

**PROLOGA**



**SAP S/4HANA for waste and recycling,  
environmental services add-on by  
PROLOGA**

**SAP**® Certified  
Powered by SAP NetWeaver®

**Feature Scope Description**

**Relevance**



This documentation is relevant for:

- *SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA*
- *Cloud SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA*
- *SAP S/4HANA Cloud for waste and recycling, private edition, environmental services add-on by PROLOGA*

Whenever *SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA* is referred to in the following, the mentioned products above are always meant as well. To ensure a better overview when reading the document, *SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA* is used as a reference of all products.

**Document History**



Before you start the implementation, make sure you have the latest version of this document. You can find the latest version at the following location: [S/4HANA for waste and recycling, environmental services add-on by PROLOGA](#)

The following table provides an overview of the most important document changes.

Version	Important Changes
1	Initial version
2	Added chapter <i>interaction center</i> and <i>Resource Planning Apps</i>
3	<i>What's New</i> updated
4	Added chapter <i>Automated Route Planning</i> , <i>What's New</i> updated
5	Added chapter <i>Enhancements for Subcontracting</i> , <i>What's New</i> updated
6	<i>What's New</i> updated: 1809 SP05

Table 1: Most important document changes

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## Glossary



Attention



Note

## **1 SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA Feature Scope Description**

With *SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA* is providing a new add-on which extends *SAP® S/4HANA for Utilities* to support processes and requirements of waste disposal and recycling companies.

*SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA* is composed of:

- **Long-term Planning**

The Long-term Planning is designed to plan the periodic services such as municipal waste disposal, street cleaning or winter service for instance which are typically based on fix routes. Such routes have mostly rare changes. Therefore the solution supports the long-term planning based on a horizon of six to twelve months.

It's possible to create and maintain alternative routes, route districts and adjust services which are combined in one planning scenario which holds the related key performance indicators. By calculating and comparing the different planning scenarios it possible to identify the ideal route for a certain route district.

The digital map support enables a clear planning and more transparency of the planning scenarios.
- **Operational Planning**

The Operational Planning is designed to support the daily planning of waste disposal orders. After selecting the related planner group the planner gets a full overview of his planning area. This includes all available resources such as vehicle and drivers for instance. The related waste disposal orders and items can be easily planned and assigned by drag & drop. Based on the planning route lists can be printed and provided to the drivers.

The digital maps support enables a clear planning and more transparency related to the required information for the daily operations. This includes displaying of vehicles, service locations, waste disposal orders and items and depots in the map for instance.

In combination with Mobile Waste Order Management it's possible to transmit the planned orders to the on-board computer of the vehicle. This reduces paper work and is more efficient via real time data exchange and monitoring and provides a faster reaction on customer request.
- **Mobile Waste Order Management**

The Mobile Waste Order Management is designed to support the integration of your vehicle fleet into the company's IT network. The real-time communication and data recording which the software provides go a long way toward making your fleet utilization more efficient and your costs more transparent. The deep integration into Operational Planning supports a more efficient and transparent order planning and container management based on real-time data.
- **Material Flow Management**

The Material Flow Management contains the basic framework to enable companies to integrate processes according to the environmental legislation. The solution supports at creating, processing, tracking and documenting material flows in the SAP system from the creation to transport to recovery or disposal. Also the related quantities can be monitored including delivery permissions to the waste disposal facilities.

By the material inspection it is allowed to control inbound and outbound deliveries based on several rules according to the customer agreements. The outbound process of your own facilities is supported by Output Steering. It allows at planning and execution of outbound deliveries between 2 locations and helps at transparent mapping of the transport and disposal costs.

It is fully integrated into the *SAP® S/4HANA for Utilities* business solution which provides all standard data required for monitoring material flows such as waste generation sites, waste disposer sites, materials and quantities.
- **Interaction center for SAP S/4HANA for waste and recycling**

You can use the interaction center for SAP S/4HANA for waste and recycling to start customer-specific processes, which you use frequently.

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The solution helps the customer agent to manage customer relationships and supports the set up and operation of functions and processes for presales, service order management and customer interaction.

- Resource Planning Apps

To improve complex and time-consuming resource planning in waste disposal companies, the new Fiori application for mobile dispatching of staff and vehicles was developed.

You can use the applications to intervene in daily and weekly planning at short notice and from any mobile device in the event of an unanticipated vehicle breakdown or sick leave. The planning can easily be executed from any location.

- Automated Route Planning

- *SAP Waste and Recycling, automated route planning option by PROLOGA* is a cloud solution, which provides functions for automated planning of service orders in a commercial route collection scenario. *SAP S/4HANA for waste and recycling* can be used as a source system that provides the orders.

- Enhancements for Subcontracting

Subcontracting supports business processes in which some parts of a waste service (such as transport or waste disposal) are to be performed by a third party. *SAP S/4HANA for waste and recycling* supports subcontracting processes by automatically creating the associated documents (purchase orders and sales documents) as well as posting any goods receipts required. In the industry extension, the standard subcontractor processing is expanded to include various processes and functions to achieve full integration.

### 1.1 About this document

This feature scope description shows you which features are provided with *SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA*. In addition, this feature scope description also defines the product documentation for *SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA*.

### 1.2 Product documentation

The following product documentation is available for *SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA*:

Document Title	Description
Master Guide	Getting started information about the add-on
Feature Scope Description	This document
Installation Guide	Contains information about how to install the add-on
Operations Guide	Contains information about how to operate your productive <i>SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA</i>
Sizing Guide	Contains information about additional sizing considerations when using the add-on
Configuration Guides	Contains information about how to configure the add-on
User Manuals	Contains information for the end user about how to use the add-on

Table 2: Documentation provided for the add-on

You can find all this information in the SAP Service Market Place at the SAP® Help Portal under [SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA](#).

### 1.3 What's New

This section gives you an overview of the new features available as of *SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA 1809 SP05*. The following table describes what is new, enhanced, changed, or deleted:

Status	Component	Features	Where used
New	Longterm Planning	<p><b>Requirement analysis and requirement reports for longterm planning</b></p> <p>Before starting planning and after importing the data, the planner has the option to use requirement analysis to determine minimum needs of a scenario. A button was integrated at the scenario level and at the district level, which calculates a requirement analysis.</p> <p>A button for calculating requirement reports has also been integrated with additional filters for districts. This enables the values to be prepared in a table.</p>	TP_LONGTERM
Enhanced	Longterm Planning	<p><b>Adjustment to longterm planning to include service frequencies for sub-cleaning objects</b></p> <p>The cleaning frequency of sub-cleaning objects can be adjusted independently of the cleaning frequency of the upper-cleaning object, so that the services of the sub-cleaning objects can be planned flexibly.</p> <p>After adjustment, sub-cleaning objects include service frequencies. So, they are displayed in longterm planning as planning elements if service frequencies have been assigned.</p> <p>Furthermore, it can also be seen directly in the tree that the planning element is a service rhythm for a sub-cleaning object.</p>	TP_LONGTERM
Enhanced	Longterm Planning	<p><b>Filter by characteristics of planning areas</b></p> <ul style="list-style-type: none"> <li>Filtering according to characteristics at container location and cleaning object</li> <li>Set filter criteria for planning area in transaction /WATP/TP05</li> </ul> <p>If a classification has been maintained for a container location or a cleaning object, characteristics with characteristic values can also be entered as filter criteria in the planning area.</p> <p>When importing data to /WAT/TP_LONGTERM, the planning worklist is filtered according to these entered characteristic values and limited accordingly.</p>	WATP/TP05 TP_LONGTERM
Enhanced	Longterm Planning	<p><b>General adjustments for longterm planning</b></p> <ul style="list-style-type: none"> <li>Correction for "quick move" of planning elements</li> <li>Deletion flag for planning area: If planning areas are flagged for deletion, they can no longer be edited. The deletion flag can be reset.</li> <li>Information, warnings, and error messages have been adjusted: Message for blocked elements Positive confirmation in the overview of changes</li> <li>Links to other transactions have been adjusted: Equipment, container location, container category, planning area</li> </ul>	TP_LONGTERM

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New	Material Flow Management	<p><b>Implementation of Commercial Waste Ordinance (Gewerbeabfallverordnung)</b></p> <p>The Commercial Waste Ordinance (GewAbfV) stipulates, that commercial enterprises separate their waste, such as paper, wood, glass and metals, at the point of origin, in order to ensure the highest possible recycling of the waste.</p> <p>In transaction /WATP/ARB_CONFIG, the new tab “commercial waste ordinance” is available. It is possible to maintain recycling paths and categories and to assign a recycling path to a category.</p> <p>When creating new materials in transaction MM01, the new view “commercial waste ordinance” is available. Only entries are available that were maintained in /WATP/ARB_CONFIG.</p>	ARB_CONFIG MM01 – MM03
Enhanced	Material Flow Management	<p><b>General Bug Fixes</b></p> <ul style="list-style-type: none"> <li>• Synchronization of the waste list data: If the contract configuration process is canceled, the data entered in the waste list will be reset.</li> <li>• Deleting an SD contract item: If a contract item is deleted from the waste list in the contract configuration, the corresponding waste list is also deleted.</li> <li>• Filter by waste approval in the waste list: In the waste list, only waste approvals that match the EWC codes (AVV-Code) of the selected waste materials are displayed.</li> <li>• Master data extensions for the legal requirements for the waste and recycling industry in /WATP/ARB_CONFIG</li> <li>• Adjustments to the tree in the /WATP/ARB_CONFIG with English registration</li> </ul>	ARB_CONFIG
New	Mobile Waste Order Management	<p><b>Confirmation notes with mandatory entries in Mobile Waste Order Management</b></p> <ul style="list-style-type: none"> <li>• Make the settings for required text and photo for each confirmation note.</li> <li>• Getting the right mandatory field when selecting the confirmation notes.</li> <li>• Transmission of the data from the PDA to SAP.</li> </ul>	Route Assistant (RA)
Enhanced	Mobile Waste Order Management	<p><b>Enhancements for Geocoding via HERE.COM</b></p> <p>If several possible coordinates are found for a geocoding query, all possible results are displayed to the user and made available for selection.</p> <p>Example: Search for "Berlin, Waldstraße 1" without specifying the postcode: HERE provides multiple results.</p>	
Enhanced	Mobile Waste Order Management	<p><b>Adjustment of the time filter range for the orders to be transferred to the mobile client</b></p> <p>All provided orders that are x days in the past and a maximum of 7 days in the future will be called back (get back).</p> <p>The number of days in the past can be configured in the transaction /WATP/MOW_CONFIG.</p>	MOW_CONFIG
Enhanced	Mobile Waste Order Management	<p><b>General Bug Fixes</b></p> <ul style="list-style-type: none"> <li>• Multiple use of waste disposal order items:</li> </ul>	Route Assistant (RA) TP_SHORTTERM

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		<p>After the negative confirmation of a waste disposal order item via the route assistant (RA), it can be dispatched again.</p> <ul style="list-style-type: none"> <li>Waste disposal orders without items can be provided in MOW in TP_SHORTTERM.</li> </ul>	
New	Operational Planning	<p><b>Search help with text for route</b></p> <p>A text for a route can be maintained for a route in transaction EROUTE. This text is now included into search helps for operational planning:</p> <ul style="list-style-type: none"> <li>Transaction /WATP/TP_SHORTTERM: A waste disposal order can be searched by a search help. One of the criteria is the route. You can now search for the text of the route. This text is also displayed at waste disposal order level. You can also search for a route by using the search help. You can now search for the text of the route. The text is displayed directly on the waste disposal order in the tree structure.</li> <li>Transaction /WATP/TP_SCHEDULER When scheduling staff, the text for the route is displayed when selecting the route.</li> </ul>	TP_SHORTTERM TP_SCHEDULER
Enhanced	Operational Planning	<p><b>General Bug Fixes</b></p> <ul style="list-style-type: none"> <li>Fixed incorrect date display at month change in personnel planning</li> <li>Improved scroll functionality in the scheduler for personnel planning</li> <li>Allocation of container categories to vehicle types: A new plug-in can be used to control what should happen in the system if no entries are maintained for this allocation. If no allocation is maintained here, each type of container can be used when planning to a certain type of vehicle.</li> </ul>	TP_SCHEDULER TP_SHORTTERM EWABEHVEH
New	Operational Planning	<p><b>New Customizing Activity: Settings “Vehicle Type -&gt; Trailer Assignment”</b></p> <p>This assignment can be used to determine which vehicle type represents a trailer.</p>	SPRO
Enhanced	Interaction Center	<p><b>General Bug Fixes</b></p> <ul style="list-style-type: none"> <li>Waste data for service frequencies: When creating services from the interaction center, a search help is available for the waste material. This now supports the material lists for waste data. The materials from the contract items (waste list) are transferred correctly. If a value is used that is not maintained in the waste list, the fields are emptied, and you get a message that there is no entry in the waste list.</li> <li>If the fields “Waste Material” or “EWC Code” (AVV code) are changed when creating a service, the data from the waste list is transferred in the service rhythm according to a certain logic.</li> <li>Improved dialog for creating container placement orders</li> <li>Improved navigation to containers from the overview page: unspecific error messages no longer appear.</li> </ul>	WUI_SSO



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New	Automated Route Planning	<p><b>Maintaining costs centers in new transaction</b></p> <p>The costs for personnel, materials or plant prices and vehicles can be maintained via transaction <i>WATP/ATP_COSTS</i>. The prices stored here are used by the optimizer to determine the expected costs of the waste disposal orders. The views all have a <i>Valid to</i> column and a <i>Valid from</i> column, which are taken into account in relation to the execution date of the route.</p>	WATP/ATP_COSTS
Enhanced	Enhancements for Subcontracting	<p><b>General Bug Fixes</b></p> <ul style="list-style-type: none"> <li>• Enhancements for waste lists in the service product for contracts: The waste list of the service product has been expanded to include the information from the purchase and sales contract for external disposal and its items. If no contract has been maintained in the waste list, the old search determination is used.</li> <li>• Adjustments for the check of the type of subcontractor processing</li> <li>• Adjustments for the check for subcontractor processing based on external waste disposal facilities</li> </ul>	VA41/42/43 EWAUDOC

## 2 Long-term Planning

### 2.1 Business Background

Municipal waste disposal companies provide their disposal services on the base of periodic services. This is based on a long-term route planning with a planning horizon of 6 to 12 months in advance. Aspects such as the avoidance of unnecessary distances between the depots, route districts and waste disposal facilities and the optimal utilization of the routes for a proper service fulfillment are very important in order to ensure a cost-efficient operation. Nevertheless, the result is of such planning is often not optimal due to the fact not all required information has to be instantly available in a clear format. Sort out this problem by using Long-term Planning.

### 2.2 Key Features

Key Feature	Benefit
Planning area	By definition of a planning area according to several criteria such as service area or a certain region for instance it is ensured that the planner only sees the content which is necessary for his planning area which makes his work more transparent.
Planning scenarios and route districts	The creation and comparison of different planning scenarios and route districts for a certain region supports the planner at identification of the best routes for a certain district based on the related utilizations. By storing and using key figures such as the kilometer or average empty time per container you can get an optimized overview of the planned routes districts which is important and helpful for decision-taking.
Integration of digital map material	On the map all required geocoded data for an optimal planning are combined such as depot, service locations and waste disposal facilities. By the visual availability of all objects and required data it's more transparent for the planner and ensures a more efficient planning of each route district. View planning scenarios and routes at a glance.

Table 3: Key Features Long-term Planning

### 3 Operational Planning

#### 3.1 Business Background

The operational planning is the central element in the management of logistical processes of waste management companies. They are daily faced the challenge to plan and control the optimal resource usage and service delivery, assign resources to orders and ensure the optimal utilizations in order to ensure cost efficient operations and satisfied customers based on p fulfilled services. Operational Planning supports to solve this challenge by providing all relevant data in one application and much more.

#### 3.2 Key Features

Key Feature	Benefit
Planner group	By definition of a planner group according to several criteria such as service area or vehicle types or region is ensured that the planner only sees the content which is necessary for his operational planning which ensures more transparency.
Resource management	Enables optimal utilization of vehicles and staff resources and assigning them the related routes and orders. Based on providing all relevant data in one row the planning is more efficient and saves time.
Integration of digital map material	On the map all required geocoded data for an optimal planning are combined such as depot, service locations and waste disposal facilities. By the visual availability of all objects and required data it's more transparent for the planner and ensures a more efficient planning overview of each route.
Interaction with Mobile Waste Order Management	The interaction provides a number of options for recording key performance indicators in line with the vehicle types and order types. Depending on the type of communication that has been set up with the vehicles also real-time data can be transferred as processing status of each order or the vehicle position on the digital map of the operational planner. This transparency makes the planning more efficient and improves customer satisfaction thanks to faster processing of customer queries.

Table 4: Key Features Operational Planning

## 4 Mobile Waste Order Management

### 4.1 Business Background

Service vehicles are a valuable resource in the waste disposal industry. They make a significant contribution to value creation in the waste disposal business. At the same time, they incur high running costs. For this reason, it is crucial that you manage their utilization in a holistic way and incorporate the utilization data into your enterprise's information flow. However, too often communication with service vehicles ceases as soon as they leave the depot. This makes it difficult for you to stay up-to-date on the current service location and vehicle availability when new orders for service come in. In most cases, you can find out how everything went on a scheduled route only once the vehicle returns to the depot. A complicating factor arises when work orders and service data are transmitted in paper form: communication problems crop up, information is lost, and errors occur. It is not hard to see how real-time communication and accurate, timely data recording represent a huge optimization potential for your business.

### 4.2 Key features

Key Feature	Benefit
Fleet management	Record all up-to-date work processes and service data which are relevant to the vehicle fleet. More transparency of the vehicle location by the map integration and real-time interaction with the on-board computer. This reduces costs by improving scheduling and overall fleet control.
Order management	Saved time and money with resource optimization, direct implementation of incoming waste orders and quick reaction to unforeseen events. Faster order processing from order receipt and on-site service provisioning to invoicing thanks to mobile communication-based processing. Real-time information flow between vehicles and head office based on general packet radio service (GPRS) and wireless local area network (WLAN) communication. Transparent view of planned routes for easier service-based billing.
Container management	Maintain an ongoing overview of your inventoried container stock and container movements based on the mobile tracking.
Interaction with Operational Planning	The interaction provides a number of options for recording key performance indicators in line with the vehicle types and order types. Depending on the type of communication that has been set up with the vehicles also real-time data can be transferred as processing status of each order or the vehicle position on the digital map of the operational planner. This transparency makes the planning more efficient also for ad-hoc orders or in case of emergencies.

Table 5: Key Features Mobile Waste Order Management

## 5 Material Flow Management

### 5.1 Business Background

Since there is a big amount of national and international regulations and laws the environment-friendly waste disposal is a complex topic for waste management companies. They are daily faced with the challenge of recycling waste according to the country specific regulations – maintaining the required documents - monitoring the compliance with deadlines and waste quantities and observance of delivery permissions.

### 5.2 Key Features

Key Feature	Benefit
Material operations	Use centralized operational data to efficiently track waste and recycling operations and manage the material flow from the waste generation site to the waste treatment site or disposal site. This increases the efficiency by a centralized data entry and storage.
Compliance and performance	Improved monitoring of collected or transported waste quantities and monitor operations against pre-established thresholds or prerequisites.
Documentation	Generate compliance documentation based on integrated regulatory information and transactional data will be supported This increases the transparency of important company information by a centralized access to all waste and recovery data. Based on the process integration the required documents are available at the right time which saves time.
Material inspection	The material inspection allows monitoring and documentation of material inputs and outputs at a facility regarding their quality and quantity. Based on defined rules for inspection the system generates automatically control sets in order to enable checks of the deliveries according to the customer agreements.
Output Steering	Planning and monitoring of material outputs at own waste disposal facilities and no over planning because of quantity tracking for outgoing material flows.
Reuse of basic framework	The basic framework can be reused in order to integrate customer specific enhancements for documentation, tracking and monitoring material flows.

Table 6: Key Features of Material Flow Management

## 6 Interaction Center for SAP S/4HANA for waste and recycling

### 6.1 Business Background

Customer agents can handle inbound and outbound service transactions using the phone, e-mail, fax, chat, and letter communication channels. They can process business transactions and enhance their productivity by using a knowledge search. All relevant account information is available to them in the interaction center, such as account data, service order status, and product-related information.

The interaction center provides agents with the tools they need for the processes they use in their daily work. They can use it as a central point of entry to search and manage master data. They can also use it to perform traditional waste and recycling industry processes, such as placing containers and creating services.

### 6.2 Key Features

Key Feature	Benefit
Managing business partners and contract accounts	You can search, identify, view, change and create a new business partner and contract account.
Managing contracts and quotations	You can search, identify, view, change, create and end contracts and quotations.
Account identification	<p>On the identification split screen, you can search for and display technical and business master data.</p> <p>On the left-hand area of the screen, you can search for an account using the business master data, such as the name, account ID or address for a business partner.</p> <p>On the right-hand area of the screen, you can search for an account using technical master data, such as the object address, service address or WDO.</p>
Overview screen	<p>You can provide a complete overview of a confirmed business partner on the overview screen.</p> <p>When identifying and confirming a business partner, all business-related information for them is displayed in a hierarchical tree.</p> <p>You can use the navigation links for the individual objects in the tree to navigate to the detailed view of the objects.</p>
Managing service addresses and object addresses	<p>The service address and object address objects are created in the interaction center, which simplifies the usage of the technical objects in S/4HANA (container location, waste disposal object, cleaning object and property and their related services).</p> <p>You can search, identify, view, change and create service addresses and object addresses.</p> <p>Although the service address and the object address can only be edited in the interaction center, these objects are stored in the SAP S/4HANA system. You can still use the container location, waste disposal object, cleaning object and property objects in SAP S/4HANA. New data records and changed data records are synchronized between the old and new data model.</p>
Managing containers, cleaning objects and related services	<p>All business-relevant information is displayed in a hierarchical tree on the overview screen. Depending on which object you select in the tree, you can execute different business processes for these objects:</p> <ul style="list-style-type: none"> <li>• Place Container</li> <li>• Allocate Container</li> <li>• Add Cleaning Object</li> <li>• Create One-Off Service</li> </ul>

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	<ul style="list-style-type: none"> <li>• Create Reoccurring Service</li> <li>• Edit Service</li> <li>• Show WDO in Waste Disposal Order Overview</li> </ul>
Waste disposal orders for bulk waste	<p>Bulk waste is private or commercial waste that cannot be reduced to a size suitable for collection in containers. For this reason, bulk waste has its own waste disposal order.</p> <p>This function enables the customer agent to create and manage waste disposal orders for bulk waste.</p>
Managing interaction records	<p>This function enables the customer agent to manage interaction records as follows:</p> <ul style="list-style-type: none"> <li>• View the most recent interaction records</li> <li>• Create a new interaction record</li> <li>• View the interaction record history</li> <li>• Search for interaction records</li> <li>• See an overview of interaction records</li> <li>• View the history of clarification cases</li> </ul>

Table 7: Key Features of the interaction center

## 7 Resource Planning Apps

### 7.1 Business Background

Due to modern working models, which require new forms of flexibility in planning, it is increasingly necessary to be able to quickly and easily schedule resources. To improve complex and time-consuming resource planning in waste disposal companies, the new Fiori application for mobile dispatching of staff and vehicles was developed.

Using the application, the dispatcher can intervene in daily and weekly planning at short notice and from any mobile device in the event of an unanticipated vehicle breakdown or sick leave. There is no need for the dispatcher to be present at their workplace. The planning can easily be executed from any location, regardless of whether the dispatcher is at the depot or at home.

The apps are clustered according to the following criteria:

- The area of application, so that the authorization for the apps can be assigned at app level according to the SAP authorization concept. A distinction is made between the authorizations for staff and vehicle.
- The canvas to generally distinguish between the day view and week view. The view for the daily area has been optimized to such an extent, that more information is visible in the planning area, such as the list. The details for the week view can be found on the detail screen.

### 7.2 Key Features

Key Feature	Benefit
Overview calendar	You can provide a complete overview of a planner group and the corresponding routes and waste disposal orders in the calendar. You can switch between the day view or week view at any time during resource planning. You can show a period in the calendar from the current time and current date indicated by a marker.
Staff planning	You can allocate, deallocate and reschedule staff for a waste disposal order. You can change the period of staff deployment. You can allocate and deallocate staff for all waste disposal orders that are assigned to a route within a required period.
Vehicle planning	You can allocate, deallocate and reschedule vehicles for a waste disposal order. You can change the period of vehicle deployment. You can allocate and deallocate vehicles for all waste disposal orders that are assigned to a route within a required period.
Short-term planning	In the day view, you see an overview of all waste disposal orders for a day or period and the planned resources. The calendar entries are displayed in hours, which are divided into a total of 12 hours. You receive an overview of whether the resources are available, restricted or unavailable.
Long-term planning	In the week view, you see an overview of all routes and corresponding waste disposal orders for a period of at least one week. The calendar entries are displayed in days. You can decide whether you want to display one, two, three or four weeks at once. You receive an overview whether the resources are already scheduled.



SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA - Feature Scope Description

Searching for resources using the search function	<p>To schedule vehicles and staff you can search for resources directly.</p> <p>You can make an entry in the search field, so all elements from the name and the number are taken into consideration.</p> <p>You can search for unplanned resources by setting a filter.</p>

Table 8: Key Features of Resource Planning Apps

## 8 Automated Route Planning

### 8.1 Business Background

Strong competitors increase the pressure to optimize the efficiency of operations performed by waste disposal companies. To improve complex and time-consuming planning, *SAP Waste and Recycling, automated route planning option by PROLOGA* provides the new solution *Automated Route Planning*, which replaces manual planning, with its associated limitations.

*SAP Waste and Recycling, automated route planning option by PROLOGA* is a cloud solution, which provides functions for automated planning of service orders in a commercial route collection scenario. *SAP S/4HANA for waste and recycling* can be used as a source system that provides the orders.

Features of the cloud solution are:

- Creation of planning scenarios
- Import master and planning data to the planning scenario
- Upload the master and planning data to the automated planner
- Validation of the planning scenario
- Scenario planning
- Monitoring of the planning
- Export the solution to the ERP system

### 8.2 Key Features

The key features describe the data elements and system features that must be maintained for *Automated Route Planning*.

Key Feature	Benefit
Set up relevant master data for automated route planning	<p>Maintain specific criteria for waste disposal facilities, such as <i>Opening Hours, Service Times, Material Assignment</i> and <i>Disposal Costs</i>.</p> <p>Maintain specific criteria for container locations, such as <i>Opening Hours, Service Times</i> and <i>Disposal Quantity</i>.</p>
Set up planner groups specifically for automated route planning	<p>Planner groups for automatic route planning can be created separately from the planner group for manual planning.</p> <p>In the specific case of <i>Automatic Route Planning</i>, the following criteria must be maintained for planner groups:</p> <ul style="list-style-type: none"> <li>• <i>Planner</i>: Only SAP users who have been entered under <i>Planner</i> can view the corresponding planner group, their scenarios, and solutions in the ARP Cloud.</li> <li>• <i>Plants</i></li> <li>• <i>Waste Disposal Facilities</i></li> </ul> <p>Configuration for each plant and planner group is possible for:</p> <ul style="list-style-type: none"> <li>• <i>Check-in time</i></li> <li>• <i>Check-out time</i></li> <li>• <i>Maximum working time (including overtime)</i></li> <li>• <i>Regular working time (without overtime)</i></li> <li>• <i>Minimum working time</i></li> <li>• <i>Maximum travel time</i></li> <li>• <i>Idle time</i></li> <li>• <i>Set-up time before departure</i></li> <li>• <i>Teardown time after driving</i></li> </ul>

SAP S/4HANA for waste and recycling, environmental services add-on by PROLOGA - Feature Scope Description

Configuration of material groups and waste fractions	<p>The material group can be used to control which materials can be transported together in one vehicle. All materials that are assigned to a certain material group (for example different types of cardboard and paper) can then be transported together.</p> <p>Assign materials to material groups to maintain the price for the entire material group.</p>
RFC connection	Set up / configuration of the connection to the ARP Cloud Service.
Configuration of background tasks	<ul style="list-style-type: none"> <li>• Export planner groups to the cloud</li> <li>• Export planning data to the cloud</li> <li>• Import solutions from the cloud</li> </ul>
Processing	<ul style="list-style-type: none"> <li>• Automatic updates of the relevant planner groups in the ARP Cloud</li> <li>• Automatic selection of plan data and upload to the ARP cloud</li> <li>• Automatic download of the final solution from the ARP cloud and update of the plan data in the backend</li> </ul>

Table 9: Key Features of Automated Route Planning

## 9 Enhancements for Subcontracting

### 9.1 Business Background

Subcontracting supports business processes in which some parts of a waste service (such as transport or waste disposal) are to be performed by a third party. *SAP S/4HANA for waste and recycling* supports subcontracting processes by automatically creating the associated documents (purchase orders and sales documents) as well as posting any goods receipts required. In the industry extension, the standard subcontractor processing is expanded to include various processes and functions to achieve full integration.

### 9.2 Key Features

Key Feature	Benefit
Purchase and sales contract for external disposal in the waste list	The waste list for the service product has been expanded to include the information from the purchase and sales contract for external disposal and its items. This functionality makes it possible to select the valid purchase contract and its items for the waste materials in the end customer's sales contract at the start of the process. This is then transferred to the disposal order and referenced in the confirmation cockpit when the purchase order is created.
Search help and result list in the waste list	<p>To find and select a valid purchase or sales contracts and their items in the waste list, a search help has been implemented for the new fields "Purchase Contract" and "Sales Contract".</p> <p>A check is provided to determine whether the external waste disposal facility has assigned a valid purchase or sales contract for the selected material in the system. The search help is prefilled with the waste material, the date, the supplier or customer and the external waste disposal facility.</p> <p>The result list for the search help displays the valid purchase or sales contract items from which the user can select the correct one.</p>

Table 10: Key Features of Enhancements for Subcontracting