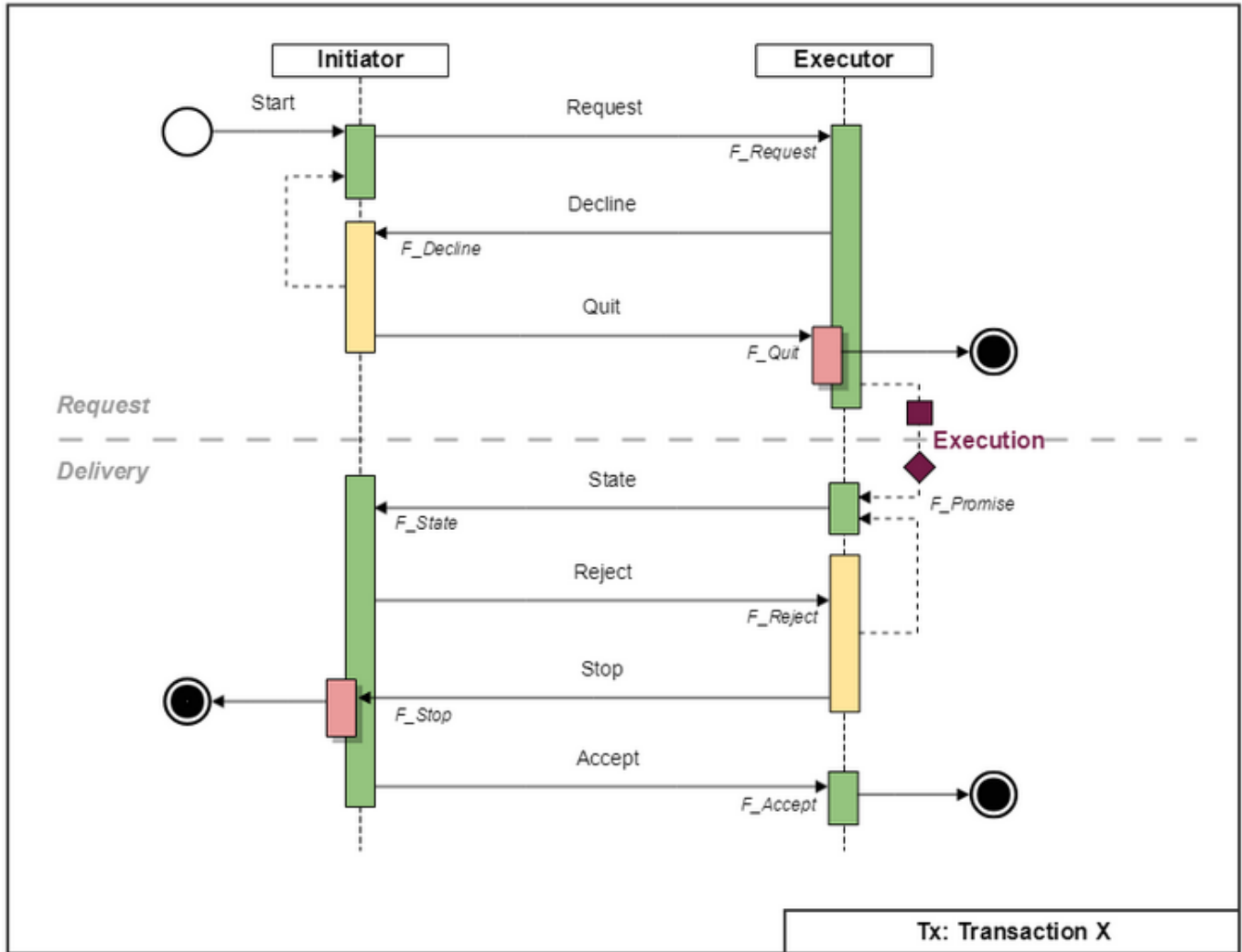


IP1109 - Additional Model Information

Example Transaction Model

In general, transactions could be modeled (graphically) as depicted below. A RDF or JSON-LD format of this diagram is needed to model and share individual transactions between project parties.



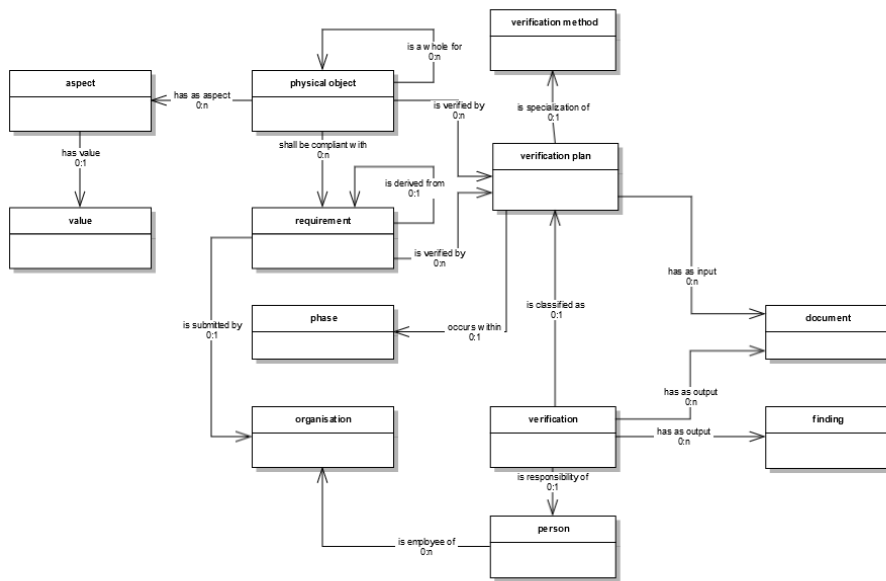
Information in an Engineering Project

Information Structure

This diagram contains an example blueprint of information for the EggBridge project. That is, it states which information structures may exist without specifying which actual individual thing is related to another individual thing.

For instancer: This diagram does not imply that the person who performs a verification has to work for the organisation that submitted the requirement. It simply describes that:

- Requirements are submitted by a single organisation
- A verification is the responsibility of at most 1 person
- A person can work for multiple organisations



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Instance Information

Some example instance information that could occur in the EggBridge project, displayed in tables for readability.

Requirements

ID	Text	Subject	Submitted by	Derived from
Req-01	Capacity must be sufficient to replace ferries	Bridge	Municipality	
Req-02	Capacity must be > 5000 pax/h	Bridge	Municipality	Req-02
Req-03	Must be safe	Bridge	Municipality	
Req-04	Must be able to carry the weight of a fire truck	On-ramp North side	Fire department	Req-03
Req-05	Visibility illuminate at least 10 lux	Street lights	EggBridge	Req-03

Physical Objects

ID	Name	Part of	Aspect	Value
Obj-01	Bridge		Dimensions	100 x 5 x 5 m
Obj-02	Bridge deck	Obj-01	Dimensions	100 x 5 x 0.3 m
Obj-02	Bridge deck	Obj-01	Colour	Ashphalt Grey
Obj-03	Pillar	Obj-01	Dimensions	0.4 x 0.4 x 4.7 m
Obj-03	Pillar	Obj-01	Colour	RAL3001
Obj-03	Pillar	Obj-01	Maximum vertical stress	2000 kN
Obj-04	Lighting system	Obj-02		

Verifications

ID	Object	Requirement	Result	Remark	Phase	Person	Proof document
Ver-02	Obj-01	Req-04	OK	Calculation result shows	Design	Redmer	calculation.xlsx
Ver-01	Obj-04	Req-05	NOK	No bulbs installed	Construction	Bram	photo.jpg

JSON-LD

In an implementation, tables of data are not useful. A JSON-LD version of project information snippet, of a 'change request' document in this case, may look like this.

The URIs (format: [http://data.uva.nl/id/.](http://data.uva.nl/id/)) are references to other snippets of project information. For instance would <http://data.uva.nl/id/2a4c228d-e8be-4d2b-a392-e6715c4abbd> point to a person whose name, company and job title may be define in another snippet of JSON-LD.

```
"@context": "https://dsp-d.uva.nl/jsonld/otl-v1.jsonld",
"@graph": {
  "content": {
    "document": [
      {
        "id": "http://data.uva.nl/id/e16e904a-1773-4d02-8cfc-03785925b742",
        "type": "Change request",
        "name": "individual change request",
        "description": "In the first design phase, Municipality based the
design on pre-COVID capacity requirements. Due to a decrease in public transit
popularity, required capacity of the bridge in Req-02 is changed to at least 6000
pax/h.",
        "date": "2020-10-30",
        "has author":
"http://data.uva.nl/id/2a4c228d-e8be-4d2b-a392-e6715c4abbd",
        "has initiator":
"http://data.uva.nl/id/7a48812a-5209-4b39-8c12-aceda5f8a4ba",
        "has as response":
"http://data.uva.nl/id/bc9ab48a-7dc5-4cc1-b557-5fafda7acd79",
        "has as subject": [
"http://data.uva.nl/id/744903ed-15a0-4a77-baa4-0459b0282806",
"http://data.uva.nl/def/3746fa7a-acce-4ea4-b5c7-9cad2cadd2d3" ]
      }
    ]
  }
}
```