



LCL Air Freight

This scenario describes operations that involve consolidated air freight at gateways belonging to the freight forwarding company, Interforwardsers. Interforwardsers is a global logistics service provider (LSP) with two subsidiaries, one in Japan and one in the United States. The Interforwardsers transportation network consists of forwarding houses (stations) in Tokyo and Nagoya, as well as a central gateway and two warehouses at Narita International Airport. On the U.S. west coast, there are two warehouses and a gateway at Los Angeles International Airport, as well as forwarding houses (stations) in Phoenix, AZ and San Diego, CA. Typically, the forwarding houses have direct customer contact, whereas the central gateway serves to coordinate and consolidate all air traffic. This means that the forwarding houses have contracts such as forwarding agreements with customers (including both shippers and consignees), which stipulate charges and state how goods are to be handled. The gateways act as service centers and enter into contracts such as freight agreements with the carriers to specify optimized, consolidated cost rates and volume agreements.

In this scenario, the Interforwardsers gateway in Narita creates an internal master flight schedule with specific flights and transportation allocations for each carrier (in this example Japan Airlines and Qantas Airways) for specific days of the week. Once the departure rules have been assigned the daily allocations, a master flight plan is created by defining the actual departures in a certain time period, for example six months). Based on this master flight plan, an operational flight plan containing all flights with booked capacity is extracted for a shorter time period, for example, four weeks. The system then automatically creates freight bookings for each schedule departure and assigns air waybill numbers from a pre-defined number range. The freight bookings can be automatically requested and confirmed by electronic data interchange or manually confirmed in the case of manual bookings.

Individual shipments from various shippers in Nagoya and the greater Tokyo area are registered by the forwarding houses in Nagoya and Tokyo in the form of forwarding orders. The forwarding houses check the shipments before manually assigning the forwarding orders to the freight booking for the main carriage stage. Alternatively, they can generate a transportation proposal in the system. At this stage, the actual route of the main carriage stage is changed to *planned* and the forwarding order is assigned to a booking for the flight. Once the gateway has confirmed the main carriage stage, pickup from the shipper's location and the pre-carriage stage from the forwarding houses in Tokyo and Nagoya to the gateway in Narita can be planned. The forwarding houses create freight orders for picking up the goods from the shipper. Once the goods have been received, any discrepancies resolved, the documents checked, outbound customs cleared, and the appropriate documentation generated, the pre-carriage stage is planned using the transportation cockpit. Generated documentation includes house air waybills (HAWBs) and HAWB labels that are to be applied to the cargo. The freight orders have to adhere to the cut-off parameters defined in the schedules from the forwarding houses to the gateway. Depending on the kind of goods delivered, these may include the dangerous goods cut-off time, the cargo cut-off time, and the document cut-off time.

The forwarding houses also perform all of the necessary export customs clearance activities and record this in the forwarding orders. Actual shipment, however, is only possible after several compliance and security checks, such as the air cargo security check, have been performed.

Land transportation in Japan consists of the following stages:

- Pickup of individual shipments from the shipper and transport to the forwarding houses in Tokyo and Nagoya
- Pre-carriage from the forwarding houses in Tokyo and Nagoya to the gateway in Narita

After the truck carrying the consolidated goods arrives at the gateway in Narita, the individual shipments are loaded as loose air freight, which is then transported to the carrier's warehouses at the airport. The airline confirms the departure of the plane by transmitting an Uplift confirmed message to Interforwardsers. At this point, Interforwardsers Japan sends the forwarding settlements to the shippers and the freight settlement to the carrier. New forwarding orders, including freight units and freight bookings for the import process, are generated from the preceding forwarding orders and freight bookings or, if the consignees do not use SAP TM, are created manually.

Once the goods arrive at the gateway in Los Angeles, Interforwardsers confirms the arrival at destination. The goods are then deconsolidated for customs clearance. Before being reconsolidated and transported as part of a full truck load from the gateway to the forwarding houses in San Diego, CA or Phoenix, AZ. Transport is arranged using a road schedule that connects the gateway to the respective forwarding house. The forwarding houses in San Diego and Phoenix also arrange for customs clearance and delivery of goods to the consignees. They also manage billing for collect charges as defined in the Incoterms and local forwarding agreements.

Prerequisites

The following table shows which SAP application components are required in this scenario. However, different scenario variants may need different SAP application components depending on your particular requirements.

SAP Application Component	Configuration	Required/Optional
SAP TM 9.0	See SAP Solution Manager	Required
SAP ERP 6.04	See SAP Solution Manager	Optional
SAP Netweaver PI 7.1	See SAP Solution Manager	Optional
SAP Visual Business 2.0	See SAP Solution Manager	Optional

You can implement this business scenario with different releases of the relevant application components. For more information, see:

- Master Guide for SAP TM on SAP Service Marketplace at <http://service.sap.com/instguides>
- Scenario & Process Component List on SAP Service Marketplace at <http://service.sap.com/sc1>

Process

The business processes run as follows:

1. Managing Bookings

Based on former shipments and growth forecasts, freight forwarders such as Interforwardsers reserve capacity for a certain route and create master flight schedules for each weekday and carrier, Qantas Airways or Japan Airlines. An operational flight plan with specific departures from Narita International airport to Los Angeles International airport is created for a certain period of time on the basis of the master flight schedules. The operational flight plan consists of air freight bookings that have to be confirmed by the carriers. Confirmed freight bookings can be used to link forwarding orders, consolidate the cargo, and issue the necessary documents such as master air waybills and truck manifests.

2. Managing Forwarding Orders

The freight unit, which is the execution object, is generated from the information contained in the forwarding order.

A transportation proposal is used to determine the route between the export station and the import station.

3. Planning Freight and Selecting Carriers

The forwarding houses in Tokyo and Nagoya create forwarding orders based on the transportation proposal, which results in freight unit stages.

The transportation planner at the Narita gateway views the assignment of the forwarding order to a flight (based on the freight booking) and confirms the assignment after having checked the order for special handling requirements or other compatibility issues. The forwarding order is loosely assigned to the air freight booking appropriate to the

flight. At the same time, the capacity of the reserved flight is checked along with the feasibility of meeting the required pickup times at the shipper and delivery times at the consignee. This determines the final routing selected by the gateway and the approximate timeline.

Regardless of whether the route has been assigned, the transportation planner responsible for land transportation plans the pickup of the shipment from the shipper's location and the pre-carriage transport of all shipments as part of a full truck load (FTL) from the forwarding houses in Tokyo and Nagoya to the gateway in Narita. To do so, the transportation planner generates freight orders in the SAP TM system for individual forwarding orders, for example, the pick-up at a shipper, or multiple forwarding orders, for example for FTL feeder trucks to a gateway.

The planner prints the necessary documents, such as the roadway bill, and sends them to the trucking organization.

4. Executing and Monitoring Transportation

After all the stages have been planned in forwarding orders, freight bookings, or freight orders, the execution status is monitored and repeatedly updated at different locations along the transportation chain. The responsible party for each stage ensures that the execution status is set properly via electronic integration with the respective carrier or by manually adjusting it.

The receiving organization for each stage decides whether the cargo is ready for execution in the next stage or whether it must be put on hold for further processing until any issues are resolved.

The export gateway plans the loading process for warehouse staging purposes, since the import gateway needs to deconsolidate and re-assign the goods to freight orders for the on-carriage stage to the import station.

This step also includes the documentation for the main-carriage stage as required by the transportation mode. For example, this includes documents that govern the transfer of cargo from the gateway warehouse to the carrier.

5. Settling Freight Orders (Settling Costs for Internal Resources and Settling Freight Orders for LSPs and Shippers)

You use this business process to evaluate, calculate, and distribute the transportation charges for the business partners involved on the supply side (suppliers). The transportation costs are calculated on the basis of the outgoing transportation order (freight orders and booking orders) referenced to contract rates. The business partners involved are the supplying parties, such as the truckers and air carriers. This business process enables freight settlement documents and internal settlement documents to be created for the transportation of goods from the forwarding houses to the gateways on both the export and the import side.

6. Settling Forwarding Orders (Settling Forwarding Orders for Customers and Settling Internal Charges for Forwarding Orders)

Interforwarders has negotiated forwarding agreements with its customers. A forwarding agreement is a bilaterally binding contract that is valid for a specific time and defines the charges and rates agreed upon for the transport of cargo. The agreement is based on volume projections per customer trade lane and service level within the time frame, and the freight forwarder provides the respective capacity and transportation services. The forwarding agreement may also contain information about penalties that may be incurred if the commitments are not met.

The transportation charges, calculated in the forwarding order, originate from the forwarding agreement but can contain additional charge elements (for example, services such as fumigation or repacking), which are not part of the forwarding agreement. In this scenario, a door-to-door service is provided and the charge distribution is based on Incoterms.

Finally, any charges that were incurred by the export station are forwarded to the import station. There, the profitability of the entire shipment is calculated.