

**Functional Documentation**

**PUBLIC**

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# **SAP® Environmental Compliance 3.0**



## Typographic Conventions

Type Style	Represents
<i>Example Text</i>	Words or characters that appear on the screen. These include field names, screen titles, pushbuttons as well as menu names, paths and options.  Cross-references to other documentation
Example text	Emphasized words or phrases in body text, titles of graphics and tables
EXAMPLE TEXT	Names of elements in the system. These include report names, program names, transaction codes, table names, and individual key words of a programming language, when surrounded by body text, for example, SELECT and INCLUDE.
Example text	Screen output. This includes file and directory names and their paths, messages, names of variables and parameters, source code as well as names of installation, upgrade and database tools.
<b>Example text</b>	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Pointed brackets indicate that you replace these words and characters with appropriate entries.
<b>EXAMPLE TEXT</b>	Keys on the keyboard, for example, function keys (such as <b>F2</b> ) or the <b>ENTER</b> key.

## Icons

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

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# SAP Environmental Compliance 3.0

## Use

*SAP Environmental Compliance* (SAP EC) is designed to support processes related to emissions and compliance in large industrial corporations.

SAP EC integrates people and processes across different business units on a high quality level, thereby, contributing significantly to risk mitigation.

The SAP EC core functions have been developed to maintain compliance with legal permits and regulations, which impose serious operational limits - and even financial threats - on industrial and non-industrial operations. In addition, the solution supports emission trading schemes that are required according to existing and upcoming national and international directives for the global reduction of greenhouse gases.

## Implementation Considerations

To use SAP Environmental Compliance 3.0, the following licenses are required:

- SAP Business Suite user
- SAP EHS Management or SAP EHS Management: Environmental Compliance

SAP Environmental Compliance 3.0 runs in SAP NetWeaver Portal 7.1 CE and newer releases. Refer to [Product Availability Matrix](#) for details and latest updates.

On the portal, you need to use the [Business Package for SAP Environmental Compliance 3.0](#).

## Integration

You can use SAP EC independently, but you can integrate data and processes to enhance the reliability of your environmental business processes.

SAP EC provides the following features for integration:

- An intuitive web interface that simplifies user access to controls and reports and helps workers collaborate between business units and across the enterprise.
- An integration feature with ERP software and process control systems that helps automate processes and improves the quality of results.

You can link the following objects:

- SAP EC facilities with their counterparts on SAP Enterprise Asset Management (SAP EAM)
- SAP EC materials with SAP ERP Material Management (MM)
- SAP EC facilities with SAP ERP (PM, IH) work areas
- SAP EH&S specification data and SAP EC material parameters
- SAP EH&S properties and SAP EC material parameters values
- SAP EH&S specification identifiers and SAP EC material identifiers
- SAP EH&S specification classifiers and SAP EC material classifiers
- SAP EH&S specification compositions and SAP EC material parameters
- An integration feature with SAP Portfolio and Project Management enables SAP Portfolio and Project Management Portfolio Items to refer to facilities in SAP EC and show information about the referenced facilities in the SAP Portfolio and Project Management application.

In addition, you can integrate SAP EC Document Management with SAP ERP Knowledge Management (KM).

- Web services and enterprise services maximize data exchange efficiency.

## Features

SAP Environmental Compliance covers the full range of enterprise compliance needs, from plant-permit management to emission inventory and reporting to exception reporting, prevention plans and incident tracking. It supports the full range of business processes needed for compliance, as follows:

- Modeling of complex enterprise scenarios  
This includes the modeling of all facilities and its activities that cause emissions.
- Defining emission scenarios based on material characteristics, facility parameters, specified equations, and/or measurement data
- Managing material properties and complex equations for calculation of various emission types
- Monitoring, tracking, and analyzing the state of compliance with defined requirements
- Data monitoring  
You can set limit checks and automate detection of exceptions and deviations to reduce errors.
- Identifying trends and critical deviations – such as an upcoming shortage of emission allowances – at an early stage
- Defining and applying different forecast and planning scenarios to assess the effects of operational modifications
- Regulatory reporting  
You can use standard regulatory templates and forms and form-based electronic reporting to stay current with regulatory agencies.
- Task and workflow management  
You can handle processes, data submissions, and scheduled activities using a sophisticated task and workflow management engine – complete with personalized task lists and notifications.
- Event and exceptions tracking  
You can coordinate a timely, effective response to an incident using flexible exception management software for mapping and delivering defined prevention plans.
- Compliance definition and verification  
You can keep your compliance processes up-to-date with regulatory changes using the content and services provided.

As of support package 15, you can import master data from an Excel-based template file.

The features are available for different user roles. The following roles are available in SAP EC and can be copied and changed to match your requirements:

- Corporate Program Manager
- Compliance Manager
- EHS Manager
- Compliance Analyst
- Environmental Analyst
- Site Manager
- Site Technician
- Facility Compliance Analyst
- Facility Compliance Operator
- Facility Compliance Responsible
- Environmental Compliance Admin



- Energy Manager
- Real All
- UWL Manager

## Master Data Management

### Use

SAP EC Master Data Management enables you to set up your master data, such as the facility hierarchy and materials, in your SAP EC landscape. The setup of master data is a basic implementation step required to use Emissions Management.

### Features

SAP EC Master Data Management provides a facility builder to define the company structure in a hierarchy.

You can also use Material Management to set up SAP EC materials that can be used in the calculation process.

## Material

### Definition

Everything that can be measured consumed or emitted (for example, greenhouse gas or waste).

### Use

A material is used in SAP EC for the following:

- For an emission calculation, you need an input material (oil, gas, and coal) and an output material (greenhouse gas, waste water).
- You need materials to define tasks, for example, a consumption task needs a material that can be consumed.
- A permit has limit values defined for a material that can be checked.
- To track transactions and give an overview of emissions certificate stock, you need a material for the account.

### Structure

A material usually consists of a name or identifying numbers or codes (for example, the chemical abstracts service (CAS) number).

You can structure materials by material types, groups, classifiers, and identifiers, which can be defined under Configuration. For more information about SAP EC Configuration, see [Configuration](#).

### Material Types

Every material has a specific material type - a grouping of materials with the same basic attributes, such as:

- For consumption
- For emission
- Substance
- Product

- Waste water
- Time (working hours, operating hours)

Material types can be defined in *Configuration* → *List of Values*.

## Groups

You can structure your materials by user-defined groups. Groups are defined from a chemical point of view, or from a legal point of view.

Examples:

- Ozone depleting gas
- Volatile organic compounds (VOC) emissions

You can use groups for reporting issues.

The material groups can be defined in *Configuration* → *List of Values*.

## Identifiers



Material identifiers are a unique value used to describe material. Identifier values are free-text and can be a number, word, or phrase.

You can have several different types of identifiers, but all identifiers are discrete and unassociated with the others. An identifier is defined by its type and an alphanumeric field.

Examples:

Type	Value
Heavy Metal	Pb, Zn, Sn
Halogen Compound	CCl4

The material identifiers can be defined in *Configuration* → *List of Values*.

-  **Note:** By using RFC integration, you can import material identifiers from an EHS specification.
-  The material in EC is related to the ECC EHS Specification. For this reason we have 3 material identifiers which are similar with the EHS Specification. The following identifiers changes also EC material properties:
  - Identifier "CAS - Number (NUM-CAS)" --> replaces the EC Material CAS Number
  - Identifier "Material Name (NAM-PROD)" --> replaces the EC Material Name
  - Identifier "Material Number (NUM-PROD)" --> replaces the EC Material Number
 After these 3 identifiers are set up in an EC Material, the input fields for CAS Number, name or number are read only


## Classifiers Tab

You use material classifiers to describe a category of material type. Classifier categories cannot be entered as free-text and must be selected from a list. Classifiers can also be nested. For example, a classifier for regulatory agencies can be broken down into separate classifiers for each relevant requirement.

Examples:

Classifier	Value
Volatile Organic Compound	Yes or No
Manufacturer	Manufacturer name
SARA	AH, F, P, CH, R

The material classifiers can be defined in *Configuration* → *List of Values*.

-  **Note:** By using RFC integration, you can import material identifiers from an EHS specification.

## Integration Tab

Materials are used for various objects including facilities, limits, calculations, tasks, and exceptions. If you use SAP ERP Material Management or SAP EH&S Product Safety, you can integrate those objects. You can specify in the material definition where a property comes from, such as an SAP ERP material field or an SAP EH&S specification property, so that the data can be pulled.

The connected ERP system need to be defined in the NWA Destinations ([http:<host>:<port>/nwa/destinations](http://<host>:<port>/nwa/destinations) ) and then a link to this destination need to be defined in EC Configuration → Integration → RFC Configuration. Here you can select the ERP System for Material Reference and Substance Reference.

## Parameters Tab

Material parameters hold the values for calculation. Parameter variables can be simple parameters or grouped as a set. Parameters are defined in Emissions Management.

A simple parameter is necessary to hold a single value for the calculation and it describes an equation variable in terms of value and unit.

A parameter set is necessary to hold multiple data for the calculation. The set allows you to take one value and unit relationship and extrapolate it to multiple materials. Parameter sets act as look-up lists and enable you to group parameters logically. They allow you to store multiple records related to one facility or material (such as CO<sub>2</sub>, NO<sub>x</sub>, and SO<sub>x</sub> emission factors for a flare in one location – this is a special type of parameter set known in SAP EC as an emission factor set). An emission factor set can be used, for example, for the calculation of emitting materials, such as burning natural gas, oil, or coal. Such a set contains all factors for the calculation.

Material usage enables you to create different values for parameters in different usages (qualities). For example, when you maintain parameter values for the material COAL, then you can define different usages, such as COAL South America or COAL Australia, and maintain different parameter values, such as different energy content, emission factors, or oxidation factors.

### Note:

By using RFC integration, you can import material identifiers from an EHS specification characteristic or composition.

# Facility

## Definition

The basic and central object to structure hierarchies and store data. It can reflect a technical facility, equipment, or organizational units and processes. It enables you to define a complete company hierarchy with plants, facilities, and equipment, including parametric definitions.

## Use

With the facility, you can reflect the real company facility structure. Starting with headquarters and branch locations, you can structure up to plants with their facilities, equipment, and emission points (stack).

Facilities can be of different types. Each type has different master data and different operational capabilities. The facility builder automatically determines the possible facility types when creating a sub-facility for the selected facility element in the hierarchy. For example, if you select a facility element of the type *Plant* in the hierarchy, then only facilities of the type *Facility* can be created.

### Note:

Facility types available for selection are predefined. You can customize the facility types under *Configuration* → *Master Data* → *Facility Configuration*.

## Hierarchy Assignment

Additionally, you can map the company structure by flexible hierarchies for reporting purposes. A flexible hierarchy is a hierarchy that supplies the data for a given data acquisition process. The level of detail may vary; therefore, a flexible hierarchy may represent a whole site in one situation and a specific facility in another.

By allocating hierarchy elements of company hierarchies to the flexible hierarchy, this hierarchy is described from a regional, organizational, legal, or other point of view.

### Split Function (Facility Versioning)

The splitting of facilities enables you to create different versions of a facility by dividing the validity period. By versioning, you can create different facility versions, which are valid in different time periods with different calculation parameters (for example, material and calculation assignment and different parameters).

A newly created facility always has the validity "infinite". The split date (e.g 1<sup>st</sup> Jan 2010) defines the start date of the second version. The first version has the end date: one day before the used split date. After you split a facility, the following versions exist:

1. Infinite to 31<sup>st</sup> Dec. 2009
2. 1<sup>st</sup> Jan. 2010 to infinite

The split function supports only the following business objects within the different versions (this means, you can assign different classifiers in the different facility versions):

- Identification data with identifiers
- Hierarchies
- Classifiers
- Parameters
- Material assignments
- Consumption data (during the split, the consumptions are moved to the different versions based on the end date of the different data records)
- Emissions (during the split, the emissions are moved to the different versions based on the end date of the different emission records)
- Measurements (during the split, the measurements are moved to the different versions based on the date of the different measurement records)
- Control efficiency

All other facility assignments including tasks, requirements, requirement sets, limits, exceptions, addresses, contacts, integration and documents exist in all facility versions. This means, if the assignment of a task is removed in one version, then the assignment is also removed in all other versions of the facility.

### Structure

You can only create a facility hierarchy under *Facilities*. There are different kinds of facilities, which are hierarchically structured. Each facility must be assigned to a carrier/company master record. A carrier/company record is in most cases equivalent to a legal entity (which is owner or responsible party for the assigned facility). In the facility hierarchy, a folder is a structural container for groups of objects. It can be used at all levels.

### Predefined Facility Types

Type	Description
Carrier/Company	A carrier/company is the root element
Plant	A plant is assigned beneath a carrier/company
Facility	A facility is assigned beneath a plant

Facility Part	A facility part can be assigned under both a facility and a facility part
Equipment	An equipment can be assigned under both a facility part and a facility
Control Device	A control device can be a filter to reduce emissions. The control device has a special tab "Control Efficiency"
Emission Point	Emission paths have well-defined emission points (outlets such as stacks or chimneys)
Activity	An activity or process
Folder	A structural element for grouping facilities of any type
Batch Equipment	A plant with an additional tab that shows batch emissions coming from the batch calculation

Users can use that *Favorites* function for easy access to frequently-used facility objects.

In addition to the facility hierarchy, every facility object can have facility identifiers and facility classifiers, which are used to extend the SAP EC database with additional information that you might need in your report.

Master Data Management also displays the facility hierarchy in different business scenarios with different tabs and functions. The facility hierarchy is displayed for the following business scenarios, which are defined for the SAP EC facilities and can be accessed by different user roles:

Name	Description
Master Data	- Create the whole facility hierarchy - Add contacts, hierarchy, documents, classifiers and identifiers to a facility
Emissions Management	- Add the materials and equation assignment - Handle the transactional data like emissions, measurements, etc. - Create Scenarios For more information, see the chapter <a href="#">Emissions Management</a> .
Compliance Management	- Add tasks and permits and view the attached limits and exceptions For more information, see the chapter <a href="#">Compliance Management</a> .
Facility Compliance	For more information, see the chapter <a href="#">Facility Compliance Manager</a> .



**Note:**

The tab strip visibilities of the facilities can be configured in SAP EC Configuration → Master Data → Facility Type Configuration.

### Classifiers Tab

Classifiers are used to describe a category of facility types. Classifier categories cannot be entered as free-text and must be selected from a list. Classifiers can also be nested. For example, a classifier for regulatory agencies can be broken down into separate classifiers for each relevant requirement.



**Examples:**

Type	Value
NOSE-P-Code	987.65, ...
NACE-Code	24.120, ...
UVPG	1.1.3.S, ...

The entry of multiple values is allowed. The facility classifiers can be defined by configuration.

## Identifiers Tab

A facility identifier is a unique value used to describe a facility type. Identifier values are free-text and can be a number, word, or phrase.

You can have several different types of identifiers, but all identifiers are discrete and unassociated with the others. Identifiers cannot be nested within other identifiers.

### Examples:

Type	Value
Manufacturer	Manufacturer name
Inventory number	8642

## Integration

On the facility business object, you can define integration objects.

Initially, the facility business object in SAP EC Emissions Management has the integration settings for consumptions, emissions, and measurements Web services and the facility business object in SAP EC Master Data Management has the integration settings for ERP equipment, ERP functional location, ERP work area, SAP EC exceptions and warehouse.

### Note:

Integration settings are not linked to the different facility versions. All the facility versions have the same integration settings.

### Example:

You have a facility with validity until the end of 2010 and another facility version begins in 2011. When you are importing consumptions, measurements, or emissions, the SAP EC system detects the correct version of the facility by the end date of the consumption values and emission values and the date of measurement value and adds the new records to the correct facility version.

An emission with the date 01/01/2010 - 12/12/2010 is saved to the first facility version and an emission with the date 02/02/2010 - 2/2/2011 is saved to the second facility version.

## Consumption Materials

The *Consumption Materials* tab in SAP EC Emissions Management defines the SAP EC materials for the used consumption values and their assigned consumption-based calculations.

Every consumption material can be assigned to one or several consumption-based calculations at the same time. The order number in the consumption material table and consumption-based calculations table defines the calculation order number. This order number is used for the manual calculation and also for the background job calculation.

The unit property in the consumption material table defines the default unit of the consumption values. The unit can be changed later in the consumption values; however, it can only be assigned units from the same dimension as the default unit on the *Consumption Material* tab.

As of SAP EC 3.0 SP9, SAP Environmental Compliance has been extended to enable the classification of materials for each facility and for each assigned material. This is required to allow classification according to GHG reporting that requires you to report summarized values according to one single classification row on the report.

The classifier itself can be created analog to the other classifiers that already exists in the “list of value” area on the *Consumption Materials* tab for every assigned SAP EC material. The classifiers are disabled by default and can be enabled in the SAP EC *Configuration* → *EC Properties* by setting the property “facility.consumption\_material\_classifier” to **true**. These classifications also appear on the internal SAP EC reports for consumptions and emissions and allow filtering for this attribute.

The created classifiers can be used in the SAP EC reporting data source in the hierarchy: *Consumption* → *Consumption Material Assignment* → *Consumption Material Classifier*.

## Down Propagate

This function allows copying facility properties from the selected facility to all child facilities. Following properties can be down propagated to the child facilities:

1. Source Categories (Selected List of Value)
2. Inactive Flag
3. Facility Description
4. Cost Center (Selected List of Value)
5. Facility Status
6. Equity Share
7. Coordinates
8. Internal Contacts
9. Time Zone
10. Hierarchies
11. Identifiers (Every available Identifier can be single selected )
  - When the user do not select the "DELETE IDENTIFIERS BEFORE PROPAGATING" flag, then only the identifier will be down propagated, which is selected in the upper table of the popup.
  - When the user selects the "DELETE IDENTIFIERS BEFORE PROPAGATING" flag, then first ALL available Identifiers will be first clean up, and then the identifier will be down propagated, which is selected in the upper table of the popup.
12. Classifiers (Every available classifier can be single selected )
13. Extension Points

## Dashboard

### Use

The dashboard is the starting screen of the EC application. You use this component to display tasks and exceptions assigned to you and manage them. For example, you can monitor the progress of tasks or create a new task or exception.

### Features

#### Tasks

You can work on your tasks listed in the task iView. A task appears on the list when it is created and disappears when it is completed. In addition to its name and current status of completion, the task's priority and its time status are also displayed. You can change the status-relevant properties of your task. Depending on the task type, you have to enter data for a task (consumption task, emission task, or measurement task), or fill out an attached form.

You can also create newly predefined tasks of type MANUAL from the dashboard. In this case, you have to choose a task from the drop down and enter its due date. The system creates the task in the background, depending on the task template settings.

For the consumption task, you have the option to work with an approver if you have chosen a guided consumption entry for this task.

The tasks are visible on the dashboard for the task responsible user when the task is relevant, critical and overdue.

The tasks are visible on the dashboard for the task owner user only when the task is getting critical and overdue.

The date of the status can be calculated based on the due date of the task minus the Task Starts setting in the task template (generate the relevant date) and the Task Becomes Critical setting in the template (generate the critical date).

## Exceptions

You can process your exceptions listed in the exception iView. An exception appears on the list when it is created and disappears when it is completed.

You can also create new exceptions. In this case, you have to enter the exception type, select a facility and a description. The system creates the task automatically.

## Substitutes

If you are on vacation or absent due to other reasons, you can specify a substitute for your tasks and exceptions separately.

### Note:

The exception list and task list can also be used in the portal universal work list (UWL). For more information about the UWL, see the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*.

# Emissions Management Features

## Use

Emissions Management enables you to implement business processes related to calculating, monitoring, and reporting emissions from manufacturing processes for one or more sites to ensure continued compliance with government regulations or corporate policies. Limit monitoring, execution of permit requirements, tracking greenhouse gas (GHG) credits, and government reporting are some specific examples of activities that can be executed using Emissions Management.

## Features

The amount of emissions generated can be determined by measurement, calculation or a combination of both. You can define calculations for emission calculation in batch processes and continuous processes and calculate the emission amounts.

You can create batch processes with their steps and sub-steps to determine the emissions of every step separately.

You can create emission accounts for cap and trade, which are used to sell and buy emission certificates for companies or facilities.

You can create different types of reports based on corporate demands or legal requirements. These reports contain information regarding the processes relevant for emissions and a summary of measurement or calculation results over a specified time period.



# Emissions Management

## Use

This function enables you to combine the emissions material with the consumption-based calculation and to calculate the emission amounts based on consumptions at facility.

## Integration

In Emissions Management, you can use the integration function to integrate emissions, consumptions, and measurements. For the measurements, you can display the single parameters and, for the parameter sets, you can create new ones.

## Prerequisites

In Master Data Management, the facility hierarchy is defined.

The following prerequisites must be satisfied before a calculation can be executed by the calculation engine:

- A consumption record is required for every calculation. The calculation engine displays an error if a consumption record is not defined.
- The consumption material is linked to the consumption-based calculation.

## Features

### Emissions Management Activities

Under Emissions Management you can use the following features:

- **Managing transactional data**  
You can search for consumption values, consumption parameter values, emission values, and measurements and change the amounts in a table view.
- **Archiving transactional data**  
You can search and display archived transactional data for consumptions, emissions, and measurements.
- **Managing scenarios**  
You can create and delete scenarios in a central list.
- **Releasing data**  
You can review transactional data records that are imported from external systems, as well as, data that is manually created or calculated in the SAP EC system. You can do this for emissions, consumptions, and measurements.

### Facility Detail Activities

For each facility object, you can perform the following functions:

- **Tie consumption records to time**  
The calculation is tied to a consumption period by the system. The timeframe for every consumption-based calculation executed is limited (by default) to the consumption period's start date and end date.
- **Change consumption-material assignments**  
You can change the assigned materials for consumption and consumption-based calculations combinations by changing the assignment under *Consumption Material*.
- **Display parameters**  
You can display facility parameters that are used within calculations.
- **Display additional information**  
You can display additional information about the emission, such as the incoming values,

outgoing values, calculation log, emission detail, and explanation tree. This information is available for every emission data record.

- **Creating scenarios**  
Scenarios handle *What if?* business questions and are used to analyze the effects of potential operational changes without impacting existing facilities or consumption practices. Scenarios are created by copying data records from existing master data records. If you are unsure of the effects on emissions resulting from a new facility that is under consideration for installation or a new type of fuel that is being considered, you can create scenarios to see the potential results.
- **Split validity periods of facility objects**  
You use this feature if there are any hierarchy changes where you want to keep the original hierarchy. By splitting the validity period, you actually create two hierarchies where there was one. The first (past) hierarchy is valid till the split date; the second (future) hierarchy is valid from the split date onwards.

The emission amounts are not summed up.

## Emissions

### Definition

Introduction of contaminants into an environment that causes instability, disorder, harm or discomfort to the physical systems or living organisms they are in. Emissions can take the form of chemical substances or energy, such as noise, heat, or light energy into air, water, or soil.

### Use

Under *Emissions Management*, on the *Emissions* tab, the emission amounts are displayed for every material. Emissions can be calculated automatically or manually based on assigned sources, equations and consumption data. The emission result of the calculation is displayed in a read-only table. Additionally, imported emission records can be mapped to the emissions tab and displayed in the table.

When changing an emission value manually, the system requires a comment.

### Structure

An emission record contains a time frame, an emission material, an emission amount with unit, and an uncertainty of the emission value. The system displays the emission amount for uncontrolled emissions and for controlled emissions separately.

Within the emissions, you can display the emission records filtered by material or predefined time frames.

### Integration

You can import emission data for a certain pollutant from an external system. In these cases, no calculation is done in SAP EC, but the imported values are used for reporting, as well as, for limit check functions.

By using an emission task, you can manually enter emission data by accessing the dashboard.

## Consumption

### Definition

The amount of any material or resource (for example material or energy) used in a given time by a given number of plants.

Consumption has a unit. For example, electric consumption is usually expressed in kilowatt-hours, gas in cubic feet, and water in cubic feet.

## Use

You enter or import the consumptions in *Emissions Management* on the *Consumption* tab. The consumption is the base of the emission calculation.

When changing a consumption value manually, the system requires a comment.

## Structure

A consumption record contains a time frame and an amount with a unit. It can also have an uncertainty in percentage and it is tied to the consumption material by the consumption-based calculation.

Within the consumption, you can display the consumption records filtered by material and/or predefined time frames.

## Integration

You can import consumption data for a certain material from an external system. By using a consumption task, you can manually enter consumption data by accessing the dashboard.

# Calculation Process

## Use

A consumption value always triggers an SAP EC consumption-based calculation. Based on the scripting, the consumption values can calculate emissions, consumptions, or nothing. The calculations can be triggered manually in the facility details (*Consumption* tab or *Emissions* tab) or in the Transactional Data Management (*Consumption* tab) or by the SAP EC calculation background job.

Note the following when using calculations:

- Do not start the SAP EC calculation scheduler at the same time as the limit scheduler and the change document transfer, because this results in long calculation duration.
- When a consumption value is created (manually, Web service or calculated), it is selected as a new calculation. The calculation scheduler collects only consumption values that are marked as new calculation with the value 1. After a calculation is run successfully, the SAP EC application assigns the value 0 to all consumptions. This means, the next time when the calculation scheduler is run, these calculated consumption values are not calculated. However, when an error occurs during the calculation run, the system does not reset the new calculation to 0 and these consumptions are calculated again during the next calculation run. It is important to ensure that a productive system has a low count of erroneous consumption values. The erroneous consumption calculation can be reported by using SAP EC calculation result. The following statement can be used as an SQL report data source to filter the error calculations:

```
select * from EM_CALC_RES where SYS_DELETED = 0 and STATUS = 0;
```

The column CALC\_DUMP displays the reason of the error and the column DATA\_ID the corresponding consumption value ID. The consumption can be searched by ID in the *Transactional Data Management* in *Emissions Management Activities*.

The calculation frequency is set up in the “Consumption Materials” tab within the facility detail. This flag monitors the validation of the set up manually consumption values.

## Example

You assign for the material “Diesel” a consumption based calculation “Calc. monthly values”. Then there is need to set up the calculation frequency “Monthly” on the tab “Consumption Materials” in the assigned consumption based calculation.

By creating now consumption values on the “Consumptions” tab, the EC application validates the entered consumption values. The application accept only monthly values (e.g from 01/01/2012 – 01/31/2012). Other time periods would not be accepted and the application shows in the saving process.

The user can assign more than one consumption based calculation with different time periods. Following constellations would be possible

Type	Description
No consumption based calculations are assigned to a material.	There is no validation of the calculation frequency. All time periods are accepted!
One consumption based calculation is assigned to the material: calculation frequency field is empty.	There is no validation of the calculation frequency. All time periods are accepted!
One consumption based calculation is assigned to the material: calculation frequency field is set up.	There is now validation of the calculation frequency. The set up calculation frequency would be checked.
Two consumption based calculations are assigned to the material: calculation frequency fields are set up for both calculations.	There is now validation of the calculation frequency. The set up calculation frequency would be checked. The application would accept both calculation frequencies (e.g. one calculation frequency is monthly and the other is annually. The system would accept both calculation frequencies)
Two consumption based calculations are assigned to the material: calculation frequency field is set up for one calculation. The second calculation frequency property is empty	There is no validation of the calculation frequency. All time periods are accepted! Reason is the empty calculation frequency. This would allow all calculation frequencies.

## Measurement

### Definition

Considers the determination of a physical quantity (volume, concentration), magnitude or dimension.

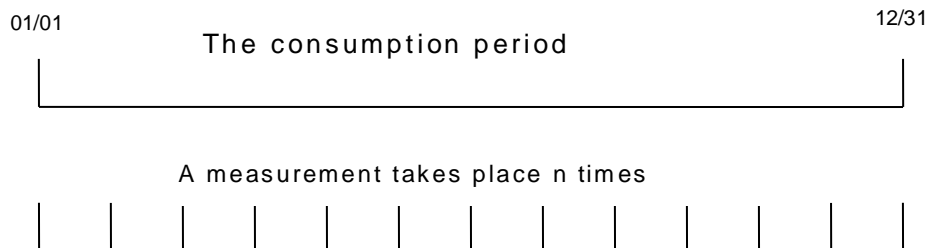
### Use

You enter the measurement in the *Emissions Management* of the *Measurement* tab. You can use measurements to calculate emissions, or to make sure that a limit value does not exceed.

By changing a measurement value manually, the system requires a comment.

## Structure

Measurement parameters represent an aggregation of measured values over a particular consumption period. The frequency with which a measurement is recorded over a given consumption period can be defined by the user. For example, a user can set up a measurement variable so that monthly measurements are recorded automatically by the system over a year-long consumption period. At the end of the consumption period, the system looks up all the measurements recorded during that timeframe. The calculation engine allows the user to perform several statistical operations on a measurement record including summation and determination of the average value, minimum value, and maximum value. The example below displays a consumption period of a year in which twelve measurements were carried out.



## Integration

You can import measurement data for a certain material from an external system. By using a measurement task, you can manually enter measurement data by accessing the dashboard.

## Emissions Account

### Definition

You can use an emissions account for any greenhouse gas cap and trade program where you can book allowances or credits for a specific material, material group, or material classifier.

### Use

You define the emissions account to record, manage, and balance emission certificates for companies or facilities in *Emissions Accounting*.

### Structure

An emissions account is defined for a certain type of emission, for example a CO<sub>2</sub> account, and has a validity period. All accounts of the same type have the same configured validity periods.

#### Note:

Account types and validity periods can be defined under Configuration. The list of values has to be set up in configuration.

Additionally, emissions accounting supports processing with forecast accounts and shadow accounts.

### Forecast Accounts

The emission bookkeeping allows maintaining forecast accounts, for example for different forecast scenarios. This can be achieved by defining accounts and assigning facilities from different facility scenarios.

#### Example:

**Account A** gets a facility from the assigned **default scenario**.

**Account B** gets a facility from the assigned **forecast scenario**.

## Shadow Accounts

The emission bookkeeping allows shadow accounts to be maintained. You can assign a facility to multiple accounts and maintain the bookkeeping data for the same facility parallel on multiple accounts.

## Integration

An account is valid for a certain facility. That means the account holds all the certificates of a certain material or group of materials (by group or by classifier) for a selected facility in the facility hierarchy and all its sub facilities.

## Transaction

### Definition

A booking on the respective emissions account.

### Use

You enter transactions in *Emissions Accounting* on the *Transactions* tab.

For more information about transactions and the use of transactions, see [Emissions Accounting](#).

## Calculation Management

### Use

With *Calculation Management*, you can create new equations, consumption-based calculations, and input/output calculations.

### Features

The following features are available:

- Defining new functions of the type equation, consumption-based calculation, and input / output calculation
- Using defined equations and predefined functions within calculation scripts
- Using quick search functionality to find parameters and advanced search functionality to find calculations
- Defining (a limited number of) favorites
- Copying a calculation as the basis for a new one
- Deleting calculations if they are not used in facilities
- Showing different versions of defined calculations
- Defining the output type where the calculation result should be written back to system
- Defining variables used within calculation script

For these features, you can use the SAP EC-specific scripting language vAlgo with a java-like syntax, see [Scripting Language vAlgo](#).

# Consumption-Based Calculation

## Definition

A formula that you can use to calculate the emission amounts based on consumptions.

## Use

You define the consumption-based calculation in *Calculation Management*.

In *Emissions Management*, on the *Consumption Material* tab, you assign the consumption material to the consumption-based calculation. As a result of this assignment, the consumption-based calculation is linked to the consumption records on the *Consumptions* tab automatically.

For each emission record, the system displays the result of the calculation on the *Emissions* tab.

### **Recommendation:**

Ensure you assign a consumption-based calculation to each consumption material.

## Structure

The consumption-based equations are sorted by source categories, for example, chemical processing, surface coating, or incineration.

When defining a consumption-based calculation, you can use the following items in scripting:

- Functions (arithmetic templates, control structure templates, SAP EC-specific function templates)
  - Equations (mathematical expression)
  - Value Types (different variable types of SAP EC)
1. Consumption (consumption variable is automatically generated by the system)
  2. Parameter (parameter variable connects a parameter)
  3. Measurement (measurement variable mapped to measurement)

### **Note:**

For information about using the “Optional Flag” in the Measurement Definition popup, see the SAP Note 1521755.

4. Emission (emission variable mapped to emission)

### **Note:**

This function works only if the emission values have been generated in the same calculation process (for the same consumption value). Example: You have one material (consumption) with two consumption-based calculations; the first one calculates an emission, and the second calculation uses the new calculated emissions.

### **Note:**

This function does not collect emissions that are imported using Web services or that are created manually. If you want to use this function, then you have to use the calculation script. For more information about “*GetEmissionValue*”, see chapter [Scripting Language vAlgo](#).

5. Local Value (value variable mapped to an absolute term)
6. Local Value Set (variable mapped to an local value set (array))

Within the calculation script, you can use predefined functions and predefined equations, which simplify the creation of the script.

Every consumption-based calculation must have a consumption variable. When you create a new consumption-based calculation, the system automatically generates a consumption variable named *C*. You can change the name of the variable. The variable's name must be between one and fourteen alphanumeric characters. Each consumption-based calculation can only have one consumption variable.

The system automatically allocates the consumption variable to a consumption value (with the default name *Consumption Value*; this name cannot be changed by the user).

## Example

The following consumption-based calculation script is an example of an emission calculation of CO<sub>2</sub> from gas:

```
C * Density * CO2_EF * LV
```

Abbreviations:

AVG_MWT:	average mol weight
PC_Component:	stands for a number of C-atoms in a component
MWT_Carbon:	molecular weight carbon
LV:	local value

## Unit Handling

SAP EC can handle dimensions and units. The units and dimension handling is part of the calculation process. SAP EC supports two kinds of unit handling in calculation, implicit and explicit unit handling. In the application, these are referred to as *Automatic* and *Manual* respectively. In the consumption-based calculation you can use both kinds of unit handling.

### Implicit (Automatic) Unit Handling

The system default unit handling is implicit. When using implicit unit handling, you have to specify the dimension of every input parameter. When a calculation is run, the system checks the result unit with the list of maintained units.



#### Example:

In the following simple emission calculation, you have to enter the unit for quantity and for the emission factor. The system calculates the result unit kg/a.

Emission (kg/a) = required quantity (t/a) \* emission factor (kg/t)

### Explicit (Manual) Unit Handling

Explicit unit handling is required when the equation does not make sense regarding its dimensions.



#### Example:

A famous example for this is the Antoine equation:

$$p = \exp(A - B / (T + C))$$

A, B and C are dimensionless while T is the temperature and the result is pressure.

When using explicit unit handling, you have to specify the unit of every input parameter and the unit of the equation result. Additionally, the output material must be specified.

## Variable Types

SAP EC works with different types of variables that can be allocated to the appropriate value (consumption, parameter, measurement, emission, local value, and local value set).

For the variables type parameter, you can use different parameters. Parameters are necessary to hold the values for calculation. In SAP EC, different types of parameters can be used. There are parameters for materials, consumptions, facilities, batch recipe, batch recipe step, and for general use.



# Equation

## Definition

A single mathematical expression (or script) with multiple input parameters but only a single return value (or value set) that you can use within calculation script.

## Use

You define the equation in the *Calculation Management*.

In the calculation script of a consumption-based calculation or in the calculation script of an input/output calculation, you can use equations. Frequently-used equations can be predefined and called within a script to make scripting easier.

## Structure

You can create folders to structure equations.

When defining an equation, you can use the following items in scripting:

- Variables
- Functions (arithmetic templates, control structure templates, SAP EC specific function templates)
- Equations

Within the calculation script, you can use predefined functions and predefined equations, which simplify the creation of the script.

If you have defined an equation once, you can use it multiple times within a calculation script.



### Note:

The equation variables are not linked to any SAP EC objects (such as parameters, consumptions). The equation works solely on the variable names and, therefore, only makes sense when called in the context of calculations.

## Example

You have created an equation named *Antoines*:  $p = \exp(A - B / (Temp + C))$ , where A, B and C are dimensionless and T is the temperature.

Within the calculation script, you have to enter the following line of code:

`<Name>(a,b,c,t)`, where `<Name>` the equation's name is.

```
CallEquation("Antoines", A, B, C, Temp);
```

With a further parameter you can force that the `callEquation()` function writes additionally Calculation Logs. See also SAP Note 2221512 for further details

```
CallEquation("Antoines", A, B, C, Temp, "createCalculationMessages");
```

# Input / Output Calculation

## Definition

A formula that you can use to calculate emission amounts for batch processes.

## Use

You define the input/output calculation in *Calculation Management*.



### Note:

The input/output variables are not linked to any SAP EC objects (such as parameters, consumptions).

You use the input/output calculation to calculate emissions for batch processes within the batch process steps.

Under *Batch Processes* on the *Calculation* tab of the recipe step details, you associate the input / output calculation with the step. On this screen, you map the calculation input variables to real data.

## Structure

You can create folders to structure input/output calculation.

When defining an input/output calculation, you can use the following items in scripting:

- Variables (IN and OUT)
- Functions (arithmetic templates, control structure templates, SAP EC specific function templates)
- Equations (mathematical expressions)

Within the calculation script, you can use predefined functions and predefined equations, which simplify the creation of the script.

# Parameters

## Definition

Parameters hold the values for calculation. Parameter variables are system-wide parameters that can be simple parameters or grouped as a set. Parameters are defined in *Emissions Management*.

## Use

A simple parameter is necessary to hold a single value for the calculation and describes an equation variable in terms of value and unit. Different types of parameters can be used.

A parameter set is necessary to hold multiple data for the calculation. The set allows you to take one value and unit relationship and extrapolate it to multiple materials. Parameter sets act as look-up lists and enable you to group parameters logically. They allow you to store multiple records related to one facility or material (such as CO<sub>2</sub>, NO<sub>x</sub>, and SO<sub>x</sub> emission factors for a flare in one location – this is a special type of parameter set known in SAP EC as an emission factor set). An emission factor set can be used, for example, for the calculation of emitting materials, such as burning natural gas, oil, or coal. Such a set contains all factors for the calculation.

## Structure

Parameters are structured by their type. This means that parameters are defined for the objects they apply to.

The following table provides an overview of parameter types:

Parameter Type	Using
Facility parameter	Fixed physical property of a facility
Material parameter	Fixed physical property of a material
Global parameter	Fixed physical property value of a facility or a material that is constant for all entities across a given hierarchy level (for example PI).
Consumption parameter	Time-dependent values that are maintained in the <i>Consumption Data</i> tab of the facility builder.
Local value parameter	Explicit value that is specific for an equation and are not used elsewhere
Batch recipe	Fixed physical property of a recipe
Batch recipe step	Fixed physical property of a recipe step

Additionally, parameters can be grouped. For example, a single parameter can be grouped by a physical property or chemical property. A group for a parameter set, for example, is the group emission factors.

### Identifiers Tab

Parameter identifiers are a unique value used to describe the parameter. Identifier values are free-text and can be a number, word, or phrase.

You can have several different types of identifiers, but all identifiers are discrete and unassociated with the others. An identifier is defined by its type and an alpha numeric field.

The identifiers can be defined in *Configuration* → *List of Values*.

### Integration Tab

The *Integration* tab defines a link to EHS specification characteristics and EHS specification composition. For more information about EHS Integration, see the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*.

### Integration

Parameters based on their type are tied to SAP EC materials, facilities, object based calculations, batch recipes. Global parameters can be used at any object.

### Example

A calculation needs the density of a material. Therefore, you need to define a material parameter holding the density of a material under *Emissions Management* → *Parameters*.

 **Note:**

To access and manage this view, the user needs at least permission for the action *SAP EC\_ParameterAccess* or the user must be member of the user group “Environmental Analyst” or “Energy Manager”.

 **Note:**

To add values to global parameters the user needs further object-based permission (*Parameter* → *Assign Values*).

## Batch Processes

### Use

You can use this function to define the recipe hierarchy and calculate the emissions of step-based production in batch processes.

### Prerequisites

If you want to use step templates, they must be defined in *Configuration*.

### Features

#### Batch Process Activities

Under *Batch Process Activities*, you can use the following batch process specific features:

- Create batch recipe  
You can create a new batch recipe that describes the materials, steps, and conditions under which the product is created.
- Create production run  
You can create a new production run, which is a single execution of a batch process.
- Create production series  
You can create a new production series, which is a number of production runs in a certain timeframe.

#### Recipe Detail Activities

For a recipe, you can perform the following functions:

- Manage classifier/identifier  
You can define classifier and identifier for every recipe.
- Split the validity period  
You can split the validity period of every recipe. You use this feature if there are any recipe hierarchy changes where you want to keep the original hierarchy. By splitting the validity period, you actually create two hierarchies where there was one. The first (past) hierarchy is valid until the split date; the second (future) hierarchy is valid from the split date onwards.
- Test emission calculation  
You can use this function to test the emission calculation for the recipe. Individual results are displayed for each step. It is also possible to use the calculation script debugger to discover issues in the calculation scripts.
- Assign parameters  
You can assign single parameter and parameter sets to the recipe.
- Defining recipe steps  
For each recipe step, you have to define the details. The following settings are especially important:
- Assigning calculation script  
You can assign a calculation script to a step. If this is the case, the mappings of the input

variables have to be executed. Depending on the selected type, you have to set the assignment and the external component, for example, if you choose the type *Facility Parameter*, you have to set the facility where the parameter is used.

- **Charging materials**  
You can charge materials. The *Charge* tab is only visible when the relevant checkbox is selected in the step header.
- **Displaying content**  
You can display the content of the step at the beginning and at the end of the current step. In addition, it allows you to configure how the displayed values are determined, for example, in weight percent or individually defined. If the step has relevant emissions, you have to set the calculation output variable.
- **Displaying emissions**  
You can display the controlled and uncontrolled emissions.
- **Transferring materials**  
You can transfer the materials to a target. The *Transfer* tab is visible only when the relevant checkbox is checked in the step header.
- **Assigning step parameters**  
You can assign single parameter and parameter sets to the step.

## Emissions Accounting

### Use

This function enables you to maintain accounts of emission certificates to track transactions and provide an overview of certificate stock. Emissions trading is sometimes called cap and trade. A central authority (usually a government or international body) sets a limit or cap on the amount of a pollutant that is allowed to be emitted. Companies or other groups can have issued emission permits and are required to hold an equivalent number of allowances (or credits), which represent the right to emit a specific amount.

### Prerequisites

You have made the following settings under *Configuration*:

- You have defined an account type for a material, material group, or material classifier, and defined the corresponding periods.
- You have defined an account category and referenced the needed transaction types to the category.
- You have defined a transaction category for each transaction type.
- You have defined the certificate types.

### Features

#### Emission Accounting Activities

Under *Emission Accounting Activities*, you can use the following account-specific features:

- **Create account**  
You can create a new emission account for every object of the facility hierarchy. The number of accounts per object is not limited (shadow accounts). This enables you to maintain the bookkeeping data for the same facility in parallel on multiple accounts.
- **Manage my work list**

You can perform a status change (validation) of transactions that appear in your worklist. The support of the dual control principle is optional. You can configure this option in *Status Network Configuration*.

## Account Activities

For an emissions account, you can perform the following functions:

- Book transactions

On the *Transactions* tab, you can book different types of transactions to an account. You cannot delete an account if at least one transaction is booked on it. Then, only correction entries are possible.

- Filter transactions

On the *Transactions* tab, you can filter the displayed list of transactions of an account.

 **Note:**

The filter settings on the *Transaction* tab are also valid for the other tabs.

- Display account balances

On the *Balances* tab, the system provides an overview of the yearly balance for each year within a period that you select. Note that any filters defined on the *Transaction* tab apply to the yearly balances displayed as well.

- Define limits for banking and borrowing

On the *Limits* tab, the system displays a table with limits regarding the banking and borrowing transactions of every reference year of a specified period. In this table, you can specify limits for the total amount of emissions allowance that can be either banked or borrowed in a given year. You can define the limits as either an absolute value or as a percentage of the total available allowance for that year.

 **Example:**

If you enter '0' in any of the limit fields, the system recognizes this as being no limit.

If, at any time, you try to bank or borrow more emissions allowance than is allowed by any relevant limit specified for the given year, a warning message appears. The system does not allow you to save the emissions account until all bank and borrow transactions comply with the relevant limits.

 **Note:**

You cannot specify negative limit values or percentage values higher than 100 %.

## Transaction Types

You can book transactions on accounts based on different transaction types. The following transaction types are included in the standard delivery of SAP Environmental Compliance:

- **Allocation**

You can use this transaction type to book emission allowances that are granted by governmental agencies.

- **Bank**

You can use this transaction type to transfer emissions allowances from one year to the next year. The system only allows you to create a bank transaction if the account has a period available that includes the year that follows the specified reference year. This transaction type is defined as an active value in the *List of Values (LOV)*.

The bank transaction from the reference year and its corresponding banked transaction in the following year are displayed in the transaction table on the *Transactions* tab.

 **Example:**

For the current year 2012, your company has an emissions allowance of 150 t of CO<sub>2</sub>. During the year, only 100 t of CO<sub>2</sub> was emitted. You decide to transfer the remaining

allowance of 50 t to year 2013. In the transaction table, you record a bank transaction of -50 t in 2012 and the system automatically creates a banked transaction of +50 t in 2013.

- **Banked**

The system automatically creates a banked transaction in the subsequent year to balance any bank transaction you create. The value of the banked transaction is positive; whereas, the corresponding bank transaction is negative. This transaction type is defined as a passive value in the *List of Values* (LOV).

 **Note:**

You can only delete a banked transaction by deleting its corresponding bank transaction.

- **Borrow**

You can use this transaction type to transfer emissions allowances not needed from one year and apply them to the previous year. You can only transfer a given amount of emissions allowance from the specified reference year to the previous year. The system only allows you to create a borrow transaction if the account has a period available that includes the year previous to the specified reference year. This transaction type is defined as an active value in the *List of Values* (LOV).

The borrow transaction from the reference year and its corresponding borrowed transaction in the previous year are displayed in the transaction table on the *Transactions* tab.

 **Example:**

In the previous year 2011, your company exceeded its CO<sub>2</sub> emissions allowance by 50 t. In the current year, your company has an allowance of 150 t but only requires 100 t. You decide to take the current remaining allowance of 50 t and apply that to the previous year 2011, therefore, creating a zero balance in both years. In the transaction table, you record a borrow transaction of -50 t in 2012 and the system automatically creates a borrowed transaction of +50 t in 2011.

- **Borrowed**

The system automatically creates a borrowed transaction in the previous year to balance any borrow transaction you create. The value of the borrowed transaction is positive; whereas, the corresponding borrow transaction is negative. This transaction type is defined as a passive value in the *List of Values* (LOV).

 **Note:**

You can only delete a borrowed transaction by deleting its corresponding borrow transaction.

- **External Purchase**

You can use this transaction type to book an amount of emissions credit that is bought from an external institution, such as a governmental agency or another company.

- **External Sell**

You can use this transaction type to book an amount of emissions credit that is sold to another company.

- **Internal Transfer**

You can use this transaction type to transfer allowances/credits from one emissions account to another of the same type.

 **Example:**

Facility A does not need all its assigned allowances/credits, and Facility B is short of allowances. Therefore, you make an internal transfer from the emissions account of facility A to the emissions account of facility B.

- **Return**

You can use this transaction type to book emissions allowances/credits that you have to return to governmental agencies.

In SAP EC Emissions Accounting, this manual return step reduces the emissions account balance so that you cannot use amounts twice, for example, by using bank transactions.

Note: SAP EC does not automatically create return transactions.

 **Example:**

At the end of the year, a company has to return an amount of emissions allowances/credits to governmental agencies that is equal to the amount of emissions the company has produced. This is to make sure that a company actually has enough allowances/credits to cover its emissions.

- **Transfer to other period**

You can use this transaction type to transfer accounts. This represents a generic type of volume transfer over time; whereas, banking and borrowing is a strict transfer to adjacent years only.

Transaction *Transfer to other period* exists from earlier SAP EC releases. If you do not need this generic transfer approach and only want to work with banking and borrowing, then we recommend disabling this transaction type.

To delete the entry *Transfer to other period* from SAP EC, go to *Configuration → Basic Settings → List of Values → Emissions Accounting → Account Category → Default Category*.

 **Note:**

SAP EC does not provide any connection to other systems, such as SAP FI, that may relate to the financial aspect of this purchase.

### Custom Transaction Types

You can manage transaction types under *Configuration → List of Values → Hierarchy → Emissions Accounting*.

Under *Account Category*, transaction types are defined and categorized. Under *Transaction Type*, the transaction types are assigned to functional groups. The system uses the provided functional groups to determine how the assigned transaction types function, for example, if emission allowances specified for the transaction type are transferred to another reference year.

 **Note:**

You cannot edit the provided functional groups and you cannot create custom groups.

The following table provides an overview of the functional groups included in the standard delivery of SAP Environmental Compliance, as well as, the default transaction types assigned to each.

Functional Group	Assigned Transaction Types
Account Transfer	Internal Transfers
Debits	External Sell Return
Period Transfers	Transfer to Other Period
Postings	Allocation External Purchase
Transfer to Year – Next	Bank Banked
Transfer to Year – Previous	Borrow Borrowed

In addition to the transaction types included in the standard delivery of SAP Environmental Compliance, you can create custom transaction types.

To create a custom transaction type:

1. Go to *Configuration → Basic Settings → List of Values → Hierarchy → Emissions Accounting*.



2. Under *Account Category*, create or select an account category that contains the transaction type you want to add.  
Note: You can add the custom transaction type to the existing *Default Category* subfolder.
3. In the selected category subfolder, create the custom transaction type.
4. Select the custom transaction type and choose *Copy Reference*.
5. Under *Transaction Type*, select the folder (functional group) that describes how you want the custom transaction to behave.  
Note: You cannot modify the existing folders or create custom folders.
6. Choose *Paste Reference*.

## Reporting

### Use

You can create and display different reports concerning Emissions Management, for example, an annual emission inventory report.

The following kinds of reports are available:

- Form-based reports
- External reports
- Analytical queries

For more information about reporting, see chapter [Reporting](#).

## Compliance Management Features

### Use

You use this component to maintain compliance with functionality for managing permits at every facility you operate. The software supports you during the application process, alerts you to upcoming expiration dates, monitors threshold limits, and can even trigger follow-up actions based on a wide range of criteria. In addition, Compliance Management solutions support exception tracking with capabilities for generating reports, taking corrective action, assigning tasks and managing workflows.

Compliance tracking ensures the proper and time-dependent execution of all these measures requiring activities across organizational entities. In addition, any changes in processes as well as non-nominal events have to be recorded.

Legal compliance across a wide range of regulated areas is essential not only for avoiding fines and maintaining operating privileges but also for sustaining corporate responsibility requirements and projecting a positive corporate image.

### Features

You can implement the compliance processes with regulations and licenses related to the environmental domain. You can access all functional components of the application necessary to view, maintain and change all data relevant to the environmental compliance business processes for plants and facilities.

You can view and maintain applicable licenses and regulations in *Permit Management* and generate periodic reports for corporate or government reporting.

You can set up and execute various tasks related to compliance.

You can create and monitor exceptions that require attention due to overdue status or if operational oversight is required.

## Compliance Management

### Use

You can use this function to manage compliance relevant issues, including tasks, exceptions, requirements, and limits to be in compliance, for example with air, water, and waste regulations. In addition to complying with regulations, you can also maintain and enhance a good corporate image.

### Features

You can use the following features assigned to facility to be in compliance:

- **Managing tasks**  
You can create and assign tasks of current activity requirements directly to the affected person.
- **Managing requirements**  
You can assign the full range of business requirement sets and requirements to each facility you operate to stay in compliance with regulations.
- **Managing limits**  
You can monitor different kind of limits, for example threshold limits and can even trigger follow up actions to stay in compliance.
- **Managing exceptions**  
You can flexibly manage exceptions to respond to an environmental incident, such as a spill of hazardous materials, by mapping and delivering defined prevention plans.

Supports event-driven processes – helping team members respond to an environmental incident, such as a spill of hazardous material or limit deviation, by mapping and delivering defined prevention plans.

## Permit Management

### Use

You can use this function to define the authority and permit hierarchy and enter the limits as defined by operation permits or corporate directives.

### Prerequisites

Relevant permits must be created and facilities/materials are created and assigned to the requirement. For automatic limit checks, you have set up the according job.

### Features

#### Authority and Permit Activities

Under *Authority and Permit Activities*, you can use the following authority and permit specific features:

- **Create authority**  
You can create a new authority. The authority is the top level in the authority and permit hierarchy.
- **Create permit**  
You can create a new permit. The permit is the second level of the authority and permit hierarchy. A permit can hold contacts, documents, and an introduction to get a quick overview about its content.

- **Create requirement set**  
You can create a new requirement set. The requirement set is the third level of the authority and permit hierarchy and can be linked to facilities.
- **Create requirement**  
You can create a new requirement. The requirement holds the demands and value limits.
- **Create limit check**  
You can create a new limit check to check values for emission, measurement, and consumption. In addition, to the *Create Limit* function you can use the *Limit Wizard*. Within the wizard, the order of the steps is fixed. The procedure of each step is the same as for the limit creation function. For more information, see chapter [Limit](#).
- **Create citation**  
You can create a new citation. A citation is a reference to a source (book, article, regulation, enactment), published or unpublished.
- **Create folder**  
You can create a folder to structure the hierarchy tree.
- **Limits Diagnostic**  
You can use this function to search for limits to get an overview of all checked and unchecked limits, failed checks, linked exceptions, the check reports, and the open check lists (future checks).
- **Citation Monitoring**  
You can use this function to search for citation updates by different criteria or related business objects, such as facilities or permits. For more information, see chapter [Citation Monitoring](#).

## Authority and Permit Detail Activities

You can perform the following functions:

- **Assign facility**  
You can assign one or many facilities to a requirement set or more granularly to a requirement.
- **Define limit checks**  
You can define one or more limit checks for a requirement.
- **Manage tasks**  
You can create a new tasks for a requirement or assign an existing task to requirement
- **Perform checks manually**  
You can perform a limit check manually, especially for testing purposes. Normally a limit check is automatically executed by the system.

## Authority

### Definition

Public agency or corporation with administrative powers in a specific field.

### Use

You use this object to maintain basic information about the authority.

You define the authority in *Permit Management*.

### Structure

An authority usually consists of a name, address, and contact persons. It can be structured by legal, regulatory, corporate, or other types. The authority is the first element in the authority and permit hierarchy.

## Example

### Authorizations

Symbol	Name
EU ETS	EU Emissions Trading Scheme
SEPA	Scottish Environmental Protection Agency
US EPA	US Clean Air Act
NJDEP	US NJ New Jersey Department of Environmental Protection

## Permit

### Definition

A document or certificate giving permission to do something; it is an official document or other document given by an authorized public official or agency to allow a business to perform certain acts - the content of the relevant laws and regulations. Generally a permit defines a set or sets of rules including enforced limits and measurement obligations. SAP Environmental Compliance uses different permit types, for example, legal, professional, or corporate.

### Use

You use this object to maintain information about the permit, for example a permit that allows processing a facility, or emitting greenhouse gases. You define the permit beneath the authority in the authority and permit hierarchy of *Permit Management*.

### Structure

A permit is defined by its name, unique number, and validity period. You can enter contacts of people, assign documents, and give an introduction of permits content.

## Example

### Permits

Name	Description
ETS Permit	Defines allocated ETS allowance volumes on installation level.
Title V Permit	Title V Operating Permit for Air

## Requirement Set

### Definition

Contains the collected requirement that results from a permit, for example, the emission limits for waste water, soil, or air.

### Use

You use this object to maintain information about the requirement, for example the emission limits or reporting requirements. In *Permit Management*, you define the requirement sets beneath the permit in the authority and permit hierarchy.

## Structure

A requirement set is defined by its name, type, and validity period. You can assign facilities and documents.

## Example

The following requirement sets are examples regarding the U.S Title V permit:

- General Compliance Requirements
- Acid Rain Program Requirements
- Combustion Units Requirements
- Monitoring Requirements
- Operating Limits / Permitted Capacity

## Requirement

### Definition

A requirement is a detailed description of how to handle or operate certain equipments, facilities, or processes in order to comply with a policy, regulation or permit. In order to demonstrate compliance, a company has to provide information that all requirements have been observed and have been implemented correctly.

### Structure

A requirement is defined by its name, requirement text, and validity period. You can assign facilities, citations, tasks, and documents.

### Permissions

The Requirement business object does not have own Permission check Action in the EC Object Based Authentication. The Requirement object inherits the permissions from the parent "Requirement Set".

## Limit

### Definition

This chapter describes how to manage limit checks within SAP Environmental Compliance. Limit checks are necessary to prevent an operator of a facility from exceeding limit values. For example, a limit check could be used to answer the following question: When did a measurement value, an emission value, or a consumption value exceed the limit value? Should an exception be triggered?

### Use

The limits are handled in *Limit Checks*, which are permit objects found in the permit hierarchy under requirements.

SAP EC supports either non-aggregated or aggregated values as input for the limit check.

- Non-aggregated values  
The limit check compares every single measurement, emission, and consumption value with a fixed or variable limit value. Every value is checked once. The next time the limit scheduler collects the measurement, emission and consumption values, it will ignore the already checked values.

- **Aggregated values for a period**  
This check is used to check values within either a fixed period with a given check start date, a fixed period continuous without check start date, or a rolling period. All aggregated period checks support daily, weekly, monthly or yearly checks.  
The user enters an aggregation type and an aggregation period. SAP EC supports the aggregation types: average, maximum, minimum and sum. The limit check always checks the affected periods that have one or more measurements, emissions, or consumption values.

SAP EC supports the following types of limit checks:

- **Single check**  
This type checks whether a limit value is exceeded.
  - Limit check with fixed values  
This limit check compares a single or aggregated measurement, emission, or consumption value with a given fix limit value for example emission value < 5 l.
  - Limit check with variable values  
This limit check compares a single or aggregated measurement, emission, or consumption value with a variable limit value, that is defined by a script, for example emission value <= the average emission value of the whole year.
- **Range check**
  - Limit check with fixed values  
This limit check compares a single or aggregated measurement, emission or consumption value with a given value range, for example, emission value > 5 l and emission value < 10 l.
  - Limit check with variable values  
This limit check compares a single or aggregated measurement, emission, or consumption value with a variable limit value that is defined by a script, for example, emission value <= [FacilityParameter1] and emission value <= [FacilityParameter2].
- **Limit check with user-defined scripts**  
This limit check is defined by a script that returns either PASSED, FAILED or INDEFINITE, for example, check that at least a defined number of conditions is fulfilled.



**Note:**

Checks based on scripts may affect your system performance.

## Structure

A limit is defined by its name, the check period, and it uses the validity period of the parent requirement.

## Permissions

The Limit business object does not have own Permission check Action in the EC Object Based Authentication. The Limit object inherits the permissions from the parent "Requirement Set".

## Managing Limits

The following prerequisites must be met before you can create and manage limits and execute a limit check in SAP EC:

- Relevant permits have been created.
- Relevant master data, such as facilities or materials, are created and assigned to the relevant requirement.

The following sections of this document describe managing limits in more detail.

## Verify Master Data for the Limit

All master data required in the Limits must exist in SAP EC; any that do not exist have to be created before you can enter a limit or check a limit. The following types of master data are required:

- Dimensions/Units
- Material
- Facility and material assignment
- Authority, permit, requirement set and requirement

### Limit Check Types

In SAP EC, you can create and manage the following types of limit checks:

- Non-aggregated limit checks
- Aggregated period checks
- Aggregated continuous period checks
- Rolling period checks
- Single checks
- Single limit checks with fixed values
- Limit checks with variable limit values
- Range checks
- Range limit checks with fixed values
- Range limit checks with variable limit values
- User-defined limit checks

### Non-Aggregated Limit Checks

The non-aggregated limit check verifies whether one emission, one measurement, or one consumption exceeds the given limit value. After the check, the system remembers that the value has been checked and it will be ignored the next time when the limit scheduler runs.

If emission, measurement, or consumption values previously used for a limit check change, the system flags that limit check as “to be rechecked” and rechecks it the next time the limit check job runs.

#### Restrictions:

The period of the check is always the parent requirement period.

#### Scenario Description:

The system collects measurements by using Web services and the limit scheduler checks each measurement.

Measurement: E.g. 33 t CO<sub>2</sub> from 21st January 2006

Limit value: E.g. <=20 t CO<sub>2</sub>

Validity Period: E.g. 1st January to 30th April

The first check creates an error with an exception. The next check ignores the value because it has already been checked. Later, the value of the measurement is changed manually to the value 20 t CO<sub>2</sub>. The next limit check recognizes that the value has been updated since the last limit check run and checks it one more time. A new limit report is generated, and assigned to the existing exception. Only measurements from the validity period are considered for the check.

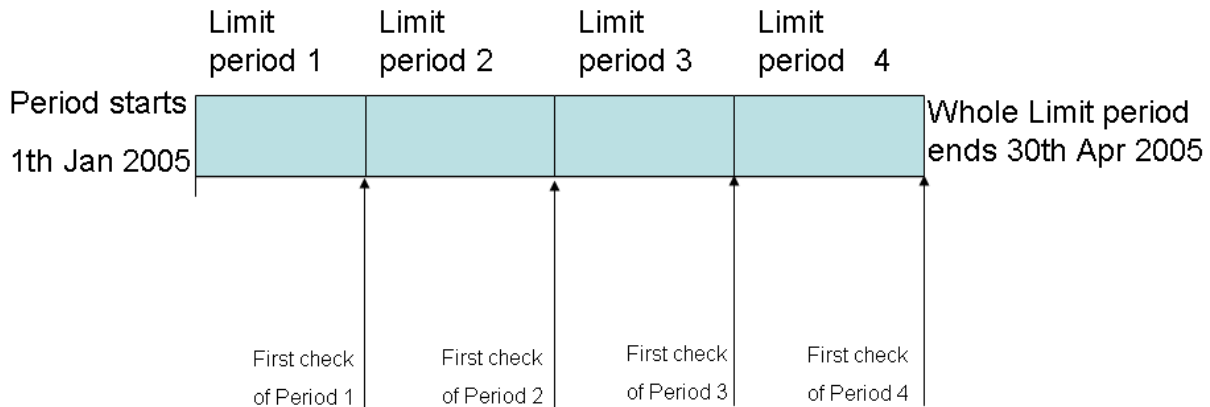
#### Note:

Every time the scheduler runs, all new and changed values from the period are collected and checked against the limit.

## Aggregated Period Checks

In an aggregated limit check, the limit values are checked against all emissions, measurements, or consumptions that are contained in a defined period.

The following picture describes a limit check for a period of four months with an aggregation period of one month and with a flagged aggregation option "Suppress Immediate Check". The system generates four check periods and the check begins when the period end date is reached and the values are created or changed in the given period.



### Restrictions:

The check always starts at the end of every limit period, and the check stops recurring after the end of the parent requirement period is reached.

For every period, the system creates at most one exception.

### Scenario Description:

The system checks an entire given period (e.g. monthly...) using aggregation values. The first limit check begins after the end of every period.

Measurement: E.g. 33 t CO<sub>2</sub> from 21st January 2006

Limit value: E.g. <= 20 t CO<sub>2</sub> in one month

Validity Period: E.g. 1st January to 30th April (aggregation average begins on 1st January).

This means that the limit period within a requirement period of four months has four recursions. The system creates four limit instances, which are checked at the end of every monthly period. The first check date is the 1st of February – when the first period ends. In the first period, the measurement average value is less than 15t. In this case, the system creates no exception but a limit report is created. If a measurement value of the first period has changed, the limit scheduler recognizes this, and the first period is checked again. If the average limit value is higher than 20t, an exception is created. Every limit period has its own exception if the limit values are exceeded.

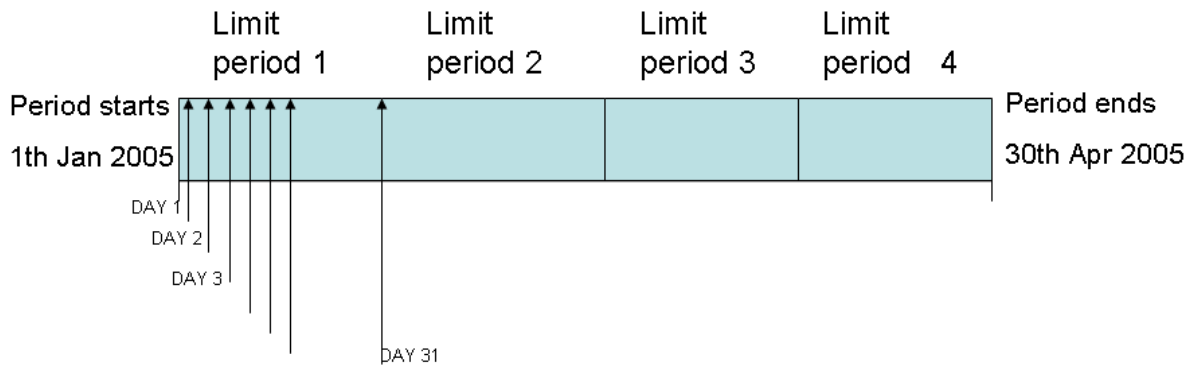
Note: Every time the scheduler runs, all new and changed values from the period are collected and checked with the limit.

## Aggregated Continuous Period Checks

The continuous aggregated limit check is based on a time period without a beginning date. The continuous period check is a special case of the period check. The only difference is that the period check has a date that describes the first date for checking the limit period. The continuous check always checks the period when the system recognizes new values. This enables the system to check values in real time.

Every check period creates one exception if the limit values are exceeded. If more than one violation happens in the period, the system appends the check reports to the exception. The following graphic describes a limit check for a period of four months with an aggregation period of one month and without the *Suppress Immediate Check* checkbox selected. The system generates four check periods, and the check begins immediately when values are created or changed in the given period.





### Restrictions:

The last recurrence ends always at the end of the parent requirement period. There is no check start date. The check always begins if the period recognizes new values. For every period, the system creates one exception if the limit values are exceeded.

### Scenario Description:

The system checks an entire given period (e.g. monthly...) using aggregation values.

Measurement: E.g. 15 t CO<sub>2</sub> for the first days

Limit value: E.g. <=20 t CO<sub>2</sub> in one month aggregation average

Validity Period: E.g. 1st January to 30th April (aggregation average begins on 1st January).

This means that for a month a maximum of 31 checks can be executed.

On the first day, the limit checks the measurement that has the date 1st of January. Every new day, the range of check increases by one day. On the last day of the month, all values of the period are checked (the same behavior as for the non-continuous period check). Every limit violation within the limit period is contained in the same exception. If the limit average creates a violation after 10 days and the measurement values are not changed, then the exception has entries for every day that follows until the end of the limit period.

Note: Every time the scheduler runs, all new and changed values from the period are collected and checked against the limit.

### Rolling Period Checks

Check requirements, such as the example below, can be defined using the *Rolling Period Check* function.

Requirement: Your permit requires you to perform a limit check every week, but the data that has to be checked must be the average of the data for the last 4 weeks.

Set up: You set the aggregation type to 'Average' and the aggregation period to 1 month (4 weeks). In the *Rolling Check* section, you define a check period length of one week.

When defining rolling checks, it is important to recognize that the rolling check period length must be equal to or smaller than the aggregation period length. See the following examples:

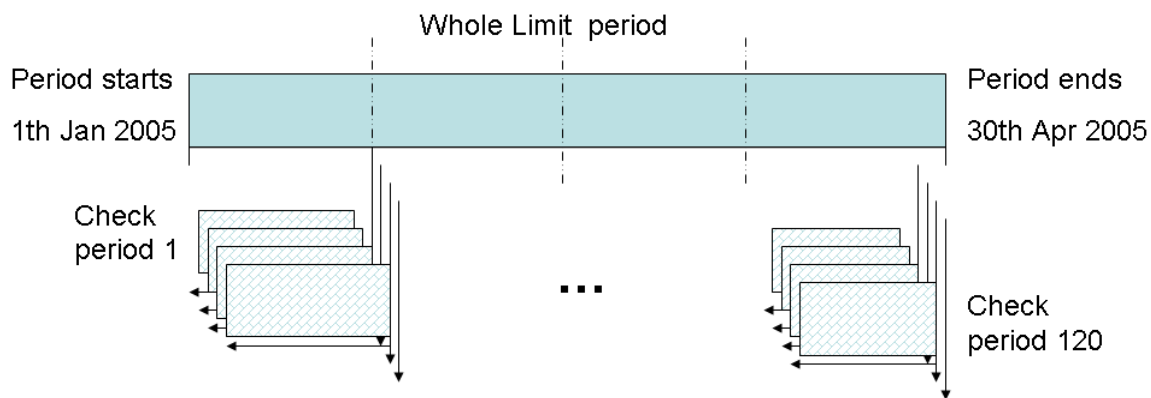
Aggregation period is daily --> rolling period is daily

Aggregation period is weekly --> rolling period is daily and weekly

Aggregation period is monthly --> rolling period is daily and monthly

Aggregation period is annually --> rolling period is daily, monthly, and annually

The start date of the next period is defined in the rolling period. The rolling period checks work with non-continuous periods and also with continuous periods. The following picture describes a monthly period with daily rolling. In this case, SAP EC generates 120 single check periods, which check for the given emissions, consumptions, or measurements.



**Scenario Description:**

A period of 12 consecutive months determined on a rolling basis with a new 12-month period beginning on the first day of each calendar month.

Measurement: The table below details the operation per 12-month rolling total.

Of months	Hours 12-	Month	Operated (hrs/mo)	Month Rolling Total (hrs/yr)
1		June 2005	300	
2		July 2005	200	
3		August 2005	400	
4		September 2005	600	
5		October 2005	300	
6		November 2005	400	
7		December 2005	400	
8		January 2006	450	
9		February 2006	550	
10		March 2006	450	
11		April 2006	550	
12		May 2006	300	4900
13		June 2006	150	4750
14		July 2006	500	5050

Limit Value: E.g. 6000 hours of operation per 12-month rolling period (the unit is first operated in June of 2005)

Validity Period: E.g. 1st June of 2005

Steps for calculation the 12-month rolling total:

1. For the first 12 months – track the total hours for each month.
2. At the end of 12 months – total the hours of operation for the year (e.g. 4900 hrs/yr.).
3. After the first 12 months – subtract the first month from the total and add the next month.
4. Repeat step 3 for each additional month.

**Single Checks**

The SAP EC limit checks support single and range checks. A single limit check compares a measurement, emission, or consumption value with a given fixed or variable limit value based on its related operator (e.g. “emission value <= 20.0”). If the measurement, emission, or consumption value exceeds the defined limit value, the limit check is passed; otherwise, it fails.

## Single Limit Check with Fixed Value

The limit value that is compared with the emission, measurement, or consumption value can be defined as a fixed value, e.g. 100. Besides the limit value, the related unit is defined in the check unit input field.

### Scenario:

The system checks that the aggregated CO2 emission values of a month do not exceed a given limit value.

Emission Value: E.g. 33t CO2 from 1st to 31st January 2011

Limit Value: E.g.  $\leq 20$ t CO2 in one month

Validity Period: E.g. 1st January to 30th April (aggregation average begins on January 1<sup>st</sup>).

## Limit Check with Variable Limit Value

The limit value that is compared with the emission, measurement, or consumption value can be defined as a variable value that is calculated at runtime in a vAlgo script. Besides the limit value, the related unit is defined in the check unit input field.

### Scenario:

In a script, the system calculates the limit value. The system can then use this to check that the aggregated monthly average values do not exceed the average emission values of a year.

For more information about scripts for variable limit checks, see chapter [Variable Limit Check Scripting](#).

## Range Checks

A range limit check compares a measurement, emission, or consumption value with two defined limit values and their related operators. (e.g. "emission value  $\geq 15.0$  AND emission value  $\leq 20.0$ ").

Similar to a single check, the limit value is passed if the measurement, emission, or consumption value exceeds neither the lower nor upper limit value. Otherwise, the limit check fails.

## Range Limit Check with Fixed Values

### Scenario:

The system checks that the aggregated natural gas measurement values of a month do not exceed a given limit range.

Emission Value: E.g. 95t natural gas from January 2011, 1<sup>st</sup> to 31<sup>st</sup>

Limit Value: E.g.  $\geq 15$ t and  $\leq 20$ t in one month

Validity Period: E.g. January 1<sup>st</sup> to April 30<sup>th</sup> (aggregation average begins on January 1<sup>st</sup>).

## Range Limit Check with Variable Limit Values

The lower and upper limit values that are compared with the emission, measurement, or consumption value can be defined as a variable value that is calculated at runtime in a vAlgo script. Besides the limit value, the related unit is defined in the check unit input field.

### Scenario:

In a script, the system calculates the limit value. The system can then use this to check that the aggregated monthly average values are within a given range that is higher than a specific minimum value and below the average emission values of a year.

For more information about scripts for variable limit checks, see chapter [Variable Limit Check Scripting](#).

## User-Defined Limit Checks

If the previously described check mechanisms are not sufficient, you can define and perform the limit check yourself.

The limit check executes a vAlgo script at runtime to return a check result. This returned check result can be PASSED, FAILED or INDEFINITE.

### Scenario

The system checks in a script whether three of four values fulfill a specific condition.

For more information about scripts for variable limit checks, see chapter [Variable Limit Check Scripting](#).

## Performing Limit Checks

The limit checks can be executed either manually in the limit detail view for testing a small period or automatically via the limit scheduler.

The method for collecting the emissions, consumptions and measurements values for the check differs between the two check types.

### Performing Checks Manually

In the definition phase, the manually performed check enables a check for a given period (in a dialog box). The check searches for and checks all the values that are found in the defined period.

We recommend you disable exception creation during the testing phase and deselect the enabled option, because this option activates the limit for the automated limit scheduler.

Performing checks manually is only used for testing the created limit check and should not be used in a productive system. The created limit summaries and check planning lists can be deleted in the limits diagnostic.

### Scheduling the Periodic Job for Automatic Limit Checks

The scheduler works only with emissions, consumptions and measurements that are new or that have been changed.

All emissions, consumptions, and measurements in the system are selected as to be checked. When the limit scheduler runs the first time, all emissions, consumptions and measurements are read and assigned to the used limit checks.

After the limit check, the system marks these emissions, consumptions, and measurements and the next limit check ignores these emissions, consumptions, and measurements.

The Java Scheduler (located in NetWeaver Administration) is required for periodic jobs. For details on how to setup the periodical jobs, see the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*.

This job can be configured to run at any intervals depending on the implementation needs.

## Results of Limit Checks

The limit check can result in the following statuses:

- Check passed  
The check worked without problems and the limit value was not exceeded.  
This situation can either result out of a passed limit check or an explicit return PASSED in a variable or user-defined script.
- Check failed  
The check worked without problems but the limit value was exceeded.  
This situation can either result out of a failed limit check or an explicit return FAILED in a variable or user-defined script.

- **Check indefinite**  
A situation was encountered that prevents a further processing of the limit check.  
This situation can either result out of an internal check error or an explicit return INDEFINITE in a variable or user-defined script.

## Exception and Error Handling

On the *Action* tab of a limit check, you can define whether an exception is created for failed limit checks. In addition, you can specify that the responsible persons of the assigned facilities are informed about the failed limit check by e-mail.

For the situation where a script error occurs, you can specify that a specific user, such as the programmer of the check script, is informed by e-mail.

## Seasonal Checks

The seasonal check enables you to define a period within a year. The described period is only used for the limit check.

Example: The following period is described as a seasonal check: 1st March to 31 May. That means that only those measurements, emissions, and consumptions with end dates within this defined period are collected.

Period checks are similar. If we have a defined period of 3 months from 1<sup>st</sup> January to 31 March, then the period only contains measurements, emissions, or consumptions with end dates within the defined season.

## Limit Check Wizard

### Use

You can create checks with the limit check wizard. The limit check wizard helps you create a limit in several steps. After leaving any step, the system validates the entered data.

The limit check wizard is in the permit activities. Before running the limit check wizard, the user must select a requirement. The selected requirement is the parent of the newly created limit.

After finishing and leaving the limit check wizard view, the view changes to the limit detail screen. Now the user can review the entered data. After reviewing the entered data, the limit is saved.

## Checking Mechanism

The limit check engine collects emissions, consumptions, and measurements based on the following criteria:

1. The assigned facilities or sub facilities match
2. The material name, group or classifiers match: The EC limit check collects the measurements, emissions, and consumption values which are assigned to a material, material group or material classifier values. The limit check checks only the transactional data that have a unit with the same dimension as the limit check unit that is defined in the limit tab.
3. The time period matches the measurement time and the end-date of the emissions and consumptions
4. Source Type Emissions: The emission type and calculation frequency must be the same. If these settings are empty in the Limit Detail, the system checks all emissions with all available settings and also all empty emissions.
5. Source Type Consumptions: The method property must be the same. If this setting is empty in the Limit Detail, the system checks all consumptions with all available methods and also all empty consumptions.
6. Source Type Measurement: The measured value property is a required field. In this case, SAP EC checks only measurements with the selected type.

7. Emissions, Consumptions and Measurements from EC Tasks will be only checked, when the Task Instance has the status **COMPLETED**.

## Limit Check Summaries

### Definition

Results of a limit check.

As of SAP EC 30 SP09, the limit reports are multilingual. When reading the limit report on the UI, the system automatically translates the report text to the user language. For SAP EC reporting, the system saves the limit report text in the report text language in the column REPORT\_TEXT of the database table EM\_LIMIT\_REPORT.

The limit report texts can be generated in the following languages:

- English (default language)
- German
- French
- Spanish
- Japanese
- Korean
- Portuguese
- Chinese
- Russian
- Turkish
- Czech
- Hungarian

By selecting a language other than the supported SAP EC languages, the SAP EC system generates the reports automatically in English.

For more information about the configuration of the limit check summary templates, see chapter [Limit Check Summary Templates](#).

## Citation

### Definition

A quoting of a codified regulation. A citation is represented by an identifier that refers to the text of a regulation.

Example:

A citation with the identifier 40CFRPart112.3(a) refers to title 40 of the U.S. Code of Federal Regulations, part 112, subpart A.

### Structure

A citation is defined by its number, citation text, and category. You can assign related documents to citations. Citations can be used in SAP EC requirements or SAP EC exception business objects.

The user can manually define an SAP EC citation or integrate it with a regulatory content provider.

### Display Citation Impacts

Citation changes can affect a lot of business processes, for example, you might have to adapt processes for limit checks on emissions of a facility. The *Citation Impact* view enables you to review the impacted objects that are directly or indirectly linked to one or multiple affected citations, and to assess whether you have to perform adaptations.

This dialog box is accessible either from within a citation or a citation update.

The following business objects are impacted:

- Permits
- Requirements
- Facilities

- Tasks
- Limits
- Exceptions

 **Note:**

The listed permits, facilities, tasks, and limits are indirectly linked by their assigned requirements.

## Integration

You can map the SAP EC citation object to an external citation from a regulatory content provider. This could be done on the *Content Provider* tab of an SAP EC citation. This can be done by mapping an external provider and setting the ID of the citation on the provider side. You can search for the provider citation ID on the provider's Web site, for which a link is provided.

By retrieving the citation data, the citation text, a link to the external provider citation, and synchronization dates are updated. If available, an effective date is also shown. In addition, pending updates are retrieved and displayed on the *Content Provider* tab. If a communication or synchronization error occurs, an error message is displayed and/or indicated by a warning icon.

 **Note:**

The text of integrated SAP EC citations cannot be changed because it is automatically retrieved and updated from the regulatory content provider.

 **Note:**

You can map the combination of provider and provider citation ID to exactly one SAP EC citation.

There are a number of regulatory content providers that provide services and publish information about legal, legislative, regulatory, and economic developments with regional or worldwide business impacts.

 **Note:**

The integration to BNA (Bureau of National Affairs, Inc.) is already implemented in SAP Environmental Compliance.

SAP Environmental Compliance offers a flexible way to integrate these services and information by using Web services. Background jobs allow synchronization of regulatory content providers' data or receipt of periodical citation updates or notifications about them.

 **Note:**

For more information about the periodic jobs, see the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*.

## Integration Prerequisites

You have configured and activated at least one regulatory content provider. For more information, see the chapter [Regulatory Content Providers](#).

## Citation Updates

### Use

To update integrated SAP EC citations, the system retrieves citation updates, such as an update of reporting requirements for process vents, from regulatory content providers by using a Web service.

A citation updates consists of a title, a type, the date of publication, the date when the citation update comes into effect, the provider of the update, and a link to the external provider citation. Beyond this general information, the related SAP EC citations are listed and linked on the *Citations* tab. By selecting one or more citations and clicking *View Impact*, the user can view the impacts of the citation on related business objects. In *Citation Monitoring*, the citation update tasks for a specific citation update are also listed and linked on the *Tasks* tab.

The user can view the pending citation updates of an integrated SAP EC citation on the *Content Provider* tab. The user can also search for received citation updates by different criteria by using *Citation Monitoring* of the *Permit Management* activities.

To monitor upcoming citation updates of specific SAP EC citations and deliver them to interested users, you can set up citation update tasks. The assignees of citation updates receive them as a citation update task on their SAP EC dashboard or in the universal work list.

Notifications about upcoming citation updates and the citation updates themselves are received by periodic background jobs (see subchapter “Background”).

### Prerequisites

You have configured and activated at least one regulatory content provider. For more information, see the chapter [Regulatory Content Providers](#).

## Citation Monitoring

### Use

You can use this activity in *Permit Management* to search for received citation updates by different criteria or related business objects, such as facilities or permits.

You can use the following search criteria:

- Update type
- Publish date
- Effective date
- Provider of the citation updates

In the *Update Type* field, you can select a predefined update type that is defined in the list of values. You can enter the publish date and the effective date as data ranges. In the *Provider* field, you can select one of the activated regulatory content providers.

Beyond the general citation update properties, you can restrict the search results to one related object that could be a permit, a requirement set, or a facility. The citations that are returned by this search criterion are assigned to a requirement that itself is indirectly assigned to the selected permit, requirement set, or facility.

### Prerequisites

You have configured and activated at least one regulatory content provider. For more information, see the chapter [Regulatory Content Providers](#).

The search criteria are: The update type, the publish date, the effective date, and the provider of the citation updates. In the *Update Type* field, a predefined update type that is defined in the list of values can be selected. The publish date and the effective date can be entered as data ranges. In the *Provider* field, one of the activated regulatory content providers can be selected.

Beyond the general citation update properties, the search results can also be restricted to one related object that could be a permit, a requirement set or a facility. The citations that are returned by this search criterion are assigned to a requirement that itself is indirectly assigned to the selected permit, requirement set or facility.

## Task Management

### Use

This function enables you to set up tasks and assign them to persons to work on the task and to finish them.



## Integration

When you create an EAM-notification task (Enterprise Asset Maintenance or Plant Maintenance), the system generates an EAM-notification in the connected SAP ERP system.

When you create an EAM-order task (Plant Maintenance), the system creates an order task in the connected SAP ERP system.

## Prerequisites

You have made the settings with the *Integration* function for the facility to link to the SAP ERP PM system. Integration is possible for plant maintenance equipment or a functional location.

You have set up the background job for e-mail notification.

You have set up the background job for exception creation when a task is overdue.

## Features

### Task Activities

Under *Task Management Activities*, you can use the following task specific features:

- Create task template / task  
You can create a new task template supported by a wizard. The wizard guides you through the steps. In the first step of the wizard you define the task type, when the task is generated, and the task's priority. Then you have to schedule the task and in the next step, you have to add the involved persons. Depending from the task type you must assign a facility, a recipe or permit rules and citations. When assigning a facility, the requirement step is optional.
- Search existing tasks templates  
You can use the advanced search to search for tasks templates by different search criteria.
- Search existing tasks  
You can use the advanced search to search for tasks by different search criteria, especially by task's completion status or by time status.
- Search archived tasks  
You can search for archived transactional data of tasks.

### Tasks Template Details Activities

For a task template, you can perform the following functions:

- View workflow  
You can show the workflow to which the task belongs.
- Define due date  
You can define a task's due date, the date when the task become critical, and whether the system creates an exception automatically when the task is overdue.
- Define users  
You can define different processors, who are involved in the task completion. The following roles are available:

**Owner:** The owner sets up the task initially and is the person who can edit any property of the task.

 **Note:**

If a task is critical or overdue, it also appears on the SAP EC dashboard of the owner.

**Assignee:** The assignee has to do the work for completing the task. The task appears on the assignee's dashboard, when it becomes relevant.

**Approver:** The approver is an optional participant of the task. The approver's function is to approve the data entered by the assignee. Whether a system uses an approver or not is centrally defined in the administration. For a system with an approver, the state *New*, *Work in*

*Process, Completed, Approved, and Cancelled* are used. For the assignee, only the states *New, Work in Process, and Completed* are visible. For an overview, see the following table:

Task status with and without approver

System without Approver		System with Approver	
Existing States	Visible States for Assignee	Existing States	Visible States for Assignee
New	New	New	New
In Process	In Process	In Process	In Process
		For Approval	For Approval
Completed	Completed	Completed	
Cancelled	Cancelled	Cancelled	

**Interested:** Any other person that is interested in the task can be assigned as an interested person. This group does not have a dashboard but the group can be notified by e-mail about changes in the status. Even people that do not have a user account for SAP Environmental Compliance can take this role. Their e-mail addresses then have to be set up as additional information.

 **Note:**

When creating a task, at least one owner and one assignee need to be set.

- Assigning facility user  
You can assign a facility responsible user (task responsible, spill contact etc.) to a task. This user must be defined for a facility on the *Contacts* tab in *Master Data Management*.
- Sending e-mail notification  
You can send e-mail notification to every involved task user. If the task is relevant, critical, or overdue, the system generates an e-mail notification to the corresponding user.
- Assign objects  
You can assign objects to the task, like facilities, requirements, and documents. You have to assign materials for a measurement task
- Manage tasks  
You can manage tasks displayed on the *History* tab. You can view all tasks and you can work on it regardless of whether you are one of the task users.
- Manage subtasks  
You can manage hierarchically structured tasks. You use this feature to get an overview of the task hierarchy – where your chosen task is placed within the hierarchy.
- Define task scripts  
You can define task statements for case differentiation to allow control of new task creation. The system enables you to write vALGO scripts that are executed for each new task. The result of the script is either TRUE, which causes the new task to be created or FALSE, which prevents the task from being created.  
Currently, you can access the content of user-defined fields (UDF) for workflow tasks and exception triggered tasks.

# Task

## Definition

Tasks are the answer to various requirements and complex situations, which are documented exactly and can be tracked using their history log.

## Use

To work on a task is an important part of the daily work. Most tasks happen as an effect of legal requirements. Therefore the focus of the task management is:

- To monitor and supervise the task sequences (fulfillment in time, fast reaction when difficulties are upcoming etc.)
- Define tasks to fulfill all requirements including legal requirements
- Assign tasks to users

Tasks are executed and monitored on the *Dashboard*.

New tasks are created in *Task Management*. The user creates a new task template by using a wizard. From the task template, the system creates tasks, which then appear on the dashboard. The template acts as a stencil for compiling the task.

## Structure

A task consists of a name, a due date, a priority, and a status.

Tasks are divided into task templates (the work order someone defined and assigned to someone else) and the task (the to-do / result of a task).

This separation becomes very handy for recurring tasks, where new tasks are created on any date or event. Therefore, at least three different task triggers can be defined:

- **Once:** The task is executed one time. For example, you can also create a simple task assigned to a user but not linked to any object in SAP EC.
- **Recurring** In some cases, it is helpful to execute a task multiple times within a time period. A recursion pattern supports the user when defining a task as recurring for a fixed time frame, or unrestricted, or for a limited number of recurrences. Within these intervals, the task is executed in the defined pattern. An example of a recurring task is an annual emission report.
- **Event-driven:** The execution of the task depends on the entry of a certain event. Apart from type and task name, the event is an additional criterion for the definition of such tasks.

The structure of tasks is hierarchically. Tasks can be used to define subtasks or workflows to model complex situations and to have them reliably documented in a system.

This means, the parent task is at the top level. Each parent task can cover one or more subtasks. If there are many nested tasks, then each subtask is also a parent task for the task level below. The following table illustrates this definition:

### Example:

Level 1	Level 2	Level 3	Description
Task 1			Parent task.
	Task 1.1		Subtask of Task 1 and parent task of Task 1.1.1 and Task 1.1.2.
		Task 1.1.1	Subtask of Task 1.1.
		Task 1.1.2	Subtask of Task 1.1.
	Task 1.2		Subtask of Task 2 and parent task of Task 1.2.1, Task 1.2.2 and Task 1.2.3.

		Task 1.2.1	Subtask of Task 1.2.
		Task 1.2.2	Subtask of Task 1.2.
		Task 1.2.3	Subtask of Task 1.2.
Task 2			Parent task.

Tasks are structured by type. The following kinds of task are available:

- Standard task, usually for a general job
- Consumption tasks, querying a user to comfortably enter consumption data on a timely base
- Measurement tasks, querying a user to comfortably enter measurement data on a timely base
- Emission tasks, querying a user to comfortably enter emissions data on a timely base
- EAM-notification tasks, creates a notification in EAM matching the current task
- EAM-order task, creates an order task in the connected SAP ERP system
- Production series task, gathers production series data from manual input
- Standard checklist task, imports checklist based data values into the system
- Facility compliance checklist task, imports checklist data as current values based on checklists, related to facility type

### Task Users

You can assign different processors, which are involved for the task completion. The following roles are available:

- **Owner:** The owner sets up the task initially and is the only person who can edit any property of the task template. The owner user has no default permissions to change the new generated tasks.  
By using one of the following options, you can set up permissions for the owner user so that the user has change permissions for the task:
  - Assign the owner user also as responsible → you will have then two responsible users.
  - Go to *EC Properties* and set the property "task.owner\_can\_edit\_instances" to true.
  - As of SAP EC 3.0 SP2 PL7, SAP EC has new object-based permission (OBP) for tasks: "Change all Tasks". Set up this OBP for the owner user. For more information, see SAP Note 1454073.
- **Assignee:** The assignee has to do the work for completing the task. The task appears on assignee's dashboard when it becomes relevant.
- **Approver:** The approver is an optional participant of the task. The approver's function is to approve the data entered by the assignee.

### Recursion

Tasks can be set up to be recurring. A recurring task has to be completed periodically. When a just completed recurring task is saved, a new task is created as a copy of the just completed one. The new task is then activated by recalculating its due date according to the recursion rule. For setting up recurring tasks, a recursion rule is needed.

### Exception

Task can be set up to be activated automatically. If an exception occurs that affects any of the requirements and facilities, the task is then assigned to the exception.

## Workflow

Task can be set up for building a workflow. This means, when a task is completed, the system looks for a next task; the just completed task is a predecessor of the next task. These tasks are then activated according to their rule for activation.

The activation takes place when the just completed task is saved. The due date of each activated task is then calculated as specified in the rule. This can either be the date of completion or the due date of the just completed task.

## Hierarchy

Subtasks are automatically activated upon activation of their parent task. Differing from the other scenarios, the rule for calculating the due dates of the subtasks is based on the due date of the parent task. This means, the calculation is based on the number of days the subtask must be completed before the parent task's due date.

## Guided Consumption Entry

You can use a guided consumption task optionally if you are supported by status messages and the data entry variances function.

## Integration

You can use the EAM-notification task to forward this task to the SAP ERP Plant Maintenance (PM) system. Once you have linked a facility using the *Integration* function of the facility, you can forward an EAM notification task to Plant Maintenance where it is executed. The integration is possible for plant maintenance equipment or a functional location in SAP ERP.

## Task Types

SAP EC supports different types of tasks. Here are some examples. Other task types are described in [Task Type: Checklist Task](#) and in [Task Type: EAM Notification Task](#).

### Task Type: Consumption Task

The consumption task enables you to set up tasks for entering consumptions and parameter values for a predefined task period that have the same period as the consumption values.

In the task template, the task owner defines the recursion type of task and the how to create the consumption value (fetch mechanism).

By selecting *No*, the system automatically generates consumptions based on the assigned materials in the used facilities. The other settings require manual assignment of materials in the task template.

The process of a defining recurring consumption tasks works as follows:

A consumption period is defined as the first complete date period that lies before the due date of a recurring consumption task. The length of the consumption period is the length of the period that is defined in the task template (e.g. one week).

Example:

The task itself is due on 10/27/2007 (every Saturday) and, therefore, the previous complete week period that defines the consumption period ranges from 10/14/2007 to 10/20/2007. The second consumption period ranges from 10/21/2007 to 10/27/2007 and due date is 03/11/2007, and so on.

The task assignee has to enter the consumption data by Saturday of the week that follows the week of the consumption period. Note that the start date of the task recurrence (10/21/2007) and the end date of the recurrence are not taken into account to calculate the consumption period. It just controls how often a task is repeated.

- If a yearly consumption task is defined, the consumption period ranges from (1/1 - 12/31) of the year before. (Sample scenario: The task assignee has to enter the consumption data by 1/31/2007 of the year 2006).

- If a monthly consumption task is defined, the consumption period ranges from (first day - last day of month).
- If a weekly consumption task is defined, the consumption period ranges from (first day - last day of week).

As of SAP EC 3.0 SP9, the consumption task also has the property *Uncertainty*. This property can be activated by using the SAP EC property (in SAP EC configuration) “consumption.visibility.uncertainty”. Note: Uncertainties in SAP Environmental Compliance have to be defined as a percentage value (%).

### Task Type: Citation Update Task

Task Management enables you to set up citation update tasks to monitor citation updates, notifications about citation updates, and delivery of citation updates to interested users. The citation update tasks allow status tracking to ensure that someone notices the update and supports the delivery of e-mail notifications.

In the task template, the user defines the general properties, the schedule, the users of the task, and the update profile. The task schedule defines the number of days after which a citation update is received that the citation update task starts, becomes critical, and is due.

The update profile defines the monitoring scope by selecting the integrated SAP EC citations that should be monitored on the *Update Profile* tab. The citations that should be monitored are assigned to the update profile either by selecting them directly or indirectly by their parent permits.

In the second case, the citations of a permit can be restricted by selecting a citation category.



**Note:**

You can only add citations that are integrated with a regulatory content provider to the update profile.

When new citation updates are received by the system, new citation update tasks are generated for the monitored SAP EC citations.

The generated citation update tasks appear on the dashboard and can be reviewed and processed by their assignees. The citation update tasks contain information about the received citation updates and the affected citations.



**Note:**

You have configured and activated at least one regulatory content provider. For more information, see the chapter [Regulatory Content Providers](#).

## Task Scripting

SAP EC has the ability to execute task statements for case differentiation. To allow control of new task creation, Environmental Compliance provides the possibility to write vALGO scripts that are executed for each new task. With these scripts, you can access the content of user-defined Fields (UDF). The content of these fields is used to calculate or compare with a constant or another UDF value. The result of the script is either TRUE, which causes the new task to be created, or FALSE, which prevents the task from being created. The explanation result of the script is visible in the corresponding task or exception.

Task Scripting can be used for **workflow tasks** (Task generated when another task is completed) and exception driven tasks. (Task generated when an exception occurs)

Currently, you can access the content of UDF fields for workflow tasks and exception triggered tasks.

For the task scripting, two specific scripting functions are created. One to hold the ID of the master task that causes the creation of this new task. Another function holds the ID of the exception that causes the creation of the new task template.

- GetTechInfo ("MASTER\_EXCEPTION\_ID")
- GetTechInfo ("MASTER\_TASK\_ID")

By using these two variables, you can access the UDF values of the master task or exception using the already existing getUDFValue function of vALGO.

Task scripting is available for tasks that are triggered by exceptions or workflow tasks (when another task is completed).

### Note:

The complete functions for scripting are described in the chapter [Scripting Language vAlgo](#).

### Example 1

Read an UDF Element Picklist with name "Conf" and check the selected value in the drop down → LOV\_ID\_YES is the ID of the list of value

```
taskId = GetTechInfo(_tech, "MASTER_TASK_ID");
udfValue = GetUDFData("Task", taskId, "Conf");
if (udfValue == "LOV_ID_YES")
{
    return true;
}
else
{
    return false;
}
```

### Example 2

Read an UDF Element Picklist by ID from the table "TD\_UDF\_X\_AREA" and check the selected value in the drop down → LOV\_ID\_YES is the ID of the list of value

```
taskId = GetTechInfo(_tech, "MASTER_TASK_ID");
TD_UDF_X_AREA = 1009531;
udfValue = GetUDFData("Task", taskId, TD_UDF_X_AREA);
if (udfValue == "LOV_ID_YES")
{
    return true;
}
else
{
    return false;
}
```

# Exception Management

## Use

This function enables you to create exceptions and to quickly detect non-compliant events, such as limit deviations, missed deadlines, or non-conforming inspection items.

## Integration

Connected external devices, such as an external measuring data system or a connected SAP ERP Plant Maintenance system, can trigger exceptions.

## Prerequisites

You have made the settings with the *Integration* function for the facility to link to the SAP ERP PM system. Integration is possible for plant maintenance equipment or to a functional location.

You have set up the background job for e-mail notification.

You have set up the background job for exception creation.

## Features

### Exception Activities

Under *Exception Activities*, you can use the following exception specific features:

- **Create exception**  
You can create a new exception for the different exception types and assessments. The default status is new. You can also work on the exceptions and change the status to *In Process* or to *Completed*, but in general this should be done by the assigned user responsible for the exception – they use the dashboard to access their exceptions.
- **Search archived exceptions**  
You can search for archived transactional data of exceptions.
- **My open exceptions**  
You can use this function to get a list of all open exceptions assigned to you. You can open the exceptions details and work on the exceptions.

### Exception Details Activities

For an exception, you can perform the following functions:

- **Display triggered tasks**  
You can show all tasks triggered by the exception. The view has three sections; one for manually created tasks, one for automatically triggered tasks, and one for rejected tasks.
- **Display linked facilities**  
You can show all facilities that belong to the exception. Additionally, you can assign further facilities to the exception.
- **Display additional information**  
You can display other information about the exception, such as the assigned documents, citations, notes, and other exception information.

### Trigger Exceptions

In addition to manual exception creation, tasks can trigger exceptions. This supports the scenario where you have a problem that needs solving while processing a task. For example, you have to read the measurements at a facility but the measuring equipment is defective. You can trigger an *Out of Order* exception from the task, which then starts another task for the technician to repair the equipment.



# Task Type: Checklist Task

This chapter describes how to create an SAP EC standard checklist task.

## Prerequisites

You have set up the background job for e-mail notification (SAP\_Environmental\_Compliance-AlertDetectorJob and SAP\_Environmental\_Compliance-AlertManagerJob) and the SAP\_Environmental\_Compliance-ChecklistTaskSchedulerJob.

The SAP EC administrators must provide a pop3 e-mail account. This e-mail account receives the checklist task e-mails by the assignee users. The data of this pop3 server must be maintained in the NWA Java System Properties. Refer to the SAP Note 1836228 to set up the POP3 properties.

## Features

This task type enables you to enter UDF data into SAP EC by entering the data into a PDF document and the data from the document is read.

This task enables you to send out an e-mail from the SAP EC system with an Adobe PDF document attached. This PDF document has input fields that can be filled out by an e-mail recipient. The e-mail recipient fills out the PDF document and sends it back to a specially set up e-mail address. The filled out PDF document is then read automatically by a background job and the PDF document is attached as a document in the checklist task.

The following steps specify how to create a checklist task.

- 1.) Create UDFs in SAP EC *Configuration*.
  - a. Create a User Defined Field (UDF) area (EC Configuration --> User Defined Fields --> Assignments for Master Data) for a domain task and type standard checklist task.
  - b. Create / Assign UDF elements to this UDF area.
  - c. When you are using a pick list, then the pick list must be created before in SAP EC *List of Values* → *Module Independent* → *UDF* → *Picklist Values*
- 2.) Create a standard checklist task.
  - a. Create a new task (standard checklist task) by navigating through the wizard.
  - b. On the *User* step, it is important to assign at least one assignee with the e-mail relevant notification option selected.
  - c. After all steps are filled out, upload a XDP file and save the task template  
The SAP EC XDP standard file can be downloaded from the SAP Note 1820226
  - d. The XDP file is used for rendering the PDF document using the Adobe Document Service. An example file is part of the delivery package. By using the Adobe Document Service, you can define custom XDP files to create a PDF in the format (headers, footer, ...) that you want. This file has to be uploaded on the *Definition* tab of a standard checklist task.  
The status icons display the current status of the checklist tasks. By hovering over those icons, a tooltip describes the current status. The traffic light symbol at the right of those icons shows whether the last steps are processed successfully or not.
  - e. Open the newly created task.
  - f. In the task, you can see the XML file created, which is the first step for creating a PDF document with the Adobe Document Service. It can be opened and it can check if all UDF elements were used as expected (according to the UDF definition).  
You can find the PDF document itself on the *Document* tab of the task. If there was an error during creation, the *Document* tab contains an error.txt document with further error description.
- 3.) After clicking the PDF link, another dialog box appears which provides the link to the document. This PDF document has a lot of empty entry fields that have to be filled by the task assignee user. (See next step.)

- 4.) Checklist Task E-mail Notification. (See SAP note for additional set up steps: 1636650)
  - a. Receiving the e-mail  
The PDF document is sent out to the task assignee user by e-mail. This e-mail contains the document as attachment.
  - b. The assignee user has to enter data into the PDF document and send the PDF document back to a special e-mail account, which must be provided by the SAP EC administration.
- 5.) Evaluation of the completed PDF document  
The background job "Checklist Task Scheduler" must be activated. This job polls the special (pop3) mail account for newly returned checklist e-mails containing a completed PDF document.

After the background job "SAP\_Environmental\_Compliance-ChecklistTaskSchedulerJob" detects the new incoming e-mails, the attached PDF documents are evaluated and the system replaces the filled out PDF documents in the check list task that contains the empty one.

The status of the checklist task is changed to COMPLETED after the document has been replaced.

## Task Type: EAM Notification Task

The EAM notification task enables you to create and trigger ERP PM notifications from the SAP EC system. By completing the PM notification, the SAP EC system completes the SAP EC EAM notification as well.

### Prerequisites

For using the SAP EC EAM notification task function, the following configuration steps are required:

#### 1. RFC configuration settings

The RFC configuration enables communication between the SAP EC System and the ERP system.

- Define a new destination setting on the NW system:  
Go to <http://<server>:<port>/nwa/destinations> with an NW admin user.  
→ Create a new destination (Type: RFC Destination).  
→ Set up the target host, system number, and system ID.  
→ Set up the authentication information such as language, client, username, and password.  
→ All other settings in the destination wizard are optional.  
→ Test the connection between the SAP EC and the newly created ERP destination by using the *Ping Destination* button.  
→ If the connection does not work, contact the network specialist to check if the ports for the RFC connection are opened between the SAP EC and ERP system.
- Map the SAP EC integration settings to the newly created destination:  
→ Go to SAP EC application <http://<server>:<port>/irj> with an SAP EC Admin user (user has to be in the group *UMEGROUP\_Environmental Compliance Admin*)  
→ Go to SAP EC Configuration → Integration → RFC Configuration  
→ Add the newly created destination from the drop down box to the settings EAM notification, EAM synchronize and functional location / equipment reference.  
→ Save the connection settings.

#### 2. SAP EC Facility link to ERP Equipment

- Create a new ERP equipment in the transaction IE02 and save it.
- Go to SAP EC *Master Data Management* and create a new facility of type "Plant".  
Go to the SAP EC integration settings in the facility details.  
Add a new integration of type "Equipment" and add the newly created ERP equipment.  
Leave the integration dialog box and save the facility.

### 3. Set up the java scheduler for EAM notification

Define java background jobs. This job detects the changes in the PM Notification status and updates the related SAP EC task status.

- Go to <http://<server>:<port>/nwa/jobs> with an NW admin user
  - Add new task (Name: SAP\_Environmental\_Compliance-TaskSchedulerForEAMObjectsJob)
  - Set up the task to recur every 10 minutes.

### Example

The following example shows how to set up an EAM notification task and how to trigger the task. For this example, the prerequisites steps from the previous chapter must be completed.

#### 1. Create a task template.

The task template is a container that defines the rules of the task runs. This type of task waits for incoming SAP EC Exceptions, and generated new tasks. For the next steps in SAP EC, the user needs SAP EC Compliance Analyst permissions.

- Create Task Wizard step 1
  - Name: EAM Task test (Oil Spill)
  - Tasks Generated: When an exception occurs
  - Type: EAM Notification Task

Wizard step 2

→ Select “Oil Spill” as exception type

Wizard Step 4

→ Add the new facility created in the prerequisite step

Finish the wizard steps and save the task template

#### 2. Create an exception which triggers the EAM notification task.

Create a new “Oil Spill” exception with the facility created in the prerequisite step on the SAP EC Dashboard. After that, the SAP EC system creates the exception and the task. The objects appear on the SAP EC dashboard after you refresh the view.

#### 3. Trigger the EAM notification manually.

The EAM task triggers the PM notification. The PM notification is generated from the SAP EC EAM Task.

- ➔ Go the SAP EC Dashboard and open the task: “EAM Task test (Oil Spill)”  
In the EAM notification task, click the *Generate EAM Notification* button
- ➔ The PM notification is now created in the ERP system. To find the new PM notification in ERP faster, you can copy the EAM notification ID within the task. In ERP, use the transaction IW22 to find the newly generated PM notification.

#### 4. Complete the notification in ERP.

After closing the PM notification in the ERP system (transaction IW22), the SAP EC java scheduler notices this process and completes the SAP EC Task “EAM Task test (Oil Spill)” automatically.

- In ERP, go to transaction IW22.
- Search for the PM notification by ID.
- Complete the PM notification.



#### Note:

When the PM notification is completed, the SAP EC task is not automatically completed. The system detects the completion of PM notification with the SAP EC background job that has been set up in the prerequisite steps.

# Exception

## Definition

Formal objection taken in the course of an action or a proceeding. An exception occurs in the case of significant deviation regarding requirements or regulations. This happens when a reference value is exceeded, caused by an unexpected incident, for example by fire, oil spill, or other event.

## Use

You can use exceptions to handle deviations that occur normally in the daily job. This helps you to improve business processes with compliance to environmental regulations and other regulations.

Emissions are executed and monitored on the dashboard.

In *Exception Management*, you can create new exceptions and manage exceptions in more detail, for example, you can modify exception assessments or manage the exception assignees.

For a quick overview of open exceptions, you can access the *My Open Exceptions* list.

An exception can trigger a task and conversely.

## Structure

An exception consists of a unique ID given by the system; an exception type, assessment and status, and dates for identified/started, an initiator, and description.

Every exception has a specific type – a grouping together of exceptions with the same basic attributes such as:

- Limit deviation
- Oil spill
- Fire
- Exceptional event

The exception types can be defined in SAP EC *Configuration* → *List of Values*.

## Exception Permissions

SAP EC exceptions need different permissions for accessing, viewing, deleting and changing different Business Objects.

## Portal Permissions

The portal permissions are needed to access the different Web Dynpro portal pages. The following pages are available for SAP EC Exceptions in the SAP EC portal landscape:

- ExceptionDashboard
- ExceptionDashboardCreation
- Exception Detail (Object-Based Navigation)
- Exception Manager

SAP EC portal pages are in the following portal content location:

*Portal Content* → *Content Provided by SAP* → *specialist* → *Environmental Compliance 3.0* → *pages*

The pages can be added to worksets and the worksets can be added to roles.

## User Management Engine (UME) Access Permission

The exception access permission is needed for access to the Exception Log navigation area of SAP EC *Compliance Management* → *Exception Management*. Users that should only access the Exceptions from the SAP EC Dashboard do not need to have this permission.

The following actions are available in SAP EC 3.0 for exception access:

- EC\_ExceptionManagerArchiveSearch

- EC\_ExceptionManagerAccess
- EC\_ExceptionWebService

The actions can be added directly to roles.

### Direct Permission as Assignee

If a user is an assignee of an exception, the user automatically has implicit view and change permissions of the exception business object.

The user only needs portal permissions to read and change the user's exceptions. All other exceptions where the user is not an assignee are not visible for the user.

Limitations:

1. If the assignee user has no CHANGE OBP Permission, then he has no rights to add or delete assignees in the general tab of the exception.
2. If the assignee user has no VIEW and CHANGE OBP permissions and the exception has the status "Completed", then the user has no permissions to read any data in the exception.

### Object-Based Permissions (OBP)

By setting up OBPs, you can define for certain user groups, roles and users SAP EC profiles with different access possibilities. SAP EC exceptions can be set up with the following OBPs:

- VIEW → Read all exceptions in SAP EC application
- CHANGE (has implicit VIEW permission) → Change all exceptions in SAP EC application
- CREATE → Create an exception where the create user is automatically an assignee (has implicit change permissions because the user is assignee)
- DELETE → Delete an exception. This permission is not initially delivered

#### Example of SAP EC Exception Profiles:

1. "EC Admin"
  - Full access
  - User belongs to the User Group UMEGROUP\_Compliance Analyst
2. "EC Exception Creator"
  - Create exceptions, read and change exceptions with status "new" and "in process"
  - a. Portal Page: ExceptionDashboard, ExceptionDashboardCreation, Exception Detail
  - b. OBP Permission: CREATE
3. "EC Exception Reader"
  - Create exceptions, read all exceptions in the application and change exceptions
  - a. Portal Page: ExceptionDashboard, ExceptionDashboardCreation, Exception Detail, Exception Manager
  - b. OBP Permission: CREATE, VIEW
  - c. UME Permission: EC\_ExceptionManagerAccess

## Reporting

### Use

You can create and display different reports concerning Emissions Management, for example an exception detail report.

### Features

The following kinds of reports are available:

- Form-based reports
- External reports
- Analytical queries

For more information about reporting, see chapter [Reporting](#).

## Facility Compliance Manager

### Use

You use this component to manage facility compliance activities according to government environmental facility compliance regulations and company internal guidelines.

In general, the technical view of a facility is covered by SAP ERP Plant Maintenance. By integrating SAP ERP and SAP EC, both the technical and legal aspects for the facilities are covered.

### Integration

To use all functions of this component, link the following objects:

- SAP EC facilities with their counterparts on SAP ERP Plant Maintenance (equipment and functional location)
- SAP EC facilities with SAP ERP Warehouse Management (warehouse number, storage type, storage section)
- SAP EC facilities with SAP ERP Industrial Health Work Areas

### Features

Facility compliance covers the environmental hazard and hazards in general that can occur at facilities. It supports the full range of business processes needed for facility compliance, as follows:

- Defining hazards and properties  
You can define hazards and properties that occur at a facility or facility type (template).
- Defining facility types  
You can define facility types for various facilities. The facility type acts as a template for defining a new real facility and holds all compliance activities that are compulsory, for example a template for a filling station.
- Displaying and managing data  
You can display all hazards, properties, accident information, and warehouse properties assigned to a facility and you can manage actual values, target values, and checklist values.
- Creating and working on tasks  
You can create tasks and work on tasks in a way similar to that in the other SAP EC components.
- Reporting  
You can create reports in a way similar to that in the other SAP EC modules.

## Facility Type

### Definition

A template that you can use to create real facilities based on the hazards and properties of the template.

Facilities can be separated into facility types such as combustor, tank farm, washing plant, and so on.

## Use

The *Facility Type Configuration* is used for the special capability of creating safety facility types.

Within the facility type configuration you create the facility types beneath the facility template node of the hazard and facility templates hierarchy tree.

In *Facility Compliance Manager* at the *Facilities Tree*, you can create real facilities based on the template defined in the facility type configuration.

## Structure

You can create folders to structure the facility type templates. This template contains a name, a time frame, and it can have a number.

A facility type consists of one or more hazard links. A hazard consists of one or more property links. A property holds one or more user-defined field elements (UDF).

## Hazard

### Definition

A situation in the workplace that has the potential to harm the health and safety of people and the environment or to damage plant and equipment.

### Use

You use a hazard to describe the imperilments relating to a facility.

Hazards are internationally valid. They are independent from the validity area and from the regulatory area.

### Structure

Hazards are structured in the *Hazards and Facility Template Hierarchy* beneath the *Hazard Templates* node of the *Facility Type Configuration*. A hazard contains a name, validity period, type and description. You can display all referenced facilities of the hazard at the *Facilities* tab and you can assign and link documents on the *Documents* tab.

Beneath a facility template, all related hazards are linked with all related property links.

### Example

International hazards concerning a facility are noise, sewage, soil pollution, explosives, magnetic field, radioactivity, and so on.

## Property

### Definition

Any tangible or intangible possession that is owned by a hazard.

### Use

You use a property to describe the characteristics and attributes of a hazard.

Properties are valid for a validity area. Properties valid for a regulatory area can have target values assigned (stored in user-defined fields), which are handled as target values at real facilities. Based on the target values, at the real facilities, you can input current values (actual values).

## Structure

Properties are structured in the *Hazards and Facility Template Hierarchy* beneath the Properties node of the *Facility Type Configuration*. A property contains a name, validity period, validity area, and a description.

Beneath a hazard, all related properties are linked.

A Property contains the following tabs:

- Text  
You can enter more text to describe the property in detail.
- Facilities  
You can display all referenced facilities of the property.
- Tasks  
You can create tasks at a property. A referenced property with an assigned task results in a task at a real facility.
- Citations  
You can display all assigned citations related to the property.
- Notes  
You can enter additional notes.
- Documents  
You can display and assign documents.
- UDF  
You can enter the target values that originate from citations.

## Facility Compliance Manager

### Use

You can use this function to define facilities based on facility templates and to work with facility data to prevent incidents and to fulfill the facility compliance regulations.

### Prerequisites

If you want to use validity areas, they must be defined in the Configuration.

### Features

Under *Facility Compliance Activities*, you can create a carrier/company, plant, and a folder to structure the facilities tree. In addition, you can create facilities based on a facility compliance type that is defined for a validity area.

#### Note:

After a facility is created once, it is not possible to change the facility type subsequently. It is not possible to change a facility that is not created based on a template.

For a facility, you can perform the following functions in the *Facility Detail Activities*:

- Display hazards and properties  
You can display all assigned hazards and properties.
- Manage actual values  
You can manage the measured or specific values used at facility. The target value



elements stored in the property are made available as actual values on the tab *Actual values*.

- **Manage target values**  
You can compare the actual values with the target values side by side. If you set a validation area, the system adds a column displaying the appropriate target value. If you set a validation area profile, the system adds columns for every validation area maintained at the profile.
- **Manage checklist values**  
You can accept or reject checklist values. The data capture in checklists is displayed on the tab Checklist Values. If you accept a checklist value, the system uses this value as a new actual value. If you reject a checklist value, the former actual value remains valid.
- **Display PM data**  
You can display selected attributes from the SAP ERP PM system. Depending on the integration settings, equipment data or functional location data is displayed. The displayed data are directly requested from the SAP ERP system.
- **Display WM data**  
You can display warehouse management data from the SAP ERP WM system. The system displays the name of an integrated object and the technical path to the object, for example 001/001/001.
- **Manage warehouse properties**  
You can manage warehouse properties, such as storage class, which define the maximum storage bin quantity or the water pollution class. This data is not linked to SAP ERP WM.
- **Display industry health data**  
You can display selected attributes from the SAP ERP IH system. The system displays the attributes names and the corresponding values of an integrated work area.

## Reporting

### Purpose

You use this component to generate and manage reports and deliver them on time to ensure customer compliance with regulatory rules. You can manage different kinds of compliance reports to national or local authorities (including reports for the U.S. Environmental Protection Agency's Title V permitting program and the European Union's Emissions Trading Scheme). It also helps you provide environmental data (including data on greenhouse gases) to international platforms and organizations (such as the European Pollutant Emission Register and the Global Reporting Initiative sustainability reporting guidelines).

### Features

This component offers a number of different reporting methods. For example, the following reports:

- Form-based reports (using SAP Interactive Forms by Adobe)
- Analytical queries
- External reports (integrated by URL address)
- Report data delivered in an XML file (for use in other applications destined for final reports generation)

You can define different kinds of data sources to collect the data for reporting. For example, the following data sources can be used:

- XML scripts
- SQL scripts
- Custom (java program)

- Business objects
- Manual (for data not provided by the system)

## Example

SAP EC reporting meets reporting requirements and goals on several levels. Examples include:

- Produce different types of reports to inform the authorities
- Produce reports containing consumption, measurement, and emission data for individual emission points
- Produce summary and roll-up style reports for groups of emission points
- Produce regulatory documents and reports in the format specified by the agencies
- Produce reports for non-compliance issues

## Report Data Source

### Definition

Data source used in form-based reports, which defines the scope of data for reporting. One exception is the Business Object data source, which can be also used to create an Analytical Query Business Object data source and, this way, can serve as a data source for the analytical queries.

### Use

You define the data source in *Reporting*. The data source describes which data is extracted from the system to fulfill specific reporting requirements. The data source is the basic item for defining a report variant.

### Structure

You can create folders to structure data sources, for example, by their purpose or by their type. First, you have to define the structure folders. On the folder level, you can define data sources.

All types of data sources consist of a name, status, and a description.

The data source definition part is different, depending on the type of data source:

- Manual data source  
Consists of fields of different data types, which can be entered manually during the report generation.
- Data source (business object)  
Is defined by a Business Object hierarchy, describing the content of the report.
- Data source (XML transfer)  
The content of the report is defined by a valid XML structure.
- Data source (SQL)  
The content of the report is defined by SQL – Statement.
- Data source (custom)  
The report data is delivered by custom coding contained in an extension point.

All data sources can contain filters that are used to select the desired data during report generation.

## Example

### SQL Data Source

The following data source script is an example of an SQL data source:

```
select estxt.name, em.em_amount from EM_ESOURCE es, EM_ESOURCE_TEXT estxt,  
EM_EMISSION_RES em  
where es.ID = estxt.EXT_ID  
and es.ID = em.ES_ID  
and (em.LOCKED = 0 OR em.LOCKED IS NULL)
```



#### Note:

For more information, see the SAP Note 1461913.

### Restrictions for SQL Data Source

```
Select ID, SYS_CREATED FROM EM_ESOURCE  
where  
<restrict_field column="SYS_CREATED" type="date" label="Creation Date"  
supports_multiple="false" id="xyz"/>  
order by SYS_CREATED
```

Following restriction types are supported (used here: type="date"):

- integer
- long
- double
- date
- time
- boolean
- string
- permit
- requirement
- requirement set
- exception
- material
- valid from
- valid to
- valid
- facility type
- exception status
- exception assessment
- task
- facility
- facility\_parent
- user

SAP EC Reporting does not support timestamps as a restriction; however, you can use your DATE type for timestamps with the following restriction based on the following example:

You have the following timestamp values:

2010-02-16 11:22:33.445

2010-02-17 06:25:34.045

2010-02-17 11:25:54.448

2010-02-18 08:13:54.546

If you want to restrict values from February 17th, then use the following restriction:

“BETWEEN 2010-02-17 and 2010-02-18”

The system shows you all values from February 17th.

## Recommendation

The EC SQL Data Source can also access to self-defined database views or self-defined database tables. It is important that the views and database tables are created in the same database schema as the EC Tables are. Furthermore the self-defined views and self-defined database tables must be set up in the Configuration view "Customer Database Tables". You find the view in the EC Configuration → Basic Settings → Customer Database Tables.

## Report Variant

### Definition

The basic object for report creation. It can contain one or more report data sources, report template with rendering settings, data filter settings, and settings for automatic report generation. It is the object that is executed during report generation.

### Use

A report variant is the executable part of a report, which is used to join one or more data sources with a layout template and an optional XSL transformation. It can be executed manually or scheduled automatically. With a special rendering, it is possible to open the XML file in Microsoft Excel or in the Adobe Document Services.

### Structure

A report variant consists of a header and is defined by name, category, locale, and status.

A report variant contains the following information:

- Rendering settings
- Transformation settings
- Formatting
- Filter properties
- Automatic generation

You can create folders to structure your report variants.

Note: the XSLT Transformation in EC has a size limitation. Please refer to SAP Note 1273115 for further information.

## Report

### Definition

A report is any document that is either generated from the system data by using a report variant or manually loaded into the system.

### Use

You can use a report to extract and store a snapshot of system data at a certain point in time. Those reports can be used to fulfill internal reporting requirements or requirements issued by authorities.

### Structure

You create folders to group the reports in the *Reporting Hierarchy*.

There are two kinds of reports – uploaded reports and generated reports. An uploaded report is a file of any kind that was uploaded into the SAP EC reporting content and stored as a report.

## My Reports

The *My Reports* folder is where the logged on user's reports are stored. This folder has some individual characteristics such as the following:

- Reports of the *My Reports* folder do not have a *Category* field in the report view.
- Reports stored in the *My Reports* folder and child folders are visible only for the current user and the report responsible user. This is different from reports of other folders that are visible for everybody with the necessary authorization.

### **Note:**

When you set up a report with all its required data sources and variants, we recommend not making changes in the data sources and generation variants after they are used in reports. Changing properties in data sources and generation variants can lead to errors in the final report. If you make changes in one of the Business Objects, you have to re-create the subsequent Business Objects to ensure that they work correctly.

### **Example:**

If you make changes in the Datasource BO (e.g. changing the filters), then you have to create a new generation variant that uses the changed data source and a new report that uses the new generation variant.

## Query Data Source

### Definition

Data source used in analytical queries, which defines the scope of data for analytical reporting.

### Use

For each analytical query, you define the data source. The data source describes which data is extracted from the system. The analytical query data source is the basic item for defining a query variant.

### Structure

You can create folders to structure query data sources, for example, by their purpose or by their type. First, you have to define the structure folders. On the folder level, you can define data sources.

All types of query data sources consist of a name, status, and a description.

The data source definition part is different, depending on the type of data source:

- Query Data Source (BO)  
Is defined by a Business Object Data Source from Form Based Reporting
- Query Data Source (SQL)  
The content of the query is defined by SQL – Statement.
- Query Data Source (custom)  
The query data is delivered by custom coding contained in an extension point.

All query data sources can contain filters that are used to select data during query execution.

# Query Variant

## Definition

A query variant serves as a template for pivot queries. Based on an assigned data source, it defines the layout of the query and restricts the number of ways the end user can modify the query settings.

## Use

You can use a query variant to set up a pivot query. In addition, you can use it to embed an analytical query into a form-based report.

## Structure

- **Attributes**  
Attributes represent the descriptive part of a query. They can be reordered, translated, drilled, filtered, and sorted. In addition, you can configure the ability of the end user to make modifications.  
On one attribute, a data rollup can be configured.
- **Key figures**  
Key figures represent the numeric part of the query. They can be reordered, translated, and formatted. On each key figure, a reporting unit, a number formatting, an aggregate function and key figure sorting can be configured. In addition, you can configure the ability of the end user to make modifications. Key figures must have data type "Double". Please refer to SAP Note [1899861](#) for further information.
- **Chart**  
Configure the chart type and number of dimensions in the chart. In addition, you can configure the ability of the end user to make modifications.

# (Pivot) Query

## Definition

Based on an assigned query variant, the query is the executable item of the analytical queries. It is executed based on the data delivered by the query data source and the settings of the query variant.

## Use

You can use a query to extract aggregated data, giving the user an analytical view of the data.

## Structure

The query is based on the structure of the query variant. Settings can be modified by the end user, depending on the configuration of the query variant.

### **Note:**

When you set up a pivot query with all its required query data sources and query variants, we recommend not making changes in the query data sources and query variants after they are used in pivot queries. Changing properties in data sources, query data sources, and query variants can lead to errors in the final report. If you make changes in one of the Business Objects, then you have to re-create the subsequent Business Objects to ensure that they work correctly.

### **Example:**

If you make changes in the query data source (e.g. changing the column type), then you have to create a new query variant that uses the changed query data source and a new pivot query that uses the new query variant.

# Reporting Miscellaneous

## Features

### Reporting Activities for Form-Based Reporting

Under *Reporting Activities*, you can use the following reporting specific features for form-based reporting:

- **Creating data sources**  
You can create new data sources that collect the data for reporting. The following kinds of data sources are supported: XML Transfer, SQL, custom, business object, and manual.
- **Creating report variants**  
You can create new report variants that contain the assigned data sources and the report template with rendering settings. In addition, you can adjust the filter settings.

#### Setting validity period mandatory

You can activate this function if you want to force users to enter a valid period for report generation.

#### Setting language mandatory

You can activate this function if you want to force users to enter a language for report generation.

#### Merging filters

You can merge two or more restrictions of the same type.

#### Setting mandatory

You can set the filter restrictions as required.

#### Supporting multiple choice

You can enable users to enter multiple values for a restriction.

- **Creating reports**  
You can start creating reports in the following ways:

#### Automatic start

If the automatic generation settings are activated, the system starts the report generation automatically according to the job settings.

#### Manual start

You can start report generation manually by using the report wizard function.

### Report Detail Activities

For a report, you can perform the following functions:

- **Download**  
You can download the report to your computer.
- **Regenerate**  
You can regenerate the report.
- **Display filter settings**  
You can display the filter settings of a report.
- **Change status**  
You can change the report status from in-process to released or historic.

### Reporting Activities for Analytical Queries

Under *Reporting Activities*, you can use the following reporting-specific features for analytical queries:

- **Create query data sources**  
You can create new query data sources that collect the data for analytical queries. The following kinds of query data sources are supported: SQL, custom, and business objects. Depending on

the chosen query data source, you can set attributes and key figures within the query and set the units of the columns.

- Create query variants  
You can create new query variants that define the layout of the query. The following settings are possible:
  - Configure attributes  
You can modify the query attribute configuration. For example, you can set a filter attribute as mandatory or allow end-users to modify the settings.
  - Configure key figures  
You can configure the key figures. For example, you can reorder the key figures or the reporting unit. Key figures must have data type “Double”. Please refer to SAP Note [1899861](#) for further information.
  - Define chart  
You can predefine the analytical query chart type and the dimension.
- Executing pivot query  
You can execute the pivot query to get the chart regarding the query variant settings. Within the chart, the following functions are available:
  - Drilldown/Rollup  
You can use the drill-down function to add another characteristic to the query for more detailed information. To get a more general result, you can use the rollup functionality.
  - Filtering  
You can add filters to the query to restrict the result.
  - Totals  
You can set totals to sum up key figures.
  - Aggregation function  
You can set aggregation functions to specify how the data is aggregated.
  - Reporting unit  
You can configure the dimension and unit for each key figure.

## Reporting Using External Reports

After the report has been generated successfully (manually by the report wizard or automatically by the background generation), you can use an external reporting tool to access the report XML file or the report XSD scheme. Access to the XML and XSD is provided by two HTTP Servlets “XSDDownload” and “XMLDownload”.



### Note:

This feature works only if the created report is in XML format and no renderer is used.

The **XMLDownload** Servlet provides the report data as an XML stream. The following URL accesses the XMLDownload:

<http://<system:port>/technidata.de~ecs~report~module~web/XMLDownload?name=variant-name>

You can use the following URL parameters to access to the report:

- Parameter “Name” requires the name of the reporting variant. Note: if there is more than one report with the used name, the Servlet returns an error indicating that more than one report matches your search criteria. The parameter “Name” is mandatory.
- Parameter “Folder” requires the name of the folder where the reporting variant is located. This parameter is optional.
- Parameter “Newest” returns only the latest report with the latest date/time that the selection returns by the given reporting variant name and folder. This parameter is optional and it should be used when the selection by name/folder returns more than one result.

The full URL appears similar to the following example:

<http://<system:port>/technidata.de~ecs~report~module~web/XMLDownload?name=variant->



[name&folder=variants&newest=true](#)

In this example, the reporting variant name is “variant-name”, it is located in the folder “variants”, and we want only the newest reports.

The **XSDDownload** Servlet provides the structure of the returned report as an XML schema file (only Business Object Data sources are supported). The following URL accesses the XSDDownload:

<http://<system:port>/technidata.de~ecs~report~module~web/XSDDownload?name=variant-name>

You can use the following URL parameters to access the report:

- Parameter “Name” requires the name of the reporting variant. Note: If there is more than one report with the used name, the Servlet returns an error indicating that more than one report matches your search criteria. The parameter “Name” is mandatory.

Both servlets require user authentication (HTTP Basic) and users with appropriate permissions in the reporting module (Object-Based Permissions).

By using these servlets, you can directly access SAP EC data from external reporting tools, such as the Crystal Reports reporting engine, to render the final report.

## Reporting Permissions

The restriction mechanism of in the Object Based Permissions (OBP) does not work for the business objects used within the EC Reporting. (Example: A user with special Restrictions on a Facility cannot see the facility in the Facility hierarchy, however when the user has full permissions in the EC Reporting, he can review all facility reports which include also the restricted facilities!)

The restrictions from the OBPs are only used in the EC Business Objects within the reporting application (display a report, etc. )

In the EC reporting we have own restriction/filter mechanisms:

You can set up Filters in the Data Source Definition and Query Editor and set then Permissions for certain users for these queries on this level to avoid that a report user see all EC data.

### Note:

In EC application a user with full EC Report permissions can read all reported data in the EC Application.

## Russian 2TP-Reporting

In Russia there are four environmental reports, called 2-TP reports (Air, Air urgent, Waste, and Water) which companies have to deliver to authorities. Air, Waste, and Water are annual reports; Air urgent is a mid-year report. Russian companies have to deliver these reports for each of their detached subdivision. Such a detached subdivision is a Russian specialty defined by legal as well as by territorial aspects.

This chapter describes the functional part of the Russian 2TP reporting within SAP Environmental Compliance 3.0 SP13 PL1 and all later releases.

### Note:

These Reports are example reports and these can be only generated in the Russian language (ru\_RU).

## Form № 2-TP-(air)

### Description

The report № 2-TP (air) is filled by legal entities possessing stationary points of pollutant emission in air including boilers. Data about moveable pollution sources including auto-transport are not reflected in the report.

## Facility

For the Russian 2-TP air reporting a carrier is the root element. A detached subdivision with new facility type 'Detached Subdivision' has to be assigned beneath a carrier/ company. Further facilities can be assigned beneath a detached subdivision.

## Carrier / Company

### User Defined Fields tab

On sub tab 'Legislation Act – 2-tp air' the data fields 'Leg Act Modif Date', 'Leg Act Modif No', 'Leg Act Modif Date One', 'Leg Act Modif No One', 'Leg Act Modif Date Two' and 'Leg Act Modif No Two' are available to enter legislation dates and numbers.

The entries are displayed on the first sheet within the report.

## Detached Subdivision

### Identifiers tab

Type	Description
Full Name of Detached Subdivision 01	Name of Detached Subdivision (Part 1) Since there are only 300 chars for identifiers and full name can be longer there are provided several identifiers
Full Name of Detached Subdivision 02	Name of Detached Subdivision (Part 2) (Optional)
Full Name of Detached Subdivision 03	Name of Detached Subdivision (Part 3) (Optional)
OKPO	Russian classification of enterprises and organizations (OKPO). Every reporting organization has only one OKPO code.

#### Note:

The values of the identifiers Full Name of Detached Subdivision 01-03 are concatenated for the report. Since the Russian law requires the format 'Full name (Short name)' the corresponding name of the Detached Subdivision has to be entered in this format with help of the identifiers, such as the following:

- Full Name of Detached Subdivision 01 = 'Detached Subdivision 01'
- Full Name of Detached Subdivision 02 = '(DS01)'

### Classifiers tab

Type	Description
Emission Source Type	'Organized Emission Source (Well defined)' resp. 'Not-organized Emission Source'

#### Note:

The classifier 'Emission Source Type' has to be assigned to each facility (emission point), where corresponding emissions are maintained which are relevant for the air report. This could be a detached subdivision as well as subordinated facilities depending on the customer implementation project.

### Address tab

The data fields 'Street/ No', 'ZIP/ Postal Code' and 'Town' are used to display the address data on the

report template. With help of data field 'Address Description' it is possible to add further address details to the address, e.g. building number.

**Contacts tab**

The person responsible has to be created as contact with function 'Resp. 2-TP Air Person' and the detail data 'First Name', 'Additional Name', 'Last Name', 'Address Type' (= 'Business'), and 'Phone'. Within the data field 'Description' the position of the person responsible has to be entered. The Additional name represents the Russian patriotic name.

**User Defined Fields tab**

If the factual address differs from the legal address, the factual post address is pointed additionally to the legal one. On sub tab 'Factual Address' the data fields 'Street/ No', 'ZIP/ Postal Code' and 'Town' are used to display the address data on the report template. With help of data field 'Address Description' it is possible to add further address details to the address, e.g. building number.

**Material (Emission)**

For emission materials reported within the air report, any material type can be used. The base unit has to be defined with a unit of dimension 'Mass'.

 **Note:**

The following emission materials relevant for air report sections 1, 2 and 5 are delivered with the 2TP content package: Sulfur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>2</sub>), Nitrous Oxide (N<sub>2</sub>O), Carbon Oxide (CO), Methane (CH<sub>4</sub>), Nitrogen Monoxide (NO), Benzo(a)pyrene (C<sub>20</sub>H<sub>12</sub>), Sulfurous Acid (H<sub>2</sub>SO<sub>3</sub>) and Sulfuric Acid (H<sub>2</sub>SO<sub>4</sub>). („In air report sum is displayed as Sulfur Acids (as H<sub>2</sub>SO<sub>4</sub>) = mat id 0322 in Russia with a conversion from H<sub>2</sub>SO<sub>3</sub> to H<sub>2</sub>SO<sub>4</sub>“).

**Identification tab**

Type	Description
Code Polluting Substance (Air)	Pollutant Code (column 1 in air report sections 1,2 and 5)

It is possible to assign the emission material to the 2TP air report relevant material groups 'Hydrocarbon' resp. 'Volatile Organic Compound' if applicable. With help of these material groups it is possible to calculate the Sum lines 107 and 108 in air report section 1.

**Classifiers tab**

Type	Description
Material State	Solid, liquid or gaseous

The classifier 'Material State' is used for the identification of the material states solid, liquid and gaseous. With help of this classifier it is possible to calculate the Sum lines 103 and 102 in air report section 1.

**Material (Consumption)**

For consumption materials which are relevant for the emissions within the air report, any material type can be used.

## Classifiers tab

Type	Description
Fuel	Caused by fuel combustion

The classifier 'Fuel' of the consumption materials is relevant for section 5 of the air report. If the classifier value of 'Fuel' = yes the corresponding emissions are relevant for column 3 (caused by fuel combustion). If classifier 'Fuel' = no the corresponding emissions are set to column 4 (caused by technological or other except fuel combustion).

## Permit

Define the permit beneath the authority in the authority and permit hierarchy of the Permit Manager. Permits with type 'Air' are considered within the report.

## Limit

The limits for the air report have to be defined beneath a permit of type 'Air' in the authority and permit hierarchy of the Permit Manager. Limits of emission materials with classifier 'Material State' = solid, liquid or gaseous resp. with assignment to material groups 'Hydrocarbon' or 'Volatile Organic Compound' are considered within the report.

## Limit tab

On tab 'Limit' the corresponding single check limit value has to be entered. The check unit has to be defined with a unit of dimension 'Mass'.

## Action tab

With help of the 2TP exception types 'Maximum allowed Limit Deviation (Russia)' and 'Temporary allowed Limit Deviation (Russia)' the corresponding limit type can be defined. Within the air report the limit values are displayed in column no. 8 (maximum) resp. 9 (temporary) of section 1, column 3 (maximum) resp. 4 (temporary) of section 2 and column 3 (maximum in line 302), temporary in line 303) of section 3 of the water report.

### Note:

If emission limits are established for part of emission points and temporarily reconciled emission are established for another part of emission points, only column '9' of section 1 or column '4' of section 2 is filled.

## Facilities tab

On tab 'Facilities' the relevant facilities have to be assigned where the limit is valid.

## Consumption

Consumptions for the air report are entered in the Emission Manager of the Consumptions tab page for a detached subdivision resp. a subordinated facility with classifier 'Emission Source Type' in the facility tree. Depending on classifier 'Fuel' the emission values are filled within section 5 as described before.

## Emission

Emissions for the air report are entered in the Emission Manager of the Emissions tab page for a detached subdivision resp. a subordinated facility with classifier 'Emission Source Type' in the facility tree. Each emission with 'Emission Type' = Captured Emissions, Reused Emissions or Untreated

Emissions is considered within the report. Additionally only emissions which have assigned the type Emission to 'Air' are taken into account for this report.

Note: The "Emission to" property can be edit in the Emission Details popup of the selected emission value.

## Task

### Task Template

Decreasing Actions for reduction of the pollutant emission in section 4 of the air report are handled via standard tasks of category 'Reduction of Pollutants Emitted to Air'. New tasks are created in the Task Manager.

On tab 'Facilities' the corresponding facilities have to be assigned where the measure is relevant.

### Task Instance

The measure tasks are executed and monitored on the Dashboard. The following user defined fields are available for air report section 4 on tab 'Details':

- Decreasing Action Group (column no. 1)
- Decreasing Action Status (2)
- Activity Costs (3)
- Predicted Production in Tons per Year (5)
- Actual reduction in tons per year (6 )

## Reporting

### Report Variant

The report variant 'Air' is the basic object for the air report creation and part of the 2TP content package. It contains the report data source 'Air DS', report template with rendering settings, data filter settings, and settings for automatic report generation. It is the object, which is executed during report generation.

The settings for manual creation of a reporting variant are described in the following chapters.

#### General tab

On tab 'General' the corresponding data source 'Air DS' (folder '2TP Reports') has to be assigned. There is no special renderer needed for the reporting, but XSL Transformation has to be activated and the upload of style sheet 'transform.xml' is necessary. The style sheet is part of the 2TP content package.

#### Filter Properties tab

The tab 'Filter Properties' contains the filter criteria configuration. The filter criteria 'Detached Subdivision' should be marked as mandatory.

#### Note:

If filter criteria 'Reporting Year' is not filled, the previous year is set by default when executing the report. If filter criteria 'Display Log' is activated an additional excel sheet 'Log' is added to display integrity check results.

## Form № 2-TP-air (urgent)

### Description

The report № 2-TP air (urgent) is equal to the air report filled by legal entities possessing stationary points of pollutant emission in air including boilers. The air urgent report is a mid-year report and contains only the following data (which is also available within the air report):

- Total volume of pollutants
- Volume of gaseous and liquid pollutants

The maintenance of master/ transactional data is therefore mostly the same as described in chapter Form № 2-TP (air). The special requirements regarding the air urgent report are described in the following chapters.

### Facility

For the Russian 2-TP air urgent reporting a carrier is the root element. A detached subdivision with new facility type 'Detached Subdivision' has to be assigned beneath a carrier. Further facilities can be assigned beneath a detached subdivision.

### Carrier / Company

#### User Defined Fields tab

On sub tab 'Legislation Act – 2-tp air urgent ' the data fields 'Leg Act Modif Date', 'Leg Act Modif No', 'Leg Act Modif Date One', 'Leg Act Modif No One', 'Leg Act Modif Date Two' and 'Leg Act Modif No Two' are available to enter legislation dates and numbers.

The entries are displayed on the first sheet within the report:

### Detached Subdivision

#### Contacts tab

The person responsible has to be created as contact with function 'Resp. 2-TP Air Urgent Person' with the detail data 'First Name', 'Additional Name', 'Last Name', 'Address Type' (= 'Business'), 'Phone' and 'Description', where the position of the person responsible has to be entered.

### Reporting

#### Report Variant

The report variant 'Air Urgent' is the basic object for the air urgent report creation and part of the 2TP content package. It contains the report data source 'Air Urgent DS', report template with rendering settings, data filter settings, and settings for automatic report generation. It is the object, which is executed during report generation.

The settings for manual creation of a reporting variant are described in the following chapters.

#### General tab

On tab 'General' the corresponding data source 'Air Urgent DS' (folder '2TP Reports') has to be assigned. There is no special renderer needed for the reporting, but XSL Transformation has to be activated and the upload of style sheet 'transform.xml' is necessary. The style sheet is part of the 2TP content package.

#### Filter Properties tab

The tab 'Filter Properties' contains the filter criteria configuration. The filter criteria 'Detached Subdivision' should be marked as mandatory.

 **Note:**

If filter criteria 'Reporting Year' is not filled, the previous year is set by default when executing the report. If filter criteria 'Display Log' is activated an additional excel sheet 'Log' is added to display integrity check results.

## Form № 2-TP (waste)

### Description

Report 2-TP (waste) is created on the base of accounting data for waste formed, used, disposed, allocated and transferred to outside persons and legal entities or received from side persons and legal entities. Passports of waste with hazard classes from I to IV and documents about hazard classes definition are also used for the report generation.

### EC Configuration

#### List of Values (LOV)

The view LOV Management enables creating phrases needed for the waste reporting in the corresponding languages. List of values represent the entries of drop-down list boxes in the EC application.

 **Note:**

There are no values delivered within the 2TP content package for the classifiers described in this chapter. Applicable values have to be created within the customer implementation project.

### Facility Classifiers (SYS\_FAC\_CLASSIFIERS)

#### Facility Classifiers (SYS\_FAC\_CLASSIFIERS)

The following classifiers are delivered for the waste reporting:

Name	Identifier	Description
OKATO	RUS_OKATO	Code of territory according OKATO
OKVED	RUS_OKVED	Code of type of economic activity according to OKVED

Within the waste report the code of the classifier values for OKATO and OKVED are displayed. That means that for these values the corresponding data field 'Code' has to be set.

### Material Classifiers (MM\_CLASSIFIERS)

The following classifiers are delivered for the waste reporting:

Name	Identifier	Description
Waste Type	RUS_MAT_WASTE_TYPE	Type of waste according to federal classification of wastes

The values of material classifier 'Waste Type' are displayed in columns Б (Type of waste), В (Code of waste) and Г (Hazardous Class of waste).

The data field 'Display Name' contains the value for the column 'Type of waste' (Б) in the report template; the data field 'Code' contains the value for the column 'Code of Waste' (В). The value for the 'Hazardous Class' (Г) is extracted from classifier data field 'Code', the 13th sign shows the hazardous class: '1' is for 'I', '2' is for 'II' etc., '0' is for cases when the hazardous class is not defined (Example: 141 001 00 00 4 (□ 4 = hazard class IV)).

## Facility

For the Russian 2-TP waste reporting a carrier is the root element. A detached subdivision with new facility type 'Detached Subdivision' has to be assigned beneath a carrier. Further facilities can be assigned beneath a detached subdivision.

## Carrier

### User Defined Fields tab

On sub tab 'Legislation Act – 2-tp waste' the data fields 'Leg Act Modif Date', 'Leg Act Modif No', 'Leg Act Modif Date One', 'Leg Act Modif No One', 'Leg Act Modif Date Two' and 'Leg Act Modif No Two' are available to enter legislation dates and numbers.

The entries are displayed on the first sheet within the report.

## Detached Subdivision

### Identifiers tab

Type	Description
Full Name of Detached Subdivision 01	Name of Detached Subdivision (Part 1) Since there are only 300 chars for identifiers and full name can be longer there are provided several identifiers
Full Name of Detached Subdivision 02	Name of Detached Subdivision (Part 2) (Optional)
Full Name of Detached Subdivision 03	Name of Detached Subdivision (Part 3) (Optional)
OKPO	Russian classification of enterprises and organizations (OKPO). Every reporting organization has only one OKPO code.

### Note:

The values of the identifiers Full Name of Detached Subdivision 01-03 are concatenated for the report. Since the Russian law requires the format 'Full name (Short name)' the corresponding name of the Detached Subdivision has to be entered in this format with help of the identifiers, such as the following:

- Full Name of Detached Subdivision 01 = 'Detached Subdivision 01'
- Full Name of Detached Subdivision 02 = '(DS01)'

### Classifiers tab

Type	Description
OKATO	Code of territory according OKATO
OKVED	Code of type of economic activity according to OKVED

### Address tab

The data fields 'Street/ No', 'ZIP/ Postal Code' and 'Town' are used to display the address data on the report template. With help of data field 'Address Description' it is possible to add further address details to the address, e.g. building number.

### Contacts tab

The person responsible has to be created as contact with function 'Resp. 2-TP Waste Person' with the detail data 'First Name', 'Additional Name', 'Last Name', 'Address Type' (= 'Business'), 'Phone' and 'Description', where the position of the person responsible has to be entered.



### User Defined Fields tab

If the factual address differs from the legal address, the factual post address is pointed additionally to the legal one. On sub tab 'Factual Address' the data fields 'Street/ No', 'ZIP/ Postal Code' and 'Town' are used to display the address data on the report template. With help of data field 'Address Description' it is possible to add further address details to the address, e.g. building number.

Details about waste landfilling can be entered on sub tab 'Landfills Compliance' within the data fields 'Number Of Landfills – Owned', 'Area Of Landfills – Owned' and 'Number Of Landfills - Owned - Not Compliant'. Optionally there are further data fields available, which are not relevant for the waste reporting.

### Material (Emission)

In EC system wastes are treated as emissions. For materials reported within the waste report, any material type can be used. The base unit has to be defined with a unit of dimension 'Mass'.

### Classifiers tab

Type	Description
Waste Type	Type of waste according to federal classification of wastes

### Emission

Emissions for the waste report are entered in the Emission Manager of the Emissions tab page for a detached subdivision or a subordinated facility in the facility tree. All emissions of materials with classifier 'Waste Type' and value 'Waste' within data field '**Emission to**' are considered within the report.

#### Note:

The "Emission to" property can be edit in the Emission Details popup of the selected emission value.

### User Defined Fields tab

The following user defined fields are available for the waste report on tab 'Waste Details' that belongs to the emission:

- Waste Generation (column no. 2 of waste report)
- Waste Received (3)
- Waste Imported (4)
- Waste Used (5)
- Waste Treated (6)
- Waste Transferred (7)
- Waste Transferred and Used (8)
- Waste Transferred and Treated (9)
- Waste Transferred and Stored (10)
- Waste Transferred and Landfilled (11)
- Waste Allocated (12)
- Waste Allocated and Stored (13)
- Waste Allocated and Landfilled (14)

 **Note:**

For the first waste data gathering period the previous year's value (column no. 1) does not exist, therefore a corresponding emission has to be entered manually if applicable. The waste presence is calculated by formula: column 1+2+3-5-6-7-14.

## Reporting

### Report Variant

The report variant 'Waste' is the basic object for the waste report creation and part of the 2TP content package. It contains the report data source 'Waste DS', report template with rendering settings, data filter settings, and settings for automatic report generation. It is the object, which is executed during report generation.

The settings for manual creation of a reporting variant are described in the following chapters.

#### General tab

On tab 'General' the corresponding data source 'Waste DS' (folder '2TP Reports') has to be assigned. There is no special renderer needed for the reporting, but XSL Transformation has to be activated and the upload of style sheet 'transform.xml' is necessary. The style sheet is part of the 2TP content package.

#### Filter Properties tab

The tab 'Filter Properties' contains the filter criteria configuration. The filter criteria 'Detached Subdivision' should be marked as mandatory.

 **Note:**

If filter criteria 'Reporting Year' is not filled, the previous year is set by default when executing the report. If filter criteria 'Display Log' is activated an additional excel sheet 'Log' is added to display integrity check results.

## Form № 2-TP (water property)

### Description

Data about every water intake or water supplier are pointed in separate lines in Section 1 (Water taken from natural sources, received from suppliers, used, transferred, and lost). The configuration of material classifier 'Water Report Section 1' identifies materials which shall be included to this report (Water Section 1).

Data about every water outlets (water categories) are pointed in separate lines in Section 2 (Water drain). Section 2 is filled only in those cases when water is given in receivers having codes in column 4 of the sources of water supply and drained waters receivers codes. The configuration of material classifier 'Water Report Section 2' identifies materials which shall be included to this report (Water Section 2).

### EC Configuration

#### List of Values (LOV)

The view LOV Management enables creating phrases needed for the waste reporting in different languages. List of values represent the entries of drop-down list boxes in the EC application.

 **Note:**

There are no values delivered within the 2TP content package for the classifiers described in this chapter. Applicable values have to be created within the customer implementation project.

### Facility Classifiers (SYS\_FAC\_CLASSIFIERS)

The following classifiers are delivered for the water reporting:

Name	Identifier	Description
OKATO	RUS_OKATO	Code of territory according OKATO
OKVED	RUS_OKVED	Code of type of economic activity according to OKVED
Water Body Type	RUS_WATER_BODY_TYPE	Codes of types of water sources and recipients

Within the water report, the corresponding code of the classifier values for OKATO, OKVED and Water Body Type are displayed. That means that for these values the corresponding data field 'Code' has to be set.

### Facility

For the Russian 2-TP water reporting a carrier is the root element. A detached subdivision with new facility type 'Detached Subdivision' has to be assigned beneath a carrier. Water Bodies with the new facility type 'Water Body' have to be assigned beneath a detached subdivision.

### Carrier / Company

#### User Defined Fields tab

On sub tab 'Legislation Act – 2-tp water' the data fields 'Leg Act Modif Date', 'Leg Act Modif No', 'Leg Act Modif Date One', 'Leg Act Modif No One', 'Leg Act Modif Date Two' and 'Leg Act Modif No Two' are available to enter legislation dates and numbers.

The entries are displayed on the first sheet within the report.

### Detached Subdivision

#### Identifiers tab

Type	Description
Full Name of Detached Subdivision 01	Name of Detached Subdivision (Part 1) Since there are only 300 chars for identifiers and full name can be longer there are provided several identifiers
Full Name of Detached Subdivision 02	Name of Detached Subdivision (Part 2) (Optional)
Full Name of Detached Subdivision 03	Name of Detached Subdivision (Part 3) (Optional)
OKPO	Russian classification of enterprises and organizations (OKPO). Every reporting organization has only one OKPO code.
INN	Taxation ID according to INN
GUIV	State account of water use according to GUIV



#### Note:

The values of the identifiers Full Name of Detached Subdivision 01-03 are concatenated for the report. Since the Russian law requires the format 'Full name (Short name)' the corresponding name of the Detached Subdivision has to be entered in this format with help of the identifiers, such as the following.

- Full Name of Detached Subdivision 01 = 'Detached Subdivision 01'
- Full Name of Detached Subdivision 02 = '(DS01)'

### Classifiers tab

Type	Description
OKATO	Code of territory according OKATO
OKVED	Code of type of economic activity according to OKVED

### Address tab

The data fields 'Street/ No', 'ZIP/ Postal Code' and 'Town' are used to display the address data on the report template. With help of data field 'Address Description' it is possible to add further address details to the address, e.g. building number.

### Contacts tab

The person responsible has to be created as contact with function 'Resp. 2-TP Water Person' with the detail data 'First Name', 'Additional Name', 'Last Name', 'Address Type' (= 'Business'), 'Phone' and 'Description', where the position of the person responsible has to be entered.

### User Defined Fields tab

If the factual address differs from the legal address, the factual post address is pointed additionally to the legal one. On sub tab 'Factual Address' the data fields 'Street/ No', 'ZIP/ Postal Code' and 'Town' are used to display the address data on the report template. With help of data field 'Address Description' it is possible to add further address details to the address, e.g. building number.

## Water Body

### Identifiers tab

Type	Description
GUIV (for water body type 'Supplier')	Code of supplier according to GUIV

### Classifiers tab

Type	Description
Water Body Type	Codes of types of water sources and recipients
OKATO	Code of territory according to OKATO

The values of material classifier 'Water Body Type' are displayed in column 4 (Code of type of water body).

### User Defined Fields tab

Further details about the water body can be entered on sub tab 'Water Body Details' within the data fields 'Water Body Code - Local Authority', 'Distance from River Mouth', 'Water Source', 'Water Quality of Disposal', 'Water Quality of Supplier', 'Water Quality of Withdrawal' and 'WHU Code Water Body'.



#### Note:

Enter value = '0' in data field 'Distance from River Mouth' 'Distance from River Mouth for a lake resp. ocean.

Depending on the entry within data field 'Water Source' further information has to be set within a dependent data field. If Water Source = Disposal the data field 'Water Quality of Disposal' has to be maintained, if Water Source = 'Supplier' data field 'Water Quality of Supplier' has to be set and if Water Source = 'Withdrawal' the data field 'Water Quality of Withdrawal' has to be filled.

## Material (Consumption)

For consumption materials reported within the water report, material type 'Water' has to be used. The base unit has to be defined with a unit of dimension 'Volume'.

### Classifiers tab

Type	Description
Water Report Section 1	Material is relevant for section 1 of the water report
Water Report Section 2	Material is relevant for section 2 of the water report

If the consumption material is relevant for Section 1 (Water taken from natural sources, received from suppliers, used, transferred, and lost) the material classifier 'Water Report Section 1' has to be set with value 'Yes'.

Otherwise if the consumption material is relevant for Section 2 of the water report (Water drain), material classifier 'Water Report Section 2' has to be filled with value 'Yes'.

## Material (Emission)

For emission materials reported within sheet 4 in section 2 of the water report, any material type can be used. The base unit has to be defined with a unit of dimension 'Mass'.

### Identifiers tab

Type	Description
Code of Emitted Pollutant (Water)	Code of pollutant in water discharged

### Classifiers tab

Type	Description
2TP Water Reporting Unit	Measurement unit specified for every substance

For the annual values of the corresponding emitted pollutant a corresponding reporting unit can be specified for every substance with help of classifier '2TP Water Reporting Unit'.



#### Note:

If classifier '2TP Water Reporting Unit' is not assigned to the emission material, the base unit of the material is used for reporting.

## Permit

Define the permit beneath the authority in the authority and permit hierarchy of the Permit Manager. Permits with Type 'Water' are considered within the report.

### Permit Document Type tab

The tab allows entering additional permit information for the columns Type (column no. 1), Number (2) and Date (3) in both water report sections.



#### Note:

If water is received from supplier columns 1, 2, 3 stay empty. In the case of permissive document's absence dash symbols ("-") are pointed in mentioned columns.

## Limit

The limits relevant for the water report have to be defined beneath a permit of type 'Water' in the authority and permit hierarchy of the Permit Manager. Limits of consumption materials with classifier 'Water Report Section 1' = yes resp. 'Water Report Section 2' = yes are considered within the report.

### Limit tab

On tab 'Limit' the corresponding single check limit value has to be entered. The check unit has to be defined with a unit of dimension 'Volume'. The limit value is displayed in column no. 11 (section 1) resp. 10 (section 2) of the water report.



#### Note:

If there are several limits available for different consumption materials within a water body the single limit values are added up for the corresponding report section.

### Facilities tab

On tab 'Facilities' the relevant water bodies have to be assigned where the limit is valid.

## Consumption

Consumptions for the water report are entered in the Emission Manager of the Consumptions tab page for a **water body** in the facility tree. All consumptions of materials with material type 'Water' and classifier 'Water Report Section 1' = yes resp. 'Water Report Section 2' = yes are considered within the report.

### User Defined Fields tab

The user defined field tabs 'Water Source/ Use' (for water report column no. 25-30), 'Water Use' (32-41), 'Water Transferred without Use' (42-47) and 'Water Transferred with Use' (48-49) are available for the values of water report section 1.

To fill corresponding data for report section 2 the user defined fields tab 'Water Removal' (12-18) is available.

#### Note:

Consumptions should be created with start and end date within the same month, since monthly consumption values are displayed in the water report. Otherwise the consumption is added to the month of the consumption end date.

## Emission

Emissions for the water report are entered in the Emission Manager of the Emissions tab page for a water body in the facility tree. All emissions with consumption material of section 2 (classifier 'Water Report Section 2' = yes) and emission material identifier 'Code of Emitted Pollutant (Water)' are considered within the report.

## Reporting

### Report Variant

The report variant 'Water' is the basic object for the water report creation and part of the 2TP content package. It contains the report data source 'Water DS', report template with rendering settings, data filter settings, and settings for automatic report generation. It is the object, which is executed during report generation.

The settings for manual creation of a reporting variant are described in the following chapters.

#### General tab

On tab 'General' the corresponding data source 'Water DS' (folder '2TP Reports') has to be assigned. There is no special renderer needed for the reporting, but XSL Transformation has to be activated and the upload of style sheet 'transform.xsl' is necessary. The style sheet is part of the 2TP content package.

#### Filter Properties tab

The tab 'Filter Properties' contains the filter criteria configuration. The filter criteria 'Detached Subdivision' should be marked as mandatory.

#### Note:

If filter criteria 'Reporting Year' is not filled, the previous year is set by default when executing the report. If filter criteria 'Display Log' is activated an additional excel sheet 'Log' is added to display integrity check results

# Configuration

## Use

This chapter explains which components or scenarios used by this application are configurable and which tools are available for adjusting.

## Features

### Component Configuration Tools

Name	Menu Structure
Units and Dimensions	Basic Settings
List of Values	Basic Settings
Currencies	Basic Settings
Status Network	Basic Settings
	Basic Settings
Extension point (User Exit)	Basic Settings
Object Based Authorization	Basic Settings
Customer Database Tables	Basic Settings
Default User Profile	Basic Settings
EC Properties	Basic Settings
Assignments for Master Data	User-defined Fields
Assignments for Transactional Data	User-defined Fields
Elements	User-defined Fields
Emission Accounting Account Types	Emissions Management
Batch Process Step Template	Emissions Management
Data Release Definition	Emissions Management
BW Properties	Integration
Integrated Systems	Integration
RFC Configuration	Integration
Extraction Mapping for Calculation Variables	Integration
Regulatory Content Providers	Integration
Data Entry Variances	Compliance Management
E-mail Notification	Compliance Management
Limit Check Summary Templates	Compliance Management
Permit Configuration	Compliance Management
Alert Logs Configuration	Compliance Management
Facility Configuration	Master Data
Hierarchy	Master Data



For access to SAP EC Configuration, you need an SAP EC Admin user. You need at least a user (SAP EC Environmental Compliance Admin) that has the user group *UMEGROUP\_Environmental Compliance Admin*.

For more information about permissions, see the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*.

## Units and Dimensions

### Use

Dimensions are needed to specify values for calculations. Each dimension includes one or more different units that are related.

The view *Units and Dimensions* enables the user to maintain dimensions and units. Each dimension has one unique external ID and descriptive text in different languages. The defined units are also administrated in different languages.

### Prerequisites

To access this view, the user needs at least permission for the action *EC\_UnitsRead* to read units and dimensions or *EC\_UnitsChange* to have full access or the user is a member of the user group “Environmental Compliance Admin”.



#### Note:

The SAP EC units can be integrated from ERP System. For more information, see the document *SAP\_Environmental\_Compliance\_30\_en\_EHS\_Integration*.

## List of Values

### Use

The view *List of Values (LOV) Management* enables the user to create phrases in different languages. List of values represent the entries of drop-down list boxes in the SAP EC application.

The identifiers of the LOVs are unique in the SAP EC system.

### Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_ListOfValues* or the user is a member of the user group “Environmental Compliance Admin”.

# Currencies

## Use

The view Currencies enables the user to manage the EC currencies and the different languages. Currencies are used in EC in the UDFs and Accounting Transactions.

## Prerequisites

To access this view, the user needs at least permission for the action *EC\_UnitsRead* to read units and dimensions or *EC\_UnitsChange* to have full access or the user is a member of the user group "Environmental Compliance Admin".

# Status Network

## Use

The status network view enables you to set up custom statuses with self-defined values.

This view supports definitions of the status for data release and emissions accounting.

The subscriber *-Data Release-* defines status for SAP EC Emissions Management: consumptions, emissions and measurements (transactional data).

The subscriber *-Emissions Accounting-* defines statuses for transactions.

## Prerequisites

To access and manage this view, the user needs at least permission for the action *EC\_StatusNetwork* or the user is a member of the user group "Environmental Compliance Admin".

## Features

After selecting a subscriber, the table *Status Network Configuration* is initialized:

The status definition table defines custom statuses with values. The initial value column needs exactly one status as initial value. The successor column defines the next status after completing the current status.

The table principal defines users, groups, or roles that enable the current selected status to be set.

The table permissions define which objects should offer this release functionality.



### Note:

We recommend setting up the value **0** for the status "*released*". The filter settings in the *Emissions Management* → *Data Releases* works with this predefined value when you enter the view the first time.



### Note:

We recommend always specifying a successor user for all set up status.

# User-Defined Fields

## Use

User-defined fields is a functionality that enables customers to add new defined fields in standard SAP EC views. This functionality is available for the following SAP EC components:

Name	Description
Facility	Own Tabs with Values Values on the Identification Tab
Task	Own Tabs with Values Values on the Task Definition Tab
Permit	Own Tabs with Values
Requirement Set	Own Tabs with Values
Requirement	Own Tabs with Values
Exceptions	Own Tabs with Values
DMS Search	Values for the DMS Search
Emissions Accounting	Values on the Account tab

### User-Defined Fields for Transactional Data

You can use user-defined fields for transactional data within the following areas with SAP Environmental Compliance 3.0:

- In *Emissions Management* on the consumption tab, emission tab, and measurement tab on the facility detail screen
- In *Task Management* on a consumption task, emission task, and measurement task
- In *Emission Accounting* on the transactions tab

The user-defined fields for transactional data were shown on the bottom of the consumption, emission, or measurement tab. However, the values belong to a single transactional date record.

You can enter date for the selected data record for manually created transactional data records.

Note: The functionalities 'Export to Excel', 'Copying facilities' or 'Copy to Scenario' do not support user-defined fields for transactional.

Different user-defined fields for transactional data are grouped together on one tab according to their specified UDF area under Configuration → User-Defined Fields → Assignments for Transactional Data.

## Features

### User-Defined Fields Assignments

You can assign UDF master data or transactional data under Configuration → User-Defined Fields.

The assignments of UDFs are organized in so called UDF Areas. The UDF assignment defines the main area definition for user-defined fields. For every area, elements, such as input fields, can be assigned. These elements are defined in the *Elements for User-Defined Fields*.

You have to assign a UDF to a domain, and a domain type or a material type. You can enter a tab name and an order number to specify, in which order the tabs were shown on the screen.

After creating an assignment for UDFs, you can press the *Data Maint.* button and the system will create initial values for UDF elements like Boolean and Picklist for all assignments of an area of such an element type.

You can delete an UDF Assignment from the current UDF area. If there are data existing behind an assignment, the system shows a confirmation popup with the number of data records.

For assigned elements, you can define BW field names for BI extraction of UDF values.

Note: If you remove user-defined field assignments after you already have maintained values for these fields, you also have to remove the according assignments in BI, too.

### Assignments for Master Data

For master data, you can assign UFDs for a specific domain and a corresponding domain type. An UDF Area for master data UFDs needs as a mandatory setting the domain this area belongs to. Possible domains are 'Facility', 'Permit', 'Requirement Set', 'Requirement', 'Task', 'Emission Accounting', and 'Exception'

The user-defined fields will be shown on the tab belonging to the specified domain and the domain type.

### Assignments for Transactional Data

For transactional data, you can assign UFDs for a specific domain and a corresponding material type. An UDF Area for UFDs for transactional data needs as a mandatory setting the domain this area belongs to. Possible domains are 'Consumption', 'Emission', 'Measurement', and 'Emission Accounting Transaction'. The assignment to a material type column is optional. If this field is left blank the assignment of this area are valid for all material type of the object defined by the 'Domain' column of the area. The user-defined fields will be shown on the tab belonging to the specified domain and the material type.



**Note:**

It is not possible to define a material type for 'Emission Accounting Transaction' because this transaction type does not have any material dependencies.

If the material type of a data record is changed to a different type than the previous material type, all the previously assigned UDF values will be deleted automatically without any user interaction.

### User-Defined Fields Elements

The user-defined field elements table enables you to edit, create, or delete user-defined field elements. The following elements are supported:

Element Type	Description
Text	String text with defined length
Numeric (Integer)	Numeric integer value
Boolean	True or False: Check box
Numeric (Double)	Numeric Double value
Pick-list	Drop down list with List of Value (LOV) values See LOV → Hierarchy → Module Independent → UDF → Picklist values. Below this Hierarchy LOV you can create a new LOV Type and a lever below LOV Value for the UFDs Drop Down.
Physical Value	Physical Value with Unit information
Date	Date Field
Currency	Drop down with SAP EC Currencies
Textfield	String text with big input field



**Note:**

You cannot have special characters in the English label of user-defined field (UDF) elements. When new UDF elements are created in languages, such as Japanese or Korean, the system shows an error message, because no English label is currently available.

This problem can be fixed by creating a new English label without special characters (only a-z and 0-9).

# Extension Point

## Use

Several modules of SAP Environmental Compliance can be enhanced with multiple custom specific extensions. SAP Environmental Compliance provides several extension points where those extension points can be integrated into the product.

## Prerequisites

All installation steps have to be finished. Custom implementations of extension points have to be deployed and started.

## Activities

Navigate to the configuration of extension points: *Configuration* → *Basic Settings* → *Extension Points*

A custom extension point implementation can be inserted by entering its extension point implementation JNDI name (see documentation of custom extension point implementation).

In addition, parameters and the execution order of the extension point implementations can be specified. You can enable / disable each extension point implementation by selecting the related option.

The easy connect button tries to find an extension point implementation where the JNDI name is the same as the default name of the extension point.

The next table shows an overview of the available extension points:

Extension Point	Description
Compliance Management Tab	Integration of an additional customer-specific Compliance Management Tab
Facility Builder Tab	Integration of an additional customer-specific Facility Builder Tab
DMS-Plugin	Integration of a customer-specific Document Management System
Requirements Management Tab	Integration of an additional customer-specific Requirement Management Tab
Custom Task Type	Integration of an additional customer-specific Task Type
Facility Compliance Tab	Integration of an additional customer-specific Facility Compliance Tab
Emissions Management Tab	Integration of an additional customer-specific Emissions Management Tab
Facility Name-Plugin	Extends the facility name in a consumption task with a classifier that is specified in the configuration.
Permits Management Tab	Integration of an additional customer-specific Permits Management tab

# Object-Based Authorization

## Use

Object-based authorization provides a fine-granular authorization and access control concept that is based on the different business objects (BOs) of SAP Environmental Compliance.

The customers can define authorizations for BOs that fulfill specific criteria. These authorizations are grantable to a specific user, group, or role. For example, change-permission for all facilities that have the classifier *Stuttgart* assigned can be granted to the users of the group *Data Entry Users Stuttgart*.

## Prerequisites

To access and manage this view, the user needs at least permission for the action *EC\_GlobalAuthorizations* or the user is a member of the user group “Environmental Compliance Admin”.

## Features

### Authorization Profile

The object-based permissions are managed by authorization profiles.

An authorization profile contains a name, a description, authorizations and assigned principals. For more information, see [Authorization Profile](#).

### Authorization

**Business Object:** An authorization is based on a business object. The authorization, therefore, defines a subset of the BO instances (for example all facilities with a special classifier).

**Restrictions:** A restriction contains a set of rows that set up different criteria to limit the subset of the selected BO instances. Each row contains an attribute and a value. The available attributes depends on the business object. The value set also depends on the BO and the selected attribute.

**Actions:** Each BO contains a set of specific actions that require an explicit authorization (for example create, view, delete, and split).

### Hierarchical Actions

These actions can be defined hierarchically. That means that any action can contain several sub-actions. An action with sub-actions, therefore, behaves as described above.

**Enabled:** All sub-actions are enabled (symbolized by a selected check box).

**Disabled:** All sub-actions are disabled (symbolized by an unselected check box).

**Partly enabled:** Some sub-actions are enabled (symbolized by a hatched check box).

### Dependent Actions

There are actions that require the authorization of other actions (for example, a copy operation can only be authorized if there are authorized create and view operations).

To define a rule that defines actions regardless of a specific attribute, an empty restriction table can be used.

### Effective Actions

Note that the authorized actions of a specific object can be determined by multiple authorization profiles. The effective action is calculated disjunctive. This means, the action is authorized if it is allowed in any profile that belongs to the object. It is prohibited only if it is not allowed in all relevant profiles. In the context of this document, an action of a business object always refers to an effective action.

### Principals

Principals are a set of users, groups, and roles assigned to the authorization profile.

### Authorization Diagnostics

You can check the authorizations of a user assigned for a specific object.

 **Do not use Special Characters in the user names, role names and user group names like “\” (Backslash)**

# Authorization Profiles

## Use

Authorization profiles give users access to the SAP System. They contain authorizations, which are identified using the name of an authorization object and the name of an authorization.

## Prerequisites

Only users who have the role *Environmental Compliance Admin* assigned can create object-based authorization profiles.

## Features

You can create an object-based authorization profile in different ways:

- Manually without any automatic pre-settings (to create from scratch)
- Using the wizard to create a profile with default pre-settings, which can be changed afterwards

Afterwards, you can assign principals to the profile. You can also change, copy, or delete the profile.

Authorization profiles can be transported. For more information, see the chapter [Manage Transport Activities](#).

## Activities

If you create a profile from scratch or change it, proceed as follows:

To add business objects to the profile, use the add button.

Choose the *Expand Node* triangle symbol next to the chosen business object data record.

In the table, pop-in authorizations for the actions can be checked /rechecked and restrictions can be added.

## Example

In the following sample authorization profile, the users of the group *Data Entry Users (Stuttgart)* have *View* and *Change* permissions for all facility objects with the parent *Carrier Stuttgart*. The users also have *Create*, *View*, *Change* and *Delete* permission for all emissions that are assigned to these facilities.

Sample Authorization Profile

<b>Name</b>	Data Entry Profile (Stuttgart)						
<b>Description</b>	Profile of all Data Entry Users in Stuttgart						
<b>Authorizations</b>	<b>BO</b>	<b>Attribute</b>	<b>Value</b>	<b>Create</b>	<b>View</b>	<b>Change</b>	<b>Delete</b>
	Facility	Parent	Carrier Stuttgart		X	X	
	<b>BO</b>	<b>Attribute</b>	<b>Value</b>	<b>Create</b>	<b>View</b>	<b>Change</b>	<b>Delete</b>
Emission	Facility-Parent	Carrier Stuttgart	X	X	X	X	
<b>Users</b>	Data Entry Users (Stuttgart)						

Note that the parent-facility contains all facility objects that are on an upper level of the facility hierarchy in relation to the current facility object.

The copy contains all data of the copied profile. If the checkbox *Principals* was selected, the copy also contains all principals copied to the new profile.

**Note: The Object Based Permissions could have a reference to EC MASTER DATA when the restrictions are using references to a single business object (Example: Restriction on a Parent Facility Object!). In case that these configuration data is transported between several EC Systems it is recommended to ensure that the technically IDs of the used master data have the same technically ID or to avoid to add the restrictions which use reference to master data in the source system of the configuration.**

## Standard Authorization Profiles

SAP EC is delivered with several standard profiles, which are assigned to the pre-delivered SAP EC UME user groups.

The following table shows the delivered SAP EC standard profiles:

Profile Name	Permissions		UME Group
EC Corporate Program Manager	Create Task Instance Create Exceptions		UMEGROUP_Corporate Program Manager
EC Compliance Manager	Create Task Instance Create Exceptions		UMEGROUP_Compliance Manager
EC EHS Manager	Permits	View Permissions	UMEGROUP_EHS Manager
	Requirement Sets	View Permissions	
	Authority	View Permissions	
	Facilities	View Permissions	
	Exceptions	Create Exceptions View Permissions	
	Tasks	Create Instance View Permissions	
	Reports	Full Permissions	
	Queries	Full Permissions	
EC Compliance Analyst	Tasks Exceptions Facilities Permits Parameters Requirement Sets Authority Reports Citations	Full Permissions	UMEGROUP_Compliance Analyst
EC Environmental Analyst	Facilities Permits Authorities Requirement Sets Citations Tasks Parameters Exceptions Reports Queries Materials Recipies Production Runs Production Series	Full Permissions	UMEGROUP_Environmental Analyst



	Emission Account Emission Account Transaction Emission Consumption Measurement Consumption Based Calculation Input/output Calculation Equation		
EC Site Manager	Create Task Instance Create Exceptions		UMEGROUP_Site Manager
EC Site Technician	Create Task Instance Create Exceptions		UMEGROUP_Site Technician
EC Environmental Compliance Admin	Report Data Source Report Variants Reports Query Variants Query Data Source Queries	Full Permissions	UMEGROUP_Environmental Compliance Admin
EC Facility Compliance Analyst	Property Property Link Hazard Link Hazards Tasks Facility Types	Full Permissions	UMEGROUP_Facility Compliance Analyst
EC Facility Compliance Operator	Facilities	Change data	UMEGROUP_Facility Compliance Operator
	Tasks	Create Instance	
EC Facility Compliance Responsible	Tasks	Create Instance	UMEGROUP_Facility Compliance Responsible
	Facilities	Full Permissions	
	Reports	Full Permissions	
EC Energy Manager	Tasks Exceptions Facilities Permits Parameters Requirement Sets Citations Authority Reports Queries Materials Emission Account Emission Consumption Measurement Consumption Based Calculation Input/output Calculation Equation	Full Permissions	UMEGROUP_Energy_Manager
EC Read all	All EC Modules	Read Permissions	UMEGROUP_Read_All

UWL Manager	OBN Tasks Editor OBN Exception Detail	Portal Page Permission	No group assignment, because this permission does not need any object-based permissions. The permissions are managed via Task Responsible / Owner and Exception Assignee.
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## Environmental Compliance Business Objects

This section describes how the different business objects are integrated in the object-based authorization concept. Each BO has different attributes and actions that have to be announced to the authorization framework. These attributes and actions are usable in an authorization profile.

The following BOs, which are written in bold letters, support the definition of the BO's authorized/non-authorized actions and, therefore, are usable in authorization profiles.

### *Emissions Management*

- *Consumption-Based*
  - **Measurement**
  - **Emission**
  - **Consumption**
- *Recipe-Based*
  - **Production Run**
  - **Production Series**
  - **Batch Recipe**
- *Emissions Accounting*
  - **Emission Account**
  - **Transaction**
- *Calculation*
  - **Consumption Based Calculation**
  - **Equation**
  - **Input-/Output Calculation**
- *Parameter*

### *Compliance Management:*

- **Exception**
- **Task Template**
- **Authority**
- **Permit**
- **Requirement Set**

### *Master Data:*

- **Facility**
- **Material**
- **Parameter**

Reporting:

- Query Data Source
- Report Data Source
- Report Variant
- Report
- Query Variant
- Analytical Query

Facility Compliance:

- Facility Type
- Hazard
- Property
- Hazard-Link
- Property-Link

## Default User Profile

### Use

This view enables the administrator to administer the following items:


- E-mail notification enabled
- Bundling
- Request type management

### Features

This profile is the default profile for the whole SAP EC system. In *My Profile*, each user can make changes to the profile. For more information, see [My Profile](#).

The *Default Profile Administration* contains the following items:

Item	Description
Activation	
<i>E-mail Notification Enabled</i>	Select this checkbox to enable notifications within the default profile. Unselect this checkbox to disable notifications within the default profile. Users can activate/deactivate notification within their personal user profile.
<i>Generate daily notification for overdue Tasks</i>	When this option is checked, an overdue e-mail is sent every day as long as an overdue task is not completed.
Bundling	
<i>No bundling</i>	Select this radio button to disable bundling. Each request generates one e-mail immediately.
<i>Daily bundling</i>	Select this radio button for daily bundling. In this case, the system needs a bundling time for bundling all requests. The e-mail that is sent contains detailed data of all new requests (e.g. task ID, status, responsible persons).

	 <b>Note:</b> In order to make sure that bundling time is used correctly by the system, the time zone to which the user is assigned must be customized in user administration.
<i>Reset</i>	This function resets the values in the specified group to system default values.
<i>Exception Types for E-Mail Notification</i>	When an EC Exception is created then the assignee users are notified via E-Mail for the exception types, which are selected in the user profile.

## Customer Database Tables

### Use

The view Customer Database Tables enables the user to create further database table names, which can be used for the EC Export and Import Tool. The EC Export and Import Tool checks during the export and import process the defined data base tables. This view allows adding additional database tables and views.

Furthermore the EC Reporting SQL Data Source checks also these additional tables.

### Prerequisites

To access this view the user shall be a member of the user group "Environmental Compliance Admin".

## EC Properties


### Use


The EC properties contain SAP EC relevant properties for the application.  
 Menu in the portal: Configuration → Basic Settings → EC Properties

### Features

There are three types of application component properties:

1. EC The EC properties are the standard EC properties.
2. EC\_FC The EC\_FC properties are properties that change the properties of facility compliance.

 **Note:**  
 If there are problems displaying the properties, see the SAP Note 1438489 for more information.

 **Caution:**  
 The values are cases sensitive. The true and false properties have to be written in lower case.

Name	SAP Note
accounting.allow_empty_ref_year	2271533
accounting.enable_cost_columns	1673352
base.display_save_notification	1877649
base.max_search_result	1882092
base.permissions.check_only_when_EC_object_loads	2086622
calculation.create_empty_UDF_values_for_trans_data	2198894

calculation.getFunctions.returnAllwaysDimensionInformation	2040178
calculation.getFunctions.returnAllwaysMaterialInformation	2053852
calculation.log_trace_level	2249449
changedoc.check.for.oldstyle	1382998
consumption.visibility.time	2286093
consumption.visibility.uncertainty	1569767
consumption.web_service.ignore_calculation_when_overwrite	2308142
data.import.forbid_data_import	1841095
document.dms.upload.mandatory_check_for_name	2013983
document.dms.upload.show_real_KM_URL_reference	2012234
equations.save.comment	2264589
exception.assignee_do_full_authorization_check	1948159
exception.initial_value_for_assessment	2293563
export.excel.maximum_fraction_digits	2209361
facility.allow_overlapped_consumptions	1474836
facility.allow_overlapped_emissions	1461917
facility.ban_multiple_integration	1161250
facility.check_overlapping_consumptions.before.calculation	1480366
facility.checkIntegration_TypeAssigned	1073313
facility.checkIntegrationIsValid	1073313
facility.consumption_material_classifier	1569767
facility.consumption_ws_logs	1816162
facility.copy.paste.include.emission.values	1596750
facility.datarelease.overview.query	2271535
facility.do_not_save_additional_calculation_logs	1815131
facility.FixWrongFacilityIDs.migration.ignore_CDs_and_Calc_Res	2287199
facility.hierarchy_assignment.mandatory_check	1902148
facility.inactive.forbid.import.data	1465470
facility.integration.WM_SDPStyle	1161250
facility.measurement.web_service.allow_importing_all_units	2061278
facility.name.check	1726779
facility.pm_ext_ref_url	1161250
facility.pm_read_newStyle	1073313
facility.save.comment	2190110
facility.tree.hide_hierarchies	2271537
material.save.comment	2264589
notification.alerts_to_read	1644327
notification.enable_failuremail	1415400
notification.limit_email_subject_additional_info	1841093
notification.loops_read_alerts	1644327
notification.task_email_subject_additional_info	1841093
notification.task_overdue_enable_daily_notification	2254097
parameters.save.comment	2264589
performance.diagnostics.calculation_job_process_warn_after_minutes	2244056
performance.diagnostics.single_consumption_calculation_warn_after_seconds	2244056
permit.limit_report.monthofhistory	1377185

permit.limit_report.showtextdirectly	1377185
permit.limit_var_check_enabled	1709371
permit.limit.master_extractor.facilityIDs	1896121
permit.limit.period.outside	1460649
permit.requirement.activate_permission_check	2098390
reporting.format.maximum_fraction_digits	2271538
reporting.performance.max_memory	1378913
reporting.performance.timeout	1408632
reporting.xslt_trans.use_xml	1767281
system.activate_usage_type_EERM	1913326
system.landscape.type	2271182
system.week_first_day	1842644
task.completion_date_input_enforced	1592218
task.confirmation_when_compl_date_after_due_date	2190079
task.consumption.canNotEditDatesInSubAndWorkflows	1989982
task.dashboard_shows_relevant_tasks_of_owner	1663149
task.delete.comment	1481797
task.eam.notification.enable_advanced_bapi	1161250
task.eam.notification.generate_automatically_notification	2026638
task.eam.order.enable	1161250
task.init_value_for_task_creation_per_facility	2285993
task.max_stat_analyzer_results	1582193
task.measurement_task.comment_is_not_required	2125042
task.owner_can_edit_instances	1271720
task.search.ignore.obp.check	1470027
task.set_due_date_always_from_begin	2064117
tier.visibility	2271170

## Prerequisites

To access this view the user shall be a member of the user group “Environmental Compliance Admin”.

## Emissions Account Types

### Use

You use this function to create account types for materials, or material classifiers or material groups for one or several time periods.

You have to create at least one account type to create new emissions accounts in SAP EC Emissions Management.

### Prerequisites

To access this view the user shall be a member of the user group “Environmental Compliance Admin”.

# Batch Process Step Templates

## Use

The batch process step template configuration enables you to create step templates, which can be used in the batch process steps.

## Prerequisites

To access this view the user shall be a member of the user group "Environmental Compliance Admin".

# Data Release Definition

## Use

The data release definition view enables you to set up the data release objects for the data release function in *Emissions Management*.

## Features

You can set up data release settings for a certain facility object, all its subordinate facilities and materials. The interval column defines interval periods of release (daily, monthly, quarterly, yearly). The initial status shows the pre-defined status of the *Configuration* → *Status Network*.

After the release definition is saved and emission, consumption and measurement values are specified for the facility and material, the release instance appears in the data release table in the *Emissions Management* view of the facilities activity.

The current status of a consumption, measurement, or emission value can be reviewed in *Facility Details* or in *Transactional Data Management*.

## Prerequisites

To access this view the user shall be a member of the user group "Environmental Compliance Admin".

# BW Properties

## Use

The BW Properties contains Business Warehouse relevant properties for the SAP EC application and Business Intelligent extraction process.

## Features

The descriptions of the properties describe the details of every property.

Name of the Property	Related SAP Note
bw.delta_load_offset	1598779
bw.extraction.data_quality_hide_warning_logs	2244382
bw.extractor.default.hierarchy	1334969
bw.extractor.multivalue.matclass	2117050
bw.extractor.package_size	2066977
bw.extractor.usergrp	1707113

bw.extractor.waid	2109498
bw.facility.classifier.readLOVKey	2009010
bw.facility.masterdata.ignoreIntegration	1963300
bw.facility.masterdata.ignoreInternalContacts	1963300
bw.field.max_length.1333_chars	2117465
bw.material.classifier.readLOVKey	2009010
bw.specialchars	1914194
bw.units.doNotConvertToReportUnit	1990419

## Prerequisites

To access this view the user shall be a member of the user group “Environmental Compliance Admin”.

## Integrated Systems

### Use

The integrated systems functionality enables you to manage integrated systems which are used for the SAP EC Web service mapping.

### Features

You can create entries to integrate systems by entering an external system ID and the external system name. For more information about SAP EC Web Services, see the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*.

### Prerequisites

To access this view the user shall be a member of the user group “Environmental Compliance Admin”.

## RFC Configuration

### Use

You can use this function for the integration of the following objects:

- ERP specifications and materials
- Functional location / equipment reference
- EAM notification
- EAM order
- EAM synchronize
- Warehouse type / number / area reference
- Work area reference
- BW System

For more information about RFC Configuration, see the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business*



## Prerequisites

To access this view the user shall be a member of the user group “Environmental Compliance Admin”.

## Extraction Mapping for Calculation Variables

### Use

You can use the *Extraction Mapping for Calculation Variable* dialog in the *configuration → integration* to configure the mapping between SAP Environmental Compliance calculation variables and the created Business Warehouse Info Objects

### Prerequisites

To use the function, the following parameters are required:

- Variable Name
- Mapping for Value in BI
- Mapping for Uncertainty in BI

For more information, see the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications → SAP EHS Management → SAP Environmental Compliance → SAP Environmental Compliance 3.0*.

To access this view, the user must be a member of the user group “Environmental Compliance Admin”.

To improve the performance of the extraction, call the SAP EC Configuration --> Integration --> Extraction Mapping for Calculation Variables and enter the ID of the calculation for the affected emissions. As a result, the system will only read the calculation results of the predefined calculations.

Example mapping:

Variable name	Assignment for value in BI	Assignment for difference in BI	Description
EF	ZBWEF1	1000003	The numeric value in the field <i>Assignment for Difference in BI</i> is interpreted as the technical ID of a calculation. The <b>emission parameter</b> EF is determined through the calculation 1000003 and extracted to the field ZBWEF1.
EF	ZBWEF1	1000004	The numeric value in the field <i>Assignment for Difference in BI</i> is interpreted as the technical ID of a calculation. The <b>emission parameter</b> EF is additionally determined through the calculation 1000004 and also extracted to the field ZBWEF1.
EF	ZBWEF1	ZBWEFUNC	The <b>value</b> of the variable EF is extracted to the field ZBWEF1. The <b>difference</b> of the variable EF is extracted to the field ZBWEFUNC.
DES	ZBWDES	1000003	The numeric value in the field <i>Assignment for Difference in BI</i> is interpreted as the technical ID of a calculation. The <b>emission parameter</b> DES is

			determined through the calculation 1000003 and extracted to the field ZBWDES.
--	--	--	---

See also the related SAP note 2300698 for further features.

## Regulatory Content Providers

### Use

The regulatory content provider integration is used to link SAP Environmental Compliance citations to citation data provided by an external content provider. The data transfer for this integration is done by using a Web service.

In the configuration of the regulatory content providers, all available providers are listed. Each entry contains an activation checkbox and general information about the provider, for example, the regulatory content provider's name, Web site, last synchronization date, and status.

The integration to the content provider BNA (Bureau of National Affairs, Inc.) is part of SAP Environmental Compliance.

Each provider can be activated separately. The last synchronization date is the date when the user synchronized the regulatory content provider data either manually in the configuration or with the automatic execution of the synchronization background job.

For more information, see chapter 4.4.5 *Periodic Tasks* in the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*).

The synchronization status is displayed by a green icon for a successful synchronization, or by a red icon for an unsuccessful synchronization of the provider data.

The button *Check Connection* checks the communication to the selected regulatory content provider.

The button *Synchronize* checks the linkage of SAP EC citations to citations on the provider side. If an SAP EC citation is marked as linked, but the provider does not have it in its list, the SAP EC linkage is removed. If an SAP EC citation is in the provider's list but not marked on the SAP EC side, it is added to the provider's list.

The button *Check for Notifications* pulls the Web service to receive notifications about upcoming citation updates and the updates themselves. If there are changes to a citation text, this text is automatically transferred to the (linked) SAP EC citation.

To maintain provider-specific settings, an integration entry also has a set of properties.



Note:

For the provider BNA, the citation updates are received depending on the property "BNA Profile Start Publish Date". Only updates after the entered date are recognized. After retrieving updates, this property is automatically set to the current date.



Note:

The provider BNA organizes the linked citation within profiles. Therefore, you have to maintain a valid profile ID in the provider property "BNA Profile ID". Every SAP Environmental Compliance system must have its own profile ID. For example, if a quality or test system, a development system, or a productive system is used, you need three different profile IDs that you have to request from BNA.

Additional information (warnings, errors, status) during the communication to an external provider are displayed in the SAP Environmental Compliance log (see chapter *EC Log Viewer*).

For more information about the configuration of regulatory content providers and specific properties regarding the BNA integration, see chapter "Regulatory Content Integration" in the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*.

## Prerequisites

To access this view the user shall be a member of the user group "Environmental Compliance Admin".

## Data Entry Variances

### Use

You can use this function to check input data of a consumption task. Checks of the input data for the consumption amount and for parameter values that are consumption specific have to be performed. If the values are out of the range of an allowed variance the maintenance of comments is necessary.

### Features

The comparison of the actual inserted value with the value from the previous reporting period is executed when the entry is saved. If the deviation exceeds the variance, a comment from the user is mandatory. You can save; however, the status *Completed* cannot be set before all deviations have comments.

When a periodic data entry task is set up, no checks have to be performed for the first data collection period.

The setting of allowed variances will be done by the administrators only. You can set the variance for each line item.

- Flaring 10 %
- Diesel consumption 5 %

## Prerequisites

To access this view the user shall be a member of the user group "Environmental Compliance Admin".

## Maintenance of Variances

Variances can be set for combinations of material, parameter and facility.

### Example

Material	Parameter	Facility	Variance [%]
			30
Diesel			20
Diesel	NOx emission factor		15
Diesel	NOx emission factor	Engines	10

If the material, parameter, and facility fields remain empty, this is the overall default variance.

If only a material value is entered, the variance is valid for the consumption entry using this material. The variance is used for checking the amount and all parameters.

If a more specific setting has been made and also has a line with parameter (third line), this entry is used.

If for specific cases, no checks should be done, an empty field value has to be maintained.

# E-Mail Notification

## Use

The e-mail notification view manages the e-mail templates that were used when a task validation is happening or a limit check failed. The system generates e-mails based on the e-mail templates.

## Prerequisites

For the basic settings for setting up e-mail configuration, see chapter “Set up E-mail Configuration” see the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*.

### Note:

Optionally you can also set up the e-mail address of the central administrator and the e-mail address of the workflow user. For more information, see the SAP Help [http://help.sap.com/saphelp\\_nwce10/helpdata/en/44/bf8f2069665991e10000000a422035/frameset.htm](http://help.sap.com/saphelp_nwce10/helpdata/en/44/bf8f2069665991e10000000a422035/frameset.htm)

## Activities

Every e-mail template has references to SAP Environmental Compliance objects such as tasks, etc. The initial delivery for templates has no system host and port information.

Change the host and port information of every e-mail template before activating the e-mail notification functionality in SAP EC.

### Note:

As of SAP EC 3.0 SP2 PL2, the e-mail notification URL for tasks, exceptions and limit checks have been changed. For more information about the URLs, see the SAP Note **1431058**.

# Configuration of E-Mail Pop3 Server for Check List Tasks

The Configuration of E-Mail Pop3 Server for EC Check list tasks need to be configured in SAP NetWeaver JAVA Properties. Refer to SAP Note 1636650 for further details.

# Limit Check Summary Templates

## Use

The *Limit Check Summary Templates* view in the configuration of *Compliance Management* manages the limit check summary templates, which are used when a limit check is executed. The system generates limit check summaries based on the related templates.

## Prerequisites

To access and manage the limit check summary templates you need at least permission for the action *EC\_LimitCheckSummaryTemplates* or the user is a member of the user group “Environmental Compliance Admin”.

## Features

Tab	Description
Check Summary Template	This tab is used for the management of limit check summary templates. For all templates, multiple multi-language XML (Extensible Markup Language) representations and their related XSL (Extensible Stylesheet Language) transformation (XSLT) can be maintained.

Template Mapping	This tab enables the assignment of limit check summary templates to the specific limit check summary types, e.g. assign “Custom Emission Limit Check” template to type “Emission Limit Check”.
------------------	--

## Task E-Mail Notification

### Use

The task compliance provides several E-Mail notifications for different Task Status:

The following enumeration described the different Task notifications

1. Task Relevant
2. Task Critical
3. Task Overdue
4. Task Completed
5. Task Validation

Following Properties could be sent to the Email content. The content of the Email is language dependent and need to be editing in the EC configuration → Compliance Management → E-Mail Notification.

Following properties could be send to Email content

1. TaskId
2. TaskMessage
3. TaskType
4. TaskName
5. TaskStatus
6. TaskDueDate
7. TaskFacility
8. TaskDescription
9. TaskUserInvolvement (Introduced with EC30 SP14 – See SAP note 1814013)
10. TaskCompletionDate (Introduced with EC30 SP15 Patch 4 – See SAP note 1924083)
11. TaskCategory
12. TaskSubCategory
13. TaskCompletionComment
14. TaskActivatingExceptionID
15. MasterTaskID
16. PredecessorTaskID
17. TaskPriority
18. TaskProgress
19. TaskStartDate
20. TaskTemplateID

See also the related SAP note 1841093 and 1817491 for further email notification features.

## Permit Configuration

### Use

The view Permit Configuration enables the user to create self-defined ICONs for the permit hierarchy. The available Icon names can be reviewed by clicking the link “SAP Icons”.

### Prerequisites

To access this view the user shall be a member of the user group “Environmental Compliance Admin” or use the Action “EC\_PermitConfiguration”

## Alert Logs Configuration

### Use

You can use the alert log configuration to specify users who will be notify when the application creates error logs and warning logs.

### Prerequisites

- To access and manage alert log configuration, the user have to be a member of the user group “Environmental Compliance Admin”.
- E-mail notification must be set up.  
For more information about e-mail notification, see SAP Environmental Compliance Implementation Guide (chapter 3.3.6 Setting Up E-Mail Configuration) on the Service Marketplace <https://service.sap.com/instguides> under SAP Business Suite Applications → SAP EHS Management → SAP Environmental Compliance → SAP Environmental Compliance 3.0.
- You have assigned at least one user in the “Alert Logs Configuration”.
- NetWeaver Java Scheduler job “SAP\_Environmental\_Compliance-AlertLogsJob” have to be set up periodically.

### Features

When the checkbox “Activate E-mail Notification for EC Logs” is active then all the EC errors and warnings are collected in a temporary database table. The “SAP\_Environmental\_Compliance-AlertLogs” job collects every time 1000 logs and sends the errors and warnings in separate e-mails to the specified users. The logs are bundled into 100 error logs or warning logs per e-mail. Duplicate logs are deleted in the E-Mail notification.

In some cases the EC application creates more Logs than the Application can send via E-Mail. In this case the administrator user can delete the temporary logs in the database which waits to be sending to the users via E-Mail.

The button “Count of Logs (x)” shows the current log count in the database. These logs are waiting to be sent to the users via E-Mail.

## Facility Configuration

### Use




The facility configuration enables you to set up basic settings of SAP EC facilities.

## Prerequisites

To access and manage the facility configuration, you need at least permission for the action *EC\_FacilityTypeCapabilitiesConfig* or the user is a member of the user group “Environmental Compliance Admin”.

## Features

The following settings are available in *Facility Configuration*:

Tab	Description
Facility Types	<p>The facility types tab enables you to configure current facility types like plant, carrier/company and so on and to create new facility types.</p> <p>The image column defines the Icon in the facility tree. The icon names can be taken from the bottom link  <a href="#">Sapicons</a>.</p> <p>The <i>Used</i> checkbox defines if the facility is shown in the <i>Create</i> drop down of the facility activity.</p> <p>The <i>No Split</i> checkbox defines if a facility can be split into different versions. If the checkbox is selected, the button <i>Split Validity Period</i> button in facility detail is not available in the related facility type.</p> <p> <b>Note:</b> The multi-language settings for facility types are in the SAP EC List of Values: <i>SAP EC Configuration</i> → <i>Basic Settings</i> → <i>List of Values</i> → <i>Hierarchy</i> → <i>Facilities</i> → <i>Facility Types</i> The List of Value (LOV) is only set up the first time, when the facility type is created. All name changes of the facility types have to be done in <i>List of Values</i>.</p> <p> <b>Caution:</b> The Type “Undefined” shall be always enabled for the “Master Data”. The Flag has to be marked for “Used in Master Data”</p>
Facility Type Hierarchy	<p>This tab defines the facility hierarchy dependencies. On this tab, the admin user can set up the parent facility types of a selected facility type. The dependencies are displayed in the “Creation” drop down of the Facilities in the Master Data Management.</p>
Facility Type Properties	<p>The Facility Type Properties tab defines the visible tabs of every facility type. Furthermore the order number of the tabs can be defined.</p>
Inheritance Rules	<p>The <i>Inheritance Rules</i> tab defines facility attributes that should be inherited from the parent facility during the creation process. This functionality has been replaced with the down propagate functionality. The <i>Down Propagate</i> functionality is available in the facility detail view.</p>

## Hierarchy

### Use

The hierarchy configuration enables you to build up the company structure in SAP EC for reporting purpose. Companies use different hierarchies to display their structure. The hierarchy elements are used to assign them to facilities (reporting units).

For the business warehouse evaluation, the hierarchy is very important. Here, you can create reports that show the breakdown of revenues by customer, time, and geography, which are probably the most common example of online analytics.

## Prerequisites

To access and manage the hierarchy you need at least permission for the action *EC\_Hierarchies* or the user is a member of the user group “Environmental Compliance Admin”.

## Features

The tray *Hierarchies* shows all defined hierarchy criteria for a company’s structure. Typical values include:

- Regional (country)
- Organizational Unit
- Legal Entity

The tray *Hierarchy Details* holds the validity periods of the hierarchy type. By splitting the validity period, you actually create two hierarchies where there was one. The first (past) hierarchy is valid until the split date; the second (future) hierarchy is valid from the split date onwards. If a validity period split is made, a new row is displayed in table *Validity Periods*.

The created hierarchies can be assigned to SAP EC facilities.

# Administration

## Use

You use this component to administrate the following sub menus:

Name
BW Delta Info
RFC Server Monitor
Data Migration
Data Import Log
System Checks
EC Log Viewer

To access SAP EC administration, you need an SAP EC Admin user. You need at least a user (SAP EC Environmental Compliance Admin) that has the user group *UMEGROUP\_Environmental Compliance Admin*.

# Data Extractions to External Systems

## Use

This function enables you to get a quick overview of the last updates that occurred in the Business Warehouse systems. Every line in the table represents a data extraction for a certain data source and target system.

## Prerequisites

To access and manage this view, you need at least permission of the action *EC\_BWDeltaInfo* or the user is a member of the user group “Environmental Compliance Admin”.



## Features

The table keeps track of the current delta-status of data sources. However, if a delta extraction needs to be repeated, the delta-status can be set to a specific date. This causes the system to send data from the set date to today.

Navigate to the Data Extractions to External Systems: *Administration* → *Data Extractions to External Systems*.

The table contains the following columns:

Column	Description
<i>Data Source</i>	The name of the data source of the external system This can contain a BW InfoSource.
<i>System ID</i>	The system ID of the external system.
<i>Last Export Date</i>	The last date of a successful update.
<i>Last Request Date</i>	The last requested date. Not every request results in an update.
<i>Last Request ID</i>	The last request ID, generated by the BW system.

### Note:

The update-function works only for delta-capable BW InfoSources.

## RFC Server Monitor

### Use

The RFC Server Monitor displays all logs from RFC modules, which come from the SAP EC-EHS Integration and the BW/BI extraction logs.

### Prerequisites

To access and manage this view, you need at least permission of the action *EC\_RFCServerMonitor* or the user is a member of the user group “Environmental Compliance Admin”.

## Data Migration

### Use

The view data migration contains the functionality to migrate or crate damaged data in SAP EC.

### Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_DataMigration* or the user is a member of the user group “Environmental Compliance Admin”.

### Features

The data migration shows all available data migration modules contained in the current version. In addition, all already-executed modules are displayed with their execution protocol. Each execution of a migration module generates a protocol persistent in the database.

SAP recommends running the migrations with the Priority “HIGH” however the Migrations “**Delta Data Migration**” and “**EC User, Roles and Group Migration**” are required in SAP EC. Every time a new patch is applied in SAP EC it is recommended running those two migrations.

When a migration never ran in the past, then it has the status is YELLOW. When a migration ran successfully one time, then it becomes the status GREEN.

Every migration has a link to the related SAP Notes in the migration view. The SAP Note described the details of every migration.

The view *Data Migration* contains two additional functions:

Function	Description
<i>Start Module</i>	Choose this button to execute the data migration, which is restricted by the marked module.
<i>Show Log</i>	Choose this button to show the protocol for migrated modules. The protocol holds the following information: <ul style="list-style-type: none"> <li>• Which migration module was executed</li> <li>• When the migration started</li> <li>• When the migration ended</li> </ul>

## Data Import Log

### Use

The view Data Import Log shows all importing sessions, which has been done with the EC Export and Import Tool, and the data, which have been imported with “Data Import from Excel Template”.

### Prerequisites

To access this view, the user needs at least permission of the action `EC_ExportImportData` or the user is a member of the user group “Environmental Compliance Admin”.

## System Checks

### Use

This function checks external service availability.

### Prerequisite

To access and manage this view you need at least permission for the action `EC_SystemChecks` or the user is a member of the user group “Environmental Compliance Admin”.

### Features

The following services can be checked:

- Adobe Document Service
- Internet Graphics Server (*IGS*)
- E-mail SMTP

After running a test, the system displays a test result.

If the e-mail notification does not work, see the chapter [E-Mail Notification](#).

# EC Log Viewer

## Use

You can use this function to list all system-based messages and their protocols.

## Prerequisites




To access and manage this view, the user needs at least permission of the action *EC\_LogViewer* or the user is a member of the user group “Environmental Compliance Admin”.

## Features

There are three kinds of messages:

- Error
- Warning
- Info

The *Log Entries* table contains the following columns:

Column	Description
<i>Icon</i>	Information about the type of message:  Error  Warning  Info.
<i>Timestamp</i>	Creation date and time of message
<i>Description</i>	Short description of message
Large field below table	Displays protocol of selected message



### Note:

The SAP EC Log Viewer does not support cluster systems. Within a NW landscape with several NW servers, the log entries are not fully logged. In this case, we recommend using the NetWeaver Log Viewer <http://<host>:<port>/nwa/logs>.

# Tools

## Use

You use this component to administrate the following sub menus:

Name
My Profile
System Information
Reset Buffer
Contact Management
Document Management
Integration Management
Integrated Tags Management
Scripting

E-mail Diagnostics
Content Export
Content Import
Data Import from Excel Template

To access EC maintenance, you need an SAP EC Admin user. You need at least a user that has the user group *UMEGROUP\_Environmental Compliance Admin* and *UMEGROUP\_Compliance Analyst*.

## My Profile

### Use

You can use this function to administer your profile.

### Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_MyUserProfile*. Almost all SAP EC user groups have full access in this view.

### Features

You can administrate the following settings of your profile:

- E-mail notification enabled
- E-mail bundling
- Substitute user
- Default unit settings

My profile settings are only valid for the logged in user. If the settings are not set, then the default profile settings are valid. For more information about default user settings, see the chapter [Default User Profile](#).

The *My Profile Administration* contains the following items:

The Profile tab has the same settings as the “Default User Profile”.

<b>Tab: Substitute</b>	
<i>Substitute Active</i>	Select this checkbox to activate a substitute user for the current user for a time period.
<i>Select User</i>	Select a substitute user.
<i>Substitute from / to</i>	Select a substitute period.
<b>Tab: Default units:</b> Define your own unit for displaying an automatic unit conversion for measurements, consumptions, and emissions in SAP EC Emissions Management.	
<i>Dimension</i>	Select a dimension to show all corresponding units.
<i>Unit</i>	<p>The <i>Display</i> checkbox activates the display of the unit for a selected dimension. You can activate only one unit per dimension.</p> <p>The activated unit is shown as a tooltip in emission calculation on the tabs <i>Consumptions</i>, <i>Emissions</i>, and <i>Measurements</i>.</p> <p>Example: You have a calculation that calculates kg values. For U.S. users, we recommend you specify the unit “US pound” as display unit in the dimension <i>Mass</i>.</p> <p>This user sees the values in kg; however, the tooltip shows the value in “US</p>

	pound".
--	---------

## System Information

### Use

The system information function displays an overview of the used SAP EC versions and deployed components. This information is needed when a SAP Customer Message is created for the SAP EC maintenance team.

Furthermore the active content range is displayed. For further information about the EC content range please contact the responsible EC consultant.

## Reset Buffer

### Use

This view enables users to initialize all buffered objects within SAP EC such as:

- List of values
- Units and Dimensions
- Object-based permission caches
- Facility Types
- Currencies

### Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_ResetBuffer* or the user is a member of the user group "Environmental Compliance Admin".

### Features

The reset buffer function shall should be used when the configuration data has been change and data is imported by using EC Import Tool or the SAP EC XML Transfer Workbench.

## Contact Management

### Use

You can use this function to search for contacts in SAP EC.

### Prerequisite

To access and manage this view, the user needs at least permission for the action *EC\_ContactsManagement* or the user is a member of the user group "Environmental Compliance Admin".

### Features

You can search for contacts that are set up and assigned in facilities, authorities, and permits.

In *Contact Management*, you can edit all contacts in the SAP EC system.

# Document Management

## Use

You can manage all documents that can be assigned in SAP EC modules.

## Prerequisite

To access and manage this view, the user needs permission of the action *EC\_DocumentAdministrator* or the user is a member of the user group “Environmental Compliance Admin”.

The admin user can also search SAP EC and Knowledge Management documents.

# Integration Management

## Use

This chapter describes how to manage and how to link objects within SAP Environmental Compliance to external systems. SAP EC Integration Management is used to define various ways of integrating between SAP EC and SAP ERP.

## Prerequisites

To access and manage this view, the user needs permission of the action *EC\_IntegrationManager* and *EC\_IntegrationManagerAdmin*. These permissions are delivered in the group *UMEGROUP\_Environmental Compliance Admin*.

In addition, the role that works with integration management needs full access to Material Management and facilities of the SAP Environmental Compliance. These permissions are delivered in the group *UMEGROUP\_Environmental Analyst*.

To work with integration management, you have to import the R/3 Transport delivered with SAP Environmental Compliance in the folder “*ABAP\R3\_Transports*”.

## Features

Integration Management is a generic tool that enables users to link similar business objects (materials, facilities) in different systems and update the data between the two different systems. The main system, where the synchronization begins, is always the SAP EC system where the integration management application runs.

Integration works in both directions. For example, an object was changed or newly created. After synchronization, the systems are updated and the changes occur in both systems. To integrate, objects must be linked together. All links must be defined in *Integration Management*. Also, the update of the linked objects must be triggered in *Integration Management*.

Integration Management provides the following functions:

- Administration
- Updating of work lists
- Linking of objects
- Updating of objects
- Sending messages

Integration Management is initially delivered with example business objects:

EC Materials, EC Facilities, ERP MM Materials, EHS Specifications, ERP Work area and ERP Functional Location.

The application can be enhanced with new business objects or with new properties of the current business objects.

The design of the application is generic and enables you to add new business objects with custom dialog and application frame.



	<p>Navigate to <i>Update</i> worklist in the Activities view of Integration Management.</p> <p>Click the link to update the <i>worklist</i>.</p> <p>Expand the nodes in the worklist hierarchy to see all updated objects.</p>
--	--

### Additional Information: Update Functional Location

The worklist of the Integration Management detects data that has been changed since the latest date specified in the administration of Integration Management. The update mechanism checks the change document of every specified element. The functional location in ERP needs some customizing changes to activate the change document mechanism.

In ERP, go to transaction SPRO. Navigate to SAP reference IMG. Then navigate to the IMG Activity *SAP Customizing Implementation Guide* → *Master Data in Plant Maintenance and Customer Service* → *Technical Objects* → *Functional Locations* → *Define Category of Reference Functional Location* For every category, the change document can be specified.

#### Note:

Two settings exist for activating the change document. (See the checkboxes in the picture above)

### Linking of Objects

The linking of the SAP EC objects (*Material* and *Facility*) to the corresponding ERP objects must be defined for every object separately. The linking is defined in the *Object* view of *Integration Management*.

The following table describes the activity for linking objects:











Activity for Linking Objects	Description
<i>Linking Objects</i>	<p>To link objects:</p> <p>Choose <i>Tools</i> → <i>Integration Management</i>.</p> <p>Navigate to <i>Advanced Search</i> in the <i>Activities</i> view of the <i>Integration Management</i>. Click the link to open the <i>Advanced Search</i> view.</p> <p>In the <i>Advanced Search</i> view, search for objects that should be linked for integration. In the <i>Search Result</i> list, click the object link to open the <i>Object</i> view.</p> <p>In the <i>Object information</i> section, the object details are displayed. The displayed content depends on the kind of object. For example, for an SAP EC-Material the material name and ID are displayed.</p> <p>Choose <i>Search</i> in the <i>Assign objects</i> section. Depending on the object type in the <i>Object information</i> section, the added search fields vary. For example, for an <i>SAP EC-Material</i> object. You can map to an ERP object such as <i>Substance</i> or <i>MM_Material</i>.</p> <p>In the <i>Partner type</i> field, select a partner type from the drop-down menu and enter search criteria into the corresponding fields.</p> <p>Depending on the chosen partner type, the search fields vary. For the partner types, the following corresponding search fields are available:</p> <p>For partner type <i>Substance</i>, you can enter search criteria for <i>Identifier</i> and <i>Substance ID</i>.</p> <p>For partner type <i>MM-Material</i>, you can enter search criteria for <i>Material ID</i> and</p>



	<p><i>Description.</i></p> <p>Choose <i>Go</i> to execute the search. The search result is displayed in the <i>Search Result</i> list.</p> <p>Mark the object in the search result list that you want to create a mapping for. Choose <i>Link</i> to execute the linking. The linked object is displayed in the <i>Linked objects</i> table. If the object is already linked to the same object type, the link is not allowed. A corresponding message is displayed.</p> <p>Choose <i>Save</i>.</p>
--	---

## Object View

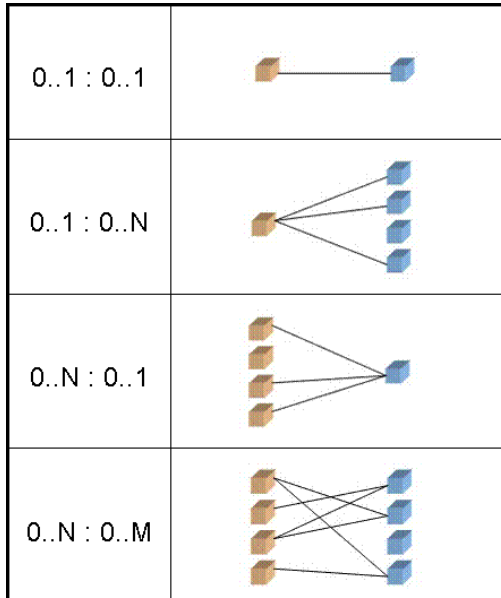
The Object view contains some additional functions.

Push Button	Meaning
<i>Close</i> 	Closes the <i>Object</i> view.
<i>Assign Objects</i> 	Displays the content of the <i>Proposal list</i> .
<i>Delete Links</i> 	Deletes all links of the <i>Linked Objects</i> table.
<i>Delete Linked Objects</i> 	Delete all links of the <i>Linked Objects</i> table and the objects itself from the database.
<i>Update</i> 	Updates the linked objects. Displays the content of the update in the <i>Logs</i> section.
<i>Send Message</i> 	Displays the <i>Send Message</i> dialog for sending e-mail or creating a task to another Environmental Compliance user.
<i>Save</i> 	Saves new links and all changes.
<b><i>Subscreen Linked Objects</i></b>	
<i>Unlink</i>	Unlinked a marked object from the <i>Linked Objects</i> table.
<i>Unlink all</i>	Unlinked all objects from the <i>Linked Objects</i> table.
<i>Refresh</i>	Refreshes the <i>Linked Objects</i> table.
<b><i>Subscreen Assign Objects</i></b>	
<i>Proposal List</i> 	Displays the <i>Proposal list</i> for linking objects.
<i>Search</i> 	Displays the search fields for finding objects by <i>Partner type</i> and search criteria to link them.
<i>New Object</i> 	Creates a new object. After type selection of the new object, the user has to choose <i>Create</i> . A <i>Create-Information</i> window appears. Make entries for all required fields and choose the create button in the window. A new object is created and saved in the database of Environmental Compliance or of R/3. After the new object is created, it can be linked to other objects.

## Updating of Objects

The integrated objects can be updated. To get an overview of the updated items, the changes are displayed in a log area. The following properties of objects are linked: ID, Name, Type, Status, and Attribute.

The following relations between the objects are possible:



The following table describes the activity for updating objects:

Activity for Updating Objects	Description
<i>Updating Objects</i>	<p>To update objects:</p> <p>Choose <i>Tools</i> → <i>Integration Management</i>.</p> <p>Navigate to <i>Advanced Search</i> in the <i>Activities</i> view of the <i>Integration Management</i>. Click the link to open the <i>Advanced Search</i> view.</p> <p>In the <i>Advanced Search</i> view, search for objects that should be linked for integration.</p> <p>In the <i>Search Result</i> list, click the object link to open the <i>Object</i> view.</p> <p>In the <i>Object</i> view choose <i>Update</i> to start updating of the linked objects. The <i>Logs</i> section of the right side of the <i>Object</i> view opens.</p> <p>The log informs you about updated objects. The update is bidirectional.</p>

## Sending Messages

With SAP Environmental Compliance, you can use several methods of sending messages to other SAP EC users or external users. Integration Management also enables you to send messages to SAP EC users.

The following table describes the activity for sending messages:

Activity for	Description
--------------	-------------

Sending Messages	
Sending Messages	<p>To send a message:</p> <p>Choose <i>Tools</i> → <i>Integration Management</i>.</p> <p>Navigate to <i>Advanced Search</i> in the <i>Activities</i> view of the <i>Integration Management</i>. Click the link to open the <i>Advanced Search</i> view.</p> <p>In the <i>Advanced Search</i> view, search for objects that should be linked for integration.</p> <p>In the <i>Search Result</i> list, click the object link to open the <i>Object</i> view.</p> <p>In the <i>Object</i> view, choose <i>Send Message</i> to send a message to an <i>Environmental Compliance</i> user. The <i>Send Message</i> section opens.</p> <p>In the <i>Send Message</i> section of the <i>Object</i> view, select a recipient from the drop-down menu.</p> <p>In the <i>Head</i> field, enter what this message is referring to.</p> <p>In the <i>Body</i> field, enter the text.</p> <p>Select the <i>Create Task</i> checkbox to indicate that this message will result in a task.</p> <p>Select the <i>Send Mail</i> checkbox to indicate the message as normal e-mail.</p> <p>Choose <i>Send</i> to send out the message.</p>

## Scripting

### Use

The scripting function enables you to create and test vAlgo calculation scripts and variable limit check scripts.

### Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_Scripting* or the user is a member of the user group “Environmental Compliance Admin”.

### Features

You can use various scripting terms for creating calculation scripts and variable limit check scripts. Scripts in SAP EC are based on the scripting language vAlgo.

## Scripting Language vAlgo

### Use

This paragraph describes the language elements and the usage of the SAP EC internal scripting language vAlgo.

### Variable Attributes

vAlgo supports Java-like dot notation, which enables access to variable information by using their attributes. vAlgo uses different data types for the different variable types. The data type conversion is implicitly handled by the system; a parameter is handled as a *PhysicsValue*, a text is handled as *StringValue*, and a set is handled as *VectorValue*.

The following examples demonstrate how attributes are used in the script:

```
physicsValue = 33.0{+-10.5, MASS, 1234567};  
dateValue = #2005.01.01#;  
stringValue = "This is a text";
```

```
print("PV Value: ");  
print(physicsValue.value);  
print("\n");
```

```
print("PV Uncertainty: ");  
print(physicsValue.uncertainty);  
print("\n");
```

```
print("PV From Date: ");  
print(physicsValue.from);  
print("\n");
```

```
print("PV To Date: ");  
print(physicsValue.to);  
print("\n");
```

```
print("PV Material ID: ");  
print(physicsValue.mat);  
print("\n");
```

```
print("String length: ");  
print(stringValue.length);  
print("\n");
```

 **Note:**

The 'print' call does not work within the consumption-based calculation. When you want to print an information please use the call `EquLogger("Variable", variable_name)`;

## Date Value

The following attributes enable access to variables information by using attributes. For the variables different data types are in use. The data type conversion is implicitly handled by the system. For example, a parameter is handled as a *PhysicsValue*, a text is handled as *StringValue*, and a set are handled as *VectorValue*.

The following examples demonstrate how using attributes in the script.

The following attributes can be used for the data type *DateValue*:

Attributes	Description
year	Delivers the value of variable's year.
month	Delivers the value of variable's month.
day	Delivers the value of variable's day.
hour	Delivers the value of variable's hour.
minute	Delivers the value of variable's minute.
second	Delivers the value of variable's second.
millisecond	Delivers the value of variable's millisecond.

time	Delivers the timestamp in milliseconds.
------	---

### Physics Value

The following attributes can be used for the data type *PhysicsValue*:

Attributes	Description
mat	Delivers the material ID.
material	Delivers the material ID.
from	Delivers the <i>From Date</i> .
to	Delivers the <i>To Date</i> .
value	Delivers the value.
uncertainty	Delivers the uncertainty of the values.

### String Value

The following attributes can be used for the data type *StringValue*:

Attributes	Description
length	Delivers the length of this string.

### Vector Value

The following attributes can be used for the data type *VectorValue*:

Attributes	Description
length	Delivers the length of this vector value (array).
isArray	Detect if the vector is an array <pre> if (Var.isArray) {     for ( i = 0; i &lt; Var.length;i ++ ) {         ....     } } else {     ... } </pre>

### Access to the Variables Attributes

vAlgo supports reading the information from all Physically Values within the calculation script.

Following attributes can be read from a variable:

Attributes	Description
<variable_name>.mat	Enables access to the material ID.
<variable_name>.material	Enables access to the material ID.
<variable_name>.from	Enables access to the <i>From Date</i> .
<variable_name>.to	Enables access to the <i>To Date</i> .
<variable_name>.value	Enables access to the value.
<variable_name>.uncertainty	Enables access to the uncertainty.

<variable_name>.dim	Reads the dimension information. See SAP Note 2058268
<variable_name>.dimension	Reads the dimension information. See SAP Note 2058268

Furthermore you can read this information directly from the consumption value: <Cons. Variable>\_tech (Example: **C\_tech.from** returns the start date of the consumption).

## Function Library

vAlgo supports users with various functions for emission calculation.

### Arithmetic Templates

Template	Description
Abs	Delivers the absolute value of a physical value. Syntax: <code>abs( &lt;PhysicsValue&gt; );</code> Example: <code>abs (-4) ;</code> delivers (4)
Sine	Delivers the sinus of a physical value. Syntax: <code>sin( &lt;PhysicsValue&gt; );</code> Example: <code>sin (30) ;</code> delivers (0.5)
Cosine	Delivers the cosine of a physical value. Syntax: <code>cos( &lt;PhysicsValue&gt; );</code> Example: <code>cos (60) ;</code> delivers (0.5)
Tangent	Delivers the tangent of a physical value. Syntax: <code>tan( &lt;PhysicsValue&gt; );</code> Example: <code>tan (45) ;</code> delivers (1)
ArcSine	Delivers the arc sine of a physical value. Syntax: <code>asin( &lt;PhysicsValue&gt; );</code> Example: <code>asin(-0.5) ;</code> delivers (30 cent.)
ArcCosine	Delivers the arc cosine of a physical value. Syntax: <code>acos( &lt;PhysicsValue&gt; );</code> Example: <code>acos (-0.5) ;</code> delivers (120 cent.)
ArcTangent	Delivers the arc tangent of a physical value. Syntax: <code>atan( &lt;PhysicsValue&gt; );</code> Example: <code>atan(1) ;</code> delivers (45 cent.)
Exp	Raise to a power of base e of a physical value. This is the inverse function of the natural logarithm. Syntax: <code>exp( &lt;PhysicsValue&gt; );</code> Example: <code>exp (1) ;</code> delivers e (2.718282...) <code>exp (2) ;</code> delivers (7.3890...)
lif	This template equals the Short If-statement. <code>lif(cond,extrue,exfalse)</code> – depending on the condition this function will return the <code>expTrue</code> or the <code>expFalse</code> value. The result of the example is: delivers 5, if <code>a==b</code> is true and delivers 10 if <code>a==b</code> is false.

	<p>Syntax: <code>iif( Boolean, &lt;PhysicsValue&gt;, &lt;PhysicsValue&gt; );</code></p> <p>Example: <code>iif(a ==b, 5, 10);</code></p>
Logarithm	<p>Delivers the logarithm with base 10 of a physical value.</p> <p>Syntax: <code>log( &lt;PhysicsValue&gt; );</code></p> <p>Example: <code>log(10);</code> delivers (1) and <code>log(100);</code> delivers (2)</p>
NaturalLogarithm	<p>Delivers the natural logarithm of a physical value.</p> <p>Syntax: <code>ln( &lt;PhysicsValue&gt; );</code></p> <p>Example: <code>ln(86);</code> delivers (4,454347)</p>
SquareRoot	<p>Delivers the square root of a physical value.</p> <p>Syntax: <code>sqrt( &lt;PhysicsValue&gt; );</code></p> <p>Example: <code>sqrt(16);</code> delivers (4)</p>
Random	<p>Delivers a random value between 0 and 1. The random function must have no value (empty parenthesis).</p> <p>Syntax: <code>random();</code></p> <p>Example: <code>random();</code> delivers e.g. 0.20208605670555102</p>
Int	<p>Converts a Physical Value or a String Value with a number in it to an integer value.</p> <p>Syntax: <code>Int( source &lt;PhysicsValue/StringValue&gt; );</code></p> <p>Example: <code>Int("123");</code> delivers (123)</p> <p><code>Int(12.32434{+-0.0,Mass});</code> delivers (12)</p>

## Control Structure Templates

Control flow statements are used to control the order in which the statements are executed.

Template	Description
IF Statement	<p>The <i>if</i> statement checks a condition and if the condition is true, the <i>if</i> statement block is executed. The <i>else</i> statement is executed if the <i>if</i> condition is not true.</p> <p>Syntax: <code>if (&lt;EXPRESSION&gt;)</code>  <code>{ &lt;STATEMENTS&gt; } //executed if expression is true</code>  <code>else</code>  <code>{ &lt;STATEMENT&gt; } //executed if expression is false</code></p> <p>Example: <code>N=50; K=0;</code>  <code>if (N &gt; 24) {</code>  <code>z = 3*N;</code>  <code>K = 90*N/z;}</code>  <code>else {</code>  <code>K = 1;</code>  <code>}</code></p>
FOR Loop	<p>The <i>for</i> statement provides a compact way to iterate over a range of values. The general form of the <i>for</i> statement can be expressed like this: <code>for (initialization; termination; increment) { statement(s) }</code></p>

	<pre> } Syntax:   for ( &lt;FORINITLST&gt;;            &lt;EXPRESSION&gt;;            FORUPDLST)            { &lt;STATEMENT&gt; } Example:  a=0; b=1;            for ( i=1; i &lt; 9; i++) {              a = b + I;              print(a); print("\n"); } </pre>
DO Loop	<p>Executes a statement block once, and then repeats the execution of the loop until a condition expression evaluates to false. The value of the expression is not checked until after the first iteration of the loop, guaranteeing that the loop is executed at least once. Thereafter, it is checked after each succeeding iteration of the loop.</p> <pre> Syntax:   do { &lt;STATEMENT&gt; } // the statement to be executed            if expression is true.            while            (&lt;EXPRESSION&gt;); // if expression is true, the loop is                            executed again. If expression is                            false, the loop is terminated. Example:  a=0; b=1; i=1;            do {              i++; a = b + i;              print(a); print("\n");            } while            i &lt; 9; </pre>
WHILE Loop	<p>The <i>while</i> statement checks <i>expression</i> before a loop is first executed. If <i>expression</i> is <i>false</i> at this time, the loop is never executed.</p> <pre> Syntax:   while (&lt;EXPRESSION&gt; )            { &lt;STATEMENT&gt; } Example:  a=0; b=1; i=1;            while (i &lt; 9) {              i++;              a = b + i;              print(a); print("\n");            } </pre>

## Specific Function Templates

Template	Description
<i>GetTechInfo</i>	<p>The <i>GetTechInfo()</i> statement is useful for getting technical information from objects, such as their technical IDs.</p> <p>Syntax: <i>Get TechInfo( Source (consumption/Text/Number), Mode(Number/Text));</i></p> <p>Arguments:</p>



*Get TechInfo for the Task Scripting*

*Source* The technical information sources as text, number or consumption.  
*Mode* The mode for the attribute as number as well as text.

Possible attributes for *Mode* are:

**Number / Text**

- 1 / "DOMAIN\_ID" needs consumption as source and returns a domain's ID, for example a Facility ID.
- 2 / "CONSUMPTION\_ID" needs consumption as source and returns the consumption technical ID.

Example: `ID = GetTechInfo(C_tech, "CONSUMPTION_ID");`

- 3 / "CONSUMPTION\_BATCH" Needs consumption as source and return the batch name of the consumption
- 4 / "CONSUMPTION\_MATERIAL\_ID" Needs consumption as source and return the material ID the consumption is bound to
- 5 / "MATERIAL\_ID\_BY\_NAME" Needs a material name as source and return the material ID
- 6 / "FACILITY\_ID\_BY\_NAME" Needs a facility name as source and return the facility ID
- 7 / "FACILITY\_PARENT\_ID\_BY\_TYPE" Needs a facility technical ID or a facility name as String as source and returns the parent facility ID
- 8 / "FACILITY\_SUBORDINATES" Needs a facility technical ID or a facility name as String as source and return a list with all child facilities

Example: You can use the number or the text to get the facility ID.

```
A = GetTechInfo( "MyPlant", "FACILITY_ID_BY_NAME" );
```

is identical to:

```
A = GetTechInfo( "MyPlant", 6 );
```

This functionality is available inside the *Task Scripting* area.


The GetTechInfo function was improved to retrieve technical exception IDs by a given facility ID and an optional exception status. The function retrieves one or more IDs as an IntegerValue or as a VectorValue list. If no exception could be found, the function retrieves an empty VectorValue list.


Syntax: `GetTechInfo( Facility_ID ( number), "EXCEPTION_ID_BY_FACILITY_ID" [, "New" | "In Process" | "Completed"]]);`


Arguments:


- Facility\_ID* The technical facility ID of the facility objects.
- EXCEPTION\_ID\_BY\_FACILITY\_ID* The technical exception ID of the given facility.
- "New"* The status of an exception (optional).
- "In Process"* The status of an exception (optional).

	<p><i>“Completed”</i> The status of an exception (optional).</p> <p>To retrieve the exception ID use:  Syntax: GetTechInfo(_tech, “MASTER_EXCEPTION_ID”);        _<i>tech</i>          The system variable is needed to receive information defined in <i>Mode</i>.  MASTER_EXCEPTION_ID                            ID of the Master Exception.</p> <p>To retrieve the task ID use:  Syntax: GetTechInfo(_tech, “MASTER_TASK_ID”);        _<i>tech</i>          The system variable is needed to receive information defined in <i>Mode</i>.  MASTER_TASK_ID                            The ID of the Master Task.</p>
<i>GetConsumValue</i>	<p>With the <i>GetConsumValue()</i> statement, a variable value is created as PhysicalValue.</p> <p>Syntax: GetConsumValue( Facility_ID(Number), Mat_ID (Number), [From_Date (Time), To_Date (Time), Unit (Text), “uncalced”, “locked”, “maximum”, “minimum”, “average”, “sum”, [“subordinates”] );</p> <p>Arguments:</p> <p>      <i>Facility_ID</i>      The technical facility ID of the facility objects.</p> <p>      <i>Mat_ID</i>          The technical material ID of the consumed material.</p> <p>      <i>From/To_Date</i>  A filter for the time range for the consumption (optional). Without a time range the system delivers all consumptions.  Example: #2005.12.01 00:00:00#</p> <p>      <i>Unit</i>           The consumptions unit (optional). The system converts to the SI unit by default.</p> <p>      <i>“uncalced”</i>      A filter for uncalculated consumptions (optional).</p> <p>      <i>“locked”</i>        A filter for locked consumptions (optional). This filter works for consumption task entries. If the task is in work, the task is locked.</p> <p>      <i>“maximum”</i>      The maximum consumption value (optional).</p> <p>      <i>“minimum”</i>      The minimum consumption value (optional).</p> <p>      <i>“average”</i>      The average consumption value (optional).</p> <p>      <i>“sum”</i>           The sum of consumption values (optional).</p> <p>      <i>“Subordinates”</i>  Includes also the subordinate facilities (optional)</p> <p>Examples: <i>e = GetConsumValue(1000885, 1000746) ;</i>  delivers:  18.11{+-0.0, MASS, , #2005.12.01 00:00:00#, #2005.12.01 00:00:00#}  Delivers the maintained consumptions without restrictions. For the example above, this consumption is maintained with no uncertainty. The system delivers the time frame of consumption as default.</p>

	<pre>E= GetConsumValue(1000885, 1000746, "", "", "g", "uncalced","locked");</pre> <p>Delivers:</p> <pre>[18110.0{+-0.0, MASS, , #2005.12.01 00:00:00#, #2005.12.01 00:00:00#}, 1.2E7{+-0.0, MASS, , #2005.12.04 00:00:00#, #2005.12.04 00:00:00#}]</pre> <p>For the time frame, placements characters (double quotation marks) are placed – this means there is no filter for time frame. The consumption value's unit is converted to grams, and the filter is set for uncalculated and locked consumptions. The second consumption results from a locked consumption entry caused by a consumption task in work.</p> <p> <b>Note:</b> Optional parameter can be used also as "". E.g.: <code>GetConsumValue(1000885, 1000746, "", "", "g", "", "locked");</code></p>
<p><i>GetConsumParam</i></p>	<p>With the <i>GetConsumParam()</i> statement, a consumption parameter can be referenced. This statement needs a consumption (C_tech) to get access to their single parameters or their parameter sets.</p> <p>Syntax: <code>GetConsumParam( Consumption (consumption) [Parameter Name (text), Unit (text)];</code></p> <p>Arguments:</p> <p><i>Consumption</i> A consumption obtained by the <i>GetConsumValue()</i> statement or a consumption like the default C in the equation builder view.</p> <p><i>Parameter Name</i> The reference ID of the consumption parameter labeled in the parameter view.</p> <p><i>Unit</i> The result unit of the parameters.</p> <p><u>Example 1:</u></p> <pre>//READ alls consumes = GetConsumValue( 1000885, 1000746 ); for ( i=0; i&lt;consumes.length; i++ ) {   consum = consumes[i];   param = GetConsumParam( consum, "ATCP" );   print ( "consumption: " );   print( consum );   print ("\n");   print (param); print("\n"); }</pre> <p>Delivers:</p> <pre>consumption: 18.11{+-0.0, MASS, , #2005.12.01 00:00:00#, #2005.12.01 00:00:00#} 12300.0{+-0.0, MASS} consumption: 750.0{+-0.0, MASS, , #2005.12.05 00:00:00#, #2005.12.05 00:00:00#} [] // an empty array for consumption parameter</pre> <p>For the first consumption, a consumption parameter is maintained with the value of 12300 kg (SI). The second consumption shows an empty array, because this consumption has no consumption parameter.</p> <p><u>Example 2:</u></p>

	<pre>//Read all parameter from the current consumption value PARAMS = GetConsumParam( C_tech );</pre> <p><u>Example 3:</u> //Read parameters from parameter "PARAM_NAME" from the current consumption value</p> <pre>PARAMS = GetConsumParam( C_tech, "PARAM_NAME" );</pre>
<i>GetCtrlEff</i>	<p>With the <i>GetCtrlEff()</i> statement a variable value is created with the control efficiency for the facility.</p> <p>Syntax: <code>GetCtrlEff(Facility_ID(Number) [Mat_ID (Number)]);</code></p> <p>Arguments:</p> <ul style="list-style-type: none"> <li><i>Facility_ID</i> The technical facility ID of the control device objects.</li> <li><i>Mat_ID</i> The technical material ID of the emission material (optional).</li> </ul> <p>Example: <code>CtrlEff = GetCtrlEff(1001095, 1000005);</code> <code>print(CtrlEff);</code></p> <p>Delivers the control efficiency, for example, the following value 98.0 (reduction of an emission of 98.0%).</p>
<i>GetEmissionValue</i>	<p>With the <i>GetEmissionValue()</i> statement, a variable value is created with the emission value.</p> <p>Syntax: <code>GetEmissionValue(Facility_ID(Number) Mat_ID (Number) [From_Date (Time) To_Date(Time), Unit(Text), "notfiltered", "success"]);</code></p> <p>Arguments:</p> <ul style="list-style-type: none"> <li><i>Facility_ID</i> The technical facility ID of the facility objects.</li> <li><i>Mat_ID</i> The technical material ID of the consumption material.</li> <li><i>From/To_Date</i> A filter for the time range for the emission Without a time range the system delivers all emissions. (optional)</li> <li><i>Unit</i> The unit of the emission. (optional)</li> <li><i>"notfiltered"</i> This option delivers the uncontrolled amount of the emission. (optional)</li> <li><i>"success"</i> This option accepts only successfully calculated calculations. They are marked by a green . (optional)</li> </ul> <p>Example: <code>emission=GetEmissionValue(1001105,1100148);</code> <code>print (emission);</code></p> <p>Delivers: <code>[5.0{+-0.0, MASS, , #2005.09.08 00:00:00#, #2005.09.08 00:00:00#},...]</code></p> <p>The system delivers a <i>VectorValue</i> that contains all emissions for the controlled amounts. If there is only one emission, the system delivers a single <i>PhysicalValue</i>. If the system does not find any values, it returns an empty <i>VectorValue</i>[].</p> <p>Example for checking if the return of the function is an array or a physical value:</p> <pre>if (Var.isArray) { // loop over all entries of the vector and sum them for ( i = 0; i &lt; Var.length;i ++ ) {</pre>

	<pre> temp = Var[i]; sum = sum + temp; } } else { // the variable isn't even a vector --&gt; sum = content of the variable sum = Var; } </pre>
<p><i>GetEmissionValueExtd</i></p>	<p>With the <i>GetEmissionValueExtd()</i> statement, a variable value is created with the emission value.</p> <p>Syntax: <code>GetEmissionValueExtd( facility_id(id)/[List of ids]/-1 {if not needed}, material_id(id)/[List of ids]/-1 {if not needed}, emission_material_id/[List of ids]/-1 {if not needed}, [from_date(date_time)], [to_date(date_time)], [unit(text)], ["notfiltered"], ["success"], ["sum "average "minimum "maximum"], ["subordinates"] );</code></p> <p>Arguments:</p> <p><i>Facility_ID</i> The technical facility ID of the facility objects.</p> <p><i>Mat_ID</i> The technical material ID of the consumption material.</p> <p><i>Emission_material_ID</i> The technical emission material ID</p> <p><i>From/To_Date</i> A filter for the time range for the emission Without a time range the system delivers all emissions. (optional)</p> <p><i>Unit</i> The unit of the emission. (optional)</p> <p><i>"notfiltered"</i> This option delivers the uncontrolled amount of the emission. (optional)</p> <p><i>"success"</i> This option accepts only successfully calculated calculations. They are marked by a green . (optional)</p> <p><i>"Aggregation"</i> sum, average, minimum, maximum of the result list (optional)</p> <p><i>"Subordinates"</i> Includes also the subordinate facilities (optional)</p> <p>Example1:  <pre> emission=GetEmissionValueExtd(1001105,1100148); print (emission); </pre> </p> <p>Example2:  <pre> emission=GetEmissionValueExtd ([1001105,1000268] , -1, 1100148); print (emission); </pre> </p> <p>delivers:  <pre> [5.0{+-0.0, MASS, , #2005.09.08 00:00:00#, #2005.09.08 00:00:00#},...] </pre> </p> <p>The system delivers a <i>VectorValue</i> that contains all emissions for the controlled amounts. If there is only one emission, the system delivers a single <i>PhysicalValue</i>. If the system does not find any values, it returns an empty <i>VectorValue</i>[].</p> <p>Note: The parameters <i>Facility_ID</i>, <i>Mat_ID</i> and <i>Emission_material_ID</i> can be a single ID, a ID list or -1. -1 means return all values without any filter. The list of IDs has to be within [], for example [1001105,1000268] .</p>

	<p>Example for checking if the return of the function is an array or a physical value:</p> <pre> if (Var.isArray) {   // loop over all entries of the vector and sum them   for ( i = 0; i &lt; Var.length;i ++ ) {     temp = Var[i];     sum = sum + temp;   } } else {   // the variable isn't even a vector --&gt; sum = content   // of the variable   sum = Var; } </pre>
<p><i>GetEmissionValueByTime</i></p>	<p>With the function <i>GetEmissionValueByTime()</i> you can read emissions within a day.</p> <p>Syntax:  <i>GetEmissionValueByTime( facility_id(id), material_id(id), emission_material_id(id), [from_date(date and time)], [to_date(date and time)], [unit(text)], ["notfiltered"], ["success"], ["sum" "average" "minimum" "maximum" "last"], ["subordinates"] );</i></p> <p>Arguments:</p> <p><i>facility_ID</i> The technical facility ID of the facility objects.</p> <p><i>material_id</i> The technical material ID of the consumption material.</p> <p><i>emission_material_ID</i> The technical emission material ID</p> <p><i>From/To_Date</i> A filter for the time range for the emission  Without a time range the system delivers all emissions. (optional)</p> <p><i>Unit</i> The unit of the emission. (optional)</p> <p><i>"notfiltered"</i> This option delivers the uncontrolled amount of the emission. (optional)</p> <p><i>"success"</i> This option accepts only successfully calculated calculations. They are marked by a green . (optional)</p> <p><i>"Aggregation"</i> sum, average, minimum, maximum of the result list (optional)</p> <p><i>"Subordinates"</i> Includes also the subordinate facilities (optional)</p> <p><b>Example1 (Reading emissions with aggregation "last")</b>  <pre> EMIS = GetEmissionValueByTime( &lt;ID&gt;, &lt;ID&gt;, &lt;ID&gt;, C.from, C.to, "", "", "", "last"); if (EMIS.isArray) {   // Handling of data that is not found   // Example: [] } else {   // Processing of the valid data record "EMIS" } </pre></p> <p><b>Example 2 (Reading with aggregation "last")</b>  <pre> EMIS = GetEmissionValueByTime( &lt;ID&gt;, &lt;ID&gt;, &lt;ID&gt;, C.from, </pre></p>

	<pre> C.to, "", "", "", ""); if (EMIS.isArray) {   if (EMIS.length == 0)   {     // Handling of data that is not found     // Example: []   }   else   {     // Processing of several data records     //Example: [30000.0{+-0.0, MASS, 1002101, #2014.01.01 00:00:00#, #2014.01.01 00:00:00#}, 33000.0{+-0.0, MASS, 1002101, #2015.01.01 00:00:00#, #2015.01.01 00:00:00#}]   } } else {   // Processing of a valid data record   // Example: 40000.0{+-0.0, MASS, 1002101, #2015.04.07 11:33:08#, #2015.04.07 11:33:08#} } </pre>
<p><b>GetFacilityParam</b></p>	<p>With the <i>GetFacilityParam()</i> statement, a variable value is created with the facility parameter values. This variable could be a <i>PhysicalValue</i> or a vector value. A <i>VectorValue</i> contains several <i>PhysicalValues</i> if the parameter contains a parameter set.</p> <p>Syntax: <i>GetFacilityParam</i>( FacilityId (Number), ParameterID (Text), [Unit (Text), CutOffDate(Date)])</p> <p>Arguments: <i>FacilityId</i> is the technical facility ID</p> <p style="padding-left: 40px;"><i>ParameterId</i> is the ID in the parameter view</p> <p style="padding-left: 40px;"><i>Unit</i> specifies the unit of a given value (is optional for unit conversion)</p> <p style="padding-left: 40px;"><i>CutOffDate</i> The date when the parameter is valid (optional).</p> <p>If the parameter is split, then the cutoff date (referred to as 'split date' in the application) finds the valid parameter for the requested date. When the parameter is not set, then the system reads the facility parameter by the actual date.</p> <p>With the optional parameter <i>Unit</i>, you can define a unit conversion.</p> <p>The possibilities for using this parameter are:</p> <p style="padding-left: 40px;">No unit given: Return value is converted to SI unit from default unit</p> <p style="padding-left: 40px;">Unit given: Return value is converted to given unit</p> <p><b>Examples: <code>facPara = GetFacilityParam("1000984", "AFP2");</code></b>  <b><code>print(facPara);</code></b></p> <p style="padding-left: 40px;">Delivers a <i>PhysicalValue</i> such as: <code>777000.0{+-0.0, MASS}</code></p> <p>The facility with the facility ID (1000984) and the parameter reference ID (AFP2) are maintained with the quantity of 777t (tons). The system delivers this value in the SI unit (777 000kg); the uncertainty is (0.0) and the dimension is mass.</p> <p>Using a parameter set delivers the following <i>VectorValue</i>:</p> <p style="padding-left: 40px;"><b><code>facPara = GetFacilityParam("1000984", "AFAPARASET");</code></b></p>

	<pre>print (facPara) ;</pre> <p>Delivers:</p> <pre>[22000.0{+-0.0, MASS, 1000936}, 4000.0{+-0.0, MASS, 1101097}]</pre> <p>The <i>VectorValue</i> delivers all materials of the parameter set as <i>PhysicalValue</i>. In this example, the parameter set contains two materials. In addition, every <i>PhysicalValue</i> contains the material ID.</p> <p>Example for checking if the return of the function is an array or a physical value:</p> <pre>if (Var.isArray) {   // loop over all entries of the vector and sum them   for ( i = 0; i &lt; Var.length;i ++ ) {     temp = Var[i];     sum = sum + temp;   } } else {   // the variable isn't even a vector --&gt; sum = content   // of the variable   sum = Var; }</pre>
<p><i>GetMatParam</i></p>	<p>With the <i>GetMatParam()</i> statement, a variable value is created with the material parameter values. This variable could be a <i>PhysicalValue</i> or a <i>VectorValue</i>. A <i>VectorValue</i> contains several <i>PhysicalValues</i> if the parameter contains a parameter set.</p> <p>Syntax: <i>GetMatParam</i>( <i>MaterialId</i> (Number), <i>ParameterId</i> (Text), [<i>Unit</i> (Text)], [<i>cutoff_date</i>(Date)])</p> <p>Arguments: <i>MaterialId</i> is the technical material ID</p> <p><i>ParameterId</i> is the ID in the parameter view</p> <p><i>Unit</i> specifies the unit of a given value (is optional for unit conversion)</p> <p><i>CutOffDate</i> is the date when a material parameter is valid (optional).</p> <p>With the optional parameter <i>Unit</i>, you can define a unit conversion.</p> <p>The possibilities for using this parameter are:</p> <p>No unit given: Return value is converted to SI unit from default unit</p> <p>Unit given: Return value is converted to given unit</p> <p><b>Examples:</b> <code>e = GetMatParam(1101512, „999“);</code></p> <p>Delivers a <i>PhysicalValue</i> like: <code>5000.0{+-0.0, MASS}</code></p> <p>The material with the material ID (1101512) and the parameter reference ID (999) is maintained with the quantity of 5t (tons). The system delivers this value in the SI unit (5000kg), the uncertainty is (0.0), and the dimension is mass.</p> <p>Using a parameter set delivers the following <i>VectorValue</i>:</p> <pre>e = GetMatParam(1101512, "99");</pre> <p>Delivers:</p> <pre>[3000.0{+-0.0, MASS, 1000191}, 4000.0{+-0.0, MASS, 1101097}]</pre> <p>The <i>VectorValue</i> delivers all materials of the parameter set as <i>PhysicalValue</i>. In this example, the parameter set contains two materials.</p>



	<p>In addition, every physical value contains the material ID.</p> <p>Using the optional parameter <i>Unit</i> for unit conversion:</p> <pre>e=GetMatParam(1101512, „99“, „g“);</pre> <p>Delivers:</p> <pre>[3000000.0{+-0.0, MASS, 1000191}, 4000000.0{+-0.0, MASS, 1101097}]</pre> <p>In this case, the maintained unit (t) is converted into (g). The first value, for example, is maintained with (3t), which is converted into 3,000,000g.</p>
<p><i>GetMeasurement</i></p>	<p>Use this statement to get a measurement value. With the <i>GetMeasurement()</i> statement, a variable value is created as <i>PhysicalValue</i>.</p> <p>Syntax: <i>GetMeasurement</i>( <i>Facility_ID</i>(Number), <i>Mat_ID</i> (Number), [ <i>From_Date</i> (Time), <i>To_Date</i> (Time), <i>Unit</i> (Text), <i>VALUE_TYPE</i> (List of Value Identifier as text)]);</p> <p>Arguments:</p> <p><i>Facility_ID</i> The technical facility ID of the facility objects.</p> <p><i>Mat_ID</i> The technical material ID of the material.</p> <p><i>From/To_Date</i> A filter for the time range for the measurement (optional). Without a time range the system delivers all measurements.</p> <p><i>Unit</i> The unit of the measurement (optional).</p> <p><i>VALUE_TYPE</i> The List of Value identifier of the Facility Value types as text (optional).</p> <p>Example: <pre>measurement=GetMeasurement (1001105, 1100148); print (measurement);</pre></p> <p>delivers:</p> <pre>[0.4{+-0.0, MASS}, 1.34{+-0.0, MASS}, ...]</pre> <p>The system delivers a <i>VectorValue</i> that contains all measurements for the facility and the measured material. If there is only one measurement, the system delivers a single <i>PhysicalValue</i>.</p> <p>If one of the optional parameters (<i>FROM_DATE</i>, <i>TO_DATE</i>, <i>UNIT</i> or <i>VALUE_TYPE</i>) is not needed " " (double quotation marks) must be entered.</p>
<p><i>WriteConsumParam</i></p>	<p>With the <i>WriteConsumParam()</i> statement, you can modify the parameter values of consumption parameters.</p> <p>Syntax: <i>WriteConsumParam</i>( <i>Consumption</i>(consumption), <i>Parameter Name</i> (Text), <i>Value</i>(<i>VectorValue</i>/<i>PhysicsValue</i>) [ <i>Parameter Set Mat_ID</i> (Number, -1 if not used), <i>Unit</i> (Text) ]);</p> <p>Arguments:</p> <p><i>Consumption</i> The consumption to which the parameter is assigned to.</p> <p><i>Parameter Name</i> The reference ID of the consumption parameter labeled in the parameter view.</p> <p><i>Value</i> A <i>PhysicsValue</i> for a single consumption parameter or a <i>VectorValue</i> for a consumption parameter set.</p> <p><i>ParameterSet Mat_ID</i> The material ID of the material contained</p>

	<p>in the parameter set.</p> <p><i>Unit</i> The unit for the consumption parameter (optional).</p> <p>Example: <code>FaciId = 1000017;</code>  <code>FlueGasMatId = 1000034;</code>  <code>consums = GetConsumValue ( FaciId,FlueGasMatId</code>  <code>);</code>  <code>for ( i=0; i&lt;consums.length; i++ ) {</code>  <code>consum = consums[i];</code>  <code>param = GetConsumParam( consum, "NOX" );</code>  <code>WriteConsumParam(consum,"NOX",0.0314 ); }</code></p> <p>Updates all consumption's consumption parameter with the value 0.0314.</p>
<i>WriteConsumValue</i>	<p>With the <i>WriteConsumValue()</i> statement, you can modify the values of consumptions.</p> <p>Syntax: <code>WriteConsumValue( Facility ID(Number), Material ID (Number), From(DateValue), To (DateValue), BatchName(Text), Tier(Text), Value (PhysicsValue), [Unit (Text) ]);</code></p> <p>Arguments:</p> <p><i>Facility_ID</i> The technical facility ID of the facility objects.</p> <p><i>Mat_ID</i> The technical material ID of the material.</p> <p><i>From/To_Date</i> A DateValue for consumptions time range.</p> <p><i>BatchName</i> The batch name for the consumption.</p> <p><i>Tier</i> The consumption tier (measured, calculated, or estimated). Enter the List Of Value Identifier KEY (FAC_METHOD_CALC, FAC_METHOD_ESTIMATE, FAC_METHOD_MEASURED, etc.)</p> <p><i>Value</i> The consumption value as PhysicsValue.</p> <p><i>Unit</i> The unit for the consumption parameter (optional).</p> <p>Example: <code>WriteConsumValue(1001105, 1100148,</code>  <code>#2005.12.11 00:00:00#, #2005.12.11 00:00:00#,</code>  <code>"Test", "FAC_METHOD_CALC", 23{+-0.0,Mass}, "g");</code></p> <p>Writes a consumption record of 23 gram and the defined details to the facility's consumption.</p>
<i>WriteMatParam</i>	<p>With the <i>WriteMatParam()</i> statement, you can modify the parameter values of material parameters. Depending on whether the parameter is a simple parameter with a single value or a parameter set, different kind of values can be handed over.</p> <p>Syntax: <code>WriteMatParam( Material ID(Number), ParamName(Text), Value(value) [Unit (Text), CutOffDate (Date)]);</code></p> <p><i>Material_ID</i> The material ID.</p> <p><i>ParamName</i> The parameter ID in the parameter view.</p> <p><i>Value</i> The parameter value (VectorValue or PhysicsValue).</p> <p><i>Unit</i> The material parameter's unit (optional).</p> <p><i>CutOffDate</i> The date when the parameter is valid (optional).</p> <p>Example: <code>WriteMatParam(1100148, "Mat_param1", 44{+-</code>  <code>0.0,Mass}, "kg");</code></p> <p>Returns a material parameter for the chosen material.</p>

<p><i>WriteFacilityParam</i></p>	<p>With the <i>WriteFacilityParam()</i> statement, you can modify the parameter values of facility parameters. Depending on whether the parameter is a simple parameter with a single value or a parameter set, different kind of values can be handed over.</p> <p>Syntax: <code>WriteFacilityParam( Facility ID(Number), Parameter ID(Text), Value(VectorValue/PhysicsValue) [Unit (Text), CutOffDate (Date)]);</code></p> <p><i>Material_ID</i>     The material ID.</p> <p><i>ParamName</i>     The parameter ID in the parameter view.</p> <p><i>Value</i>            The parameter value (VectorValue or PhysicsValue).</p> <p><i>Unit</i>             The facility parameter's unit (optional).</p> <p><i>CutOffDate</i>     The date when the parameter is valid. When the split date is set, then the system splits the available parameter in the system. If the facility has no facility parameter, then the function inserts a parameter without validity split. If a parameter exists and the parameter has no split for the requested split date, then the function splits the parameter at the split date and changes only the value after the split date.</p> <p>Example 1: <code>WriteFacilityParam(1000984, "AFP2", 777{+-0.0,MASS} );</code></p> <p>Example 2: <code>WriteFacilityParam(1000984, "AFP2", 777{+-0.0,MASS}, "val", #2005.01.01# );</code></p> <p>Writes back a facility single parameter.</p>
<p><i>CreateException</i></p>	<p>With the <i>CreateException()</i> statement, you can create an exception.</p> <p>Syntax: <code>CreateException( Type(Text), Description(Text), Facility_ID(Number) [StartDate (DateValue)]);</code></p> <p><i>Type</i>             The text of the exception type used in the list of values, e.g. EXL_TYPE_OIL_SPILL to create an oil spill.</p> <p><i>Description</i>     The exception's description text.</p> <p><i>Facility_ID</i>     The facility's ID where the exception happens.</p> <p><i>StartDate</i>      The date when the exception starts (optional).</p> <p>Example: <code>CreateException("EXL_TYPE_OIL_SPILL ", "I am an exception...", 1003268, #2006.06.03#);</code></p> <p>Creates an exception for the facility with the ID 1003268 and the optional start date.</p>
<p><i>GetUDFData</i></p>	<p>With the <i>GetUDFData()</i> statement, you can get the information from the user-defined fields.</p> <p>Syntax: <code>GetUDFData(Domain(Text), Domains ID(Number), UDFField Name(Text)), [Unit (Text)]</code></p> <p><i>Domain</i>          The domain where the user-defined field is created for (Facility, Task, and Exception).</p> <p><i>Domains Id</i>      For the domains, enters the technical ID of the object, e.g. the facility ID, exception ID or the task ID.</p> <p><i>UDFField Name</i>   The field name of the assigned element. You can find the name in Customizing → User-Defined Fields → column Assigned Element.</p> <p><i>Unit</i>             specifies the unit of a given value (is optional for unit</p>

	<p>conversion)</p> <p>With the optional parameter <i>Unit</i> , you can define a unit conversion.</p> <p>The possibilities for using this parameter are:</p> <p style="padding-left: 40px;">No unit given: Return value is converted to SI unit from default unit</p> <p style="padding-left: 40px;">Unit given: Return value is converted to given unit</p> <p>Example: <code>A = GetUDFData("Exception", 1002658, "UDF-Test");</code>  <code>print( A );</code></p> <p>Delivers the value of the UDF-Test field. Depending on the field's definition, the return value can be a physical value, e.g. 1234.0, a text, a pick list, or a boolean value.</p> <p>If you have used the same field name two times for e.g. two different tabs, the system delivers an array that contains both values.</p>
<i>WriteMeasurement</i>	<p>With the <i>WriteMeasurement ()</i> statement, you can create a new measurement within a facility.</p> <p>Syntax:</p> <pre>WriteMeasurement (   Facility ID (Number),   Material ID (Number),   Type (text),   Value (PhysicsValue),   [Date(DateValue)],   [unit(text)],   [description (text)]);</pre> <p>Arguments:</p> <p style="padding-left: 40px;"><i>Facility_ID</i> The technical facility ID of the facility objects.</p> <p style="padding-left: 40px;"><i>Mat_ID</i> The technical material ID of the material.</p> <p style="padding-left: 40px;"><i>Type</i> List of Value key of the Measurement Value Types</p> <p style="padding-left: 40px;"><i>Value</i> The measurement value as PhysicsValue.</p> <p style="padding-left: 40px;"><i>Date</i> A DateValue for measured date (optional).</p> <p style="padding-left: 40px;"><i>Unit</i> The unit for the consumption parameter (optional).</p> <p style="padding-left: 40px;">Description (optional).</p> <p>Example: <code>WriteMeasurement ( 1003530, 1003047, "EM_VALUE_TYPE_MASS", x, #2005.08.08 00:00:00#, "kg", "SAMPLE" );</code></p> <p>Available measurement value types:</p> <ul style="list-style-type: none"> <li>- Volume → EM_VALUE_TYPE_VOL</li> <li>- Temperature → EM_VALUE_TYPE_TEMP</li> <li>- Mass → EM_VALUE_TYPE_MASS</li> <li>- Concentration → EM_VALUE_TYPE_CONC</li> </ul> <p>You can add new Measurement value types in the Configuration of SAP EC List of Values management</p>
<i>Error</i>	<p>With the <i>Error()</i> statement, you can abort the current calculation by raising a manual error.</p> <p>Syntax:</p> <pre>Error ();</pre> <p>Example (Calculation is aborted as long as no emissions are read);</p>

	<pre> E = GetEmissionValue(1000056, 1006578); if (E.isArray) {   if (E.length == 0)   {     //Empty Array     Error();   }   else   {     //ok → Array has values     for... //loop over all array elements   } } else {   //single value   x = E; } </pre>																								
<p><i>WriteConsumAttribute</i></p>	<p>With the <i>WriteConsumAttribute()</i> statement, you can (over)write SAP EC Consumption properties of the following types.</p> <table border="0"> <tr> <td>FROM_DATE</td> <td>Consumption start date</td> </tr> <tr> <td>TO_DATE</td> <td>Consumption end date</td> </tr> <tr> <td>AMOUNT</td> <td>Amount</td> </tr> <tr> <td>UNIT</td> <td>Unit</td> </tr> <tr> <td>METHOD</td> <td>Calculation Method (List of Value Key)</td> </tr> <tr> <td>UNCERTAINTY</td> <td>value 0 to 99</td> </tr> <tr> <td>CALCULATE</td> <td>New Calculation Boolean Flag</td> </tr> <tr> <td>VALIDATED</td> <td>Validation Flag</td> </tr> <tr> <td>COMMENT</td> <td>Comment</td> </tr> </table> <p>Syntax:</p> <pre> WriteMeasurement(   Consumption ID (Number),   Type (String),   Value (Depends on Type)); </pre> <p>Arguments:</p> <table border="0"> <tr> <td><i>Consumption_ID</i></td> <td>The technical consumption ID.</td> </tr> <tr> <td><i>Type</i></td> <td>String value</td> </tr> <tr> <td><i>Value</i></td> <td>See the Examples</td> </tr> </table> <p>Example:</p> <pre> WriteConsumAttribute(C_tech, "FROM_DATE", #2005.08.08 00:00:00#); WriteConsumAttribute(C_tech, "TO_DATE", #2005.08.09 00:00:00#); WriteConsumAttribute(C_tech, "AMOUNT", 10.0); WriteConsumAttribute(C_tech, "UNIT", "t"); WriteConsumAttribute(C_tech, "METHOD", "FAC_METHOD_CALC"); WriteConsumAttribute(C_tech, "UNCERTAINTY", 0.5); WriteConsumAttribute(C_tech, "CALCULATE", 1); WriteConsumAttribute(C_tech, "VALIDATED", 1); WriteConsumAttribute(C_tech, "COMMENT", "Test"); </pre>	FROM_DATE	Consumption start date	TO_DATE	Consumption end date	AMOUNT	Amount	UNIT	Unit	METHOD	Calculation Method (List of Value Key)	UNCERTAINTY	value 0 to 99	CALCULATE	New Calculation Boolean Flag	VALIDATED	Validation Flag	COMMENT	Comment	<i>Consumption_ID</i>	The technical consumption ID.	<i>Type</i>	String value	<i>Value</i>	See the Examples
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	<p>METHOD            Calculation Method (List of Value Key)  UNCERTAINTY        value 0 to 99  CALCULATE           New Calculation Boolean Flag  VALIDATED           Validation Flag  COMMENT             Comment  LOCKED              If it is locked for Tasks  TASK                 Task ID  EQUATION            Equation Id  RELEASE_STATUS    Release Status</p> <p>Syntax:  <i>GetConsumAttribute</i> (  Consumption ID (Number),  Type (String));</p> <p>Arguments:  <i>Consumption_ID</i>    The technical consumption ID.  <i>Type</i>                String value</p> <p><b>Example:</b>  <pre> from = GetConsumAttribute( C_tech, "FROM_DATE"); to = GetConsumAttribute( C_tech, "TO_DATE"); amount = GetConsumAttribute( C_tech, "AMOUNT"); unit = GetConsumAttribute( C_tech, "UNIT"); method = GetConsumAttribute( C_tech, "METHOD"); uncertainty = GetConsumAttribute( C_tech, "UNCERTAINTY"); calculate = GetConsumAttribute( C_tech, "CALCULATE"); validated = GetConsumAttribute( C_tech, "VALIDATED"); comment = GetConsumAttribute( C_tech, "COMMENT"); locked = GetConsumAttribute( C_tech, "LOCKED"); task = GetConsumAttribute( C_tech, "TASK"); equation = GetConsumAttribute( C_tech, "EQUATION"); releasestatus = GetConsumAttribute( C_tech, "RELEASE_STATUS"); </pre></p>
<p><i>WriteMatAttribute</i></p>	<p>With the <i>WriteMatAttribute</i> () statement, you can (over)write SAP EC Material properties of following types.</p> <p>TYPE            Material Type  NUMBER        Material Number  CAS_ID        Material CAS ID  BASE_UNIT    BaseUnit</p> <p>Syntax:  <i>WriteMatAttribute</i> (  Material ID (Number),  Type (String),  Value);</p> <p>Arguments:  <i>Material_ID</i>        The technical Material ID.  <i>Type</i>                String value  <i>Value</i>                Value</p> <p><b>Example:</b>  <pre> WriteMatAttribute(1000002, "TYPE", "MM_TYPE_SUBSTANCE"); WriteMatAttribute(1000002, "NUMBER", "A-123"); WriteMatAttribute(1000002, "CAS_ID", "123456-78-9"); </pre></p>

	<pre>WriteMatAttribute(1000002, "BASE_UNIT", "kg");</pre>
<i>GetMatAttribute</i>	<p>With the <i>GetMatAttribute ()</i> statement, you can read SAP EC Material properties of the following types.</p> <p>TYPE        Material Type  NUMBER     Material Number  CAS_ID     Material CAS ID  BASE_UNIT BaseUnit</p> <p>Syntax:  <i>GetMatAttribute (</i>        Material ID (Number),        Type (String);</p> <p>Arguments:        <i>Material_ID</i>        The technical material ID.        <i>Type</i>                String value</p> <p><b>Example:</b>  <pre>type = GetMatAttribute( 1000002, "TYPE"); number = GetMatAttribute( 1000002, "NUMBER"); cas = GetMatAttribute( 1000002, "CAS_ID"); unit = GetMatAttribute( 1000002, "BASE_UNIT");</pre></p>
<i>GetMeasurementByTime</i>	<p>Use this statement to get a measurement value within a day. With the <i>GetMeasurementByTime()</i> statement, a variable value is created as PhysicalValue. See also SAP Note 2084587.</p> <p>Syntax: <i>GetMeasurementByTime( Facility_ID(</i>Number<i>), Mat_ID</i> (Number),        [ <i>From_Date</i> (Date and Time), <i>To_Date</i> (Date and Time), <i>Unit</i> (Text),        <i>VALUE_TYPE</i> (List of Value Identifier as text)];</p> <p>Arguments:        <i>Facility_ID</i>    The technical facility ID of the facility objects.        <i>Mat_ID</i>         The technical material ID of the material.        <i>From_Date/</i>    A filter for the time range for the measurement (optional)        <i>To_Date</i>        When the date information is the same, then the time                            information is used to get measurements within a day.                            Without a time range the system delivers all measurements.        <i>Unit</i>            The unit of the measurement (optional).        <i>VALUE_TYPE</i>    The List of Value identifier of the Facility Value types                            as text (optional).</p> <p>Example:  <pre>M1=GetMeasurementByTime(1001105,1100148 , #2005.12.01 00:00:00#, #2005.12.01 01:59:59# ); print (M1);</pre> delivers: [0.4{+-0.0, MASS}, 1.34{+-0.0, MASS}, ...]</p> <p>The system delivers a VectorValue that contains all measurements for the facility and the measured material and for the period of 2 hours. If there is only one measurement, the system delivers a single PhysicalValue.</p> <p>If one of the optional parameters (UNIT or VALUE_TYPE) is not needed " " (double quotation marks) must be entered.</p>

## Handling Return Values of the vAlgo Get Methods

The following functions have the same behavior concerning the return values during the calculation process:

- GetConsumParam
- GetConsumValue
- GetControlEff
- GetEmissionValue
- GetFacilityParam
- GetMatParam
- GetMeasurement
- GetMeasurementByTime
- GetUDFData

There are three possibilities for return values:

Possibility 1: Return one valid physical value (one return value)

Possibility 2: Return several valid physical values within a VectorValue (several return values)

Possibility 3: Empty return in an empty VectorValue (no return value)

Example of handling return values:

```
if (Var.isArray)
{
// empty return check
  if (var.length == 0){
    abort();
  }
  // loop over all entries of the vector and sum them
  for ( i = 0; i < Var.length;i ++ ) {
    temp = Var[i];
    sum = sum + temp;
  }
}
else {
  // the variable isn't even a vector -> return only one value
  sum = Var;
}
```

## Display Additional Calculation Logs

You can display calculation logs with the call EquLogger();

1. Syntax: VARIABLE = EquLogger(Text);

Example: X = EquLogger("My Consumption is:" + C);

The text of the EquLogger is saved into the emission calculation logs and can be reviewed in the emission detail popup.

2. Syntax: EquLogger(Text);

Example: EquLogger("My Consumption is:" + C);

The text of the EquLogger is displayed in the consumption calculation popup.



## Additional Functions for Scripting

The scripting application can be used to test vAlgo scripts outside the SAP EC calculation process. You can find the scripting application in the *SAP EC* → *Tools* menu.

### Note:

The “Abort()” and “Dialog()” functions cannot be used in the consumption-based calculation.

### Abort()

Syntax: Abort( Message Text );

Example: `if ( consum.length == 0 ) {  
    Abort( "There are missing consumption data for this day!" );`

Stops the script and displays the message.

### Dialog()

Syntax: Dialog( Dialog-Type, Message Text );  
Dialog-Type: CONFIRM

Example: `Dialog ( "CONFIRM", "Test" );`

Delivers a dialog window named *Test*, which includes the two push buttons *OK* and *Cancel*.

Example: `Dialog ( "FROM_TO_DATE", "Test" );`

Delivers a dialog window named *Test*, which includes the two input fields *from date* and *to date*.

Example: `Dialog ( "MONTH_DATE", "Test" );`

Delivers a dialog window named *Test*, which includes the input field *month* (returns a month always from 1<sup>st</sup> to the last day of the month).

Example: `Dialog ( "TEXT", "Test" );`

Delivers a dialog window named *Test*, which includes an input field for free text entry.

Print(): write something to the output window

Syntax: print(Variable,Text);

Example: `print("Hello World");`

### isNull()

Syntax: isNull(variable);

Example: `if ( isNull( GetMeasurement (...) ) )  
    {  
        Abort( "Could not find any Measurements.." );  
    }`

Checks if a given variable is empty (as array) or null.

## Variable Limit Check Scripting

With the introduction of scripting capabilities within SAP EC 3.0 limit checks, additional functions and language elements were also introduced to better support the needs for variable limit checking. Note

that you should use scripting only if the traditional limit check features do not provide enough functionality.

You can use the following functions when scripting variable limit checks:

### CalculateTimePeriod()

This command is used to transform a relative time period into an absolute time period.

**Syntax:** CalculateTimePeriod(object (consumption/emission/measurement),  
period(text), count(Number), period begin(test))

object	Specifies the relevant transactional object (consumption, emission or measurement) that the time period refers to. In limit checks, the current limit object variable can be used for this (C for consumption, E for emission, M for measurement). If no object is given by using an empty text "", the current server time is used.
period	Specifies the time period. Possible values are "YEARS", "MONTHS", "WEEKS" and "DAYS". These values have to be given by using quotes.
count	Specifies the number of periods to go back in time.
period begin	Specifies the starting point of the period. Possible values are "PREVIOUS" and "FROM_TODAY". These values have to be given by using quotes. If "PREVIOUS" is used, the returned period is a complete period (for example, complete month) before the time period of the given object variable. If "FROM_TODAY" is used, the period is calculated day accurate. See the examples below.

**Return value:** The command returns an array with two elements. The first element contains the start date of the period; the second element contains the end date.



#### **Example:**

Consumption C has a start date 5/10/2011 11:00:00 (that is, May, 10<sup>th</sup>, 11 a.m.).

```
CalculateTimePeriod(C,"YEARS",1,"PREVIOUS")  
returns: ([1/1/2010 12:00:00],[31/12/2010 11:59:59])
```

```
CalculateTimePeriod(C,"YEARS",1,"FROM_TODAY")  
returns: ([5/10/2010 11:00:00],[5/10/2011 10:59:59])
```

### Get...PeriodValues()

This command is used to get certain consumption, emission or measurement values for a given time range. Depending on the type of limit object where this command is used, the "..." in Get...PeriodValue has to be replaced by 'Consum', 'Emission' or 'Measurement'.

**Syntax:** GetConsumptionPeriodValues( from\_date(date\_time), to\_date(date\_time),  
[unit(text)], ["uncalcd"], ["locked"],  
["sum","min","max","average"] );

**Syntax:** GetEmissionPeriodValues (from\_date(date\_time), to\_date(date\_time),  
{unit}, ["notfiltered"], ["success"], ["sum","min","max","average"] );

**Syntax:** GetMeasurementPeriodValues (from\_date(date\_time), to\_date(date\_time),  
[unit(text)], [value type(text)],  
["sum","min","max","average"] );

**from\_Date** The start date of the time range from which the values are to be read. You can also pass over an array with the from\_date and to\_date information (for example, the output of CalculateTimePeriod()). If this is done, the <to date> parameter is ignored.

To\_date The end date of the time range from which the values are to be read.

Description of the optional GetConsumptionPeriodValues() parameters:

[unit] Optional unit into which the return value is to be converted.

["uncalced"] Checkbox; if selected, only consumptions that have to be calculated are returned.

["locked"] Checkbox; if selected, also consumptions that are locked by a task are returned.

["sum","min","max","average"] Checkbox to calculate directly the sum, min, max or average value of the retrieved values in the specified time range.

Description of the optional GetEmissionPeriodValues() parameters:

[unit] Optional unit into which the return value is to be converted.

["notfiltered"] Optional; if selected, only the unfiltered values are returned.

["success"] Optional; if selected, only the successfully calculated emissions are returned.

["sum","min","max","average"] Checkbox to calculate directly the sum, min, max or average value of the retrieved values in the given time range.

Description of the optional GetMeasurementPeriodValues() parameters:

[unit] Optional unit into which the return value is to be converted.

[value type] To specify the value type of the measurement.

["sum","min","max","average"] Aggregation checkbox to calculate directly the sum, min, max or average value of the retrieved values in the given time range.

Return Value: An array with PhysicsValues or an empty array if no values are available in the given from- to-range. If an optional aggregation flag is set, the return value is an IntegerValue, or an empty Array if there are no values within the given time range.

 **Note:**

These commands only work within a limit script if no aggregation was set on the What tab of the limit check definition. This is because these functions require internal information, such as the object value's technical ID, and if the check value is aggregated, this information is not available.

## Average()

This command is used to calculate the average of the given values.

Syntax: `Average( Set of values (PhysicsValue) [, Input-Unit (Text), Output-Unit (Text) ] );`

set of values An array with PhysicsValues

[input unit] Optional, to specify the unit of the given values

[output unit] Optional, to specify the unit of the returned value

Return Value: A PhysicsValue with the average value

## EvaluateResult()

This command is used to evaluate a list of Boolean values.

Syntax: `EvaluateResult( List of values (0/1), Result Count (Number) );`

Values An array with Boolean values (0 or 1)

Result Count Number of required 'true' Boolean values within the above array

Return Value: TRUE or FALSE

Example:

EvaluateResult([0,1,0,0,1,1],2) returns TRUE because at least 2 array elements are True = (1).

EvaluateResult([0,1,0,0,1,1],5) returns FALSE.

## Calculate Uncertainty values

EC Consumption, Emission and Parameter values could have uncertainty values. These values will be calculated to the result Emission uncertainty and Consumption uncertainty. The Emission and Consumption values will not be changed by the input uncertainty values.

Example: Consumption (x) \* Parameter (y) = Emission (z)

➔ Consumption has the value 33 with Uncertainty 9

➔ Parameter has the value 2 with Uncertainty 8

The result of the emission value is 66 with the uncertainty id 12.04159

The uncertainty calculation is calculated with the following rule:

## Use Case Examples for Variable Limit Checks

For the following examples, note the following:

- Limit check scripts always have an implicitly available input variable.
  - Consumption checks can use “C” to access the checked consumption.
  - Emissions checks can use “E” to access the checked consumption.
  - Measurements checks can use “M” to access the checked consumption.
- Limit check summary output
  - The new “print” command enables you to write information to the limit check summary.
- Return values:
  - Normal return values
    - Variable limit scripts return their limit value with “RETURN <value>”.
    - User-defined check scripts indicate their positive or negative outcome with “RETURN PASSED” or with “RETURN FAILED”.
  - Special return values
    - Variable limit checks can also return FAILED or PASSED (instead of an explicit limit value) if the actual check is not possible, wanted, or needed. With this, the check can directly indicate failure or success.
    - RETURN INDEFINITE means that the check cannot return a definitive result. The check summary gets a yellow status icon (new feature) then.

### Use case 1 Limit Checks: Limit checks against (multiple) parameters

Consumptions of material CONSUMPTION\_MATERIAL\_ID shall be compared against a certain facility parameter FP1 (or against a material parameter MP1 or a consumption parameter CP1). If the consumption is greater than the checked parameter, the check fails:

```
// Verify against Material parameters
```

```

consumMatId = GetTechInfo(C_tech,"CONSUMPTION_MATERIAL_ID");
MatParam = GetMatParam ( consumMatId, "MP1");
print("Material Param", MatParam);

if (C.value > MatParam.value) {
    print("Consumption exceeds material parameter MP1");
    return FAILED;
}

// Verify against Facility parameters
faciId = GetTechInfo(C_tech,"DOMAIN_ID");
print("FacilityId",faciId);

FaciParam = GetFacilityParam( faciId, "FP1");
print("Facility Param", FaciParam);

if (C.value > FaciParam.value) {
    print("Consumption exceeds facility parameter FP1");
    return FAILED;
}

// Verify against Consumption Parameter
ConsumParam = GetConsumParam( C, "CP1");
print("Consum Param",ConsumParam);

if (C.value > ConsumParam.value) {
    print("Consumption exceeds consumption parameter CP1");
    return FAILED;
}

// the above checks were ok, so check is okay
return PASSED;

```

 **Note:**

The command 'GetConsumParam()' expects as first parameter a variable that contains internal technical information. In this case, the technical ID of the consumption that holds the consumption parameter has to be available. Therefore, this command only works within limit checks with no aggregations defined on the When tab.

### Use case 2 Limit Checks: Verify against multiple parameters ("2 out of 3 check")

The consumptions C1, C2, C3 of materials 'Mat-LCE1', 'Mat-LCE2' and 'Mat-LCE3' want to be checked on a facilities against three limits that are defined as facility parameters FP1, FP2, FP3 (C1 against limit FP1, C2 against limit FP2, C3 against limit FP3). If two or more of these three consumptions exceed the relevant facility parameter, the check fails:

```

// Example: Verify against multiple parameters
faciId = GetTechInfo(C_tech,"DOMAIN_ID");

// get the three materials

```

```

mat1 = GetTechInfo( "Mat-LCE1", "MATERIAL_ID_BY_NAME" );
mat2 = GetTechInfo( "Mat-LCE2", "MATERIAL_ID_BY_NAME" );
mat3 = GetTechInfo( "Mat-LCE3", "MATERIAL_ID_BY_NAME" );

// get the three consumptions
c1 = GetConsumValue( faciId, mat1);
c2 = GetConsumValue( faciId, mat2);
c3 = GetConsumValue( faciId, mat3);

print("consumption Mat-LCE1",c1);
print("consumption Mat-LCE2",c2);
print("consumption Mat-LCE3",c3);

// get the three facility parameters
p1 = GetFacilityParam( faciId, "FP1");
p2 = GetFacilityParam( faciId, "FP2");
p3 = GetFacilityParam( faciId, "FP3");

print("facility parameter FP1",p1);
print("facility parameter FP2",p2);
print("facility parameter FP3",p3);

// do the three checks
count_failed = 0;

if ( c1 > p1 ) {
    print("consumption of Mat-LCE1 > parameter FP1");
    count_failed++;
}

if ( c2 > p2 ) {
    print("consumption of Mat-LCE2 > parameter FP2");
    count_failed++;
}

if ( c3 > p3 ) {
    print("consumption of Mat-LCE3 > parameter FP3");
    count_failed++;
}

if (count_failed >= 2) {
    print("Two or more consumptions exceed their limit. Check
failed!");
    return FAILED;
}
else {
    print("At least two consumptions meet their limit. Check
passed!");
    return PASSED;
}
}

```

 **Note:**

Assign this check to one of the affected materials 'Mat-LCE1', 'Mat-LCE2' or 'Mat-LCE3'. Otherwise this same check is performed three times. You can make the script more intelligent and introduce a statement in the check script to verify that the consumption to be checked refers to 'Mat-LCE1', for example.

### Use case 3 Limit Checks: Limit checks against the average of the last five months

Consumptions shall be maximum 10% over or under the average of the last five months.

Solution 1: Do the complete check within one user-defined check script:

```
// get the last 5 months
time = CalculateTimePeriod(C, "MONTHS", 5, "FROM_TODAY");
print("Last 5 Months", time);

consum = GetConsumptionPeriodValues(time);
print("Consumptions within time period", consum);

average = Average( consum );
print("Consumption average", average);

minValue = average * 0.9;
print("allowed min value", minValue);

maxValue = average * 1.1;
print("allowed max value", maxValue);

if ( (C.value >= minValue) && (C.value <= maxValue) ) {
    return PASSED;
} else {
    return FAILED;
}
```

Solution 2: Create a range check with a script for lower and one for upper limit value:

Script for variable lower limit value:

```
time = CalculateTimePeriod(C, "MONTHS", 5, "FROM_TODAY");
print("Last 5 Months", time);

consum = GetConsumptionPeriodValues(time);
print("Consumption", consum);

average = Average( consum );
print("Average", average);

minValue = average * 0.9;
print("minValue", minValue);
```

```
return minValue;
```

#### Script for variable upper limit value:

```
time = CalculateTimePeriod(C, "MONTHS", 5, "FROM_TODAY");
print("Past 5 Months", time);

consum = GetConsumptionPeriodValues (time);
print("Consumption", consum);

average = Average( consum );
print("Average", average);

maxValue = average * 1.1;
print("maxValue", maxValue);

return maxValue;
```

#### Note:

From a performance standpoint, it is better to use the user-defined script because the consumption values are only read once. The second solution reads them twice, once within the lower limit calculation and once within the upper limit calculation.

#### **Use case 4 Limit Checks: A measurement shall depend on a previous measurement**

A measurement always has to be lower than the previous measurement (we assume daily measurements):

```
// get the facility id
faciId = GetTechInfo(M, "DOMAIN_ID");

// get the previous day
dateRange = CalculateTimePeriod(M, "DAYS", 1, "PREVIOUS");
print("Previous Day", dateRange);

// get the previous measurement
measure = GetMeasurementPeriodValues(dateRange, "", "1");
print("Previous measurement", measure);

if (isNull(measure)) {
    print("No previous measurement available. Check passed.");
    return PASSED;
}

if (measure.length > 1) {
    print("Multiple measurements available. Check result unknown.");
    return INDEFINITE;
}

return measure[0].value;
```



## Use case 5 Limit Checks: Compare a consumption against the same time period of the previous year

A monthly consumption has to be lower than the consumption from the same month of the previous year:

```
fromDate = C.from;
toDate = C.to;

print("current from date",fromDate);
print("current to date",toDate);

// shift the period to last year
fromDate.year = fromDate.year - 1;
fromDate.hour = 12;
fromDate.minute = 00;
fromDate.second = 00;
toDate.year = toDate.year - 1;
toDate.hour = 11;
toDate.minute = 59;
toDate.second = 59;

print("new from date",fromDate);
print("new to date",toDate);

prevYearValue = GetConsumptionPeriodValues(fromDate,toDate,"t");
print("previous year value",prevYearValue);

if (isNull(prevYearValue)) {
    print("No consumption from last year available. Check ok.");
    return PASSED;
}

if (prevYearValue.length > 1) {
    print("Multiple consumptions available. Check result unknown.");
    return INDEFINITE;
}

if (C.value <= prevYearValue[0].value) {
    print("Current value does not exceed previous year. Check ok.");
    return PASSED;
} else {
    print("Current value exceeds previous year. Check failed.");
    return FAILED;
}
```



### Note:

Due to a legacy problem in SAP EC about the setting of the time information, there is a need to

set the exact time information manually as we did above in the script. Unfortunately, while reading the <from> and <to> properties (C.from, C.to), the system does not return the time information.

### Use case 6 Limit Checks: Compare against the average of the previous calendar year

Make sure consumptions are always lower than the average of the previous year's consumptions: (Variable limit value for a single value; sign is set to "<".)

```
// get the date range of the previous year
dateRange = CalculateTimePeriod(C,"YEARS",1,"PREVIOUS");
print("Previous year",dateRange);

prevYearValues = GetConsumptionPeriodValues(dateRange);
print("previous year values",prevYearValues);

if ( IsNull(prevYearValues) ) {
    print("No Data from previous year available; check ok");
    return PASSED;
}

return Average( prevYearValues );
```

## E-Mail Diagnostics

### Use

The E-mail Diagnostics enables to search all emails which have been created in an EC System. The user has the possibility to overview all SENT, NOT SENT and ERRORNEOUS emails in the EC System. Furthermore the DELETED Emails will be also displayed.

The EC System deletes e-mails, when the sent user does not exist in the EC system or when the email sent process creates an exception or an error (The error are saved in the EC Logs!).

### Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_EmailNotification* (used also for the E-mail Templates!) or the user is a member of the user group "Environmental Compliance Admin".

### Features and Limitations

The E-mail Diagnostics provides the possibility to DELETE permanently selected emails from the email search result. After the emails have been deleted, then user has the possibility to copy the deletion log from the log overview.

The search result is limited to 100.000 emails in one searching process. The reason of this restriction is that the deletion could create too many deletion logs in the NetWeaver memory.

# Content Export

## Use

With the content export tool, you can use several options for exporting data from the EC System into other file formats. These data can be imported into other EC systems.

## Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_ExportImportData* or the user is a member of the user group “Environmental Compliance Admin”.

## Features

For more information about content export, see SAP Environmental Compliance Implementation Guide (4.13.1 Export Content Data) on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*.

# Content Import

## Use

With the content import, you can import data that have been exported with the content export tool.

## Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_ExportImportData* or the user is a member of the user group “Environmental Compliance Admin”.

## Features




For more information about content export, see SAP Environmental Compliance Implementation Guide (4.13.2 Import Content Data) on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*.

# Data Import from Excel Template

## Use

The data import enables you to import master data, such as materials, facilities, hierarchies, or parameters from an Excel template into the SAP EC data base or permit data from the permit hierarchy.

To get the EC configuration needed for data entry, you have to download an Excel template in the language in which you want to import your data. In this Excel template, you have to enter the data you want to import using the configuration in the dropdown menus. Mandatory fields are marked with an \*.

-  **Note:**  
The data import function only supports Microsoft Excel releases higher than Microsoft Excel 2007.
-  The downloaded template file has to be renamed to “\*.xlsx” instead of “\*.xls”
-  This tool does not update any data in the EC Application. It creates only new data!

## Prerequisites

To access and manage this view, the user needs at least permission of the action “EC\_ImportExcelFiles” or the user must be member of the EC User Group “UMEGROUP\_Environmental Compliance Admin”.

## Features

Each master data object has its own tab in the Excel worksheet. To make data entry easier for you, the tabs in the template file are color-coded: Material related tab pages are red, facility related tab pages green and integration related tab pages orange.

The import provides a function to verify your data prior to the import. With this function you can detect and correct all errors in your template file. The import file needs to be free of any errors otherwise the data will not be imported into the SAP CE data base.

The import function creates new objects in the SAP EC data base. For nearly all existing objects, an update of existing objects is not supported. Only parameters and parameter sets can be updated.

For more information about the data import from an Excel template, see import description on <http://help.sap.com/ec> or [http://help.sap.com/saphelp\\_ec303/EC\\_30\\_Data\\_Import\\_Info.pdf](http://help.sap.com/saphelp_ec303/EC_30_Data_Import_Info.pdf)

## Important SAP-Notes

SAP Note	Description
<a href="#">1898597</a>	Excel upload for SAP Environmental Compliance permits
<a href="#">1882092</a>	Feature Release Notes for SAP EC 3.0 SP15 (Feature Pack 3)
<a href="#">1947657</a>	Data import from Excel template does not validate address data length of facility
<a href="#">2099530</a>	Material ID not exported to Excel
<a href="#">2075144</a>	EC data import from Excel template indicates error when importing integration f
<a href="#">2074862</a>	EC data import from Excel template indicates error when importing data
<a href="#">2052746</a>	Data import from Excel template does not create hierarchy nodes for some EC hierarchies
<a href="#">2018340</a>	Data import from Excel template for permits does not save reference to authority
<a href="#">1996603</a>	Excel import for EC permits sets incorrect permit numbers
<a href="#">1993208</a>	Data import from Excel template for permits does not check name

<a href="#">1931012</a>	File import from Excel with negative values for latitude and longitude does not work
<a href="#">1905738</a>	EC Excel upload does not work with large no. of identifiers

## Maintenance

### Use

You use this component to set up the following components:

Name	Detailed Description
XML Transfer Workbench	Export and import SAP EC data using XML definition file
Change Documents	Search and display all SAP EC change documents
Change Document Archives	Search and display all SAP EC archived change documents
Manage Transport Activities	Manage transport activities to transport SAP EC configuration data
My Transport Activities	Overview over my Activities to transport SAP EC configuration data
Global User Reassignment	Tool to reassign users in SAP EC

To access SAP EC Maintenance, you need an SAP EC Admin user. You need at least a user (SAP EC Environmental Compliance Admin) that has the user group *UMEGROUP\_Environmental Compliance Admin*.

## XML Transfer Workbench

### Use

The XML Transfer Workbench enables you to export and import data into an SAP EC system database. The tool is based on XML definition file, which defines the database tables and the relationship between the database tables.

For more information, see the SAP Note 1427501.

### Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_XMLTransferWorkbench* or the user is a member of the user group "Environmental Compliance Admin".

### Features

You can define your own XML definition file to define the related tables where the data should be downloaded from or uploaded.



#### Example:

When you export a facility in Master Data Management, the system generates a ZIP file. The ZIP file contains the data and the definition file (xml\_transfer\_def.xml), which can be used to define further definition files.

## Change Documents

### Use

The change document view enables you to search and display SAP EC change documents. The SAP Environmental Compliance logs every change in the system. These changes can be reviewed in the change documents function.

By changing the three different tabs (Transactions, Report View, Table View), the user has to start the search because the search button updates only the visible tab.

### Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_ChangeDocumentAdmin* or the user is a member of the user group “Environmental Compliance Admin”.

## Change Document Archives

### Use

The Archived Change Document function enables you to search and display archived change documents. For more information, see the Archiving documentation *SAP\_Environmental\_Compliance\_30\_en\_Archiving*.

### Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_ChangeDocumentArchives* or the user is a member of the user group “Environmental Compliance Admin”.

## Manage Transport Activities

### Use

You can use this function to manage the transport of configuration data from a development landscape (D) to QA landscape (Q) and from QA landscape to production landscape (P). For more information, see the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*.

### Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_TransportConfigManager* or the user is a member of the user group “Environmental Compliance Admin”.

**Note:** *The Object Based Permissions could have a reference to EC MASTER DATA when the restrictions are using references to a single business object (Example: Restriction on a Parent Facility Object!). In case that these configuration data is transported between several EC Systems it is recommended to ensure that the technically IDs of the used master data have the same technically ID or to avoid to add the restrictions which use reference to master data in the source system of the configuration.*

# My Transport Activities

## Use

You can use this function to manage datasets of configuration data to be transported. For more information, see the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*.

## Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_MyTransportConfiguration* or the user is a member of the user group “Environmental Compliance Admin”.

## Features

You can manage your own transport activities (create, release, delete).  
You can mark configuration data for the transport and add it to the transport activity.

# Global User Reassignment

## Use


The Global User Reassignment enables you to replace a user in tasks or exceptions with another user. This process is needed when an SAP EC user leaves a company or is on vacation and the tasks must be given to another user.

## Prerequisites

To access and manage this view, the user needs at least permission of the action *EC\_GlobalUserReassignment* or is a member of the user group “Environmental Compliance Admin”.

## Features

The Application supports reassigning of following SAP EC Users:

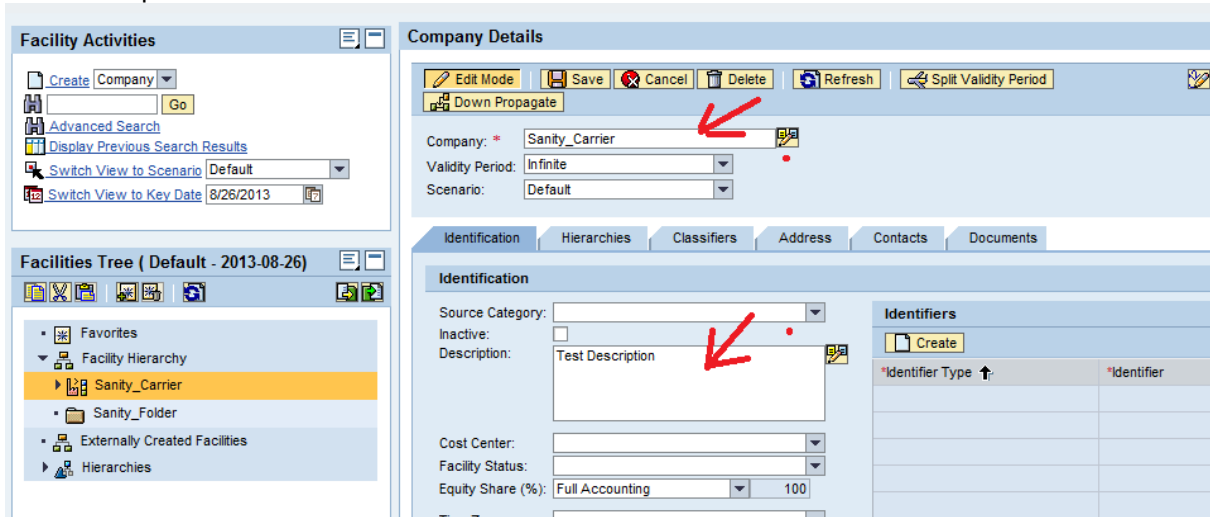
Name of Checkbox	Description
Tasks	This function reassigns the responsible/owner/involved task user of SAP EC tasks in status: <i>In Process</i> , <i>New</i> , <i>Canceled</i> , and <i>To Approve</i> .
Reassign Completed Tasks	This function reassigns the responsible/owner/involved task user of SAP EC tasks in status <i>Completed</i>
Task Templates	This function reassigns the responsible/owner/involved task templates users.
Internal Contacts (Facilities)	This function reassigns the responsible users of facilities. The internal contacts are managed in the facility on the tab strip “Contacts”.
Exceptions	This function reassigns the assignees of SAP EC exceptions.
Reporting	This function reassigns the responsible users of reports.
Reassign Elements Created After	This input field enables you to set up a date. The system reassigns only users in the affected objects which are newer than the entered date. This feature should be used when you have historical data that should not be changed during the reassign process.   <b>Note:</b> This feature does not work for Facility Internal Contacts because the internal contacts are not facility version independent. A facility responsible user is not version dependent.

# Multilingual Texts in the EC Application

The EC Application supports for several Business Objects multilingual texts for the property NAME and DESCRIPTION. This feature allows the user to create the name and description in different Languages and also to display this information in the different languages.

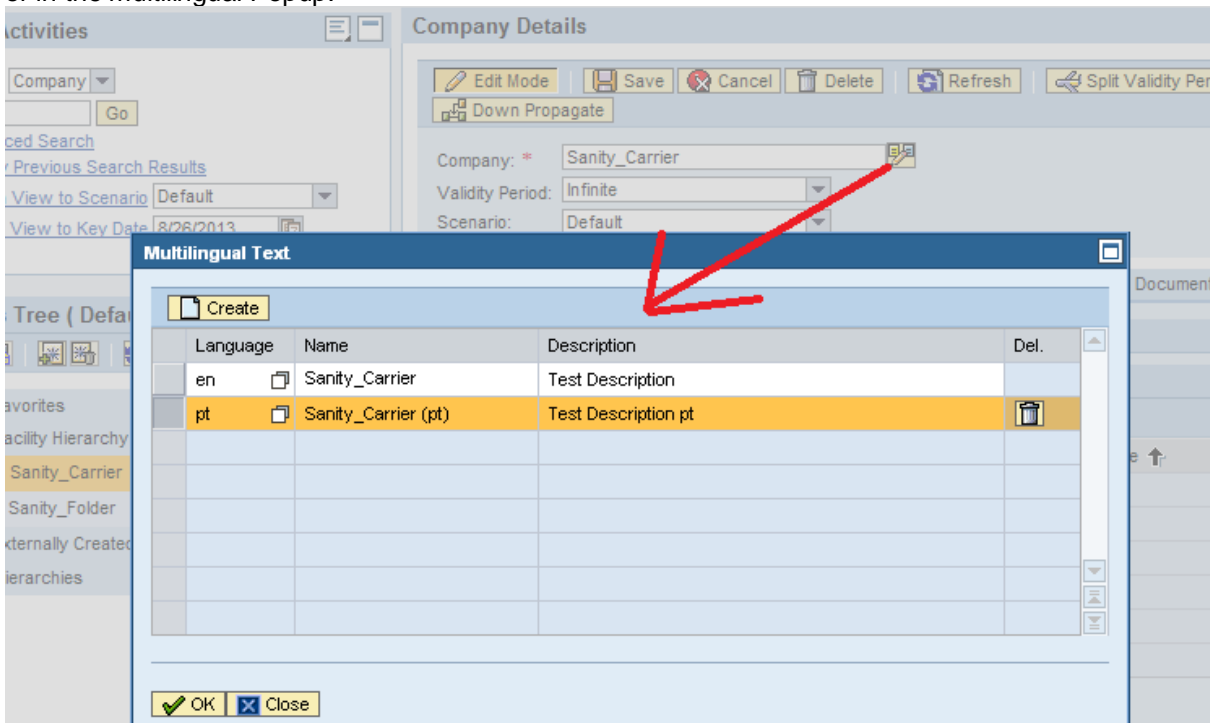
When an EC user in with the supported and available Language is logged in the application, then the EC Application shows the name and description of the selected Business Object in the maintained language.

The setup of the different Languages can be done directly in the Input field of the multilingual “Name” and “Description”



→ Picture 1

or in the multilingual Popup.



The default language of EC is “English”. So every multilingual Business Objects needs at least one name in the default language. All the other languages are optional.

## User Language:

The user language in the EC Application can be set up in different ways.



1. The user has the Language setting in the User Management Engine (case a.) or the name comes from the set up SAP LDAP.

**Details of User Ardelean**

Modify

General Information | Account Information | Contact Information

Logon ID:	Ardelean
Last Name:	Ardelean
First Name:	Felix
E-Mail Address:	<a href="#">mailto:ar@scn.sap.com</a>
Form of Address:	
Language:	English
Activate Accessibility Feature:	<input type="checkbox"/>
Security Policy:	Default
Unique ID:	USER.PRIVATE_DATASOURCE.un:Ardelean

2. The user has no language setup. In this case the SAP Web Application server reads the language from different sources:
  - b.) Internet Browser Locale (When case a. cannot be identified)
  - c.) Web Dynpro Server Locale (When case a. and b. cannot be identified)
  - d.) Virtual Machine Default Locale (When case a. and b. and c. cannot be identified)

### Behavior of creating and changing a name and description of multilingual Business Objects

1. Create and change the name and description in the default language within the input fields. If an EC Business Object is created or changed in the English language, then the application changes ONLY the name and the description of the business object in the “en” language. All other languages will not be modified.
2. Creation and change the name and description in the default language in the multilingual popup. In the multilingual popup the user can change all the available languages and create new one. The default language cannot be deleted!
3. Creation of the name and description in other language as the default language in the input fields. When a multilingual business object is created the EC application creates automatically two names and descriptions. One name has the default language and the other has the user language. Both entries have at the first time after the new object has been saved the same content. The two entries can be reviewed and changed in the multilingual popup (See 5.).
4. Changing of the name and description in other language as the default language in the input fields. When a user opens an EC business object with a multilingual name and description then two scenarios can occur:
  - a.) The business object does not have name and description of the user language and then the user see the name and description of the business object in the default language. When the user changes the name or description of the business object and save the changes then the EC application saved these changes ONLY in the user language (The default name and description will be copied to the user language with the user changes!). The default name and description will not be changed. Note, that this process happens in the background. The user does not see that only the name and description in the user

language has been changed. A user with the default language will not see the changes.

b.) The business object has additionally the name and description of the user language and then the user see the name and description of his language. When the user changes the name or description of the business object and saves the changes then the EC application saved these changes ONLY in the user language. All the other languages and the default name and description will not be changed. Note, that this process happens in the background. The user does not see that only the name and description in the user language has been changed.

5. Creation and change of the name and description in other language as the default language in the multilingual popup.

When the multilingual popup is opened then the EC application shows all available names and descriptions of the affected business object.

When the popup is opened there could be also two scenarios:

a.) The business object does not have initially the name and description of the user language. The popup is opened the application will copied to the name and description of the default language and generate a new entry in the user language. The user can make changes in all available languages and create also new entries.

b.) The business object has the name and description also of the user language. The popup is opened the application shows all available entries. The user can make changes in all available languages and create also new entries.

## Search behavior in EC Application

SAP EC differs between two search types:

1. The GOOGLE search in the activity area of every EC business object:  
This search does not need a "\*" because internally we set this character. Every search in the activity area is using automatically an asterisk (\*) as a wildcard.
2. The detailed search:  
The detailed search which is used in the popups of object selection and in the advanced search of every business object (Example: Material, Facility, etc). The detailed search has in every view the following text: "**You can use an asterisk (\*) as a wildcard**"  
When the user does not use the "\*" character, then the EC application search for the exactly character string the user uses.  
If the name is not detected in the login language of the user, the EC application automatically search the also in the default language "English". When the search engine does not find a hit in the login language and a hit in the default language, then the result will show the default language result.

# Business Package for SAP Environmental Compliance 3.0

## Use

The roles and functions of SAP EC are delivered with the *Business Package for SAP Environmental Compliance 3.0*.

## Technical Data

<b>Availability</b>	NW CE 7.1 SP8 or higher See SAP PAM page of EC <a href="https://service.sap.com/pam">https://service.sap.com/pam</a> → SAP ENVIRONMENTAL COMPL. 3.0
<b>Data Source</b>	SAP EC 3.0
<b>Recommended Browser</b>	For information about the browsers recommended for Web Dynpro applications, see the Product Availability Matrix (PAM) for the business package. For the PAM, see SAP Service Marketplace at <a href="http://service.sap.com/ep-content">http://service.sap.com/ep-content</a> → BP Product Availability Matrix.
<b>Languages Available</b>	The business package is available in the following languages: <ul style="list-style-type: none"> <li>• DE German</li> <li>• EN English</li> <li>• ES Spanish</li> <li>• FR French</li> <li>• JA Japanese</li> <li>• PT Portuguese</li> <li>• KO Korean</li> <li>• Chinese (since EC 3.0 SP2 PL0)</li> <li>• Russian (since EC 3.0 SP2 PL5)</li> <li>• Turkish (since EC 3.0 SP5 PL0)</li> <li>• Czech (since EC 3.0 SP7 PL0)</li> <li>• Hungarian (since EC 3.0 SP7 PL0)</li> <li>• Hebrew (since EC 3.0 SP19 PL0)</li> </ul>
<b>SAP Support Component</b>	XAP-EM, XAP-EM-INT

## Release Notes

The Business Package for SAP Environmental Compliance 3.0 contains several new features and enhancements. For details, refer to following SAP Notes:

SAP Environmental Compliance 30 SP0

→ <https://service.sap.com/sap/support/notes/1277367>

SAP Environmental Compliance 30 SP9

→ <https://service.sap.com/sap/support/notes/1569767>

SAP Environmental Compliance 30 SP12

→ See Attachment in SAP Note <https://service.sap.com/sap/support/notes/1709371>

SAP Environmental Compliance 30 SP15

→ See Attachment in SAP Note <https://service.sap.com/sap/support/notes/1882092>

## Delivered Portal Roles in Environmental Compliance 3.0

SAP EC 3.0 delivers several example roles. If you plan to use the SAP EC Roles, assign the SAP EC UME Groups (delivered in the SAP Notes of the main Support Packages) to the users. The advantage of using the SAP EC groups is that the delivered object-based authorization permissions (see View in the SAP EC Configuration) are preconfigured with the SAP EC UME Groups.

### Corporate Program Manager Role

Technical name: `com.sap.pct/specialist/ec30/roles/role04/ec_corporate_program_manager`

Description: *Environmental Performance*

#### Use

The Corporate Program Manager is a role within the corporate department responsible for provide oversight of environmental compliance business processes, execute certain tasks that require corporate oversight and monitor performance of sites. With this role, the manager has access to the Dashboard and can attend to tasks for which corporate oversight or approval is required. Additionally, this role can also monitor/trigger exceptions from the dashboard as necessary.

The Corporate Program Manager fulfills tasks with the following worksets:

- Dashboard (`de.technidata.ec_dashboard_workset`)
- Tools
  - My Profile (`de.technidata.MyProfileAdministrationPage`)

#### Technically name:

`portal_content/com.sap.pct/specialist/ec30/roles/role04/ec_corporate_program_manager`

#### Assigned Actions

## Compliance Manager Role

Technical name: com.sap.pct/specialist/ec30/roles/role02/ec\_compliance\_manager

Description: *Environmental Performance*

### Use

The Compliance Manager is a role responsible for managing compliance activities related to applicable regulations and licenses for one or more sites. This role is also responsible for providing oversight when exceptions to the compliance business processes are identified so the user can take proper action to ensure continued compliance. With this role, the manager has access to the Dashboard and can attend to tasks which require oversight or approval. These tasks can be completed by using the dashboard of SAP Environmental Compliance. As necessary, this role can also monitor/trigger exceptions from the dashboard.

The Compliance Manager fulfills tasks with the following worksets:

- Dashboard (de.technidata.ec\_dashboard\_workset)
- Tools
  - My Profile (de.technidata.MyProfileAdministrationPage)

### Technically name:

portal\_content/com.sap.pct/specialist/ec30/roles/role02/ec\_compliance\_manager

### Assigned Actions

EC\_MyUserProfile

## EHS Manager Role

Technical name: com.sap.pct/specialist/ec30/roles/role05/ec\_ehs\_manager

Description: *Environmental Performance*

### Use

EHS Manager is a role responsible for ensuring the site remains in compliance with all applicable EHS regulations and permits. This role is also responsible for providing oversight when exceptions to the compliance business processes are identified so the user can take proper action to ensure continued compliance. With this role, the user can access all functions in SAP EC related to managing compliance with regulations and licenses/permits. For example, the dashboard can be used to execute tasks related to compliance, view facilities that are subject to compliance within the Facility Manager, view applicable licenses and regulations in Permit Management and review periodic reports.

The EHS Manager fulfills tasks with the following worksets:

- Dashboard (de.technidata.ec\_dashboard\_workset)
- Compliance Management
  - Compliance Management (de.technidata.pages/de.technidata.complianceManagementPage)
  - Permit Management (de.technidata.pages/de.technidata.permitManagerPage)

- Task Management (de.technidata.pages/de.technidata.taskAdministrationPage)
- Exception Management (de.technidata.pages/de.technidata.exceptionlogpage)
- Reporting (de.technidata.pages/de.technidata.reportingPage)
- Tools
  - My Profile (de.technidata.MyProfileAdministrationPage)

**Technically name:**

portal\_content/com.sap.pct/specialist/ec30/roles/role05/ec\_ehs\_manager

**Assigned Actions**

EC\_TaskAccess  
 EC\_ReportAccess  
 EC\_ComplianceManagementAccess  
 EC\_ExceptionManagerAccess  
 EC\_PermitAccess  
 EC\_MyTransportConfiguration  
 EC\_MyUserProfile

## Compliance Analyst Role

Technical name: com.sap.pct/specialist/ec30/roles/role01/ec\_compliance\_analyst

Description: *Environmental Performance*

### Use

Compliance Analyst is a role responsible for implementing the compliance process with regulations and licenses applicable to one or more site. This individual also provides oversight and is responsible for execution of compliance processes. With this role, the user can access all functions in SAP EC related to managing compliance with permits, tasks, facilities and reporting. For example, dashboard can be used to execute tasks related to compliance, view and maintain facilities that are subject to compliance within the Facility Manager, view and maintain applicable licenses and regulations in the Permit Management, generate periodic reports for corporate or government reporting.

The Compliance Analyst fulfills tasks with the following worksets:

- Dashboard (de.technidata.ec\_dashboard\_workset)
- Compliance Management
  - Compliance Management (de.technidata.pages/de.technidata.complianceManagementPage)
  - Permit Management (de.technidata.pages/de.technidata.permitManagerPage)
  - Task Management (de.technidata.pages/de.technidata.taskAdministrationPage)
  - Exception Management (de.technidata.pages/de.technidata.exceptionlogpage)
  - Reporting (de.technidata.pages/de.technidata.reportingPage)
- Master Data Management
  - Facilities (de.technidata.pages/de.technidata.facilityBuilderPage)
  - Materials (de.technidata.materialmanagementworkbenchpage)
- Configuration
  - Basic Settings
  - Units & Dimensions (de.technidata.configurationPagesFolder/de.technidata.UnitDimensionPage)
  - List of Values (de.technidata.configurationPagesFolder/de.technidata.lovPage)
- Master Data

- Facility Configuration  
(de.technidata.configurationPagesFolder/de.technidata.FacilityConfigurationPage)
- Hierarchy (de.technidata.configurationPagesFolder/de.technidata.hierarchyPage)
- Tools
  - My Profile (de.technidata.MyProfileAdministrationPage)
  - Contact Management  
(de.technidata.toolspagesfolder/de.technidata.contactsmanagementpage)
  - Document Management  
(de.technidata.toolspagesfolder/de.technidata.documentmanagementpage)
  - Integration Management  
(de.technidata.toolspagesfolder/de.technidata.integrationmanagerpage)

**Technically name:**

portal\_content/com.sap.pct/specialist/ec30/roles/role01/ec\_compliance\_analyst

**Assigned Actions**

EC\_Hierarchies  
 EC\_TaskAccess  
 EC\_ReportAccess  
 EC\_ExceptionManagerAccess  
 EC\_ComplianceManagementAccess  
 EC\_FacilityAccess  
 EC\_ContactsManagement  
 EC\_UnitsChange  
 EC\_LogViewer  
 EC\_MaterialAccess  
 EC\_PermitAccess  
 EC\_IntegrationManager  
 EC\_MyUserProfile  
 EC\_DocumentManagement  
 EC\_CitationMonitoringAccess

## Environmental Analyst Role

Technical name: com.sap.pct/specialist/ec30/roles/role06/ec\_environmental\_analyst

Description: *Environmental Performance*

### Use

Environmental Analyst is a role responsible for implementing the compliance processes with regulations and licenses related to the environmental domain. With this role, the user can access all functional components of the application necessary to view, maintain, and change all data relevant to the environmental compliance business processes for one or more sites. This role has all rights similar to the Compliance Analyst role and additionally is also able to access the Emissions Management features of the application to support compliance processes with calculating emissions, monitoring limits, generating reports.

The Environmental Analyst fulfills tasks with the following worksets:

- Dashboard (de.technidata.ec\_dashboard\_workset)
- Emissions Management
  - Emissions Management (de.technidata.emissionCalculationPage)
  - Calculation Management (de.technidata.calculationmanagerpage)

- Parameters (de.technidata.configurationPagesFolder/de.technidata.parametersPage)
- Batch Processes (de.technidata.batchProcessespage)
- Emissions Accounting (de.technidata.emissionsaccountingpage)
- Reporting (de.technidata.pages/de.technidata.reportingPage)
- Compliance management
  - Compliance Management (de.technidata.pages/de.technidata.complianceManagementPage)
  - Permit Management (de.technidata.pages/de.technidata.permitManagerPage)
  - Task Management (de.technidata.pages/de.technidata.taskAdministrationPage)
  - Exception Management (de.technidata.pages/de.technidata.exceptionlogpage)
  - Reporting (de.technidata.pages/de.technidata.reportingPage)
- Master Data Management
  - Facilities (de.technidata.pages/de.technidata.facilityBuilderPage)
  - Materials (de.technidata.materialmanagementworkbenchpage)
- Configuration
  - Basic Settings
    - Units & Dimensions (de.technidata.configurationPagesFolder/de.technidata.UnitDimensionPage)
    - List of Values (de.technidata.configurationPagesFolder/de.technidata.lovPage)
- Tools
  - My Profile (de.technidata.MyProfileAdministrationPage)
  - Contact Management (de.technidata.toolspagesfolder/de.technidata.contactsmanagementpage)
  - Document Management (de.technidata.toolspagesfolder/de.technidata.documentmanagementpage)
  - Integration Management (de.technidata.toolspagesfolder/de.technidata.integrationmanagerpage)
  - Scripting (de.technidata.toolspagesfolder/de.technidata.scriptingPage)

**Technically name:**

portal\_content/com.sap.pct/specialist/ec30/roles/role06/ec\_environmental\_analyst

**Assigned Actions**

EC\_TaskAccess  
 EC\_ReportAccess  
 EC\_Scripting  
 EC\_ExceptionManagerAccess  
 EC\_ComplianceManagementAccess  
 EC\_FacilityAccess  
 EC\_ContactsManagement  
 EC\_UnitsChange  
 EC\_EmissionManagerArchiveSearch  
 EC\_ListOfValues  
 EC\_MaterialAccess  
 EC\_EmissionManagerAccess  
 EC\_BatchProcessAccess  
 EC\_EmissionsAccountingAccess  
 EC\_PermitAccess  
 EC\_IntegrationManager  
 EC\_CalculationAccess



EC\_ParameterAccess  
EC\_MyUserProfile  
EC\_DocumentManagement

## Site Manager Role

Technical name: com.sap.pct/specialist/ec30/roles/role11/ec\_site\_manager

Description: *Environmental Performance*

### Use

Site Manager is a role ultimately responsible for all operational compliance activities for one or more site with all applicable laws/regulations and permits. With this role, the user can access the SAP Environmental Compliance Dashboard and monitor compliance tasks or exceptions that require their attention due to overdue status or if operational oversight is required, for example, for exceptions within their production processes with applicable regulations.

The Site Manager fulfills tasks with the following worksets:

- Dashboard (de.technidata.ec\_dashboard\_workset)
- Tools
  - My Profile (de.technidata.MyProfileAdministrationPage)

### Technically name:

portal\_content/com.sap.pct/specialist/ec30/roles/role11/ec\_site\_manager

### Assigned Actions

EC\_MyUserProfile

## Site Technician Role

Technical name: com.sap.pct/specialist/ec30/roles/role12/ec\_site\_technician

Description: *Environmental Performance*

### Use

Site Technician is a role responsible for carrying out the compliance activities relevant to the site technician's work area, such as operations or maintenance, to assure continued compliance with government regulations and permits. With this role, the user can access the SAP Environmental Compliance Dashboard to attend to tasks related to for example maintenance or operations processes. For example, a maintenance technician needs to fix a troubled asset or operations technician needs to provide data relevant to a process to facilitate emissions calculation.

The Site Technician fulfills tasks with the following worksets and pages:

- Dashboard (de.technidata.ec\_dashboard\_workset)
- Tools
  - My Profile (de.technidata.MyProfileAdministrationPage)

### Technically name:

portal\_content/com.sap.pct/specialist/ec30/roles/role12/ec\_site\_technician

### Assigned Actions

EC\_MyUserProfile

## Facility Compliance Analyst Role (Deprecated!)

Technical name: com.sap.pct/specialist/ec30/roles/role08/ec\_facility\_compliance\_analyst

Description: *Environmental Performance*

### Use

Facility Compliance Analyst is a role responsible for carrying out the facility compliance activities to maintain hazards, properties, facility types (templates) according to government environmental facility compliance regulations and company internal guidelines.

With this role, the user can access the SAP Environmental Compliance *Facility Type Configuration* to maintain different kind of hazards that may occur while operating.

To avoid hazards and to ensure legal compliance, properties related to hazards have to be maintained. Facility types based on their possible hazards can be saved as new facility types and used as templates.

With this role, the Facility Compliance Analyst has access to the dashboard and can attend to tasks for which corporate oversight or approval is required.

The Facility Compliance Analyst fulfills tasks with the following worksets and pages:

- Dashboard (de.technidata.ec\_dashboard\_workset)
- Task Management (de.technidata.pages/de.technidata.taskAdministrationPage)
- Facility Type Configuration (de.technidata.pages/de.technidata.facilityTypeConfigurationPage)

### Technically name:

portal\_content/com.sap.pct/specialist/ec30/roles/role08/ec\_facility\_compliance\_analyst

### Assigned Actions

EC\_TaskAccess

EC\_FacilityTypeConfigurationAccess

## Facility Compliance Operator Role (Deprecated!)

Technical name: com.sap.pct/specialist/ec30/roles/role09/ec\_facility\_compliance\_operator

Description: *Environmental Performance*

### Use

Facility Compliance Operator is a role responsible for work with facility data. This involves maintaining current environmental facility compliance values, for example, by using checklists and compare values with target values. In case of deviation, the Facility Compliance Operator has to create tasks to correct or to take care of the case. Even creating a SAP ERP PM (Plant Maintenance) notification via task is possible, if the problem is related to Plant-Maintenance.

Facility Compliance Operator has access to facility data and to the dashboard task view and task creation. Exceptions informing the user about new incoming values via checklist are displayed on dashboard.

The Facility Compliance Operator fulfills tasks with the following worksets and pages:

- Dashboard (de.technidata.ec\_dashboard\_workset)
- Facility Compliance Manager (de.technidata.pages/de.technidata.FacilityCompliancePage)

**Technically name:**

portal\_content/com.sap.pct/specialist/ec30/roles/role09/ec\_facility\_compliance\_operator

**Assigned Actions**

EC\_TaskAccess  
EC\_FacilityComplianceAccess

## Facility Compliance Responsible Role (Deprecated!)

Technical name: com.sap.pct/specialist/ec30/roles/role10/ec\_facility\_compliance\_responsible

Description: *Environmental Performance*

### Use

Facility Compliance Responsible is a role responsible for managing facilities and facility data within SAP Environmental Compliance Facility Compliance Manager. Creating, changing, or even deleting a facility is done by the Facility Compliance Responsible. The Facility Compliance Responsible has full access to facilities and can even maintain current values, which is usually done by a Facility Compliance Operator.

To monitor facility compliance status, the Facility Compliance Responsible can create reports.

With this role, the Facility Compliance Responsible has access to the dashboard and can review tasks for which corporate oversight or approval is required.

The Facility Compliance Responsible fulfills tasks with the following worksets and pages:

- Dashboard (de.technidata.ec\_dashboard\_workset)
- Facility Compliance Manager (de.technidata.pages/de.technidata.FacilityCompliancePage)
- Reporting (de.technidata.pages/de.technidata.reportingPage)

**Technically name:**

portal\_content/com.sap.pct/specialist/ec30/roles/role10/ec\_facility\_compliance\_responsible

**Assigned Actions**

EC\_TaskAccess  
EC\_FacilityComplianceAccess  
EC\_ReportAccess

## Energy Manager Role

Technical name: pcd:portal\_content/com.sap.pct/specialist/ec30/roles/role05/ec\_ehs\_manager

Description: *Environmental Performance*

### Use

Manage energy consumptions in SAP EC 3.0.

**Technically name:**

portal\_content/com.sap.pct/specialist/ec30/roles/role13/ec\_energy\_manager

### Assigned Actions

EC\_TaskAccess  
EC\_MaterialAccess  
EC\_FacilityScenarioManager  
EC\_ReportAccess  
EC\_EmissionManagerAccess  
EC\_ComplianceManagementAccess  
EC\_ExceptionManagerAccess  
EC\_FacilityAccess  
EC\_EmissionsAccountingAccess  
EC\_PermitAccess  
EC\_CalculationAccess  
EC\_IntegratedTags  
EC\_ParameterAccess

## Read All Role

Technical name: pcd:portal\_content/com.sap.pct/specialist/ec30/roles/role14/ec\_read\_all

Description: *Environmental Performance*

### Use

Read data in all SAP EC Modules. The role has no access to the SAP EC Configuration, SAP EC Maintenance, SAP EC Administration and SAP EC Tools Menu.

#### Technically name:

portal\_content/com.sap.pct/specialist/ec30/roles/role14/ec\_read\_all

### Assigned Actions

EC\_TaskAccess  
EC\_ReportAccess  
EC\_ExceptionManagerAccess  
EC\_ComplianceManagementAccess  
EC\_FacilityAccess  
EC\_FacilityComplianceAccess  
EC\_MaterialAccess  
EC\_EmissionManagerAccess  
EC\_BatchProcessAccess  
EC\_EmissionsAccountingAccess  
EC\_PermitAccess  
EC\_CalculationAccess  
EC\_ParameterAccess  
EC\_FacilityTypeConfigurationAccess

## Environmental Compliance Admin Role

Technical name:

pcd:portal\_content/com.sap.pct/specialist/ec30/roles/role07/ec\_environmental\_compliance\_admin

Description: *Environmental Performance*

### Use

This is the SAP EC Administrator that has almost all permissions in the following menus:

- Configuration
- Maintenance
- Administration
- Tools

In addition, the Environmental Compliance Admin has permissions to run the EC20 to EC30 Migration application. For more information, see chapter *Migration* in the Implementation Guide for Environmental Compliance 3.0 on the Service Marketplace <https://service.sap.com/instguides> under *SAP Business Suite Applications* → *SAP EHS Management* → *SAP Environmental Compliance* → *SAP Environmental Compliance 3.0*.

**Technically name:**

portal\_content/com.sap.pct/specialist/ec30/roles/role07/ec\_environmental\_compliance\_admin

**Assigned Actions**

EC\_DataEntryVariances  
EC\_RFCServerMonitor  
EC\_Hierarchies  
EC\_TableLookupWebService  
EC\_ChangeDocumentArchives  
EC\_ReportAccess  
EC\_Scripting  
EC\_IntegratedSystems  
EC\_ContactsManagement  
EC\_IntegrationManagerAdmin  
EC\_DataMigration  
EC\_UnitsChange  
EC\_EmissionManagerArchiveSearch  
EC\_ListOfValues  
EC\_DefaultUserProfile  
EC\_SystemChecks  
EC\_BatchProcessStepTemplate  
EC\_TaskArchiveSearch  
EC\_ExceptionManagerArchiveSearch  
EC\_EmailNotification  
EC\_BWProperties  
EC\_MyUserProfile  
EC\_EmissionsAccountingConfig  
EC\_EmissionManagerWebService  
EC\_BWDeltaInfo  
EC\_RFCDestination  
EC\_UserExits  
EC\_StatusNetwork  
EC\_FacilityTypeCapabilitiesConfig  
EC\_ResetBuffer  
EC\_FacilityComplianceWebService  
EC\_LogViewer  
EC\_GlobalAuthorizations  
EC\_UserDefinedFields  
EC\_XMLTransferWorkbench  
EC\_DataRelease  
EC\_TransportConfigManager  
EC\_ExceptionWebService  
EC\_ExtractionServerMonitor  
EC\_MyTransportConfiguration  
EC\_IntegrationManager  
EC\_GlobalUserReassignment  
EC\_BatchProcessWebService  
EC\_DocumentManagement  
EC\_IntegratedTags  
EC\_ChangeDocumentAdmin  
EC\_RegulationContentProvider  
EC\_ExtractionMappingConfig  
ContentMigration  
EC\_ExportImportData  
EC\_CustomerDatabaseTables  
EC\_LimitCheckSummaryTemplates  
EC\_PermitConfiguration  
EC\_ImportExcelFiles  
EC\_EnergyAnalyticsWebService  
EC\_LOVWebService  
EC\_FacilityWebService

## UWL Manager Role

Technical name: pcd:portal\_content/com.sap.pct/specialist/ec30/roles/role15/uwlManager

Description: *Environmental Performance*

### Use

The UWL Manager role should be assigned to users that use only the SAP portal universal work list (UWL) or users that access SAP EC task and SAP EC exceptions only by using e-mail notification URLs.

The role has no access to the SAP EC application.

The role has only access to the views "Task Editor" and "Exception Detail". Due to e-mail notification OBN links, the view "Task Management – Status Editor" is also assigned to this role; however, it is not used in the UWL View. For more information about the E-mail notification OBN links, see the SAP Note "1431058".

## OBN Roles

Technical name: pcd:portal\_content/com.sap.pct/specialist/ec30/roles/obnroles

Description: *All EC OBN Pages*

Description: Dashboard OBN Pages

### Use

The Environmental Compliance 3.0 SP13 Patch 5 standard delivered portal content has two roles which have only Object Based Navigation (OBN) pages. (Pages which are opened from a link in EC in a new window. E.g. Tasks from Dashboard!)

You can find the roles in the following path:

Content Administration > Portal Content > Content Provided by SAP > Specialist > Environmental Compliance 3.0 > Roles > OBN Roles

In this folder, you can find the two new Roles "**All EC OBN Pages**" and "**Dashboard OBN Pages**".

The Role "All EC OBN Pages" contains all Environmental Compliance Object Based Navigation (OBN) pages.

The Role "Dashboard OBN Pages" contains Object Based Navigation (OBN) pages which are relevant for a Dashboard user which has only access to the assigned Tasks and assigned Exceptions.

## EC\_Technical\_AllUsers

Role name in User Management: EC\_Technical\_AllUsers

Description: SAP EC 3.0 - Allows using technical basics (mandatory for each user)

### Use

This role is mandatory for every used User Group in SAP EC to access to the SAP Basis application. The role is already assigned to the SAP EC standard user Groups delivered in the SAP Note 1517139 (EC 3.0 Installation Note: Import EC User Groups). In case of using own User Groups, this role must be assigned to all SAP EC User Groups. Refer to SAP Note 2370485 (Loss of authorizations after import of patch or support package) for further details.

**Technically name:**

EC\_Technical\_AllUsers

**Assigned Actions**

Core

EC\_Basic

## Actions and the related Pages in the SAP EC Portal Content

Name of the Action	Portal Page Name(s)
ContentMigration	Data Import Log Content Export Content Import
EC_ExportImportData	Data Import Log Content Export Content Import
EC_ImportExcelFiles	Data Import from Excel Template
EC_BatchProcessAccess	Batch Processes
EC_BatchProcessStepTemplate	Batch Process Step Templates
EC_BatchProcessWebService	-
EC_BWDeltaInfo	Data Extractions to External Systems
EC_BWProperties	BW Properties EC Properties Number Ranges Management
EC_CalculationAccess	Calculation Management
EC_ChangeDocumentAdmin	Change Documents
EC_ChangeDocumentArchives	Change Document Archives
EC_CitationMonitoringAccess	
EC_ComplianceManagementAccess	Compliance Management
EC_ContactsManagement	Contacts Management
EC_CustomerDatabaseTables	Customer Database Tables
EC_DataEntryVariances	Data Entry Variances
EC_DataMigration	Data Migration
EC_DataRelease	Data Release Definition
EC_DefaultUserProfile	Default User Profile
EC_DocumentManagement	Document Management
EC_EmailNotification	E-Mail Notification E-Mail Diagnostics

	Alert Logs Configuration
EC_EmissionsAccountingAccess	Emissions Accounting
EC_EmissionsAccountingConfig	Emissions Account Types
EC_EmissionManagerArchiveSearch	Emissions Management
EC_EmissionManagerWebService	-
EC_ExceptionManagerAccess	Exception Management
EC_ExceptionManagerArchiveSearch	Exception Management
EC_ExceptionWebService	-
EC_ExtractionMappingConfig	Extraction Mapping for Calculation Variables
EC_ExtractionServerMonitor	
EC_FacilityAccess	Emissions Management Energy Manager Facilities Facility Compliance Management
EC_FacilityComplianceWebService	-
EC_FacilityScenarioManager	Emissions Management
EC_FacilityTypeCapabilitiesConfig	Facility Configuration Facility Type Configuration
EC_FacilityWebService	-
EC_GlobalAuthorizations	Object-Based Authorization
EC_GlobalUserReassignment	Global User Reassignment
EC_Hierarchies	Hierarchy
EC_IntegratedSystems	Integrated Systems
EC_IntegratedTags	Integrated Tags Management
EC_IntegrationManager	Integration Management
EC_IntegrationManagerAdmin	Integration Management
EC_LimitCheckSummaryTemplates	Limit Check Summary Templates
EC_ListOfValues	List Of Values
EC_LOVWebService	-
EC_LogViewer	EC Log Viewer
EC_MaterialAccess	Materials
EC_MyUserProfile	My Profile
EC_MyTransportConfiguration	My Transport Activities
EC_ParameterAccess	Parameters
EC_PermitAccess	Permit Management
EC_PermitConfiguration	Permit Configuration
EC_RegulationContentProvider	Regulation Content Provider
EC_ReportAccess	Reporting
EC_ResetBuffer	Reset Buffer



EC_RFCDestination	RFC Configuration
EC_RFCServerMonitor	RFC Server Monitor
EC_Scripting	Scripting
EC_StatusNetwork	Status Network Configuration
EC_SystemChecks	System Checks
EC_TableLookupWebService	-
EC_TaskAccess	Task Mangement
EC_TaskArchiveSearch	Task Mangement
EC_TranportConfigManager	Manage Transport Activities
EC_UnitsChange	Currencies Units & Dimensions
EC_UserDefinedFields	Assignments for Master Data Assignments for Transactional Data Elements
EC_UserExits	Extension Points
EC_XMLTransferWorkbench	XML Transfer Workbench
EC_EnergyAnalyticsWebService	OBSOLETE since SAP EC 3.0 SP21
EC_Basic	Action of the delivered SAP EC Role "EC_Technical_AllUsers". Refer to SAP Note 2370485 (Loss of authorizations after import of patch or support package) and 1517139 (EC 3.0 Installation Note: Import EC User Groups)

The pages "**System Information**" and "**Dashboard**" do not have special Actions. The views can be accessed without any special permissions.

## Useful SAP Notes

SAP Note Number	Description
1521755	SAP EC Consumption Based Calculation with optional Measurements
1529366	Missing SAP EC Calculation Function GetEmissionValueExtended()
1836228	Password management for EC checklist task
2380446	Composite SAP Note for Calculation topics in SAP EC 3.0
2066725	Composite SAP Note for BI topics in SAP Environmental Compliance 3.0
1517139	EC 3.0 Installation Note: Import EC User Groups
2370485	Loss of authorizations after import of patch or support package

## History of Changes

The functional documentation is regularly updated on *SAP Help Portal* at SAP ERP → SAP Business Suite → SAP EHS Management .

The following table provides an overview of the important changes that were made in the past:

Functional Doc. Version	Important Changes
1.00 (January 22 <sup>th</sup> , 2009)	Initial Creation
1.10 (April 23 <sup>th</sup> , 2010)	SAP EC 30 SP3: update chapter "Report Data Source" and new role "UWL Manager"
2.0 (June 23 <sup>th</sup> , 2010)	SAP EC 30 SP4: <ul style="list-style-type: none"> <li>- New description for "Task Users"</li> <li>- Note for creating new Reports and Pivot Queries</li> <li>- Insert Page numbers</li> <li>- Rearrange chapters</li> <li>- New Chapter for SAP EC Limits, Requirements and Citations</li> </ul>
2.1 (July 7 <sup>th</sup> , 2010)	EC30 SP4 PL1: Consumption-Based Calculation → Calculate with Emissions
2.2 (August 31 <sup>st</sup> , 2010)	EC30 SP5 Adapt documentation for SP5
2.3 (September 12 <sup>th</sup> , 2010)	EC30 SP5 Update license information
2.4 (October 04 <sup>th</sup> , 2010)	EC30 SP6 Integration tab in the Facility Detail
2.5 (November 10 <sup>th</sup> , 2010)	EC30 SP6 PL2 Introducing Useful SAP Notes and new Function GetEmissionValueExtd()
2.6 (February 16 <sup>th</sup> , 2011)	EC30 SP8 EC Integration rules, SQL Data Source Restriction types, Calculation Process chapter, new chapter "Checking mechanism" for SAP EC Limits, SAP EC Accounting basic configuration (Chapter Transaction)
2.7 (March 30 <sup>th</sup> , 2011)	EC30 SP9: <ul style="list-style-type: none"> <li>- Consumption Material Classifiers,</li> <li>- Consumption Tasks with uncertainty,</li> <li>- Enter comment for Emissions, Consumptions and Measurements,</li> <li>- Delete Exceptions.</li> <li>- SAP EC Limit Reports</li> <li>- Citation Impacts, Citation Integratio, Citation Updates, Citation Monitoring</li> <li>- Task Type: Citation Update Task</li> </ul>

	<ul style="list-style-type: none"> <li>- Regulatory Content Providers</li> <li>- isNull() vAlgo function</li> </ul>
2.8 (July 11 <sup>th</sup> , 2011)	EC30 SP10 <ul style="list-style-type: none"> <li>➔ Task Scripting</li> <li>➔ Checklist Task</li> </ul>
2.9 (August 11 <sup>th</sup> 2011)	EC 30 SP10 PL1 <ul style="list-style-type: none"> <li>- Task Type: EAM Notification Task</li> </ul>
3.0 (May 2012)	EC 30 SP12 <ul style="list-style-type: none"> <li>- Description of the Actions of the delivered example roles</li> </ul>
3.1 (June 2012)	EC30 Feature Pack 2 (EC 30 SP12) <ul style="list-style-type: none"> <li>➔ Account Activities</li> <li>➔ Transaction Types (Borrow/Bank)</li> <li>➔ Variable Limit Checks</li> <li>➔ Limit Check Summaries</li> <li>➔ User Defined Fields for Transactional Data</li> <li>➔ Variable Limit Checks Scripting</li> </ul>
3.2 (October 2012)	EC 30 SP13 PL1 <ul style="list-style-type: none"> <li>➔ Russian 2TP-Reporting</li> </ul>
3.3 (December 2012)	EC 30 SP13 PL5 <ul style="list-style-type: none"> <li>➔ Currency Management</li> <li>➔ Permit Configuration</li> <li>➔ EC Import Logs</li> <li>➔ OBN Roles</li> </ul>
3.4 (January 2013)	EC 30 SP13 PL6 <ul style="list-style-type: none"> <li>➔ Calculate Uncertainty values</li> </ul>
3.5 (February 2013)	EC 30 SP14 <ul style="list-style-type: none"> <li>➔ Email Diagnostics</li> </ul>
3.6 (March 2013)	EC 30 SP14 PL1 <ul style="list-style-type: none"> <li>➔ Note 1836228 replace the note 1636650 (Checklist task!)</li> </ul>
3.7 (July 2013)	EC 30 SP15 <ul style="list-style-type: none"> <li>➔ Data import form Excel template file</li> <li>➔ Content import / content export function</li> <li>➔ Alert Log Configuration</li> <li>➔ Enhancement of function "BW Delta Info" to "Data Extractions to External Systems" including other system than only BW systems</li> </ul>
3.8 (October 2013)	EC 30 SP15 Patch 4 <ul style="list-style-type: none"> <li>➔ Emissions, Consumptions and Measurements from EC Tasks will be only checked, when the Task Instance has the status <b>COMPLETED</b>.</li> </ul>
3.9 (December 2013)	EC 30 SP15 Patch 14 <ul style="list-style-type: none"> <li>➔ WriteConsumValue() function had wrong "Tier" Syntax</li> </ul>
4.0 (March 2014)	EC 30 SP15 Patch 24 <ul style="list-style-type: none"> <li>➔ Deletion of a role</li> <li>➔ Deletion of a EC property</li> </ul>
4.1 (March 2014)	EC 30 SP15 Patch 29 <ul style="list-style-type: none"> <li>➔ EC SQL Data Source: Use self-defined Views and DB tables</li> </ul>

5.0 (August 2014)	<p>EC 30 SP17</p> <ul style="list-style-type: none"> <li>➔ Down Propagate function in the facility master data</li> <li>➔ Configuration of E-Mail Pop3 Server for Check List Tasks</li> <li>➔ Access to the Variables Attributes</li> </ul>
5.1 (November 2014)	<p>EC 30 SP16 and EC 30 SP17</p> <ul style="list-style-type: none"> <li>➔ GetMeasurementByTime (See also SAP Note <a href="#">2084587</a>)</li> </ul>
5.2 (November 2014)	<p>EC 30 SP17</p> <ul style="list-style-type: none"> <li>➔ Task Owner sees only opened tasks which are critical and overdue on his EC dashboard.</li> <li>➔ Task Scripting update with an example</li> </ul>
5.3 (April 2015)	<p>EC 30 SP18</p> <ul style="list-style-type: none"> <li>➔ Working with EC Material Identifiers and Integration</li> <li>➔ Sap Notes 1820226 and 1636650 for checklist task have been updated</li> </ul>
5.4 (December 2015)	<p>EC 30 SP19</p> <ul style="list-style-type: none"> <li>➔ Use function GetTechInfo(C_tech,"DOMAIN_ID");</li> <li>➔ Generate daily notification for overdue Tasks. See SAP Note 2254097</li> <li>➔ callEquation() function writes additionally calculation logs. See SAP Note 2221512 for further details</li> <li>➔ New function GetEmissionValueByTime(). See SAP Note 2047821 for further details</li> </ul>
5.5 (May 2016)	<p>EC 30 SP20</p> <ul style="list-style-type: none"> <li>➔ Data migration handling</li> <li>➔ Chapter "Data Import Log" has been updated</li> <li>➔ Facility Compliance Roles are deprecated</li> </ul>
5.6 (October 2016)	<p>EC 30 SP21</p> <ul style="list-style-type: none"> <li>➔ Actions and the related Pages in the SAP EC Portal Content</li> <li>➔ Update SAP EC Properties and BW Properties Table</li> </ul>
5.7 (January 2017)	<p>EC 30 SP21</p> <ul style="list-style-type: none"> <li>➔ New technical User Role : EC_Technical_AllUsers</li> </ul>

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