



# Electrical Safety Project WP6 Annual Review 2024

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Indico 1416608

# WP6 - Overview

## **6.1 Documentation** WPL: Denis Ribiollet (as of 03.2025)

Establish workflows, roles, and responsibilities for the creation and maintenance of documents pertinent for the electrical safety

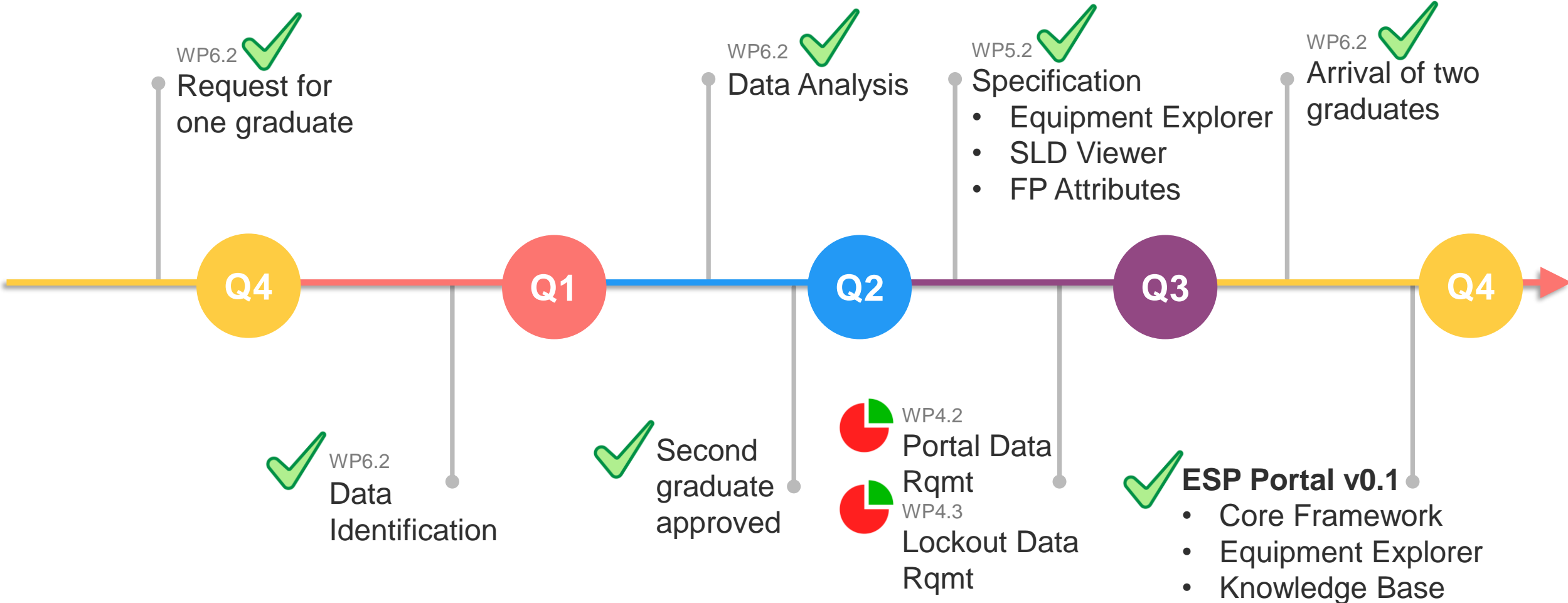
## **6.2 Databases & Electrical Safety Portal** WPL: Lukasz Pater

Assess databases for electrical data, collaborate on a unified portal specification, and develop the portal.

## **WP 6.3 Electrical Knowledge Dissemination** WPL: ESP Core team

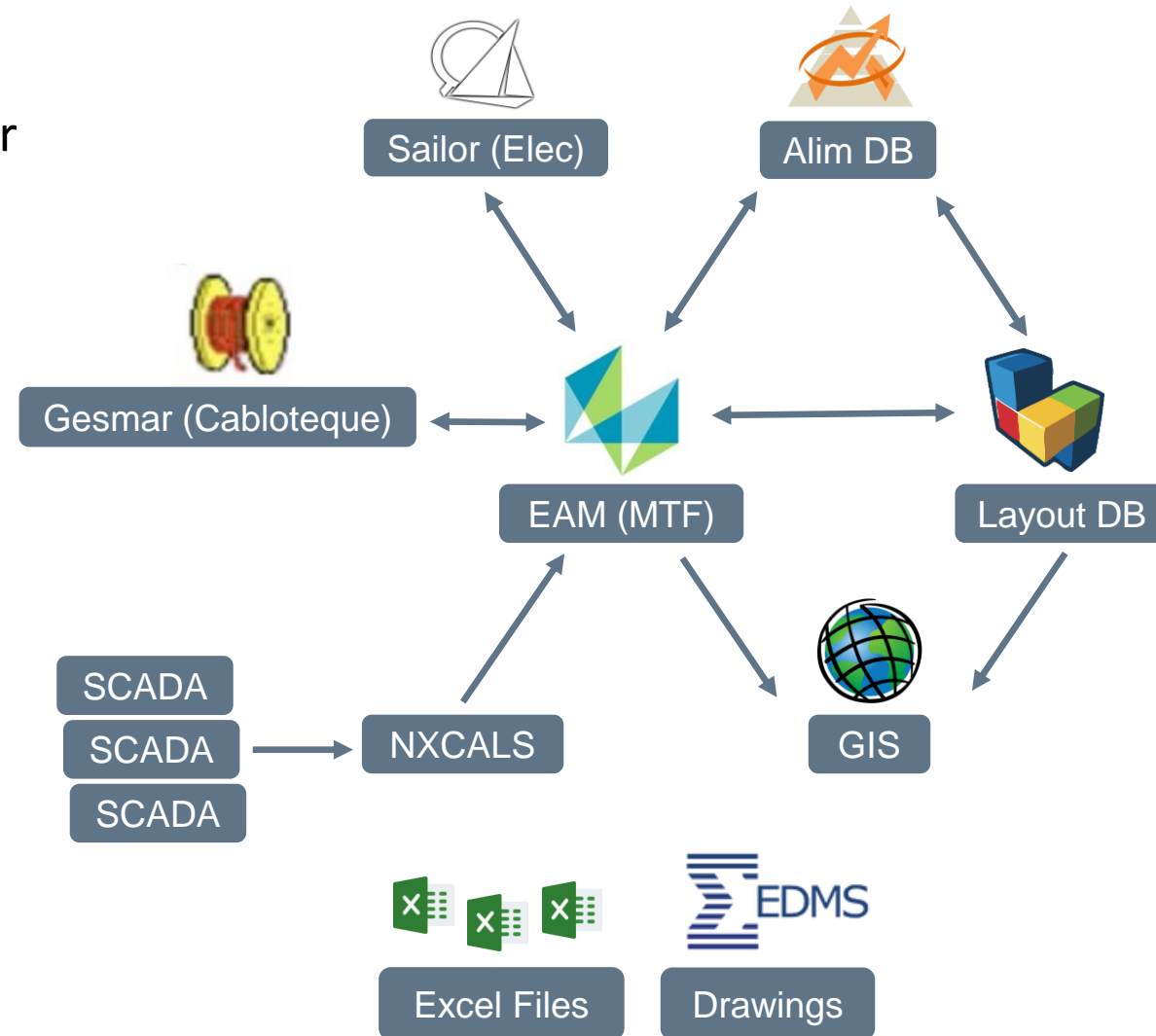
Implement processes and procedures to secure the distribution of electrical knowledge and standards in the ATS sector.

# Roadmap Recap (Q4 2023 - 2024)

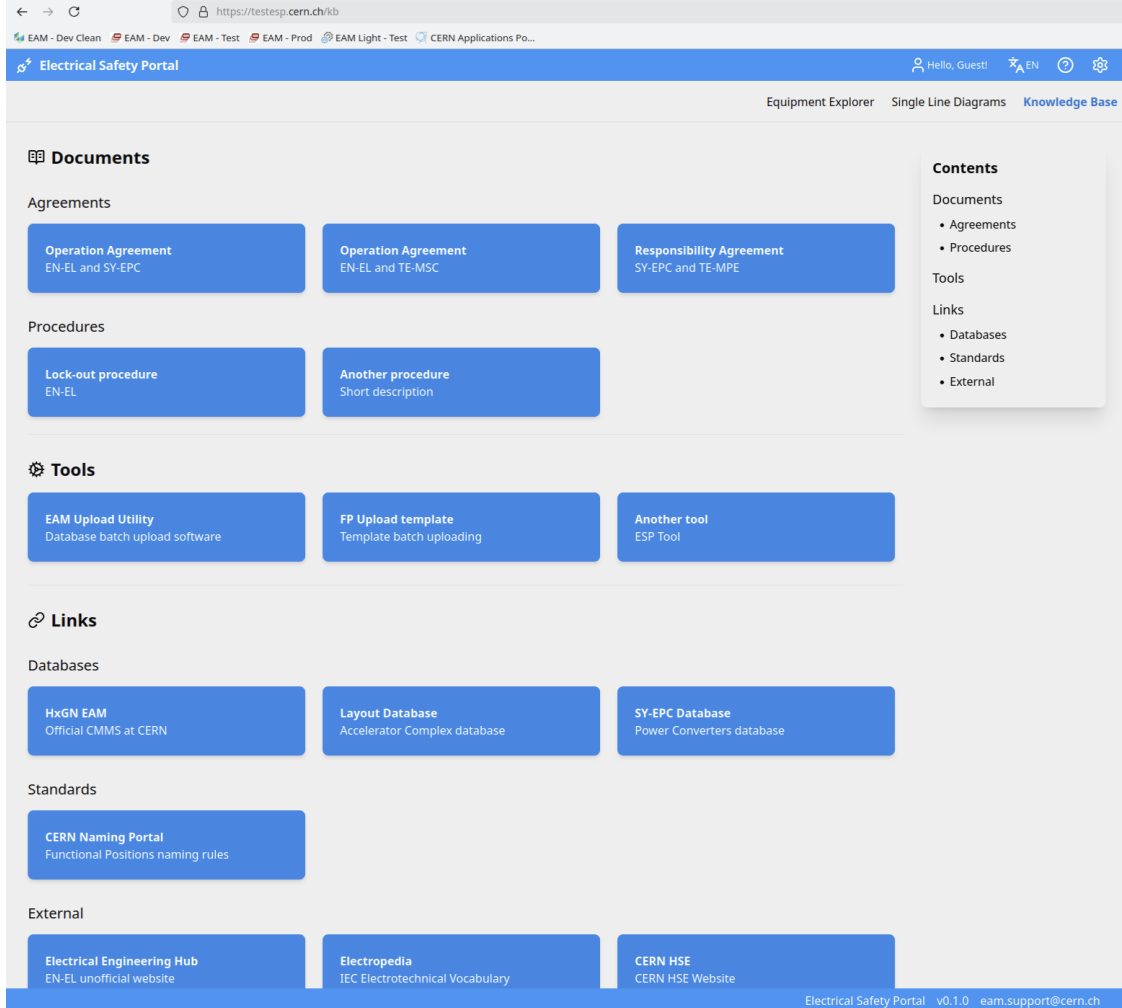
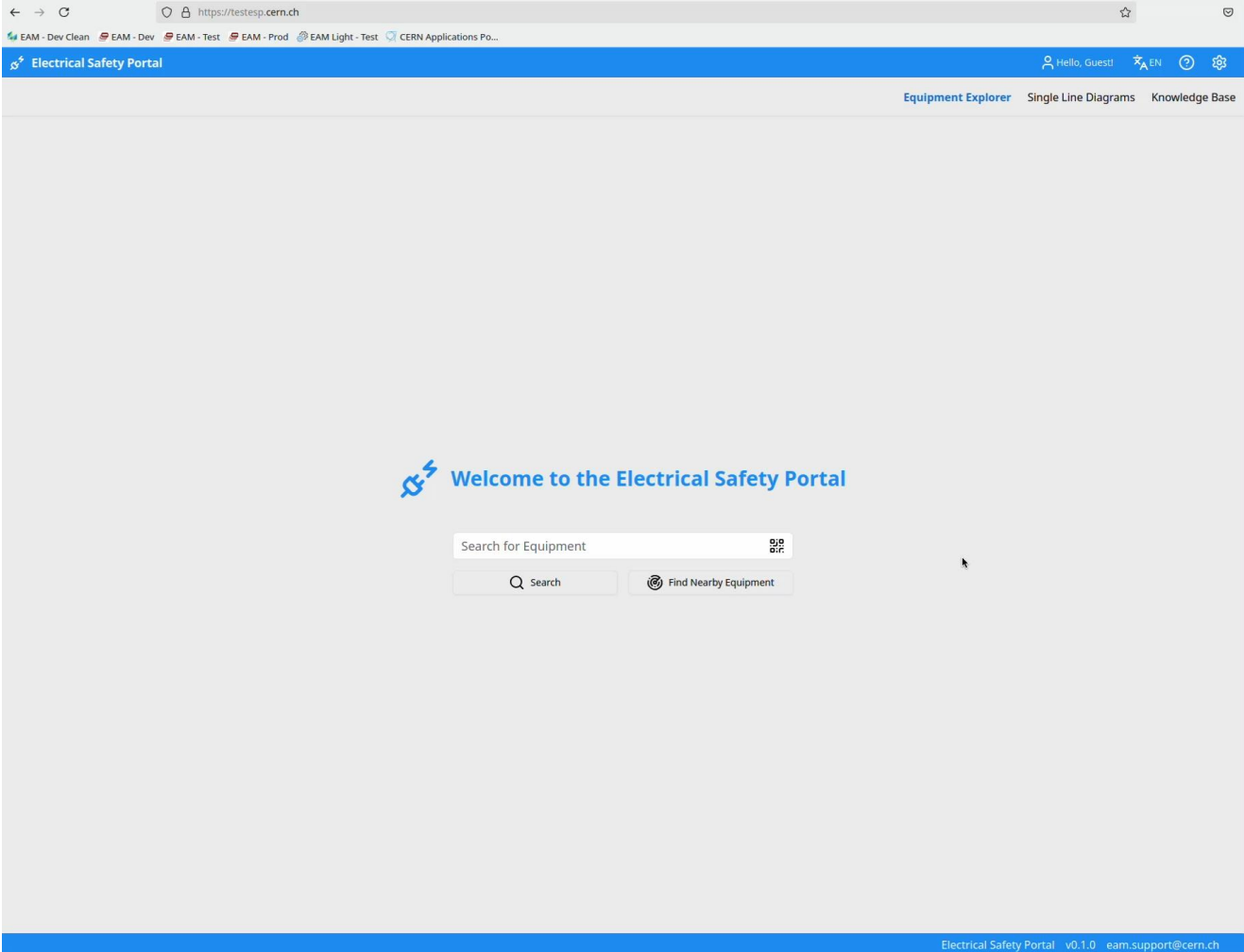


# Data Identification and Analysis

- The initially identified systems relevant to ESP appear to be largely comprehensive and are expected to serve as the project's foundation
- Additional applications and databases were reviewed, but most, such as ElecCalc—a software used for electrical calculations—were deemed outside the project's scope.
- NORMA DB has been transferred to EN-IM and is currently undergoing a rewrite, with minimal likelihood of directly impacting ESP.
- We are also in discussions with the IMPACT team to explore how it might contribute to ESP



# Electrical Safety Portal v0.1 – Equipment Explorer



# Electrical Safety Portal v0.1

- Built on EAM, Gesmar, Layout, GIS (and Alim) to maximize reuse of existing systems.
- Developed using the EN-IM tech-stack, ensuring rapid development and familiarity for most software developers within the group.
- Infrastructure established with three environments across three dedicated availability zones.
- Responsive design optimized for mobile usability.

The screenshot displays the Electrical Safety Portal interface for a specific piece of equipment, UIAE-201. The page is titled "UIAE-201 TABLEAU DE DISTRIBUTION ELECTRIQUE".

**PROPERTIES:**

- EQUIPMENT TYPE: Circuit Breaker
- EQUIPMENT OWNER: EN-EL
- EQUIPMENT OPERATOR: Kamil Zielinski
- OPERATION DELEGATION: Delegated to Substation Team
- CURATIVE MAINTENANCE: Performed by EN-CV
- CORRECTIVE MAINTENANCE: Monthly Checkups
- PREVENTIVE MAINTENANCE: Quarterly Inspection
- RESPONSIBILITY LIMIT: Yes
- SHORT CIRCUIT IK3: 15.6 kA

**ELECTRICAL DEPENDENCY GRAPH:**

Depth: 2. Included in graph: Powered by (Electrical) X

The graph shows a dependency structure where EBD111/2U (P) is powered by EBD1/2U (P), ESD350/2E (P), and ESD917/2E (P). ESD350/2E (P) and ESD917/2E (P) are also powered by ESA1/2U (P). Both EBD111/2U (P) and ESA1/2U (P) are powered by the main equipment, UIAE-201 (P).

**COMMENTS:**

- CV: 13-NOV-2001 08:56 by Cooling & ventilation (Super Util)  
Acces si Arret Machine  
Tableau UIAE-201 PLAN LEP-660-UI-6228-2  
Principe de distribution BT PLAN LEP-660-UI-6225-0
- KA: 11-NOV-2024 14:00 by Kamil Zielinski  
12-NOV-2024 22:43 by Lukasz Piotr Pater  
Troubleshooting completed according to ODM: 3245769

**CABLES:**

Number	Type	Description	Functional Position 1	Element 1	Connector 1	Functional Position 2	Element 2	Connector 2
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**MAP:**

The interface also includes a table of related documents:

ID	Title	Status
> 2080093 v.1	Circuit breakers settings table	In Work
> 2080090 v.1	Tableau de Distribution Electrique	In Work
> 2080092 v.1	Switchboard drawing	In Work
> 2080094 v.1	Calculation note	In Work
> 2080086 v.1	Tableau de Distribution Electrique	In Work

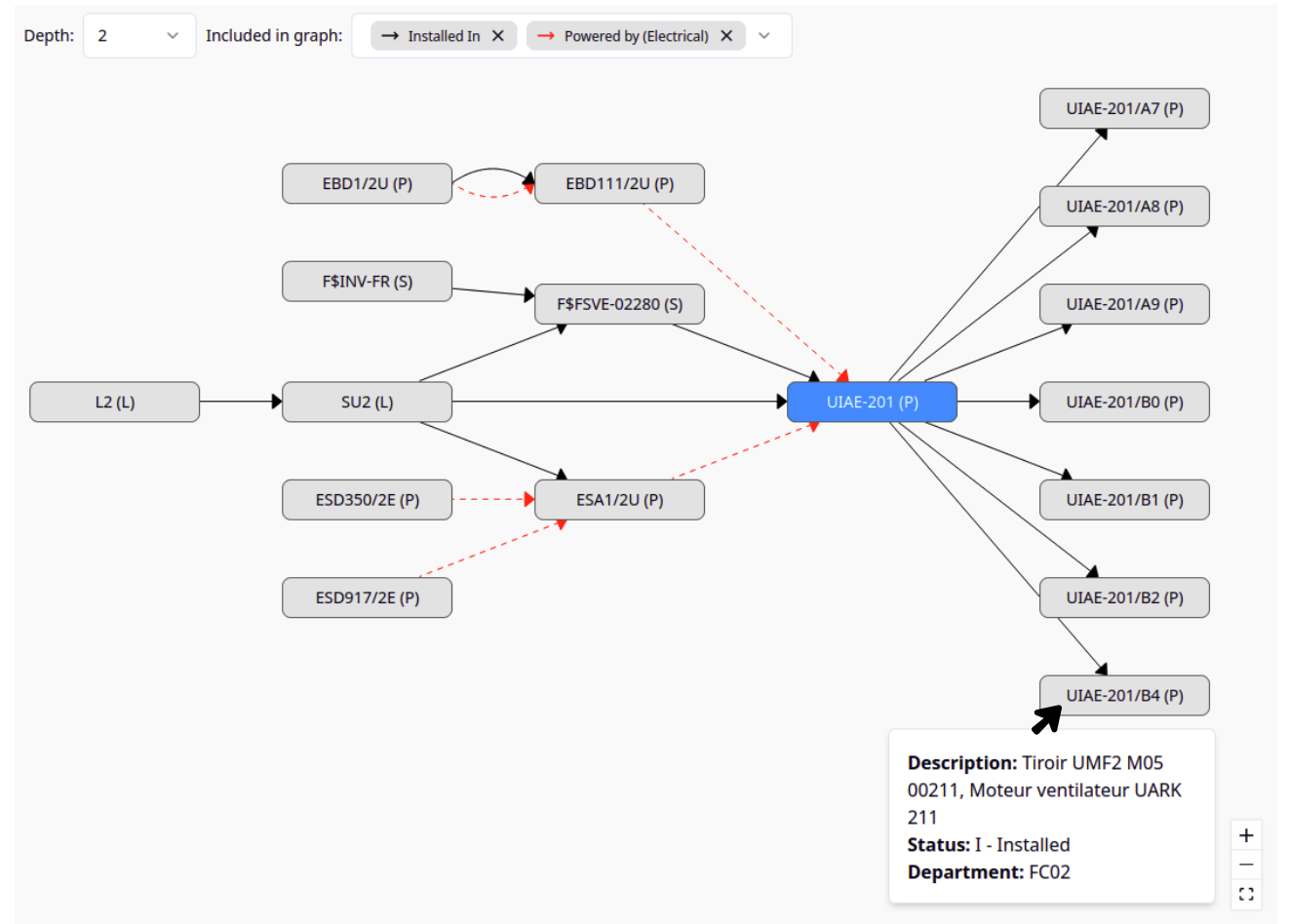
Footer: Electrical Safety Portal v0.1.0 eam.support@cern.ch

# Electrical Safety Portal v0.1

- Real-time updates, enabling instant reflection of edits.
- Intuitive, geolocation-driven interface that dynamically adjusts content visibility based on user role, location, and contextual relevance.
- Single Sign-On (+ guest mode) and e-groups/GRAPPA integrated.
- Role-based access control fully supported.
- Multilingual support.
- Caching mechanism implemented for optimized performance and to maintain functionality in case of underlying system failures.

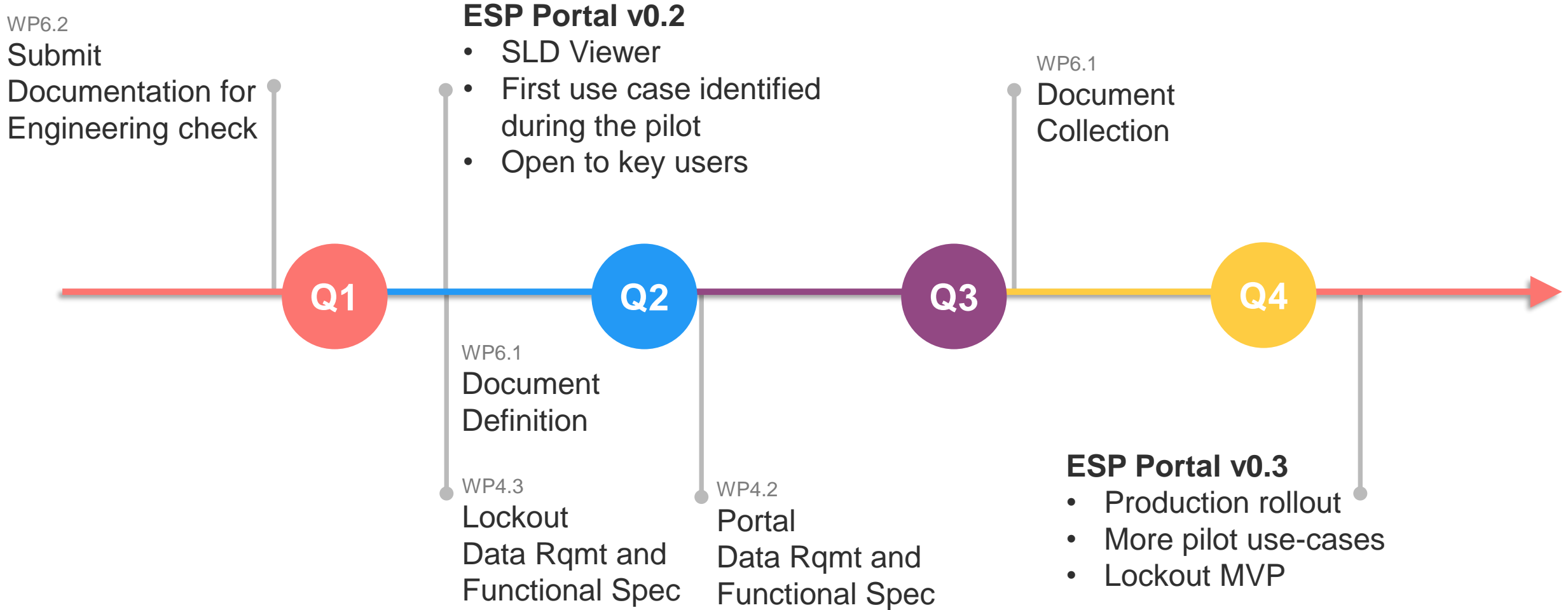
# Equipment Graph

- The Equipment Graph was developed to display various relationships between equipment in EAM.
- Recently, it was completely rewritten to align with the technology stack currently in use within the group, keeping ESP requirements in focus.
- This new version enables full flexibility in terms of rendering options, animations, and declarative configuration of behavior.
- Numerous discussions with EN-EL helped shape and finalize the requirements.



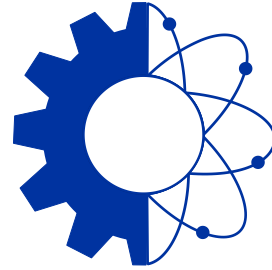
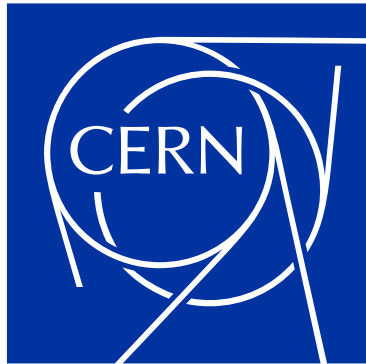


# Roadmap 2025



# Conclusions

- The two graduates, Iulian and Afonso, joined us two weeks ago and are steadily familiarizing themselves with the technologies and the domain.
- The project pilot urgently needs to explore real-world use cases, which will also aid in identifying data quality issues.
- As of Q1 2025 we will work in sprint cycles, actively engaging relevant stakeholders to shape the tool's development.
- Complete the document outlining the various systems relevant to the project, then submit it for an engineering review (Q1 2025)
- Share the specification with the IMPACT team and begin work on the lockouts (Q2 2025)
- Graduates are an invaluable foundation for our team, but in the future, dedicated staff will be essential to manage growing complexity and provide continuity.



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