The Casting

Complementary brands serving wide range of customer needs

B2C (+/- 2M MM/WS)

proximus

scarlet

MOBILE VIKINGS

tango))

B2B B2B (5K SME & COR)

proximus NXT
tech. bizz. people.

tango))

telindus
a Proximus company

International

bics

telesign

routemobile
communication simplified

NIT – Who we are?

NIT = **Network IT** (+/- 350 people)
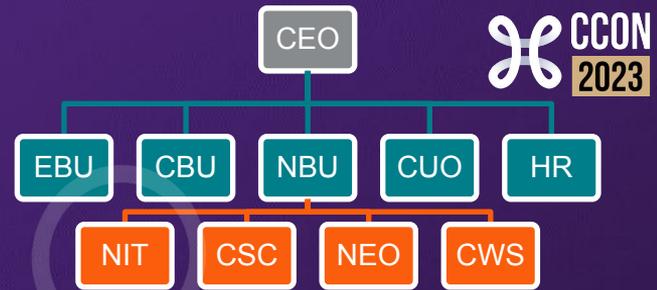
CEO

EBU CBU NBU CUO HR

NIT CSC NEO CWS

NAA Tribe
Network **A**ctivation & **A**utomation **(13 squads)**

NDD Tribe
Network **D**ocumentation & **D**esign

NIT – Who we are?

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CCON 2023

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| EBU | CBU | NBU | CUO | HR |

| NIT | CSC | NEO | CWS |

NAA Tribe
Network **A**ctivation & **A**utomation (13 squads)

SOM - Service Order Management
| AQUA | BLUE | NAVY | RED |

SIM – Service Inventory Management
| GREEN | LIME |

SAM- Service Activation Management
| WHITE | PURPLE | ORANGE | INDIGO |

ICM – Infrastructure & Config Management
| OLIVE | MAROON | GOLD |

System Architects

Operations

Domain Architects
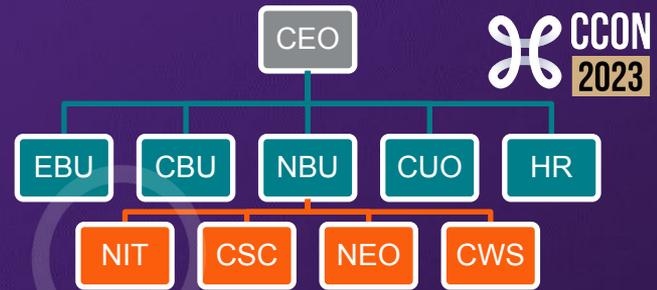
NDD Tribe
Network **D**ocumentation & **D**esign
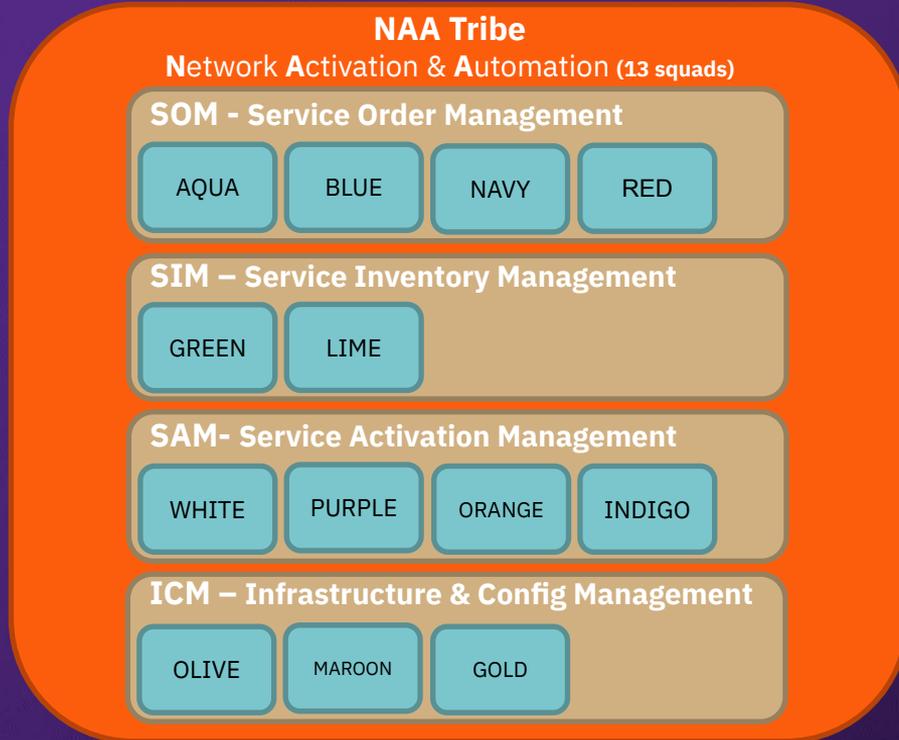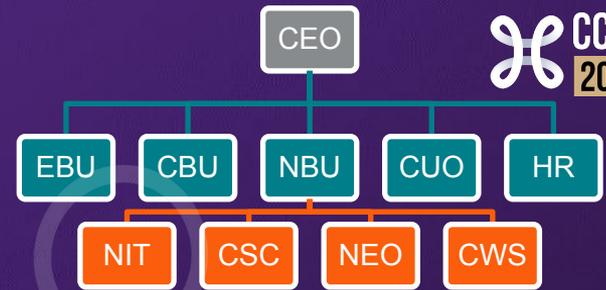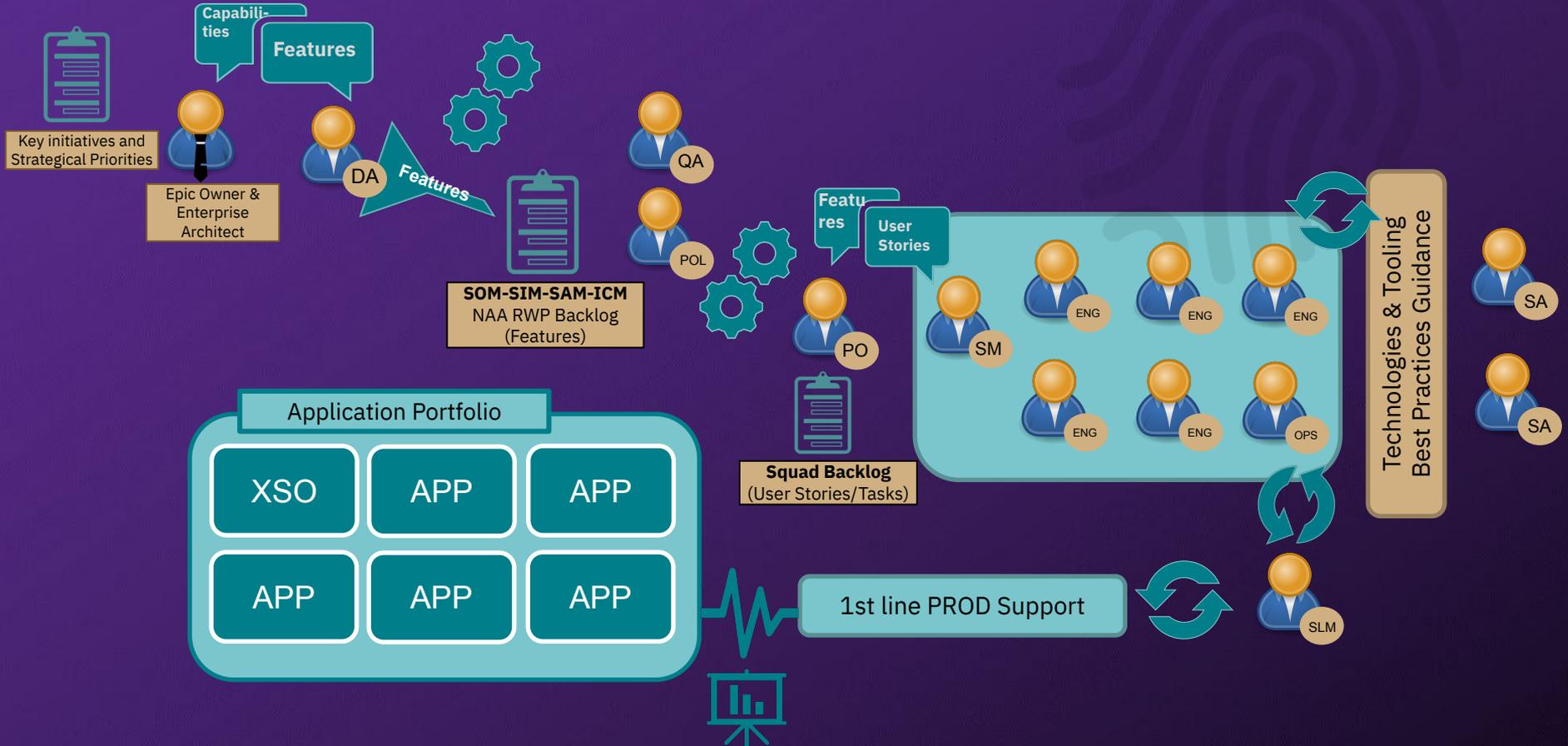
Once upon a time...

...there was an OSS layer called ROSY...

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+/- 30K PO/day

FT Ordering

<SOAP>

SOAP REQUEST

Provisioning Order

Business Support System

Operational Support System

ORACLE

RCL-PSY ⟷ **Service Design**

Network inventory

RCL-SWI | **RCL-ATM** | **RCL-ETH** | **RCL-OTT** | **RCL-VOIP**

Service inventory

SOAP-WS

JBoss by Red Hat

kibana

Network & Platforms

CPE MNGT | **BACKBONE** | **VOICE** | **TV** | **DSL**
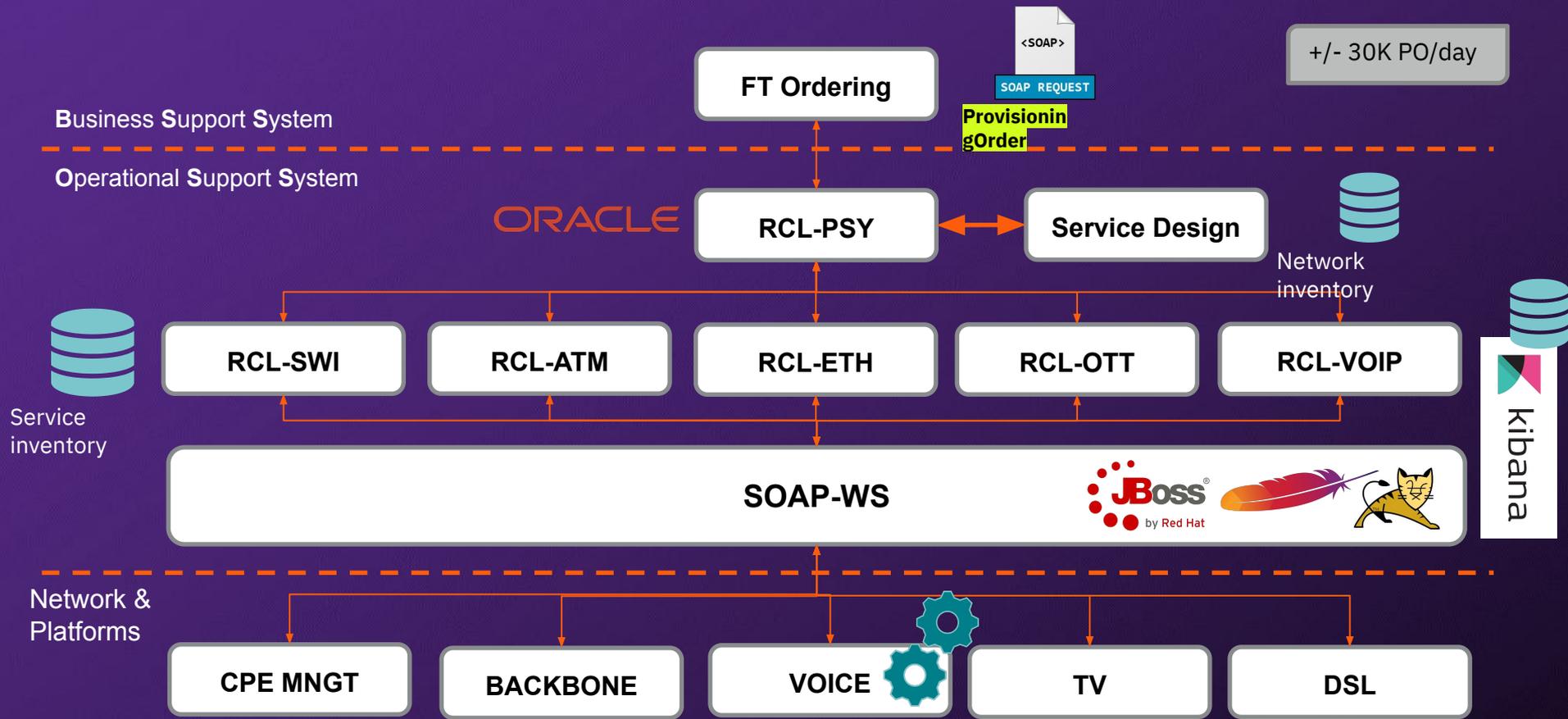
... she had to open up to the world!

BSS

OSS

Network & Platforms

Service inventory

Network inventory

- FT Ordering
- RCL-PSY
- Service Design
- RCL-SWI
- RCL-ATM
- RCL-ETH
- RCL-OTT
- RCL-VOIP
- SOAP-WS
- CPE MNGT
- BACKBONE
- VOICE
- TV
- DSL

{REST}
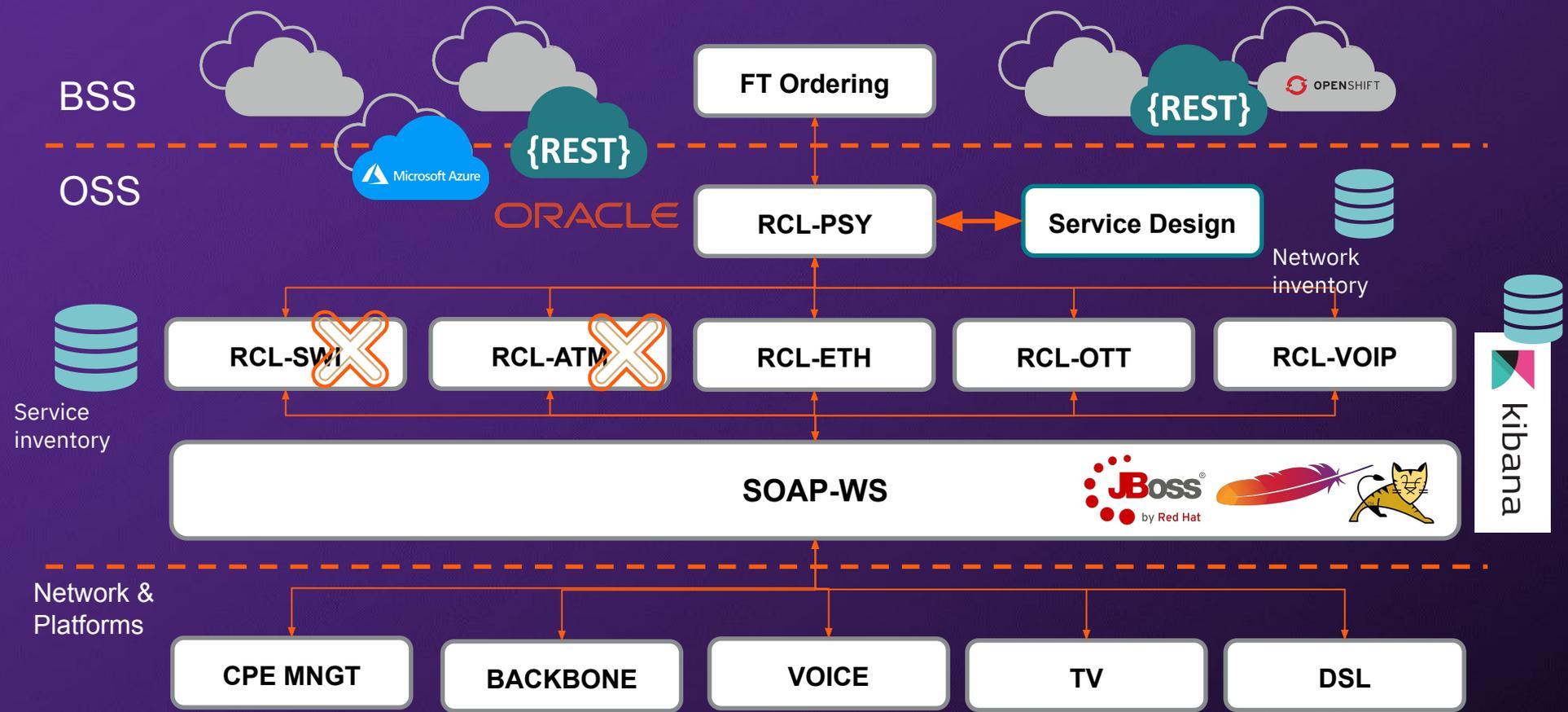
So we used some TMF fairy tale dust...
Sorry, TMF what?

What is tmforum about?

- **T**ele**M**anagement **F**orum

  - Worldwide consortium of **850 telco/tech companies**

  - Align on OSS-industry standards to **improve interoperability**

  - Define **standards & specifications** for each OSS capability (FulFillment, InventoryMngt...)

 - Integrated in a cloud-based eco-system via **REST-based OPENAPI's**

We had to let ROSY goooo...
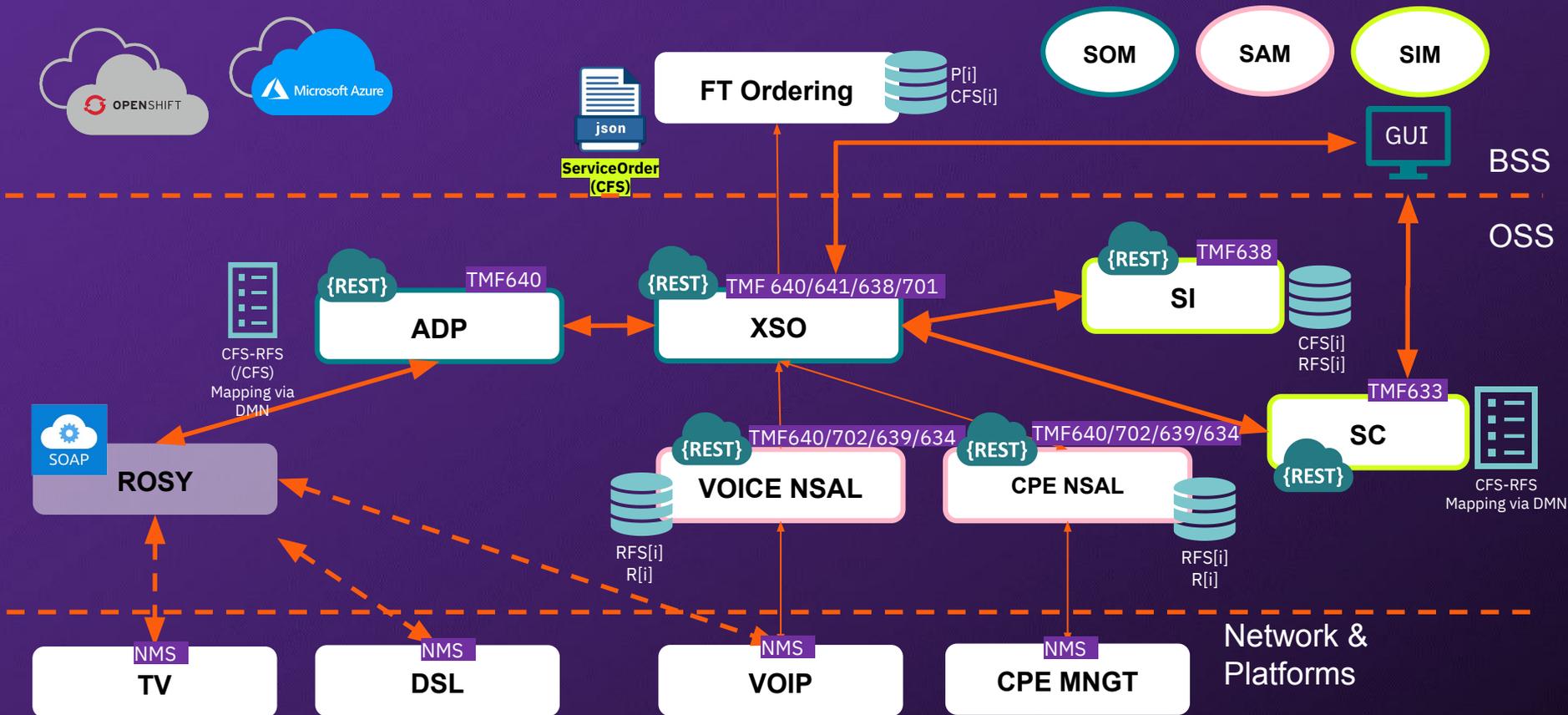
... and we moved to a new OPEN NaaS-model called ELSA*!

*Any reference to Elsa from the Disney-movie Frozen is pure coincidence

... and we moved to a new OPEN NaaS-model called ELSA*!

CCON 2023

OPENSHIFT

Microsoft Azure

json
ServiceOrderItem
(CFS-RFS)

json
ServiceOrderItem
(CFS-RFS)

json
ServiceOrderItem
(CFS-RFS)

json
T Ordering

P[i]
CFS[i]

json
ServiceOrder
(CFS)

SOM

SAM

SIM

GUI

BSS

OSS

CFS-RFS
(/CFS)
Mapping via
DMN

{REST} TMF640
ADP

{REST} TMF 640/641/638/701
XSO

{REST} TMF638
SI

CFS[i]
RFS[i]

TMF633
SC

{REST}

CFS-RFS
Mapping via DMN

SOAP
ROSY

{REST} TMF640/702/639/634
VOICE NSAL

{REST} TMF640/702/639/634
CPE NSAL

RFS[i]
R[i]

RFS[i]
R[i]

NMS
TV

NMS
DSL

NMS
VOIP

NMS
CPE MNGT

Network &
Platforms

*Any reference to Elsa from the Disney-movie Frozen is pure coincidence

... and we moved to a new OPEN NaaS-model called ELSA*!

CCON 2023

FT Ordering — P[i] CFS[i]

SOM · **SAM** · **SIM**

GUI

BSS

OSS

ADP — TMF640 {REST}

XS TMF641 {json}
ServiceOrderItem (RFS)
ServiceOrderItem (RFS)
ServiceOrderItem (RFS)
(RFS)

SI — TMF638 {REST}
CFS[i] RFS[i]

CFS-RFS (/CFS) Mapping via DMN

ROSY SOAP

SC — TMF633 {REST}
CFS-RFS Mapping via DMN

VOICE NSAL TMF640/702/639/634 {REST}
RFS[i] R[i]

CPE NSAL TMF640/702/639/634 {REST}
RFS[i] R[i]

Network & Platforms

TV NMS

DSL NMS

VOIP NMS

CPE MNGT NMS
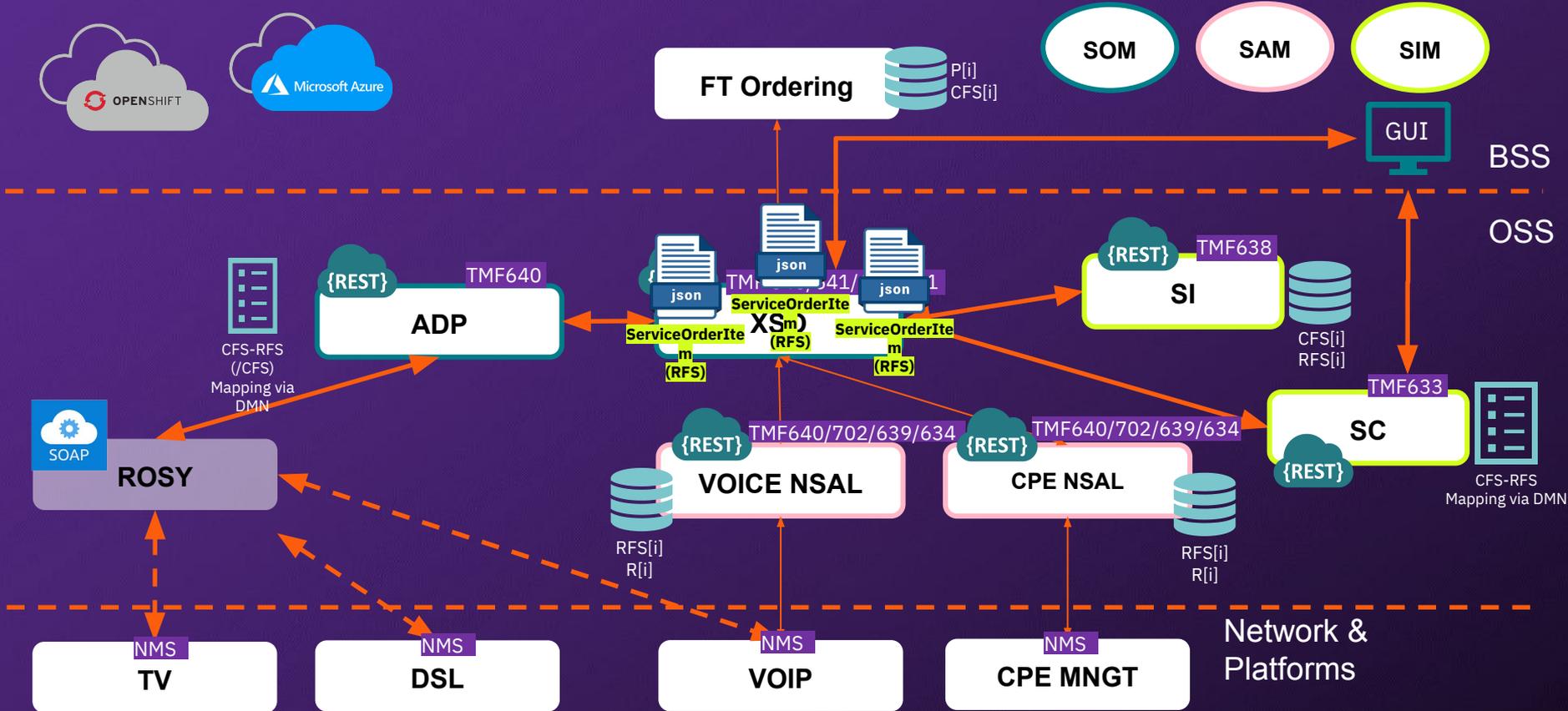
*Any reference to Elsa from the Disney-movie Frozen is pure coincidence

And we needed a hero...

An orchestration engine for XSO...

- **Cloud-native** engine **transferable** to any cloud-ecosystem

- Easily **integratable** + a vivid community and **open documentation**

- Highly **extendable** with other frameworks and open-source techno

- **Strong references** to other telco players

- Easy to use BPMN **graphical editor** facilitating **collaboration**

- Easily **upgradeable** and maintainable with **high end qualitative support**

- Rich toolset for extendible **logging & monitoring**

What made us choose Camunda?

Runnable in Cloud ecosystem

- Powered by a **cloud-native workflow engine** designed for horizontal scalability and resilience.

- Integratable on **private Cloud** or set-up in a **PaaS/IaaS**.

What made us choose Camunda?

Open documentation with vivid community

- **Vivid developer community**
  - Online documentation and discussions
  - Camunda Forum

- **Camunda Academy**
  - Multiple role-based learning tracks
  - Training guides
  - Reference implementations

What made us choose Camunda?

Extendable with other technologies

- Smooth **integration** of **3rd party package** Drools iso Camunda DMN in XSO

- Rich set of **API-protocols** (REST/SOAP or in-house designed connector)

- **Design Patterns** for integration

- **User Tasks** support in a GUI, makes it pluggable as back-end

What made us choose Camunda?

- Other <u>telco operators</u> already choose Camunda for their **digital transformation** i.e.
  T-Mobile, Orange, Swisscom, Vodafone...

- Camunda adopted in <u>other sectors</u>: *banking, retail, government...*

What made us choose Camunda?

Facilitate in the bridging between business & IT

Cawemo Modeller as
visual collaboration platform

- Highly improving **readability** for non technical profiles
- Highly improving efficient **collaboration**
- BPMN 2.0 as **bridging** language with business (Domain Architects in NIT)

What made us choose Camunda?

High **qualitative support** from the start!

- Even with Community Edition – direct access to Camunda engineering

- **Pro-active approach** to meet up and inform on **future roadmap** – allowing internal anticipation.

What made us choose Camunda?

Easy investigation in case of issues

- *Camunda Cockpit* provides **real-time view** of running BPMN processes enabling DevOps to **monitor & analyse** technical incidents efficiently.

- *Camunda Optimize* uncovers process bottle-necks and other **performance issues** in easy-to-understand reports & dashboards.

... where do we use CAMUNDA today in our new OSS Stack?
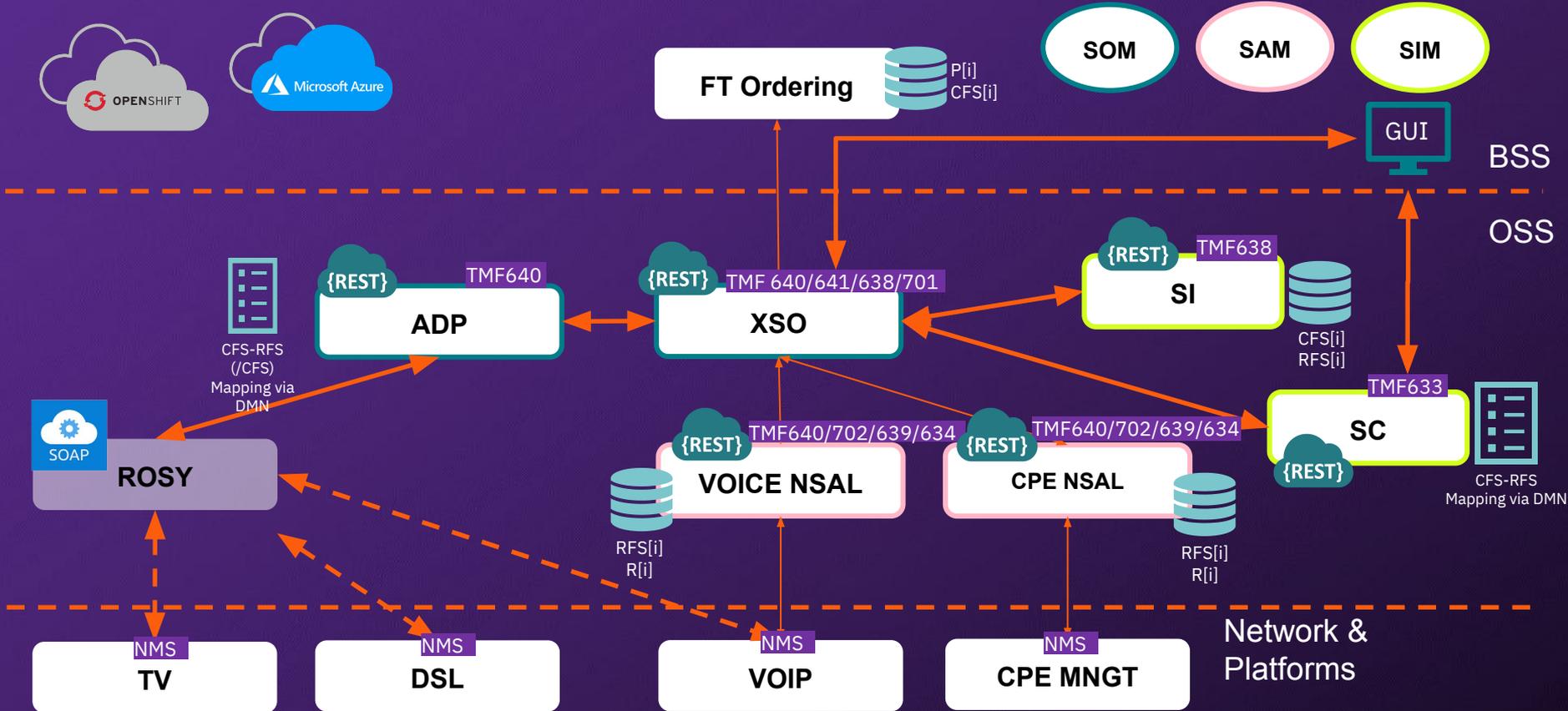
*Any reference to Elsa from the Disney-movie Frozen is pure coincidence

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Use Case I: XSO

- **XSO** = **Cross**-**S**ervice **O**rchestrator:
    - Processes **Service Orders** containing CFS's to activate cross-domain

- TMF701 Process Flow API implemented using Camunda BPMN Processes:
    - Invoke other **services** (TMF or legacy)
    - Use Drools DMN-rules for dynamic decomposition of CFS, mapping CFS-RFS & validation rules (**catalogue-driven implementation**)

- Orchestration logic compressed in **15-20 Camunda flows** with nearly no human intervention (compared to +/- 400 BPEL flows!!)
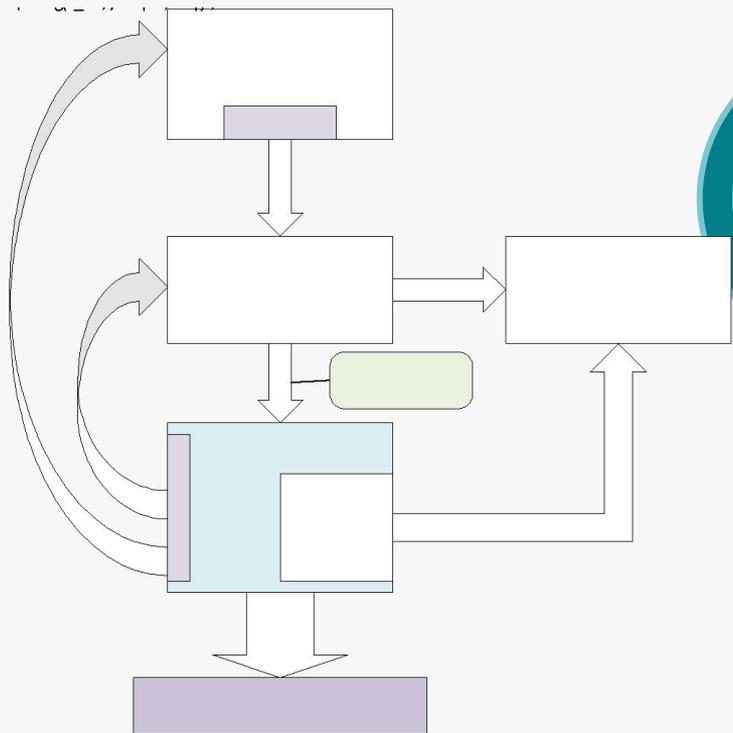
Use Case II: RBT/MCG

- **RBT** (**R**OSY **B**ring into Service **T**ool) and **MCG** (**M**igration **C**ontroller **G**ateway)
    - Used by network field technicians to **deploy new infrastructure** or to **migrate existing equipment** in the fixed access network.
    - Back-end fully driven by **Camunda workflows** using *UserTasks* to interact with the technicians' front-end
   - Domain architects collaborate with NEO business to define these automated workflows, using **BPMN 2.0** as **bridging language**.
    - The sub-tasks in the Camunda workflows are implemented using Java. Below shows flow for UC "Activate FX Card".
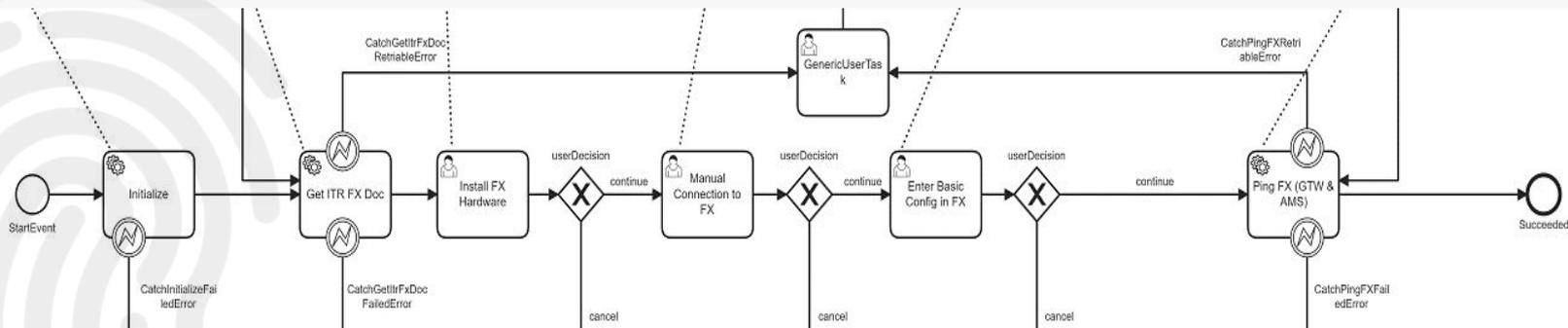
So, happily ever after?

proximus

Let's start with today...

1 ### We're about to accelerate
- Given provisioning load for ELSA will increase, monitoring of impact on performance will become key

2 ### Set off on the right foot
- With high-quality level of support from CAMUNDA engineering, looking confidently forward to the future!

3 ### No one size fits all
- Camunda today doesn't cover all our orchestration needs, for instance Dynamic Acyclic Graph (DAG)

Now, what's next?

JULY-AUGUST

START
2019 CE – 2020 EE

- Preparation of deep dive sessions with senior CAMUNDA & Proximus engineering

- Training track on BPMN 2.0 & usage of CAMUNDA for new DA's and engineers

- Discuss findings of Deep Dive with full DevOps engineering squad (design patterns, best practices)

SEPT

- Extend XSO in <u>NON-PROD</u> with new Fixed Services & monitor impact on performance.

- Extend OPS-inclusion in the usage of Optimize and Cockpit for monitoring & intervention.

- SA start PoC on XSO-flows to move to Camunda 8.3

OCT

- Move to PROD with new Fixed Services increasing XSO provisioning via new TMF-chain

- Discuss migration actions to Camunda 8 and discuss potential difficulties found.

NOV

DEC

- Define new training path with focus on CAMUNDA 8 findings made during PoC

- Define migration plan for all apps using CAMUNDA7

Start iterative migration to Camunda 8

Q1 2024

INFINITY AND BEYOND

CAMUNDA Tech-Day

Questions?

David CAPELLE

System Architect

NBU/NIT NAA Tribe

in

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Questions?

Frederic THISE

Senior Technical Engineer

XSO – Blue Squad

✉ frederic.thise.ext@proximus.com
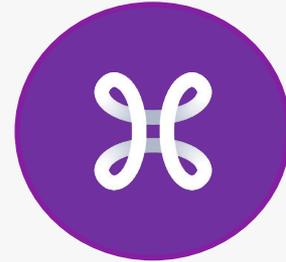
Questions?

Alexandre CAPRON

Senior Engineer

RBT – White squad

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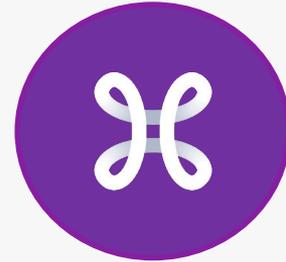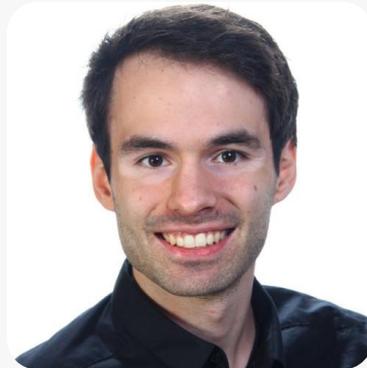
Questions?

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Chapter Lead NAA Analysts

NBU/NIT NAA Tribe

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The end!

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