Infor M3 Connect

Integration Best Practice

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The presenters

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Infor M3 Connect

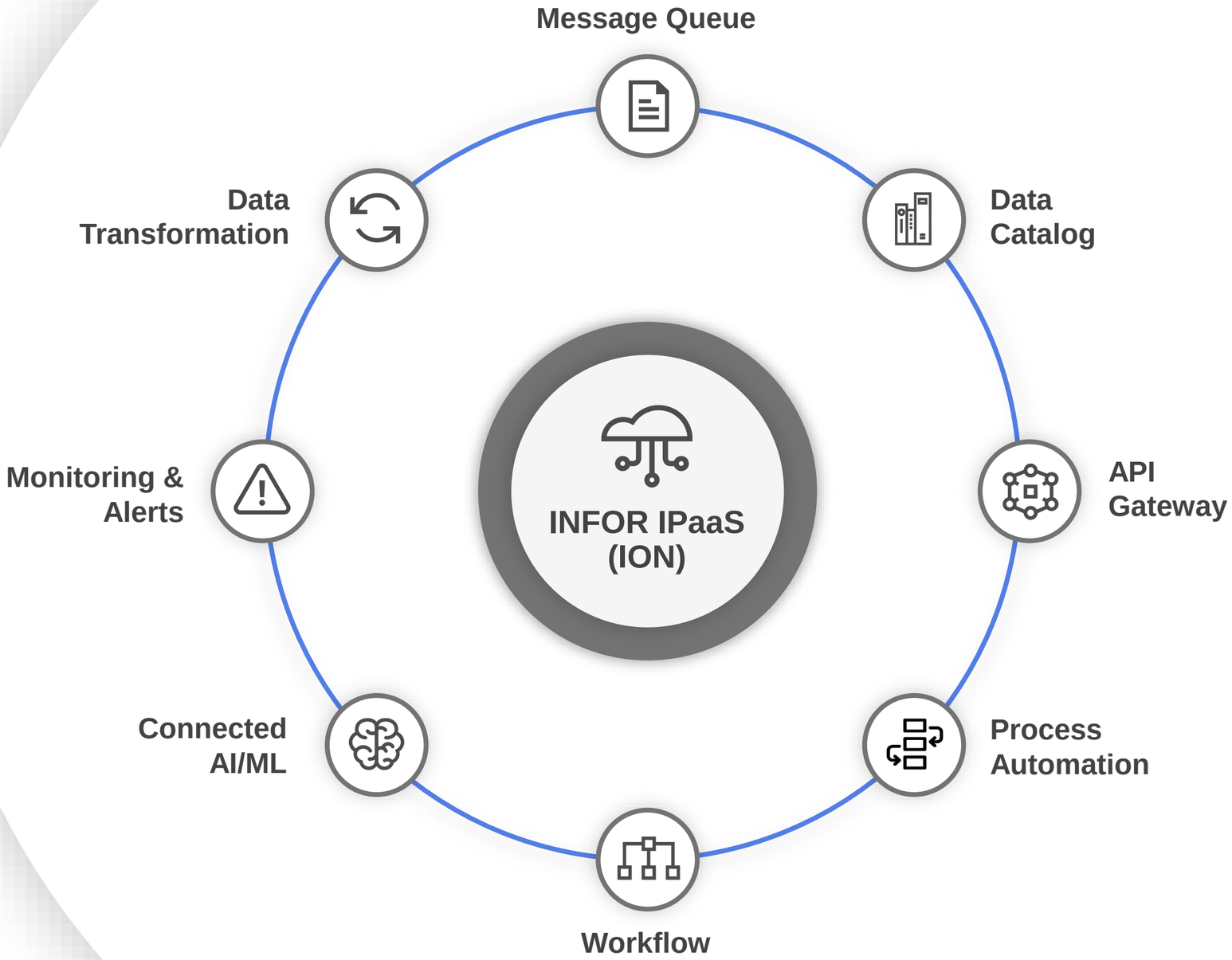
Intro

Integration Best Practice

System Integration

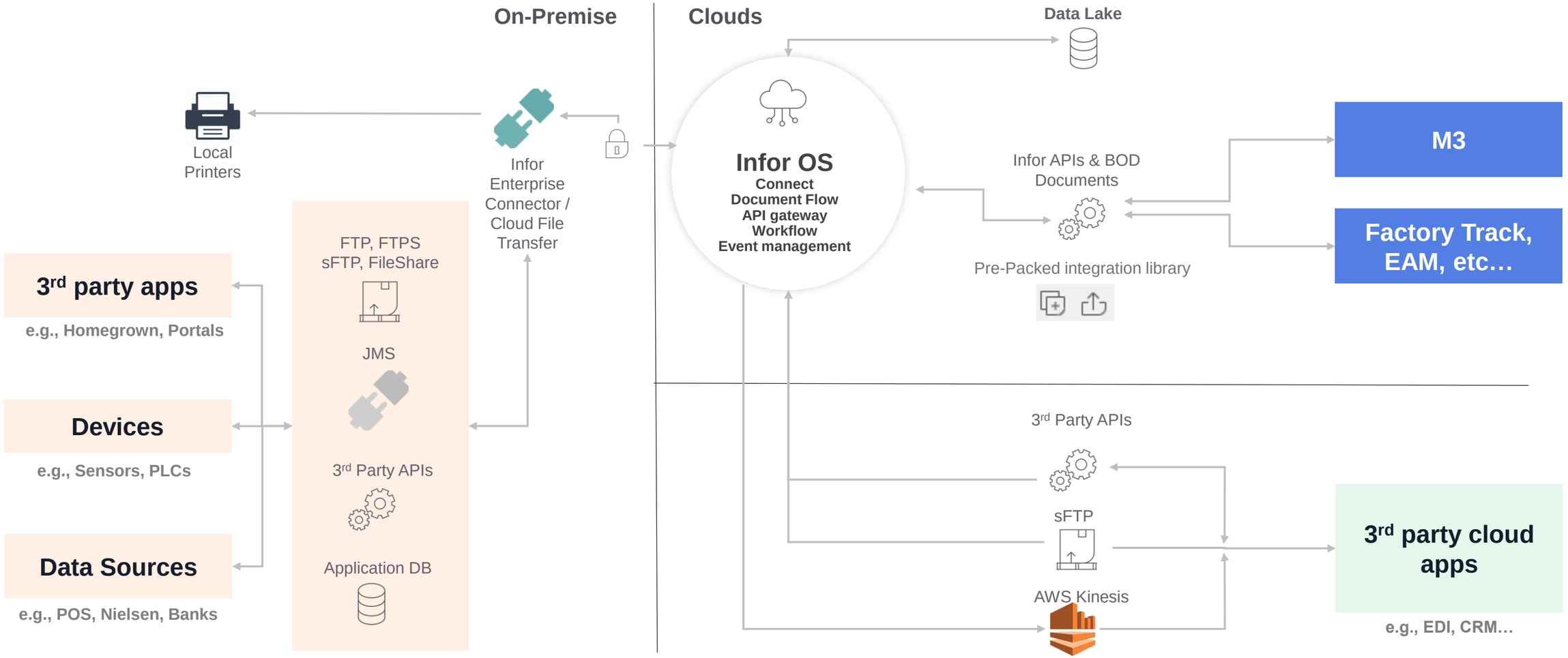
A modern enterprise architecture demands an open standards-based integration platform that can scale in a true multi-tenant cloud.

The Infor OS Intelligent Open Network (ION) provides this and much more to create the basis for future business expansion and connectivity.



Integration Best Practice

Infor ION: Connectors



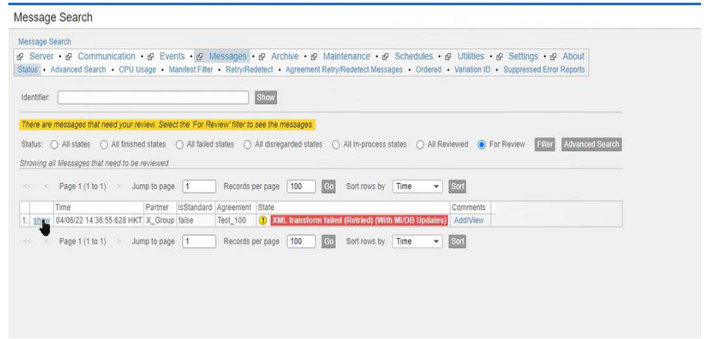
Monitor & different responsibilities

Ops monitoring

- Infrastructure
- Operative system
- Databases
- Web
- Security

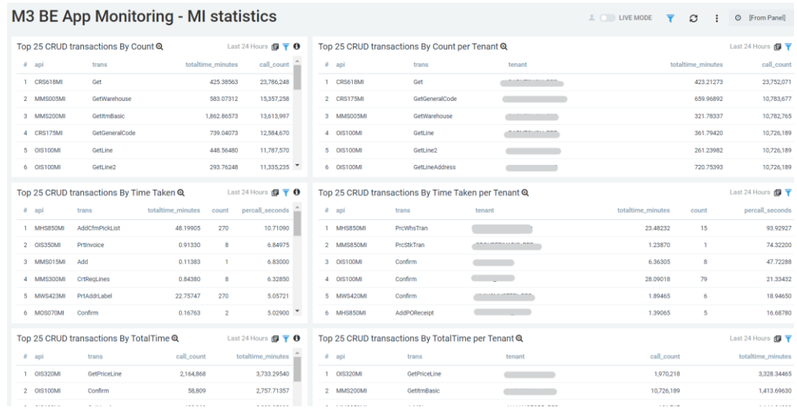
Customer monitoring

- Tenant level
- Customer data
- Failed messages
- IEC Notifications (oct)
- Health service (future)



Development monitoring

- Development teams are tasked to monitor how things behave in production
- Nr of API calls
- Time for API calls



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Common issues

Today's topics

Sending large messages

- Why is this an issue?

When to store translations in CRS881. What not to store.

- M3 Cloud has a limit of 20 000

Sending unnecessary updates

- Use correlation rules to correlate multiple events into one BOD.

Select the right API transaction

- Use Batch mode when possible OIS100MI & MHS850MI 2127960
- OIS100MI GetHead vs GetOrderHead 2123325

When to use ordering

Choosing the right technology

- Webshop
- EDI

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Large messages

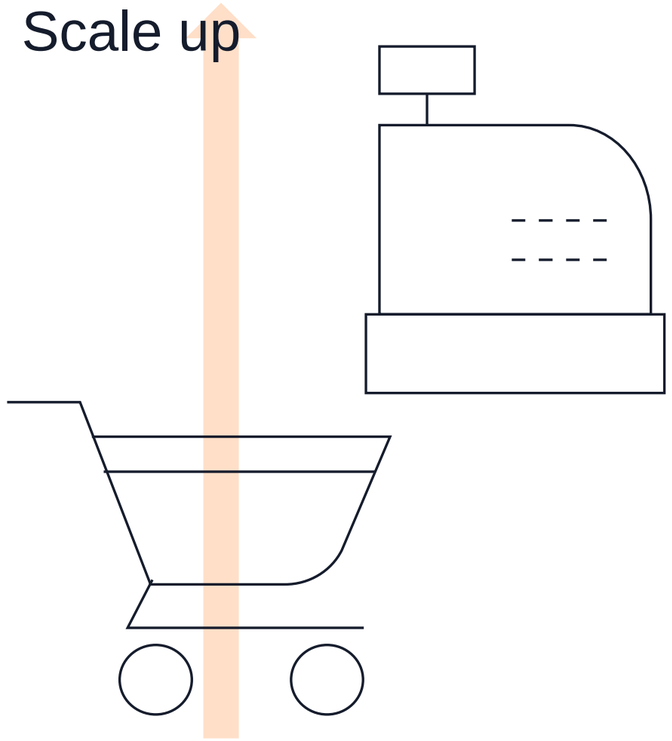
Scaling

To resize the system when needed is referred to as scaling

Integration components in M3 scale horizontally.

Horizontal scaling / Scale out

Vertical scaling / Scale up



What if we send a big message?

- ION Size limit, depending on license. (5 – 50 MB)
- IEC CPU limits
  - Info
  - Warning
  - Error
- IEC timing limits
  - A worker thread in IEC will stop after one hour of processing.
- IEC Memory limits
  - One message can use a maximum of 10% of your allotted memory in IEC.
  - If memory usage closes in on 100% IEC will prevent more worker threads to start

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Data translator

Data translator usage

- IEC stores the data translations from CRS881 in memory to get quick access to the translations.
- There is a limit set to only store 20,000 translations to avoid that memory being used unnecessarily.
- If you use more than 20,000 translations in CRS882 only the first 20,000 values will be loaded.

Data translator usage

- DO
  - Store translations that are needed to convert between message standards.

- Don’t
  - Use CRS881MI to fetch translations
  - Use CRS882 as a generic holder of data.
    - ItemMaster.isWMSItem in CRS882
    - Then they add ItemMaster.isW… ItemMaster.WMSTemplate in CRS8…
    - This means CRS882 is used like an extension table.

Use XtendM3 instead

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APIs

API improvements

KB 2232142 shows performance improvements Infor has made in standard BODs

KB 2313562 shows performance improvements to APIs

MMS200MI/GetItemBasic
Commonly used to get basic item information.

MMS200MI/Get

New API to return basic item information. Faster.

MMS200MI/Get also contains price information. An entire call to MMS200MI/GetPrice can be excluded from many mappings.

API improvements

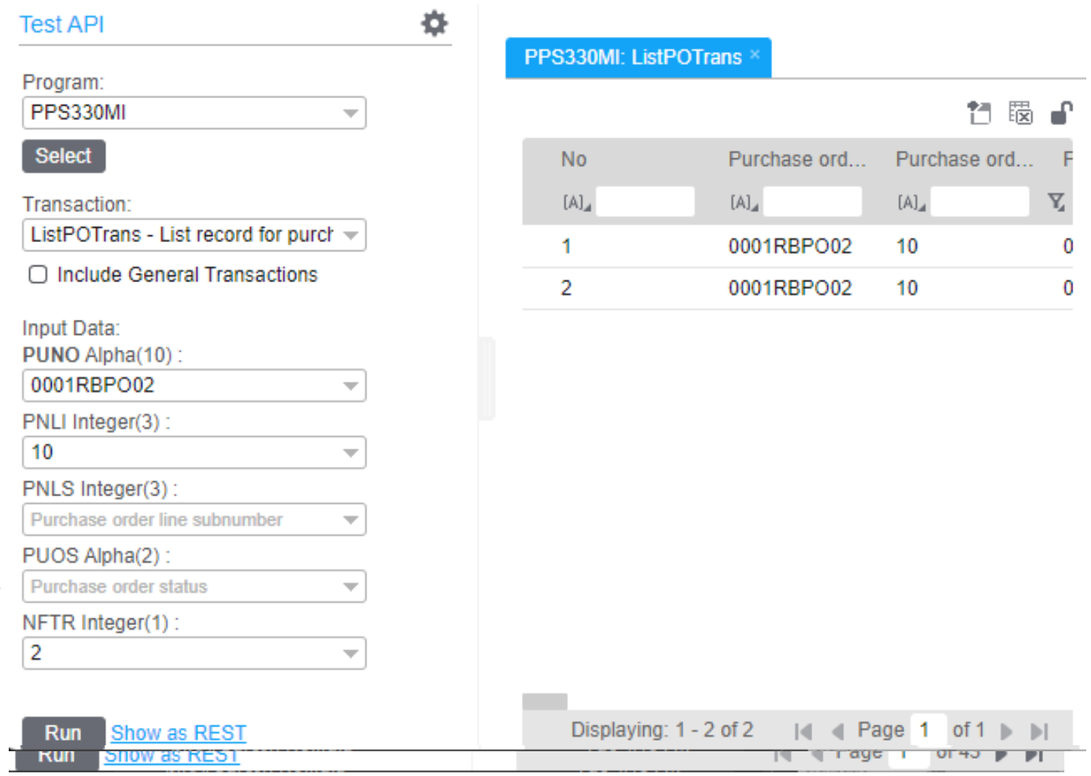
NFTR

New field, number of filters.
Start from the key input and only list what matches the input to the API.

PPS330MI/LstPOTrans

Default behavior – Start from the key input and list every following entry in the database.

NFTR



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Correlation Rules

Correlation Rules

Correlation rules aims to reduce the number of events, by grouping multiple events into fewer events. And subsequently trigger fewer BODs / messages published by M3.

TimeCorrelation correlates multiple events with same defined key values and only publish one (1) event.

EventCorrelation correlates multiple events with same defined key values and waits for a specific trigger event to publish one (1) event.

Correlation rules are NOT built to delay events.

Problem

Why can we not use M3 events directly to create BODs?

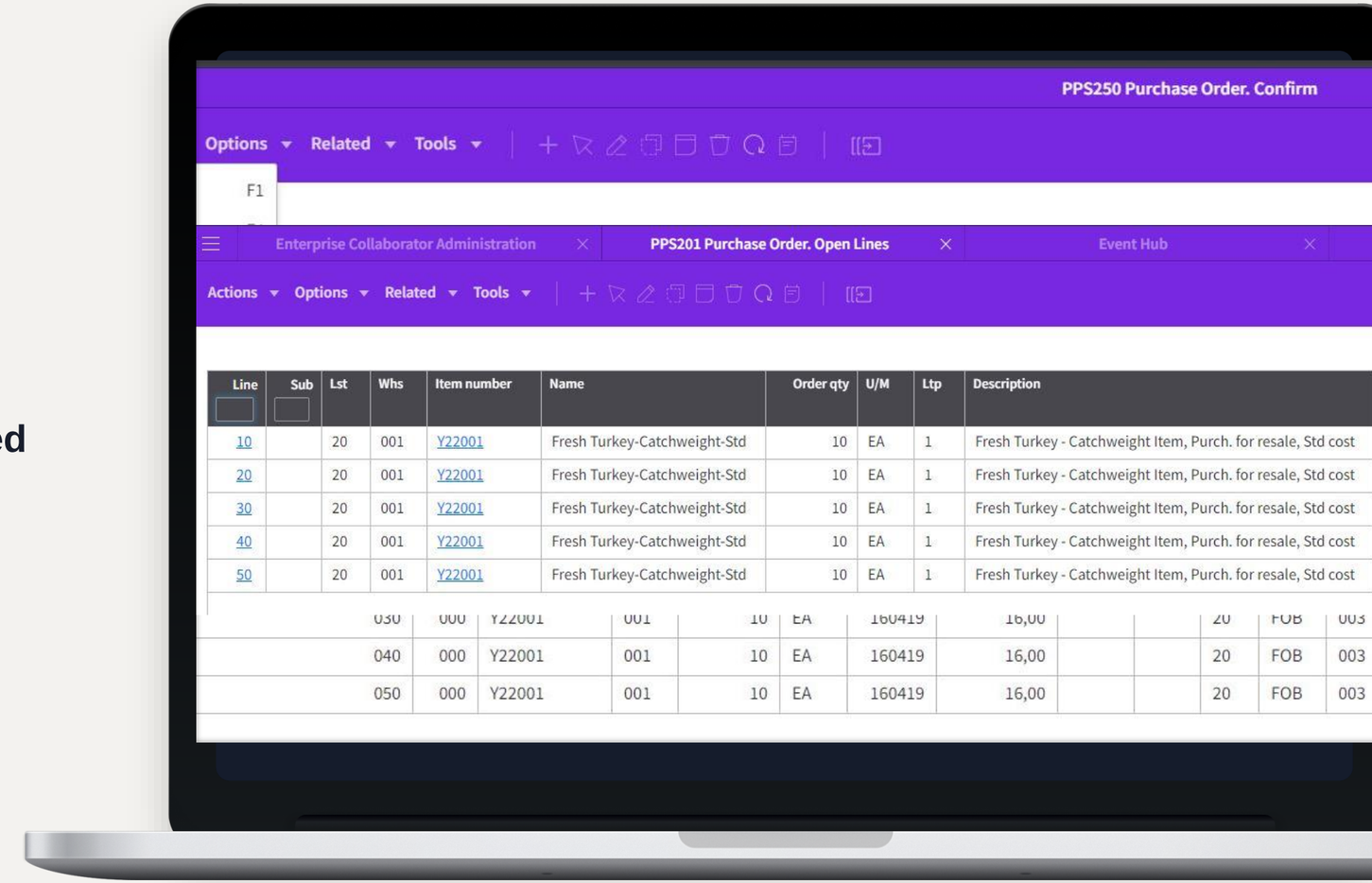
PO with multiple lines

PO with five PO-lines

Confirm all PO-lines in one go (F14)

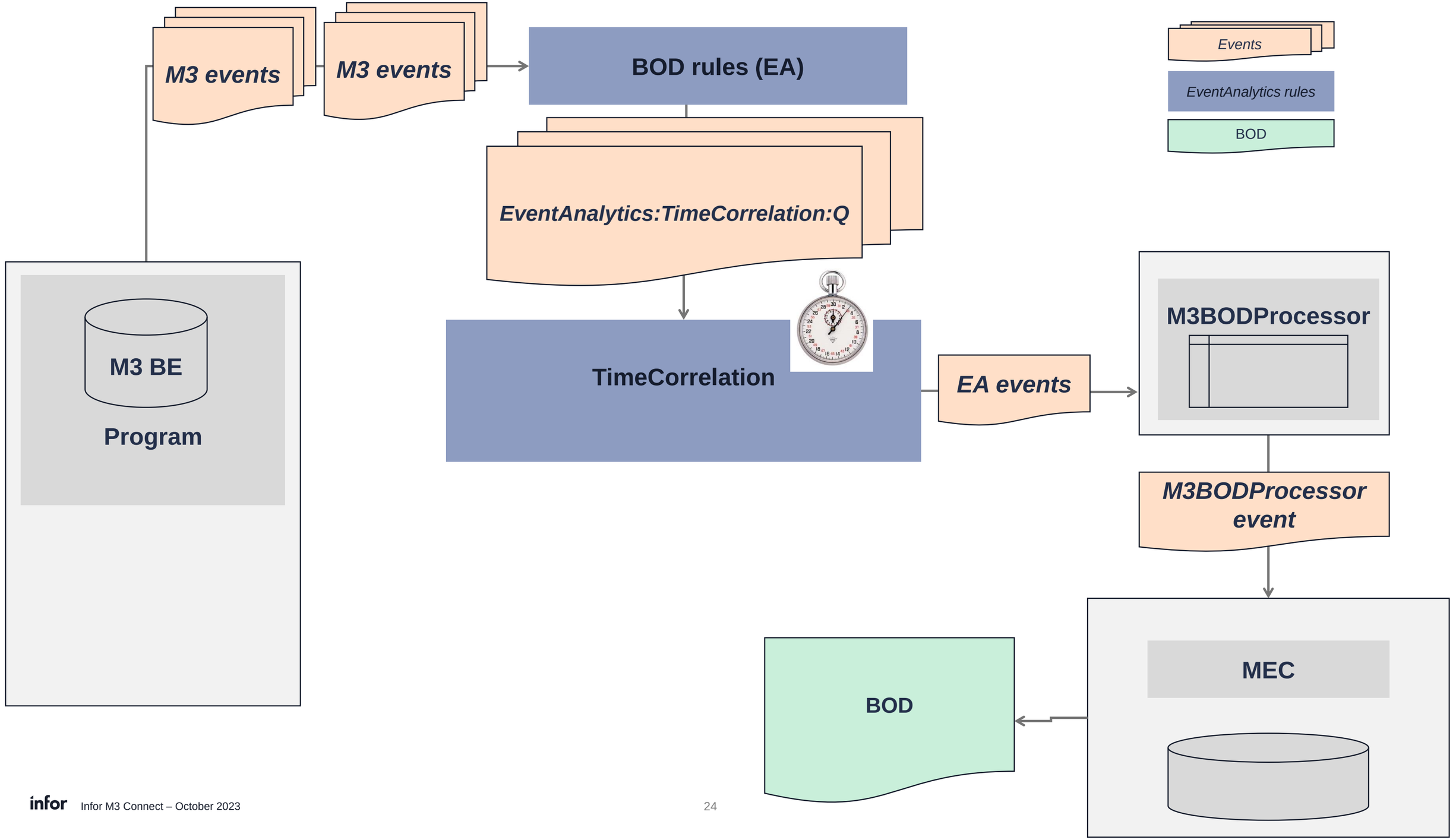
Multiple SyncPurchaseOrder events/BODs published

- One for each PO-line (status change)
- Multiple for PO-header (status change



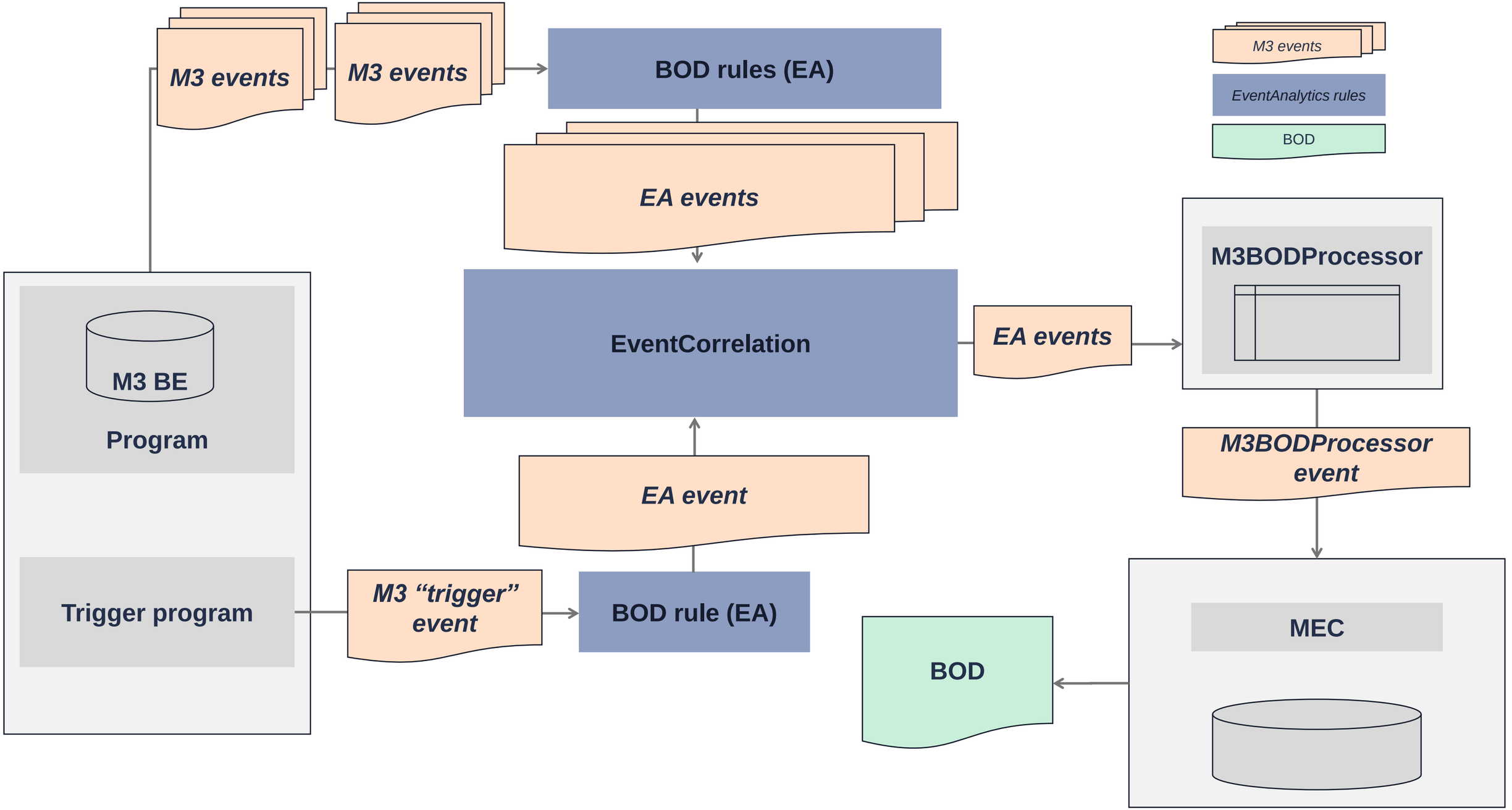
Solution

TimeCorrelation


M3 events
M3 events
BOD rules (EA)
Events
EventAnalytics rules
BOD
EventAnalytics:TimeCorrelation:Q
M3 BE
Program
TimeCorrelation
EA events
M3BODProcessor
M3BODProcessor event
BOD
MEC

Solution

EventCorrelation

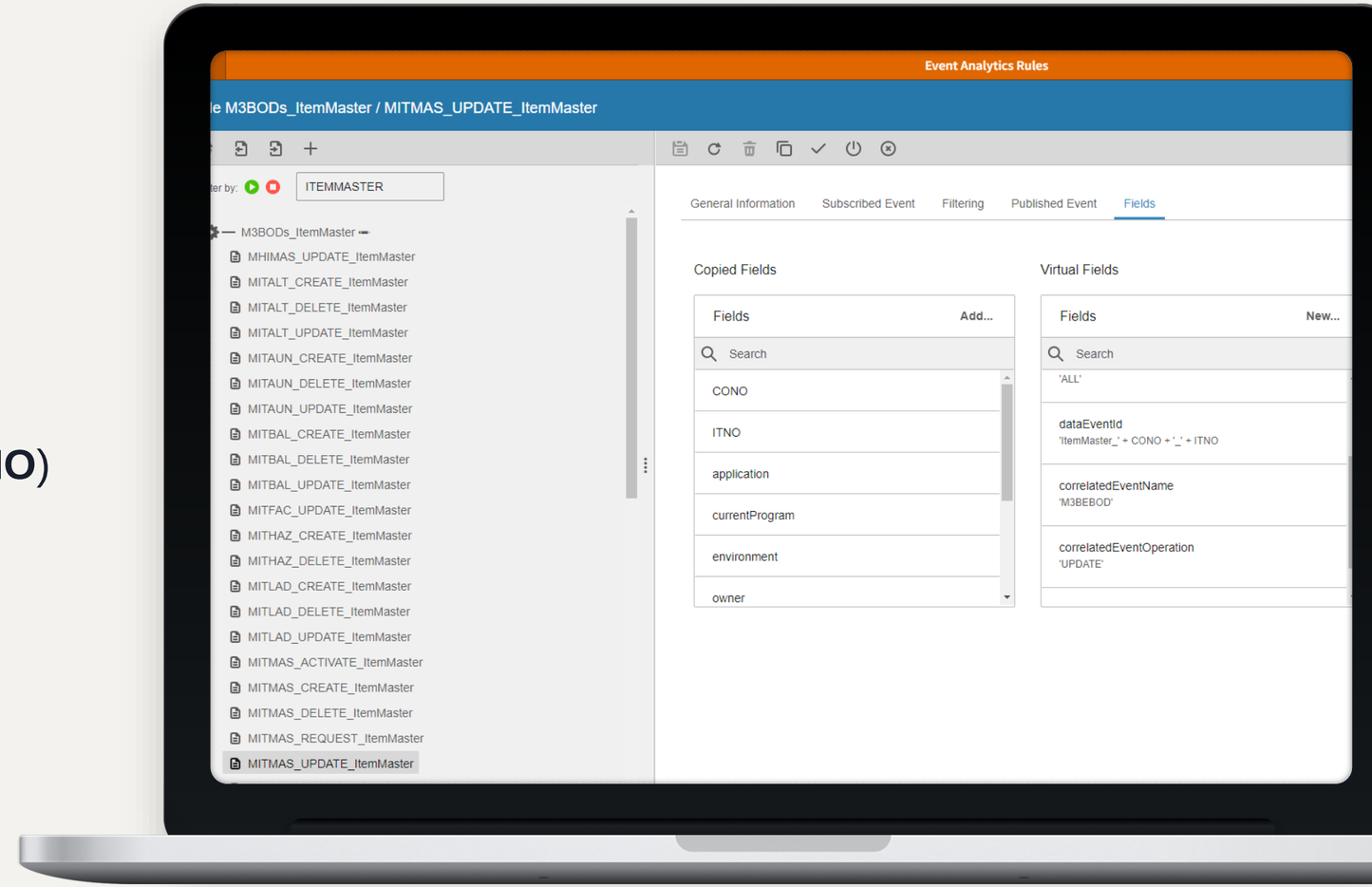


Time Correlation example

SyncItemMaster

Rule data for the published event:

- Document: **TimeCorrelation**
- Operation: **Request**
- Virtual fields:
  - **dataEventId ('ItemMaster_' + CONO + ITNO)**
  - **correlatedEventName ('M3BEBOD')**
  - **correlatedEventOperation ('UPDATE')**
  - **correlatedWindowTime (optional)('20')**



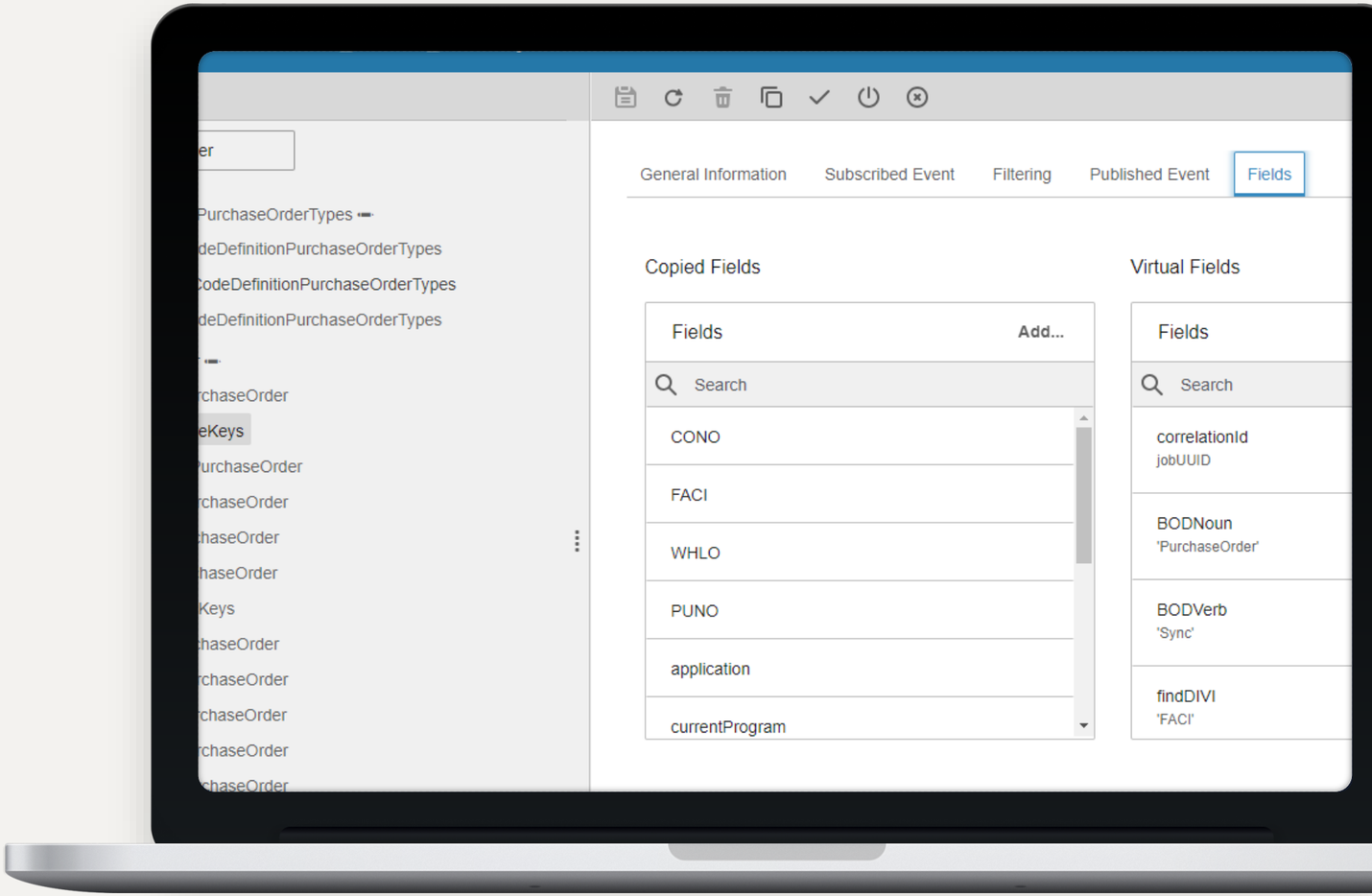
Event Correlation example

SyncPurchaseOrder

Event correlation

Rule data for the published events:

- Data event:
  - Document: **EventCorrelation**
  - Operation: **Create**
  - Virtual fields:
    - **correlationId** (<**jobUUID**>)
    - **dataEventId** (**'PurchaseOrder_'+CONO+'_'+PUNO**)
- Trigger event:
  - Document: **EventCorrelation**
  - Operation: **Request**
  - Virtual fields:
    - **correlationId** (<**jobUUID**>)
    - **correlatedEventName** (**'M3BEBOD'**)
    - **correlatedEventOperation** (**'CREATE'**)



Example of KB

APIs and Rules

KB 2283350

Description:

Abstract: The SyncLocationWarehouse rules have been refactored to apply TimeCorrelation.

Background: Multiple SyncLocationWarehouse BODs were generated when a record was updated. TimeCorrelation had to be applied in the rules to limit the number of BODs created.

Resolution:

Applied TimeCorrelation to these rules:

MITWHL_UPDATE_LocationWarehouse

CIADDR_CREATE_LocationWarehouse

CIADDR_UPDATE_LocationWarehouse

CIADDR_DELETE_LocationWarehouse

Published Event Document set to TimeCorrelation.

Published Event Operation set to Request.

Added these Virtual Fields to MITWHL_UPDATE_LocationWarehouse:

Name: dataEventId Expression: 'LocationWarehouse_' + CONO + '_' + WHLO

KB 2232142 shows performance improvements Infor has made in standard BODs

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Modify a standard BOD

Modify a standard BOD – when?

- ***When to change only EA rules?*** – When the BODs are published too often or too seldom
- ***When to customize a standard BOD?*** – When the BOD does not risk conflicting with other integrations
- ***When to use custom BOD / BOD schema?*** – When the BOD risk conflicting with other integrations

- ***When to make changes in IEC?*** – When you want to extract data from or put data into M3
- ***When to make changes in ION?*** – When you want to manipulate data in existing BODs

Customize standard BOD

Event Analytics (only for outbound BODs)

- Copy standard session and adjust custom session & rules as needed.
  - Activate custom session and rules
  - Deactivate standard session and rules (if not, you risk getting duplicate BODs published)

M3BODProcessor (only for outbound BODs)

- No changes needed

Enterprise Collaborator (IEC)

- Copy standard mapping and adjust as needed
- Publish mapping to server

Create a custom BOD

Event Analytics (only for outbound BODs)

- Create custom session & rules as needed (either from scratch, or copy standard and rename)
- Activate custom session and rules

M3BODProcessor (only for outbound BODs)

- Add custom BOD documents

Enterprise Collaborator (IEC)

- Copy standard Infor BOD schema or create custom BOD schema
- Create custom mapping based on BOD schema

ION configuration

- Adjust connection points and / or document flow in ION as needed

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Ordering

Purpose

ION does not guarantee the message order!

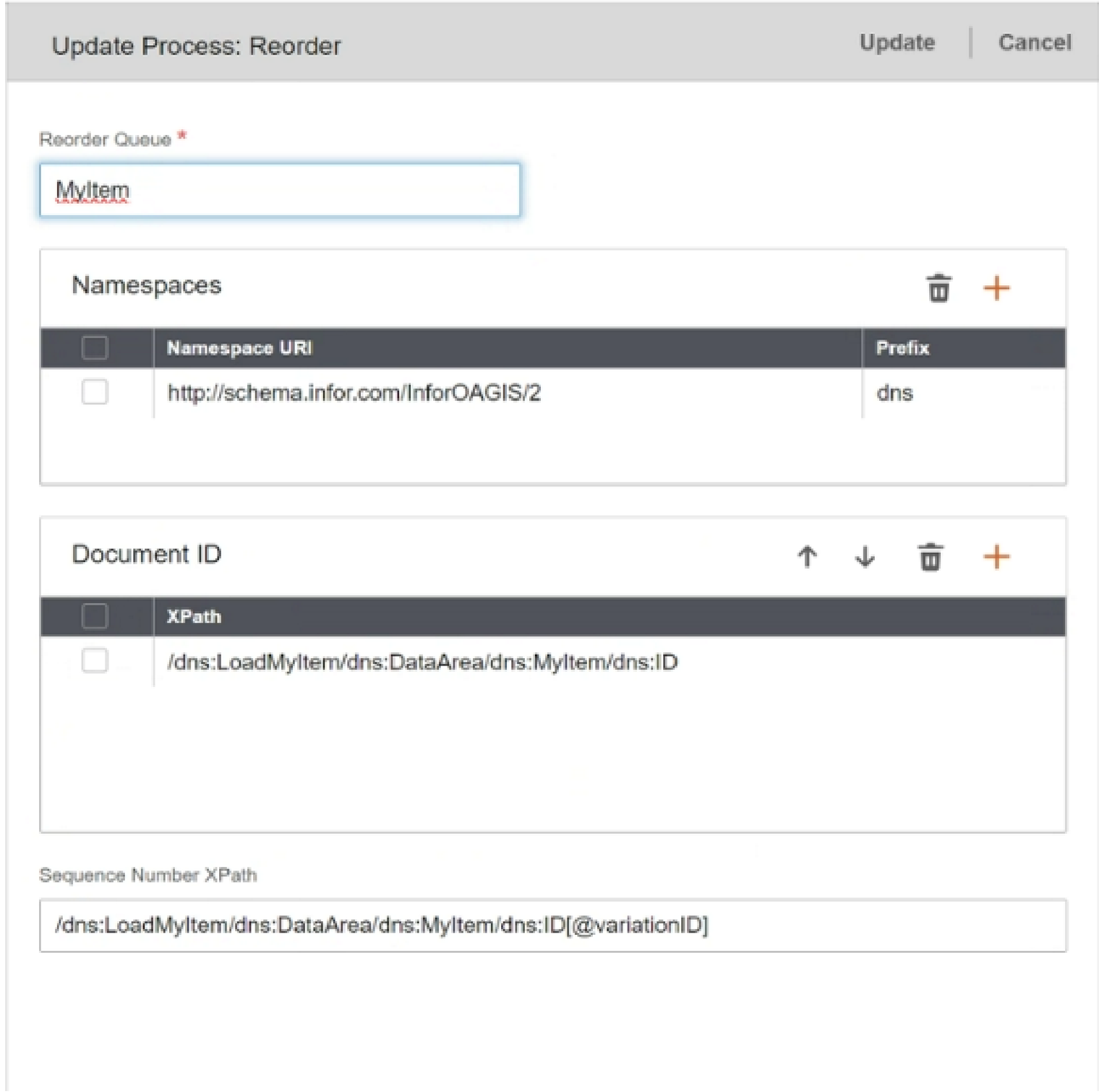
The receiving application (Infor on non-Infor) must reorder received messages.

In some M3 integrations it is vital that the messages are processed by M3 in the correct order.

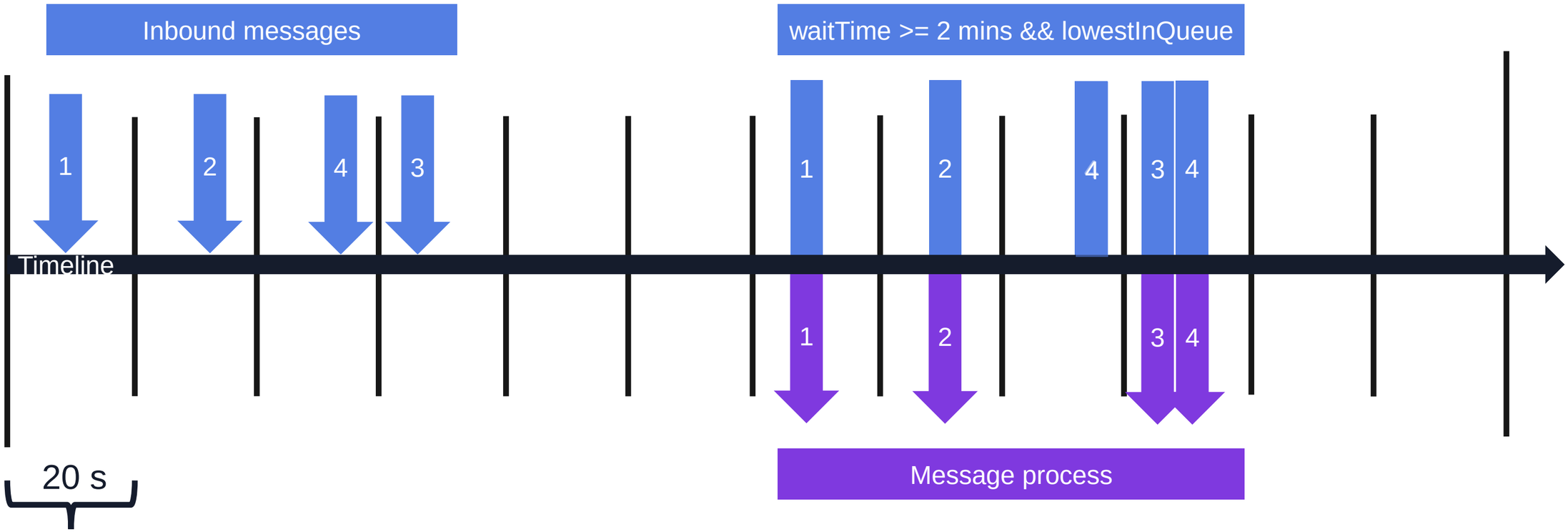
In these cases, you can use the Reorder Process in IEC.

How it works in IEC

- The **Reorder** process in IEC is used to reorder (inbound) messages based on the message payload.
- The **Reorder** process must be the first process
- Received messages are added to an internal reorder queue and rearranged based on a sequence number provided in the message payload.
- A message is held for at least 120 seconds in the reorder queue before it is processed. This gives time for “late” messages with a lower sequence number to be received.

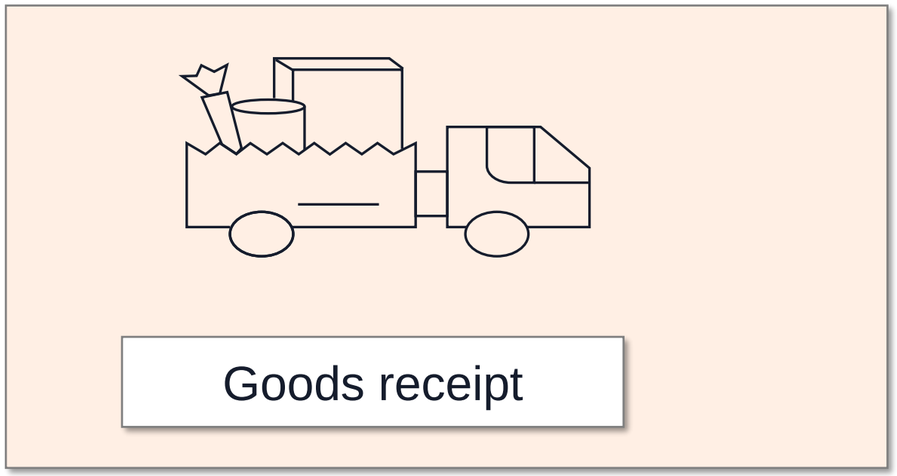


Timeline



Use when

- You can’t allow messages to arrive seconds out of order.
- The same queue can be used over multiple agreements.

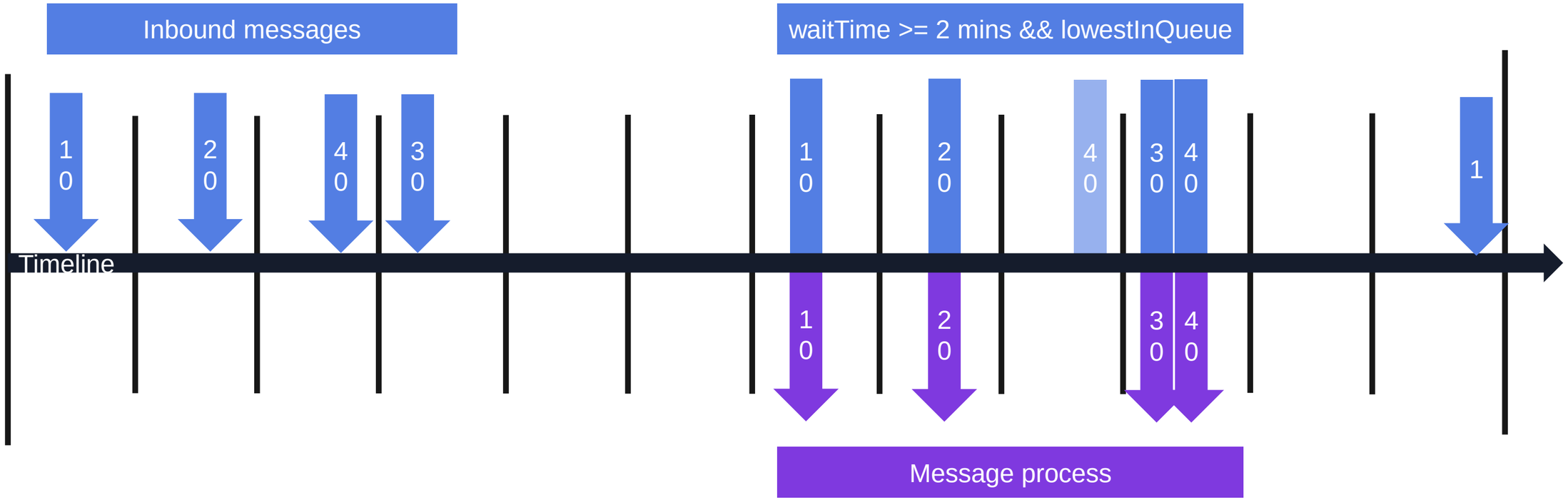


Receiving number R0012
Sequence 1

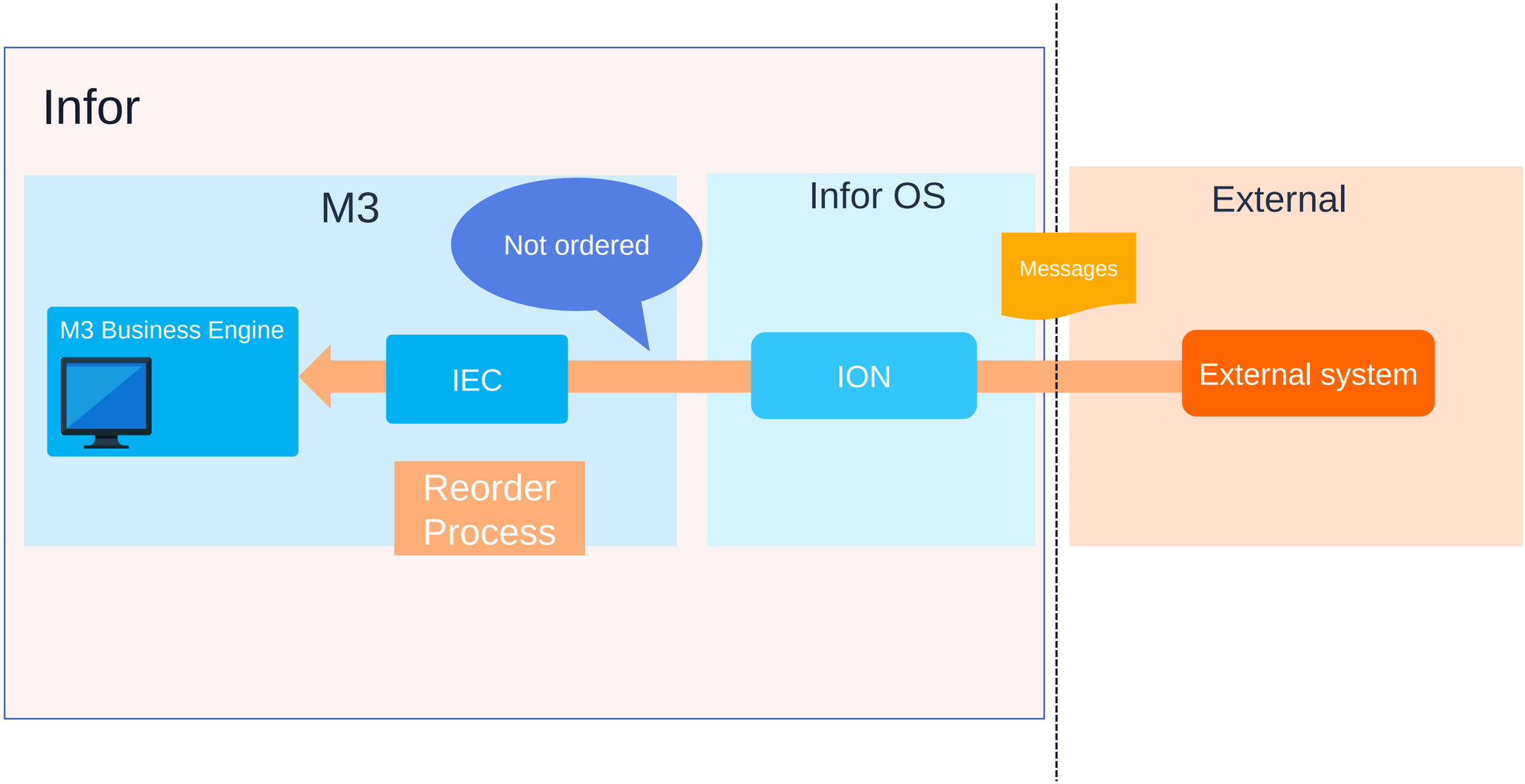
Receiving number R0012
Sequence 2

Don’t use when

- When you need fast responses.
- You want to force messages delayed more than 2 minutes to be in order.
- When you can’t accept gaps.

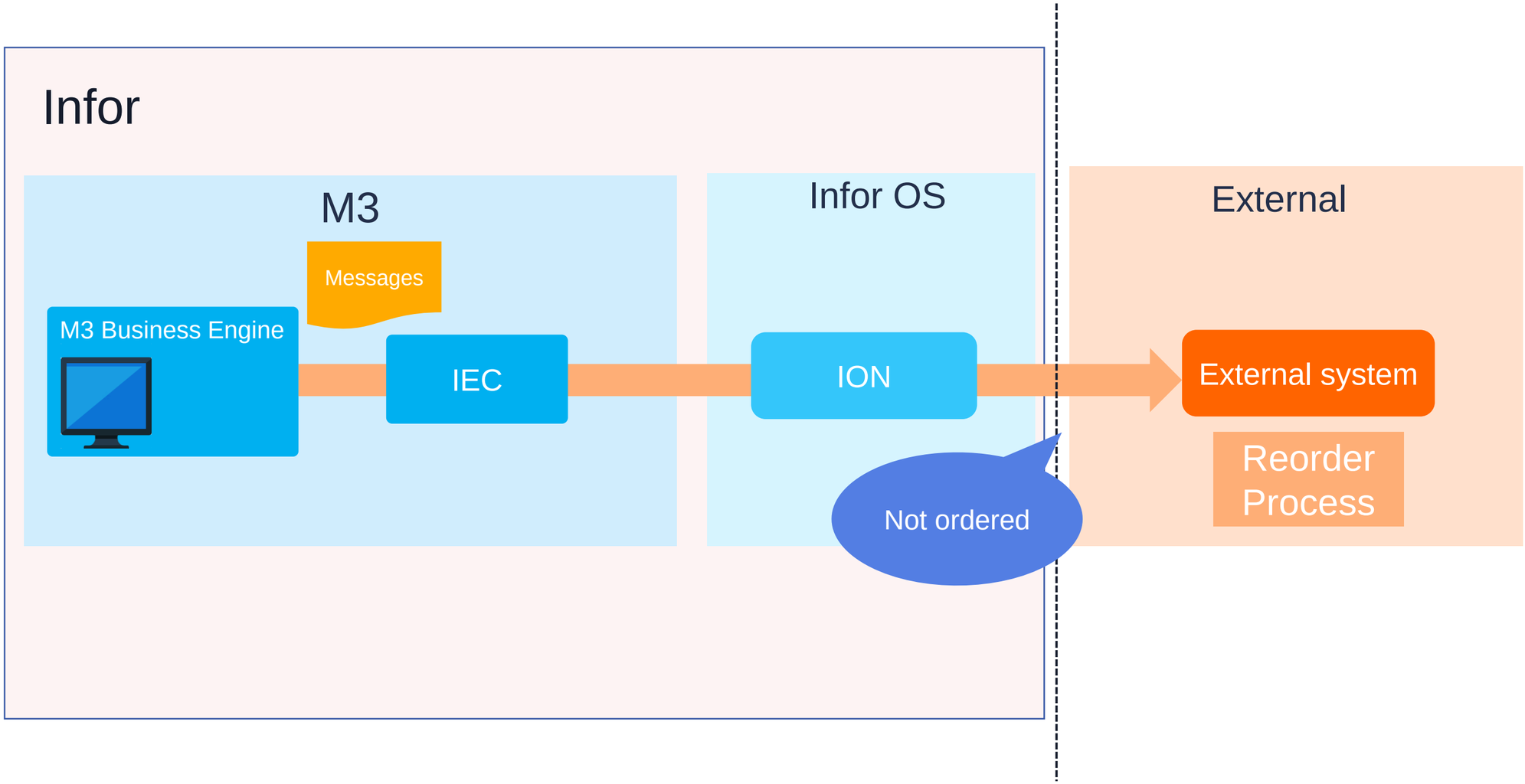


Inbound



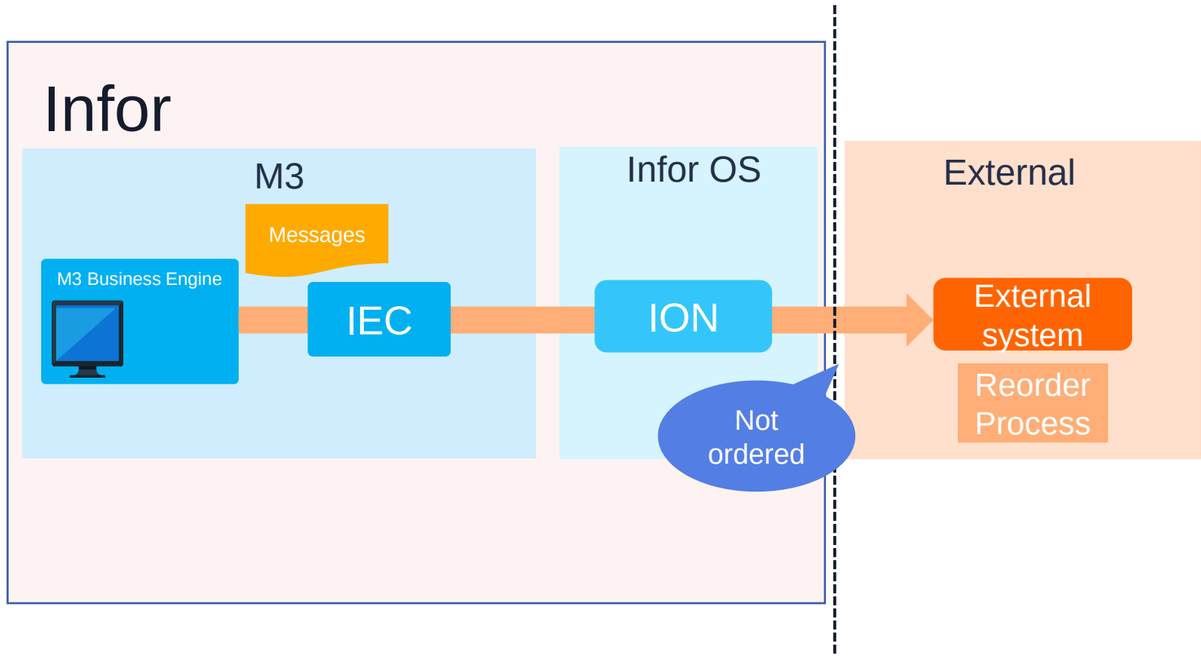
REORDER

Outbound



Outbound

- When ordering M3 events you need to find an incremental number to send to the receiving system.
- Can be M3 logic business logic. Examples could be the receiving number or invoice number.
- sequenceNumber is a built-in incremental number in M3 foundation that increments for each database event.
- sequenceNumber + an internal offset is used to sort the events to data lake.
- For initial loads all the events of the same initial load have the same sequenceNumber.



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Choosing

System type specific integration KB – Webshop

- Master Data
  - CustomerParty
  - ContactMaster
  - ItemMaster
  - BillOfMaterials
  - LoctionWarehouse
  - PriceList (new)
- Business Transactions
  - Quote
  - CustomerReturn
  - CustomerCall (new)
  - SalesOrder
  - Shipment
  - Invoice
  - ReceivableTransaction
- Areas to consider
  - Price
  - ATP
  - Stock

- KB2297997 is discussing this and gives guidelines on how to design your webshop integration.

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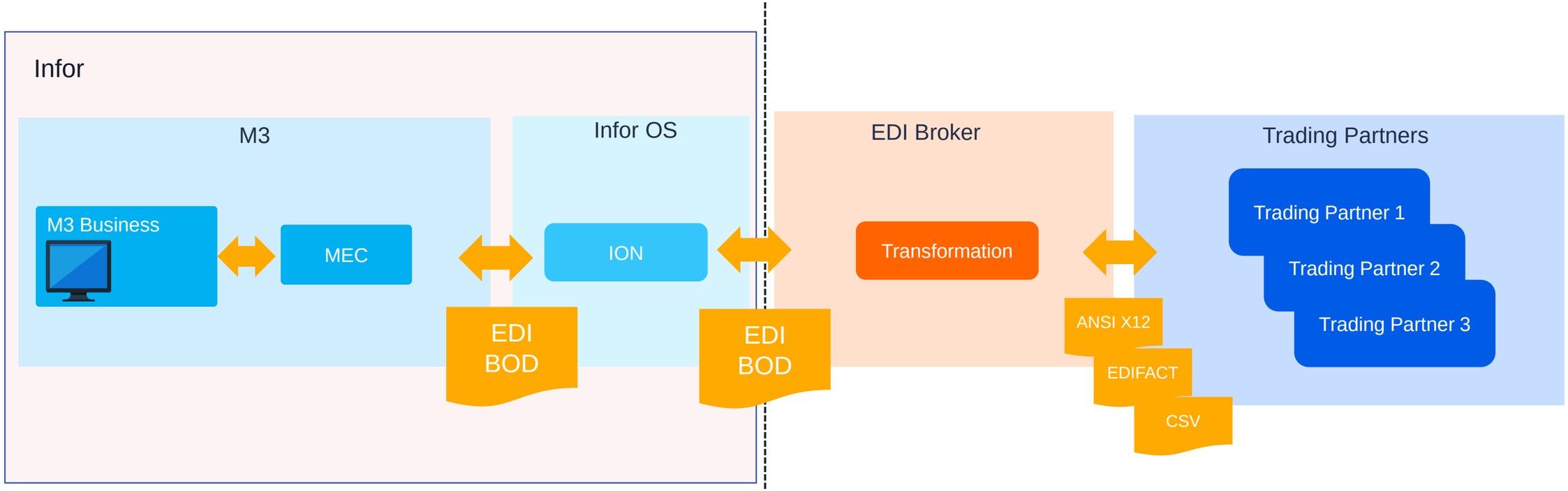
EDI

How to implement EDI - EDIBODS

- Based on the standard Infor OAGIS BOD schemas
- Branched from the standard schemas to M3 application-specific schemas
- M3 development can freely add elements and structures
- Triggering the EDI BODs is different from the triggering of the standard BODs
- Standard integrations are not affected
- Translations of identities are supported

M3 EDI BOD solution in M3 CE



ION
- Communicates with the EDI Broker
- Routes BODs between M3 and the EDI Broker

EDI Broker
- Transforms from and to M3 EDI BODs to Trading Partner specified formats
- Provides the communication protocolls for communicating with the Trading Partners

Infor M3 Cloud

EDI BOD Supported features

Order

Ship to DC, Dropship, Direct-To-Store, Catchweight

Shipment

Single item cartons, multi-item cartons, Partial Shipment, Consolidated shipment

Invoicing

Invoicing, partial invoicing, consolidated invoice, credit memo

Other

Order acknowledgement, shipment, and invoicing of non-EDI order

M3 EDI and IPC

IPC Deliverables

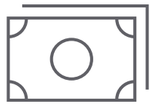
CUSTOMERS / SUPPLIERS

ITEMS

CRDER TYPE

DISPATCH POLICY

DOCUMENT SETUP



CONFIGURATION

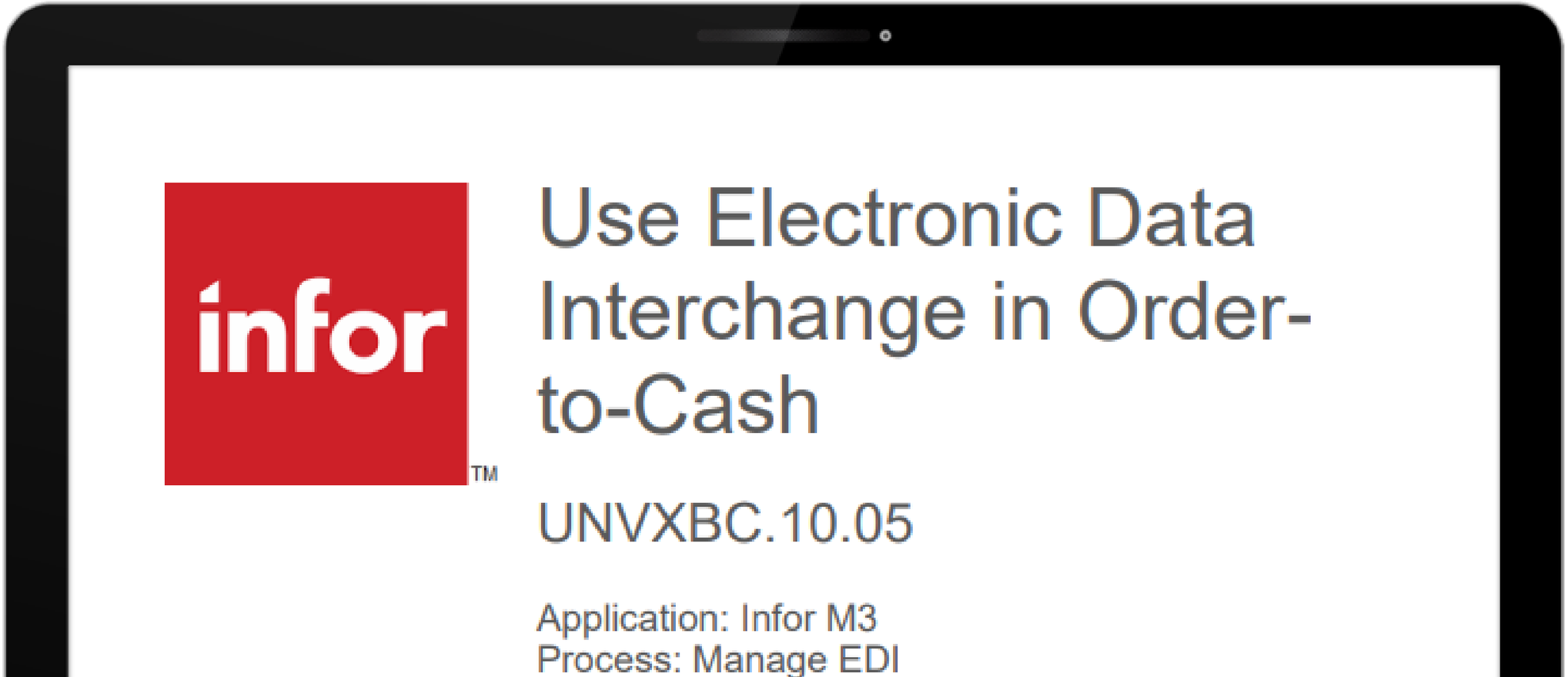
SAMPLE FILES

INSTRUCTIONS

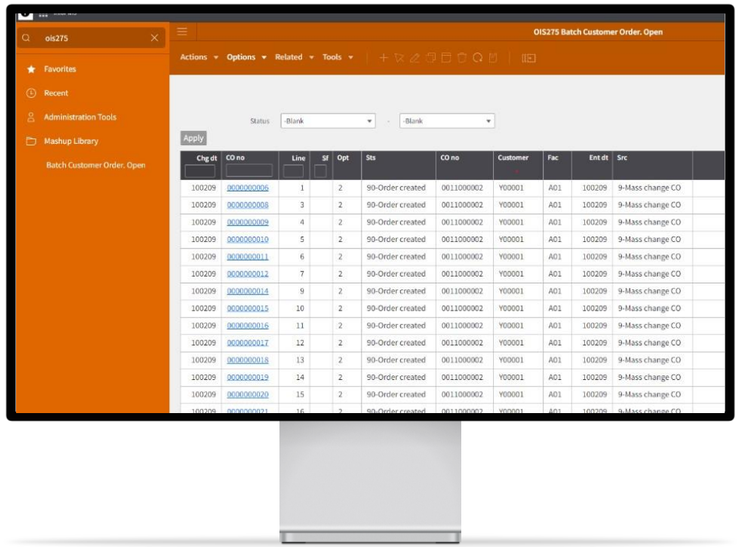
M3 EDI and IPC

Instructions

The IPC document contains links, instructions and know how to get started.



IPC and Brokers



IPC Content

Integration to certified Brokers

Available on the IPC-page ⟷ Available on CFT and docs.infor.com

Focus on the data inside the system ⟷ **Focus on the world outside the system**

Provides industry specific setup and sample data in M3 ⟷ Verifies that XML can be sent to external partners

Both give value separately – Together they bring a real, complete template solution.

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Q/A

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Thank you

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