

A man and a woman are in a snowy, coastal environment. The woman, wearing a black parka and beanie, stands and looks out a large window of a wooden building. The man, wearing a dark jacket and beanie, sits on the snow. Several Thule bags and a rolling suitcase are on the ground. The background shows a snowy landscape and a body of water under a cloudy sky.

## MAF Seminar: Use of Events - Internal replenishment to Assembly

Tobias Johansson, Thule



# Agenda

- Introduction
- Events and example usage
- Business challenge
- How Events helped us to solve the challenge
- Demo

# Presentation

Tobias Johansson

- M3 Specialist Warehouse & Distribution
- Responsible for Factory Track
- 18 years of ERP experience as M3 Specialist and Business Consultant
- Joined Thule in 2019

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## Events and examples



# Events in M3 - programs

## CMS045- Event Subscription

- Subscribe to events published by M3 or EventAnalytics

## CMS047-Event based alerts

- Enter conditions for which events to do something with
- Alert
- Task
- Start Workflow

## CMS042- Composite Event

- Add additional filters to the original event
- Join data from other tables

## CMS041 Event Based API calls

- Run API call towards M3

## CMS048 Event log fields

- Light weight FAT

## Event Analytic Rules

- Subscribe to events
- Publish events
- Perform filtering
- Add virtual fields

# CMS045 – Event Subscription

CMS045 Event Subscription. Open

Actions ▾Options ▾Related ▾Tools ▾|+🔍✍️📄🗑️🔄📅|

Event nameMITBAL

Event publisherM3

Event operationU

Create☐

Delete☐

Exit☐

Update☒

Start☐

Failed☐

Detailed Information

Status20-Approved

Include in auto job event alerts (CMS911)☒

Include in auto job event DB changes (CMS912)☐

Include web service call in event auto job☐

- The starting point for the other programs
- Include in auto job event alerts (CMS047).
- Include in event log (CMS048)
- Include in auto jobs event DB changes-Field Audit Trail (CMS048/CMS300)



# CMS047 – Event Based alerts

CMS047 Event Based Alerts. Open

ActionsOptionsRelatedTools

Event publisherM3

Event nameMITBAL

Alert rule IDSCP\_BLK\_ADDED

Event operationU

Create☐

Delete☐

Exit☐

Update☒

Start☐

Failed☐

Detailed Information

DescriptionSupply chain policy

Name

Status20-Approved

BOD enabled☐

Workflow name

1-Alert

2-Task

3-Notification

4-Workflow

Logical formula

TypeA-Alphanum...

FieldWHLO

1-Equals (=)

Operand3-Specific value

Field

Specific value014

1-And

TypeA-Alphanum...

FieldSCPO

7-Changed value

Operand0-Not defined

Field

Specific value

0-Not defined

Type-Not defined

Field

0-Not defined

Operand0-Not defined

Field

Specific value

Alert message<CHID> changed from <OLD\_SCPO> to <SCPO> for item <ITNO> in whs <WHLO>

ReceiverSEMALTOJ00

Table

Field

Focus field

Option

Opening panel

Thule Group

!

DENEUBEST0 changed from BLK to for item 639800 in whs 014 (M3 application message, cmp 100)

ID:449829

Created:Jun 4, 2025, 3:10:28 PM Central European Summer Time

Alert Timestamp : Jun 4, 2025, 3:10:28 PM Central European Summer Time

Sent by Infor OS

- Enter your logical formula to capture only those event you are interested in.
- Give your alert message a name and select receiver.
- CRS111 setup needed.
- Restart autojobs.

## EXAMPLES

- Notify someone when goods have been received to a specific location.
- Run times have updated for a routing.
- Monitor specific field changes in tables.

# CMS047 – Event Based alerts

≡

CMS047 Event Based Alerts. Open

Actions ▾Options ▾Related ▾Tools ▾

+🔍✎📄🗑️🔄📅

Event publisher

M3

Event name

OCLINE

Alert rule ID

014\_PLHUTNARE0

Event operation

U

Create

☐

Delete

☐

Exit

☐

Update

☒

Start

☐

Failed

☐

Detailed Information

Description

New mail when reason upd in stat 33

Name

Status

20-Approved

BOD enabled

☒ 4-Workflow

Workflow name

ClaimNotification\_M3\_TJ

Logical formula

Type	Field	Condition	Operand
A-Alphanumeric	RSCD	7-Changed value	0-Not define
1-And			
A-Alphanumeric	CHID	1-Equals (=)	3-Specific value
1-And			
A-Alphanumeric	REST	1-Equals (=)	3-Specific value

THULE Group

THULE M3CE PRD New Claim Notification for customer: traveltraeger, Item: Easy-Fold 3 foldable add-on Amount: 1. Description: SF # 01961393 - wheel strap holder broken

ID: 455574

Created: Jun 12, 2025, 1:29:39 PM Central European Summer Time

Customer or Return Order number : 1611404

Return Line : 1

Warehouse : 022

Item No : 944700

Item Name : EasyFold 3 foldable add-on

Item Quantity : 1

Reason Code : 305

Batch No : 944700-25/4-6461

Claim Description : SF # 01961393 - wheel strap holder broken

Return Order Responsible : DENEUSOKI0

Customer No : 24042001

Customer Name : traveltraeger

Customer Country : DE

Claim Group : ClaimGroup-Cargo6

Sent by Infor OS

PLHUTNARE0

Instead of sending an alert you can start a workflow to collect more details and send to users.

## EXAMPLES

We use it to trigger workflows, where we might need more information than is available in the table, and there is a need to setup distribution of mails.



# CMS042 – Composite Event

≡

CMS042 Composite Events. Open

Actions ▾Options ▾Related ▾Tools ▾| + ✕ ↗ ↻ 📄 🗑️ ↺ 📅 ||🔍

Apply

Event publisher	Event name	Event ope	Composite event	Sts	Name	Description	Event k v	
M3	CUGEX1	CU	CUGEX1OCUSMA	20	CUGEX1_OCUSMA	CUGEX1_OCUSMA	CUGEX1	
M							MGLINE	
M							OCUSMA	
M							OXLIN	

Event publisher

M3

Event name

CUGEX1

Comp event name

CUGEX1OCUSMA

Event operation

CU

Create

☒

Delete

☐

Exit

☐

Request

☐

Update

☒

Details

Details

Name

CUGEX1\_OCUSMA

CUGEX1\_OCUSMA

Status

20-Approved

Original op

☒

Filter

Logical type

Field

Condition

Operand

Value field

N-Numeric

CONO

6-Does not equal (≠)

1-Blank value

A-Alphanumeric

A130

7-Changed value

A-Alphanumeric

A030

7-Changed value

A-Alphanumeric

A230

7-Changed value

Event k v

CUGEX1

Table

OCUSMA00

Table keys

CUNO

Tabl key values

CUNO=<PK01>

Table columns

CUNO, STAT, CFC4

2-Or

☐

3-Not defined

☐

- A composite event can be used to add some additional information from related tables.
- Select fields from related table to include, like order type from an order header.
- Mainly used in Event Analytics rules to filter out unnecessary events, so you don't send to many events to i.e. IEC, or ION.

## EXAMPLES

We have external systems that might be built up on masterdata from several tables, and need to update an external system if any of two tables are updated.

- Update a CRM system
- Update an EDI order if changes are made
- Standard E-invoicing mappings use this

# CMS041 Event based API call

Apply

Event publisher	Event name	Event ope	Subscriber ID	Sts	Name	Description	Program	Name	
M3	MITMAS	U	STATUS_15	20	STATUS_15	Status 15 change to 20	MMS200MI	UpdItmBasic	
M3	MITVEN	C	BLANK_ORTY	20	Order type	Blank out order type	PPS040MI	UpdItemSupplier	
M3	ODHEAD	U	160507_ALL_OTRP	20	Add Invoice	Add Invoice to FISC_QUE	C		

Event publisher

M3

Event name

MITVEN

Subscriber ID

BLANK\_ORTY

Event operation

C

Create

☒

Update

☐

Delete

☐

Start

☐

Exit

☐

Failed

☐

Request

☐

Response

☐

Details

Name

Order type

Blank out order type

Status

20-Approved

Program

PPS040MI

Connect Supplier and Item

Transaction

UpdItemSupplier

Update a item supplier record

Parameter value

ITNO=<ITNO>,SUNO=<SUNO>,ORTY=?

Use event owner

☐

Filter

Logical type	Field	Condition	Operand	Value field	And/or
A-Alphanumeric	ORTY	7-Changed value			1-And
A-Alphanumeric	SUFI	1-Equals (=)	1-Blank value		3-Not defined

- Possible to call API call towards M3
- Filtering can be done to limit the calls.

## EXAMPLES

- Change item status
- Remove order type in PPS040
- When invoicing is done add information in a special printing queue.

# CMS048 – Event log fields

☰

CMS048 Event Log Fields. Open

Actions ▾ Options ▾ Related ▾ Tools ▾ | + ↗ ↻ 📄 🗑️ ↺ 📅 | 📖

Event name

DROUDI

Event operation

U-Update ▾

Event publisher

M3

Apply

Field	Sts	
DSARDY	20	

☰

CMS300 Event Log. Display

Actions ▾ Options ▾ Related ▾ Tools ▾ | + ↗ ↻ 📄 🗑️ ↺ 📅 | 📖

Primary key 2

1-201

-

1-201

Entry date

25/06/12 📅

-

25/06/12 📅

Changed by

-

Event name

DROUDI

Apply

Timestamp	Event name	Primary key 1	Primary key 2	Primary key 3	Field	Old value	New value	Changed by	Chg dt
2025/06/12 14:48:43	DROUDI	100	1-201	1	DSARDY	60	26	MB10001001	250612
2025/06/12 15:03:17	DROUDI	100	1-201	1	DSARDY	26	60	MB10001001	250612
2025/06/12 15:19:55	DROUDI	100	1-201	1	DSARDY	60	7	MB10001001	250612
2025/06/12 15:28:32	DROUDI	100	1-201	1	DSARDY	7	60	MB10001001	250612
2025/06/12 15:28:52	DROUDI	100	1-201	1	DSARDY	60	14	MB10001001	250612
2025/06/12 15:38:48	DROUDI	100	1-201	1	DSARDY	14	60	MB10001001	250612

- Setup logging for specific tables
- Useful for trouble shooting and monitoring specific fields. Views can be created in CMS300.
- Use with care since a lot of records can be created.

# MNS051 – Auto jobs

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MNS051 Subsystem Job. Open

Actions ▾ Options ▾ Related ▾ Tools ▾ | + ⚙️ 🔗 📄 🗑️ ↺ 📅 | 📺

Run mode 

-Blank ▾

 - 

1-IMQ ▾

Status 

-Blank ▾

 - 

-Blank ▾

Apply

Subsystem	Job	Status	Description	Delay	Table	No of records	Active	Select/Omit	
<div>ASJ</div>	<div>CMS911</div>								
ASJ	CMS911	20-Definite	Event subscription - alerts	2			<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ASJ	CMS912	20-Definite	Event log	60			<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ASJ	CMS913	20-Definite	Event subscription API calls	60			<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ASJ	CMS914	20-Definite	Event Subscription - Composite Events	60			<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ASJ	CMS915	20-Definite	Event subscription - web service call	60			<input checked="" type="checkbox"/>	<input type="checkbox"/>	

- End jobs when adding/updating configurations



# Event hub

≡

Event Hub

Event Hub

Browse Events

Administration

Subscriptions

Subscription Selection

Available subscriptions

Q

Search Available subscriptions

M3BODProcessor:SyncInvoiceFixedAssetInvoicing

M3:CINBUACINHED

M3BODProcessor:ShowCodeDefinitionCustomStatNumbr

M3:MCFCOH

→}

Selected subscriptions

Q

Search Selected subscriptions

- Browse events – check details

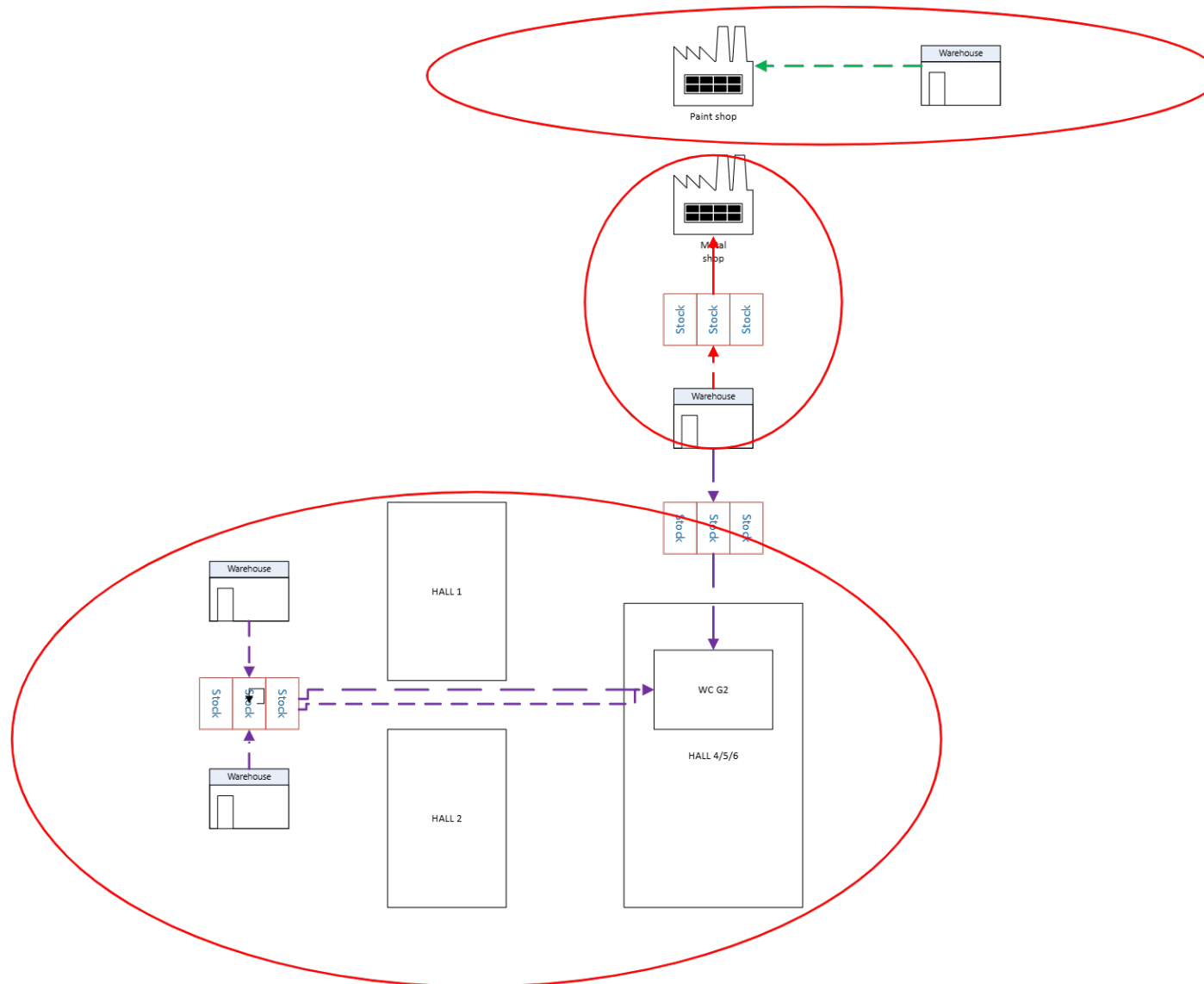


**Business case – internal  
replenishment**





# Background – A layout and material flow challenge



## Background

Over the last couple of years we have introduced internal replenishment orders for line feeding in our production plants, to have better control and visibility from earlier having used stock movements.

## Request from the business

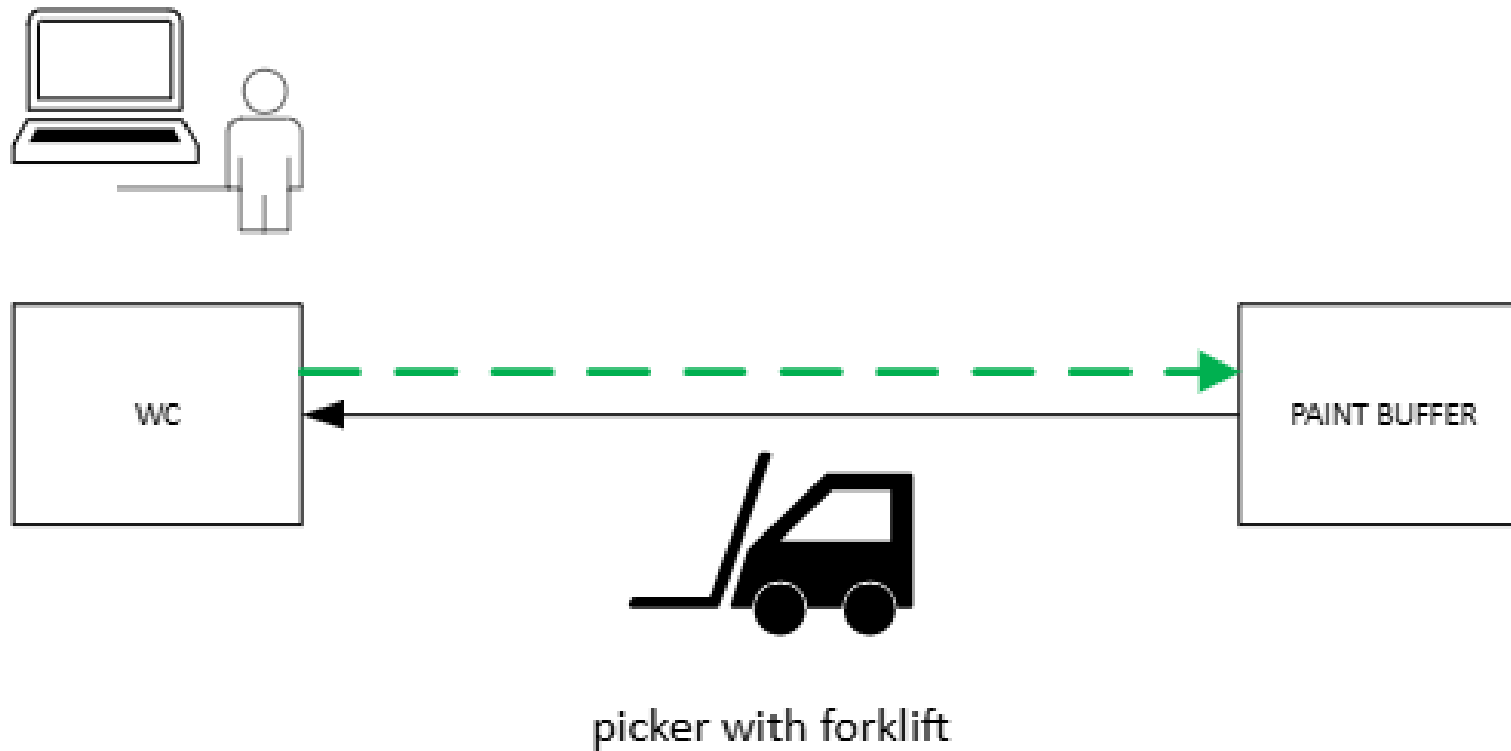
We want to use internal replenishment orders to move goods from the warehouse to work centers.

Operators and pickers use Factory Track as their only tool.

## Types of material flows

- We have three different types of flows
- Simpler flows with short distances
- Flows with separation of picking activities and material handling, but warehouse nearby.
- Complex flows with separation of picking activities and line feeding.

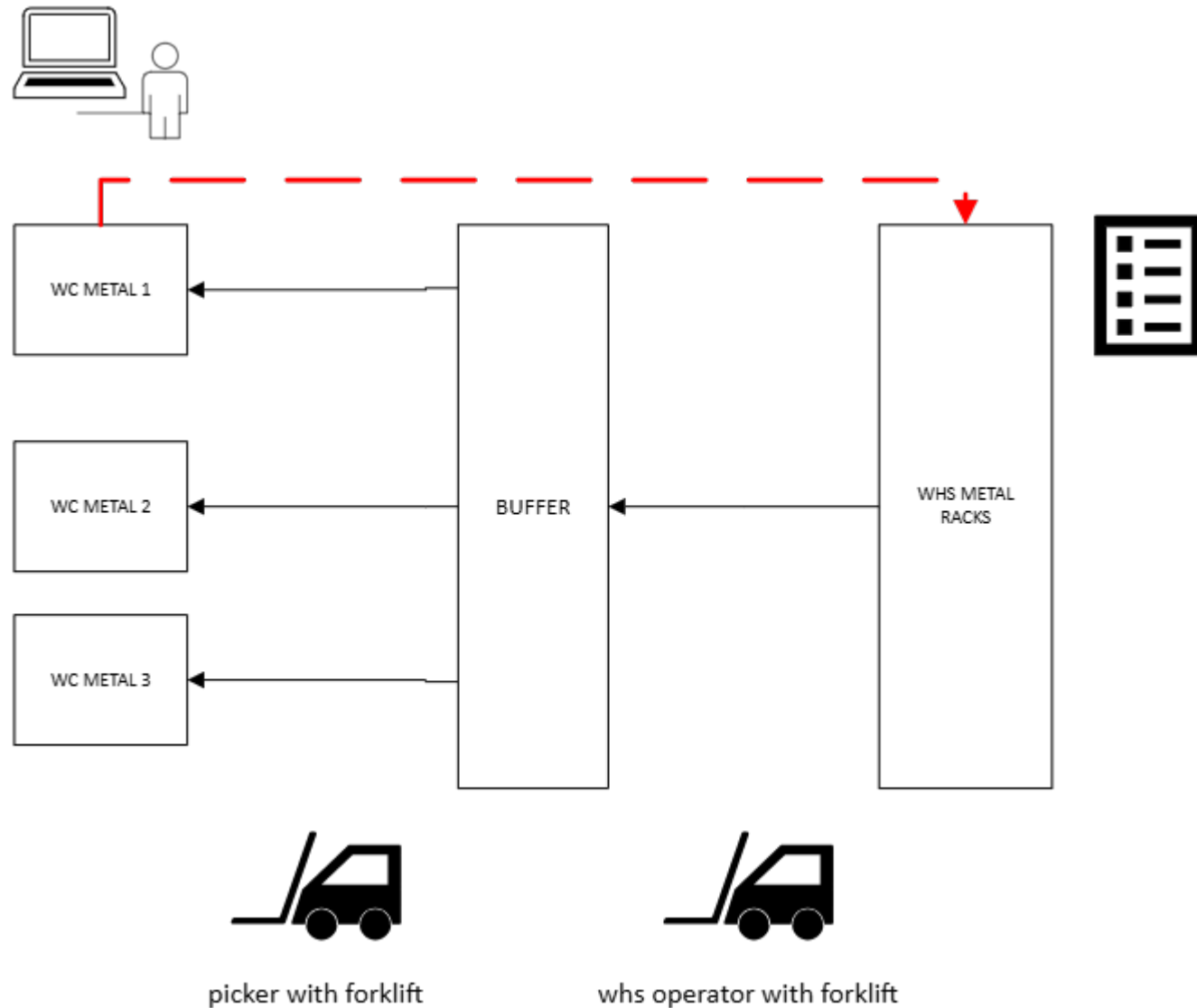
## Flow 1 Paint shop – internal replenishment



- Cell leader orders material
- Picking lists are released in the warehouse
- Picking is performed and delivery is made directly to WC location by one picker

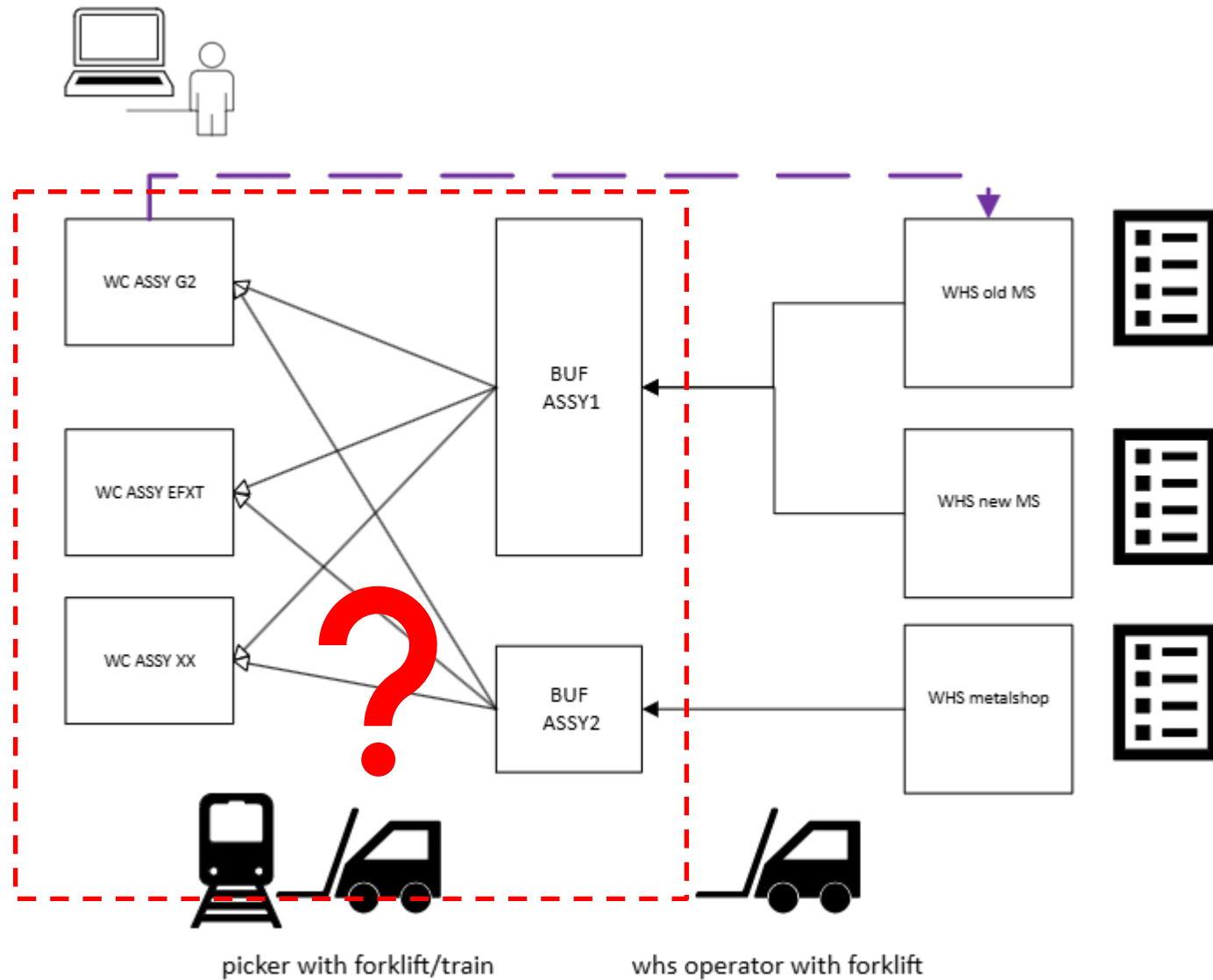


## Flow 2 Metalshop – internal replenishment 2-step put-away (one buffer area)



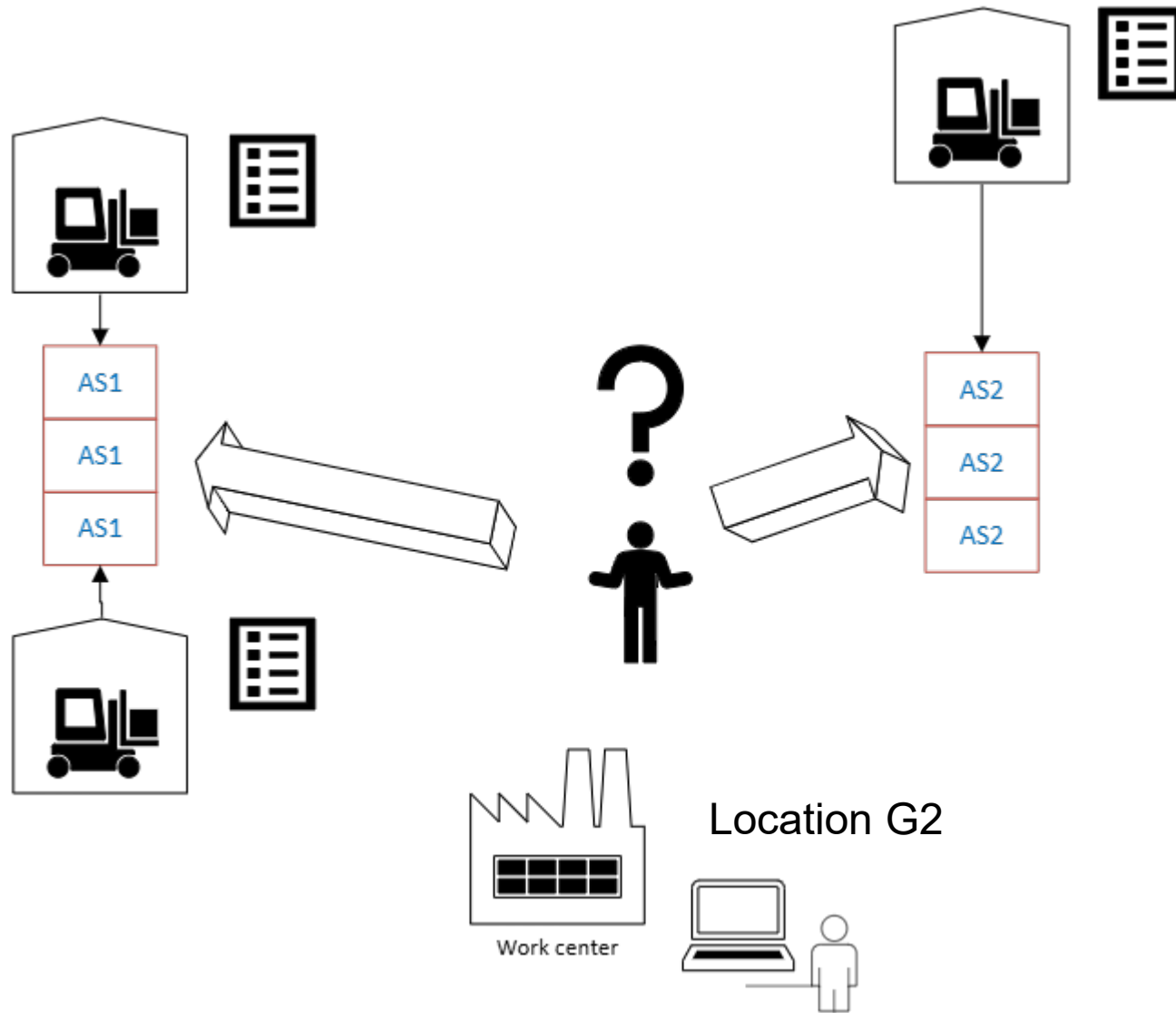
- Cell leader orders material
- Picking lists are released in the warehouse
- Picking is performed by whs operator and delivery made to buffer location.
- The picker monitors pending put-away tasks and knows which buffer location to pick from, as he only has one.

# Flow 3 Assembly hall - internal replenishment 2-step put away (2 buffer areas)



- Cell leader places order
- Picking lists are released in the warehouse.
- Picking is performed by whs operators and they deliver to assigned buffer location.
- The picker monitors pending put-away tasks and **have 2 buffer locations** to pick from, so he don't know where to pick up the goods.

# Problem – To which buffer should I go?



- The pending put-away tasks only show the to-location, not the buffer locations where the goods is placed now.
- The physical distances are long, so the pickers can't see if anything is there to pickup.
- **How can we help the pickers that need to monitor 2 buffer locations?**

# The picker point of view- before

Pending Putaway Wave					
LIST PUTAWAY TASKS					
Putaway task - Select					
Item	Item Name	Loc	Qty	U/M	Lot
8541918002	BASE TUBE f45XT L	G2	100	PCS	
8574006003	TUBE, SEAMLESS Ø40x2 L=2067	G2	1	PCS	
8574006003	TUBE, SEAMLESS Ø40x2 L=2067	G2	1	PCS	
8574006003	TUBE, SEAMLESS Ø40x2 L=2067	G2	1	PCS	

- The picker only sees the to-location, but he don't know where to pick it up



# Anything we can do in M3 and Factory Track to help?

MWS460 Pending Put-Away. Process

Actions Options Related Tools

Put-away no3537299001

Balance Identity Details

Warehouse040Huta

LocationG2Production W40 G2

Item number8541918002BASE TUBE fi45XT L

Lot number

Container

Receiving no

Trans qty bU/M100PCS

Assignment Details

Picking teamQ²

PickerQ²

Wave no

Parameter	Value	Parameter Value
SEARCH PUTAWAY TASKS	<input checked="" type="checkbox"/>	1
Auto trigger Next when all fields confirmed	<input checked="" type="checkbox"/>	1
Default data for input field Zone	<input type="checkbox"/>	
Search field search sequence	<input type="checkbox"/>	6
Sequence of filter fields	<input type="checkbox"/>	7
LIST PUTAWAY TASKS	<input checked="" type="checkbox"/>	1

SEQUENCE OF FILTER FIELDS

1. Search

2. Location

3. Item

4. Lot

5. Container

6. Package

7. Wave

8. Zone

9. Putaway No

Example: "1;2;3;4;5;9;6"

← AS1

- The problem is the pending put-away task, is there any field we can use in both M3 and Factory Track?
- Yes, lets use the Wave number as the buffer locations, since we can update it and also use it as a filter field in the scanner, which is the pickers only tool...
- This record is created when the forklift driver in the warehouse has picked the goods and move it to the buffer

# Wave –to set as "buffer AS1 or AS2" on putaway task?

Pending Putaway Wave

SEARCH PUTAWAY TASKS

Wave

AS1|

☐

Wave

Pending Putaway Wave

LIST PUTAWAY TASKS

Putaway task - Select

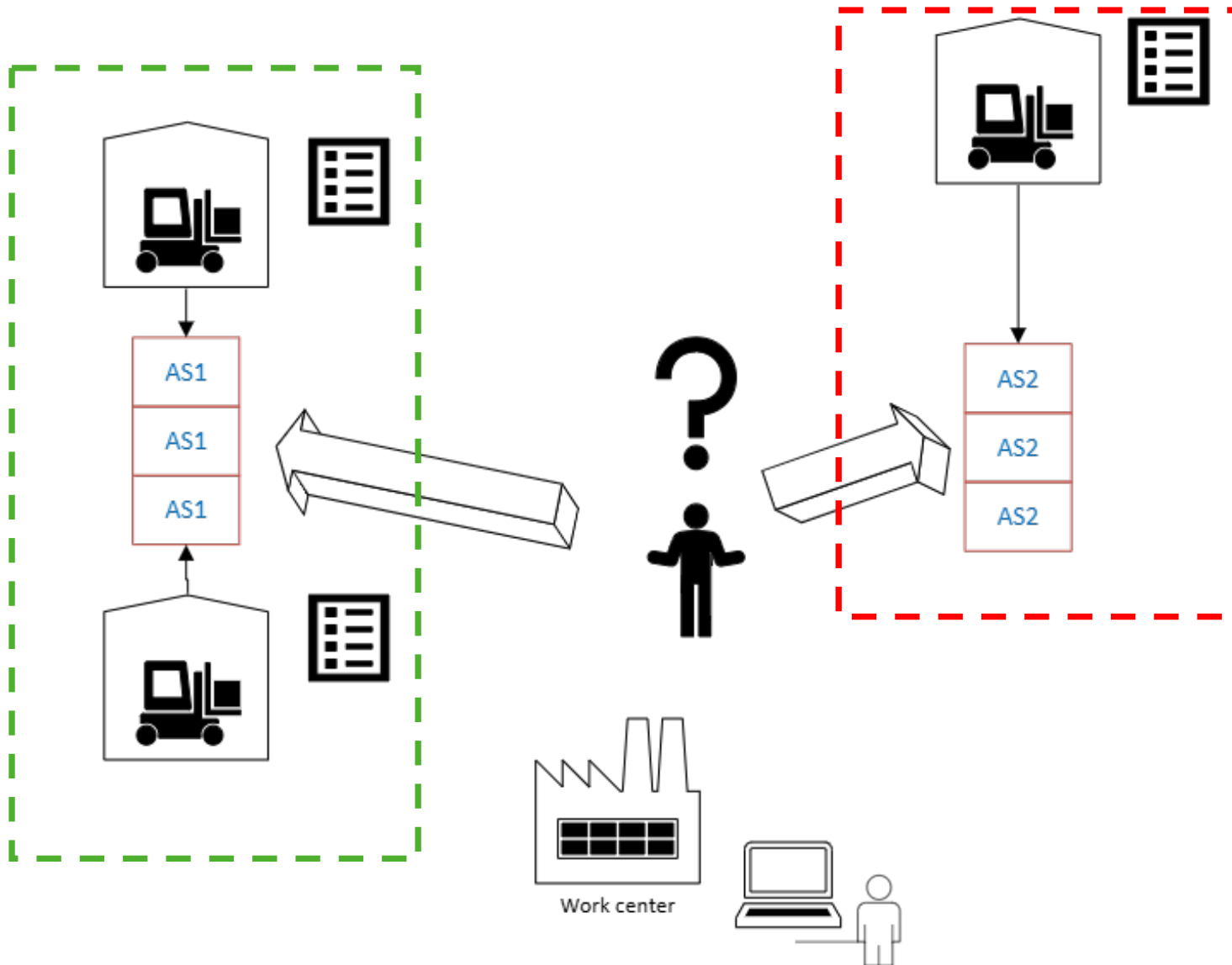
3537314001

Item	Item Name	Loc	Qty	U/M	Lot	Cont	Task
8541918002	BASE TUBE #45XT L	G2	100	PCS			3537299001
8565719002	ADAPTER LAMP RIGHT	G2	100	PCS			3537314001
8574006003	TUBE, SEAMLESS Ø40x2 L=2067	G2	1	PCS			3537309001
8574006003	TUBE, SEAMLESS Ø40x2 L=2067	G2	1	PCS			3537311001
8574006003	TUBE, SEAMLESS Ø40x2 L=2067	G2	1	PCS			3537313001

## Factory Track

- The picker can scan the wave to check where goods are at...
- ...But how to make this happen?

# What can we use to set the wave to reflect buffer location?



- The warehouse operators only supply one buffer location each....
- ..and when they perform the picking, their user creates the pending put-away task.

# Connect the warehouse operators to picking teams

- Picking team setup for Buffer Assy 1 and 2

MWS038 Picking Team. Open

Actions ▾Options ▾Related ▾Tools ▾| +🔍🔗📄🗑️🔄📅||🔒

Warehouse

040 🔍 Huta

Apply

Team	Description	
<div></div>		
AS1	BUFFER ASSY 1	
AS2	BUFFER ASSY 2	

MWS039 Picking Team. Connect Pickers

Actions ▾Options ▾Related ▾Tools ▾| +🔍🔗📄🗑️🔄📅||🔒

Warehouse

040 🔍 Huta

Apply

Team	Picker	Name	Skl	
<div>AS1</div>	<div></div>			
AS1	SEMALTOJ00	Tobias Johansson	4	
AS2	PLHUTJOKR0	Krystek, Joanna	4	

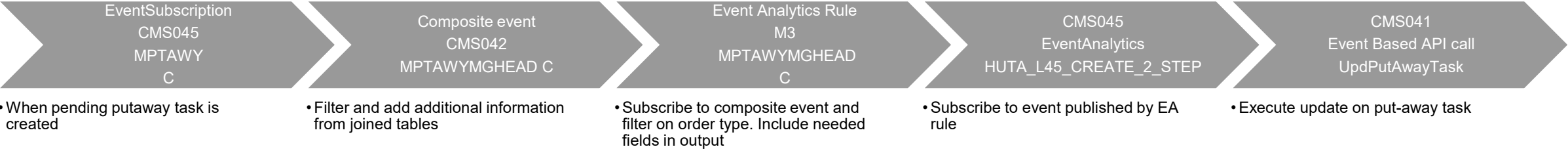


**How events helped us**





# Event programs used in the setup



# Event Subscription CMS045 MPTAWY

CMS045 Event Subscription. Open

MWS038 Picking Team. Open

CMS046

Actions Options Related Tools|+🔍🔗📄🗑️🔄📅|

Event name

MPTAWY

Event publisher

M3

Event operation

C

Create

☒ Update

☐

Delete

☐ Start

☐

Exit

☐ Failed

☐

Detailed Information

Status

20-Approved

Include in auto job event alerts (CMS911)

☒

Include in auto job event DB changes (CMS912)

☐

Include web service call in event auto job

☐

- Event subscription setup in CMS045 for table MPTAWY (MWS460) to monitor events

# Composite event CMS042 MPTAWYMGHEAD

CMS042 Composite Events. Open

ActionsOptionsRelatedTools+✖✎🔗📁🗑️🔄📅

Event publisherM3

Event nameMPTAWY

Comp event nameMPTAWYMGHEAD

Event publisherM3

Event nameMPTAWY

Comp event nameMPTAWYMGHEAD

Event operationC

Create☒ Update☐

Delete☐ Start☐

Exit☐ Failed☐

Request☐ Response☐

Details

NameMPTAWYMGHEAD

Status20-Approved

Original op☒

Details

Event k vMPTAWY

TableMGHEAD00

Table keysTRNR

Tabl key valuesTRNR=<ARDN>

Table columnsTRTP

TableMITPIC10

Table keysWHLO,PICK,TEAM

Tabl key valuesWHLO=<WHLO>,PICK=<CHID>,TEAM=<FIRST>

Table columnsTEAM

Filter

Logical typeFieldCondi...

N-NumericCONO1-Equals (=)3-Specific value1001-And

A-AlphanumericWHLO1-Equals (=)3-Specific value0401-And

N-NumericAORC1-Equals (=)3-Specific value91-And

A-AlphanumericWHSL1-Equals (=)3-Specific valueG23-Not defined

- Composite event setup in CMS042 based on MPTAWY
- Find the requisition order type used
- Find the picking team the picker belongs to.

# Event Analytics Rule (1/2)

Rule CUSTOM\_THULE\_EVENTS / HUTA\_L45\_2STEP\_CREATE

Filter by: 🟢 🔴

**General Information** | Subscribed Event | Filtering | Published Event | Fields

Name \*

**General Information** | **Subscribed Event** | Filtering | Published Event | Fields

**Subscription**

Publisher \*

Document \*

Operations \*

- ☒ Create
- ☐ Update
- ☐ Delete
- ☐ Start
- ☐ Exit
- ☐ Fail
- ☐ Request
- ☐ Response

**Field Metadata**

Fields ☐

- ☐ NOPANO string
- ☐ NOWHLO string
- ☐ NOWHSL

**General Information** | Subscribed Event | **Filtering** | Published Event | Fields

**Filtering**

Criteria

**ISCHANGED Filtering**

Fields ☐

- Add new rule in Event Analytics

- Subscribe to the composite event published by M3

- Filter based on criteria from event

# Event Analytics Rule (2/2)

General InformationSubscribed EventFilteringPublished EventFields

Event

Publisher

EventAnalytics

☐ Copy document name

Document\*

HUTA\_L45\_2STEP\_CREATE

☒ Copy operation

Operation

Key Value

☒ Use default key value

Fields

Q

Type to search

General InformationSubscribed EventFilteringPublished EventFields

Copied Fields

Fields

Q

Type to search

☐ MGTRTP

☐ NOPANO

☐ NOWHLO

☐ NOWHSL

☐ HPTEAM

Virtual Fields

Fields

Q

Type to search

Published event

Fields to publish



# Event subscription CMS045 and Event based API call CMS041

CMS045 Event Subscription. Open

Actions Options Related Tools | + | | | | | | |

Apply

Event publisher	Event name	Event operation	Sts	
<input type="text"/>	<input type="text"/>	<input type="text"/>		
EventAnalytics	HUTA_L45_2STEP_CREATE	C	20	

CMS041 Event Based API Calls. Open

Actions Options Related Tools | + | | | | | | |

Event publisher

EVENTANALYTICS

Event name

HUTA\_L45\_2STEP\_CREATE

Subscriber ID

L45

Event operation

C

Create

☒ Update

☐

Delete

☐ Start

☐

Exit

☐ Failed

☐

Request

☐ Response

☐

Details

Name

MWS460MI

Upd

Status

20-Approved

Program

MWS460MI

Pending put-aways

Transaction

UpdPutAwayTask

Update put-away task

Parameter value

PANO=<PANO>,PLRI=<HPTEAM>

Use event owner

☐

Filter

Logical type

N-Numeric

Field

CONO

Condition

1-Equals (=)

Operand

3-Specific value

Value field

100

And/or

3-Not defined

- Subscribe to the event published by EventAnalytics

- Add API with input parameters

# DEMO

# Summary

- Events might be used in areas you didn't realize
- Efficiency gains
- Follow-up is improved when moving to an order based flow

# Thule Group»

ACTIVE LIFE, SIMPLIFIED.