

Scicat Soleil facilities updates

SciCatCon Meeting 2025 – Patrick Madela



SOLEIL II Upgrade Plan

- SOLEIL Synchrotron
- Overview of SOLEIL II upgrade
- Project timeline and structure of SOLEIL II



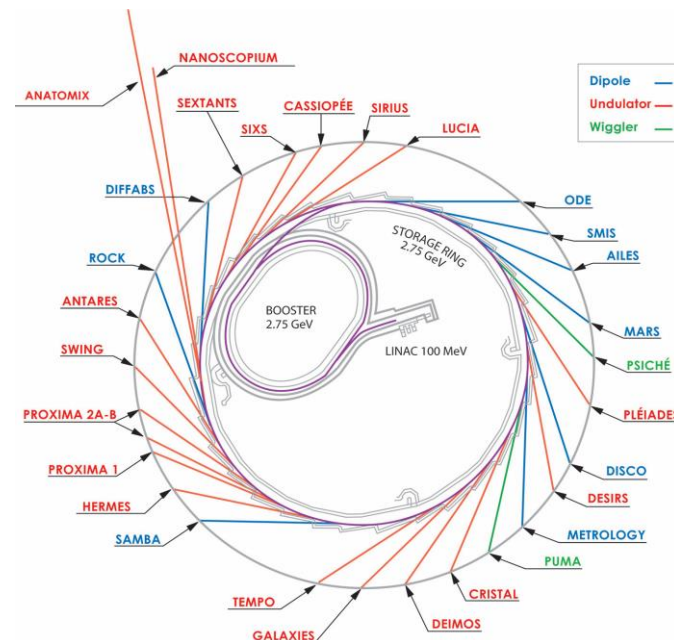
Status of SciCat Implementation

- Simplified Soleil expected timeline
- Access Control Mapping with DUO and Keycloak
- Current State of SciCat project at Soleil

SOLEIL II upgrade plan



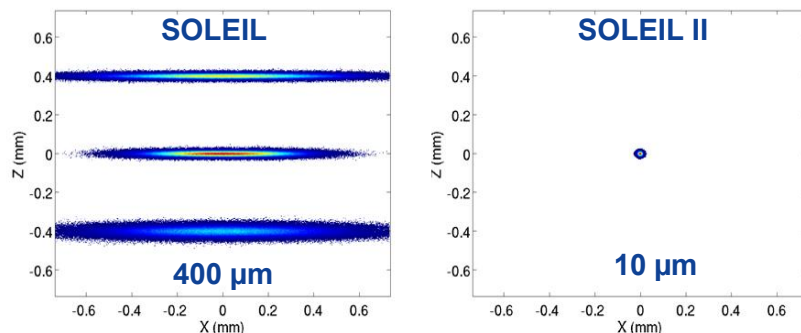
- National facility, near **Paris**
- Open to users **since 2008**
- Energy: far **IR to hard X-rays**
- Storage ring: **354 m, 2.75 GeV**
- **~450 staff members**
- **~30 in computing & electronics control acquisition**



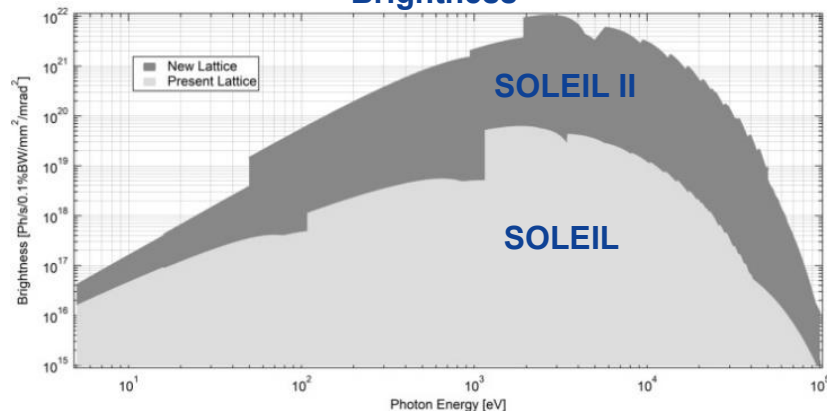
- **29 beamlines**
 - **24/7 operation** with over **98% reliability**
 - More than **65,000 users** since 2008
 - Users from **~1,200 laboratories** each year
 - More than **9,300 publications** since 2008
- (end 2024)

- Better accelerators and photon sources performances
 - Reaching an emittance < **100 pm.rad**.
 - Keeping the same electron beam energy : **2.75 GeV**
 - Preserving a maximum current of **500 mA** in the multibunch mode.

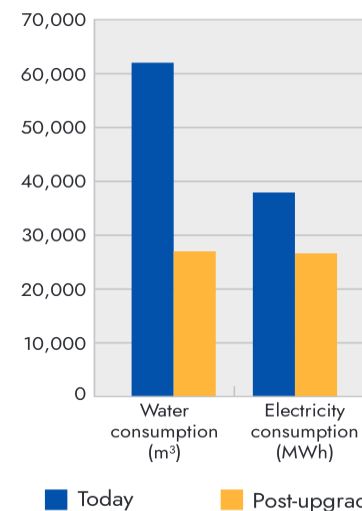
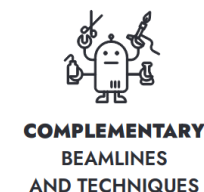
Beam sizes



Brightness

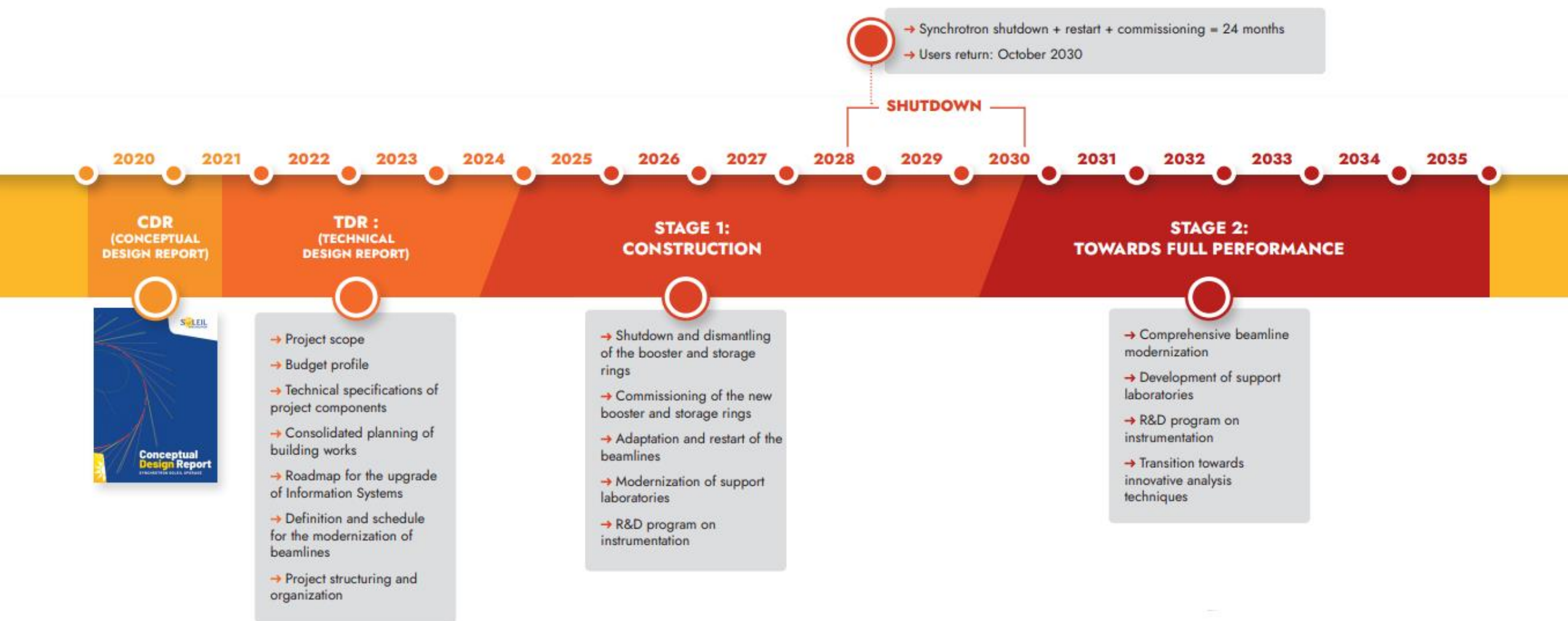


- New access mode for **more efficient** beamline use



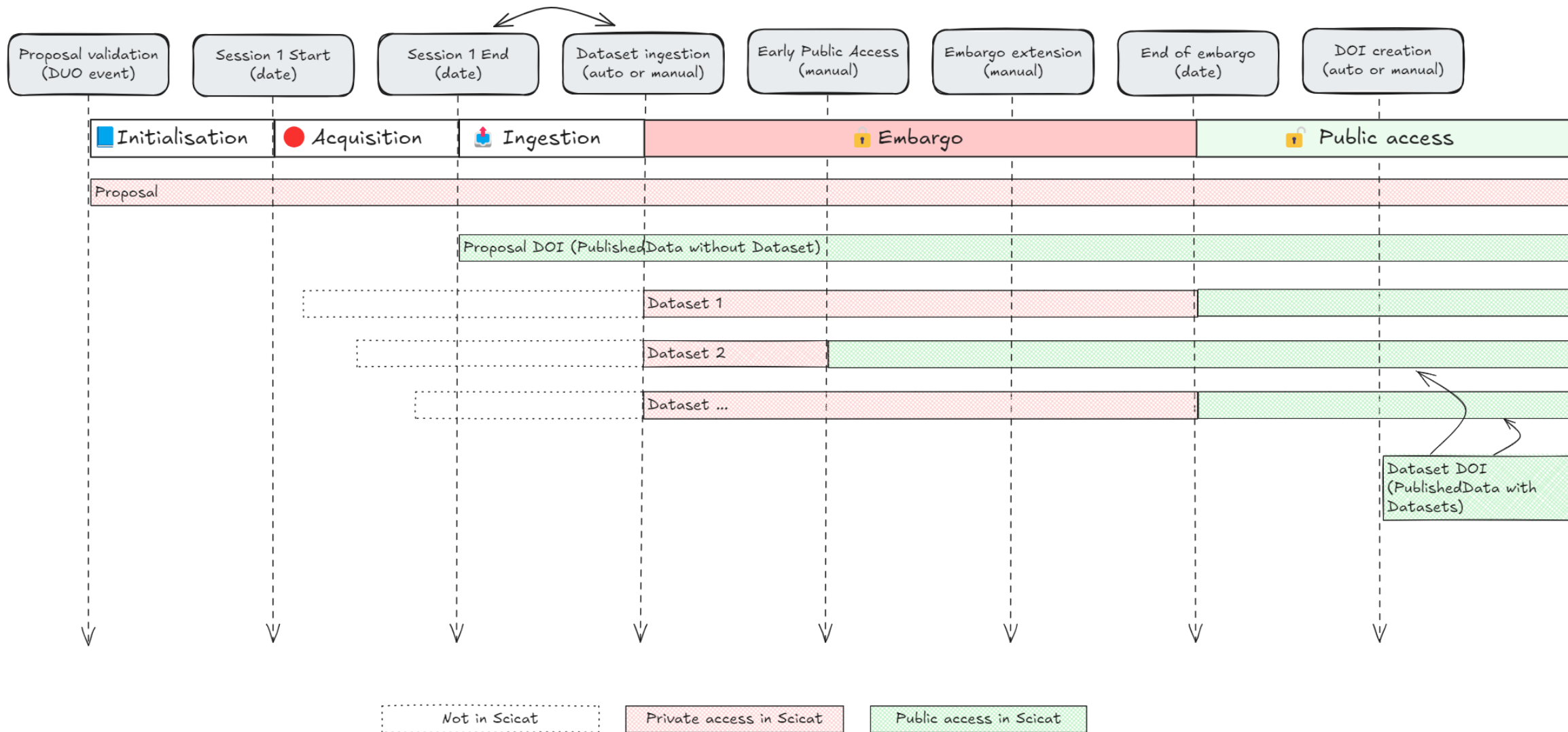
Greener infrastructure

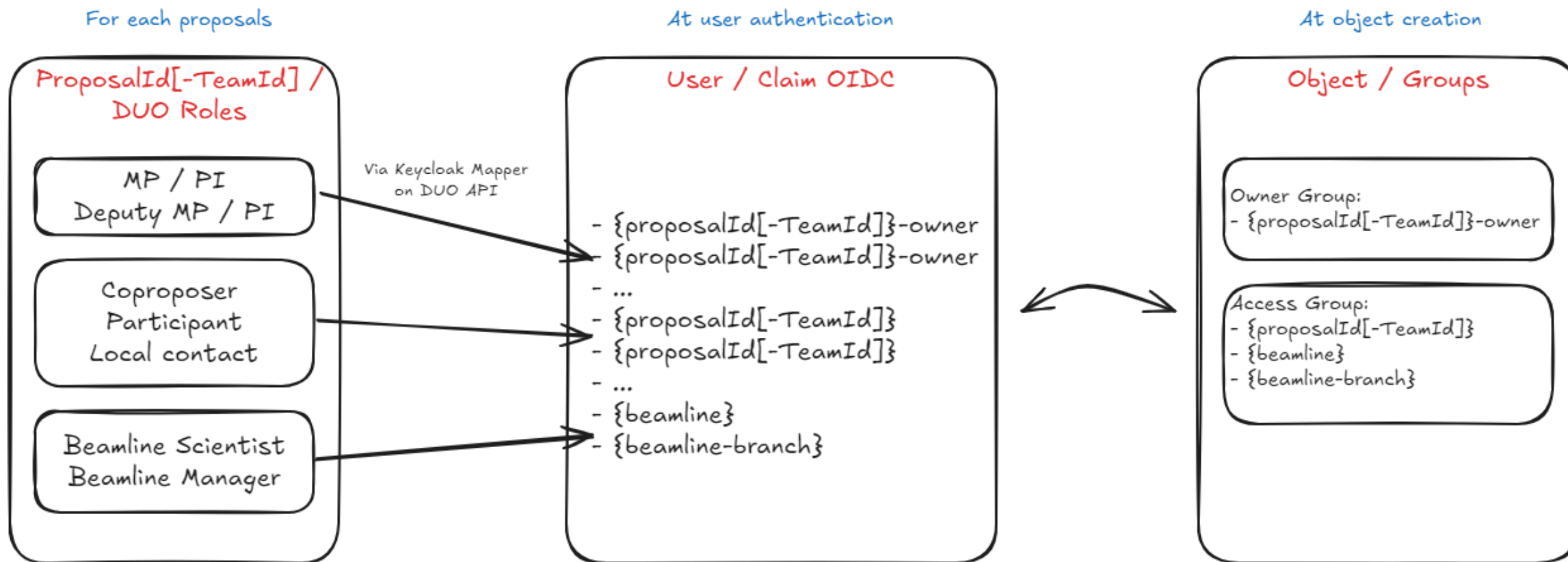
- Smaller environmental footprint
- Lower power & water use
- Reduced operating costs

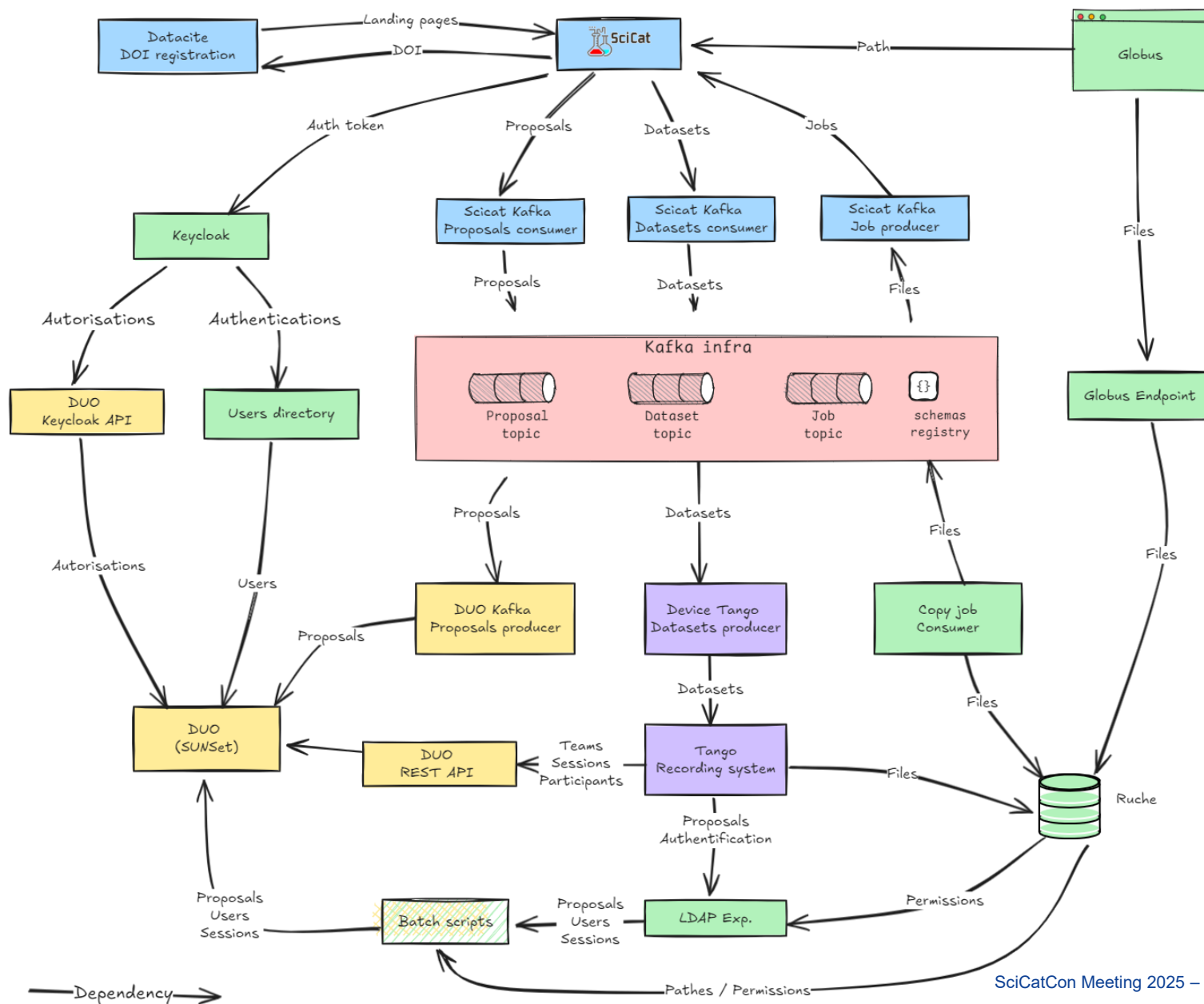


The future of SOLEIL with the SOLEIL II project

Status of SciCat Implementation







	Done	In progress / Todo
Infrastructure	<ul style="list-style-type: none"> • Deployment of environments with Docker Swarm • Authentication and access control with Keycloak • Mapping of DUO roles to owner and access groups • Kafka infrastructure 	<ul style="list-style-type: none"> • Accessibility from Internet
Proposals ingestion	<ul style="list-style-type: none"> • DUO Kafka proposals producer • Scicat Kafka proposals consumer 	
Datasets ingestion	<ul style="list-style-type: none"> • Project management device update to get DUO data for Dataset • Dataset management from the control system • Metadata acquisition system update for Dataset • Device Tango Dataset producer • Scicat Kafka datasets consumer 	
Public file access		<ul style="list-style-type: none"> • Job implementation for managing files access using Kafka
Data registration		<ul style="list-style-type: none"> • DOI registration configuration • Automatic Proposal DOI generation

Milestone: first test datasets ingested from a beamline last week 🎉 🎉 🎉



- Thank you to all the contributors of Scicat
- Main Soleil Scicat project contributors: J. Perez, M. Ounsy, Y.M. Abiven, G. Abeillé, S. Poirier, I. Chado, Y. Taheb, A. Buteau, A. Vandebosch, C. Vidal