



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

SAP Business Network
February 2021

PUBLIC

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:

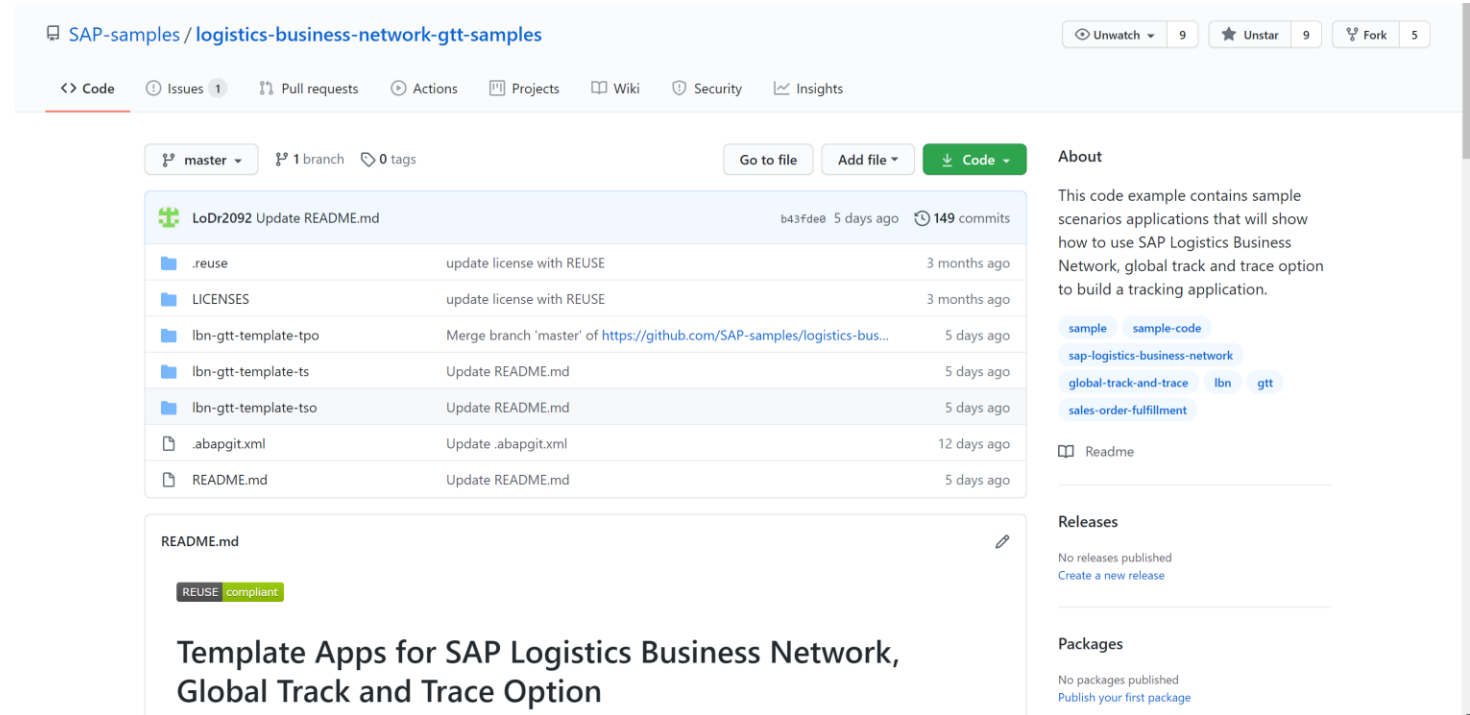
- **Track PO Fulfillment**
- **Track SO Fulfillment**
- **Track Shipments**



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

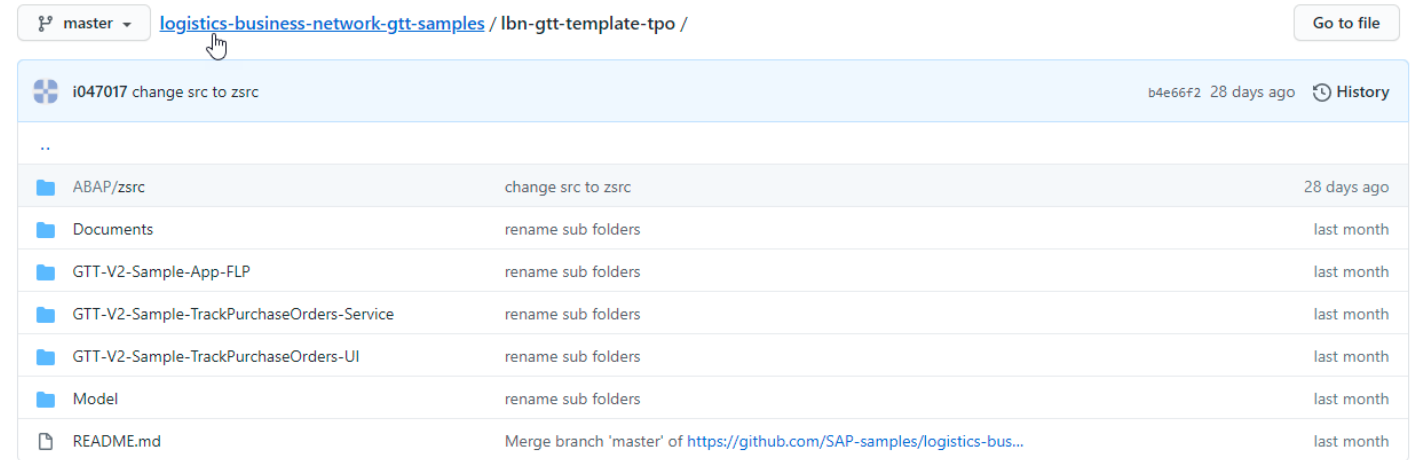
- Deploy model
- Package and deploy
- Maintain destination

■ 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

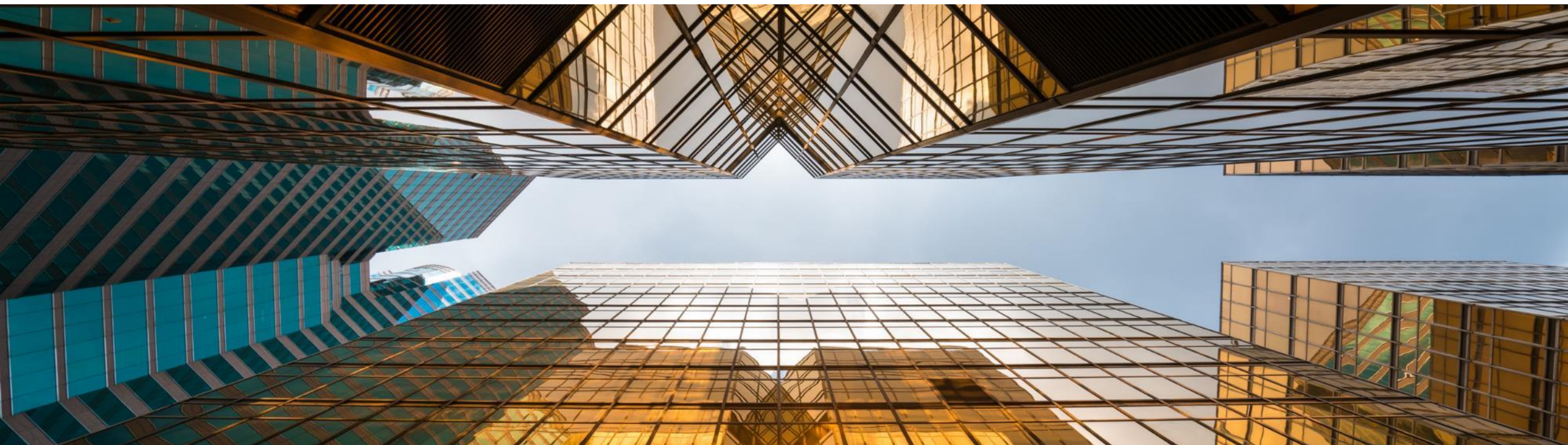


master		logistics-business-network-gtt-samples / lbn-gtt-template-tpo /	Go to file
i047017 change src to zsrc		b4e66f2 28 days ago	History
..			
ABAP/zsrc	change src to zsrc		28 days ago
Documents	rename sub folders		last month
GTT-V2-Sample-App-FLP	rename sub folders		last month
GTT-V2-Sample-TrackPurchaseOrders-Service	rename sub folders		last month
GTT-V2-Sample-TrackPurchaseOrders-UI	rename sub folders		last month
Model	rename sub folders		last month
README.md	Merge branch 'master' of https://github.com/SAP-samples/logistics-bus...		last month

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

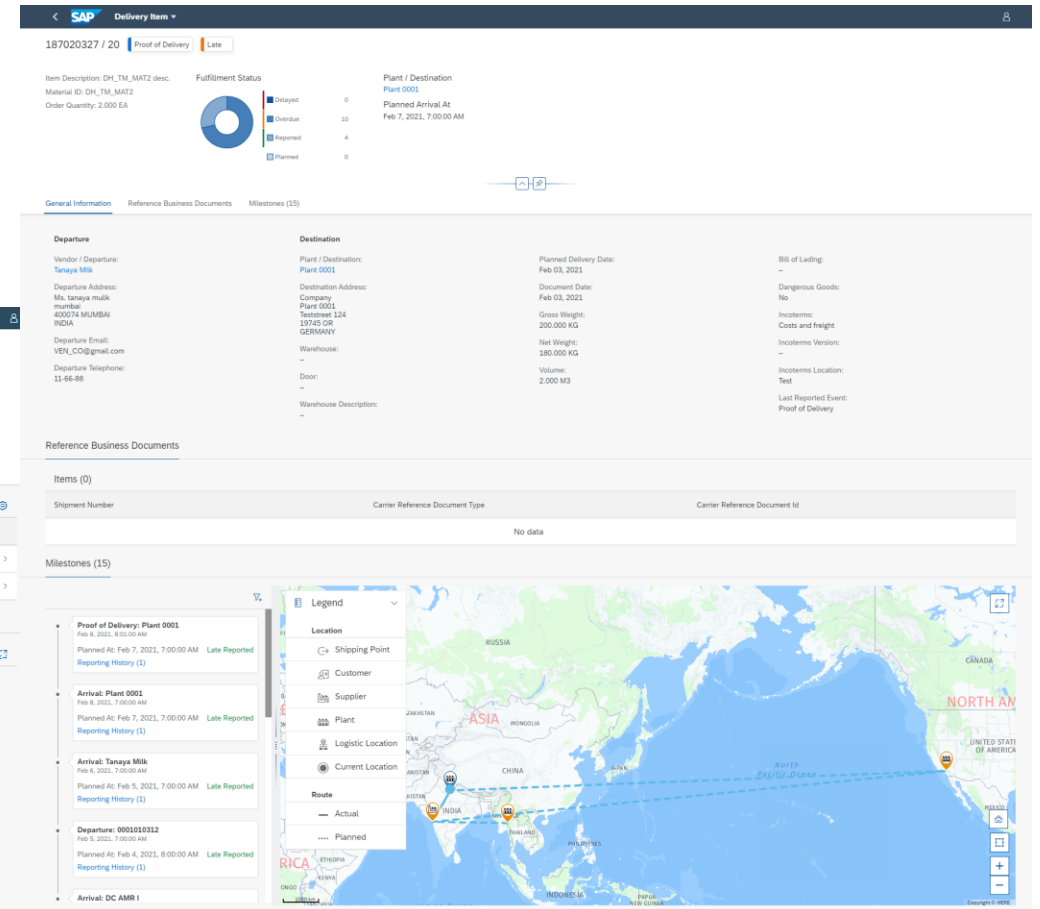
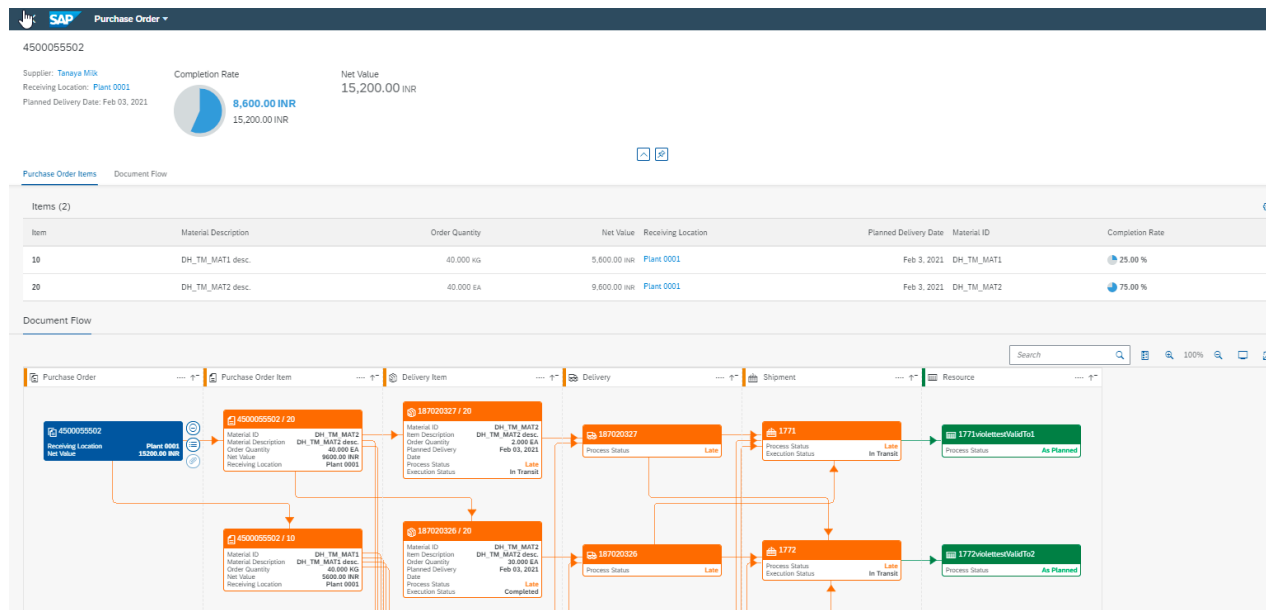
Track PO Fulfillment Template App



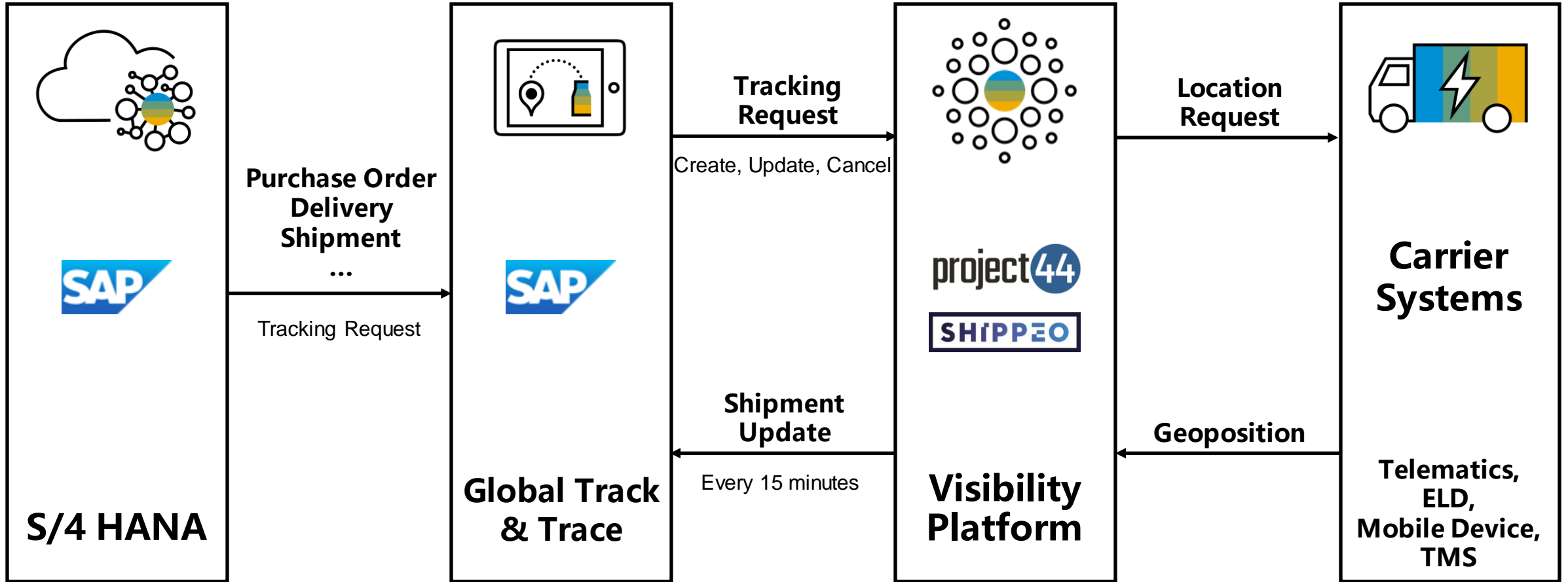
Introduction

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:

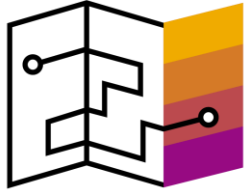
- How many deliveries in my purchase order are **delayed**?
- How many deliveries in my purchase order are **completed**?
- **Where** are my purchase orders?
- What is the **ETA** of my purchase orders?



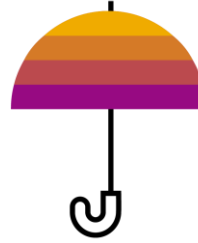
System & Integration Overview



Highlights



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



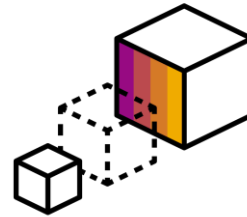
Comprehensive Overview &
Event Aggregates



Graphical Milestone Visualization



Embedded Map

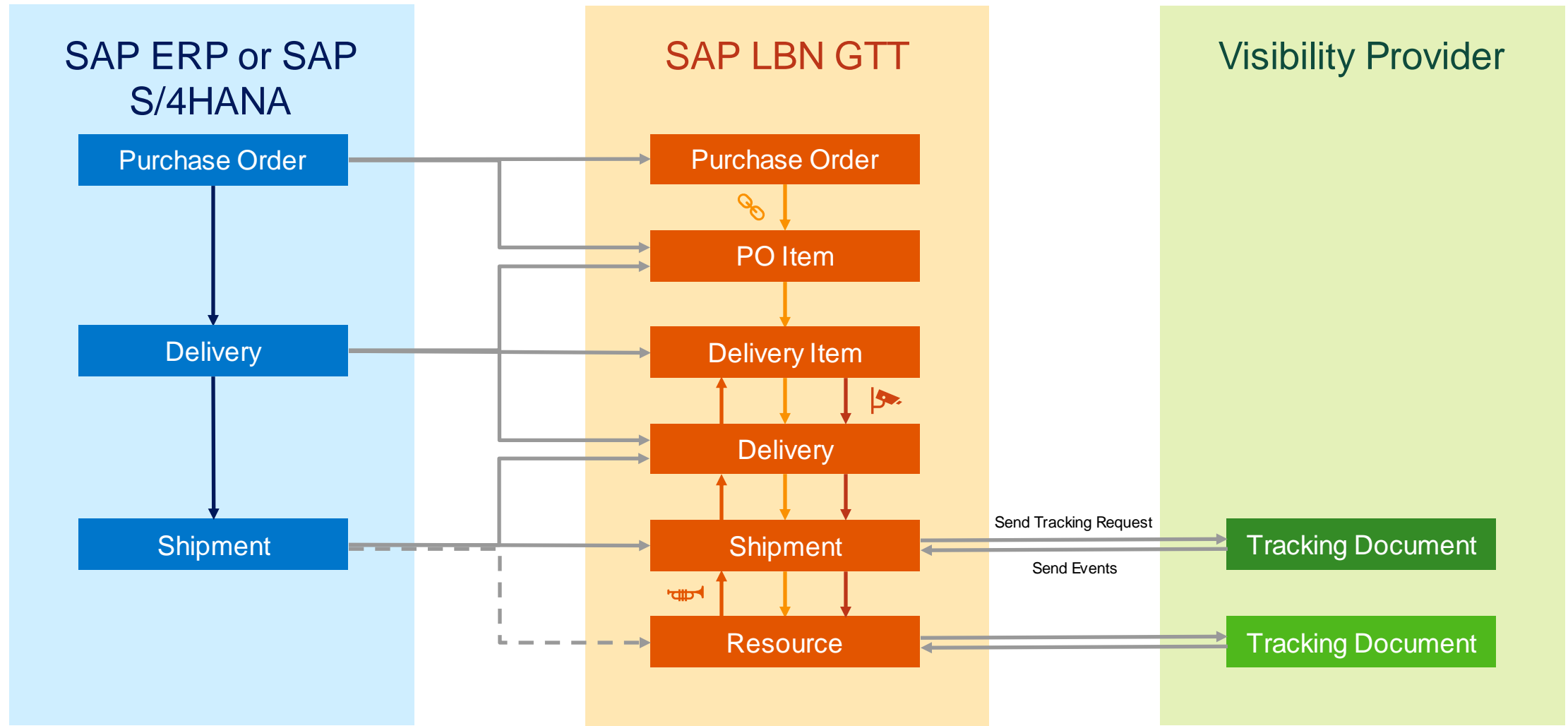


Out-of-the-box connectivity to
Project44



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

Tracked Process Modeling in **Track PO Fulfillment**

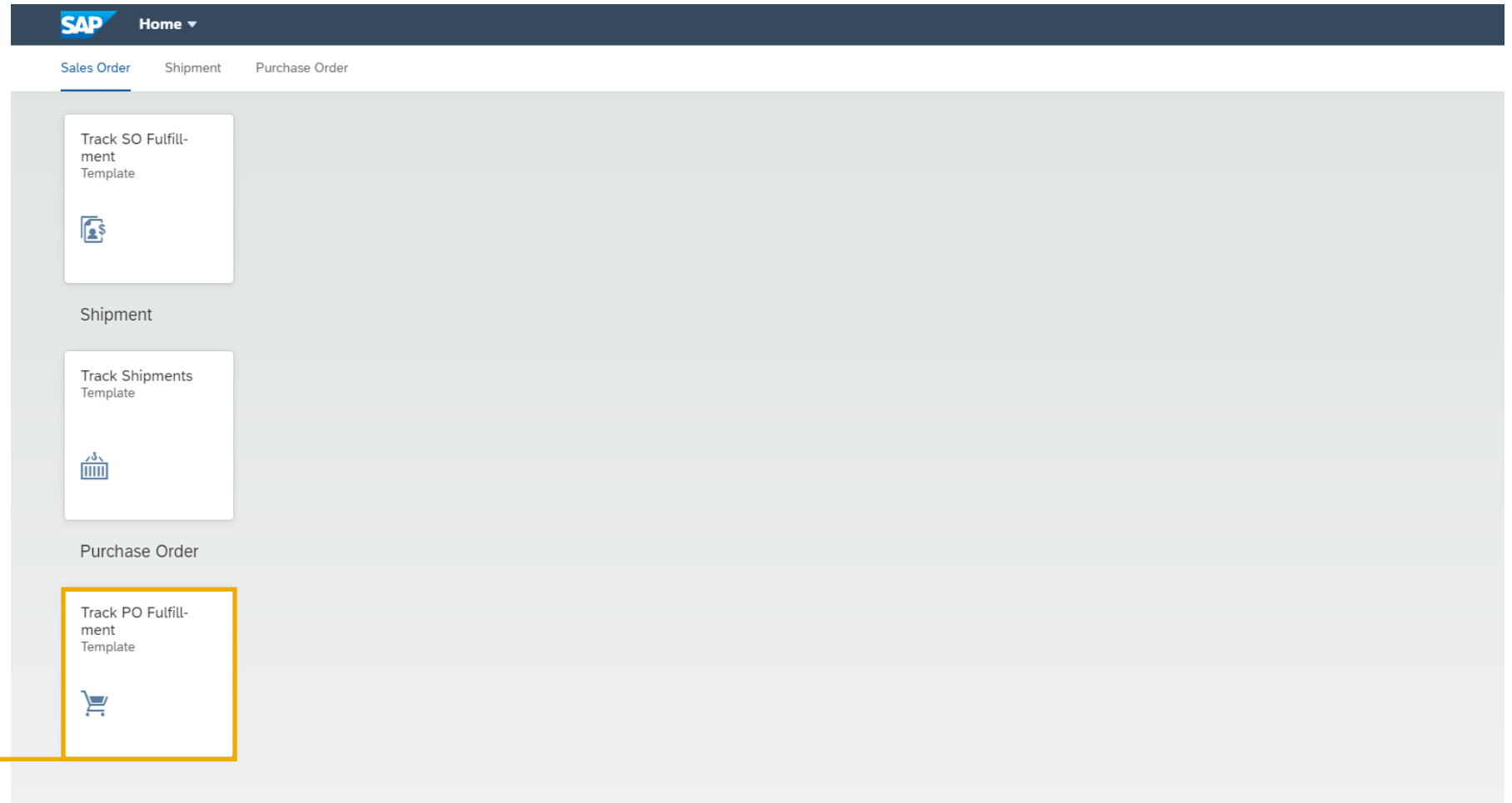


Let's see the features



Fiori Launchpad

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



Purchase Orders List

Filter your purchase orders by various criteria

Store your
**customized
view** of the
list


<

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 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 %	
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 %	
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

**Customize
your table,**
such as
sorting logic
or layout
change

Purchase Orders List Popover

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

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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	Oct 12, 2021	605.70 INR	0.00 %		>
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 %		>
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	>

Location Details

Plant 0001

Object Type

Plant

Source System / ID

QW9CLNT170 / 0001

Address

Plant 0001

Teststreet 124

19745 Delhi

Indien

Purchase Orders Details

Sum of completion values of undeleted PO items

<

SAP

Purchase Order ▾

4500055554

Supplier: Tanaya Milk

Receiving Location: Plant 0001

Planned Delivery Date: Oct 19, 2020

Completion Rate

3,620.00 INR

11,000.00 INR

Net Value

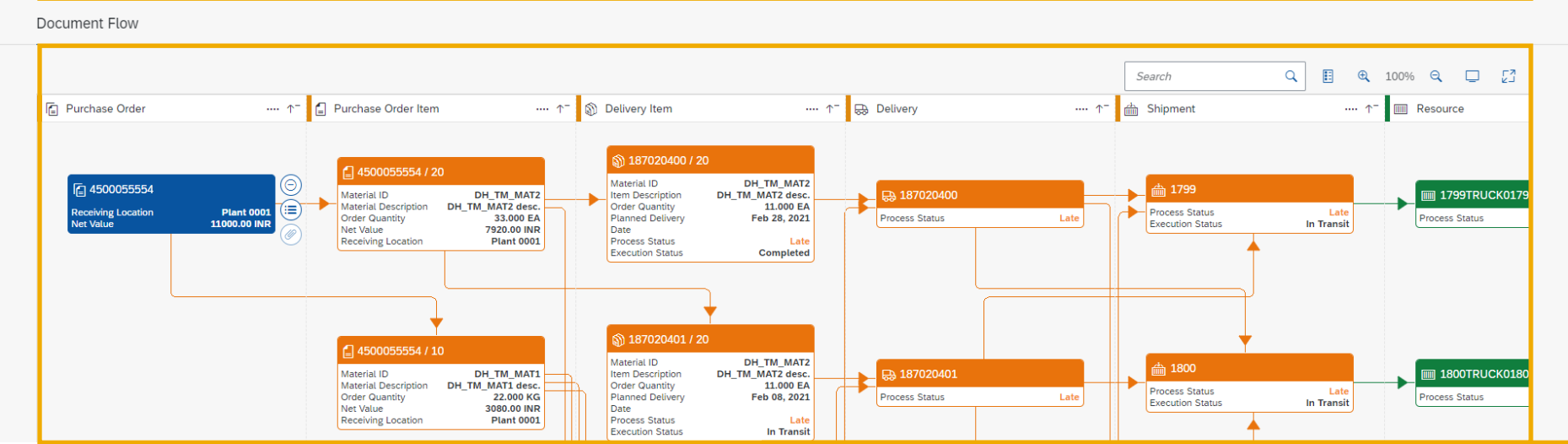
11,000.00 INR

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

Purchase Order Items

Document Flow

Items (2)						
Item	Material Description	Order Quantity	Net Value	Receiving Location	Planned Delivery Date	Material ID
10	DH_TM_MAT1 desc.	22.000 KG	3,080.00 INR	Plant 0001	Oct 19, 2020	DH_TM_MAT1
20	DH_TM_MAT2 desc.	33.000 EA	7,920.00 INR	Plant 0001	Oct 19, 2020	DH_TM_MAT2



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

<

SAP

Purchase Order Item

>

4500055554 / 10

Receiving Location: Plant 0001

Planned Delivery Date: Oct 19, 2020

Material Description: DH_TM_MAT1 desc.

Completion Rate

7.000 KG

22.000 KG

Order Quantity
22.000 KG

General Information

Delivery Items

Schedule Lines

Milestone Fulfillment Process

Document Flow

Order Details

Supplier:
Tanaya Milk

Material ID:
DH_TM_MAT1

Net Value:
3,080.00 INR

Net Weight:
0.900 KG

Gross Weight:
1.000 KG

Volume:
0.010 M3

Incoterms

Incoterms:
-

Incoterms Location:
-

Incoterms Version:
-

Last Reported Event:
Confirmation Event

Delivery Items

Items (3)

Item No.	Planned Delivery Date	Vendor / Departure	Plant / Destination	Material ID	Process Status	Execution Status
187020400 / 10	Feb 28, 2021	Tanaya Milk	Plant 0001	DH_TM_MAT1	Late	Completed (Proof of Delivery: Plant 0001)
187020401 / 10	Feb 8, 2021	Tanaya Milk	Plant 0001	DH_TM_MAT1	Late	In Transit (Proof of Delivery: Plant 0001)
187020402 / 10	Feb 8, 2021	Tanaya Milk	Plant 0001	DH_TM_MAT1	Late	In Transit (Arrival: HEG1 Great Britain)

Schedule Lines

Items (1)

Line No.	Delivery Date	Scheduled Quantity
----------	---------------	--------------------

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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:
 $\text{Net Price} / \text{Price Unit} * \text{sum of Goods Receipt quantity for this PO item}$
- If at least 1 subsequent inbound delivery item exists, the Completion Value equals the:
 $\text{Net Price} / \text{Price Unit} * \text{Completion Quantity}$

Completion Quantity equals the:

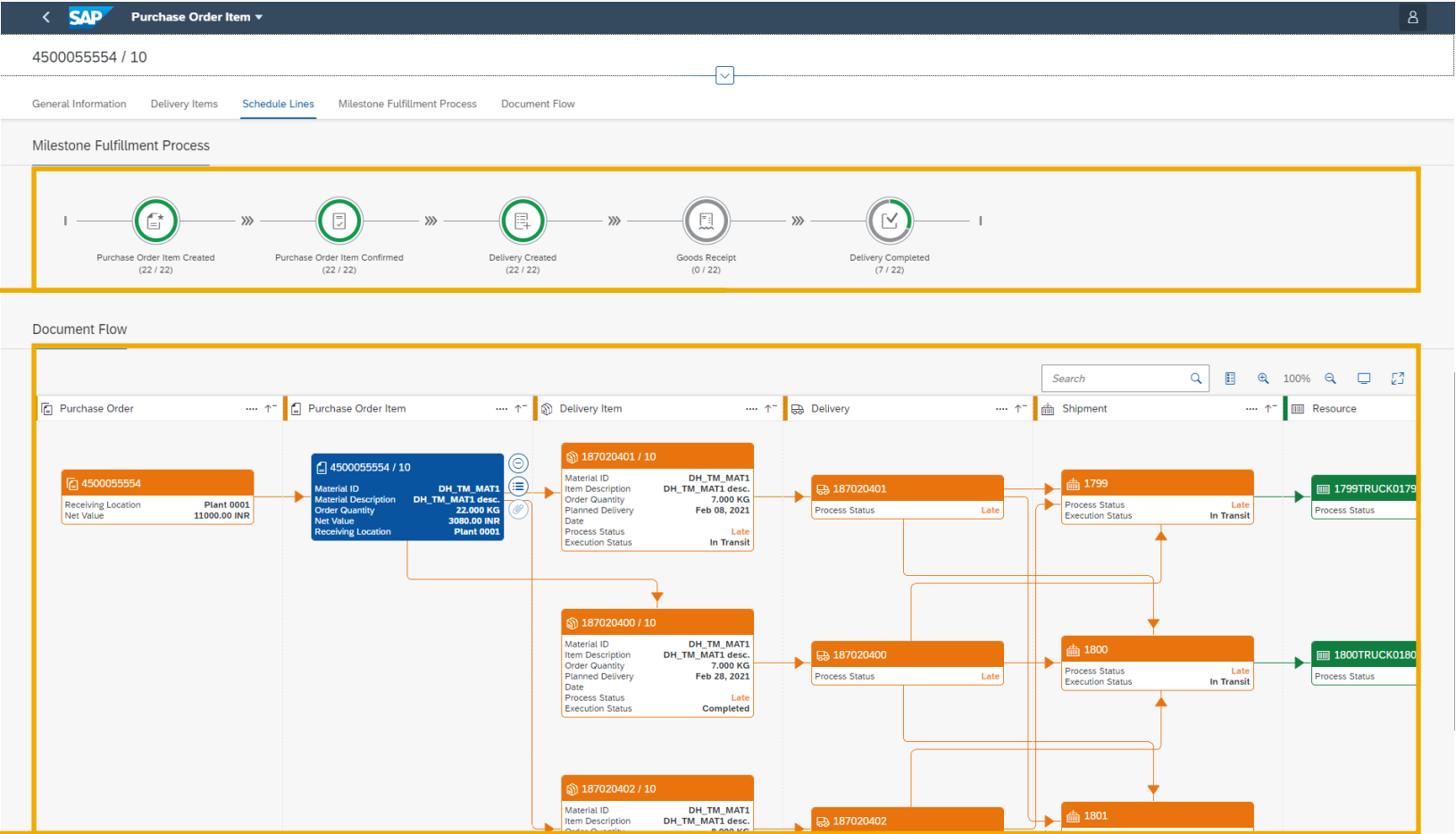
1. Sum of **Goods Receipt quantity** for not POD-relevant delivery items
2. Sum of **item POD quantities** for the POD-relevant delivery items

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 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.

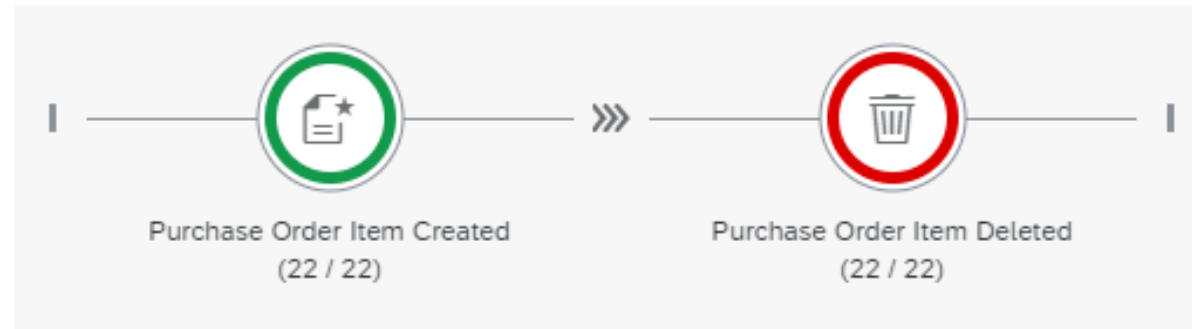
How to tell if the Delivery is completed:

- **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](#).

The delivery item's execution status and process status

<div> <div> <div><</div> <div>SAP</div> </div> <div>Delivery Item ▾</div> </div>									
<div> <div>187020408 / 20</div> <div> <div>Proof of Delivery</div> <div>As Planned</div> </div> </div>									
<div> <div>Item Description: DH_TM_MAT2 desc.</div> <div>Material ID: DH_TM_MAT2</div> <div>Order Quantity: 50.000 EA</div> </div>		<div> <div>Plant / Destination</div> <div>Plant 0001</div> </div>							
<div> <div>Fulfillment Status</div> <div> <div> <div></div> <div>Delayed</div> <div>0</div> </div> <div> <div></div> <div>Overdue</div> <div>2</div> </div> <div> <div></div> <div>Reported</div> <div>2</div> </div> <div> <div></div> <div>Planned</div> <div>0</div> </div> </div> </div>		<div> <div> <div>⏮</div> <div>⏭</div> </div> </div>							
<div> <div>General Information</div> <div>Reference Business Documents</div> <div>Milestones (5)</div> </div>									
<div> <div> <div>Departure</div> <div> <div>Vendor / Departure:</div> <div>Tanaya Milk</div> <div>Departure Address:</div> <div>Ms. tanaya mulik</div> <div>mumbai</div> <div>400074 MUMBAI</div> <div>INDIA</div> <div>Departure Email:</div> <div>VEN_CO@gmail.com</div> <div>Departure Telephone:</div> <div>11-66-88</div> </div> </div> <div> <div>Destination</div> <div> <div>Plant / Destination:</div> <div>Plant 0001</div> <div>Destination Address:</div> <div>Company</div> <div>Plant 0001</div> <div>Teststreet 124</div> <div>19745 OR</div> <div>GERMANY</div> <div>Warehouse:</div> <div>—</div> <div>Door:</div> <div>—</div> <div>Warehouse Description:</div> <div>—</div> </div> </div> <div> <div>Planned Delivery Date:</div> <div>Feb 10, 2021</div> <div>Document Date:</div> <div>Feb 10, 2021</div> <div>Gross Weight:</div> <div>5,000.000 KG</div> <div>Net Weight:</div> <div>4,500.000 KG</div> <div>Volume:</div> <div>50.000 M3</div> </div> <div> <div>Bill of Lading:</div> <div>—</div> <div>Dangerous Goods:</div> <div>No</div> <div>Incoterms:</div> <div>Costs and freight</div> <div>Incoterms Version:</div> <div>—</div> <div>Incoterms Location:</div> <div>Test</div> <div>Last Reported Event:</div> <div>Proof of Delivery</div> </div> </div>									
<div>Reference Business Documents</div>									
<div>Items (0)</div>									
<table> <tr> <th>Shipment Number</th><th>Carrier Reference Document Type</th><th>Carrier Reference Document Id</th></tr> <tr> <td colspan="3">No data</td></tr> </table>				Shipment Number	Carrier Reference Document Type	Carrier Reference Document Id	No data		
Shipment Number	Carrier Reference Document Type	Carrier Reference Document Id							
No data									
<div>Milestones (5)</div>									

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.

Show Reference Business Documents for Business Tracking

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Delivery Item Details **Last Reported Event**

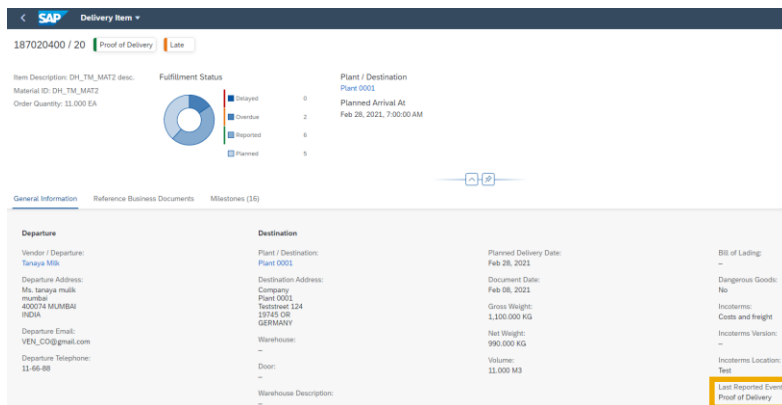
- Display the Event Description, fetched from the Actual event ID with maximum actual business datetime for the process (PO item or Inbound Delivery item).
- Only consider the following lists that need to be included in the admissible planned or unplanned event list of process types in the model.

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

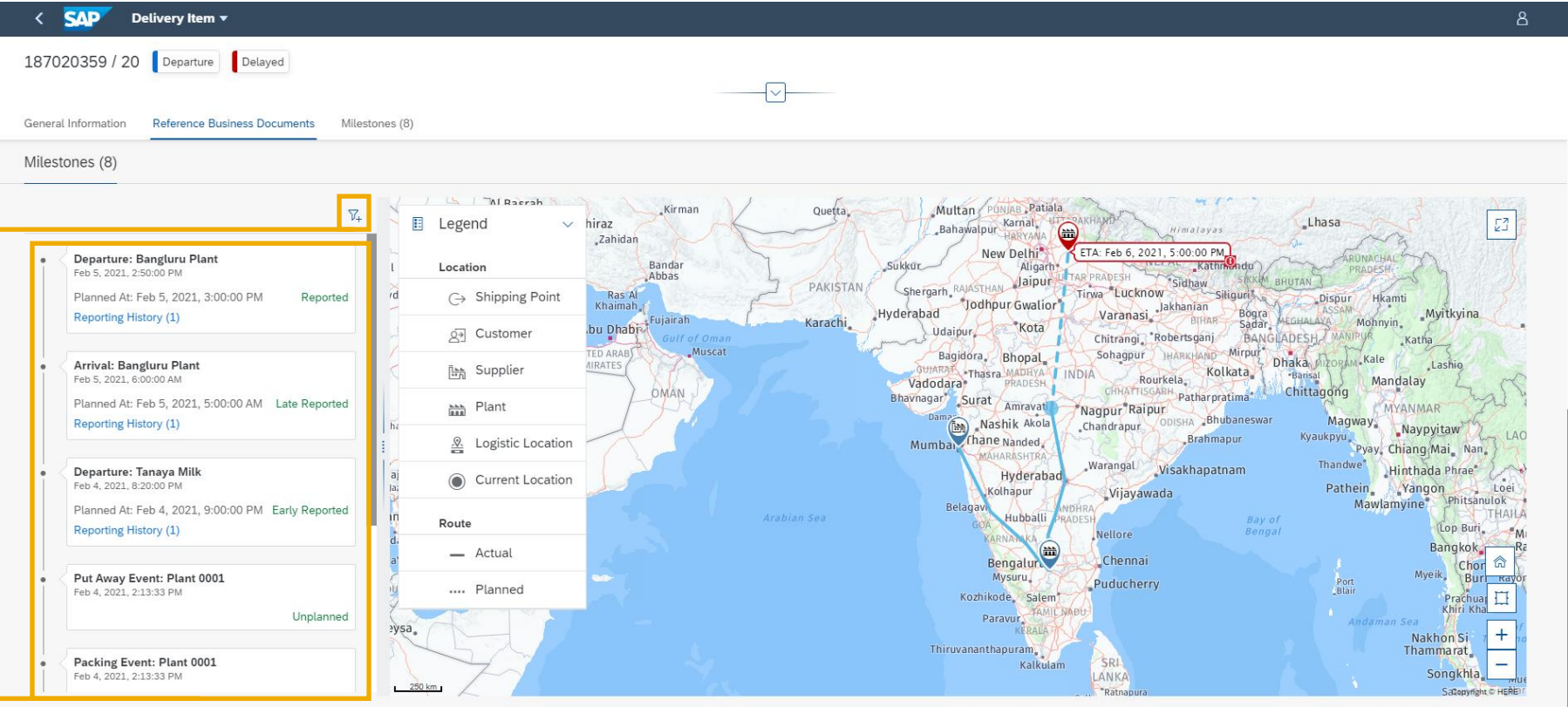


You can set your own logic in Event-to-Action script.

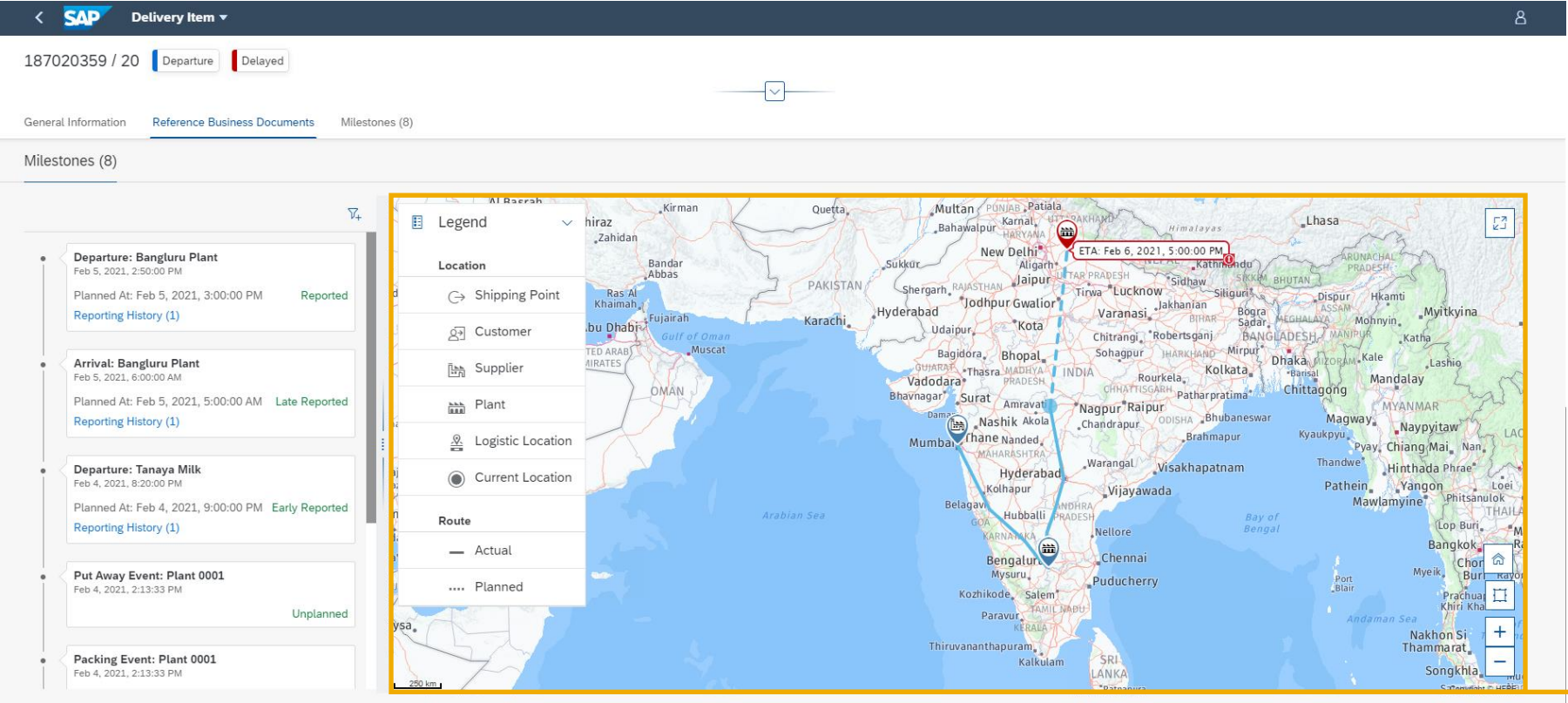
Delivery Item Details Milestones

Event Status Filter

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



Delivery Item Details 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.

SAP Business Network
February 2021

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