

GAIA-X 4 PLC-AAD

—
Building a data ecosystem for the product life cycle
of automated lane keeping systems

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Bundesministerium
für Wirtschaft
und Klimaschutz

aufgrund eines Beschlusses
des Deutschen Bundestages

Project structure

Use Case 1:
Simulation

Use Case 2:
Bullwhip Effect

Use Case 3:
Predictive
Maintenance

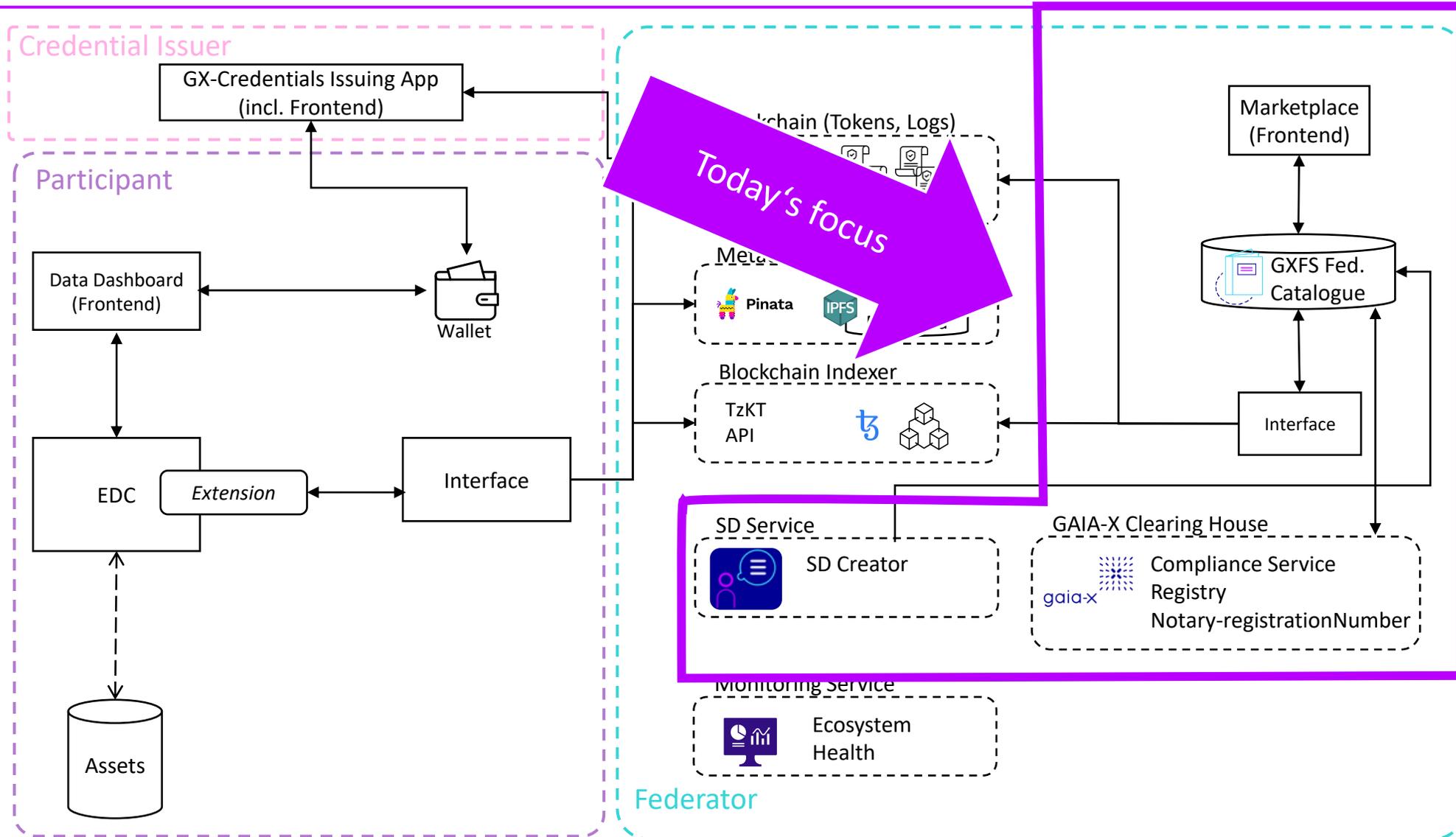
Architectural Aspects

(SSI, Data Settlement, Meta-Data Search, Payment, Governance)

Infrastructure

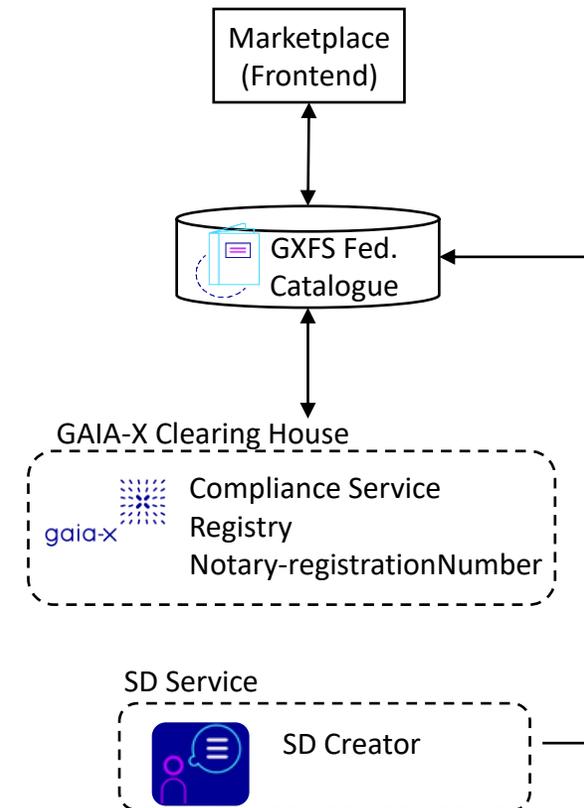
(Privacy, Contract Execution, Interfaces, Monitoring)

Overall architecture



Quick Overview of the GXFS Federated Catalog in our architecture

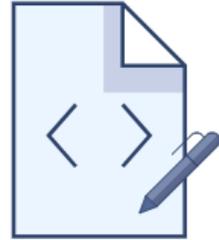
- Backend of our marketplace/portal used to search for data
- Centralized storage for Self Descriptions and defined shapes in the data ecosystem
- Uses self hosted GAIA-X Registry to verify Self Descriptions
- Own implemented open source tool to create and sign Self Descriptions and send them directly to a GXFS Federated Catalog instance ([SD Creator](#))



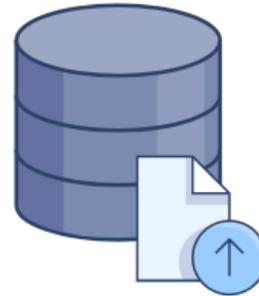
Current Workflow in Use Case 2: Use of the Federated Catalog



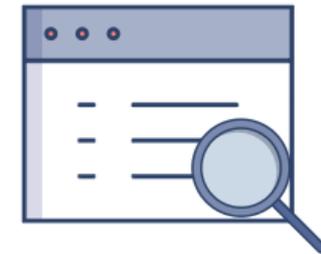
Implementation of a process that extracts metadata from survey as claims



Claims are converted to valid signed self descriptions with the SD Creator

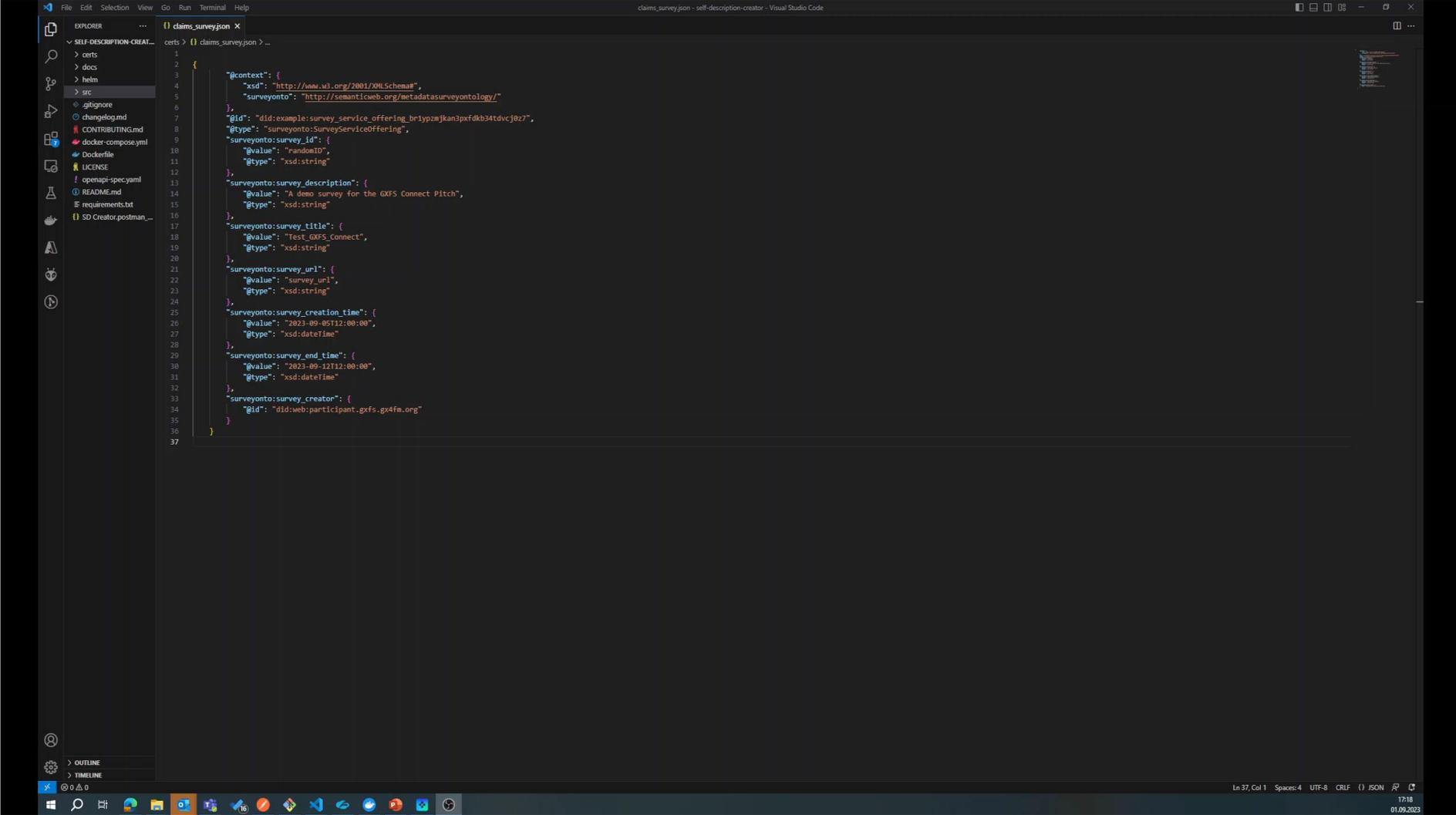


With the help of the SD Creator these Self Descriptions can then be loaded into the Federated Catalog



With the use of the FC the survey can be found in our portal

Demonstration



```
claims_survey.json - self-description-creator - Visual Studio Code
EXPLORER
SELF-DESCRIPTION-CREAT...
  certs
  docs
  helm
  src
.gitignore
CHANGELOG.md
CONTRIBUTING.md
docker-compose.yml
Dockerfile
LICENSE
openapi-spec.yaml
README.md
requirements.txt
SD Creator.postman...

claims_survey.json X
certs > claims_survey.json > ...
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{
  "@context": {
    "xsd": "http://www.w3.org/2001/XMLSchema#",
    "surveyonto": "http://semanticweb.org/metadatasurveyontology/"
  },
  "id": "did:example:survey_service_offering_brtypzjkan3pxfkb34tdvcj0z7",
  "@type": "surveyonto:SurveyServiceOffering",
  "surveyonto:survey_id": {
    "@value": "randomID",
    "@type": "xsd:string"
  },
  "surveyonto:survey_description": {
    "@value": "A demo survey for the GXFS Connect Pitch",
    "@type": "xsd:string"
  },
  "surveyonto:survey_title": {
    "@value": "Test GXFS Connect",
    "@type": "xsd:string"
  },
  "surveyonto:survey_url": {
    "@value": "survey_url",
    "@type": "xsd:string"
  },
  "surveyonto:survey_creation_time": {
    "@value": "2023-09-05T12:00:00",
    "@type": "xsd:dateTime"
  },
  "surveyonto:survey_end_time": {
    "@value": "2023-09-12T12:00:00",
    "@type": "xsd:dateTime"
  },
  "surveyonto:survey_creator": {
    "id": "did:web-participant.gxfs.gx4fm.org"
  }
}
```

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Thanks for your attention!

Questions

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