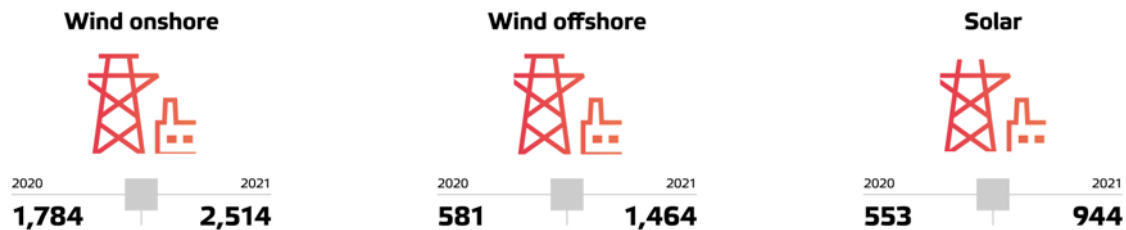


About Eneco

Strategy: Accelerate the Energy transition

- Onshore wind grows because of replacements (higher mills)
- Offshore wind revenue triples, new projects
- Solar revenue doubles





About Eneco

Strategy: Accelerate the Energy transition

- Phasing out natural gas
- Accelerating heat reuse



**REALISING A
NATURAL GAS-
FREE ROTTERDAM
DISTRICT**



About Eneco

Strategy: Accelerate the Energy transition

- Radical electrification
- Phasing out natural gas
- Plan with Shell for wind energy to power Rotterdam green hydrogen plant

An aerial photograph of a large offshore wind farm in the North Sea. Numerous white wind turbines are visible, stretching across the horizon under a clear blue sky. The water is a deep blue, and the turbines are spaced out in a grid-like pattern.

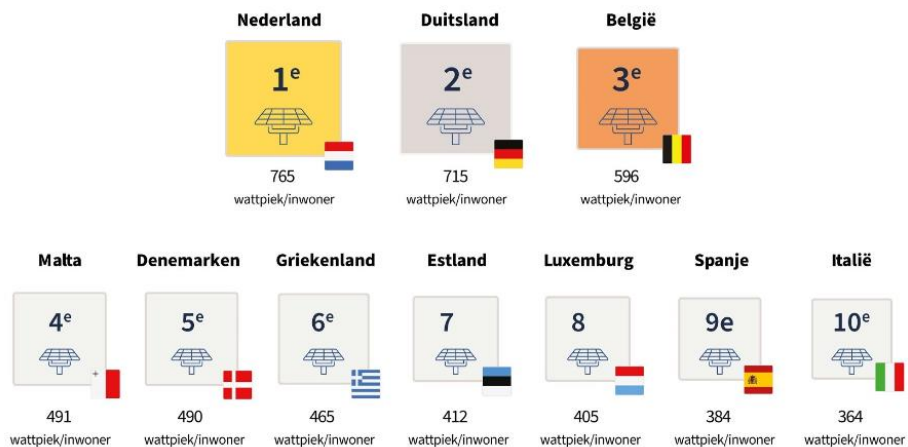
**JOINTLY
PARTICIPATING IN
GREEN HYDROGEN
PROJECT**



About Eneco

Strategy: Accelerate the Energy transition

- Install heatpumps, solar panels, isolation
- Phasing out natural gas
- Accelerating heat reuse



**HELPING
CUSTOMERS
PARTICIPATE IN
THE ENERGY
TRANSITION**

Going for the long run.

2035 Climate Neutral

"We have the ambition to be climate neutral as early as 2035. Not only in our own activities, but also, in the energy we supply to our customers."

Eneco's vision on IT is similar:

Huge investments are done in reuse, decoupling and data standardization.



CPI early adopter from 2015

Migration PI to HCI

Eneco implemented a robust and secure integration using the **SAP® Cloud Integration Suite**:

Gained the flexibility to integrate between all SAP and non-SAP systems, thanks to the cloud integration capabilities offered by SAP® Cloud Platform Integration Suite

Simpler IT that helps drive innovation, no costs for hardware installation

No need to invest in technical monitoring and upgrades, thanks to automatic monthly upgrades to the cloud infrastructure

Started to look at SAP Integration Solution Advisory Methodology (SAP ISA-M), plans to implement SAP ISA-M for integration governance in the future

Making extensive use of prepacked content CPI offers with API Hub



Journey as CPI early adopter.

Migration PI to HCI, 2017 Challenges

- Eclipse or Web UI
- No Enterprise Service Repository
- No FTPS and no FTP adapter
- No RFC adapter
- Router problems Rott
- Not enough BPM functions
- Groovy scripting
- Operation/message mappings
Speed IDOC to IDOC mapping

Nr.	Item	Kanditaat POC	Kanditaat HCI	PROXY	IDOC	SOAP
INTERFACES						
1	Bestelling Uit SRM	Nee	Ja			
2	eCollege Bestelling	Nee	Ja			
3	eCollege HR export	Ja	Ja		Uitgaand	
4	HRMD R3 SRM	Nee	Ja			
6	HRMasterdata EPS	Nee	Ja			
9	Creer Gebruikers CUA en SOLMAN	Nee	Ja			
10	Financiel Dynamics	Nee	Ja			
11	Randstad facturen	Nee	Ja			
12	Topdesk	Nee	Ja			
13	Randstad timecards	Ja	Ja	Uitgaand		Uitgaand
17	Stedin Intercompany Facturen	Nee	Ja			
25	BW to BPC	Nee	Ja			
29	SISNET Functional loc. Equipments	Nee	Nee			
31	Bio Golden Raand	Nee	Ja			
40	EET Settlement Tracker	Nee	Ja			
41	Marketing Intel	Nee	Ja			
45	Externe Inhuur	Nee	Ja			
51	NGA kostenplaatsen	Nee	Ja			
52	NGA IAM Mail	Nee	Ja			
53	NGA HR Masterdata	Ja	Ja		Inkomend	
54	NGA Time	Nee	Ja			
55	NGA Payroll boekingen	Nee	Ja			
56	NGA Journalisering Detail BW	Nee	Ja			
57	NGA Payrol betaling	Nee	Ja			
61	Tijdschrijven EIB	Nee	Ja			
62	Qlicview	Nee	Ja			
63	Appian	Ja	Ja	Inkomend		Inkomend

Journey as CPI early adopter.

Migration PI to HCI, Switch off PI



		Planned					
Phase	Activities Descriptions	Start Date	Start Time (CET)	End Date	End Time (CET)	Responsible	Status
SID	DXE and AXE						Completed
Phase	Activities Descriptions	Start Date	Start Time (CET)	End Date	End Time (CET)	Responsible	Status
SID	PXE						
1.0	Preparation						
1.1	Create mountpoint PXE_export	1st February		1st February		CG/Unix team	Done
1.2	Create Samba share for PXE_export (FS created for export)	26th February	08:00	27th February	18:00	CG/Unix team	Done
1.3	Disable monitoring	26th February	08:00	26th February	18:00	CG/Basis team	Done
1.4	Stop SAP Application PXE with customer's approval	26th February	08:00	26th February	18:00	CG/Basis team	Done
1.5	Export of PXE (Sybase and Hana)	27th February	08:00	28th February	18:00	CG/Basis team	Done
1.6	Ask Eneco to copy from mount point PXE_export	28th February	08:00	28th February	18:00	Eneco	Done
2.0	Execution (Shut down PXE)						
2.1	Start phasing out PXE; Shutdown server with customer's confirmation	1st March	08:00	1st March	10:00	CG/Basis team	Done
2.2	Disable Backups	1st March	10:00	1st March	18:00	CG/Backup team	Done
2.3	Disable Firewall connections	2nd March	08:00	9th March	18:00	CG/Network team	Done
2.4	Remove FTP Services	5th March	08:00	9th March	18:00	CG/Network team	Done
2.5	releasing APN connections	6th March	08:00	9th March	18:00	CG/Network team	Done
2.6	Remove storage	7th March	08:00	9th March	18:00	CG/Unix team	Done
2.7	Remove Samba share	8th March	08:00	9th March	18:00	CG/Unix team	Done
2.8	rundown VM	9th March	08:00	9th March	18:00	CG/Unix team	Done
2,9	Decommission PXE from SOLMAN and SAP Support	9th March	08:00	9th March	18:00	CG/Basis team	Done

Journey as CPI early adopter.

From Proxy to Gateway

Eneco slowly moves from using ABAP Consumer/Producer Proxies into Gateway Services:

- From XML towards JSON
- From WSDL towards EDMX
- Make use of user-friendly, customizable and readable OData query language
- Profit from more user-friendly SAP workbench (compare Gateway tools with Proxy tools)
- Introduction of CDS views; easy generation of gateway services and shift processing from AS to DL.
- Use of standard Odata services
- Disadvantage in combination with CPI; polling for data.

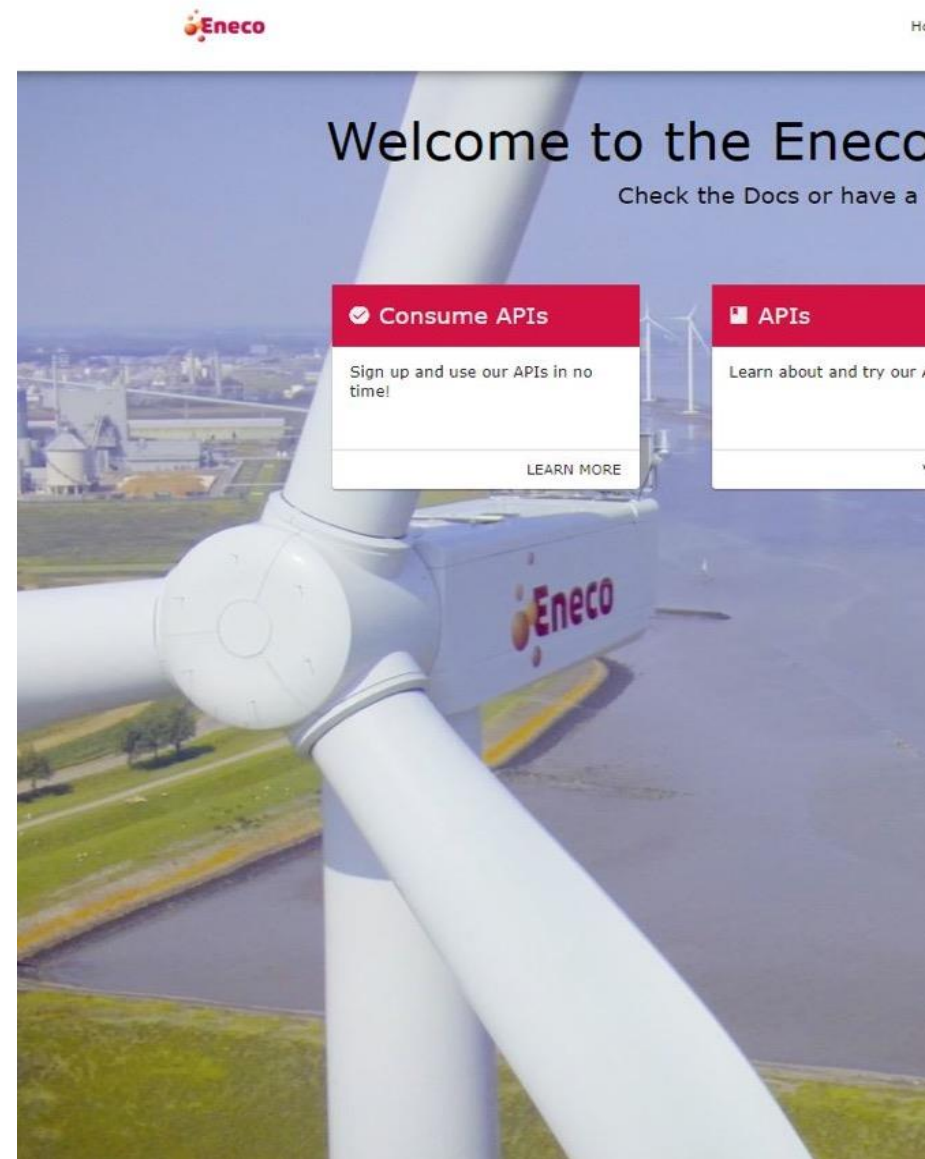


Journey as CPI early adopter.

API first

Eneco has created three API Portals to standardize integration with backend systems.

- Company wide APIs are advertised on the Portal
- Transactions like: Serviceorder, Building enter/leave registration (safety), Customer lookup
- Backend systems are open, different Consumers are able to use the same API
- Teams responsible for building backend services, SAP, Navision, MVS, Outsystems
- Central Integration Team does not build but assists with guideline, portal, Common Data Model setup, so more a Center of Enablement
- SAP Cloud Platform OAuth service is supported, this next to Active Directory

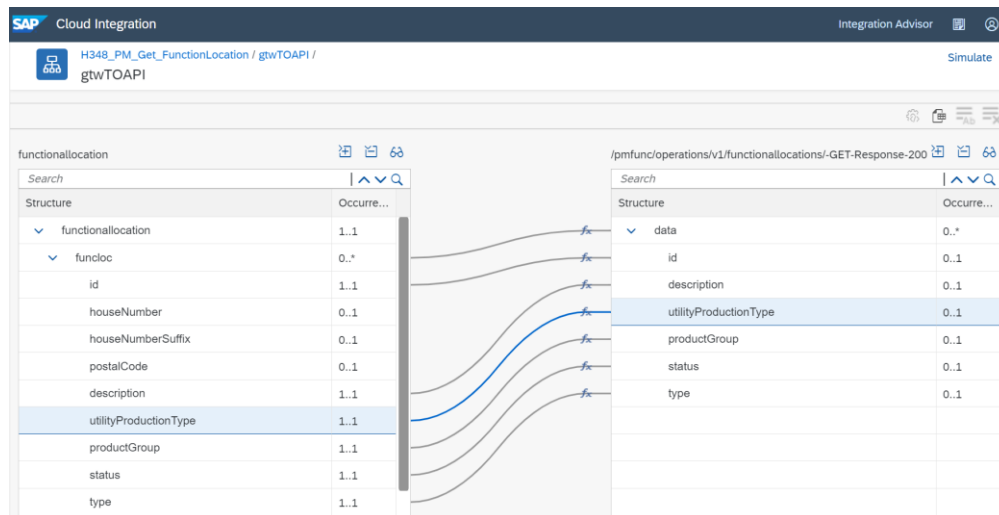


Journey as CPI early adopter.

API security, naming

Eneco has created an API Portal to standardize integration with backend systems.

- SAP BTP OAuth service is supported, this next to Active Directory
- JSON/REST standards, swagger/openapi, normalized against Eneco Common Data Model
- JSON mappings



GET /pmfunc/operations/v1/functionalallocations/

Get the functional locations details

Parameters Try it out

Name	Description
x-request-id string(\$uuid) (header)	Unique identifier of the request for tracing purposes
houenumber * required string (query)	houenumber
houenumber suffix string (query)	houenumber suffix
postalcode * required string (query)	postalcode

Responses

Code	Description	Links
200	Ok	No links

Media type: application/json Examples: examplefuncloc

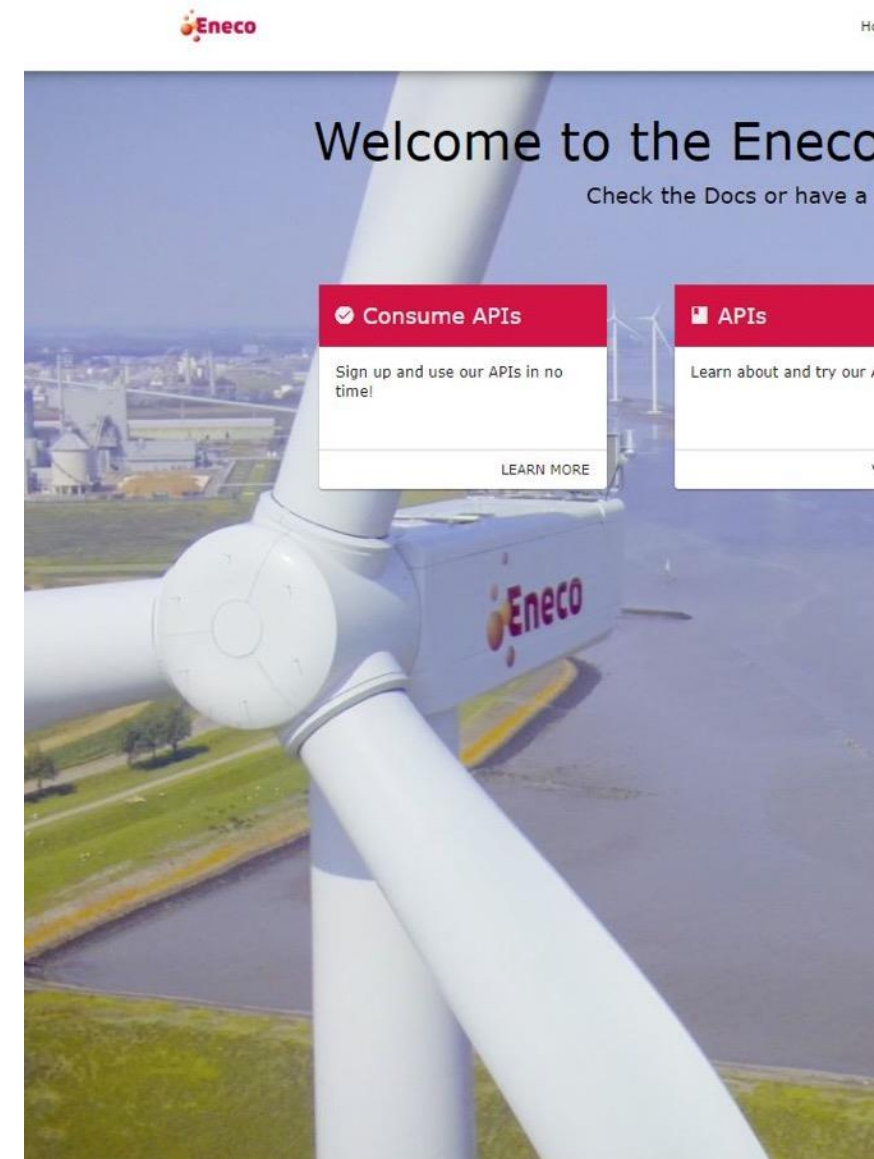
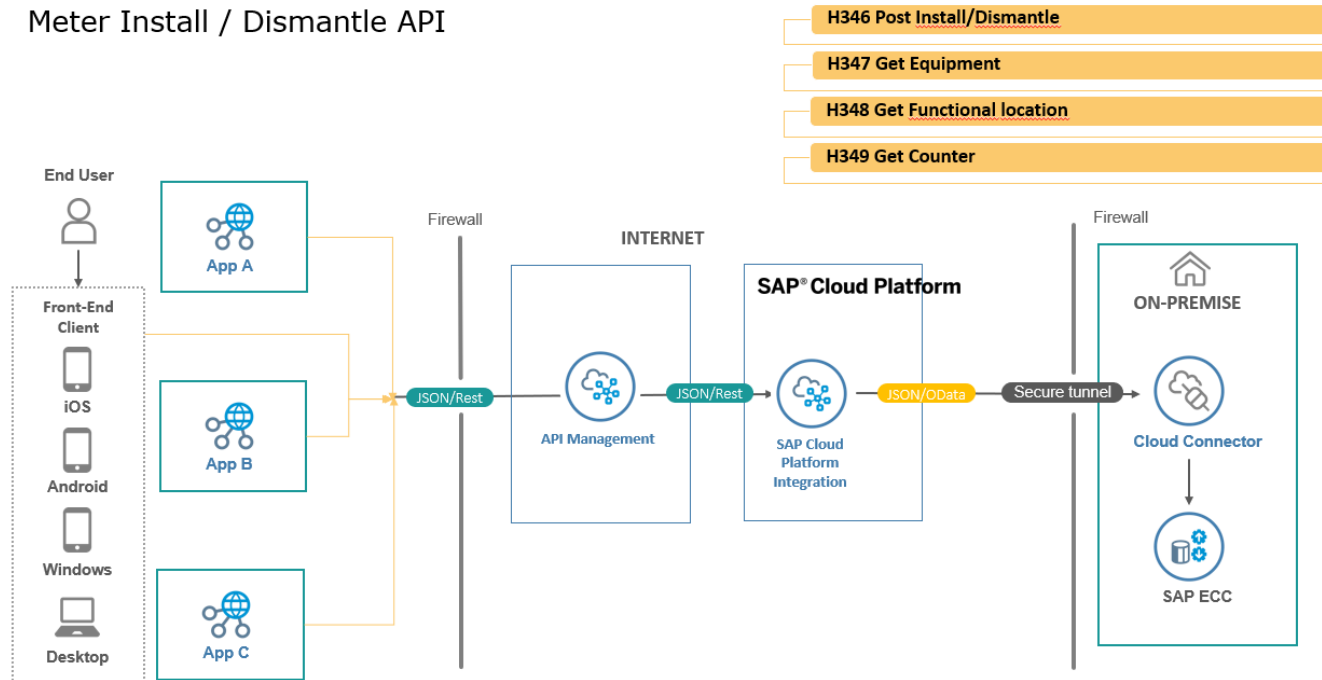
Example Value Schema

```
{
  "data": [
    {
      "id": "870000000000067293",
      "description": "Prinsestraat 10, 'S-GRAVENHAGE",
      "utilityProductionType": 30
    },
    {
      "id": "87000000000123420",
      "description": "SWW-RING-ROCA-ERVE-0002-0002",
      "utilityProductionType": 10
    }
  ]
}
```


Journey as CPI early adopter.

API first, OData - Rest

Meter Install / Dismantle API

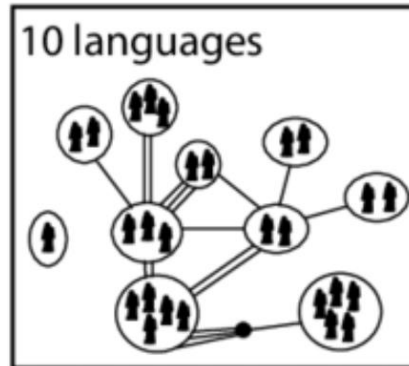


Journey as CPI early adopter. Moving to EDA

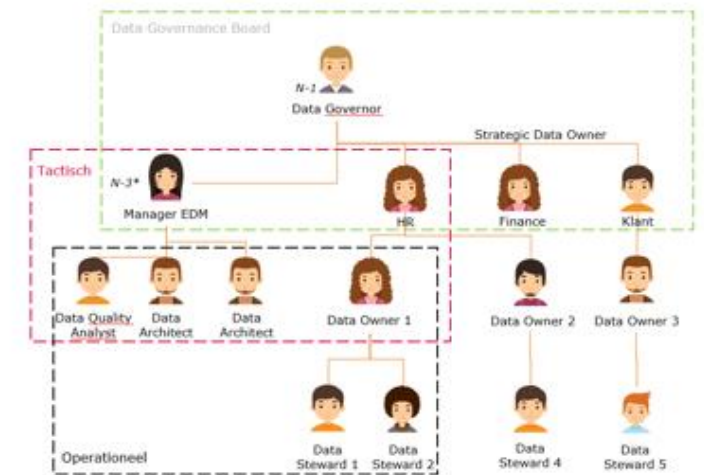
Event Driven Architecture

Eneco has company wide Event Streaming Platform (ESP):

- The Pub/Sub model suits the company very well, solutions are reliable and fast
- Basis for API and Event design is the company's Common Data Model (Long run investment)
- With continues software/application rationalization the demand for pluggable solutions is high
- Move to (near) Real-Time integration supports e.g., predictive maintenance of all Assets like Heat, Wind and Sun
- Many different Business Units, Line of Businesses and Countries come together, no Silo thinking
- Events fill Data lake for cross-company reporting
- IOT smart metering, 10 Million messages daily
- Loosely Coupled Software Services connect to ESP
- Topics defined using the Common Data Model, defined in Colibra
- Many-to-many producers(publisher) and consumers(subscribers)
- Less tower of babel



Data Governance organisation





SAP Fiori Cloud

SAP ECC Order Service

Multiple Order Services

Products
SAP Invoice Management by OpenText

SAP CPI



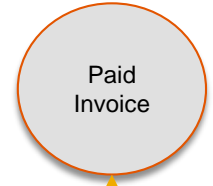
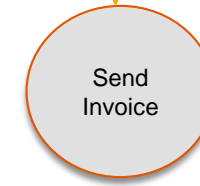
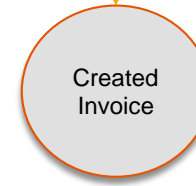
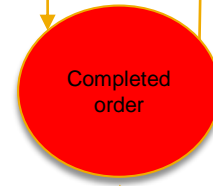
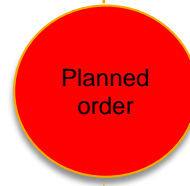
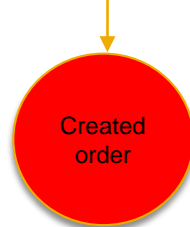
SAP CPI



SAP CPI



SAP CPI



Event Streaming Platform



SAP CPI



SAP CPI

(Advanced)
Event Mesh

ASAPIO

Planning Service

SAP Fieldglass

SAP S/4 HANA

SAP Concur

SAP Ariba

SAP SuccessFactors

Common Data Model based

Topics:

Orders

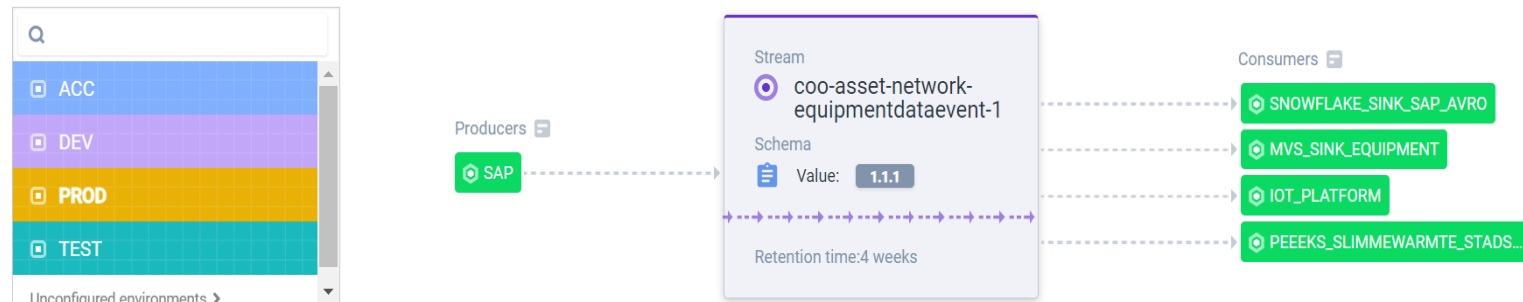
Invoices

Journey as CPI early adopter.

Event Driven Architecture

Eneco is in the process of creating a company wide Event Streaming Platform (ESP):

Environments > PROD

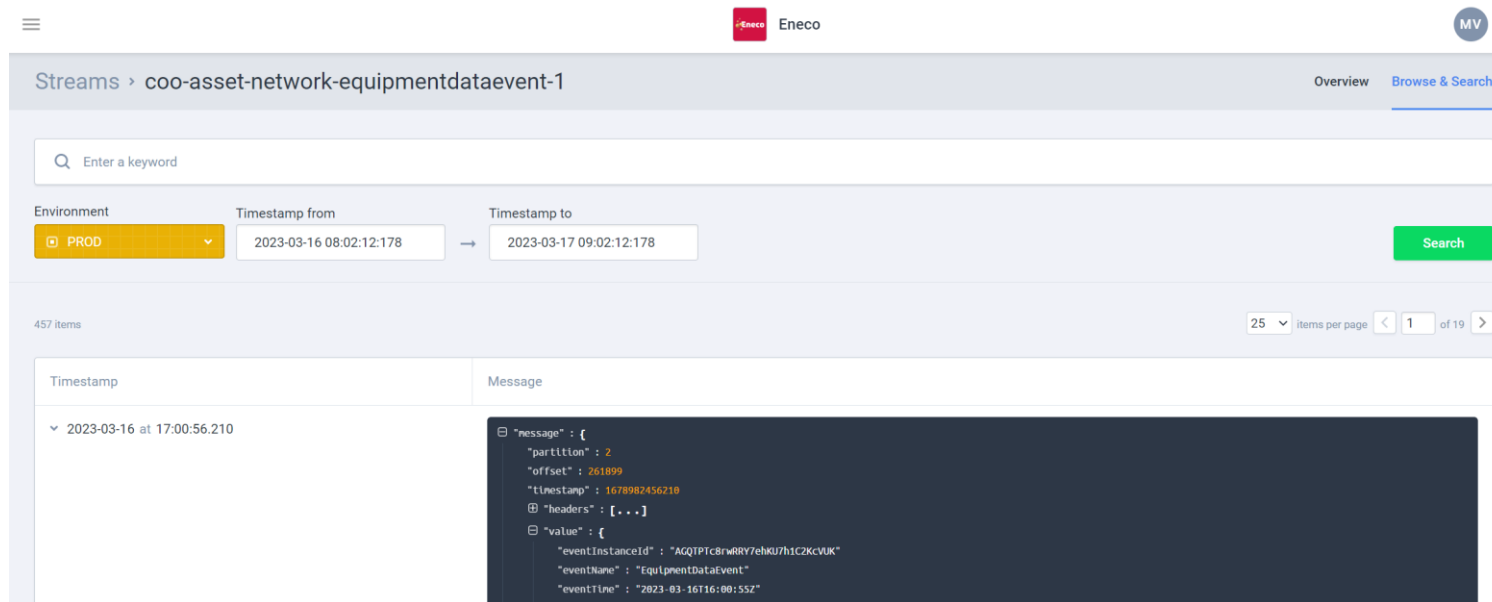


Picture Credit: Customer Name - City - SAP Cloud Managed Services with Eneco

Journey as CPI early adopter.

Event Driven Architecture

Example of monitoring in the blackbox of ESP



Streams > coo-asset-network-equipmentdataevent-1

Environment: PROD

Timestamp from: 2023-03-16 08:02:12:178

Timestamp to: 2023-03-17 09:02:12:178

Search

457 items

25 items per page 1 of 19

Timestamp	Message
2023-03-16 at 17:00:56.210	<pre> { "message": { "partition": 2, "offset": 261899, "timestamp": 1678982456210, "headers": [...], "value": { "eventInstanceId": "AQ0TP1c8rWRRYehKU7h1C2KcVUK", "eventName": "EquipmentDataEvent", "eventTime": "2023-03-16T16:00:55Z" } } } </pre>



Picture Credit | Customer Name, City, and Country are fictitious

Journey as CPI early adopter.

Event Driven Architecture

Eneco is in the process of investigating EDA SAP related tooling while moving to S/4HANA on-premise

Investigating

- Event mesh: focus to keep the core clean
- Advanced event mesh: all purpose EDA, think of scalability, subsidiary instances, catalog, distributed tracing
- Solace

First objective

- Initial focus on full payload (best, because of full decoupling), out of the box solutions, outbound S4/HANA

Enable options:

- S4/HANA notification events, find approx. 400 in sap api hub
- RAP (RESTful Application Programming) based, SAP's upcoming event enabler
- ASAPIO add-on or full version low code and mature



Journey as CPI early adopter.

Future plans

Eneco chooses for Market Leading software and uses prepacked content extensively.

- Market leaders
- SAP SAAS, prepacked content in Cloud Platform Integration
- No room for File based interfaces, no Shared database, no manual interface, no Enterprise Service Bus
- Citizen integration: let functional consultants, key users and architects do part of the monitoring/scheduling.

SAP Cloud Integration

Overview / Monitor Message Processing / Message Processing Log Attachments

Name: H163_FICO_Navision_Inkomende_Facturen_Inbound_SAP Status: Completed Processing Time: 1 sec 830 ms
Last Updated at: Mar 16, 2023, 16:02:50 Log Level: Info

Log 1. Input vanuit Navision 2. Input voor mapping 3. Input voor SAP **4. Output uit SAP** 5. Output na mapping xml 6. Succesvol

```
<?xml version="1.0" encoding="UTF-8"?>
<n0:BAPI_ACC_DOCUMENT_POST.Response xmlns:n0="urn:sap-com:document:sap:rfc:functions">
  <CURRENCYAMOUNT/>
  <RETURN>
    <item>
      <TYPE>S</TYPE>
      <ID>RW</ID>
      <NUMBER>605</NUMBER>
      <MESSAGE>Document correct geboekt: IDOC VF2300252452168 CPI</MESSAGE>
      <MESSAGE_V1>IDOC</MESSAGE_V1>
      <MESSAGE_V2>VF2300252452168</MESSAGE_V2>
      <MESSAGE_V3>CPI</MESSAGE_V3>
      <SYSTEM>PEECLNT100</SYSTEM>
    </item>
  </RETURN>
</n0:BAPI_ACC_DOCUMENT_POST.Response>
```



Journey as CPI early adopter.

Key Takeaways

Things to take home.

- Loosely coupled software services make your company's IT agile
- When choosing CPI consider a SAP SAAS solutions, prepacked content gives you a head start
- Use the Common Data Model as a basis within your Company.
- CPI is nowadays a very mature piece of middleware and has entered Gartner's Magic Quadrant

