Foundational Elements for Federated Digital Infrastructure from the W3C
in
Emerging Architectural Directions for Federated Digital Infrastructures

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The open Web Platform

The Web of Data

Data annotation is generic

Compliance

- Data protection constraints
- Commercial Constraints
- Environmental information
- Product information, labels, certification
- Data quality information (e.g. for learning)
- Match safety requirements to performance with SHACL

Streams into a data lake

Elements of Interoperability

- Computer readable link between Object/data and its metadata
- Metadata formats (e.g. OWL, turtle, JSON-LD)
- Semantics (vocabularies, meaning)
- How to puzzle the pieces together (data space architecture)
- Standard transformations (Connectors)

The output side

No unification please

Summary

- Data & Metadata (RDF/Knowledge graph)
- Policy/Regulatory info is metadata
- Policy templates/vocabularies needed
- Sticky policy & API depending on architecture
- Many Specifications exist, but still gaps
- Security Specifications under way (RDF RCH)

This is why we are working on:

- **Current work**
  - RDFstar*
  - Web of Things
  - Human-like AI
  - DPV CG
  - RDF RCH
  - DID (Methods!)
  - Verifiable Credentials
- Under consideration
- SOLID
- Simple RDF
- Gaps:
  - RDF Security
  - RDF encryption

Current work

- RDFstar from CG to WG to make property graphs interoperable (e.g. Neo4J)
- Web of Things instrumental in the edge-cloud continuum (cooperation with AIOTI & BDVA)
- DID is rechartered, disputes around default method standardisation
- VCs are so generic that they are used widely. A lot of work ahead.

Upcoming

- SOLID: successful incubation, now chartering in progress (no vote yet)
- Simple RDF (considering low code in projects)
- RDF Security:
  - RDF RCH is only the beginning
  - Signature, meaning of signature and encryption still too controversial

Standards are great, please use mine

Thank you