FIBRE 1st Partial review

WP4: Federation of facilities

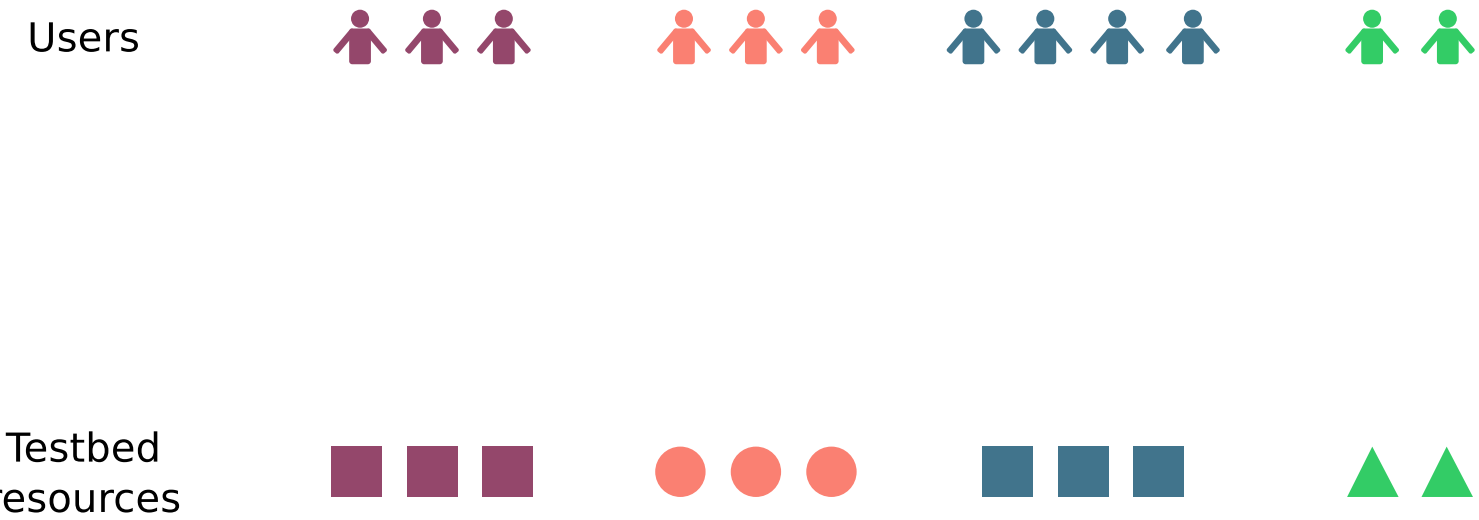
WP4 objectives

Objective is to federate the Brazilian and European sides of the FIBRE testbeds.

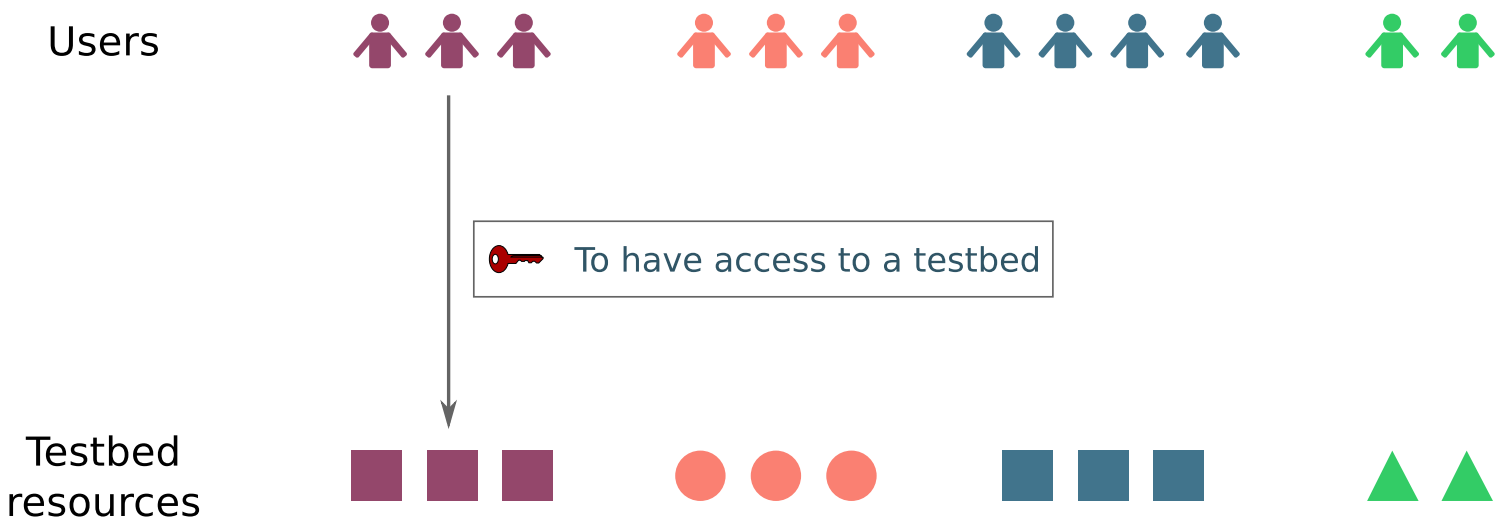
- This means federating across countries and also across technologies, as the NITOS (wireless/OMF) and OFELIA (OpenFlow) islands will initially operate independently

- In addition, issues related to the physical interconnection of the various islands will be managed in this work package

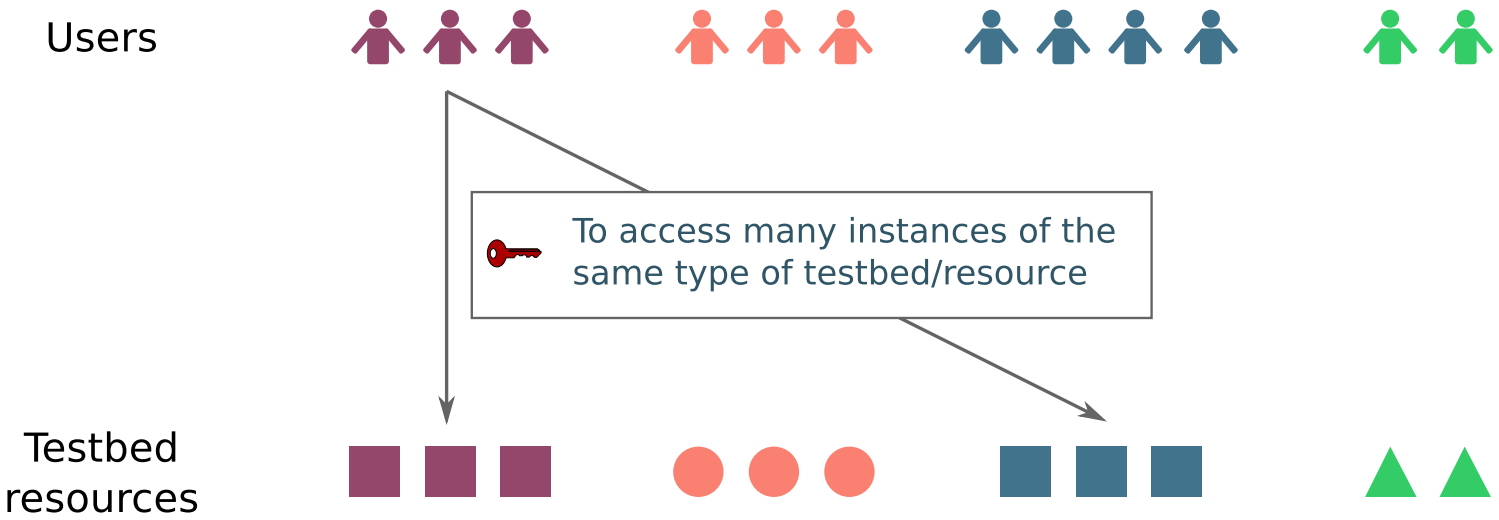
What researchers want



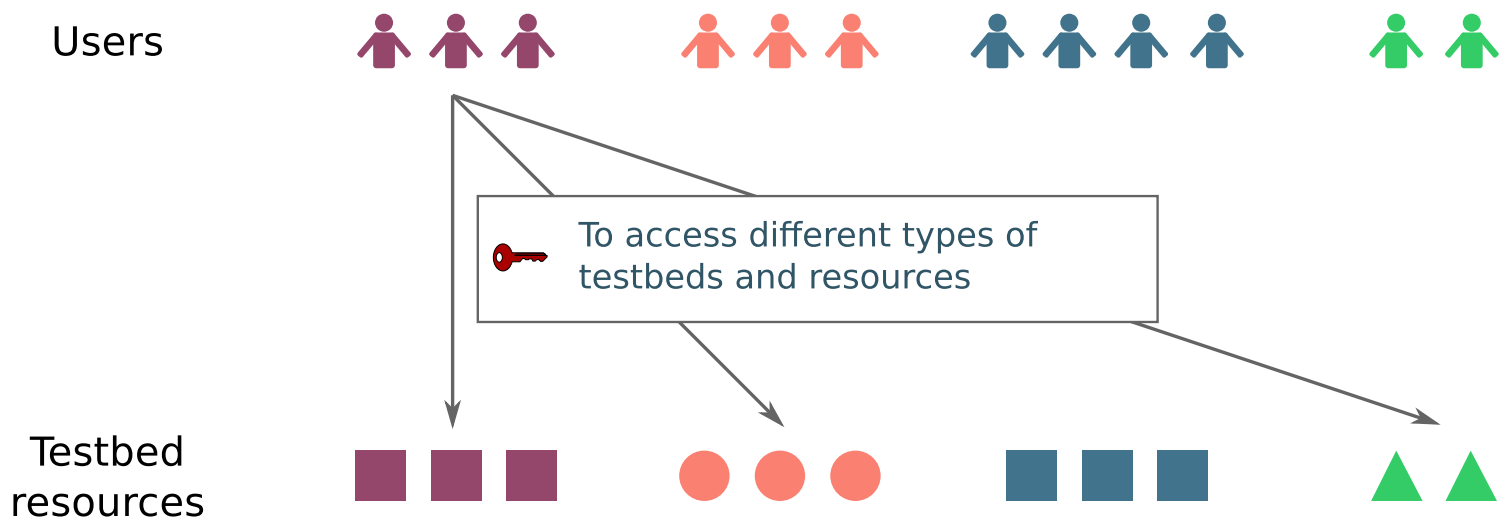
What researchers want



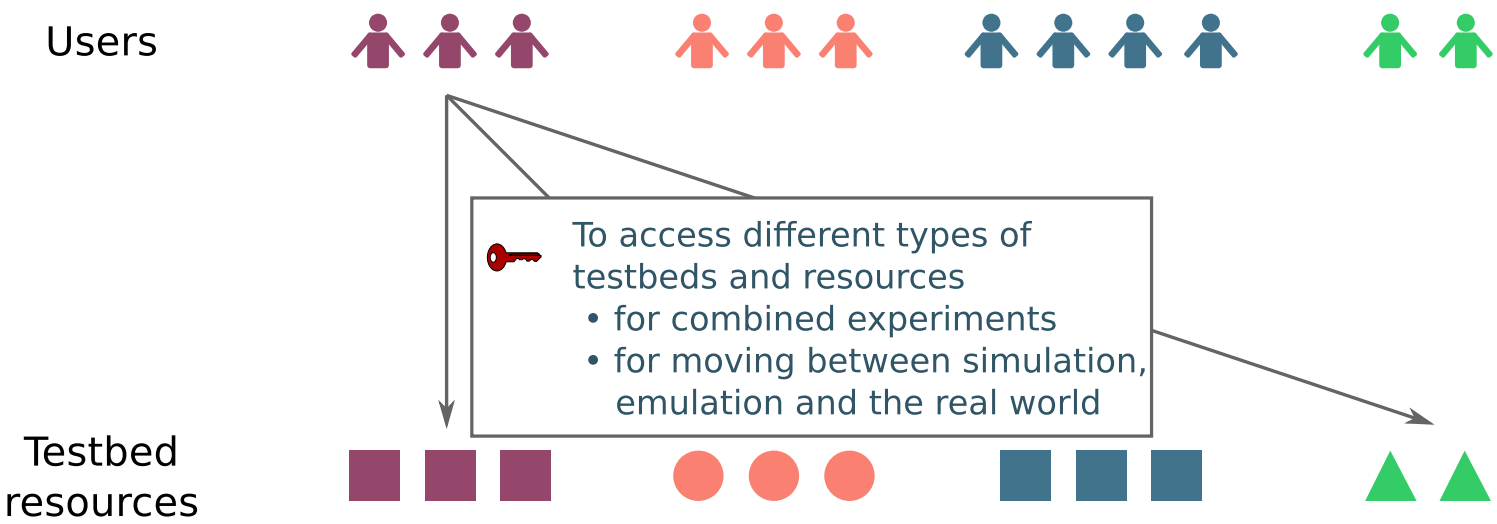
What researchers want



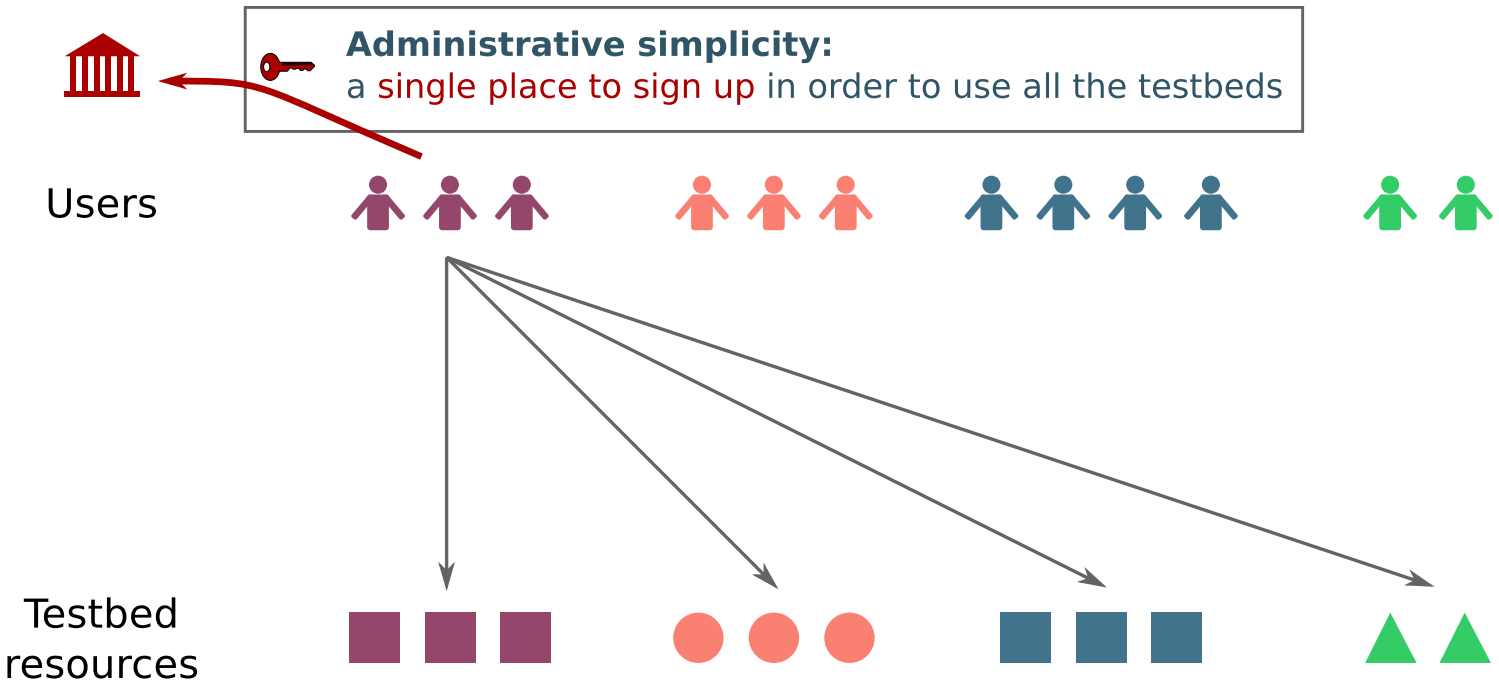
What researchers want



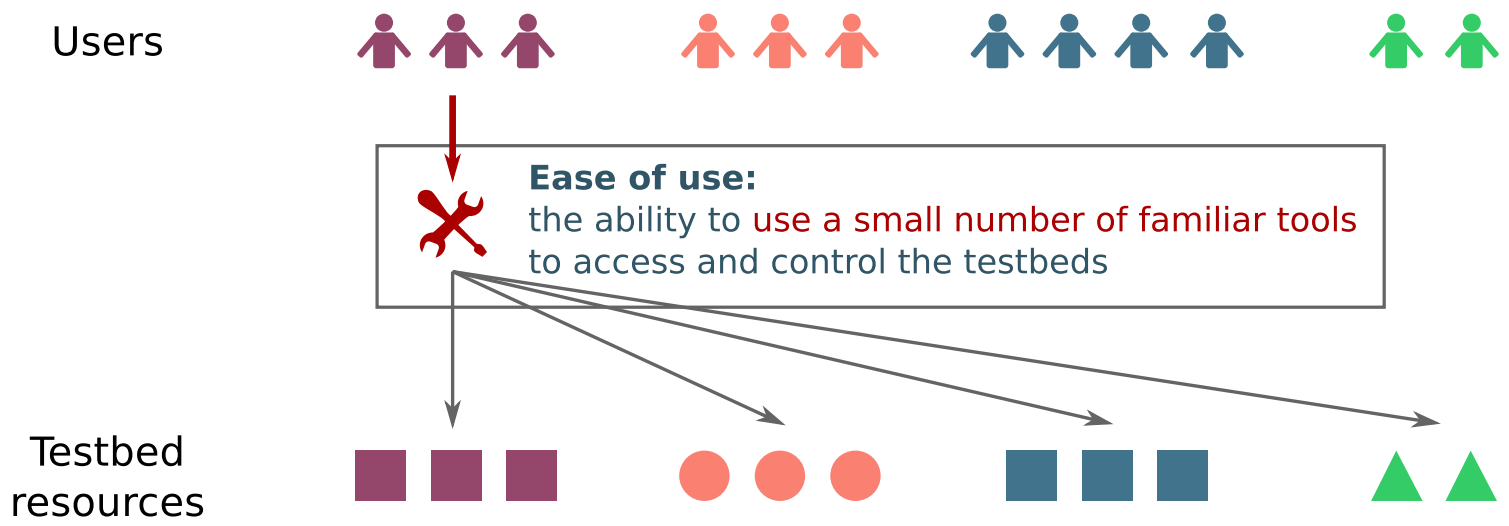
What researchers want



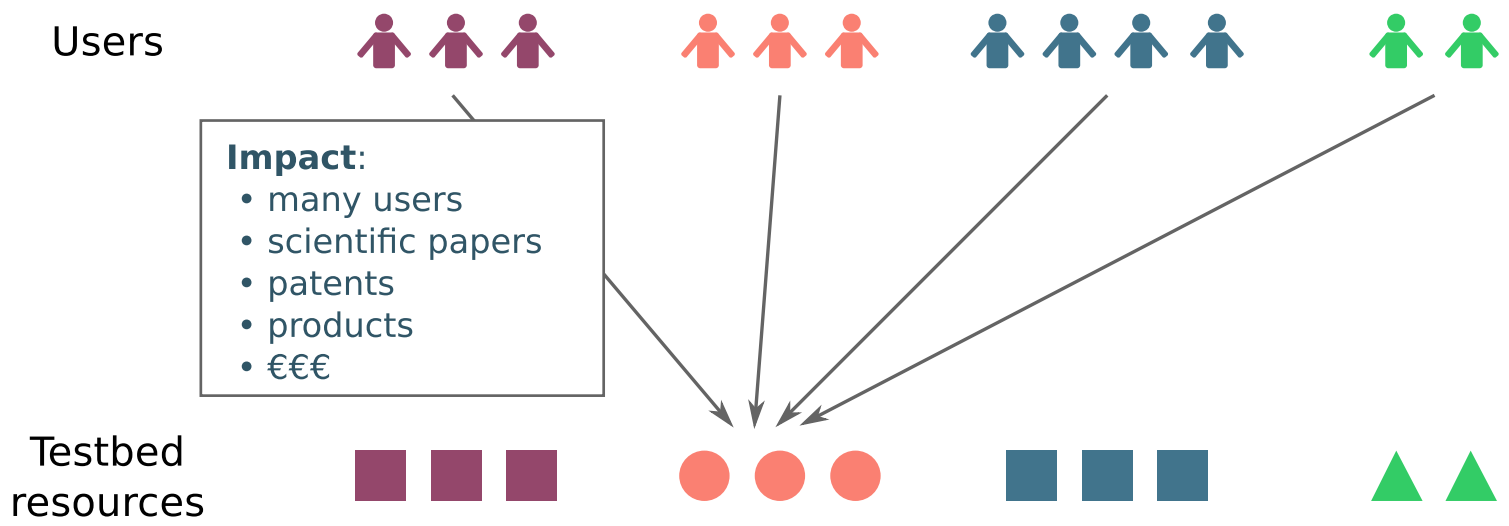
What researchers want



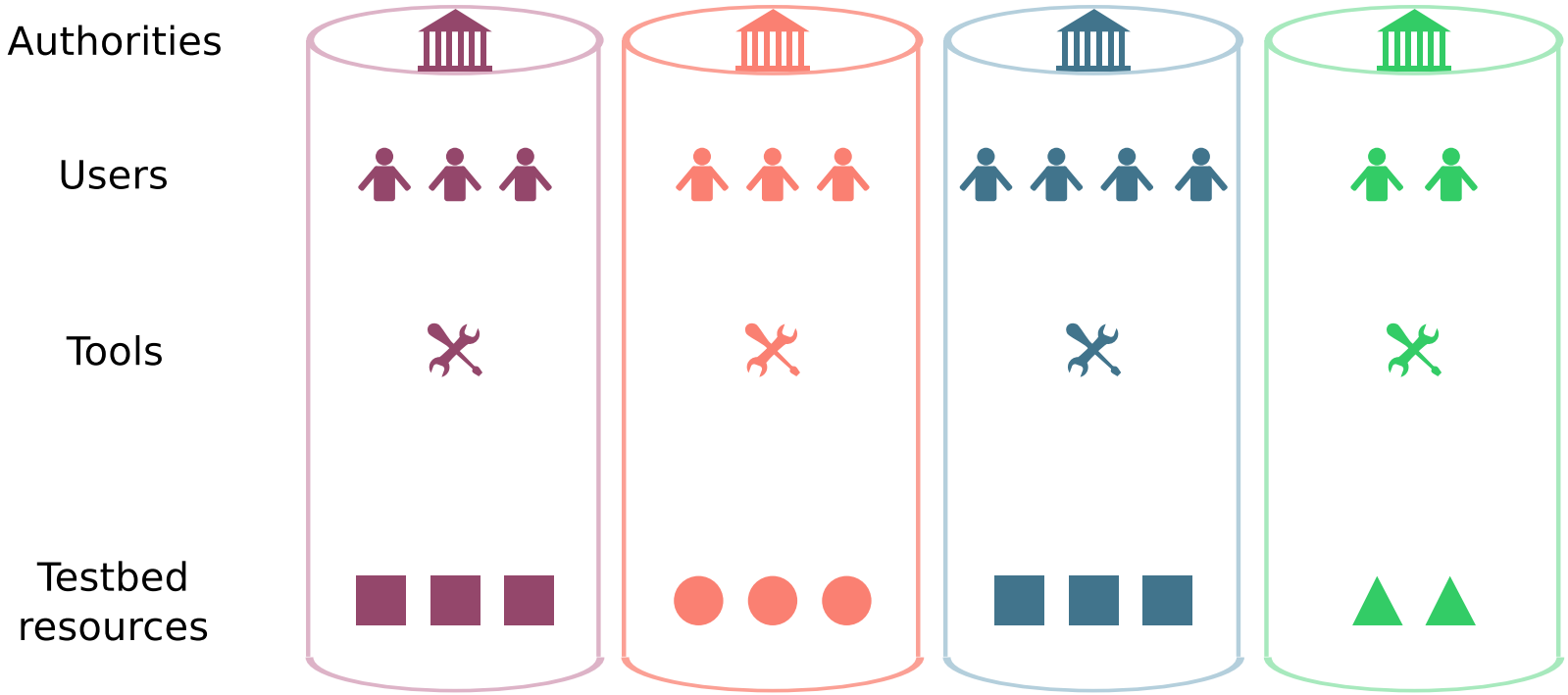
What researchers want



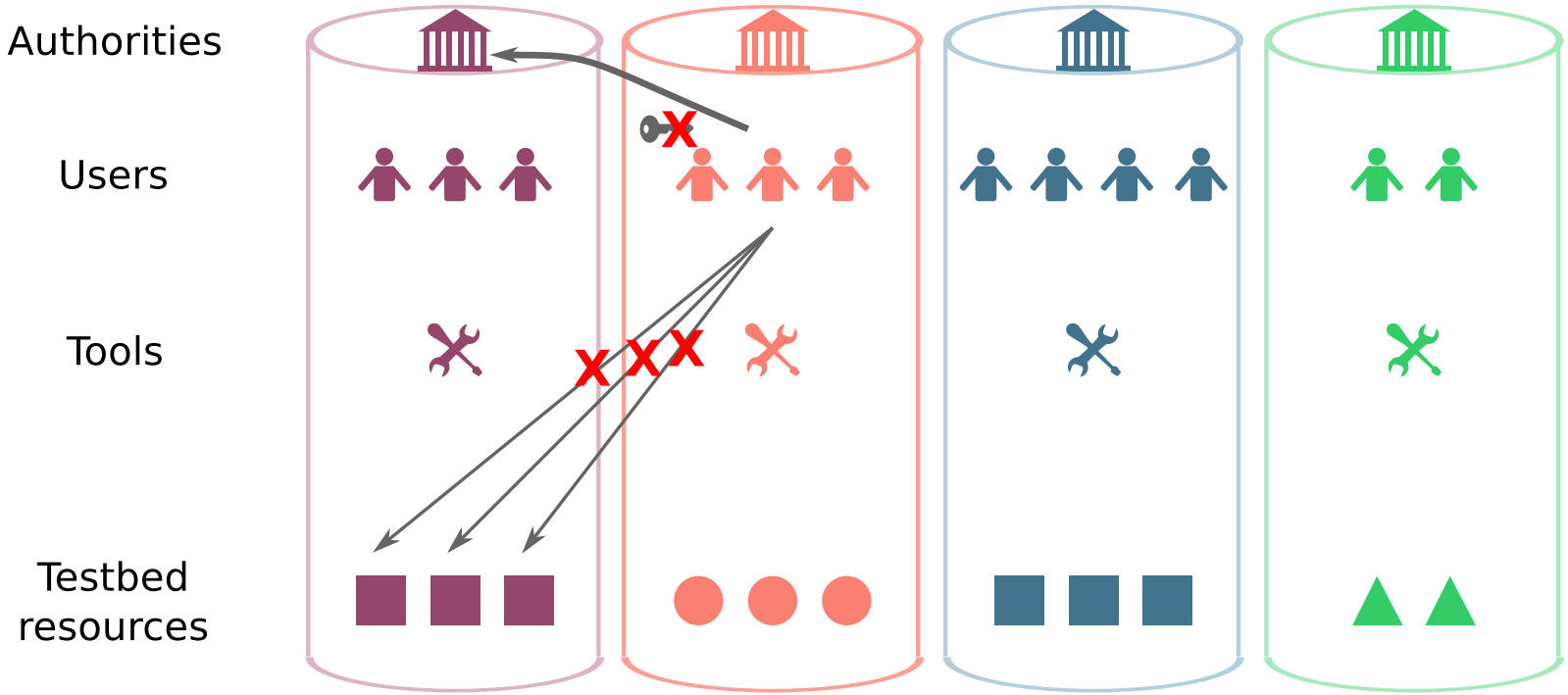
What testbed owners want



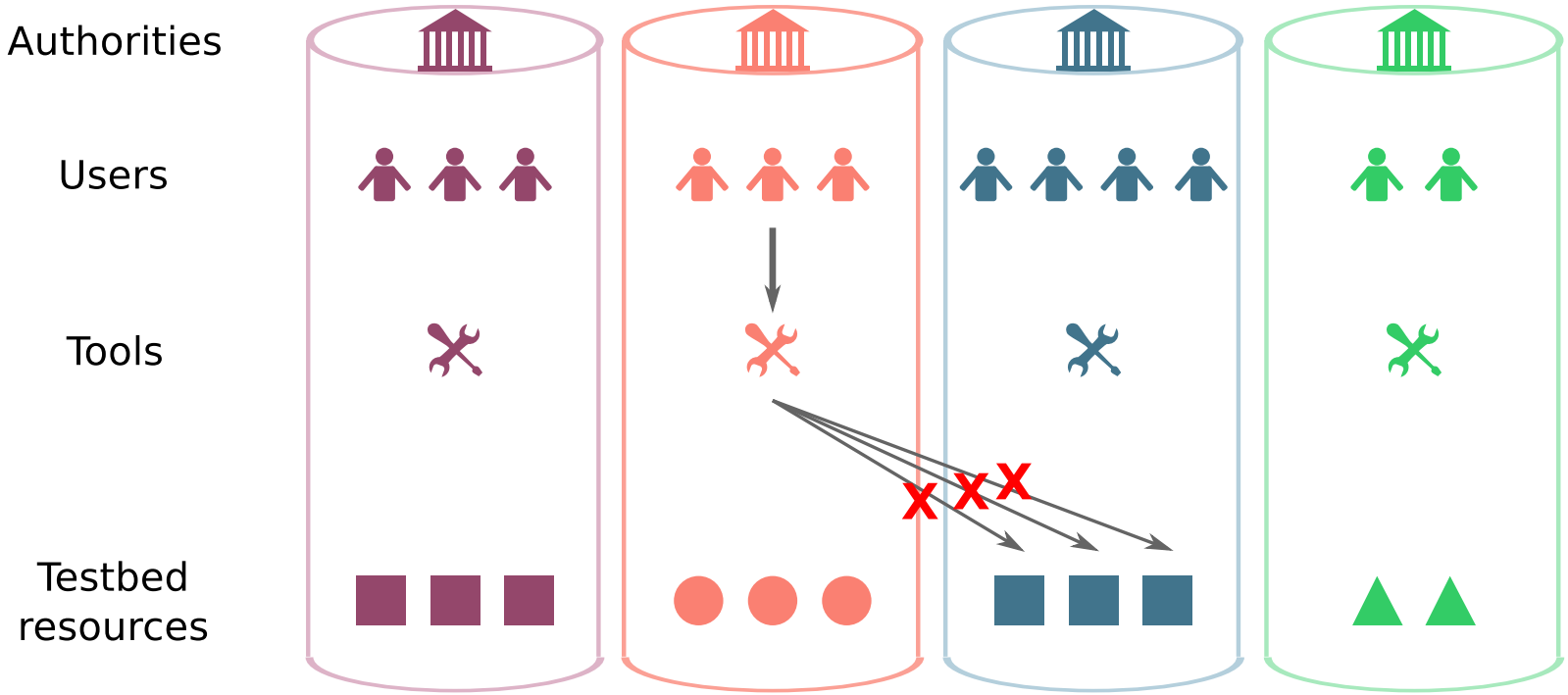
Where we were recently



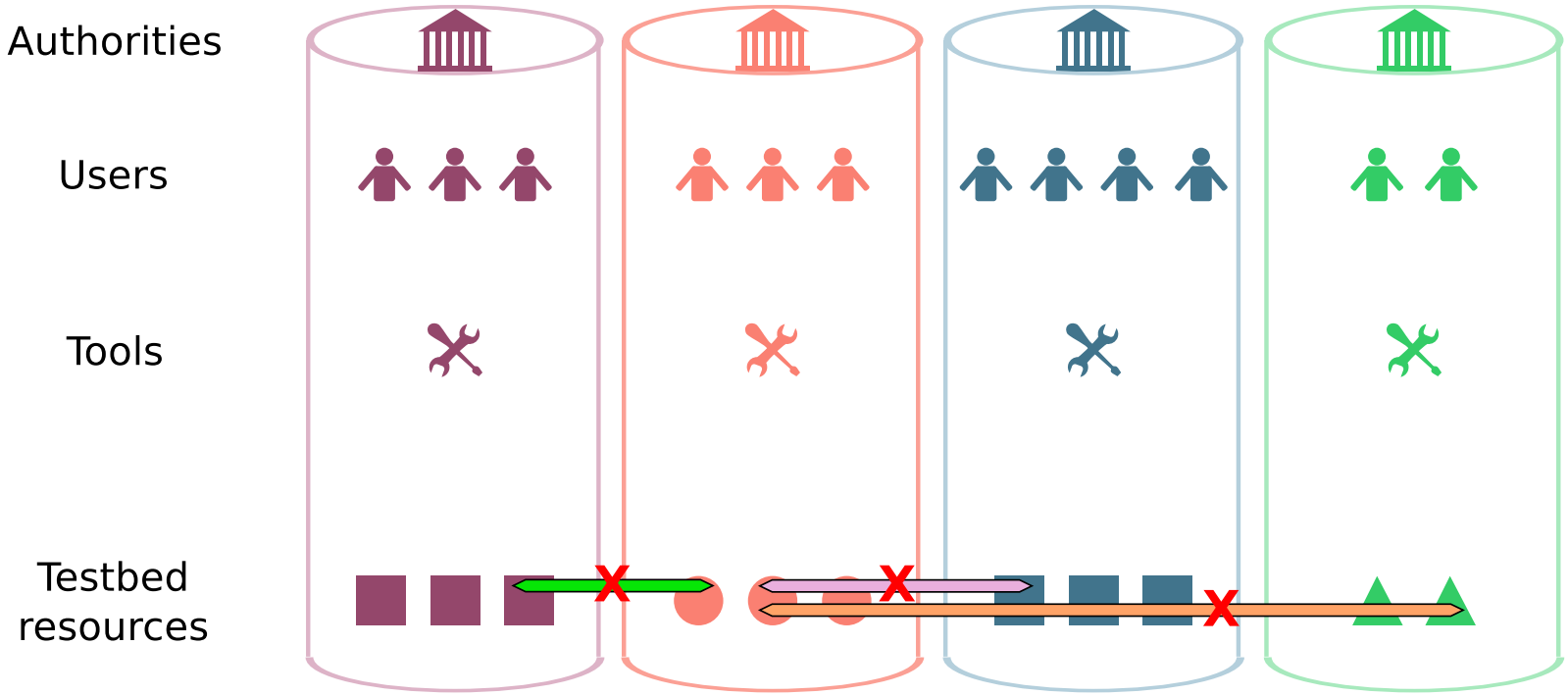
Where we were recently



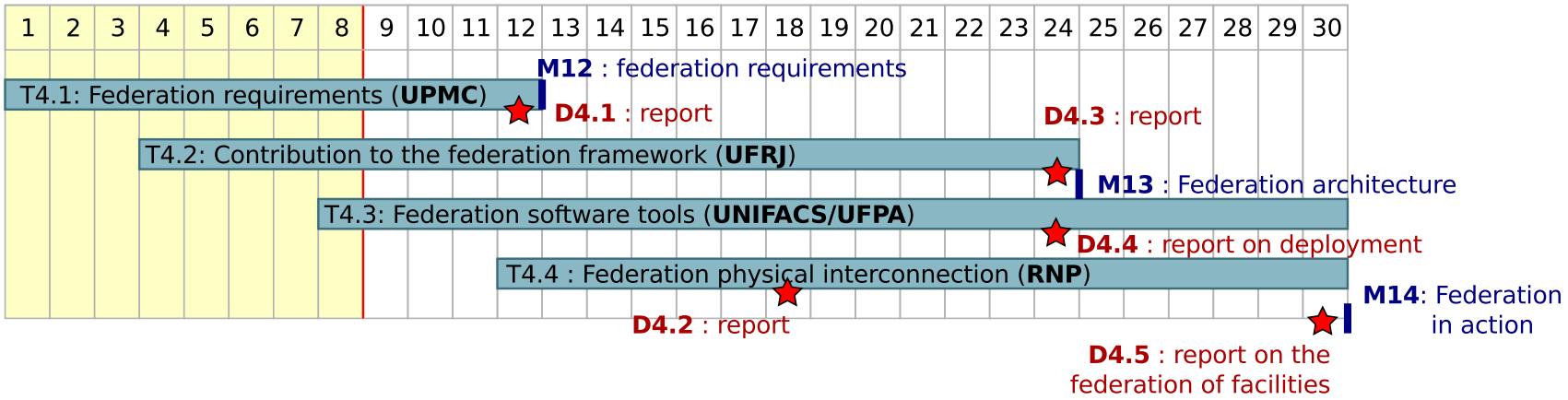
Where we were recently



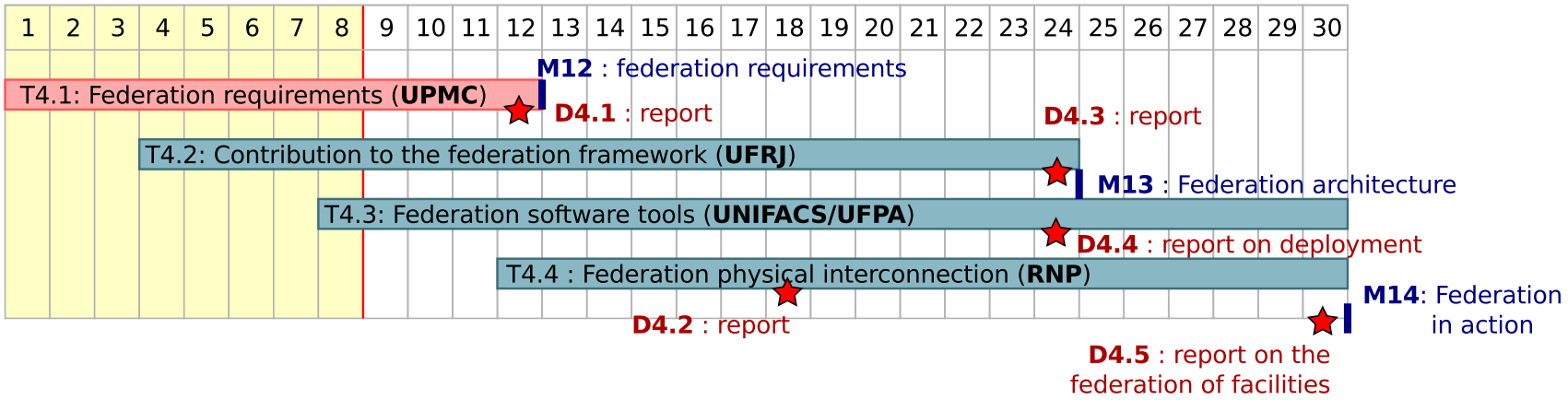
Where we were recently



Workpackage overview



Workpackage overview



Task 4.1 progress report

T4.1: analysis of the federation requirements (M1-M12) - **UPMC**

- collect and analyze the requirements concerning the federation of the experimental facility

D4.1: Report on the federation requirements analysis **[M12, UPMC]**

- public report with the listing and explanation of the different requirements that FIBRE federation has to support

M4.1: Federation requirements (M12)

- First version of the federation requirements after a thorough identification of the various needs from the testbeds involved
- Means of verification: practical list of testbeds, software solutions in use and issues for federation

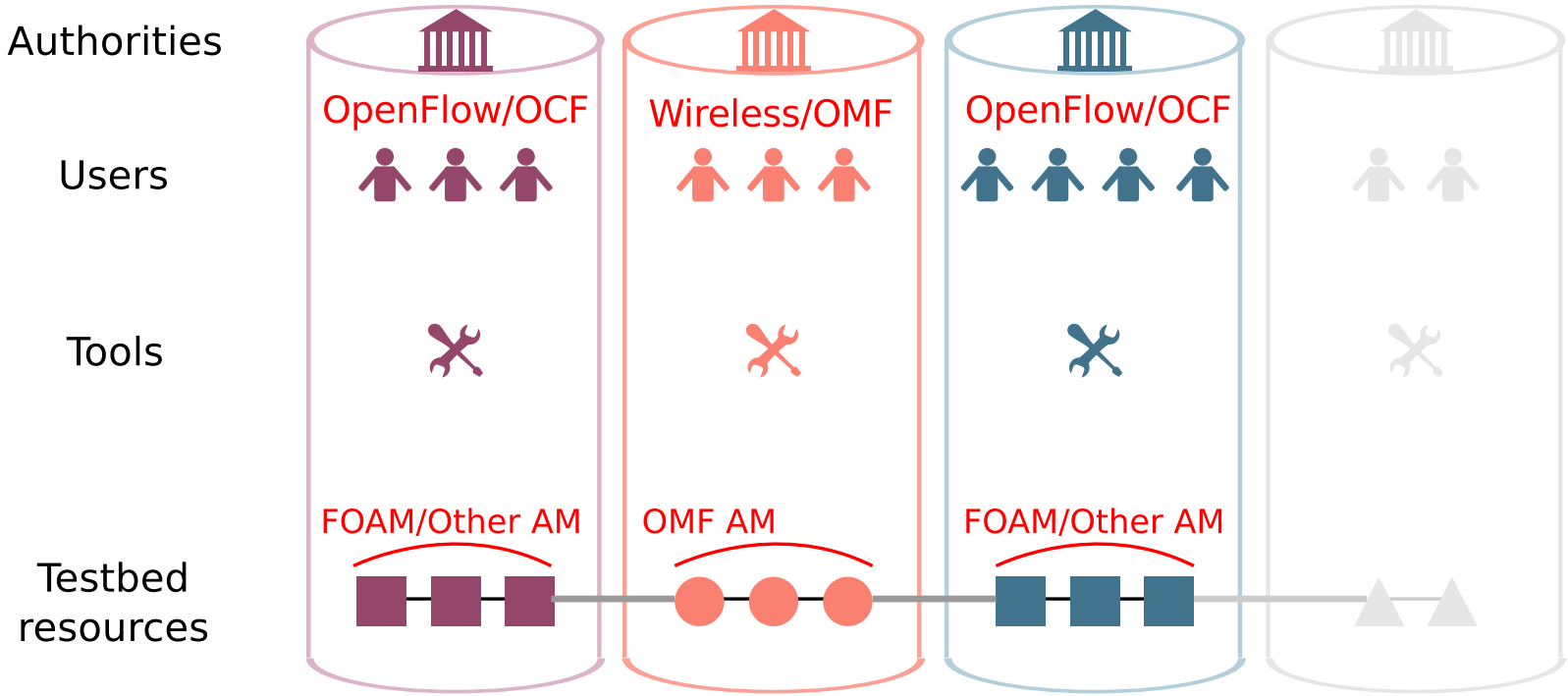
Federation requirements: current status

State-of-the-art document due soon

- getting familiar with partner's technologies
- requirements for the federation
- available components in use in major projects/frameworks
  - control plane
  - experimental plane
  - monitoring
- challenges, solutions and best practices

To guide discussion about the architecture

Federation requirements



Federation requirements: current status and next steps

EU/BR open discussion about FIBRE architecture

- Based on working document
- working groups: WP2, WP3 and WP4 leaders

D4.1 well on track: next months dedicated to going more into details

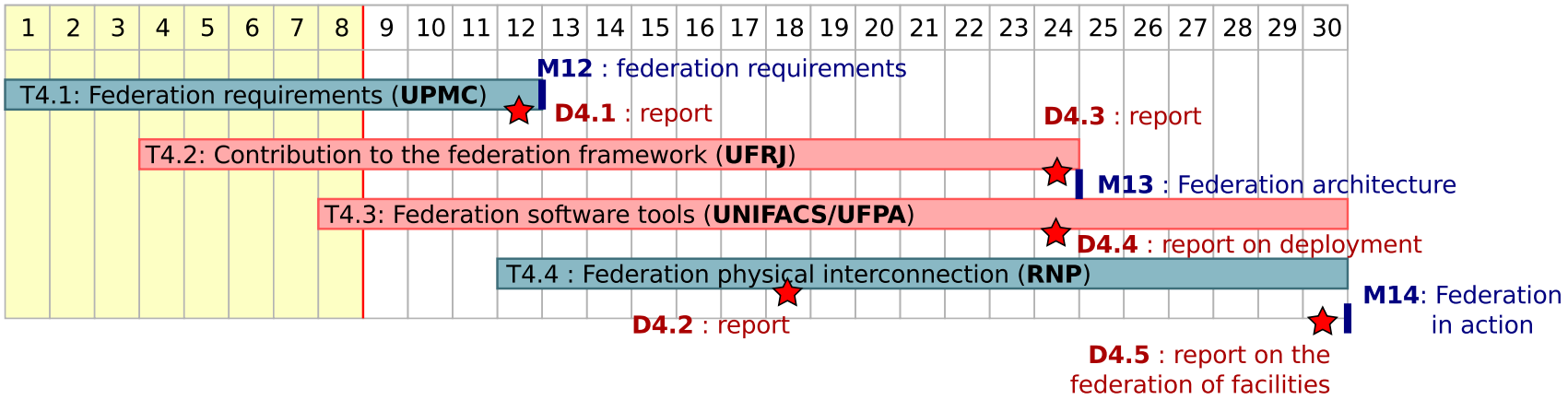
Position FIBRE into the broader FIRE and GENI contexts

OpenLab workshop: "Federation architecture and tools"

- central services for federation
- RSpecs, reservation, policies
- Monitoring tools and other topics

active participation of FIBRE EU and BR partners

Workpackage overview



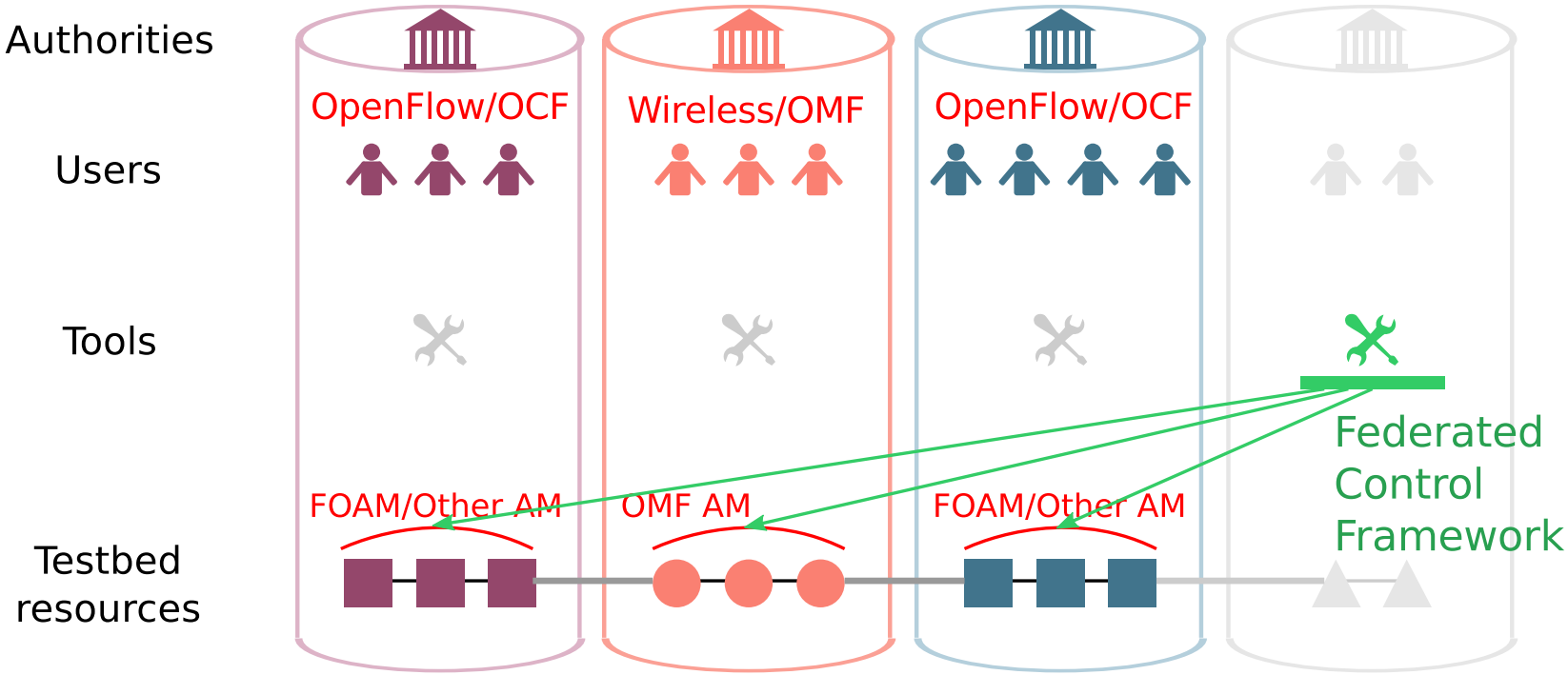
Our vision towards the federation of facilities

- outcome of the current discussion with partners
- previous experience in operating testbeds
- evolution and work done in similar projects

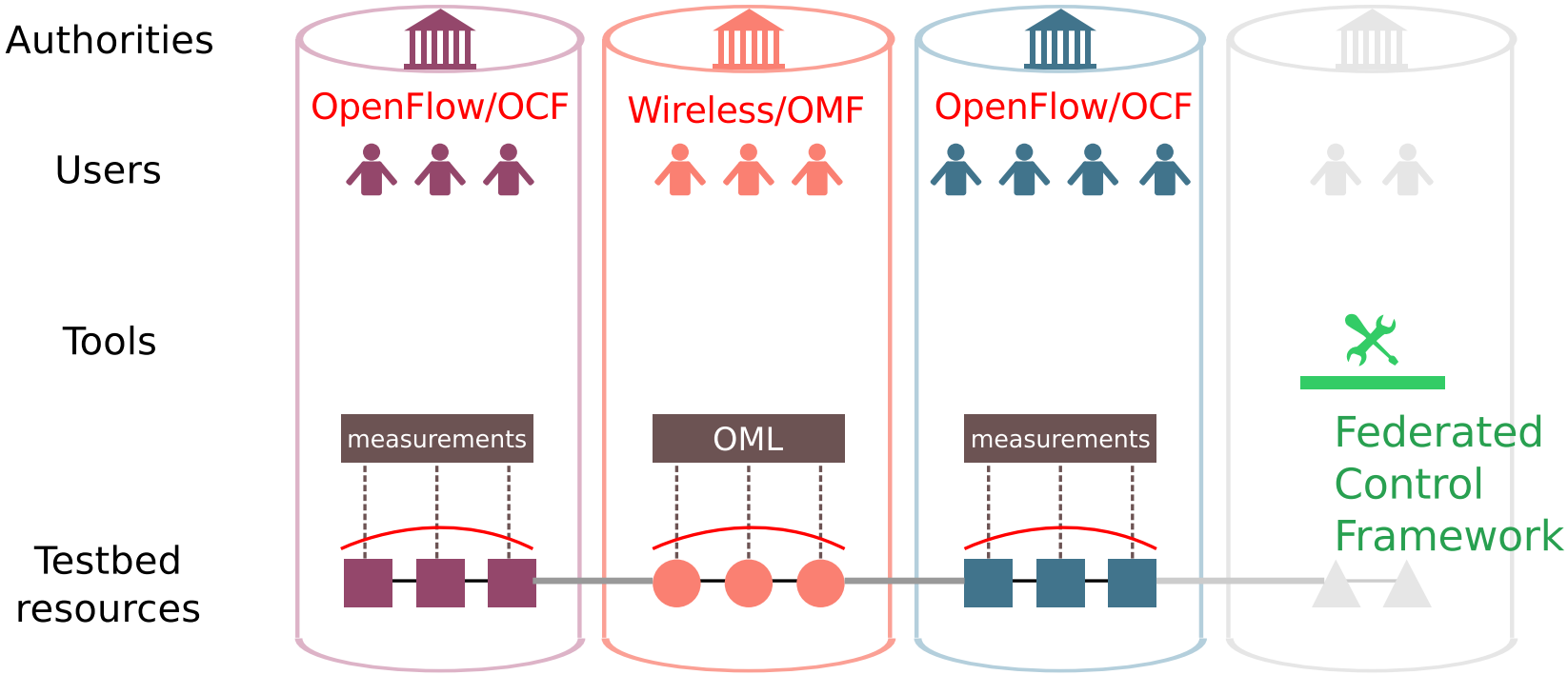
Two highlights:

- many possible policies: the federation scheme should be flexible enough to accomodate this
- tight integration of monitoring along the experimental lifetime

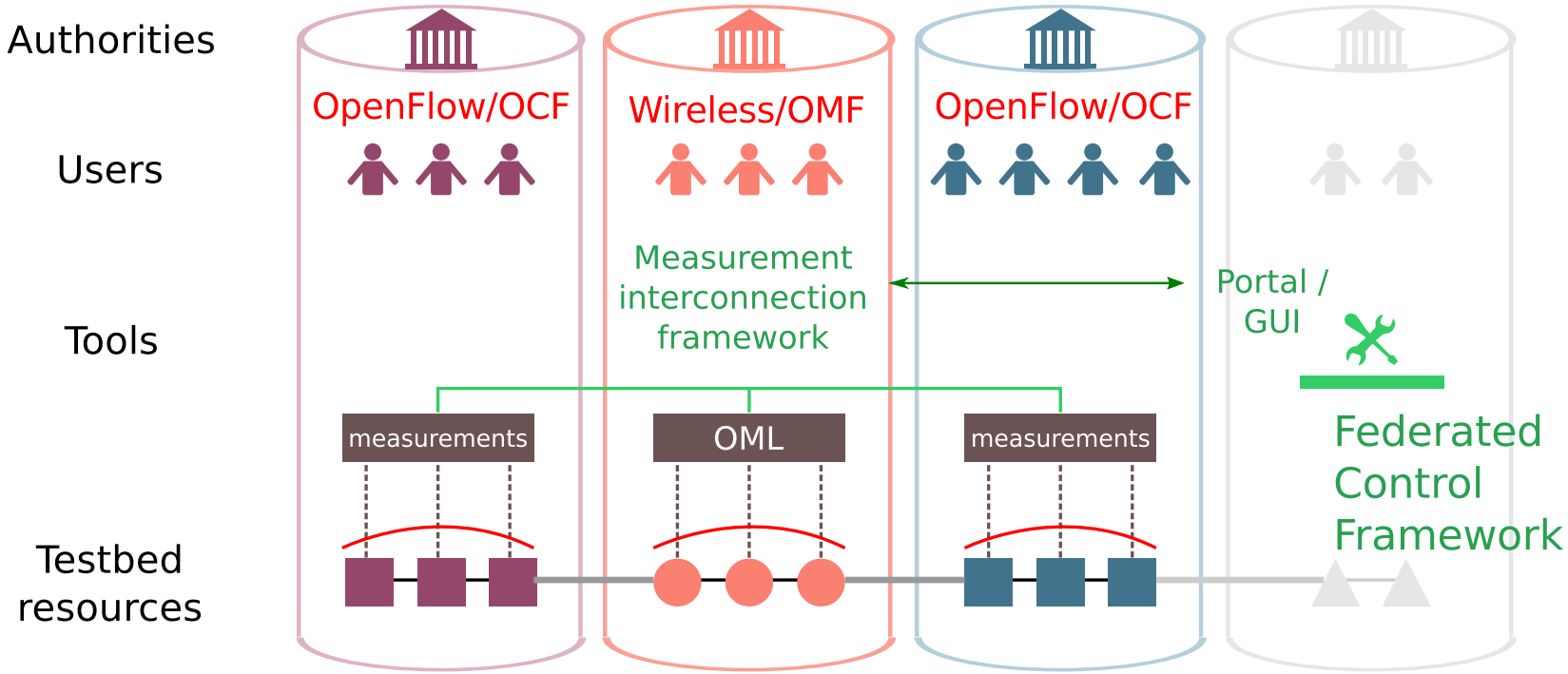
Our vision towards the federation of facilities



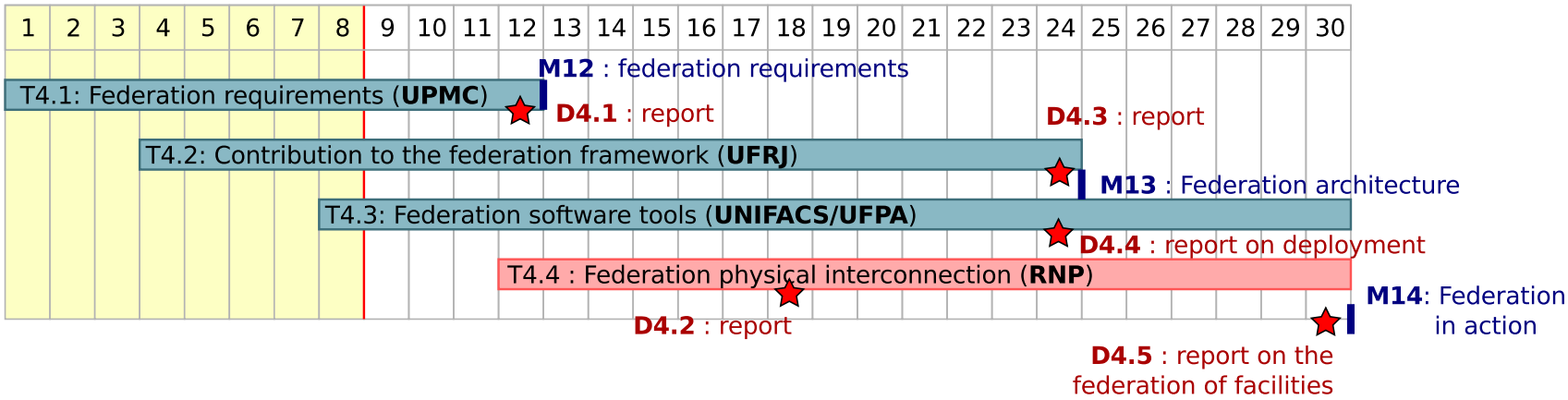
Our vision towards the federation of facilities



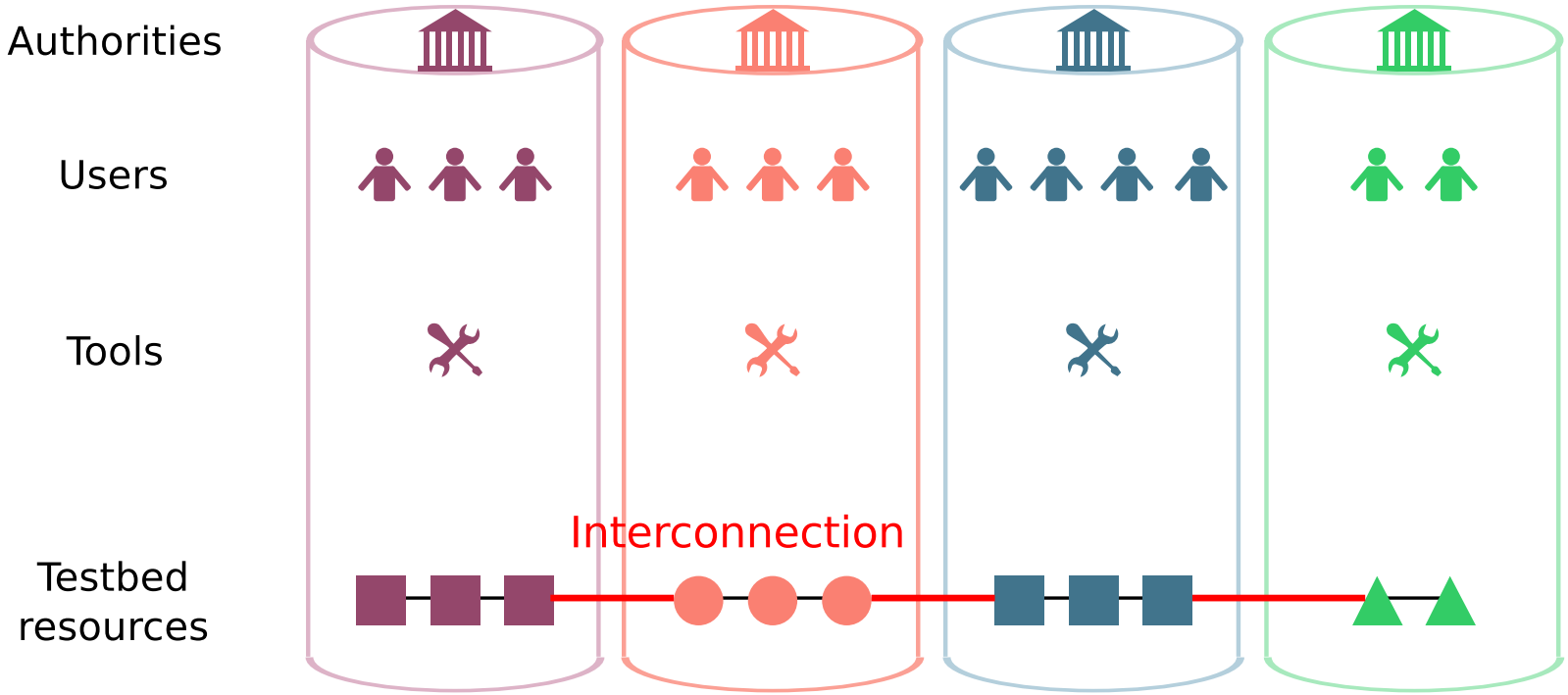
Our vision towards the federation of facilities



Workpackage overview



Connectivity



Connectivity

Links between EU and BR clouds:

1. _____

UEssex-USP
via GEANT (UK)
MANLAN (NYC)
Atlantic Wave
AMPATH (Miami)
AmLight
SouthernLight
(S.Paulo)

2. _____

i2CAT-RNP,
via RedIris (ES)
GEANT (ES)
RedCLARA
RNP (BR)

WP4 methodology

Bring the various communities into the same framework:

- OFELIA, OpenLab/OMF, EU, BRAZIL
- Integration of the communities
- Share best practices
- Deploy similar testbeds
- Identify key components
- Decide upon a consensus architecture
- International exposure (GENI, FIRE, Asia)

WP4 Tasks

T4.1: analysis of the federation requirements (M1-M12) - **UPMC**

- collect and analyze the requirements concerning the federation of the experimental facility

T4.2: contribution to the federation framework (M4-M24) - **UFRJ**

- select the right solutions for federation and customize them to the EU/Brazil facility

T4.3: federation software tools (M8-M30) - **UNIFACS**

- identify the various tools needed to allow experiments across the federation

T4.4: federation physical infrastructure (M12-M30) - **RNP**

- physically interconnect the European and Brazilian testbeds

WP4 deliverables

D4.1: Report on the federation requirements analysis **[M12, UPMC]**

- public report with the listing and explanation of the different requirements that FIBRE federation has to support

D4.2: Report on the contributions to the Federation framework **[M24, UFRJ]**

- confidential report on the selected solution and the implemented/customized software for the federation of the facility

D4.3: Report on the federation software tools deployment **[M30, UNIFACS/UFPA]**

- confidential report on the monitoring and diagnosis tools to be used on the facility

WP4 deliverables (cont'd)

D4.4: Report on the federation physical interconnection **[M24, RNP]**

- confidential report on the evaluation and identification of suitable physical interconnectivity of the FIBRE sites, the setup of the EU and Brazilian hubs and intercontinental links

D4.5: Report on the federation of the facilities **[M30, UPMC/UFRJ]**

- public report on the federated architecture, management and operation issues

WP4 milestones

M4.1: Federation requirements (M12)

- First version of the federation requirements after a thorough identification of the various needs from the testbeds involved
- Means of verification: practical list of testbeds, software solutions in use and issues for federation

M4.2: Federation architecture (M24)

- Software components for the federation of the various testbeds
- Means of verification: practical list of software solutions and their interactions. Partial deployment in some of the testbeds in operation enforcing the global share of their resources

M4.3: Federation in action (M30)

- Deployment of the solution to federate the various testbeds in a single facility
- Means of verification: Experiments can run across the testbeds