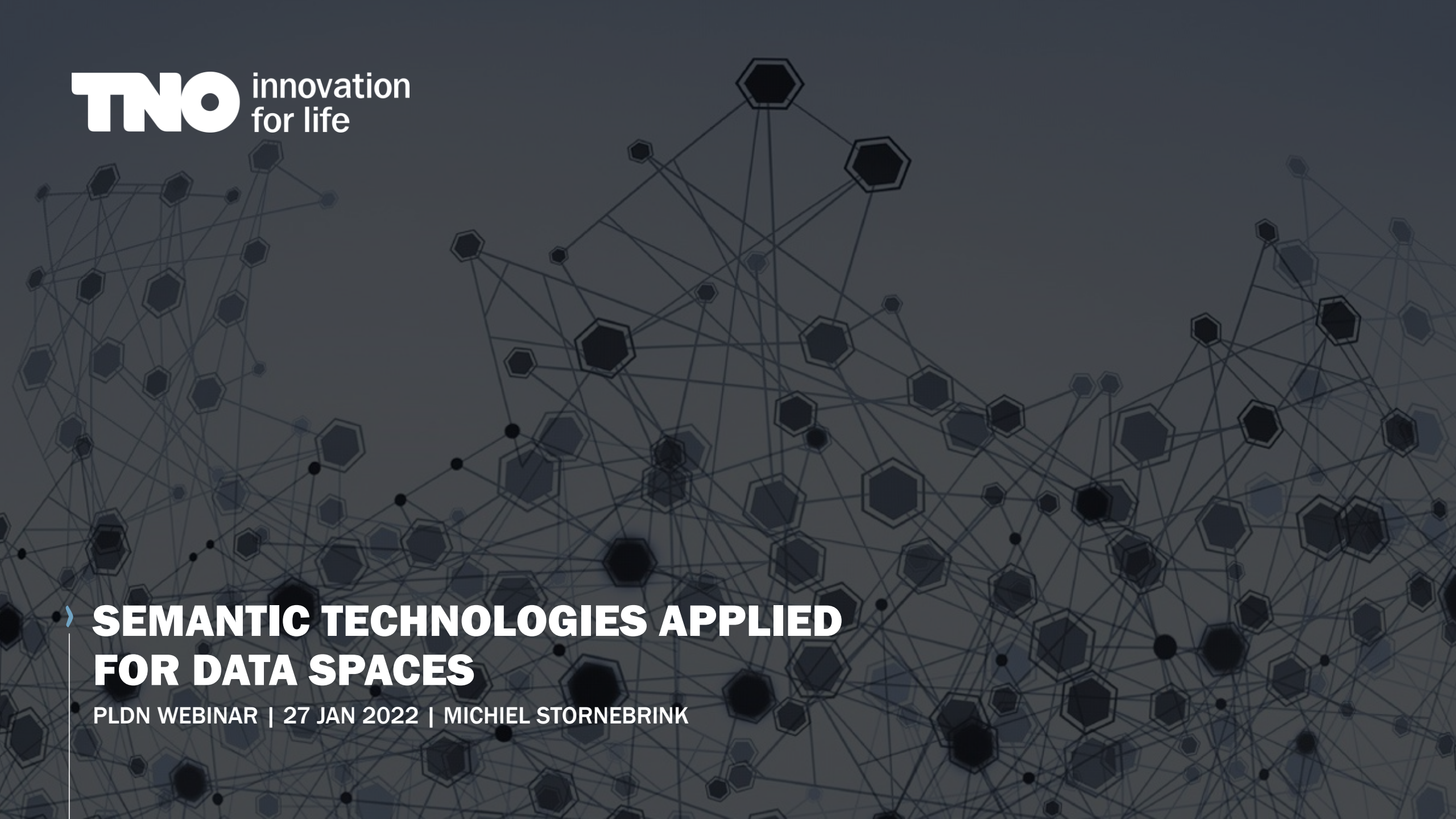


SEMANTIC TECHNOLOGIES APPLIED FOR DATA SPACES

PLDN WEBINAR | 27 JAN 2022 | MICHIEL STORNEBRINK

OUTLINE

01. ~~ABOUT ME AND PROJECTS~~
02. ~~ABOUT TNO~~
03. ~~INTRODUCTION IN DATASPACES~~
04. ~~SOME NICE INTERACTION~~
05. SEMANTICS IN DATASPACE BUILDING BLOCKS
06. Q&A

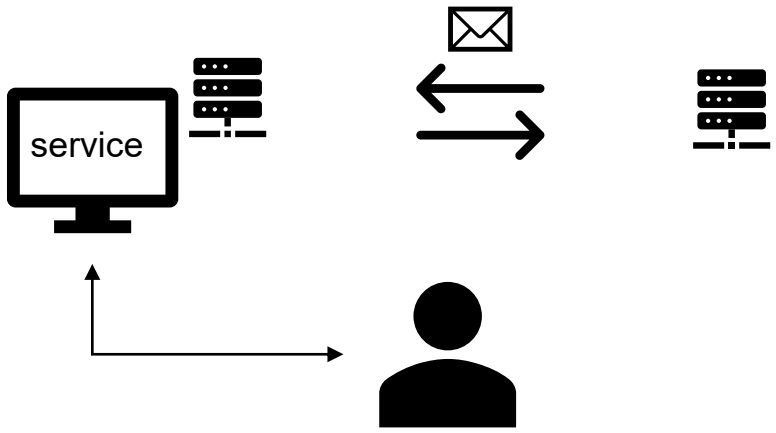
Michiel Stornebrink

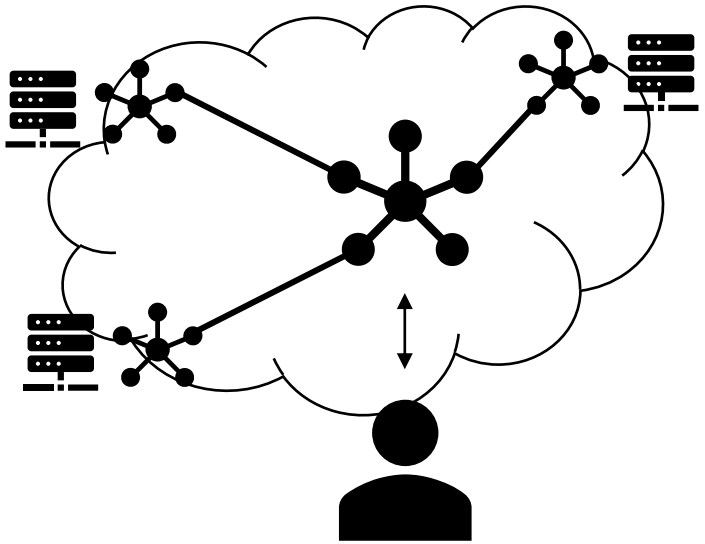
TNO Data Ecosystems dep.

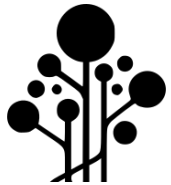
TNO innovation for life

DATA SHARING PARADIGMS

IMPORTANCE OF SEMANTICS

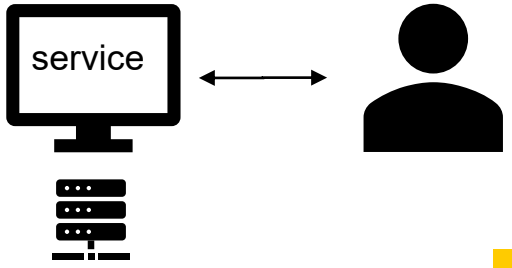




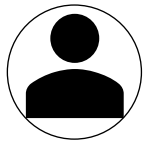


IDS

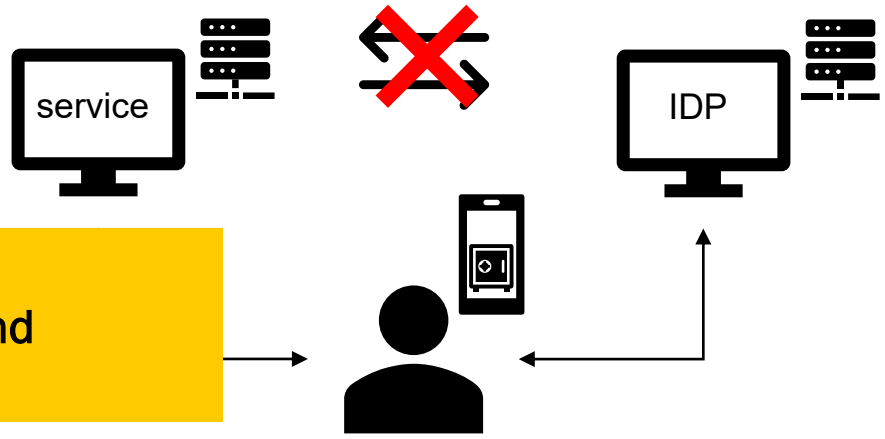
Linked
(Open) Data



Ledgers &
blockchains



SSI

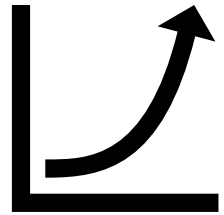


In all data sharing paradigms,
data infrastructure standards and
semantics is key!

DATA ECONOMY
WHAT DO WE NEED?

Dataspace: a secure, sovereign system of data sharing in which all participants can realize the full value of their data

Scalable
data sharing ecosystem
a.k.a. dataspace



Infrastructure
+ standards

INTERNATIONAL DATA SPACES ASSOCIATION

FEDeRATED NETWORK OF PLATFORMS

DS GO Afspraken over toegang tot data

Peppol The future is open

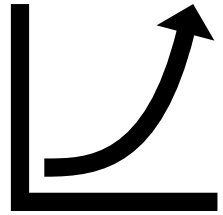
iSHARE

OPENDEI

NGI ESSIF-LAB

GAIA-X

Scalable
semantic interoperability
for dataspaces



Platform Linked Data Nederland

W3C Semantic Web

rml.io

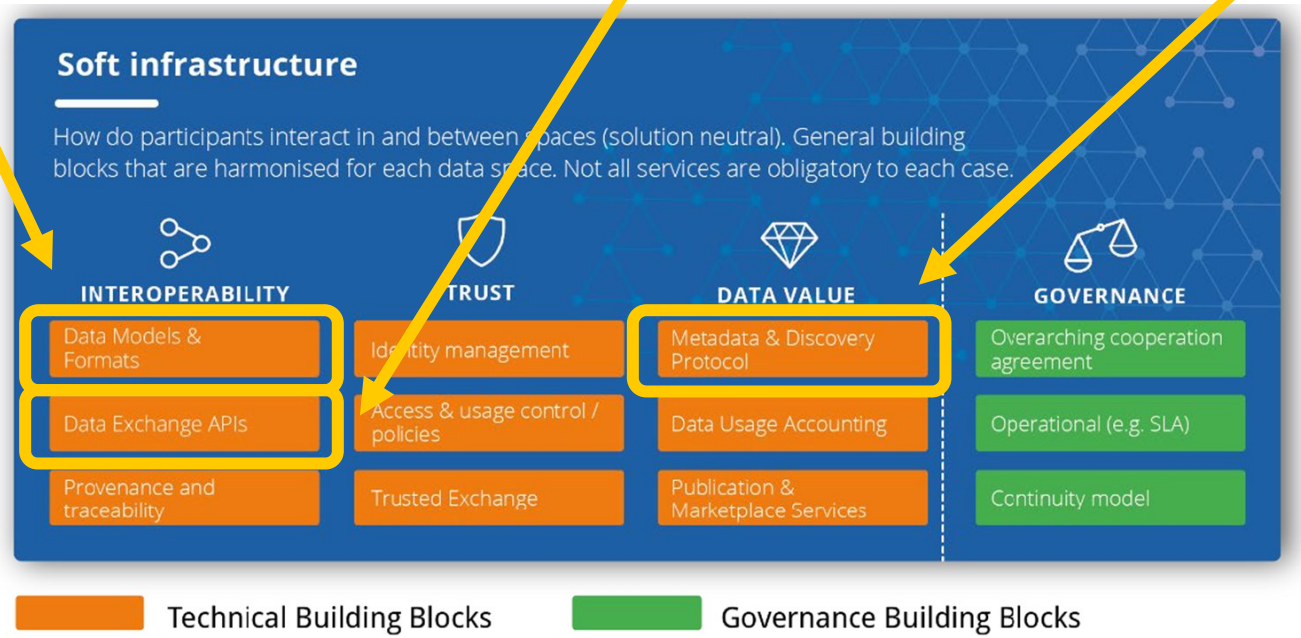
TNO innovation for life

SEMANTICS IN DATASPACES
BUILDING BLOCKS

IDS
Information Model

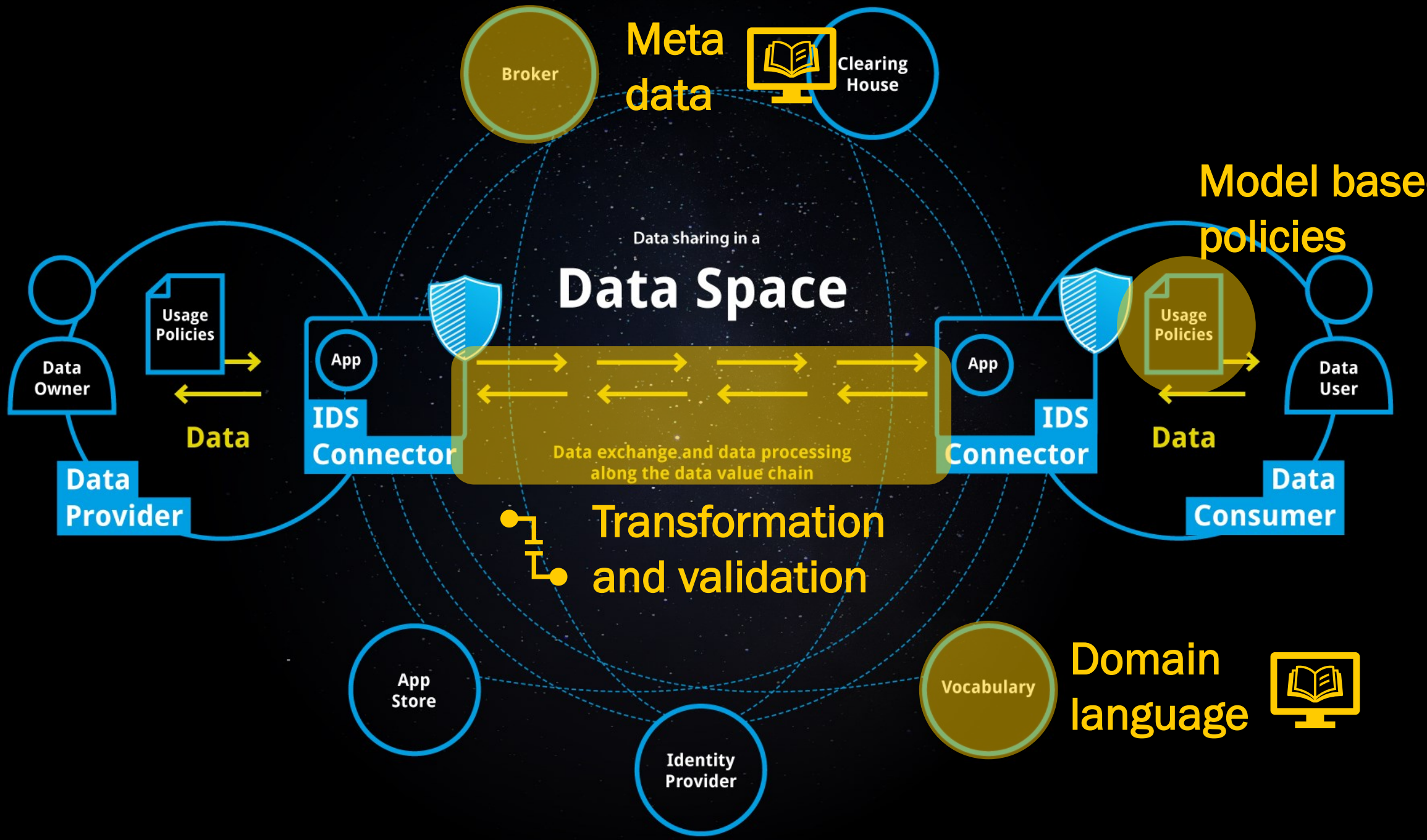
Towards knowledge
graphs

Vocabulary providers
& Data catalogues



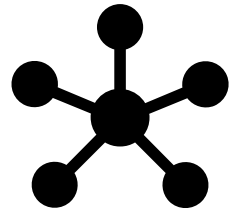
OPENDEI

TNO innovation for life

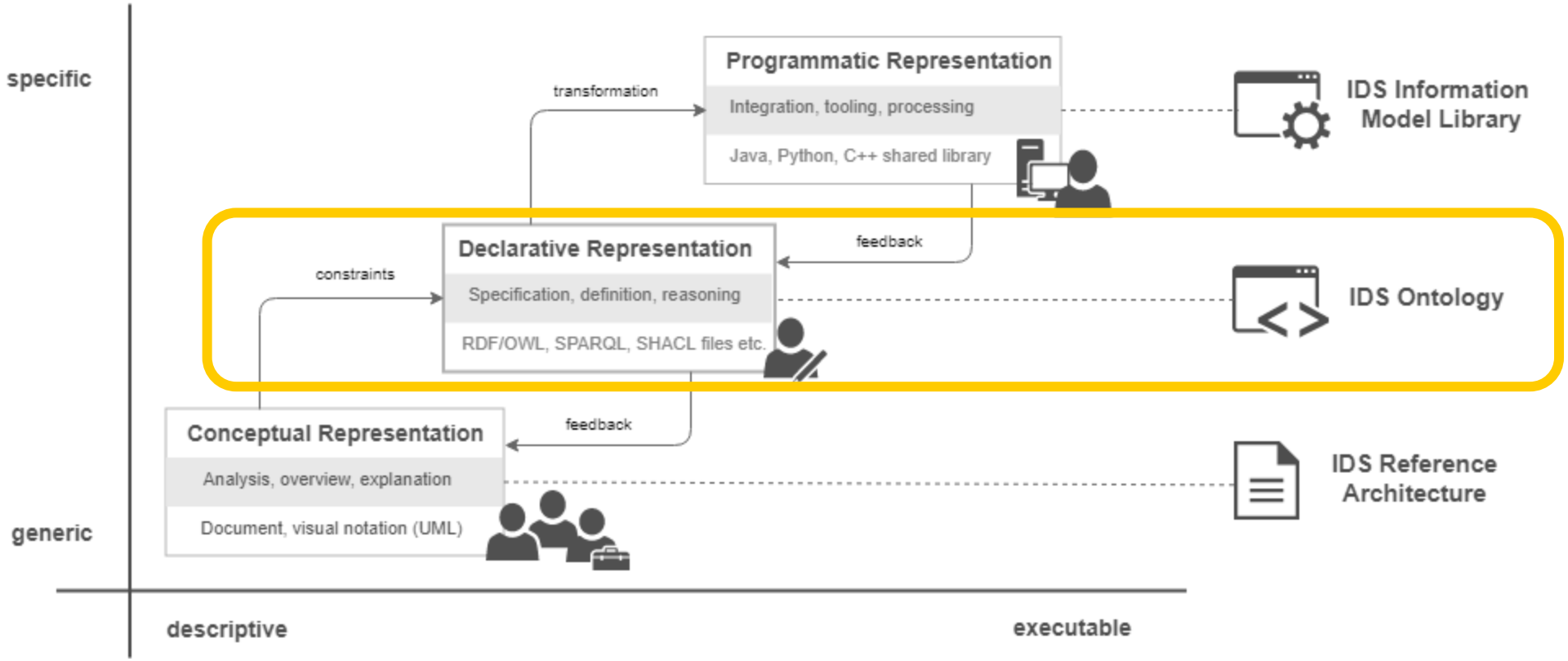

Broker
Meta data
Clearing House
Model based policies
Data sharing in a
Data Space
Usage Policies
Data Owner
Data
App
IDS Connector
Data exchange and data processing along the data value chain
App
IDS Connector
Usage Policies
Data User
Data
Data Provider
Data Consumer
Transformation and validation
App Store
Identity Provider
Vocabulary
Domain language

SEMANTICS IN DATASPACES

IDS INFORMATION MODEL



IDS
Information Model



https://github.com/International-Data-Spaces-Association/InformationModel

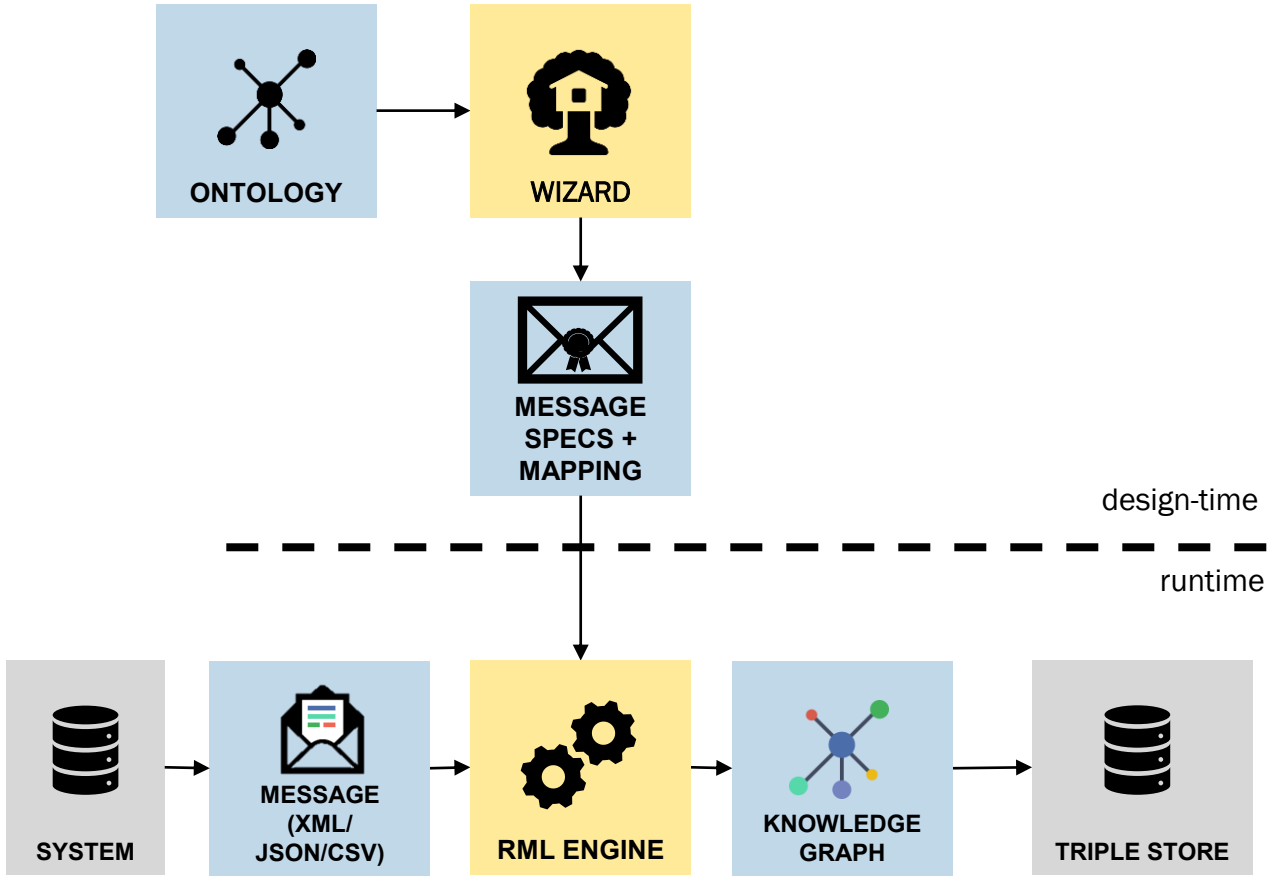
https://international-data-spaces-association.github.io/InformationModel/docs/index.html

SEMANTICS IN DATASPACES
TOWARDS KNOWLEDGE GRAPHS

Platform Linked Data Nederland

LD Wizard

Erfgoed & LD + Lancering LD Wizard
Bijeenkomst 10 feb 2022
Link + aanmelden



RML:

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@prefix rml: <http://semweb.mmlab.be/ns/rml#> .
@prefix ql: <http://semweb.mmlab.be/ns/ql#> .
@prefix rr: <http://www.w3.org/ns/r2rml#> .

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    rml:referenceFormulation ql:XPath ;
    rml:iterator "/HourRegistration"
  ] ;
  rr:subjectMap [
    rr:termType rr:BlankNode ;
    rr:class <https://ontology.setu.nl#HourRegistration>
  ] ;
  rr:predicateObjectMap [
    rr:predicate <https://ontology.setu.nl#hourRegistrationHasWorkedShift> ;
    rr:objectMap [
      rr:parentTriplesMap [
        rml:logicalSource [
          rml:source "http://www.example.com/root" ;
          rml:referenceFormulation ql:XPath ;
          rml:iterator "/HourRegistration/Urenlijst/Dienst"
        ] ;
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          rr:termType rr:BlankNode ;
          rr:class <https://ontology.setu.nl#Shift>
        ] ;
        rr:predicateObjectMap [
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        ], [
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Bedankt voor
uw aandacht