ing INGÉNIERIE

Feedback on deployment of Capella at the RATP

RATP - moving towards a better city

16/09/2019| Matthieu CONNEN – Maxime PIOT

Agenda

01 Presentation of the RATP group

02 Appropriation and Deployment process

03 Feedback on ARCADIA and CAPELLA deployment

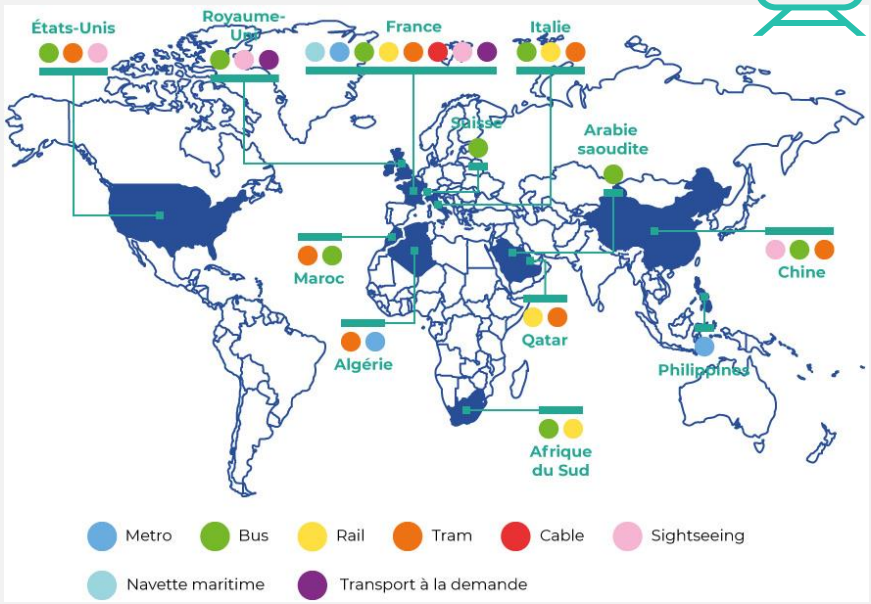
Presentation of the RATP group

Group presentation
and main engineering challenges

Moving towards a better city

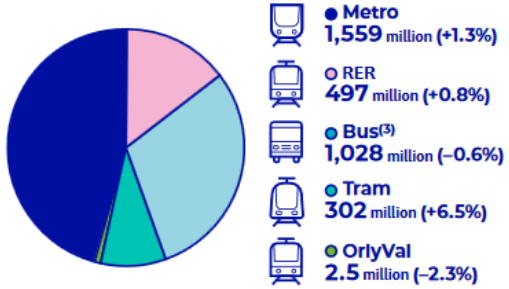
63000 staff members

Operating in 12 countries



+1,1% Increasing passenger traffic

3,389
million journeys[1] provided by the RATP EPIC[2] (+1.1%)



€ 1.579 M
Invested in the Île de France region

€820 M
To upgrade the network
And maintain its infrastructures

€620 M
On line extensions (metro/tram)

€140 M
Upgrading stations
and passenger informations

Ambitious rolling stock renewal programs for the next 10 years

4 designs to be carried out at the same time

2020 : new rolling stock « MP14 » for automated metro lines

2022 : new rolling stock « TW20 » for tramway lines

2024 : new rolling stock « MF19 » for manual driving lines

2025 : new rolling stock « MING » for the commuter rail line RER B

Modernisation of 13 RATP railway lines

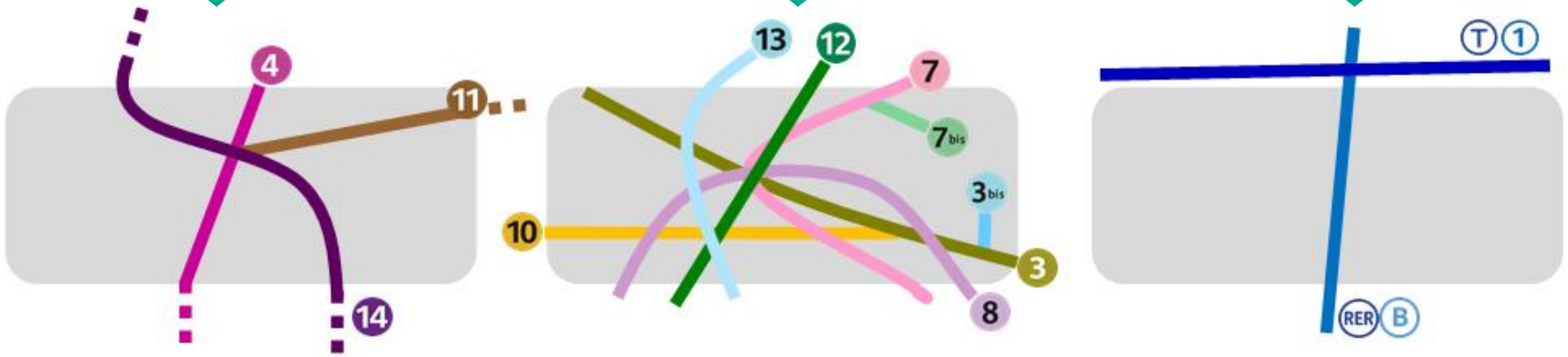
Several system integrations to be performed

Metro MP14 : 3 lines

Metro MF19 : 8 lines

Train MING: 1 co-operated line

Tramway TW20 : 1 lines



Our Challenge

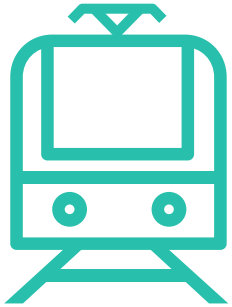
Optimize our systems engineering approach
to manage the complexity of different contexts and have
a greater cross-functional approach

Appropriation and Deployment process

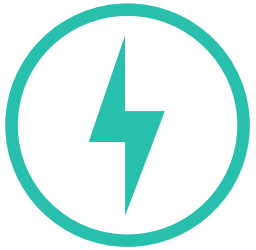
How we have deployed CAPELLA on RATP’s context

What “Complexity” means at the RATP?

A broad range of solutions to design and maintain



Transport
Power supply
Radio communications
Video surveillance
Passengers information
Ticketing
Fire safety
…



From global system to products

Here's Matthieu

Project system architect

Challenge :
System integration on railway projects

Designing & Assembling services & products

interface modelisation

Here's Maxime

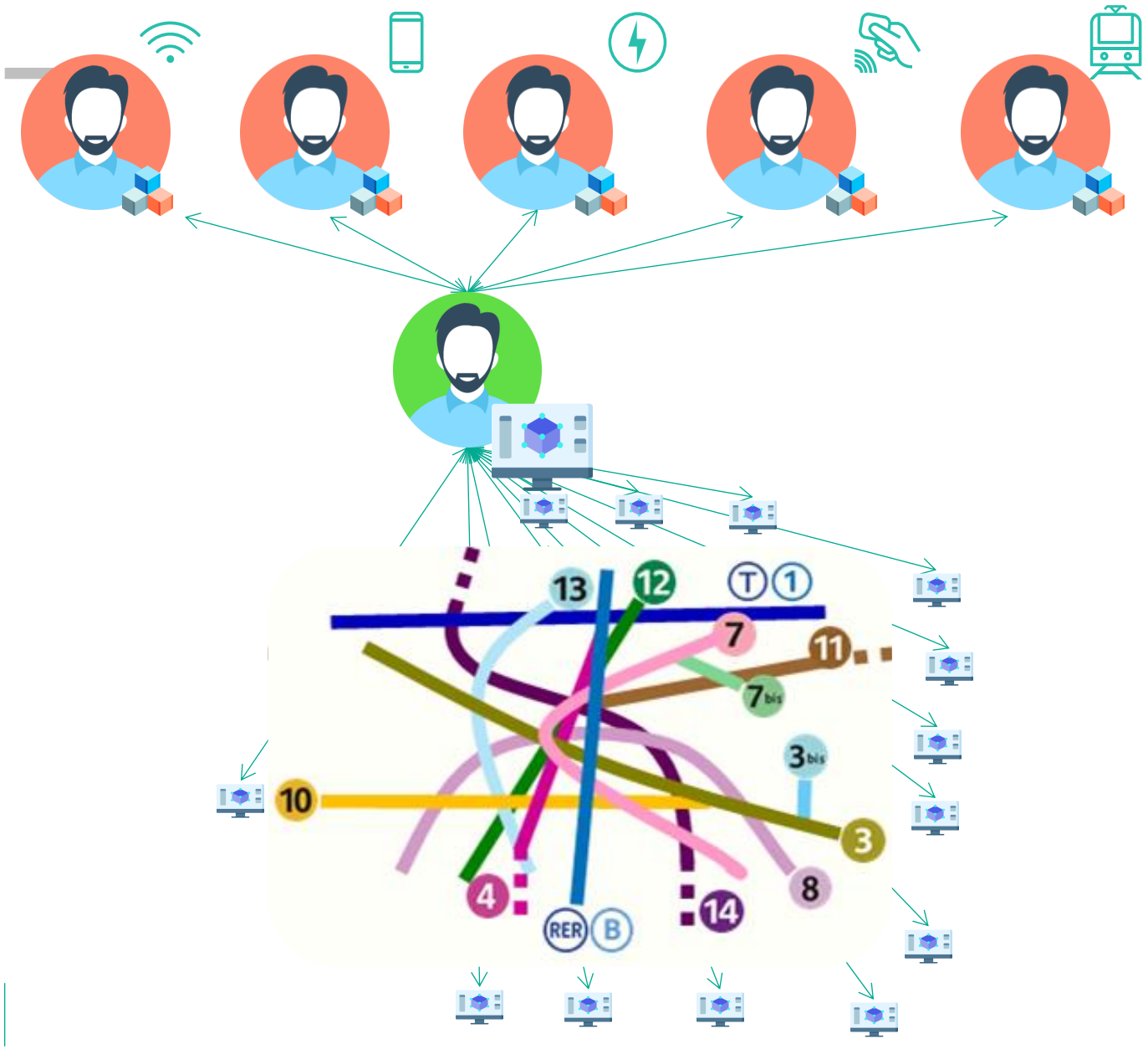
System designer

Challenge :
Design new train-related services

Designing services and products

functional exchange modelisation

From products to projects



The System designers
design their systems and generate specifications for their suppliers

The Projects System Architects
integrate the whole system by assembling the individual designs

The Projects System Architects
instantiate, when possible, the designs for each project context

CAPELLA appropriation and deployment strategy

Cautious and iterative strategy

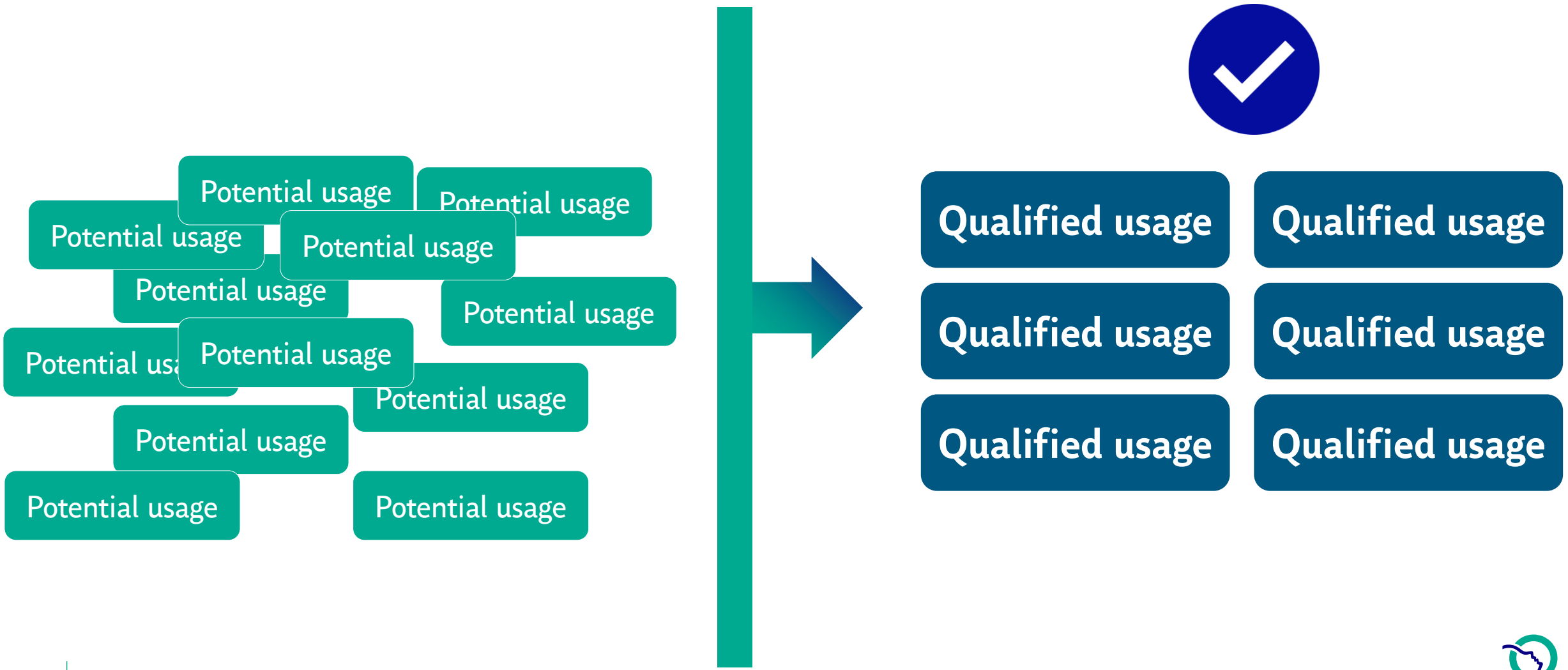
Priority on high-value usages

Minimise risks on our projects

Definition

Usage : the way we use CAPELLA to improve a specific engineering task

Goal: select, test, qualify and disseminate valuable usages

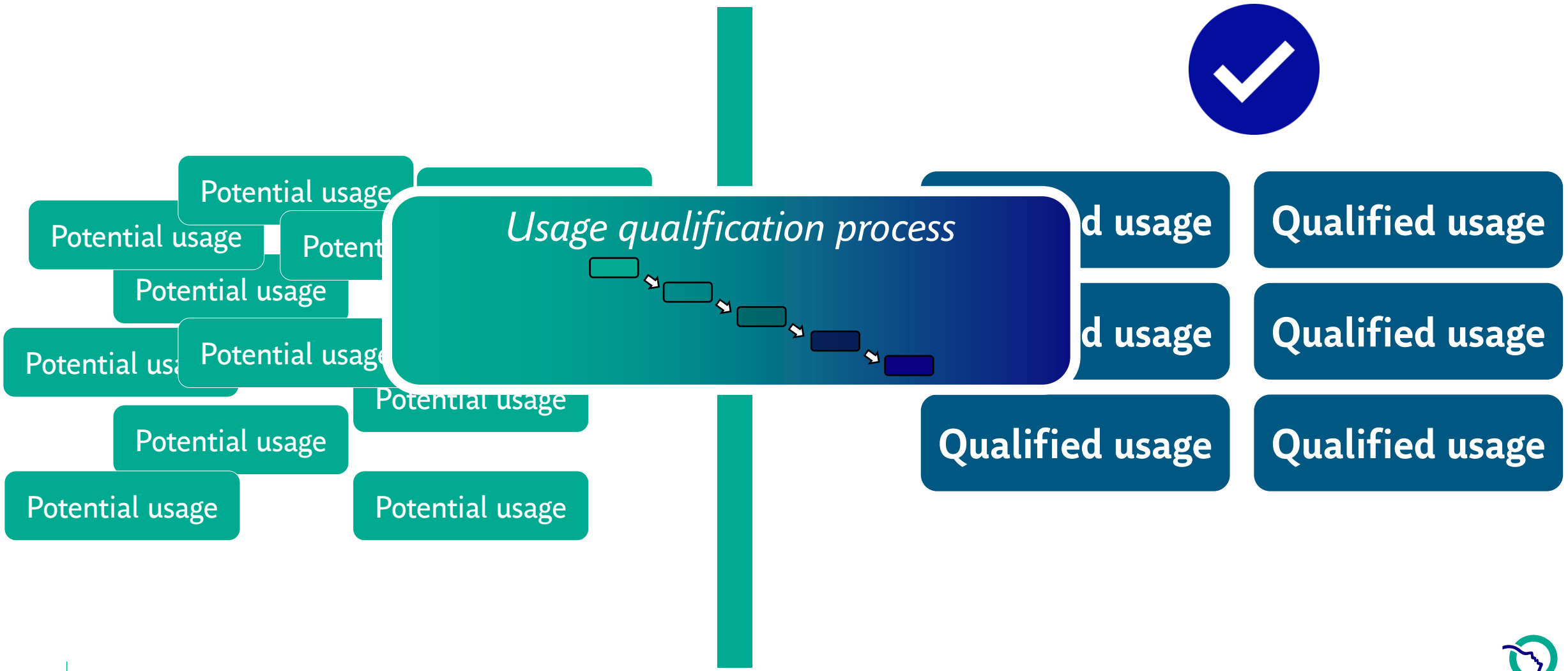


Definition

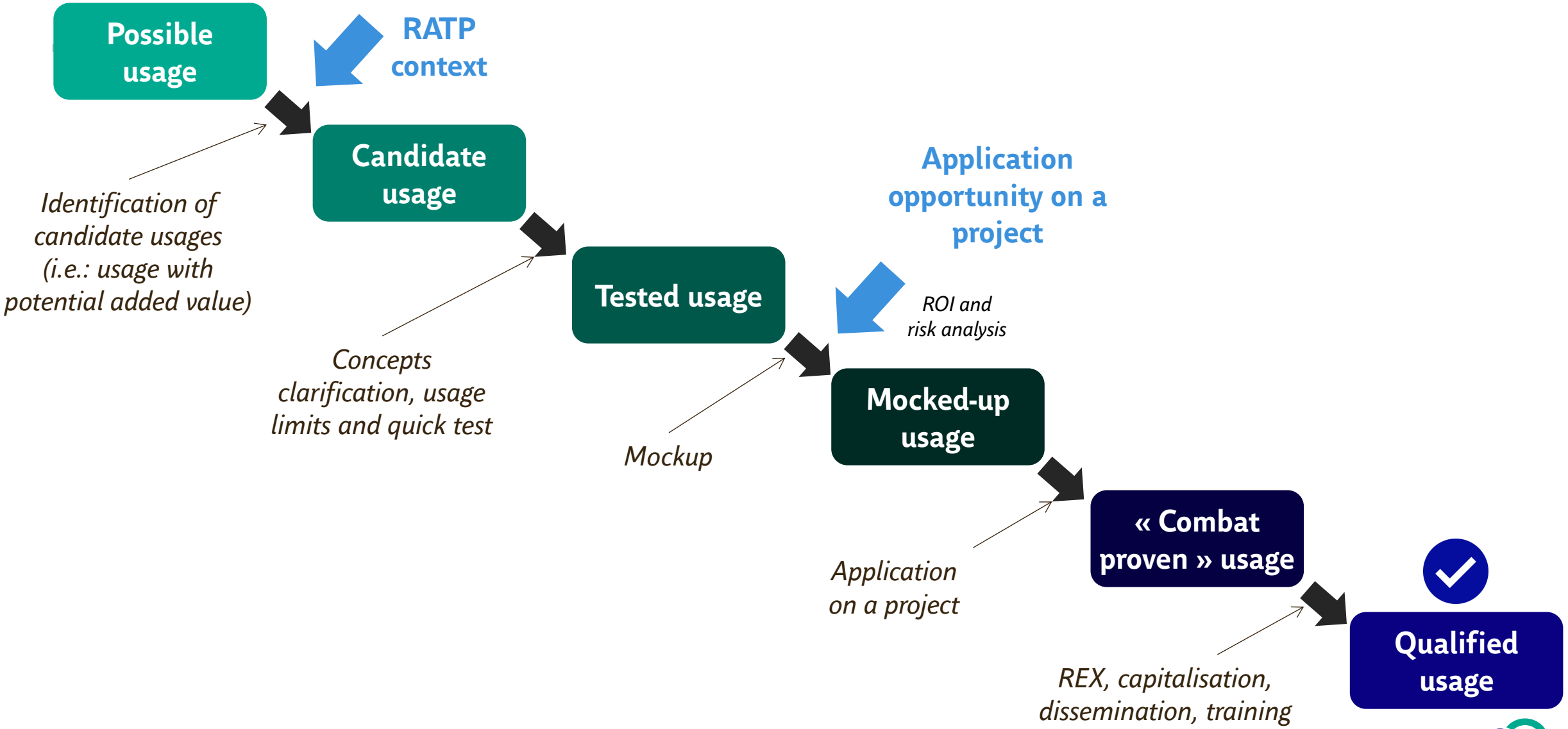
Qualified usage :

- Is rewarding
- Is adapted to our organization
- Is adapted to users skills
- Does not introduce critical risks to the project
- Is ready to be spread in the organization

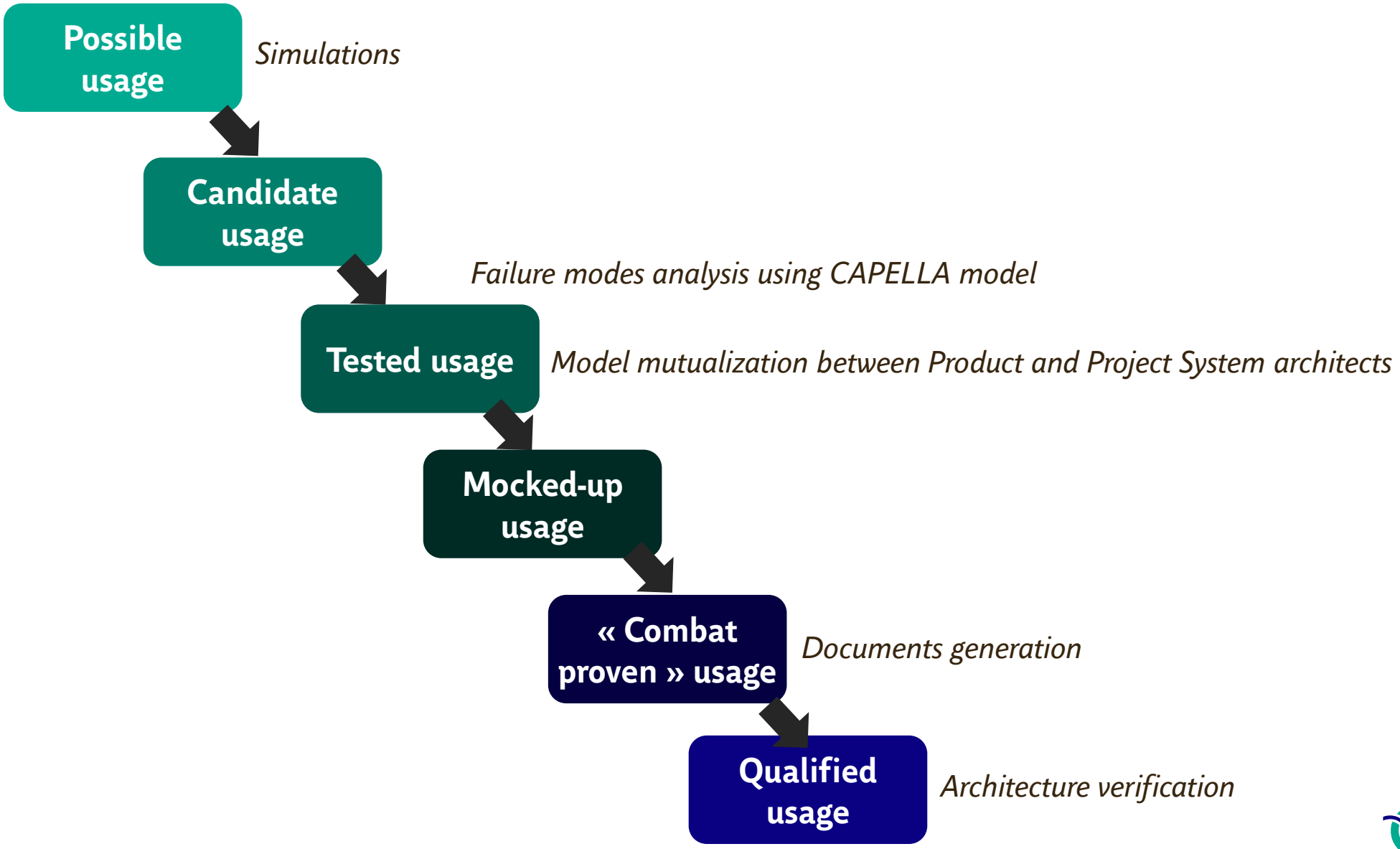
Goal: select, test, qualify and disseminate valuable usages



From Possible usage to Qualified usage



Exemples of usages status



Feedback on ARCADIA and CAPELLA deployment

How we use CAPELLA and why modelisation is important for our projects

Benefits of CAPELLA (and ARCADIA Method)

Co-working

Capella helps us sharing ideas and concepts thanks to *one common language*

Structuration

Separation between OA, SA and LA helps us clarifying *design responsibilities* within our organization

Mutualization

Capella eases design mutualization for multiple projects through *model sharing*

Coherence

Capella helps us to *guarantee coherence* thanks to automatic update and verification of diagrams

Publishing

M2DOC allows us to continue to *publish the usual documentation* with all the benefits of the model-based work

Time saving

CAPELLA allows us to instantiate several modernization projects in a short time and produce key documents

Next steps

Within RATP

- **Qualify** more usages
- Share the **feedback**
- **Train staff**
- **Formalize** methods

Next steps

Waiting for CAPELLA

- **Ease beautyfying activities** (diagrams organisation, printable view)
- Improve generated diagrams around **functional chains** (SFCD, LFCD, ES)
- **Ease model exploration** from macro to micro and from OA to LA
- More ergonomic **management of libraries**
- More ergonomic **way of updating users environment** (CAPELLA + plugins)

To conclude

Coherence

Mutualization

Publishing

Structuration

Co-working

Time saving

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