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

Nic Roest (Head Semantic Consultancy)
n.roest@semmtech.nl
www.semmtech.com
+31(0) 12 65 12 32
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
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?
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?

- Data clouds incorporating Semantics
  - to create and maintain assets
  - to organise and prioritise assets
  - to deploy and utilise assets

Manage information to realise efficiencies

Increase Return on Investment

Manage information to assure effectiveness
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)
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Requirements Library Editor
(SEMMweb™ Text Extractor)

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

Requirements Library data cloud

Use Cases for Semantic Web
Use of Linked Data and Semantic Web technologies

- Life Cycle Management tool (incl. SEMMweb™-add on + GIS-frame)
- NEN2767-dictionary data cloud
- Asset inspection data cloud
- Mobile Inspection-app (custom-made)
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- Systems Engineering tool (incl. SEMMweb™-add-on)
- COINS Navigator

Use Cases for Semantic Web

Project data handover
data cloud

Concept

Bit
Use of Linked Data and Semantic Web technologies

- Usable
- Shareable
- Re-usable
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