

Functional Documentation - Sales & distribution - OTIF report - NOT READY FOR CIRCULATION

1.0 Overview

Business Context and Application Overview

On Time In Full, also known as 'OTIF', is a key element of the Service-Cash-Cost balance that defines Solvays End to End Value Chain performance, and a powerful tool to drive continuous improvement in operations such as (Planning, Logistics, Production, etc).

As part of the Service pillar, OTIF provides insights on how we are performing vs our customers requests and vs our promises to the customer.

OTIF is a crucial measure that focuses on ensuring that customer orders are delivered both on time and in the quantity ordered. Achieving a high OTIF score is vital for customer satisfaction, operational efficiency, and the overall success of the supply chain.

Application User Profile

Describe the key User profiles that exist for the application.

General role/Viewer role:

Approver role:

Target Users:

As examples: Controllers / Accountants

VERSION	DATE	MODIFIED BY	DESCRIPTION
0.01	06.11.2023	Karen Oppong	Initial draft

Application Type

Data Product Type

☒ Dashboard

☐ Report

☐ Advanced analytics

☐ AI

☐ Others <specify which one>

Technologies

☐ BW

☐ Tableau

☐ QlikSense

☐ Talend

☐ Dataiku

☐ Others <specify which one>

Data Sources

Note: list of all applications and various environment

☐ SAP PF1 (Production environment)

☒ SAP WP1

☐ SAP PI1

☐ BW (versions)

☐ iCare CRM

☐ CORE CRM

☐ Others <specify the name of the source>

2.0 Business Process

Capture the business process that the application supports . This can be describe through a process diagram or a business capability model

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3.0 Application Feature Overview

3.1. Background

This is one of the main KPI that all GBUs want to follow nowadays. It's also very tricky because there is a multitude of way to calculate it.

In this dashboard we highlight 6 indicators: 3 for Customer delivered and 3 for Departure plant.

The calculation is and remains the same for all the indicators and the tolerances days are now standardized by Transport Mode only for all GBUs.

OTIF is broken down in two different elements:

- **On Time** (an order is considered to be delivered on time when it is delivered at the right time)
- **In Full** (an order is considered in full when it is delivered with the right quantity).

At Solvay today, we have 6 different standard definitions for OTIF that are calculated based on data directly from SAP, and that evaluate our performance on those two components:

- **OTIF Customer Delivered** - Evaluates customer satisfaction, and its result can be impacted by both internal and external factors
 - OTIF Customer Delivered Requested: compares actual delivery vs customer request
 - OTIF Customer Delivered 1st Confirmed: compares actual delivery vs our 1st ATP confirmation
 - OTIF Customer Delivered Last Confirmed: compares actual delivery vs our last ATP confirmation
- **OTIF Departure Plant** - Evaluates our ability to deliver according to customer requirements, and its result is only impacted by internal reasons
 - OTIF Departure Plant Requested: compares readiness of the goods vs customer request
 - OTIF Departure Plant 1st Confirmed: compares readiness of the goods vs our 1st ATP confirmation
 - OTIF Departure Plant Last Confirmed: compares readiness of the goods vs our last ATP confirmation"

Granularity: Order Lines

Available metrics:

1. % OTIF Customer delivered - Requested , 1st Confirmed & Last Confirmed dates
2. % OTIF Departure plant - Requested , 1st Confirmed & Last Confirmed dates
3. Number of OTIF Order Lines
4. Number of NON-OTIF Order Lines
5. Number of OTIF Order Lines with a Redress code from NON OTIF to OTIF
6. Number of OTIF Order Lines with a Redress code from OTIF to NON OTIF
7. Number of OTIF Order Lines with an Actual Delivery date
8. Visibility of redress codes
9. Detail about NON-OTIF order lines and the reason codes behind

Classification:

- OTIF & NON OTIF
- NON OTIF includes NOT ON TIME / NOT IN FULL / NOT ON TIME & NOT IN FULL

OTIF-Customer (Delivered) :

This KPI measures our capacity to deliver our customers at destination at the right time, with the right quantity. It evaluates Customer satisfaction.

The result of this KPI can be both related to internal and external factors.

OTIF-Departure Plant:

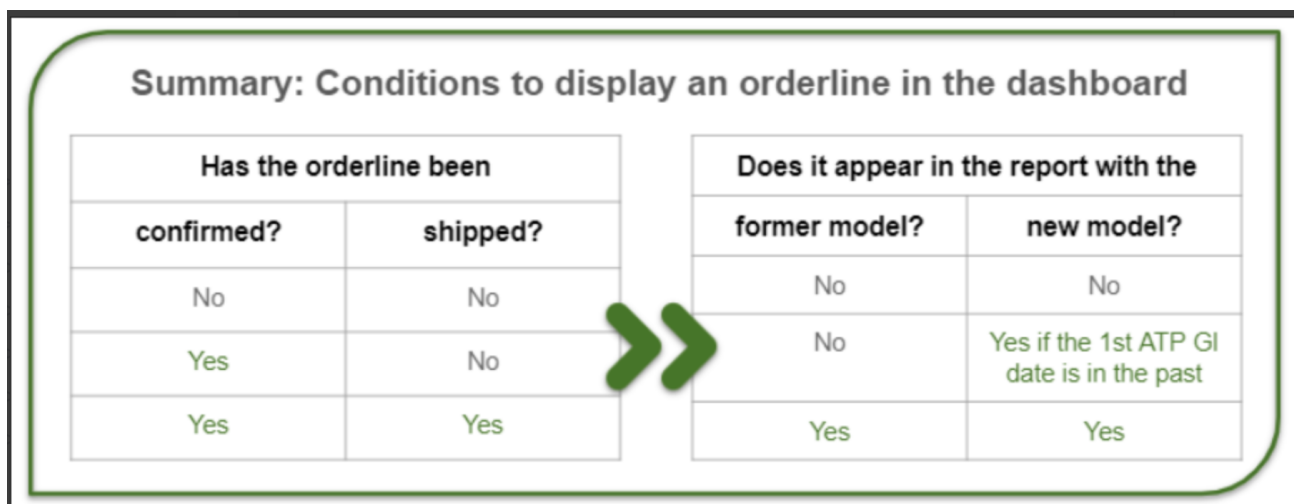
This KPI measures our capacity to make the products available at departure location at the right time, with the right quantity. It evaluates our ability to deliver according to customer requirements. The result of this KPI is only related to internal reasons (eg: product not available)

Exception: if the carrier is 2 days late, the actual Good Issue Date will also be delayed even if the product is available.

New reference date to distribute the orderlines: the OTIF reference month (no change in the calculation)

This field is recalculated on a daily basis on the following criteria:

- If quantity is confirmed but not yet issued (no Actual GI date) AND First ATP GI < current day --> First ATP GI date month
- If already issued (Actual GI date available) earliest date between Actual GI date and First ATP GI date



As a consequence, you are now also seeing orders that were not shipped yet, because their 1st ATP GI date is past.

Important: to allow early visibility on “On Time” indicators, both “In Full” indicators are forced to “1” (In Full) until the Delivery Actual GI date is done.

From a “Solvay-centric” to a customer-centric OTIF

With the former OTIF model, the orderlines were displayed according to Actual GI date. In case we were late, we were waiting for the effective shipment to trigger our Not-On Time (OT) performance, while our customers knew we were Not-OT since the 1st Promised date.

With the new OTIF model, the orderlines are distributed according to the earliest date between the 1st ATP GI and the Actual GI date. This way, we know we are Not-OT at the same time as our custo

Tolerances To avoid being too stringent, for OTIF calculation we apply tolerances:

- For On Time we have harmonized tolerances for the Group by transportation mode.
- For In Full, tolerances are defined by the GBUs.

OTIF as a tool for continuous improvement

Insights

When a non-OTIF case is reported, the Customer Service Representatives and Plants are accountable to investigate and report the root cause of the issue, and the analysis of these root causes provide diverse insights:

- Issues on communication of our lead times to customers
- Order entry issues
- Planning issues (business on allocation, lack of capacity, wrong planning/scheduling)
- Delays on raw materials or packaging
- Production & Quality issues (delays / schedule adherence, production out of specifications, lab delays, not in full packaging units)
- Issues with transport execution (shipping issues, equipment not available, use of wrong equipment, carrier not respecting pick-up time, carrier errors, shorter or longer transit times, transport restrictions)
- Other (credit / payment issues, data issues)

Note: Some GBUs (e.g. Peroxides, Soda Ash) have implemented Robotic Process Automation (RPA) to automate the coding process based on business rules using data directly from SAP.

Roles & accountabilities

GBUs are accountable for the coding process, and to define operational actions to improve performance. Often those actions are supported by TC transversal initiatives, e.g. L4G, Planning initiatives.

Transformation Center is responsible to share best practices, insights and tools to better leverage OTIF as a tool for continuous improvement, e.g. TC is responsible for the design of the Group dashboards

Targets

GBUs set their yearly targets for one of the two KPIs followed (either OTIF Delivered Requested, or OTIF Delivered 1st Confirmed) Targets for the Group are defined yearly as a weighted average of the GBU targets.

Dashboards

Today we have two different dashboards to monitor OTIF in the Group:

- E2E Value Chain Dashboard
 - End-To-End dashboard targeting Managers & Leadership teams, and that shows high-level OTIF performance: OTIF evolution by GBU/ destination geo zone / plant
- Global Supply Chain Dashboard
 - Supply Chain dashboard targeting the operations, and that shows details on OTIF performance, e.g. top non-OTIF root causes, OTIF by destination geo zone / plant / transportation mode / customer, % orders with actual delivery date, etc
- Other dashboards that also contain OTIF data include Customer 360 Dashboard, Monthly Industrial Dashboard, GSKAs dashboard

Requirements to mitigate potential risks

- Integration into SAP
- Data quality: good date management, good visibility of actual delivery dates provided by freight forwarders, robust non-OTIF coding process

Reports	Definition	Prompts	BW Workbook Query	Query Technical Name
BW Sales/Transfer - OTIF & Orderbook - Details (core query)			BW_WBK_MVSDSO60_0002	
BW Sales - OTIF & Orderbook - Details (core query)			BW_WBK_MVSDSO60_0001	
BW Sales - OTIF - Details (core query)			BW_WBK_MVSDSO50_0004	
BW Sales - OTIF - dashboard (core query)			BW_WBK_MVSDSO50_0001	
BW Transfer PO OTIF - Details (core query)			BW_WBK_MVSDSO51_0001	
BW Transfer PO OTIF - dashboard (core query)			BW_WBK_MVSDSO51_0002	

NON-OTIF Order Lines

NON-OTIF order lines table

We decided to add to the new Global SC dashboard a more operational KPI: the list of order lines that are NON-OTIF.

The main intention is to facilitate to CSR and/or Logistic team for each GBU the fulfillment of the reason codes by order line. Today all the GBU have access to **23 reason codes** grouping in different clusters from Customer to Transport Execution and to **4 redress reason codes**.

Thanks to this the GBUs have the possibility to put corrective action plans in place.

Link to : [Reason codes Guidelines](#)

Important note: the redress codes force a Not On Time result into an On Time result, but have no action on the In Full Part.
If you set up a redress code and still see the orderline in the non OTIF list, this means that the delivery is not In Full (over- or under- delivered)

FYI, The pourcentages are the contrepart of the OTIF ones. If there happens to be a 1% gap, the reason must be the rounded percentage. Don't hesitate to use the My Report to check.

Granularity:

Order Lines Number

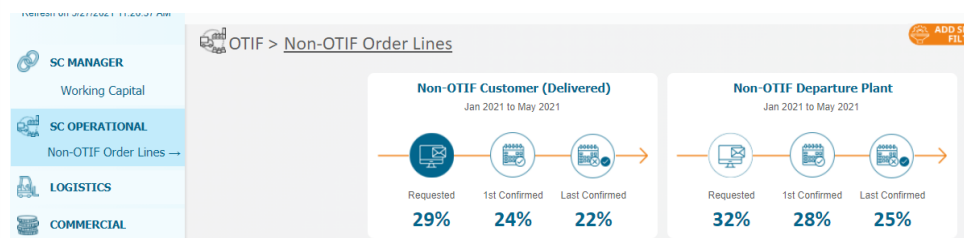
Scope:

NON-OTIF Order Lines for the whole 2 year scope of the dashboard (with and without any Non-Otif reason)

How to manage the orderlines with the new OTIF reference month?

With the new OTIF reference month, the date to distribute the orderlines is the earliest date between the Actual GI date and the 1st ATP GI date. As a consequence, you are now seeing orders that were not shipped yet because their 1st ATP GI date is within today and the past.

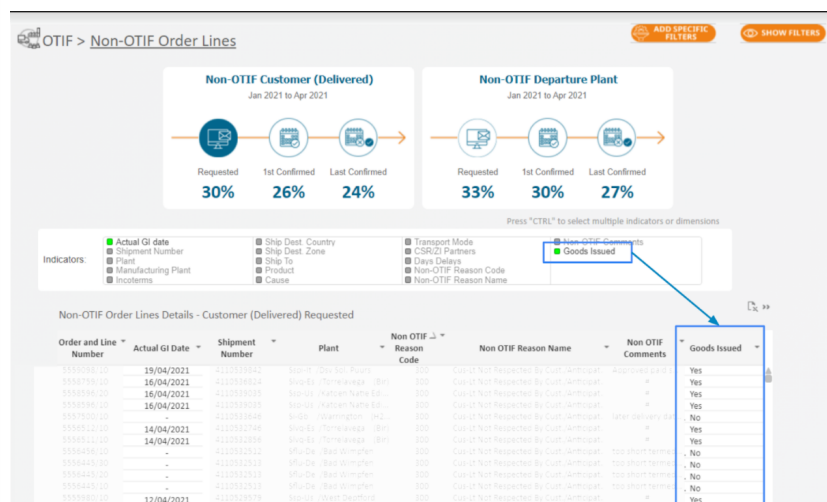
The set up of the non OTIF reason codes depends on the OTIF your GBU is looking at amongst the 6 available



Our recommendation is to update the non OTIF reason codes based on the Non-OTIF orderlines of the GSCD the latest as following :

- OTIF Customer (Delivered) *Requested* : when the orderline has an Actual GI date.
- OTIF Customer (Delivered) *1st confirmed* : when the orderline has an Actual GI date.
- OTIF Customer (Delivered) *Last confirmed* : when the orderline has an Actual GI date.
- OTIF Departure Plant *Requested* : when the orderline appears in the GSCD.
- OTIF Departure Plant *1st confirmed* : when the orderline appears in the GSCD.
- OTIF Departure Plant *Last confirmed* : when the orderline has an Actual GI date.

TIP: Use the new "Goods Issued" filter in the non OTIF page to select only the orderlines with an actual GI date



Explanation:

- if they appear in the GSCD without being shipped (no Actual GI date), it means that their 1st ATP GI date is in the past so they are definitely not Departure 1st confirmed OTIF.
- if they are not OTIF for the Departure Plant 1st confirmed, they are probably not OTIF Departure Plant *Customer requested* neither (it is rare that we confirm an order earlier than requested)

as soon as a line appears in the dashboard, its OTIFs Departure Plant *1st confirmed* and Departure Plant *Customer requested* result will remain unchanged.

- the other OTIFs will be definitive :
 - when the GI is done for the OTIF Departure Plant *Last confirmed*
 - when the Actual Shipment end date is updated into SAP for the 3 OTIFs Customer (Delivered).

Best practice:

Complete the Actual Shipment End date in SAP for accurate and definitive results.

Deadl.	Further Dates	Stages	Partner	Texts	Duration and Distnce	Status	Tender	Addit. data	Dng.Goods	Continuous Move
Planning					Execution					
Check-in	14.02.2020	00:00			11.02.2020	15:27	✓		Planning	
Loading start	14.02.2020	00:00			12.02.2020	08:50	✓		Check-in	
Loading end	14.02.2020	00:00			12.02.2020	08:50	✓		Loading start	
Shpmt completion	14.02.2020	00:00			12.02.2020	08:50	✓		Loading end	
Shipment start	14.02.2020	00:00			12.02.2020	08:50	✓		Shpmt completion	
Shipment end	14.02.2020	00:00			12.02.2020	08:50	✓		Shipment start	
					12.02.2020	08:50	✓		Shipment end	

Actual GI date

Achieved delivery date

At the Group level, only 63% of the orderlines were properly completed with this date in 2020, also labeled Actual Delivery Date in the OTIF page of the dashboard.

Number of Order Lines	Total
Total	423 265
OTIF	320 143
Redress code from Non-OTIF to OTIF	49 497
Non-OTIF	103 122
With Actual Delivery Date	63%

4.0 Functional Specification

4.1 General Data/Calculations

This section will approach the concepts/definitions that will be used in all the reports and required to understand the data from the reports.

Could be specific fields, closing activities, additional information to work and understand the reports.

4.1.1 Perimeter

Included in calculation

Excluded from calculation at the query level

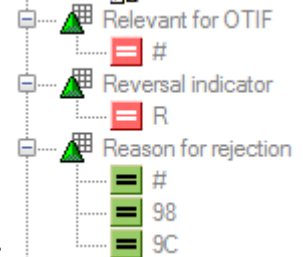
- Outbound deliveries to Customers. This includes :
 - Deliveries to final customer
 - Customer Pick-up
 - Deliveries to warehouses / storages as long as the inventory belongs to the customer
- Inter-GBU flows
- Swap
- Intra-GBU flows
- order doc types:

Global Sales → Reports

OTIF			
DATA INCLUDED FROM RESULTS			
The following Order Types are considered relevant for OTIF:			
Order Document Type	Description	Order Document Type	Description
KB	Consignment Fill-up	UB	Stock transport ord.
KBB	BR Consig&Loan Deliv	VDOR	Venda à Ordem BR
KBCC	KBCC CC Consign.Sto.	ZEXP	BR Export
LP	Scheduling Agreement	ZITI	Sales Order ITI BR
NB	Standard PO	ZOR	Immediate delivery
ORB	BR Standard order	ZORB	Standard Order BR
RCM	BR Cta.&Ord. Sales	ZOUT	Other Outputs BR
SB	SB Third-p.dir order	ZPVA	ZPVA Ord.immed.ship.
TA	Standard Order	ZTSA	BR Cta.&Ord. Sales
TD	TD Standard Order	ZVEX	Fut. Dely Invoice BR
TDIV	TDIV Misc Op		



- Advanced Storage
- Return flows
- Toll
- Pipe delivery
- KE orders
- Item categories:
 - FGN = Free of charge item
 - KLN = Sample item
 - TANN = Free of charge Item
 - TAPS = Industrial Item
 - ZCSE = Cross selling items
 - ZTEP = Aero Test Panel
- Division ZZ - Code of gestion
- Distribution Channel 99 - ERP Non commercial products



in the Qlik version of the query only

- Samples (through order doc types + Field "Reason for order = SPF - Sample-rqst customer /paid by Customer")

=> please think of those exclusions when running the BW query to be aligned with the dashboard

default filter in the dashboard (can be removed)

- Intra-GBU= No
- Sales/Replenishment = Sales

=> please think of those exclusions when running the BW query to be aligned with the dashboard

4.1.2. Formula

OTIF Customer - Requested: we compare the Achieved Delivery date^(c) and the the Requested Delivery date ^(d) + we compare the requested quantity and the delivered quantity

OTIF Customer - 1st Confirmed: we compare the Achieved Delivery date^(c) and the 1st confirmed Delivery date ^(d) + we compare the confirmed quantity and the delivered quantity

OTIF Customer - Last Confirmed: we compare the Achieved Delivery date^(c) and the Last confirmed Delivery date ^(d) + we compare the confirmed quantity and the delivered quantity

OTIF Departure Plant - Requested: we compare the Achieved shipment date ^(a) and the Requested GI date ^(b) + we compare the requested quantity and the delivered quantity

OTIF Departure Plant - 1st Confirmed: we compare the Achieved shipment date ^(a) and the 1st confirmed GI date ^(b) + we compare the confirmed quantity and the delivered quantity

OTIF Departure Plant - Last confirmed: we compare the Achieved shipment date ^(a) and the Last confirmed GI date ^(b) + we compare the confirmed quantity and the delivered quantity

- 1st ATP GI date = 1st ATP date - Route Transit Time

- Last ATP GI date = Last ATP date - Route Transit Time

(a) Achieved shipment date:

Achieved Shipment Date: actual GI date (or equivalent) - detailed definition here

For "PICK UP" transportation mode : Last transfer order confirmation date for the order line if it is a date and Actual Good Issue date for the order line if there is no transfer order (should normally never be in RCS).

For other transportation mode: The last "Actual Good Issue" date

(b) Requested/1st Confirmed/Last Confirmed Good Issue date:

- Requested GI date = Requested Delivery date ^(d) – standard transit time of the route
- First Confirmed GI date = 1st Confirmed Delivery date ^(d) – standard transit time of the route
- Last Confirmed GI date = Last Confirmed Delivery date ^(d) – standard transit time of the route

For Specialty Polymers:

- Requested GI date = Requested Delivery date (at the order header level in SAP)
- 1st confirmed delivery date = 1st committed delivery date (in SAP, see "Additional Data B tab at the orderline level)
- Last confirmed delivery date = Delivery date (at the orderline level in SAP - see the Tab Schedule Lines)

(c) Achieved delivery date:

Achieved Delivery Date: actual or estimated delivery date at customer side - detailed definition here

For "PICK UP" transportation mode : Last transfer order confirmation date of the order line if it is a date and Last Good Issue date of the order line if there is no transfer order (should normally never be in RCS).

For other transportation mode: The last "Actual Shipment end" if it exists, else the last "Planned shipment end" (automatically filled in at planning step of shipment, using planned shipment completion + transit time from the SAP ROUTE or updated manually at shipment completion) if it exists and else the last "Actual Good Issue" date (normally should not happen).

Tolerances:

For quantity:

For In Full tolerances, if there is a tolerance defined in the order then we consider it, ie : 5%, 10% even 20%.

Else it's +/- 0%.

Warning: For some GBU's this is one of the main causes to be NON OTIF on the reporting, even if they were On Time

For time: standardized by transport modes

Transport mode	One Solvay Group Tolerances	Count of Weekends and holidays
Road LTL*	-1/+1 day	No
Road FTL*	-0/+0 day	No
Rail	-1/+1 day	Yes
Sea/Ocean	-7/+7 days	Yes
Barge	-3/+3 days	Yes
Intermodal	-2/+2 days	Yes
Air	-/+1 days	Yes
Other	-1/+1 day	No
Pickup	-/+0 days	No

*New: The transport mode Road was split between Road LTL (Less Than Truck Load) and Road FTL (Full Truck Load)

Count of weekends and holidays according to the Belgian calendar

Reprocessing root causes (from NON OTIF to OTIF)

In cases of Non OTIF due to time issues, front Office and Back Office can use reason codes: 740, 745, 750 to force the order line status to On Time.

Reprocessing root causes (from OTIF to NON OTIF)

In cases of OTIF that suppose not to be due to time issues, front Office and Back Office can use reason codes: 755 to force the order line status to Non OTIF.

*You'll find the Guidelines done by SBS & EC end of 2018 : Reason codes guidelines

Plant Category (WP1 only):

- PROD = Production plant
- NDIR = Direct Trading : shipment from third party suppliers to customer (Order Type TAS will be used for this type of plant)
- NDEP = Warehouse : physical Solvay stock location to store purchased materials from Solvay or 1/3 party supplier or Solvay produced materials
- NDC = Customer consignment warehouse: stock held at customer address (purchased or produced materials)
- SSTT = Sub contracting

4.2 Process Detail

4.2.1. Report/Process Definition

Domain	Supply Chain
Application	Sales & distribution - OTIF report
Provider	<insert name>
Existing Documentation	<insert link>

This section represents the process with detail information for the application. Can include specific or special cases, complex logics , calculations, flows, among others.

Note: When you generate a BW report, use the field OTIF Reference Month in the prompt for aligned data

4.2.2. How to access BW

Step One

Select OTIF Ref. Month as the reference date in the prompt

Demande BW OTIF SO&PO - Details (core query)

— □

Utiliser variante

Sélectionnez une variante ou entrez un nom puis enregistrez pr créer variante utilisateurs



Synthèse invite

Search variables...

UoM for Qty conv. (Single value, Optional): kg

GBU (Select Optional, Optional, Auth):

Company Code (Selection Option, Optional, Auth):

Actual GI Date (Month.Year, Optional, Interval):

OTIF Ref. Month (optional, interval):

First ATP GI Month/Year (Interval, Optional):

Last Req.GI Month/Year (Interval, Optional):

Spécifier valeur pour invites

UoM for Qty conv. (Single value, Optional)

VKG

GBU (Select Optional, Optional, Auth)

=

Company Code (Selection Option, Optional, Auth)

=

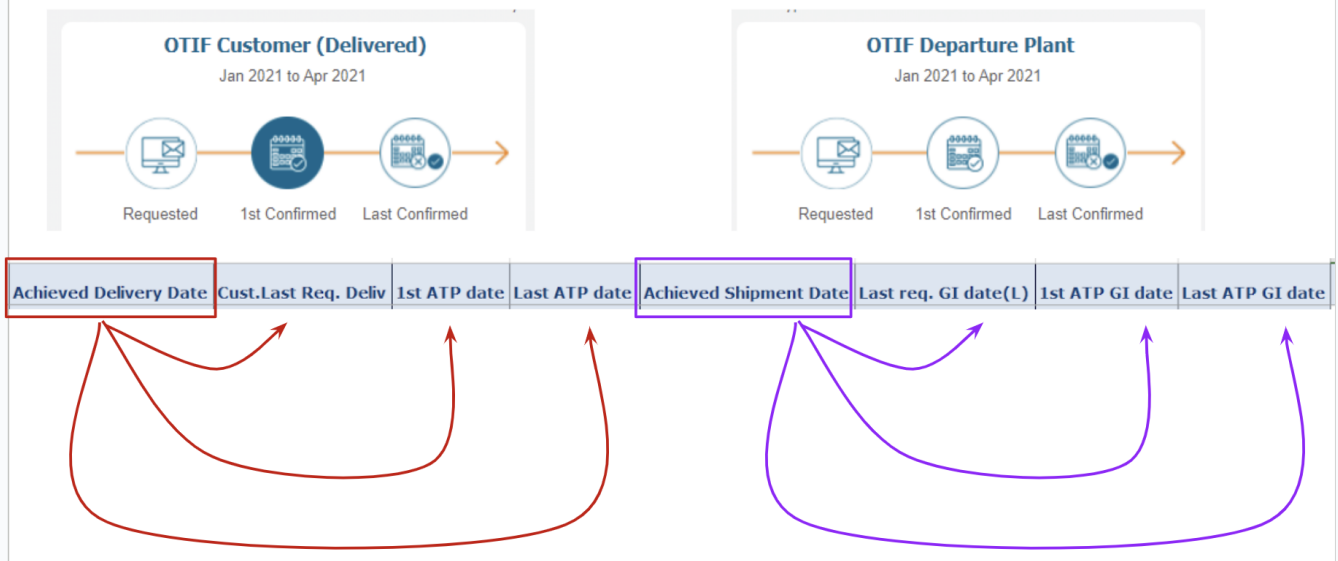
Actual GI Date (Month.Year, Optional, Interval)

OTIF Ref. Month (optional, interval)

First ATP GI Month/Year (Interval, Optional)

Step two

Reference dates to compare for each OTIF



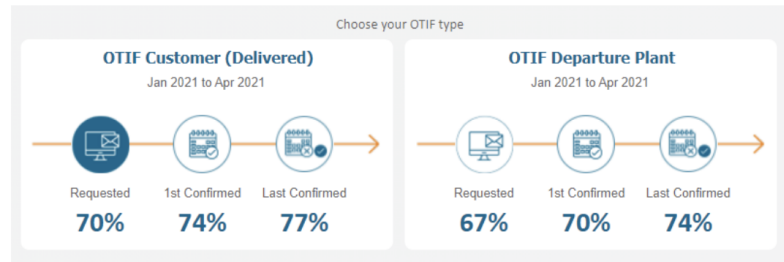
Step Three

On Time: Names of the fields to display for the dates

- + [C_ITM_GS] Order Line
- + [C_SHIPCD2__C_TR_MODE] Transportation mode
- + [C_ACHDLV] Achieved Delivery Date
- + [C_ITM_GS__C_LSTREQ] Cust.Last Req. Deliv
- + [C_ITM_GS__C_FSTATP] 1st ATP date
- + [C_ITM_GS__C_LSTATP] Last ATP date
- + [C_ACHSHIP] Achieved Shipment Date
- + [C_ITM_GS__C_LSTRQGI] Last req. GI date(L)
- + [C_ITM_GS__C_FIRSTGI] 1st ATP GI date
- + [C_ITM_GS__C_LASTGI] Last ATP GI date

Step Four - Example

Example:
For the *OTIF Customer Delivered* - *Customer Requested*, we compare the **Achieved Delivery Date** to the **Customer Requested Delivery Date**



If the delay days fits in the tolerance, then we are On Time

Transportation mode	Achieved Delivery Date	Cust.Last Req. Deliv	Early Tolerance days	Late Tolerance days	OTDCR Delay days	In Full & OTDCR	In Full but Not OTDCR	Not In Full but OTDCR	Not In Full Not OTDCR
ROAD-FTL	09.04.2021	07.04.2021	0	0	2	0	1	0	0
ROAD-FTL	09.04.2021	07.04.2021	0	0	2	0	1	0	0
ROAD-FTL	09.04.2021	09.04.2021	0	0	0	1	0	0	0
ROAD-FTL	09.04.2021	09.04.2021	0	0	0	1	0	0	0
ROAD-FTL	09.04.2021	09.04.2021	0	0	0	1	0	0	0
ROAD-FTL	09.04.2021	09.04.2021	0	0	0	1	0	0	0
PICKUP	12.04.2021	14.04.2021	-999 999	0	-2	1	0	0	0
PICKUP	14.04.2021	16.04.2021	-999 999	0	-2	1	0	0	0

The tolerance days depend on the Transport mode

For operational purposes, please open the global sales query and do the following filter to extract the same info that Global SC dashboard. This query will bring to you Sales orders and Replenishment orders. Thus please follow the next steps:

- Filter on document type: for sales all except NB & UB, for replenishment only NB & UB.
- Filter on Intra-GBU flag, because sometimes you can have intra flows in type of orders other than NB & UB
=> Those filters are set up by default in the OTIF pages but you can remove in the "SHOW FILTERS" box if you want
- To check the OTIF
 - Filter on OTD for On time delivered if you're looking for KPI at customer delivered (OTDCR/OTDFC/OTDLC)
 - Filter on OTS for On time shipment if you're looking for KPI at departure plant (OTSCR/OTSFC/OTSLC)
 - Filter on In full requested = 1, for requested KPI
 - Filter on in full confirmed =1, for confirmed KPI
- To check the NON-ON TIME
 - Filter on LATE & EARLY in the column of your KPI (OTDCR/OTDFC/OTDLC or OTSCR/OTSFC/OTSLC)
 - Filter on In full requested = 1, for requested KPI
 - Filter on in full confirmed =1, for confirmed KPI
- To check NON-IN FULL
 - Filter on OTD for On time delivered if you're looking for KPI at customer delivered (OTDCR/OTDFC/OTDLC)
 - Filter on OTS for On time shipment if you're looking for KPI at departure plant (OTSCR/OTSFC/OTSLC)
 - Filter on In full requested = 0, for requested KPI
 - Filter on in full confirmed =0, for confirmed KPI
- To check NON-ON TIME & NON-IN FULL
 - Filter on LATE & EARLY in the column of your KPI (OTDCR/OTDFC/OTDLC or OTSCR/OTSFC/OTSLC)
 - Filter on In full requested = 0, for requested KPI
 - Filter on in full confirmed =0, for confirmed KPI

5.0 Non-functional Descriptions

Please populate the relevant section and delete those that are not applicable.

5.1 Usability

Usability is about the ease with which a User can learn to start using the solution and the ease with which they can use the system. In addition to ease of learning and ease of use, usability also includes areas such as ease of recall, error avoidance and handling, accessibility among others e.g., 99% of metadata entry Users who have use the Maintenance Dashboard should be able to change filters, extract etc., when required. Maintenance data will be centrally stored in the Google Cloud platform, which will be available to other applications e.g., and Dashboards if needed.

5.2 Regulatory Compliance

Software systems must comply with legal and regulatory e.g., GDPR requirements, this can change depending on country, organisation industry and / or region. The software systems must be secure from unauthorized access. The Maintenance Dashboard will comply with Solvay's regulations and compliance e.g., access only granted to authorized Users.

5.3 Security

Security refers to essential aspects that assure a solution and its components will be protected against unauthorized access or malware attacks. Important considerations related to security aspects of a system are User authentication, User authorization or User access privileges, data theft, malware attacks, data encryption, and maintaining audit trails, e.g., only Users with administrator access shall be able to create new accounts and assign data access privileges to the new accounts e.g.,

- All data will be encrypted in the dashboard
- Only authorised Users / Administrative Users will be able to access data.
- Maintenance data will be split between either SCO or ECO, and Users will only have authority to one Entity data.

5.4 Performance

Performance management

KPIs

Today at the Group level we follow two indicators on a monthly basis: OTIF Delivered Requested, and OTIF Delivered 1st Confirmed. Each GBU is following (at least) one of these two indicators for their internal performance management.

5.5 Reliability

Reliability is the ability of a solution or its component to perform its required functions without failure under predefined conditions for a specified time / period. Reliability can possibly be specified in terms of average time system runs before failure occurs, percentage of operations completed successfully within a time / period, maximum acceptable failure probability, or number of failures within a period. Reliability aspects are in reference to (but not limited to) evaluation of the system to be considered as reliable, classification of reliability defining failures vs. regular failures, and the impact of failure on business operations. The Maintenance Dashboard will display data from the previous refresh of data.

5.6 Scalability

Scalability refers to the degree to which a solution can evolve to handle increased amounts of work. The increased amount of work could be in terms of the user base, transactions, data, network traffic, or other factors e.g., the system should be able to handle an additional load of a maximum of 5,000 Users every month for the next 6 months without any noticeable performance impacts.

5.7 Compatibility

Interoperability is the degree to which the solution is compatible with other components. It is a measure of how effectively the system interoperates with other software systems and how easily it integrates with external hardware devices.

Interoperability aspects to be discussed during elicitation are in reference to (but not limited to) software systems to be interfaced with along with data / messages to be exchanged and any standard data formats, hardware components to be integrated with, and any standard communication protocols to be followed e.g., Order Management system will push the order file into a secured file transfer protocol server from where it will be loaded into the system through a daily job. To guarantee between Google Cloud platform and SAP BW Queries e.g., BW_QRY_MVPMOR01_0002, Solvay has introduced a new tool called Xtract ([Xtract](#)).

5.8 Availability

Availability is the degree to which the solution is operable and accessible when required. It is a measure of time during which the system is fully operational e.g., available for use and sometimes included as a Service Level Agreement (SLA) considering its criticality to the business, e.g., the system shall be at least 99% available on weekdays between 09:00 to 18:30 Central European Time (CET).

5.9 Refresh of the Data

Frequency, data, and time of the data refresh in the data product.