



*Data clouds to tackle Asset Management lifecycle challenges !*

*Use of Linked Data and Semantic Web technologies*

Symposium Linked Data NL

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Beeld & Geluid, Hilversum, The Netherlands

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Platform Linked  
Data Nederland



## *Why the Data Train needs Semantic Rails*

*... Consequently, the need for and benefit from using Semantic Technologies increases as those three dimensions increase :*

- with an increasing data and domain diversity;*
- with an increasing role of data synthesis;*
- with an increasing importance of definiteness.*

**2015 - AI Magazine (AAAI)**

Janowicz, van Harmelen, Hendler and Hitzler

[http://geog.ucsb.edu/~jano/s4bd\\_intro\\_article.pdf](http://geog.ucsb.edu/~jano/s4bd_intro_article.pdf)

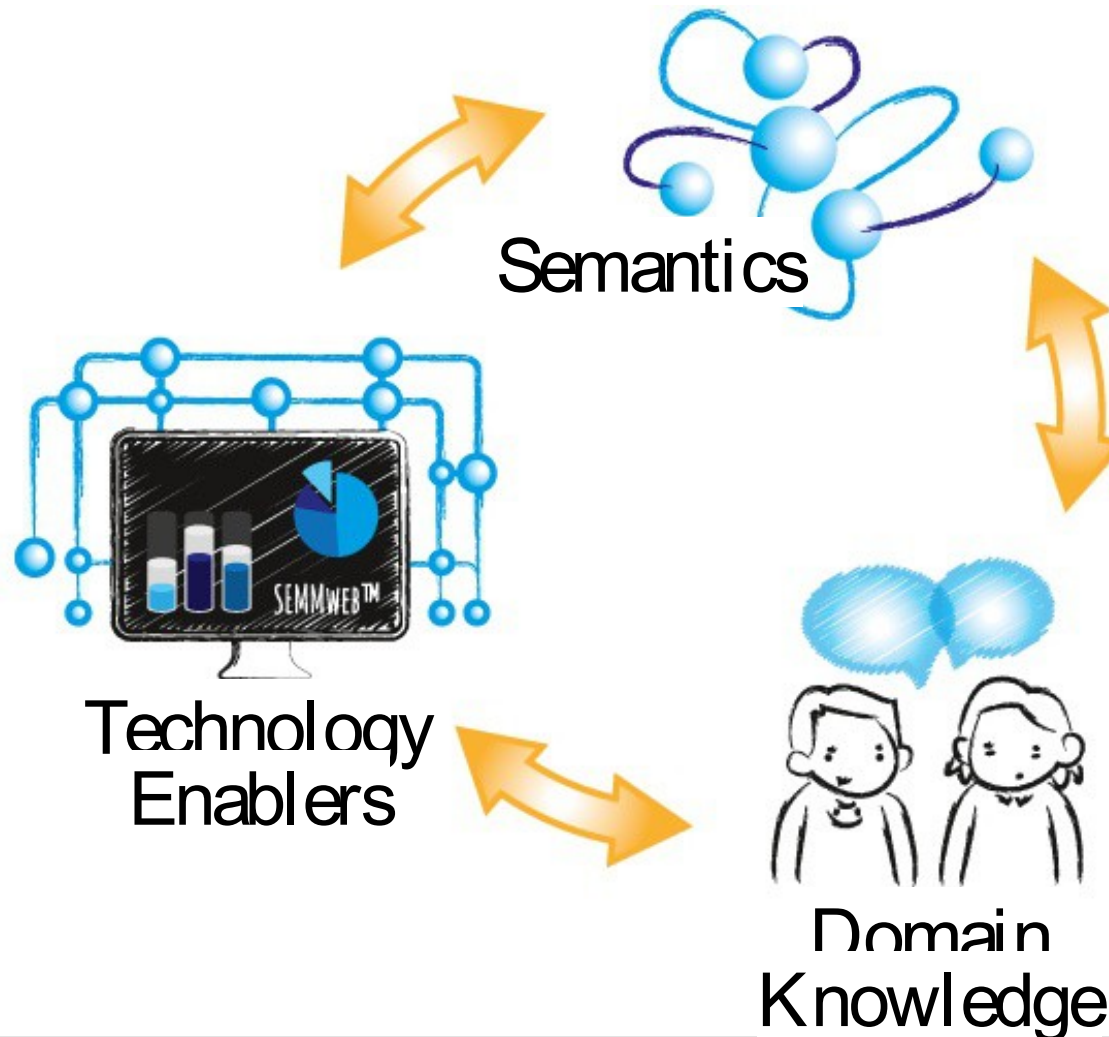


*What will we talk about ?*

- What does Semmtech do ?
- Who do we work for ?
- What's their challenge ?
- How do we solve this ?
  
- Use of Linked Data and Semantic Web technologies



*What does Semmtech do ?*





*Who do we work for?*

John laing  
making infrastructure happen

**ProRail**



**DEME**

Dredging, Environmental  
& Marine Engineering



**Strukton**



**heijmans**



Rijksoverheid



**Boskalis**



**ARCADIS**



**mobilis**  
TBI infra

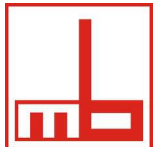


**STRABAG**



**Ballast Nedam**

**DAMEN**



kennisplatform  
**CROW**

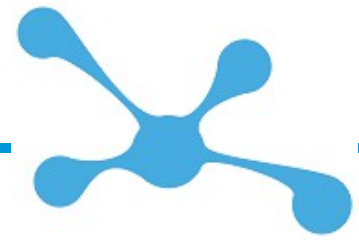


**BESIX**



### *What's their challenge ?*

- asset scope of 25 years and more (product lifecycle)
- different specialised project-resources (consortium-based)
- all kinds of software applications (data-exchange)
- vast safety regulations (design validation)
- multi-million euro contracts (deliverable verification)



*What's their challenge ?*

## ***Asset management lifecycle challenges***

How to manage resources owned for many years :

- that foresee in intensive customer use ;
- that reduce day-to-day operational costs ;
- and/or that diminish critical business risks .



### *What's their challenge ?*

- Requirements management
- Configuration management
- Life cycle management
- Document management
- Portfolio management
- Knowledge management
- Risk management



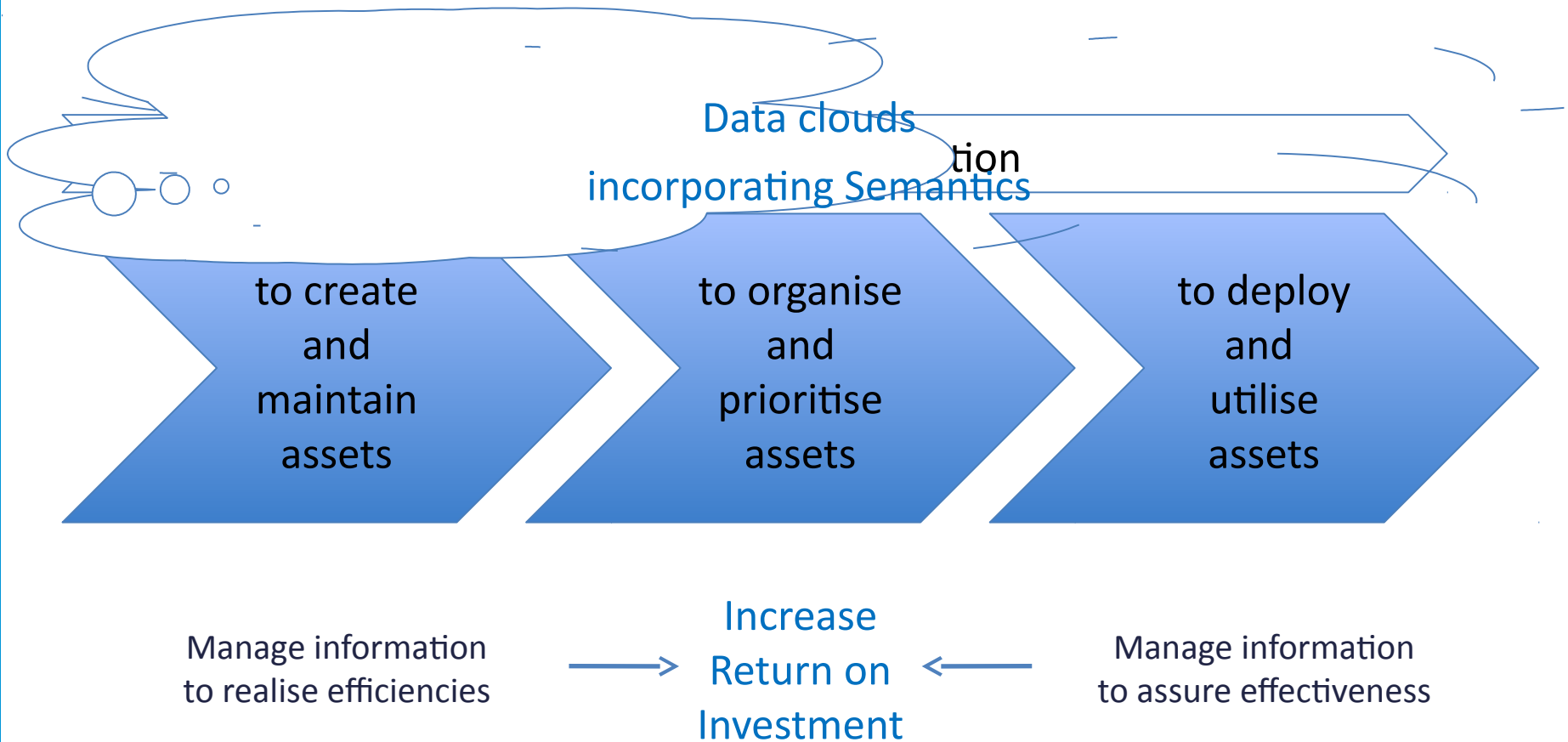
### Manage information on assets

- +++ data and domain diversity
- +++ need for data synthesis
- +++ focus on definiteness



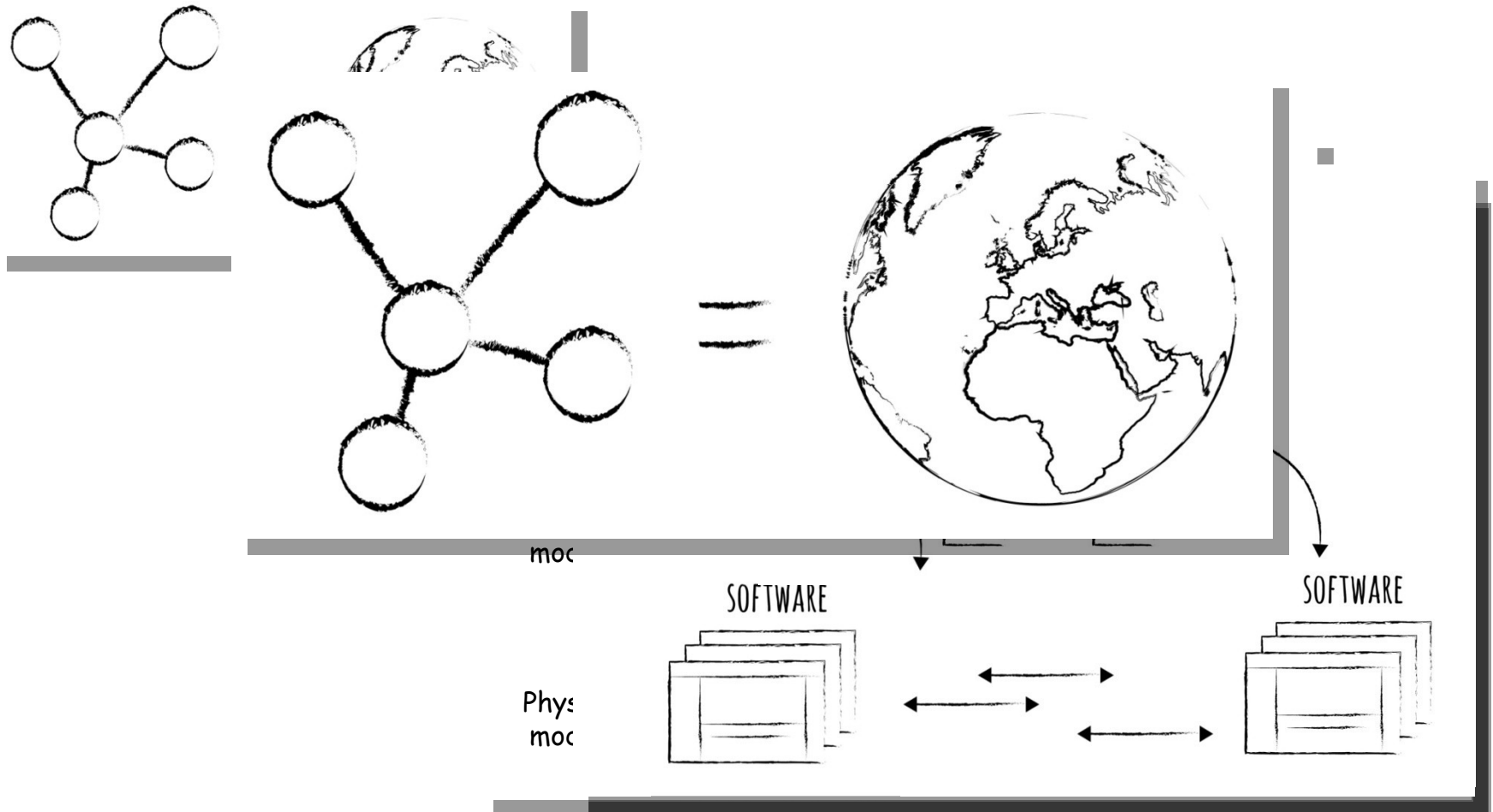


*How do we solve this ?*





*How do we solve this ?*





## *Use of Linked Data and Semantic Web technologies*

Proof :

- use of semantic standards (dictionaries as common denominators)
- use of existing software (for Systems Engineering, GIS, CAD ....)

.... suitable for actual commercial solutions



## *Use of Linked Data and Semantic Web technologies*

Proof points :

- to make information usable:
  - create semantic 'richness' that is fit for purpose
  - ease automation (less code, more usable content)
- to make information shareable:
  - connect different sources (and communities as 'source' owners)
  - make information accessible (via Internet)



*Use of Linked Data and Semantic Web technologies*

- Reuse standardised requirements on projects (dictionary-data cloud)
- Connect to GIS-based inspection data (asset- + dictionary-data clouds)
- Project data handover to asset owner (asset-data cloud)



## Use of Linked Data and Semantic Web technologies

gebaseerd op | Bibliotheektype

code	bibliotheektype	tekst
	Veiligheid	Gebruik moet plaatsvinden in een veilige omgeving.

Brondocument (specifiek)

titel

Bestand | Afbeelding

upload/download

Bovenliggende specificaties

Onderliggende specificaties

Veiligheid

Selecteer onderliggende eis...

Refresh

Save as

Query...

Details...

Eisenanalyse

1. Relevantie | nu of later?

Moet de eis in huidige fase worden behandeld, alloceren.

Eisenanalyse

Relevantie

f kansinschatting? Zo ja

2. Verantwoordelijkheden | wie van ons?

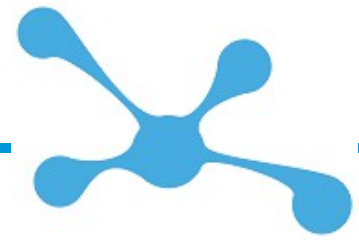
R en A: Wie is verantwoordelijk voor het verwerken van de Ontwerpleider Integraal Ontwerp, Wewo etc.

Requirements Library data cloud

Requirements Management tool (incl. SEMMweb™-add on)

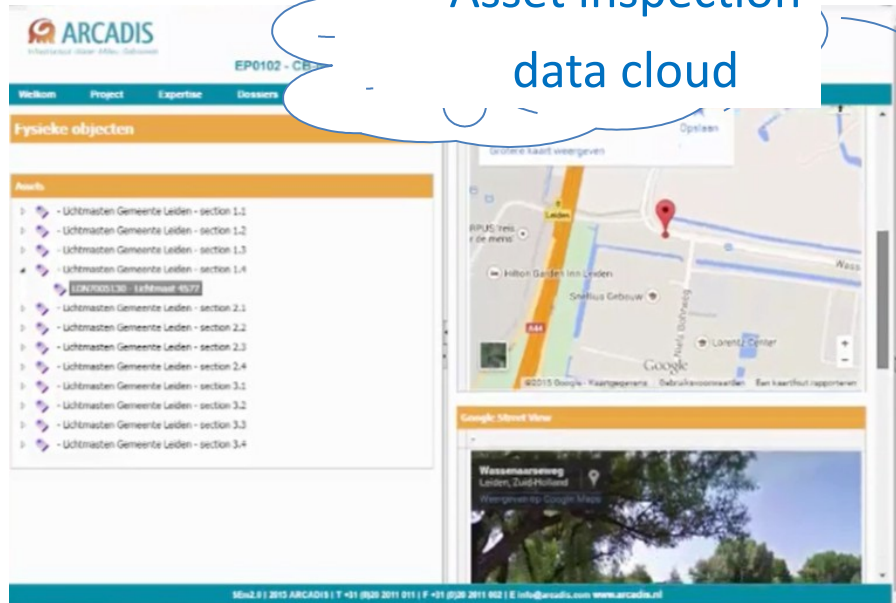
Requirements Library Editor (SEMMweb™ Text Extractor)

Requirements Library Editor  
(SEMMweb™ Text Extractor)



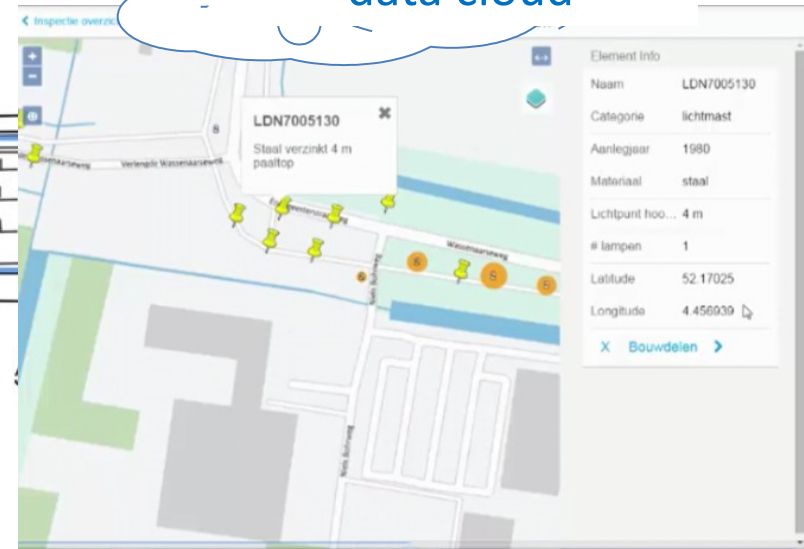
## *Use of Linked Data and Semantic Web technologies*

Asset inspection  
data cloud



Life Cycle Management tool  
(incl. SEMMweb™-add on  
+ GIS-frame)

NEN2767-dictionary  
data cloud

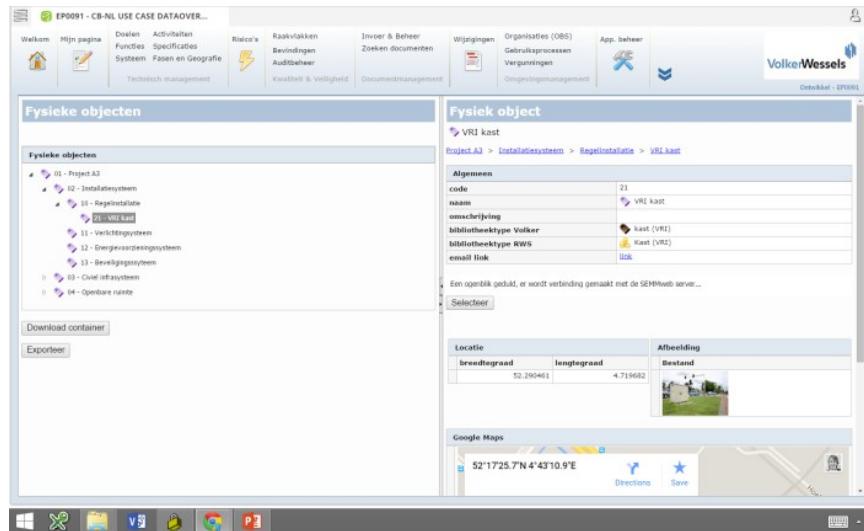


Mobile Inspection-app  
(custom-made)





## Use of Linked Data and Semantic Web technologies

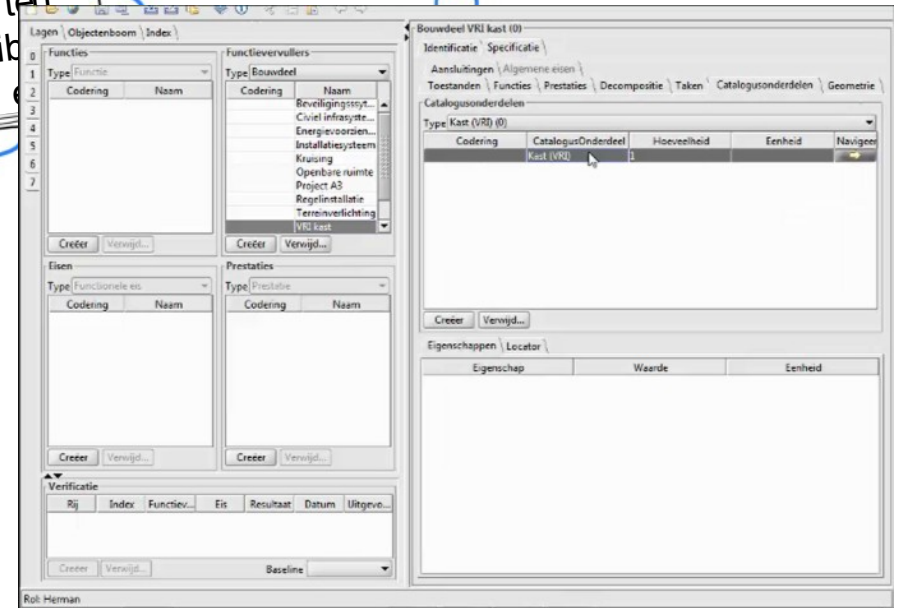


Systems Engineering tool  
(incl. SEMMweb™-add-on)

VW - OBJECT TYPE LIBRARY

Project data handover  
data cloud

Concepten  
Bibliotheek



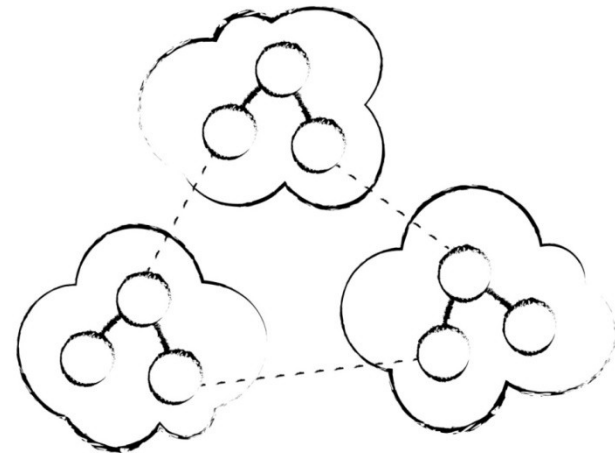
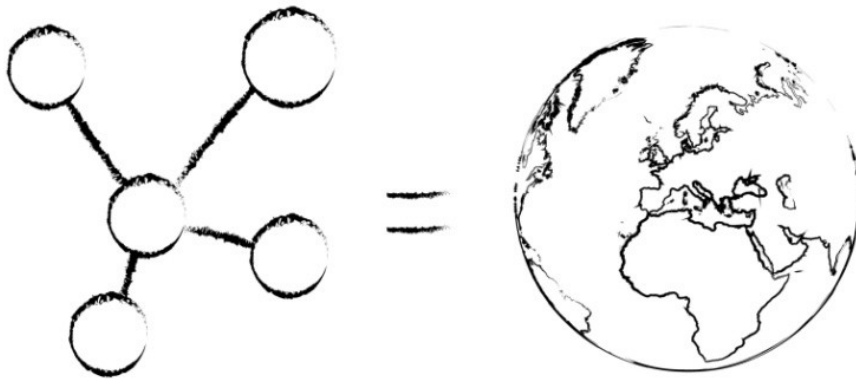
COINS Navigator





## *Use of Linked Data and Semantic Web technologies*

- Usable
- Shareable
- Re-usable





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