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Battery Pass Demonstrator

Presentation of Battery Pass Demonstrator @ CIRPASS Event

5th of March 2024 Brussels



Covered user stories / functions in the Battery Passport Demonstrator

- Collect and process data for the Battery Passport from economic operator back-end systems
 - Collect data from backend systems
 - Map data to common battery pass data model
 - Manage Battery Passport in Economic Operator local Battery Passport Data Repository
- Issue a Battery Passport
 - Create unique Battery Pass Identification based on URN notation scheme, which allows multiple identification standard adoption e.g. DID



Covered user stories / functions in the Battery Passport Demonstrator

- Distributed management of Battery Passport data at each Economic Operator
 - Common access to Battery Pass through Battery Passport IDs via resolver mechanism in central registry
 - Verify different data representation based on common semantic model (NoSQL, NGSI-LD, AAS) for verification of technology-open implementation approach
- Accessing and viewing of Battery Passport
 - Scan QR Code or enter Battery Passport ID
 - Access to public/restricted Battery Passport Data without/with authorisation





Scope of BP Demonstrator in DPP-System Architecture





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Battery Pass Demonstrator Implementation

- Minimum viable Battery Passport System
 - Cloud-based infrastructure for distributed management
 - Currently Multiple instances of Battery Passport Data Repository (BPDR) have been setup to mimic a Battery Ecosystem with multiple Economic Operators
 - Economic operator portal with a dedicated URL for each EO
 - . Access protected with additional authorization
 - Common API providing CRUD operations on . **BPDR**
- **Battery Passport Manager**

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- Management tool for managing a local Battery Passports in Data Repository
 - Collect data from external source or from . existing model passport
 - Store Battery Passport in EO specific BPDR .
 - Publish Battery Passport via central registry .

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Battery Pass Demonstrator Implementation

- Battery Passport Viewer
 - Get Access with QR-Code or Battery Passport ID
 - Landing page with most important data points, structured navigation through individual content clusters

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- Dynamic UI for automatic adoption to mobile devices
- Multi-lingual and graphical representation of data points







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Scope of Battery Pass Demonstrator

- Distributed management of data to ensure data sovereignty by applying a data space concept
- Each battery passport responsible economic operator manage its own DPP data repository in a high-availability system
- Machine-readbale data model of battery pass based on semantic object model
- Identification of DPP by machine-readable identifier (QR-code)
- Interoperability based on common generic standardised semantic data model and related domain ontology
- The DPP system shall be designed technology-open in order to allow system-overarching interoperability
- Data interfaces and transport shall base on common standards (e.g. REST API and HTTPS via TCP/IP)
- Public DPP data shall be accessible via the identifier
- Reliable identity and Access Management for granting access to restricted DPP data necessary (e.g. Dismantling Information)



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API Access to the battery passport manager

- The data model is derived from a platform independent semantic object model based on the generic Resource Description framework
- From that platform independent model a platform specific model can be derived (e.g. JSON Schema)
- The JSON Schema model defines the data structure of the individual data models for each
 battery pass content cluster
- For access to the battery pass manager we developed an API that uses GraphQL for all CRUD (Create, Read, Update and Delete) operations.
- This can be reviewed in detail in a workshop.

