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 Federal Ministry
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One Year Until the EU Battery Passport: Preview Our Test Environment and Get Ready

Webinar – 03 February 2026





Welcome & introduction



Thomas Knothe
Fraunhofer IPK



Agenda for today

Time 	Topic 
16:00 – 16:05	Welcome & introduction
16:05 – 16:15	Franziska Zibold, DG GROW: Digital Product Passport: looking ahead
16:15 – 16:50	BatteryPass-Ready first results & insights <ul style="list-style-type: none">- Project scope, current status- Battery passport data- From system requirements to test environment- Live demo test environment & roll-out plan
16:50 – 17:00	Carolynn Bernier, CIRPASS 2: CIRPASS 2 approach to interoperability testing for digital product passport pilots in other sectors
17:00 – 17:25	Q&A Session
17:25 – 17:30	Closing



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Digital Product Passport: looking ahead



Franziska Zibold
DG GROW – European Commission





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Project scope & current status



Patrick Gering
Fraunhofer IPK



BatteryPass *ready*

Delivering a test system to advance battery passport readiness

Key Facts on BatteryPass-Ready

Pre-competitive project to **support industry & SMEs** in implementing battery passports **by delivering a test system & guidance, co-funded by the Federal Ministry for Economic Affairs and Energy (BMWE)**

Four **work packages** including:

1. System requirements and stakeholder needs
2. Test system specification and implementation
3. Deployment, application and optimization
4. Project management and stakeholder involvement

Evolved from the Battery Pass project

2-year timeframe from April 2025 to March 2027

CONSORTIUM LEAD



CONSORTIUM PARTNERS

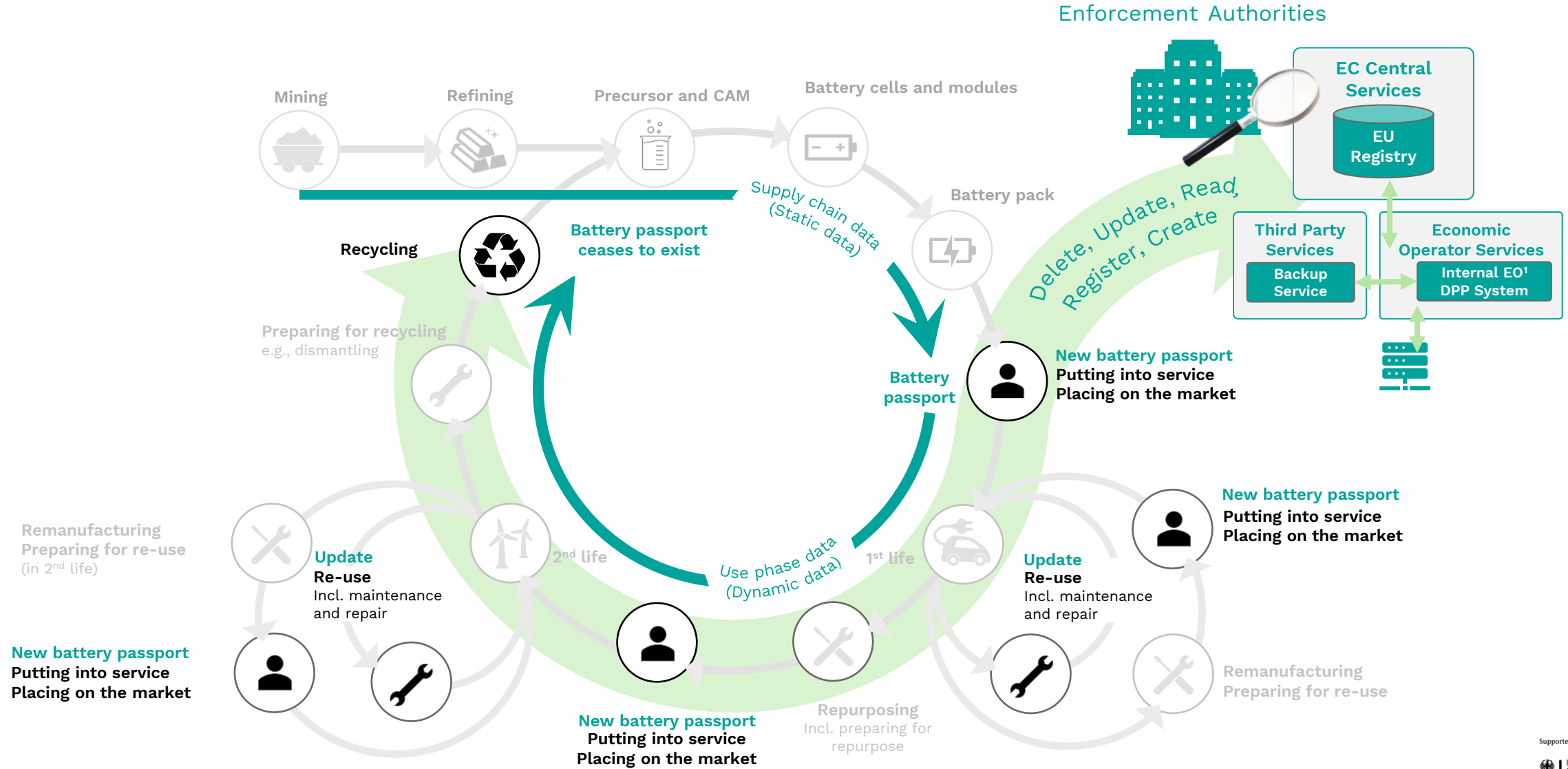


ASSOCIATED PARTNERS



Kick-off event of the BatteryPass-Ready project in Berlin in May 2025

Inside the Complex Battery Passport Ecosystem



Remanufacturing
Preparing for re-use
(in 2nd life)

New battery passport
Putting into service
Placing on the market

Update
Re-use
Incl. maintenance
and repair

New battery passport
Putting into service
Placing on the market

Repurposing
Incl. preparing for
repurpose

Update
Re-use
Incl. maintenance
and repair

New battery passport
Putting into service
Placing on the market

Remanufacturing
Preparing for re-use

BatteryPass *ready* creates a test environment

Responding to Key Challenges

Challenges in the DPP Ecosystem

High complexity of overall system

- Automated multi-organisation collaboration;
- High system load conditions.

Tight time frame

- Technical standards (JTC 24) by summer 2026;
- Delegated acts ongoing for data standards.

Dynamic ecosystem and moving targets

- Changing system specification & data;
- Frequent validation needed.

Purpose of BatteryPass *ready*



Validate data completeness and plausibility



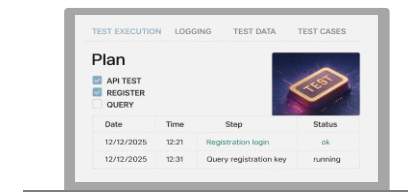
Verify system functions, consistency and interoperability



Guidance for policy and implementers



Describe options on operating model for test system



BatteryPass *ready* Associated Partners and Advisory Board

Associated Partners

bitkom

VDA | Verband der
Automobilindustrie

VDMA

ZIV DIE
FAHRRAD-
INDUSTRIE

Advisory Board Members

Holger Berg
Wuppertal Institut

Boris Böhme
BMW

Ilka van Dalwigk
RECHARGE

Jens Gayko
VDE

Thomas Götz
Wuppertal Institut

Benjamin Helfritz
DIN e.V.

Lars Johannsen
BMUKN

Stefan Wolf
KLiB e.V.

Susanne Kuch
DAkKS

Ina Schieferdecker
TU Berlin


Martin Schreck
Norwegian Standard

BatteryPass *ready* Supporting Partners

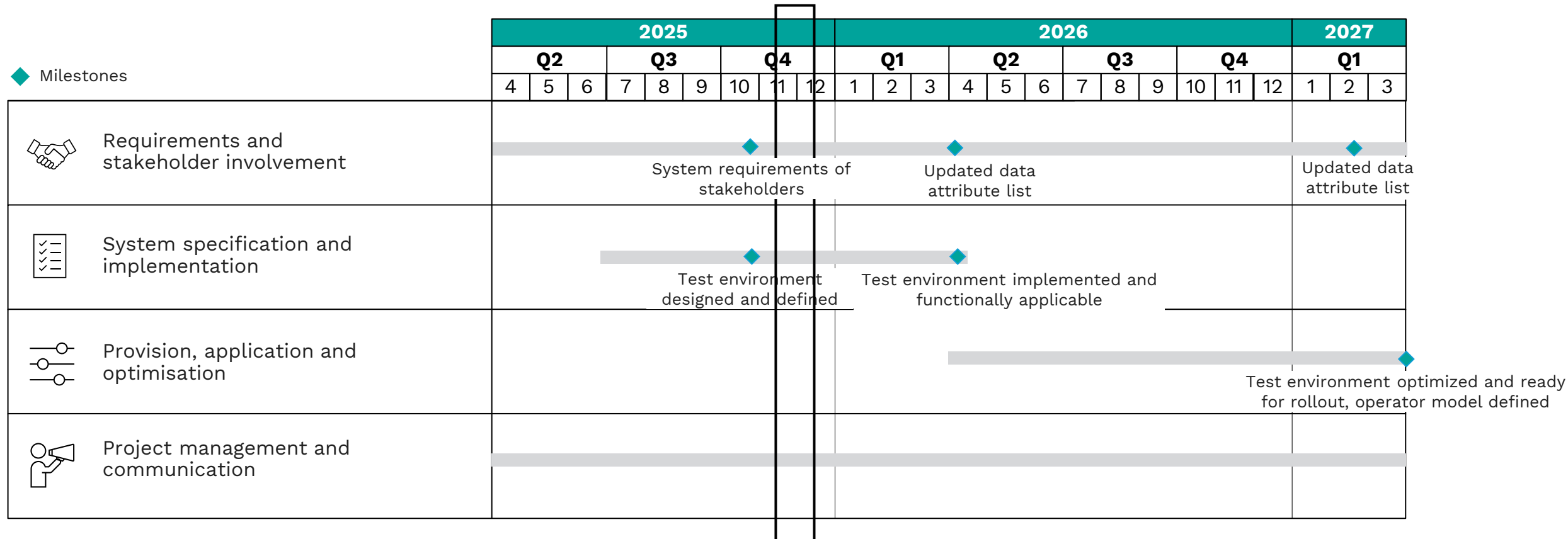
100+ Supporting Partners



BatteryPass *ready* timeline

 Where we stand today

 Milestones



Status

preEN Drafts

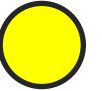


Key assumptions for the architecture

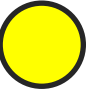
Battery passports must be registered in the EU registry (BattReg Art 77 (10))



- Unclear: which identifiers must be provided to registry



- Battery passports to be introduced regardless of registry availability (because only relevant for customs etc.)

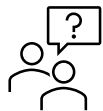


Battery passports require a back-up (BattReg, Art 78e (BP to be available after EO ceases to exist))



- Unclear: Is a third party required?





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Battery passport data

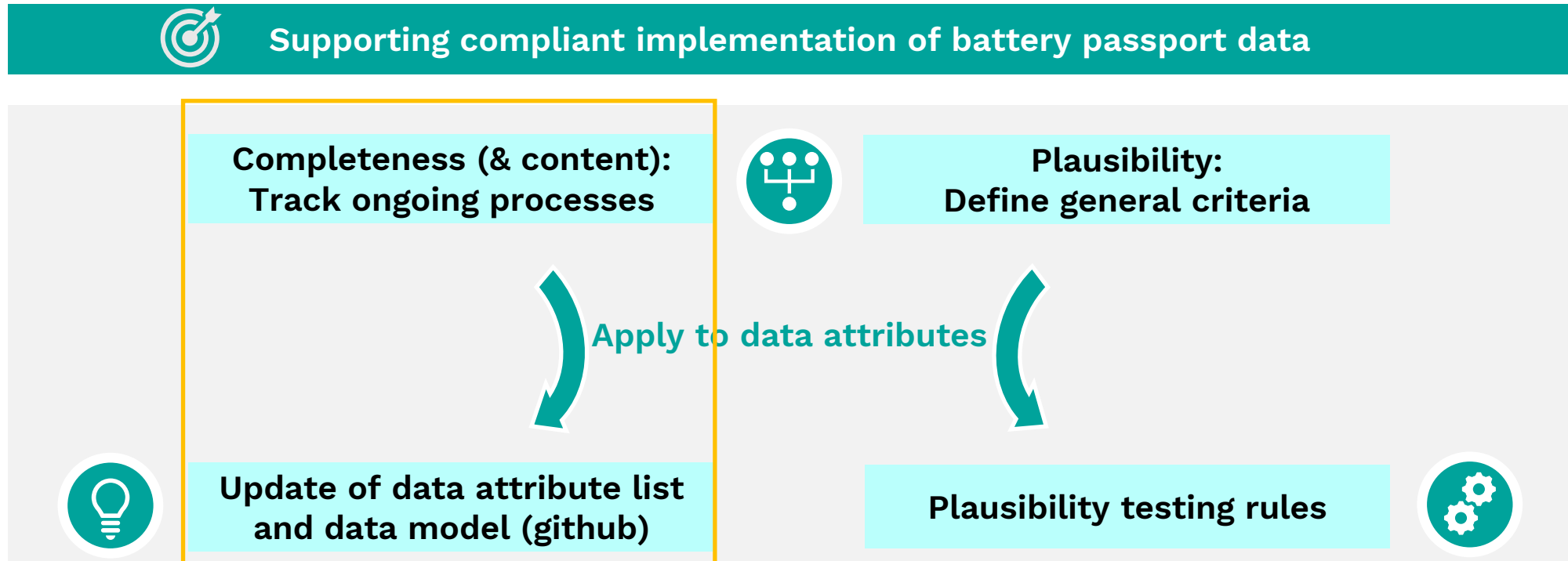


Johannes Simböck
acatech



Data completeness and plausibility

General approach



Key Step: Analysis of Battery Passport data

DIN DKE Spec 99100 as starting point

Data categories for the battery passport¹ (select data attributes shown below)

Various data points are not defined in detail or still being specified through delegated acts and standardization efforts





Battery Pass

Battery ID: 01010





Battery passport ID: batt.pass/01010

Responsible economic operator




Identifiers & product info

-  Manufacturing info (identity, place, date)
-  Battery category
-  Battery mass
-  Battery status

Labels and conformity

-  Symbols and labels
-  Meaning of labels & symbols
-  Declaration of conformity
-  Compliance of test results





Carbon footprint

-  Carbon footprint (5 metrics)
-  Weblink to CF study
-  CF performance class





Supply chain due diligence

-  Due diligence report




Materials & composition

-  Hazardous substances
-  Battery chemistry
-  Critical raw materials
-  Materials used in cathode, anode, electrolyte

Circularity & resource efficiency

-  Recycled content shares
-  Manuals for removal, disassembly, dismantling
-  Component part numbers & spare parts information
-  Safety measures/instructions

Performance & durability

-  Capacity, energy, power, SoH
-  Expected lifetime
-  Negative events



Ongoing legislation

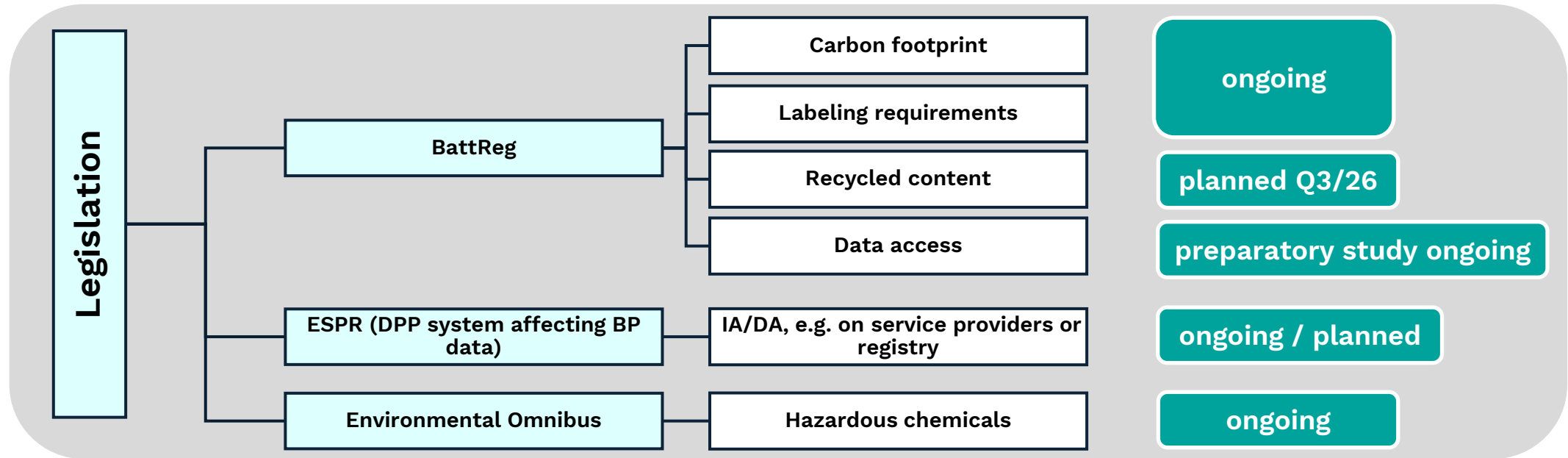


Ongoing standardization



Ongoing implementation

Overview: Ongoing legislation affecting battery passport data



Example: Proposed changes in the Data Attribute List based on JTC-24 drafts

DPP Information

Attribute	Short Definition/Understanding
DPP schema version	The reference standard the DPP instance schema refers to
DPP Status	The current status of the DPP as a digital resource
DPP Granularity	The required level of information with regard to product item, batch or model
Date-time of latest update of DPP	Date and time of the latest update of the battery passport

Identifiers

Attribute	Short Definition/Understanding
Battery passport identifier	The unique identifier of a battery passport
Battery identifier	The unique identifier of the battery <i>item</i>
Battery model Identifier	The unique identifier of the battery model.
Economic operator identifier	The unique identifier of the economic operator
Manufacturer identifier	The unique identifier of the manufacturer of the battery.
Facility identifier	The unique identifier of a facility
Economic operator information	Information related to the economic operator
Manufacturer information	Information related to the manufacturer of the battery



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From system requirements to test environment



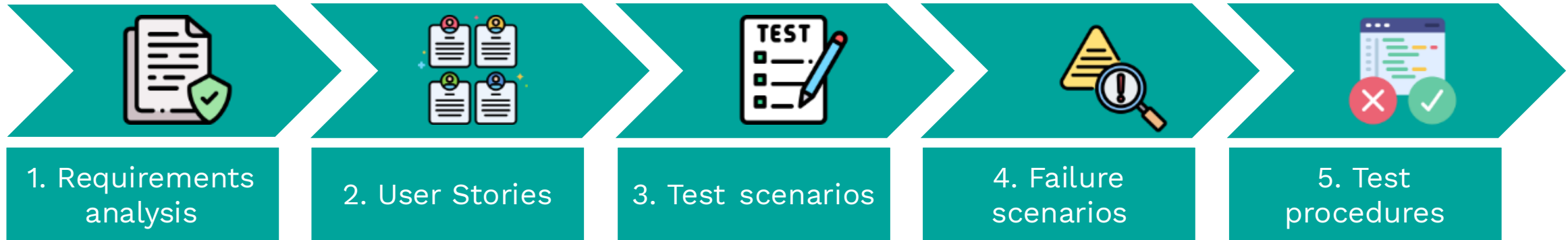
Elena Andrushchenko
TU Berlin



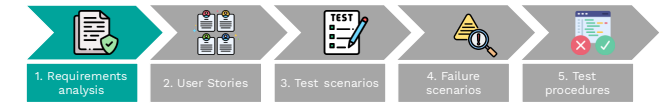
Development of test procedures

Objective of the Test Environment:

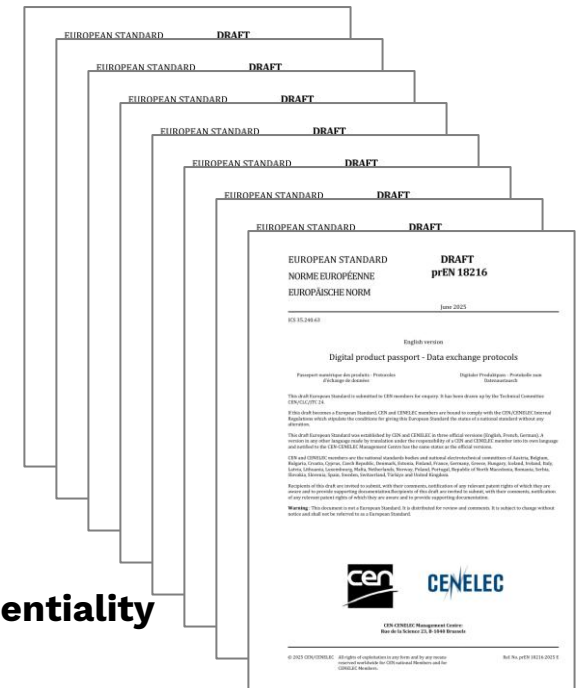
- Evaluation of the implementation and functionality of battery passport systems within the company
- Assessment of seamless data exchange and the machine-readable, and interoperable provision of information



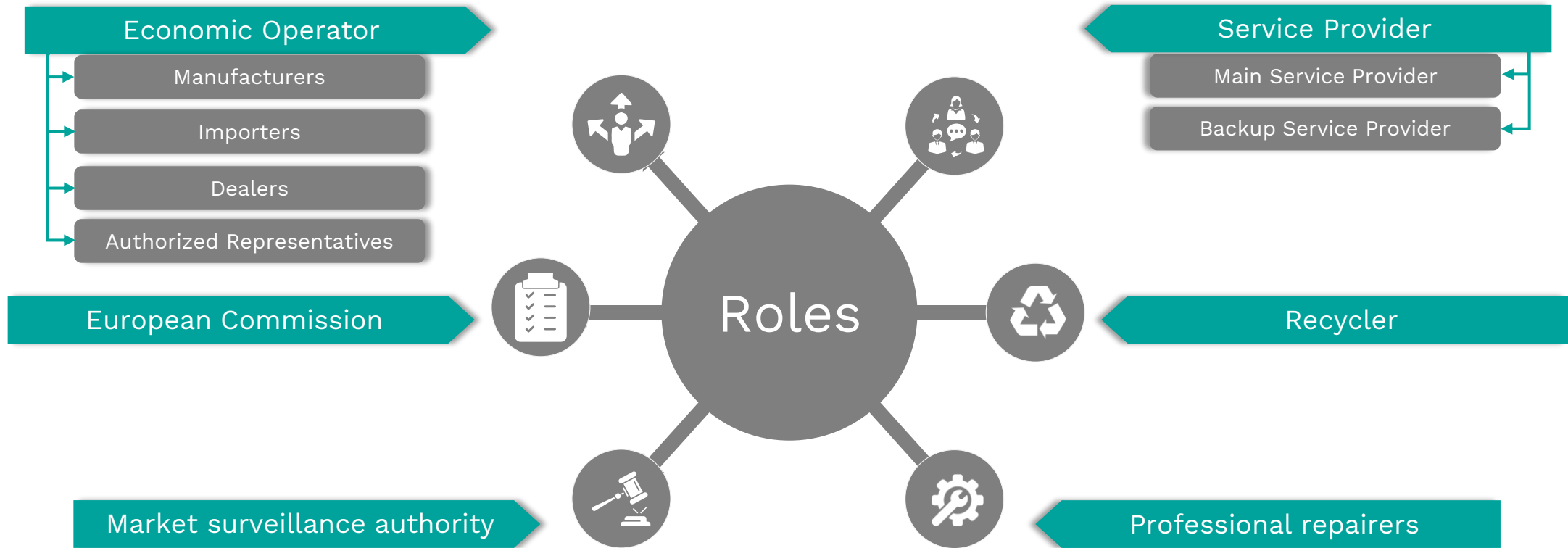
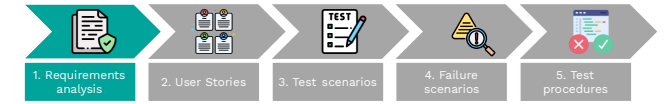
Draft standards



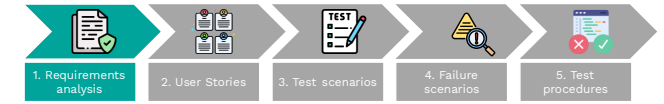
- July / August – Publication of Draft Standards for the Digital Product Passport
- Draft standards prEN 18216, 18219, 18220, 18221, 18222, 18223, 18239, 18246
- prEN 18216 – Data exchange protocols
- prEN 18219 – Unique Identifiers
- prEN 18220 – Data carriers
- prEN 18221 – Data storage, archiving and data persistence
- **prEN 18222 – Application Programming Interfaces (APIs)**
- prEN 18223 – System interoperability
- **prEN 18239 - Access rights management, information system security, and business confidentiality**
- prEN 18246 - Data authentication, reliability and integrity
- The draft standards support a systematic identification and analysis of the requirements for future systems of the various stakeholders.



Roles per prEN 18239 and 18222 draft standard

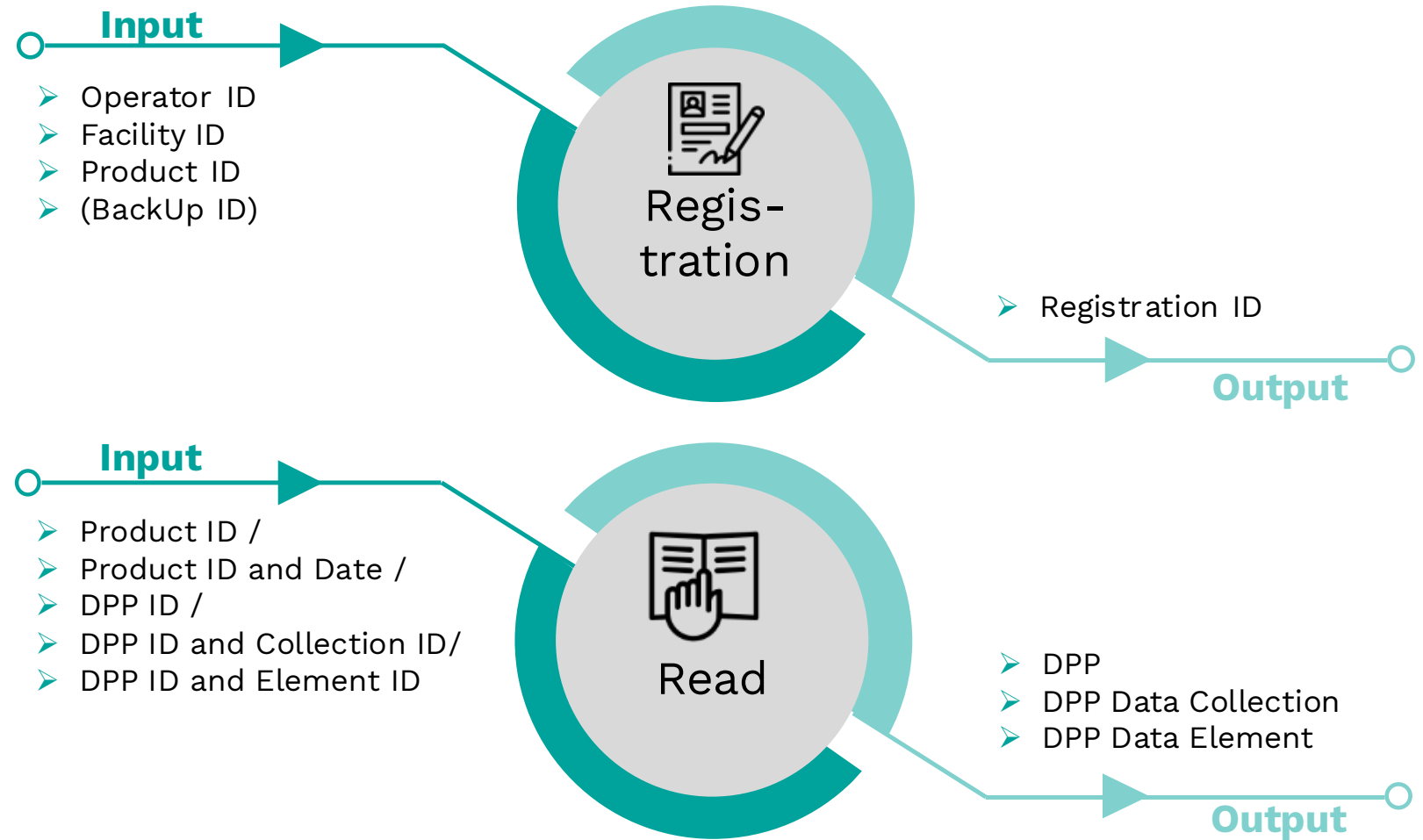


Functionalities per prEN 18222 draft standard

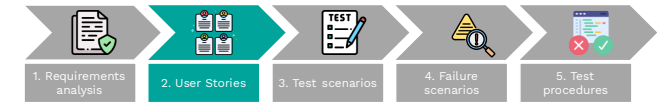


- Mapping of functions and actors to generate test scenarios

1. Functions form user stories.
2. User stories combined with actors form test scenarios.

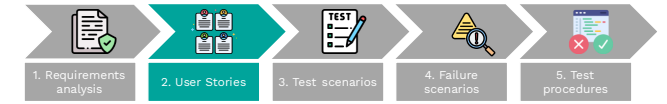


Overview User stories



Working Assumptions for User Stories

Place battery on the market



Place battery on the market

Authorization by Registry

- The Authorization process with the registry will be performed using eIDAS

Registration

- Input parameters for the registration process will be the following IDs: Economic Operator ID, Product ID, Facility ID, Backup ID
- The Registration ID will not be a data point in the DPP itself, rather it functions as a proof of registration

Authorization by Service Provider

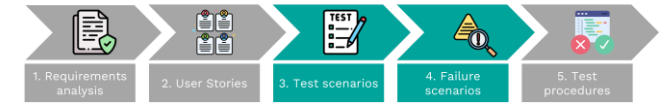
- The Authorization process with the Service Provider will be performed using OAuth2.0

Backup

- Creating a Backup Copy is mandatory for Battery Passports
- The Backup is created after the registration process is successfully completed
- The Create API is used for creating Backups with the Service Provider

Test and Failure scenarios

Place battery on the market



- Economic Operator wants to register a new Battery Passport and place it on the market
- DPP Service Provider wants to register a new Battery Passport and place it on the market



Authorization by Registry

- **Insufficient Authorization Rights:** The Economic Operator successfully authenticates via eIDAS, but their account lacks the necessary permissions to register battery passports.

Registration

- **Invalid Data:** The EO sends incorrectly formatted data, the registration is rejected, and a specific error message is returned.
- **Duplicate Identifier:** The EO attempts to register a battery that has already been registered. The registration is blocked, and an error message indicates that the battery is already registered

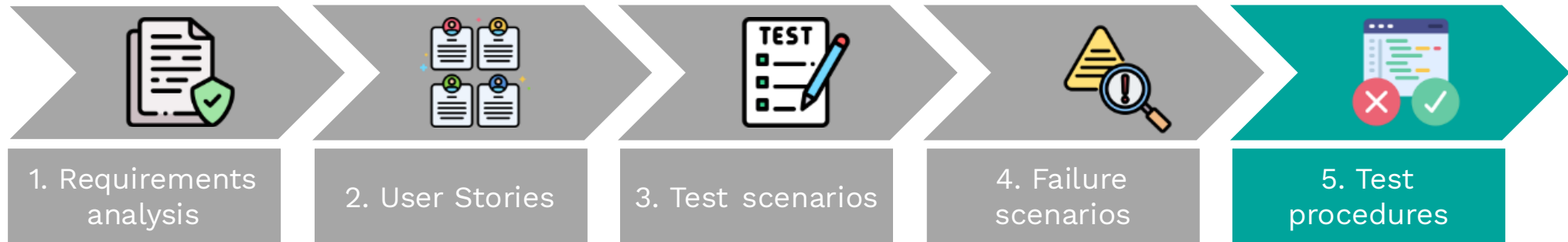
Authorization by Service Provider

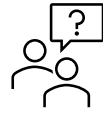
- **Invalid OAuth2.0 Credentials:** The Service Provider provides incorrect client credentials during the OAuth2.0 authentication. The authorization is rejected, and an error message indicates invalid client credentials

Backup

- **Malformed Backup Request:** The EO sends a technically broken request to the Create API. The system cannot parse the data, and the Service Provider receives a technical failure message such as "400 Bad Request."

Test procedures





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Test environment proof of concept: Early insights



Jonathan Fritz
GEFEG



Key Step: Building the test system

Objectives and features to support the battery ecosystem

Objectives

Support compliance

The digital product passport requires transparent and verifiable data exchange between all actors.

Safeguard interoperability

Different systems (Economic Operator, registry, Backup Provider) must interact reliably.

Enable early testing

A dedicated test environment allows early validation before large-scale implementation.

Features



Provide a modular test system

to simulate real DPP interactions end-to-end.



Integrate standardized tests step by step

as they are defined in the project.



Foster continuous collaboration

through iterative improvements and shared validation results.



Refine user interface and workflow

based on feedback from stakeholders and test users.

From Architecture to Action – Test Environment Demonstration

Let's see how the Test Environment works in practice – from configuration to results.

Each test follows a repeatable workflow: **Setup** → **Execution** → **Validation** → **Reporting**



Configuration



Select Test Case

Choose a scenario such as "BringBatteryToMarket"



Run Execution

The Test Executor performs defined steps automatically.



Validate Results

The system compares expected and actual responses.



Transparent

Every step is visible and logged for traceability.



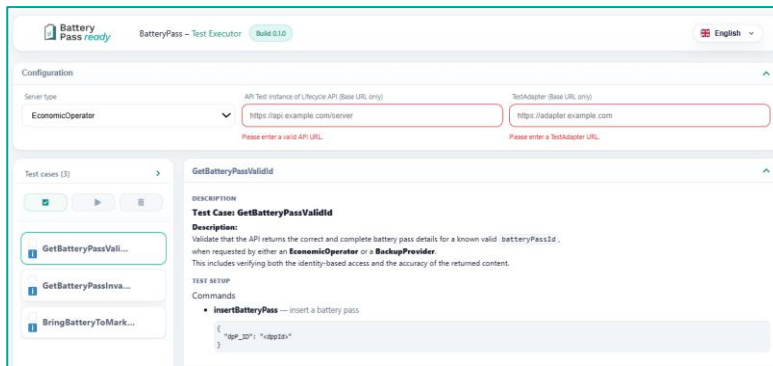
Automated

Execution and validation run without manual intervention.

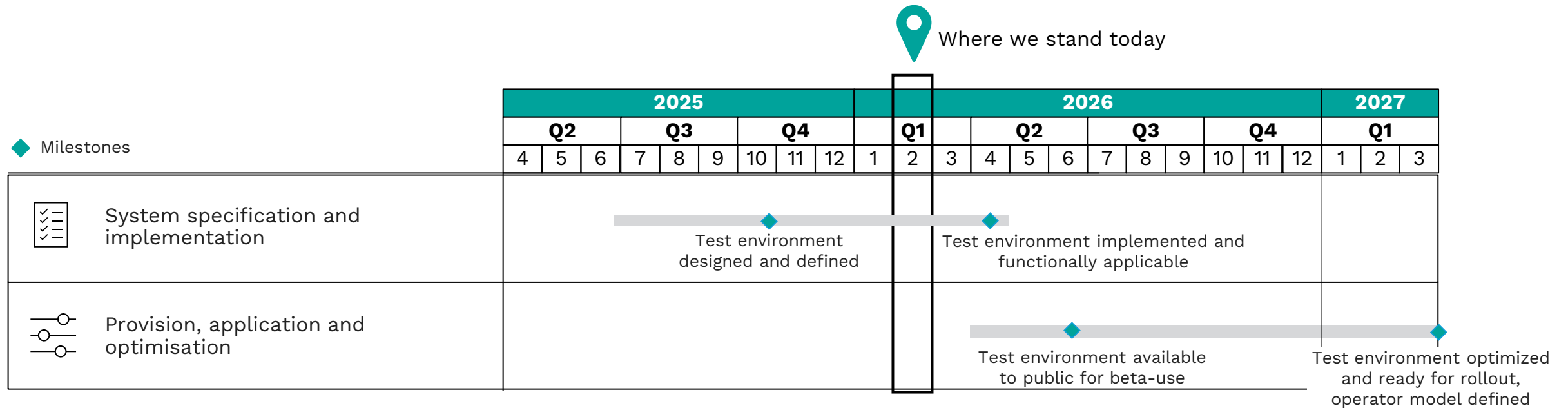


Iterative

Feedback from stakeholders directly improves future tests and UI flows.



BatteryPass *ready* Test Environment Roll-out





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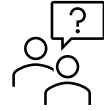
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CIRPASS 2 approach to interoperability testing for digital product passport pilots in other sectors.



Carolynn Bernier
CEA / Cirpass 2





Feel free to use the **Teams Q&A** to **submit your questions**. You can also **raise your hand** to **ask your question live**.

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Q&A Session



Carolynn Bernier
CEA / Cirpass 2



Franziska Zibold
DG GROW



Thomas Knothe
Fraunhofer IPK



Elena Andrushchenko
TU Berlin



Jonathan Fritz
GEFEG



Patrick Gering
Fraunhofer IPK



Johannes Simböck
acatech



Thank you!



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