SAP Logistics Business Network, Global Track and Trace Option
Track PO Fulfillment Template App

SAP Business Network
February 2021

THE BEST RUN **SAP**

About **GTT Template Apps**

GTT template apps* stand for codes, scripts, and associated documentation published by SAP to show GTT customers and partners how to use the global track and trace option of SAP Logistics Business Network. They can also accelerate customers' and partners' development of applications that are intended to work with the option.

GTT template apps include:

- **Track PO Fulfillment**

- Track SO Fulfillment

- Track Shipments

Delivery Channel and Contents

The following contents are provided in SAP Samples GitHub for users to build template apps or do the customization:

- **GTT Model**

  – Processes / events modeling

  – ERP integration / VP integration mapping

  – Event to Action script

- **Fiori App Code (Java and JavaScript)**

- **ERP Extractor (ABAP)**

  – Processes

  – Actual events
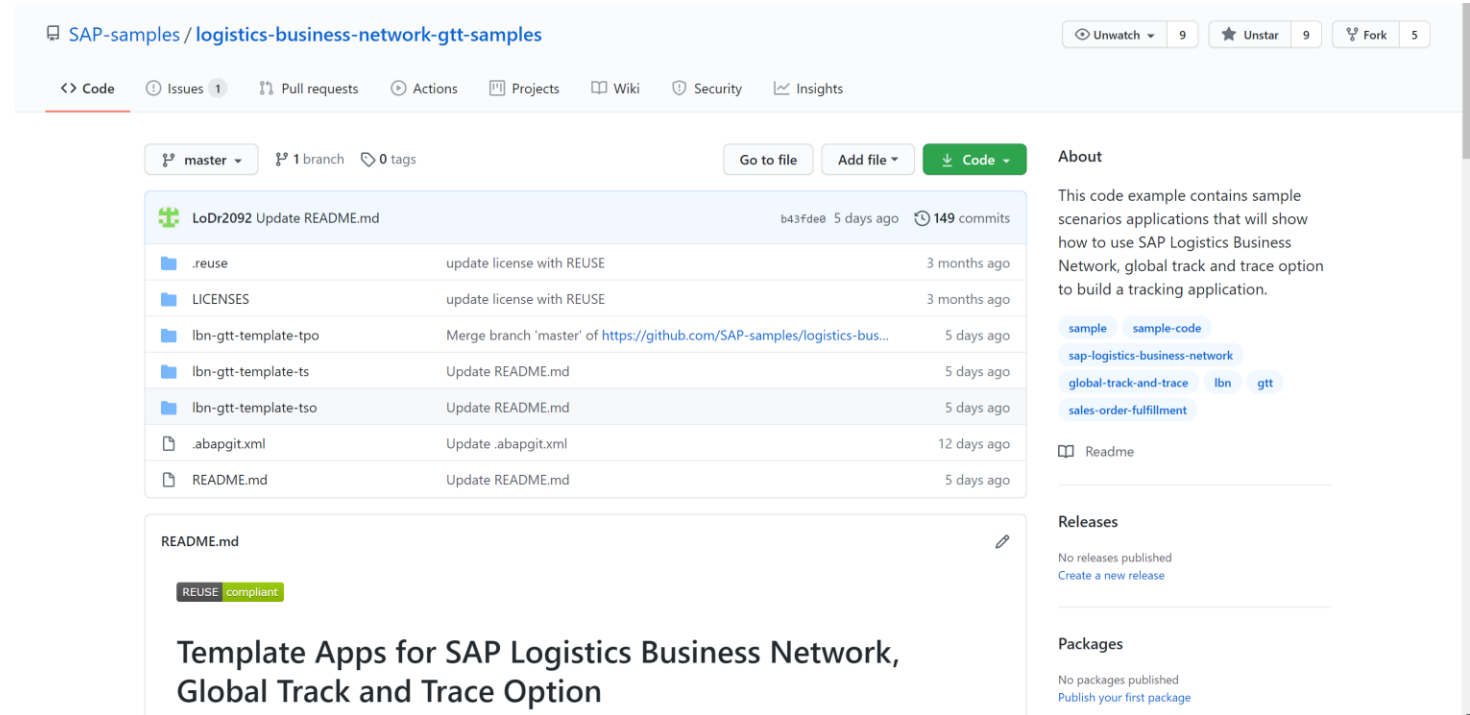
Template apps for global track and trace option:

https://github.com/SAP-samples/logistics-business-network-gtt-samples

Implementation Steps

The following describes how to use the delivered contents in SAP Sample GitHub. For detailed steps, refer to the document link on this page:

- **Environment Configuration**
  - Enable cloud foundry and create space
  - Maintain roles and users
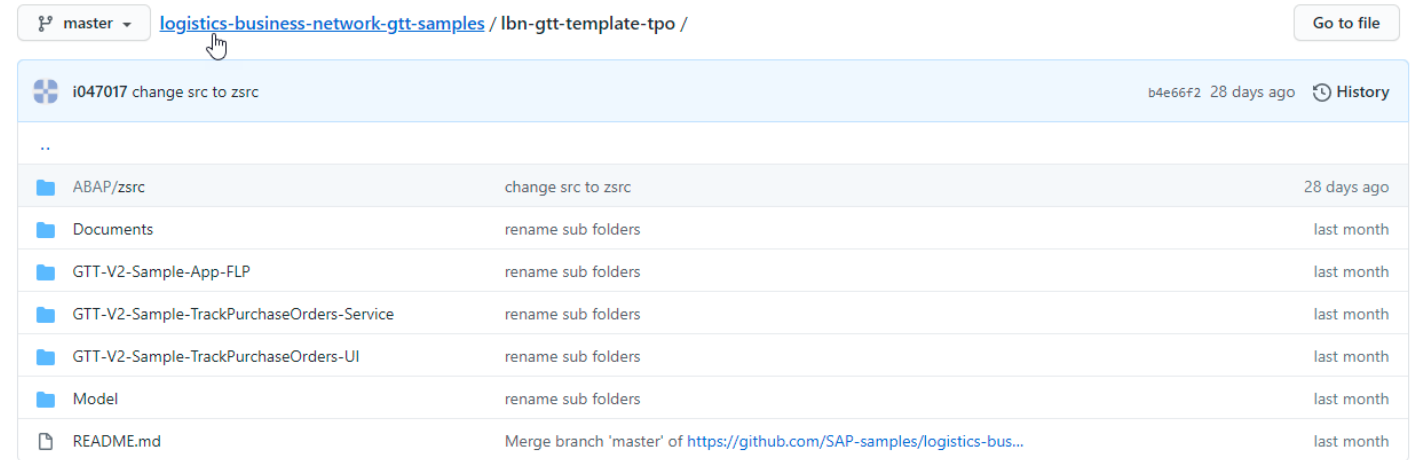 - Maintain technical users

- **Implement Template App**
  - Deploy model
  - Package and deploy
  - Maintain destination

- **Implement ERP Extractor**
  - Activate SAP Event Manager Integration
  - Configuration and Implementation - Basic
  - Download and implement ABAP Code from GitHub

- **Other Configurations**
  - Obtain Here Map license
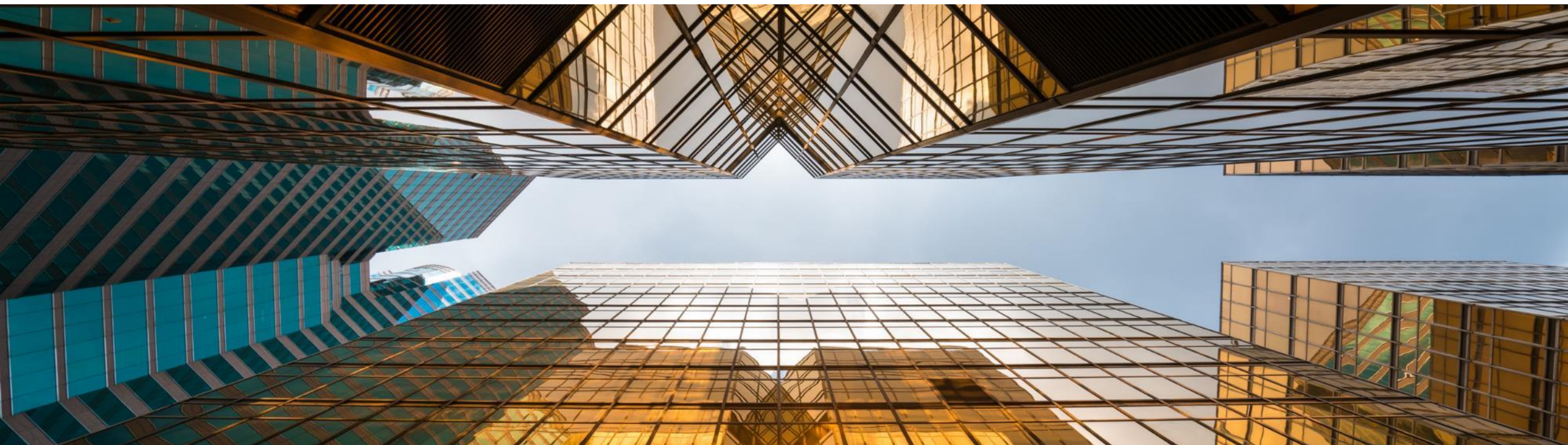 - Maintain location master
  - Maintain business partner

Implementation guide for *Track PO Fulfillment* template app:

https://github.com/SAP-samples/logistics-business-network-gtt-samples/blob/master/lbn-gtt-template-tpo/Documents/01_Implementation_Guide-TPOF.pdf
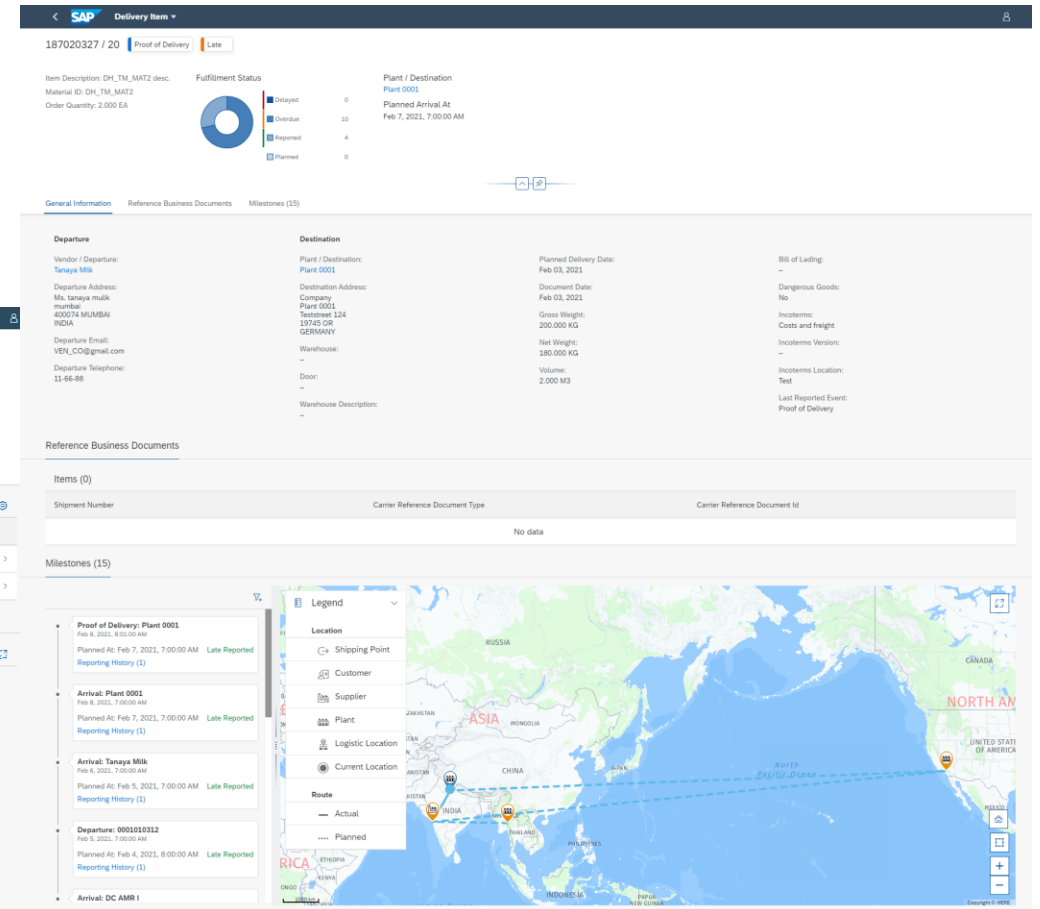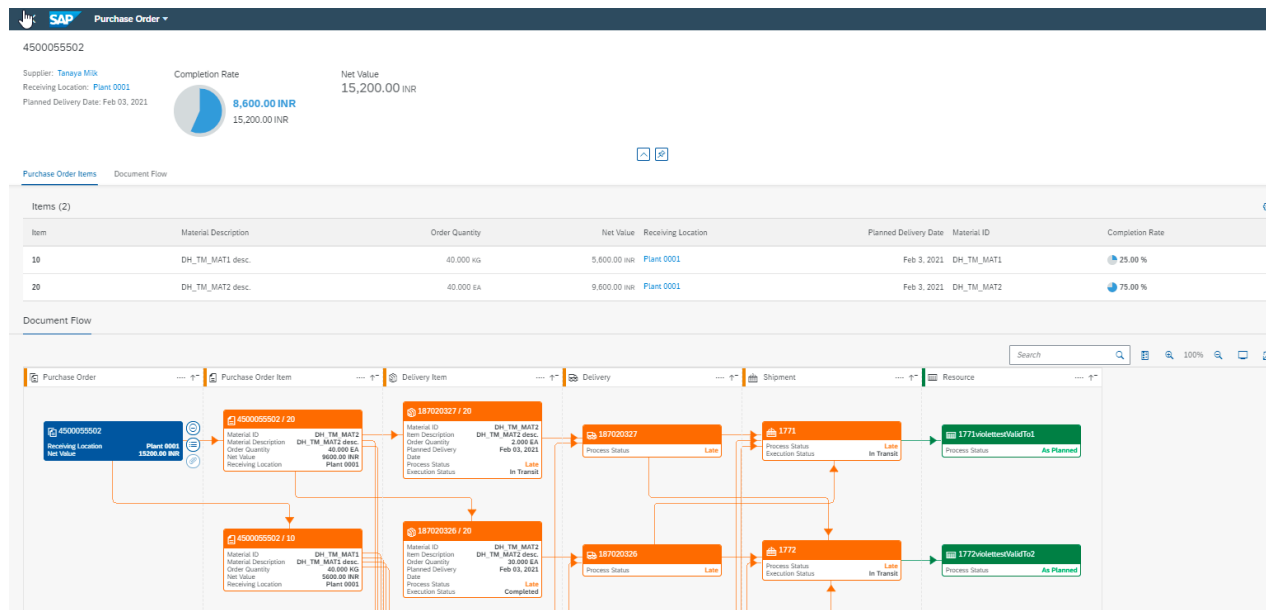
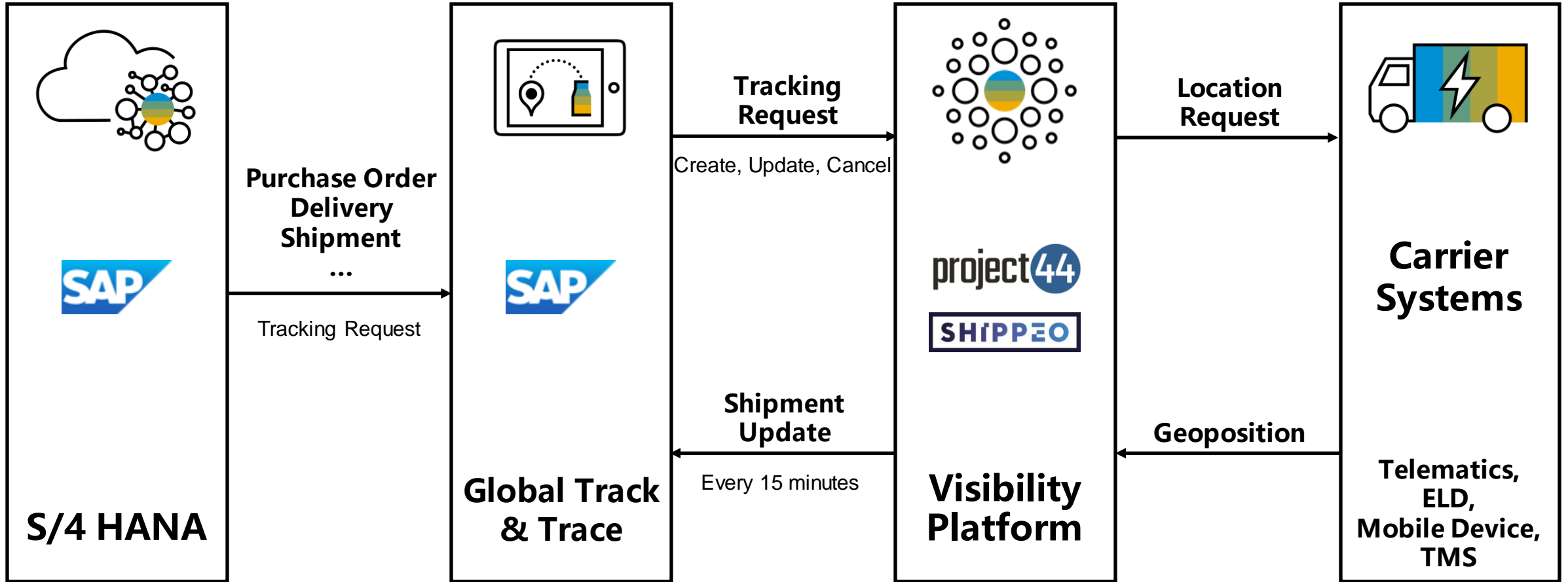# Track PO Fulfillment Template App

Introduction

Track PO Fulfillment template app is one of the template apps for SAP Logistics Business Network, global track and trace option. It is designed for purchase representatives to monitor the purchase order fulfillment status when the procuring party manages the deliver transportation. It mainly answers the following questions:
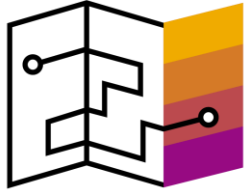
- How many deliveries in my purchase order are **delayed**?

- How many deliveries in my purchase order are **completed**?

- **Where** are my purchase orders?
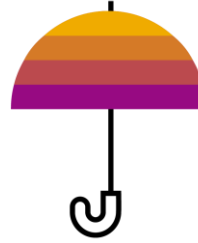
- What is the **ETA** of my purchase orders?

System & Integration Overview

S/4 HANA — SAP

Purchase Order Delivery Shipment ...

Tracking Request

Global Track & Trace — SAP

Tracking Request

Create, Update, Cancel

Shipment Update

Every 15 minutes

Visibility Platform — project44 / SHIPPEO

Location Request

Geoposition

Carrier Systems

Telematics, ELD, Mobile Device, TMS

Highlights

Standardized, easy-to-use app
for status
and milestone tracking

Comprehensive Overview &
Event Aggregates

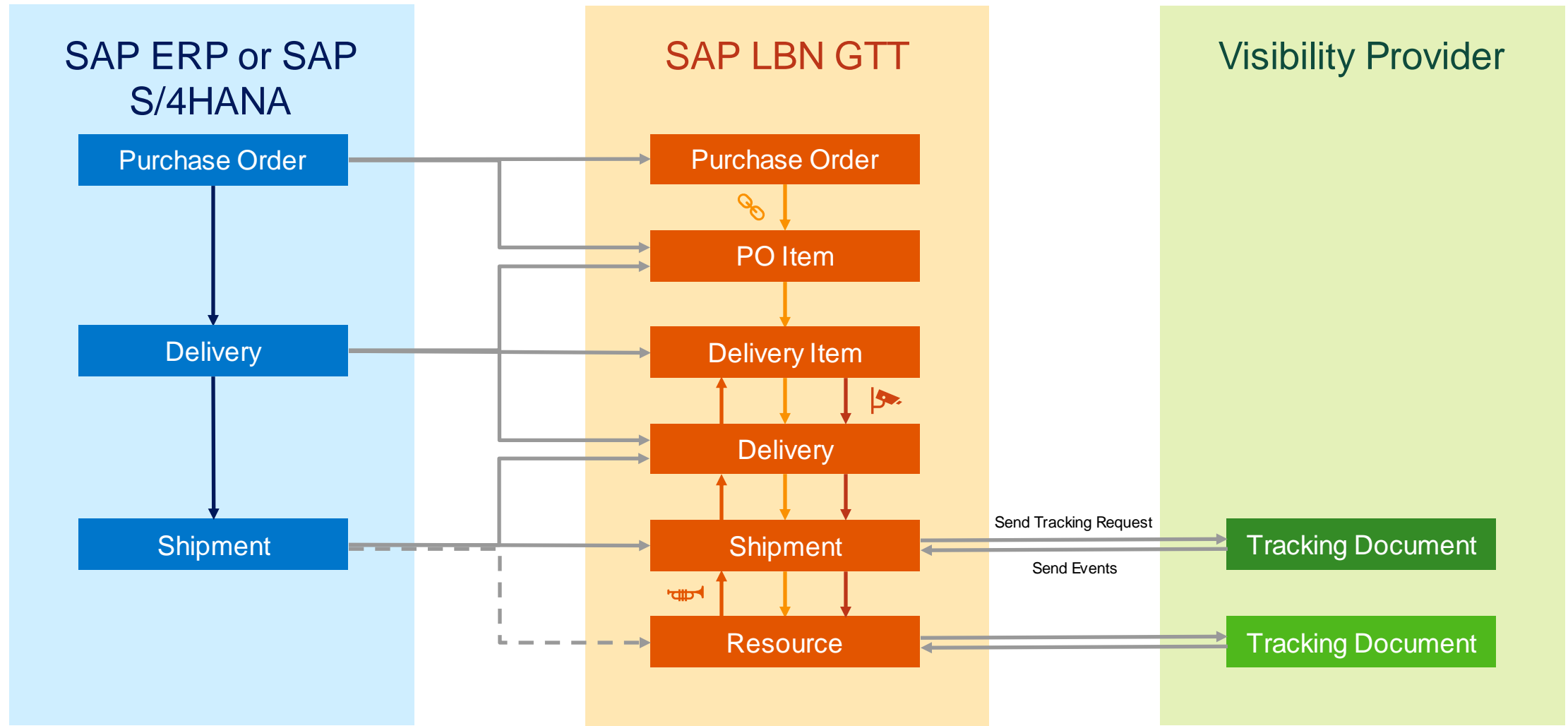Graphical Milestone Visualization

Embedded Map
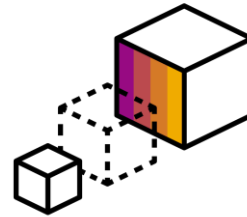
Out-of-the-box connectivity to
Project44

Allows for real-time geo location
and ETA updates for full truck
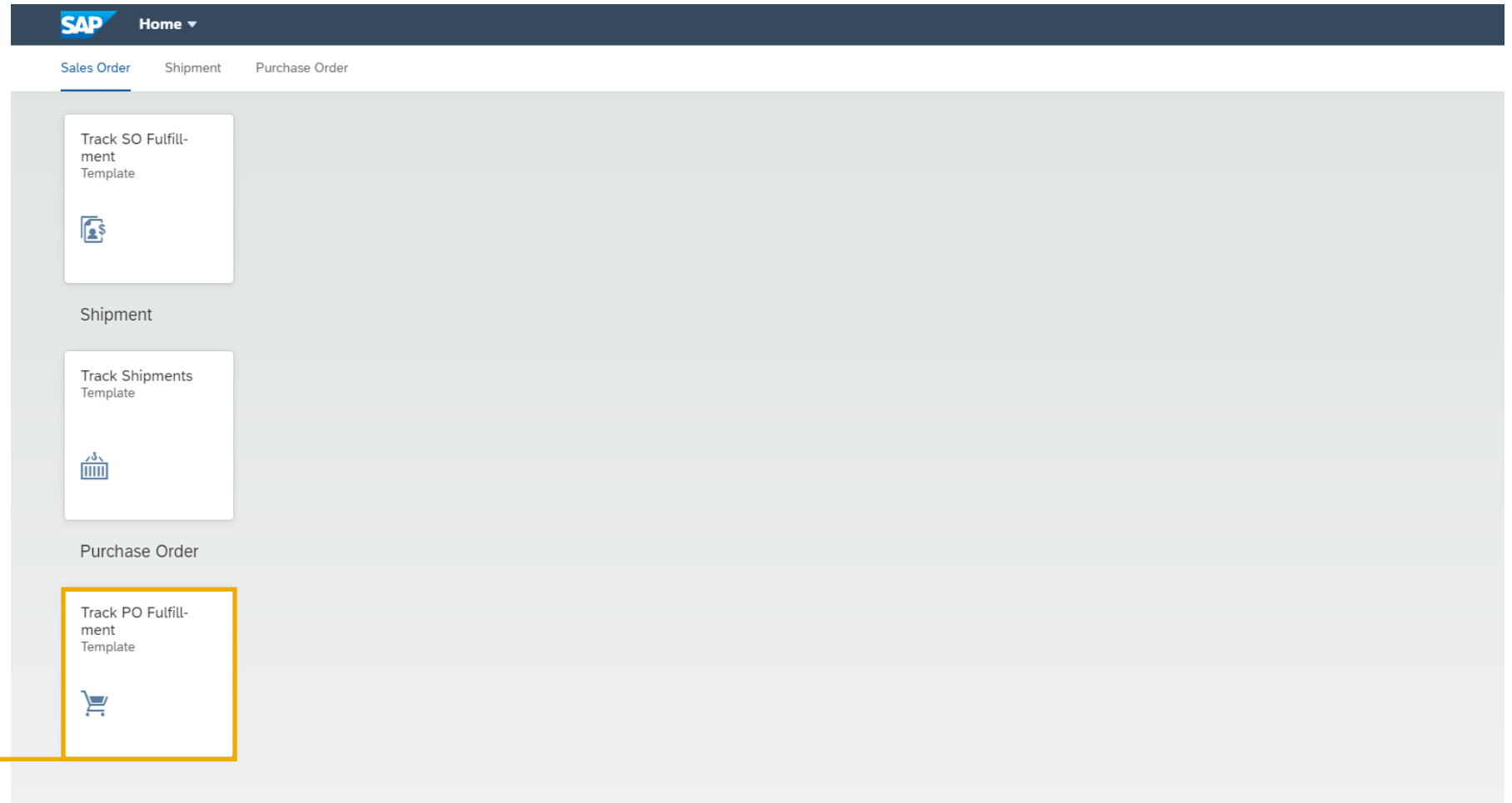load shipments

Tracked Process Modeling in Track PO Fulfillment

Let's see the **features**

Fiori Launchpad

Enter the **Track PO Fulfillment** app on the Fiori Launchpad of GTT template apps

Purchase Orders List

Store your customized view of the list

Filter your purchase orders by various criteria

Customize your table, such as sorting logic or layout change

| | | | | SAP | Track Purchase Orders ▾ | | |

Standard ⌄

Purchase Order No.:	Supplier:	Receiving Location:	Planned Delivery Date:	Material ID:	Material Description:	Shipment Number:	Inbound Delivery No.:

Adapt Filters   **Go**

Purchase Orders (413)   Purchase Order Items (763)

Purchase Orders (413)

Purchase Order No.	Supplier	Receiving Location	Planned Delivery Date	Net Value	Completion Rate	Incoterms	
4500055207	Tanaya Milk	Plant 0001	Oct 19, 2020	11000.00 INR	0.00 %	Costs and freight	›
4500055210	Tanaya Milk	Plant 0001	Oct 19, 2020	3220.00 INR	0.00 %	Costs and freight	›
4500055217	Tanaya Milk	Plant 0001	Feb 12, 2021	605.70 INR	0.00 %	Costs and freight	›
4500055238	Tanaya Milk			11280.00 INR	0.00 %		›
4500055267	Tanaya Milk	Plant 0001	Oct 19, 2020	11000.00 INR	0.00 %	Costs and freight	›
4500055268	Tanaya Milk	Plant 0001	Oct 19, 2020	11000.00 INR	0.00 %	Costs and freight	›
4500055269	Tanaya Milk	Plant 0001	Oct 19, 2020	11000.00 INR	0.00 %	Costs and freight	›
4500055270	Tanaya Milk	Plant 0001	Oct 19, 2020	11000.00 INR	46.73 %	Costs and freight	›
4500055271	Tanaya Milk	Plant 0001	Oct 19, 2020	11000.00 INR	0.00 %	Costs and freight	›
4500055272	Tanaya Milk	Plant 0001	Oct 19, 2020	11000.00 INR	0.00 %	Costs and freight	›
4500055273	Tanaya Milk	Plant 0001	Oct 19, 2020	11000.00 INR	34.73 %	Costs and freight	›
4500055274	Tanaya Milk			7920.00 INR	0.00 %	Costs and freight	›
4500055275	Tanaya Milk	Plant 0001	Oct 19, 2020	11000.00 INR	36.91 %	Costs and freight	›

Purchase Orders List Popover

The column fields **Supplier** and **Receiving Location** are clickable. These easily provide the location information.

Purchase Orders Details

Sum of **completion values** of undeleted PO items

Table of your **purchase order items** with column fields that can be customized

Relevant processes based on the purchase order

Purchase Orders Details Document Flow

There is a maximum of six milestones:

- Purchase Order*

- Purchase Order Item*

- Delivery Item*

- Delivery

- Shipment

- Resource

*You can navigate to the Details page by the box marked with *.

Purchase Orders Details Document Flow

Box Status Logic

- Every box has its own process status indicated by a color.

- If there is a sub-node, then the box's color is determined by the sub-node's process status:
  - ▎ Delayed
  - ▎ Overdue
  - ▎ Early
  - ▎ Late
  - ▎ As planned

- If there is no sub-node, the box's color is determined by its own process status.

Purchase Order Item Details

Completion Rate calculated by Completion Quantity and Order Quantity

Last Reported Event fetched from the **Actual Event ID** with maximum actual business datetime for the process

Delivery items are relevant to the purchase order item

Completion Rate of PO Header and PO Item

PO Header

- Sum of Completion Values of undeleted PO items

PO Item

- If the PO item is deleted, both the Completion Value & the Net Value are set to zero (0)

- If the PO item is not deleted, both the Completion Value & the Net Value are calculated as below:
  – Net value always equals the Net Value of the undeleted PO items
  – Completion Value is calculated by the following logic…

Completion Rate of PO Item

- If no inbound delivery exists, the Completion Value equals the:

  Net Price / Price Unit * sum of Goods Receipt quantity for this PO item

- If at least 1 subsequent inbound delivery item exists, the Completion Value equals the:

  Net Price / Price Unit * **Completion Quantity**

  Completion Quantity equals the:

 1. Sum of **Goods Receipt quantity** for not POD-relevant delivery items
  2. Sum of **item POD quantities** for the POD-relevant delivery items

TIP: POD-relevant means POD is a planned event for the inbound delivery item, which is fed by subsequent shipments for the delivery.

TIP: Item POD quantities mean all the subsequent shipments for this delivery item have all the planned POD events reported.

Purchase Order Item Details Milestone & Document Flow

Milestone Fulfilment Process of the purchase order item, depending on whether the inbound delivery process is required.
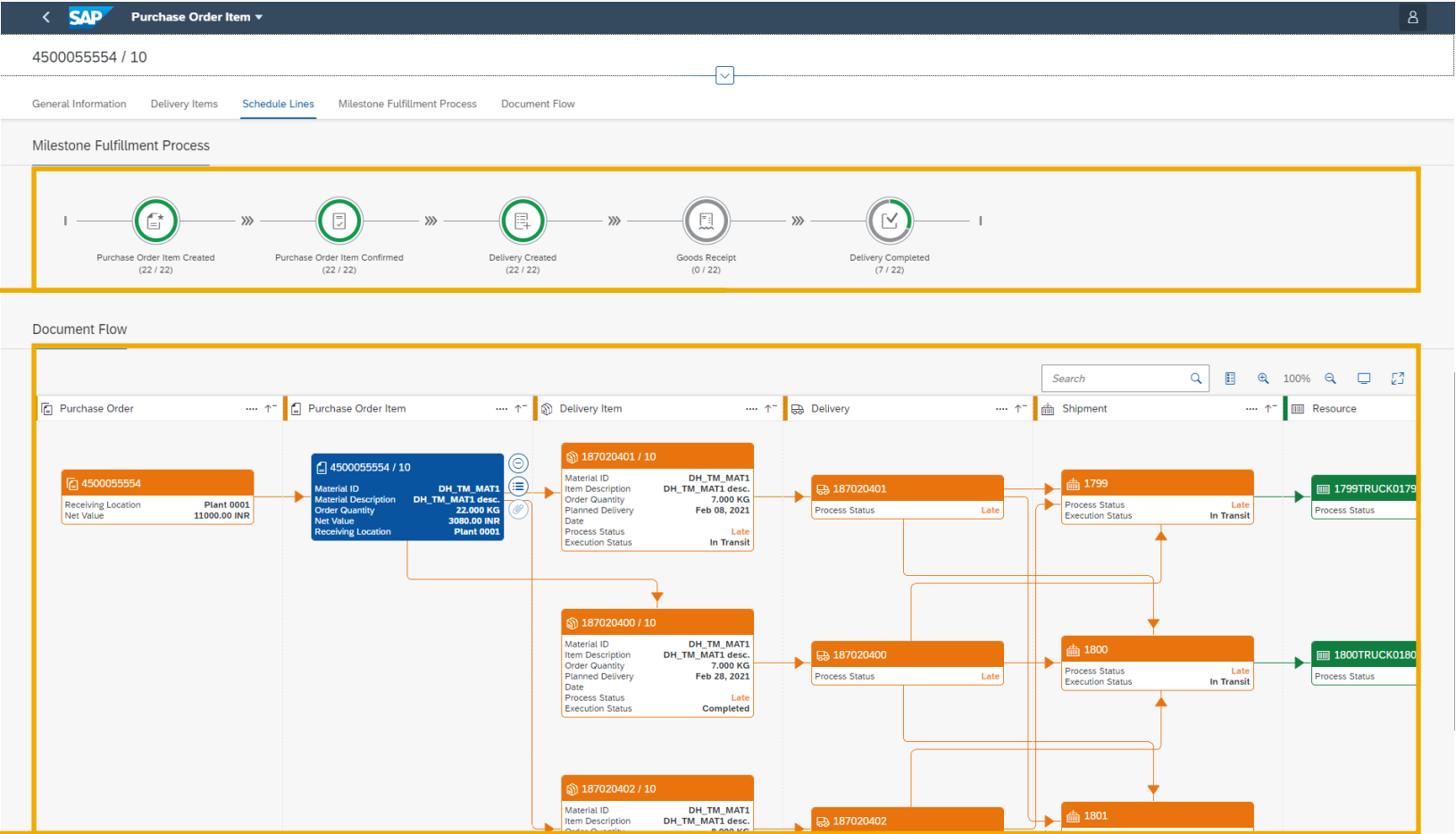
Document Flow of the Purchase Order Item

Purchase Order Item Details Milestone Fulfillment Process Case 1

- **Purchase Order Item Created**

- **Purchase Order Item Confirmed**: Displayed when CONFIRMATION is of a planned event

- **Goods Receipt**: GR by Purchase Order, displayed when GR is of a planned event and no inbound delivery is created

- **Delivery Created**: Displayed when at least 1 inbound delivery is created

- **Goods Receipt**: GR by Inbound Delivery, displayed when at least 1 inbound delivery is created

- **Delivery Completed**: Displayed when at least 1 inbound delivery is created

Purchase Order Item Created (33 / 33) — Purchase Order Item Confirmed (18 / 33) — Delivery Created (18 / 33) — Goods Receipt (6 / 33) — Delivery Completed (9 / 33)

Purchase Order Item Details Milestone Fulfillment Process Case 1

How to tell if the Purchase Order Item is confirmed:

- **Priority 1st**: If at least 1 inbound delivery is created, then use the sum of delivery order item quantities as the confirmed quantity / purchase order item quantity.

- **Priority 2nd**: Regard it as ALL confirmed when the confirmation table is empty while confirmation control key is not initial. The same applies when the confirmation table is fully filled. When the confirmation table is partially filled, then regard it as PARTIALLY confirmed.

How to tell if the Delivery is completed:

- **Not POD-relevant Deliveries**: Sum of delivery received quantities / purchase order item quantity.

- **POD-relevant Deliveries**: Sum of item POD quantities / purchase order item quantity.

Purchase Order Item Details Milestone Fulfillment Process Case 2

How to tell if the Purchase Order Item is deleted:

If the latest event reported is DELETION, then the Purchase Order Item is deleted. And the milestones are shown as follows:
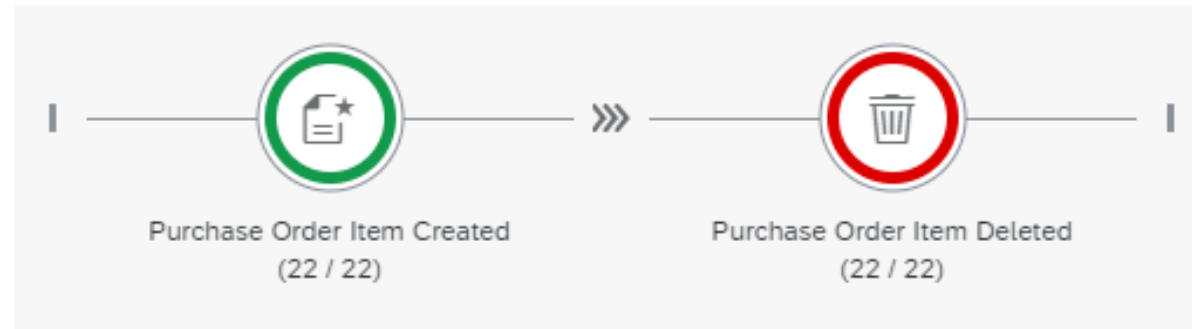
If no DELETION event is reported or an actual event UNDELETION is reported later than the last event DELETION, then the milestone fulfillment process is as Case 1.

Delivery Item Details

The delivery item's
execution status and
process status

Show **aggregated status**
by planned events' status
of the delivery item

Delivery Item Details Execution Status

On the Delivery Item Details page, the delivery item's execution status is displayed. So the user can quickly see the latest changes that happened to this delivery item.

Execution Status:

- Default status: "Not Started" when the tracked process is created
- Change status to "In Transit" when the delivery item's planned event has been reported
- Change status to "Completed" when:
  - All planned PODs related to this delivery item are reported if POD is a planned event for the inbound delivery item
  - If POD is not a planned event for the inbound delivery item, then the sum of Goods Receipt Quantity reported equals or greater than the order quantity

You can set your own logic in Event-to-Action script.

Delivery Item Details

Show **Reference Business Documents** for Business Tracking
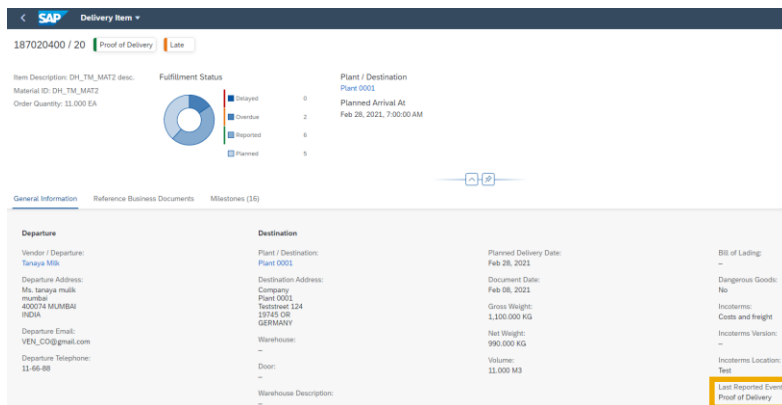
Delivery Item Details Last Reported Event

- Display the Event Description, fetched from the Actual event ID with maximum actual business datetime for the process (PO item or Inbound Delivery item).
- Only consider the following lists that need to be included in the admissible planned or unplanned event list of process types in the model.

PO item
– Deletion / Un-deletion
– Confirmation (cancelling)
– Goods Receipt (reversing)

Inbound Delivery item
– Put-away
– Packing
– Goods Receipt
– Departure
– Arrival at Destination
– Load Begin
– Load End
– Proof of Delivery
– Gate In Start
– Gate In End
– Gate Out Start
– Gate Out End

– Unloading Start
– Unloading End
– Stuffing
– Unstuffing
– Return
– Proof of Pickup
– Check In
– Receive
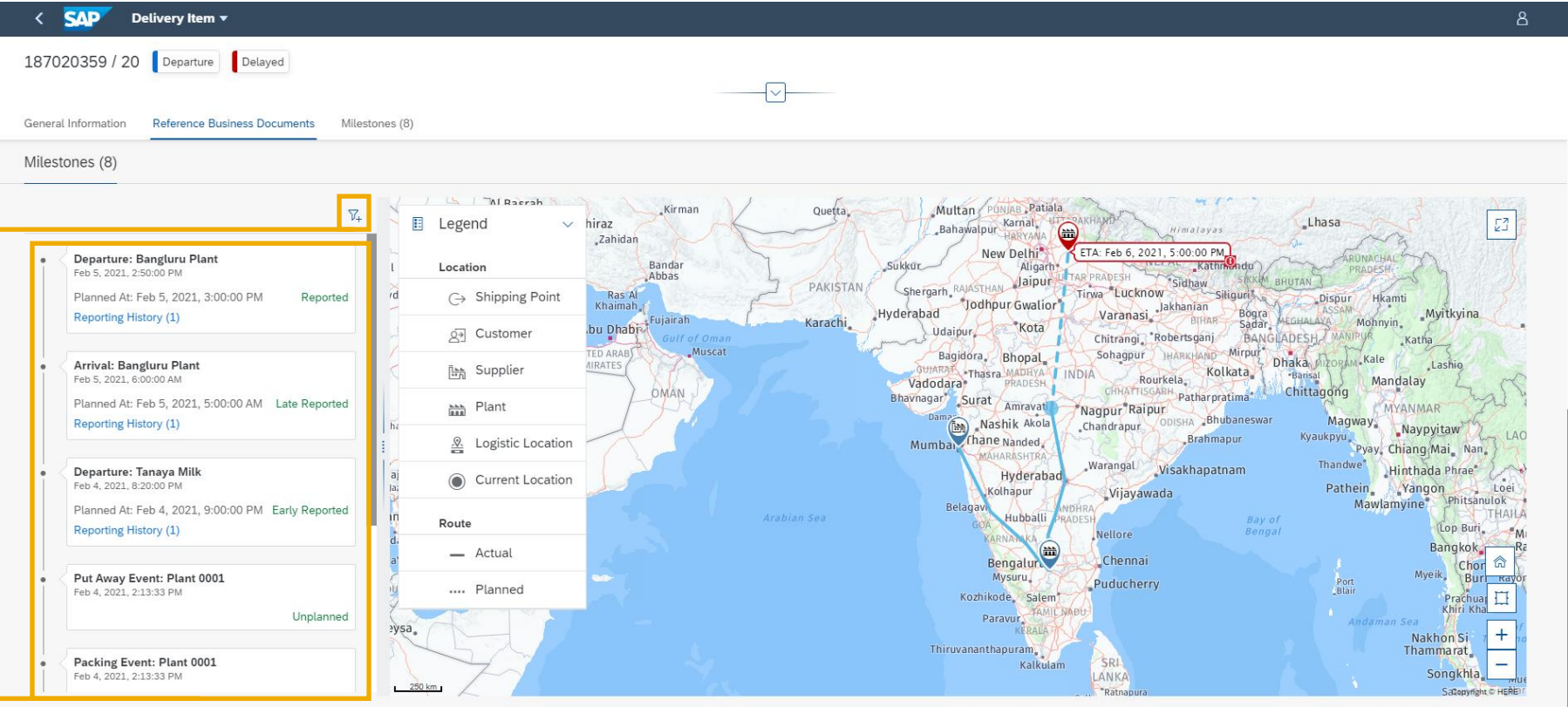– Delivered
– Coupling
– Decoupling
– Out For Delivery

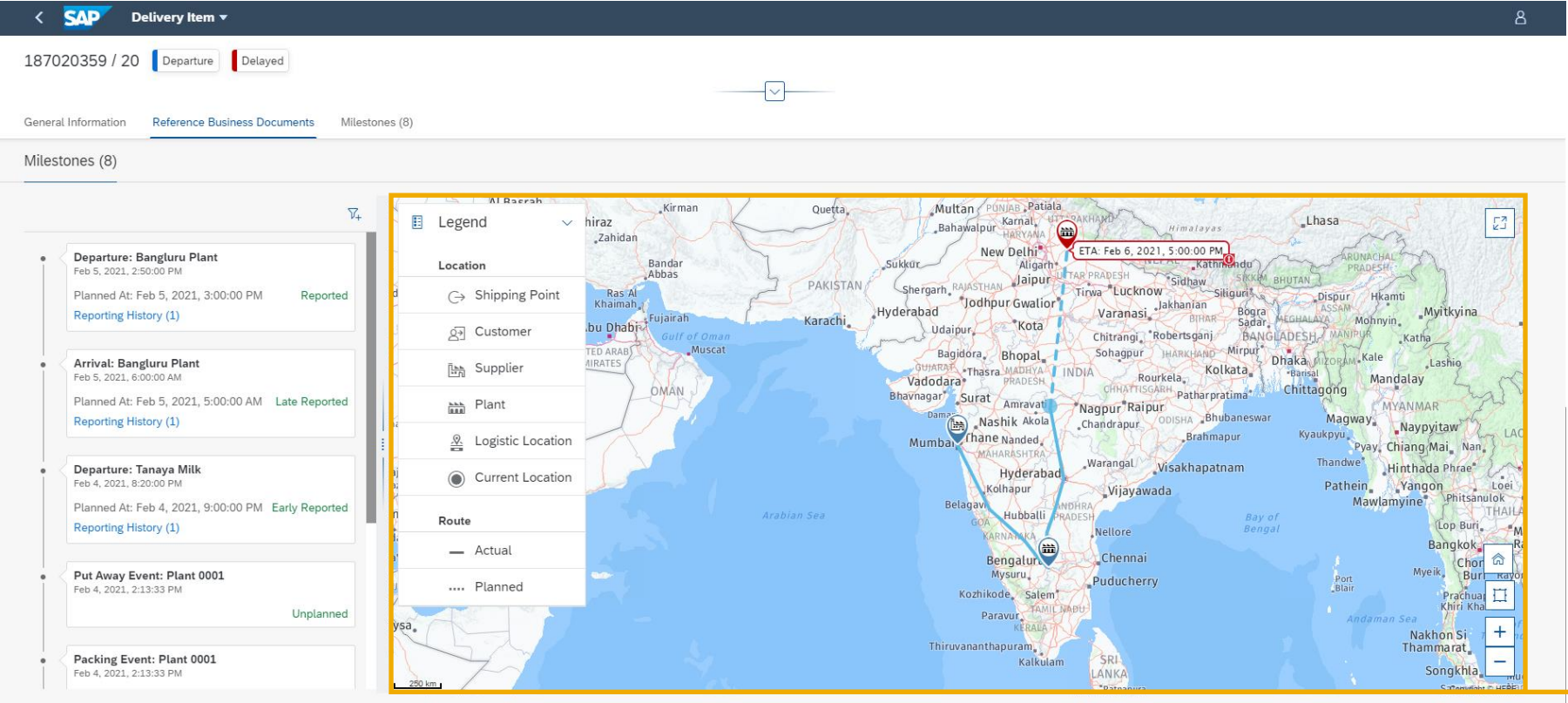
You can set your own logic in Event-to-Action script.

Delivery Item Details Milestones

Event Status Filter

Show all the **planned and unplanned events** related to this delivery item and the relevant shipments

Delivery Item Details **Milestones**

Show the **Reporting History** for planned events which have been reported.

Delivery Item Details Map

Each **Route** indicates one shipment. It shows the planned route of each shipment with a dotted line and the actual route with a solid line.

Each **Spot** indicates one stop where there are planned events.

Current Location indicates the last position where the latest event was reported.

ETA of next stop is shown as the latest actual event reported with ETA information.

Planned & Unplanned Events

The following are predefined…

Purchase Order Item Events

- Planned Event
  - Confirmation
  - Goods Receipt

- Unplanned Event
  - Deletion
  - Undeletion
  - Confirmation
  - Goods Receipt

Delivery Events

- Planned Event
  - Goods Receipt
  - Departure
  - Arrival
  - POD

- Unplanned Event
  - Deletion
  - Undeletion
  - Confirmation
  - GoodsReceipt
  - Packing
  - Putaway
  - ExceptionalEvent
  - OtherEvent
  - OutForDelivery

  - Delivered
  - Unstuffing
  - Receive
  - Decoupling
  - Coupling
  - POPU
  - Return
  - Stuffing
  - Delay
  - LocationUpdate

  - UnloadingEnd
  - UnloadingStart
  - GateOutEnd
  - GateOutStart
  - GateInEnd
  - GateInStart
  - CheckIn
  - LoadingEnd
  - Arrival
  - Departure
  - POD
  - LoadingStart

Delivery Item Events

- Planned Event
  - Departure
  - Arrival
  - POD
  - Put Away
  - Packing
  - Goods Receipt

- Unplanned Event
  - Deletion
  - Undeletion
  - Confirmation
  - GoodsReceipt
  - Packing
  - Putaway
  - ExceptionalEvent
  - OtherEvent
  - OutForDelivery

  - Delivered
  - Unstuffing
  - Receive
  - Decoupling
  - Coupling
  - POPU
  - Return
  - Stuffing
  - Delay
  - LocationUpdate

  - UnloadingEnd
  - UnloadingStart
  - GateOutEnd
  - GateOutStart
  - GateInEnd
  - GateInStart
  - CheckIn
  - LoadingEnd
  - Arrival
  - Departure
  - POD
  - LoadingStart

Shipment Events

- Planned Event
  - Departure
  - Arrival
  - POD
  - Check In
  - LoadingStart
  - LoadingEnd

- Unplanned Event
  - Deletion
  - Undeletion
  - Confirmation
  - GoodsReceipt
  - Packing
  - Putaway
  - ExceptionalEvent
  - OtherEvent
  - OutForDelivery

  - Delivered
  - Unstuffing
  - Receive
  - Decoupling
  - Coupling
  - POPU
  - Return
  - Stuffing
  - Delay
  - LocationUpdate

  - UnloadingEnd
  - UnloadingStart
  - GateOutEnd
  - GateOutStart
  - GateInEnd
  - GateInStart
  - CheckIn
  - LoadingEnd
  - Arrival
  - Departure
  - POD
  - LoadingStart

Links You May Need

- Sample on GitHub

https://github.com/SAP-samples/logistics-business-network-gtt-samples

Thank you.

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