

Collaborating for Better On-Demand Mapping

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Ordnance Survey, UK

Outline

Goals

Related works

High-level architecture

Directions of collaboration

Conclusions

A new challenge for Ordnance Survey

Growing users need:

To make good quality maps combining their own thematic data with a reference topographic background

Ordnance Survey's duty:

- A more flexible data delivery
- To provide reference data as a background for user's data
- To assist map making

On-demand mapping

Definition:

To produce dynamically
a tailored map based on
user's requirements

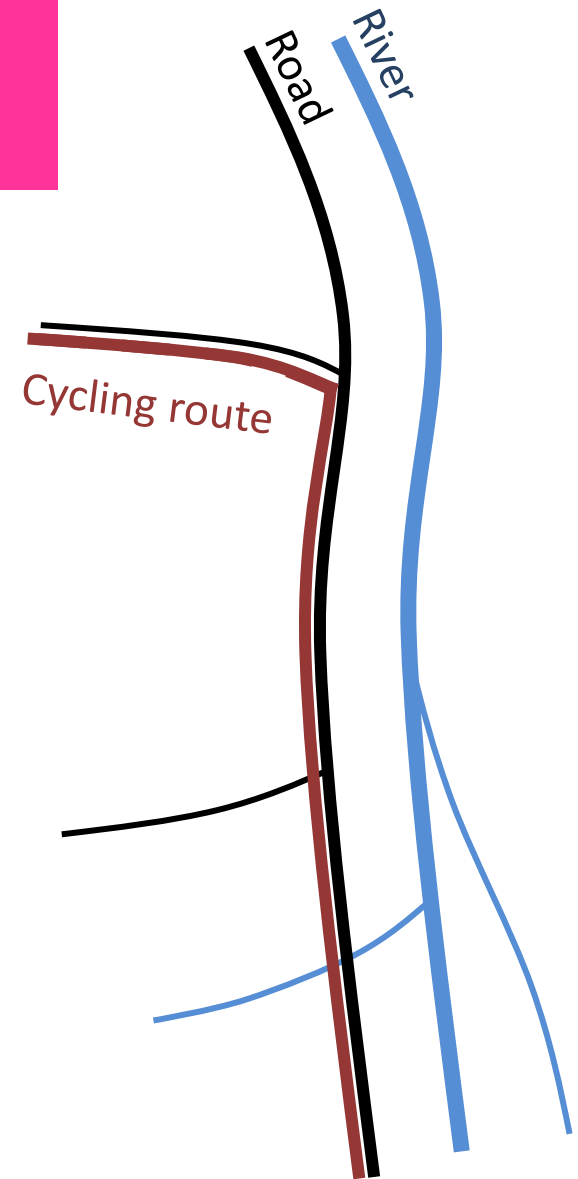
- Content
- Scale
- Level of detail
- Symbolisation
- Schema
- Integration need

On-demand mapping

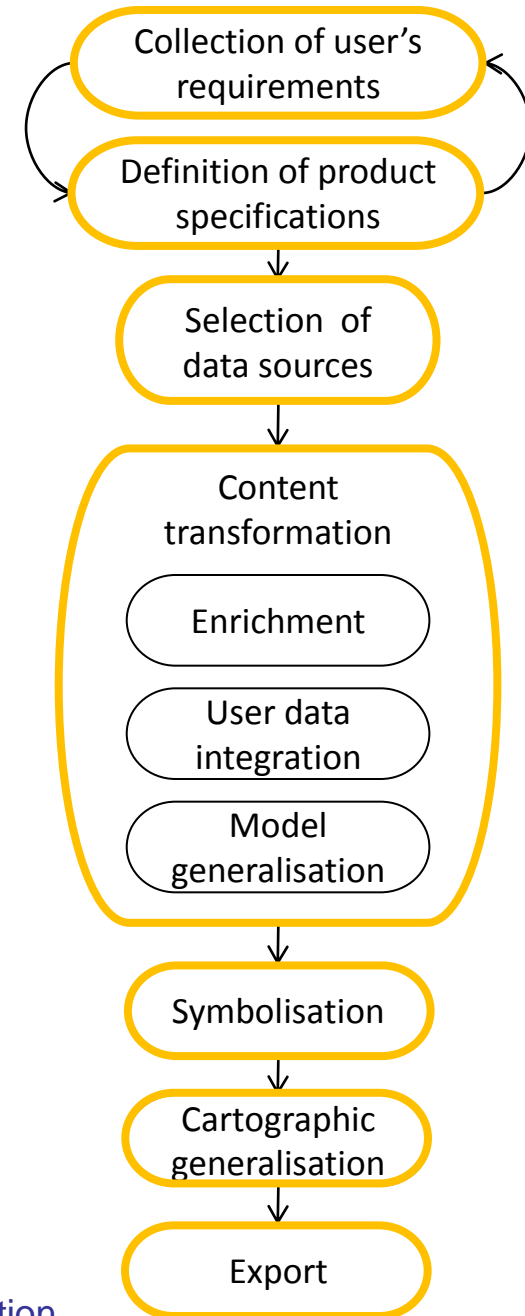
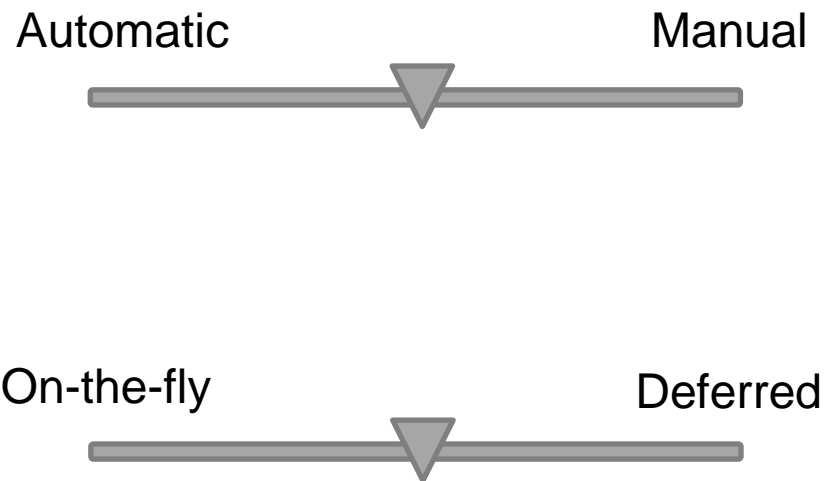
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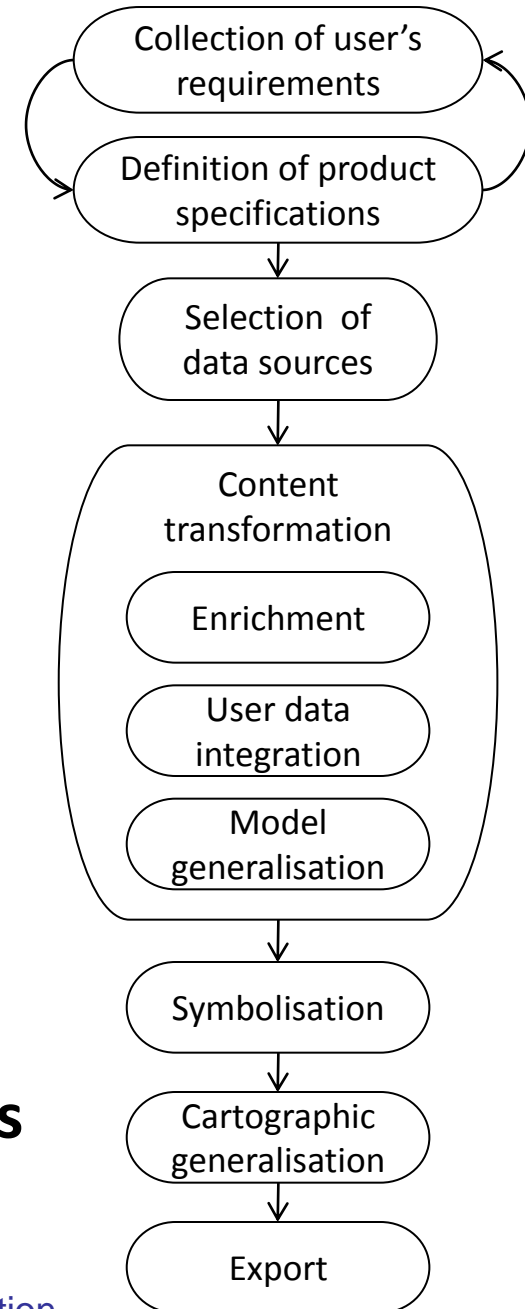


On-demand mapping

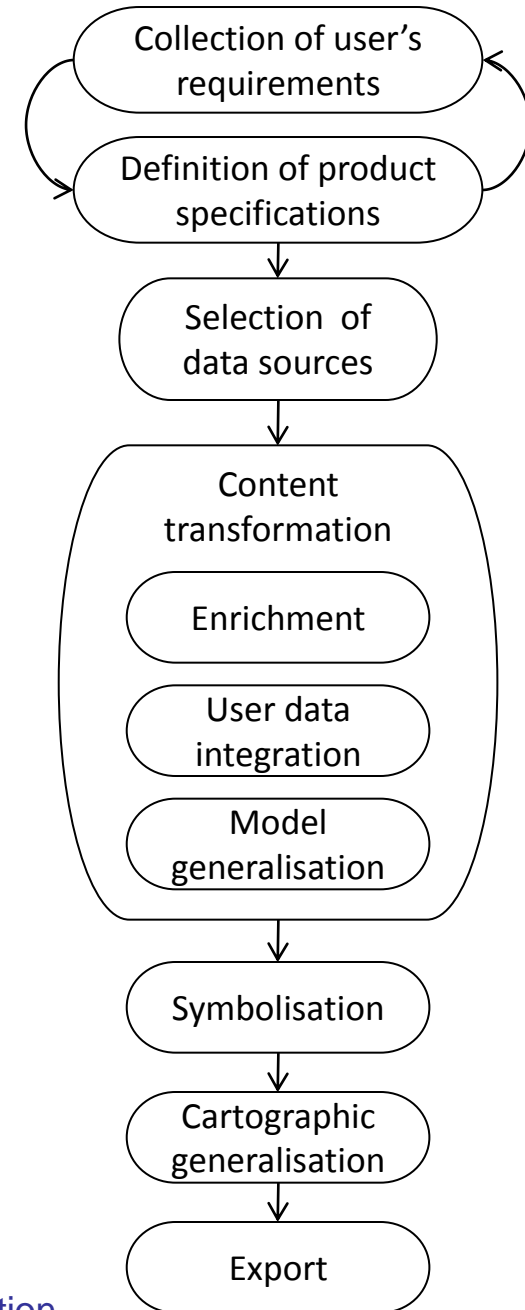


Our goals

- **Long-term goal:**
Full automatic on-demand mapping at a reasonable speed
- **Mid-term goal:**
Pave the way for on-demand mapping by proposing a **conceptual framework**
- **Short term goal:**
Prove specific components of the conceptual framework through **prototypes**



Related works

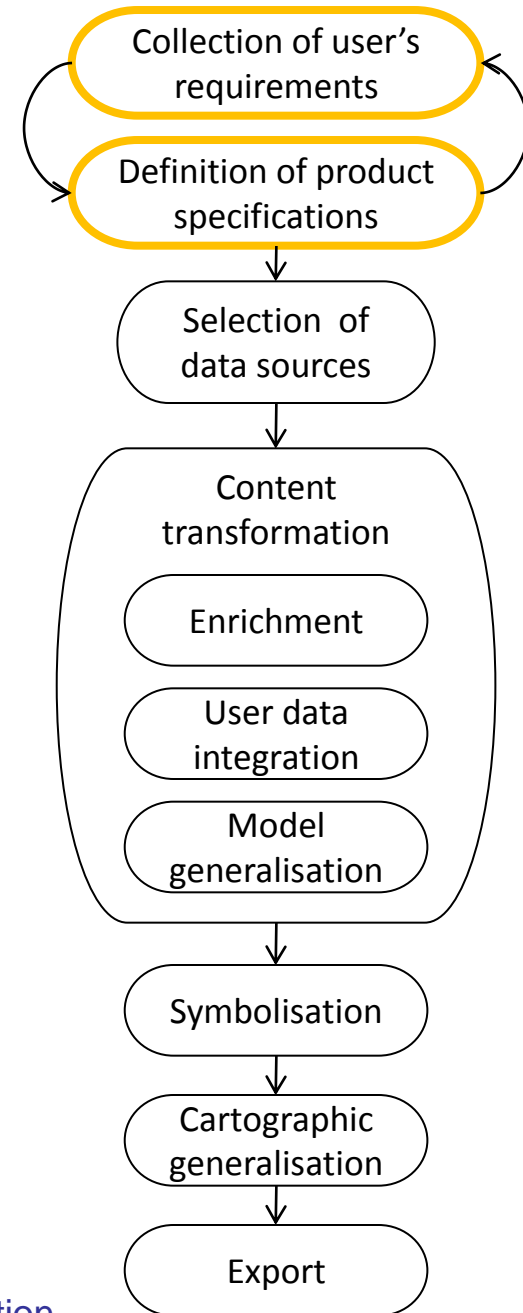


Related works

Dialogue applications

(Hubert, 2005)

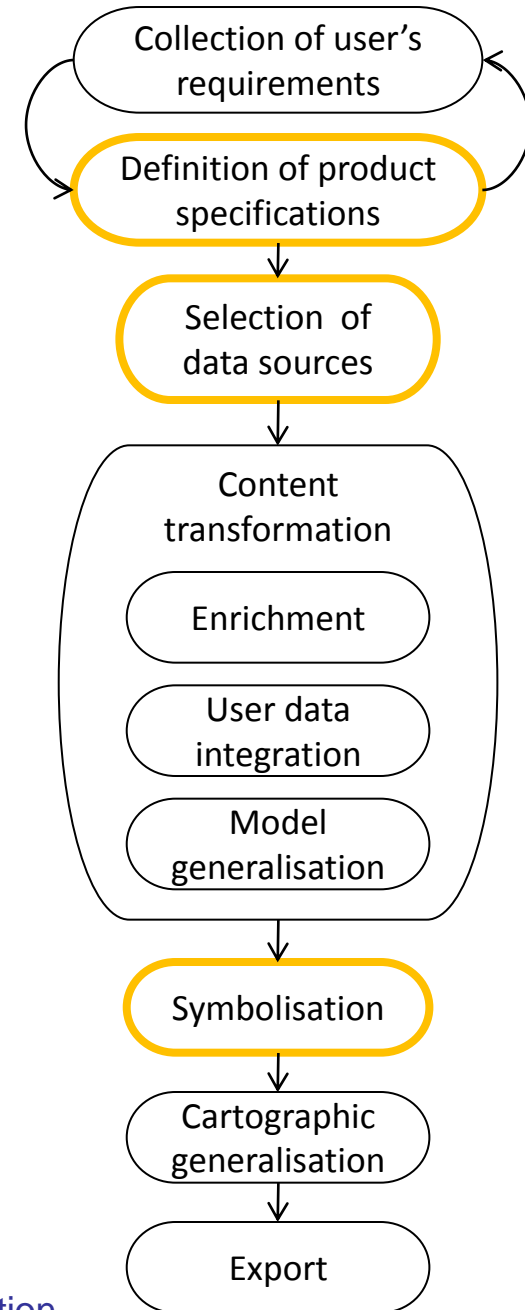
(Christophe, 2009)



Related works

Expert mapping systems
focusing on content selection
and symbolisation

(Forrest, 1999)

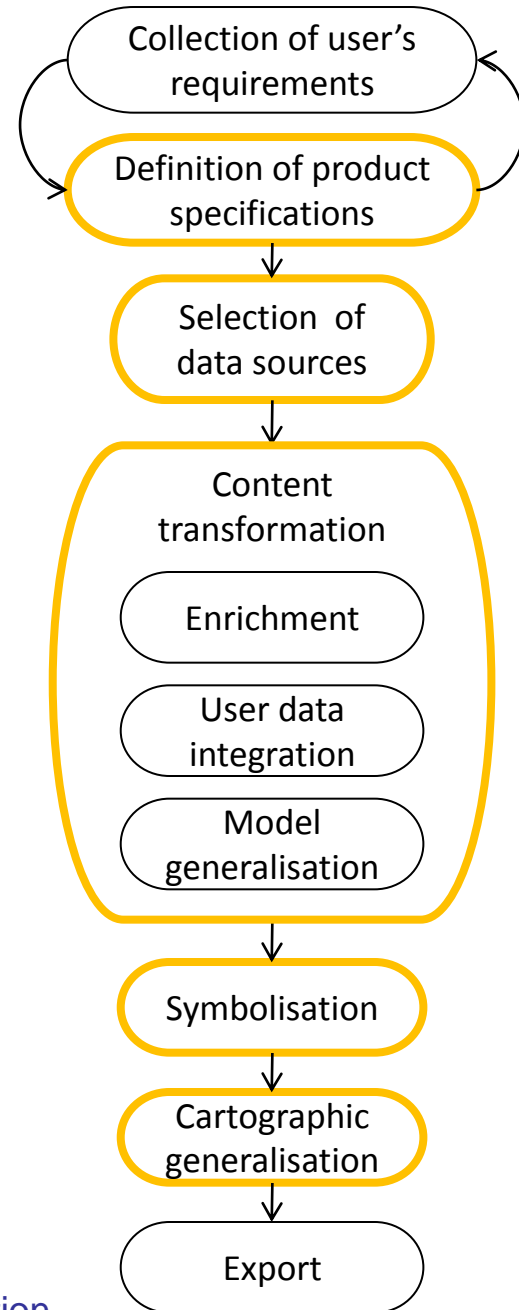


Related works

On-demand mapping systems
involving content transformation

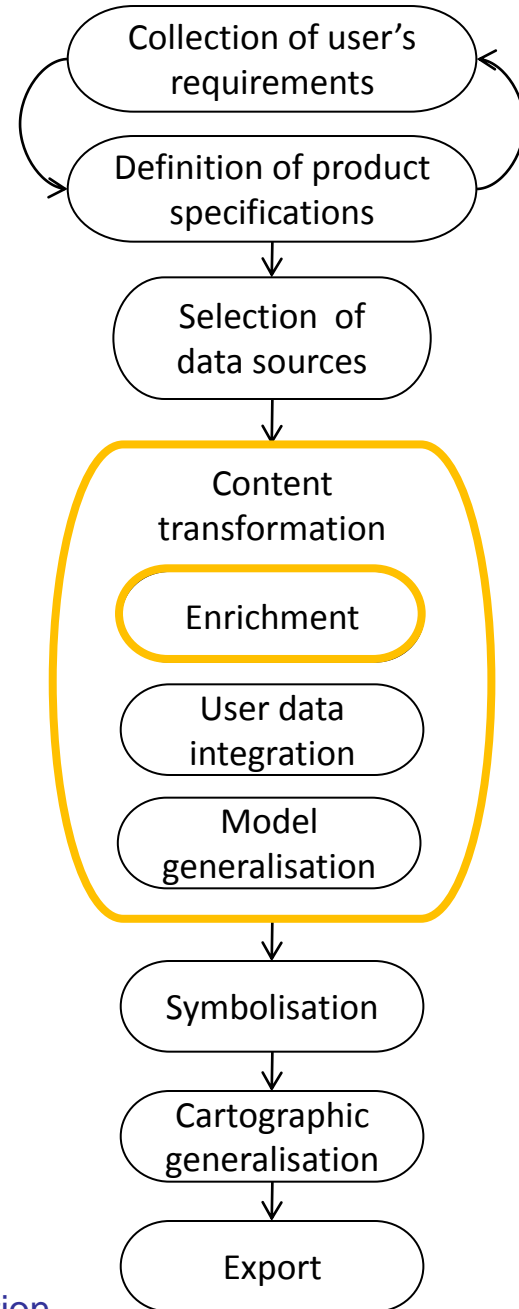
GiMoDig

Web architecture for
on-demand mapping (*Foerster, 2010*)



Related works

Ontology-driven enrichment (Lüscher, 2010)

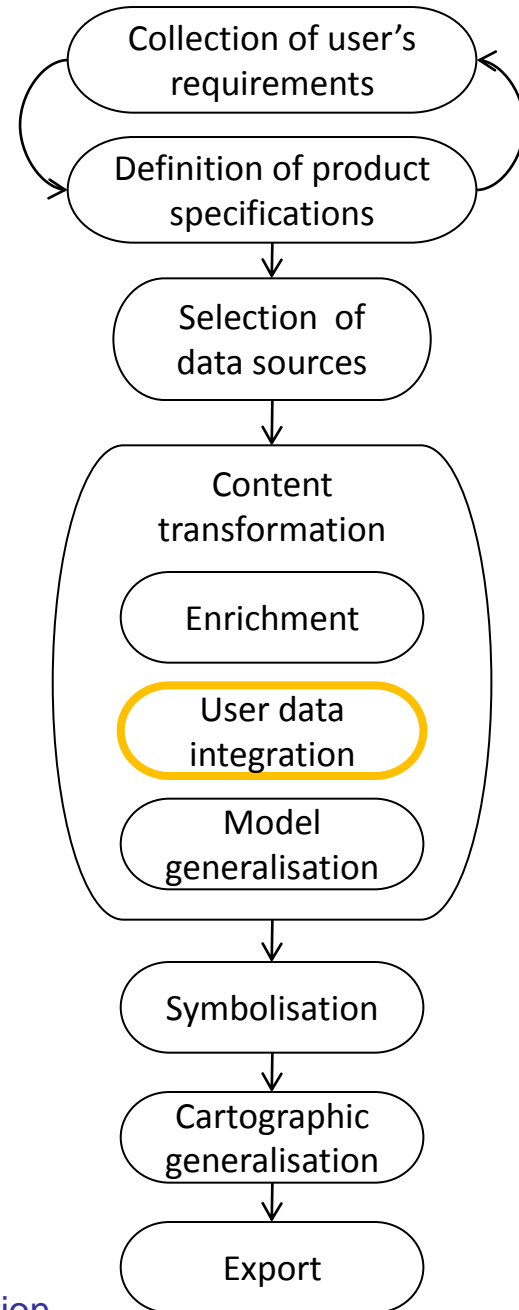


Related works

Extraction of constraints for integration
(Stern & Sester, 2011)

Mashup generalisation *(Jaara et al., 2011)*

Characterisation of user-generated content
(Brando et al., 2011)



Related works

On-the-fly generalisation

(Bernier & Bedard, 2007)

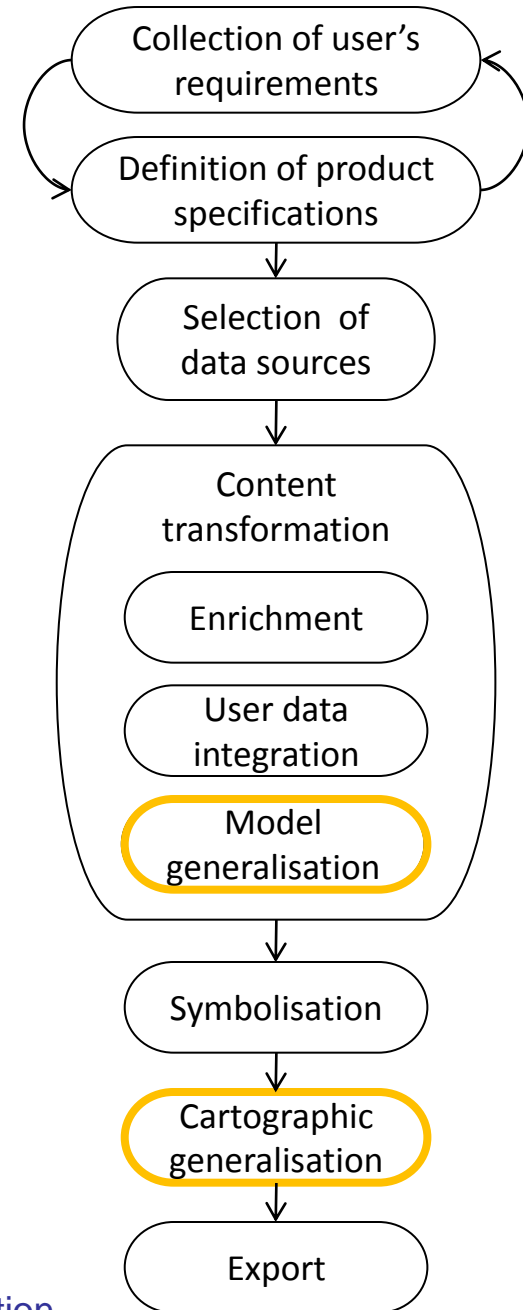
(Cecconi, 2003)

Generalisation Web Services

(Neun & Burghardt, 2005)

(Foerster et al., 2008)

Collaborative generalisation *(Touya, 2010)*



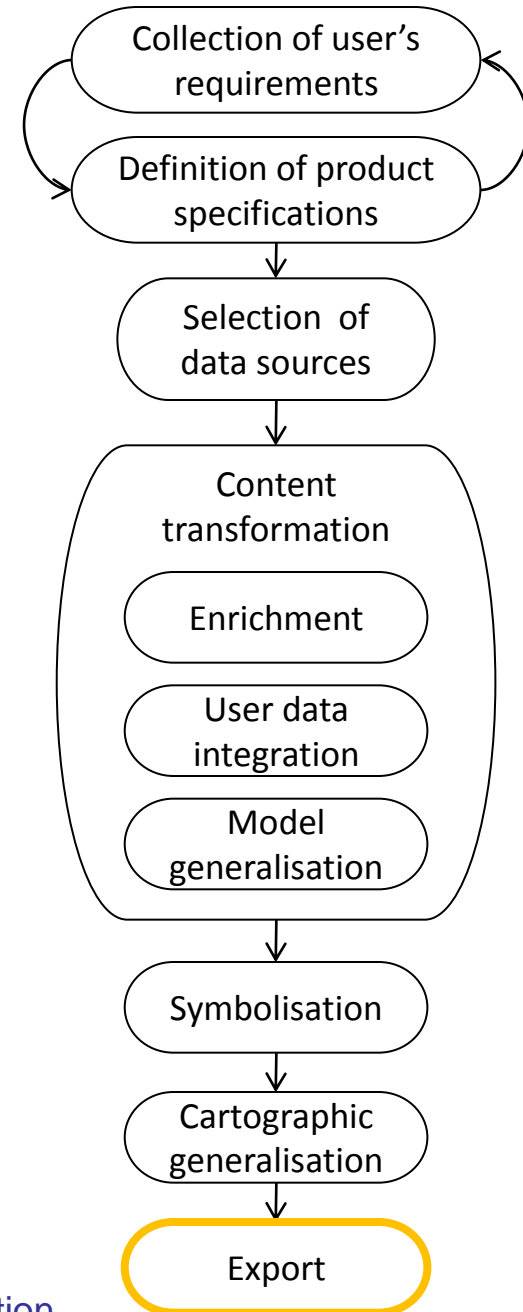
Related works

Schema transformations

(Letho, 2007)

(Balley, 2007)

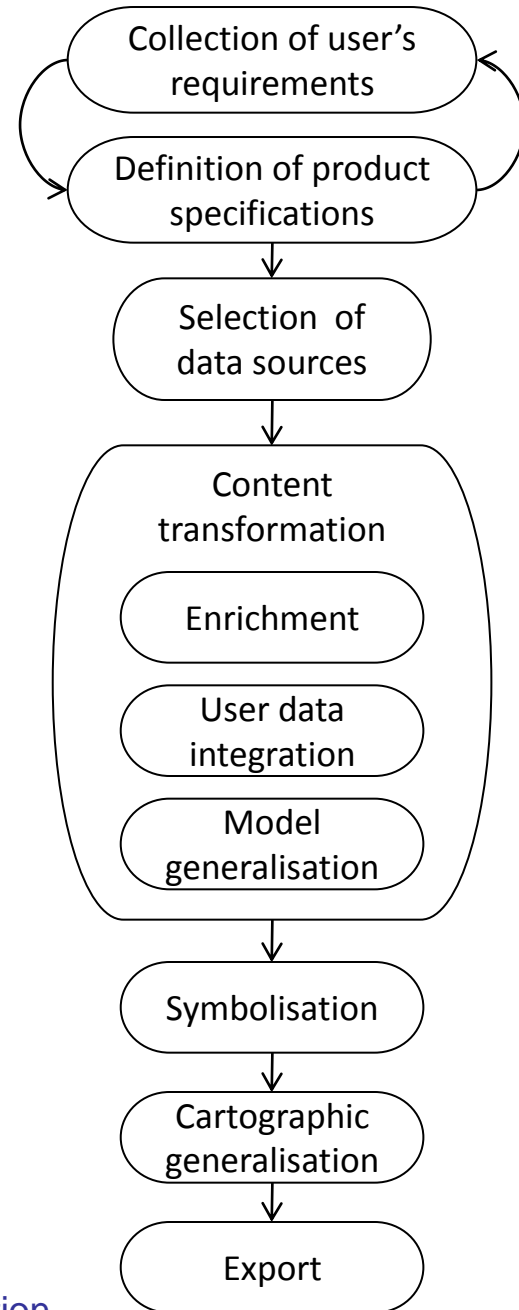
(Schade, 2009)



Related works

Towards genericity and modularity

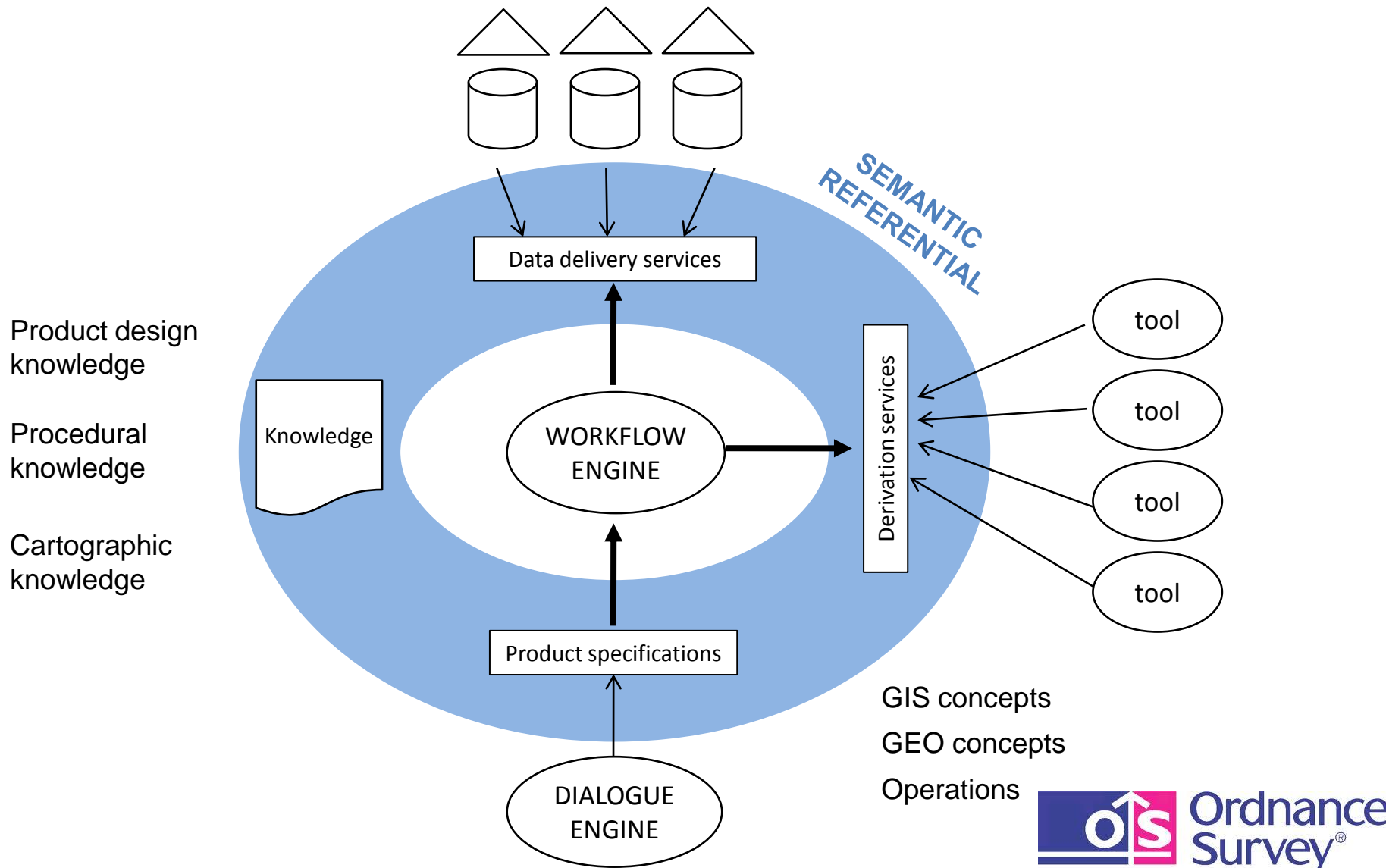
- Standards
- Ontologies
- Semantic data modelling
- Semantic web services



Related works - Summary

- Many existing and ongoing contributions
- A framework for future contributions?
 - ⇒ Reusable components
 - ⇒ Extensible on-demand mapping systems
- Collaboration needed

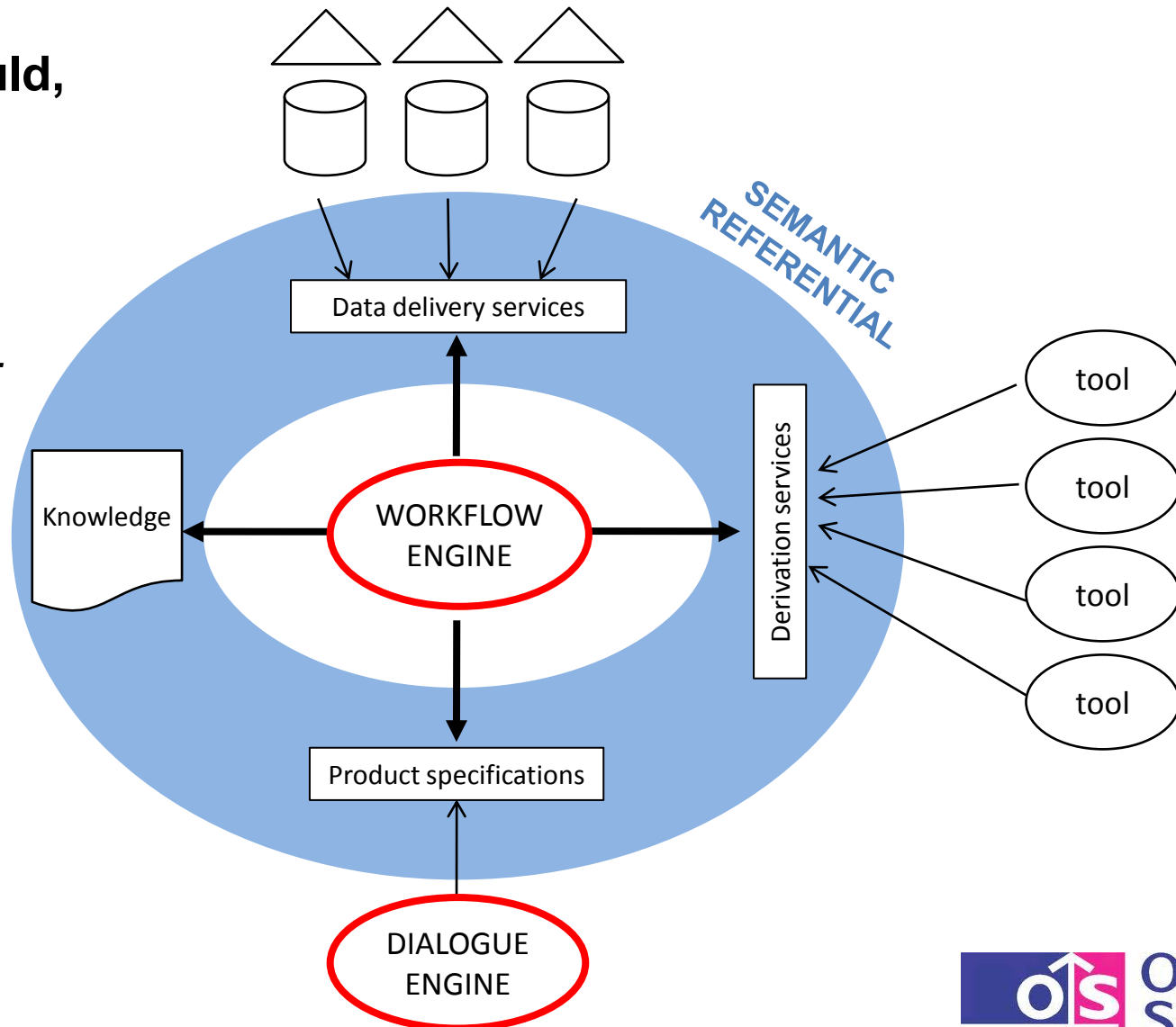
High-level architecture



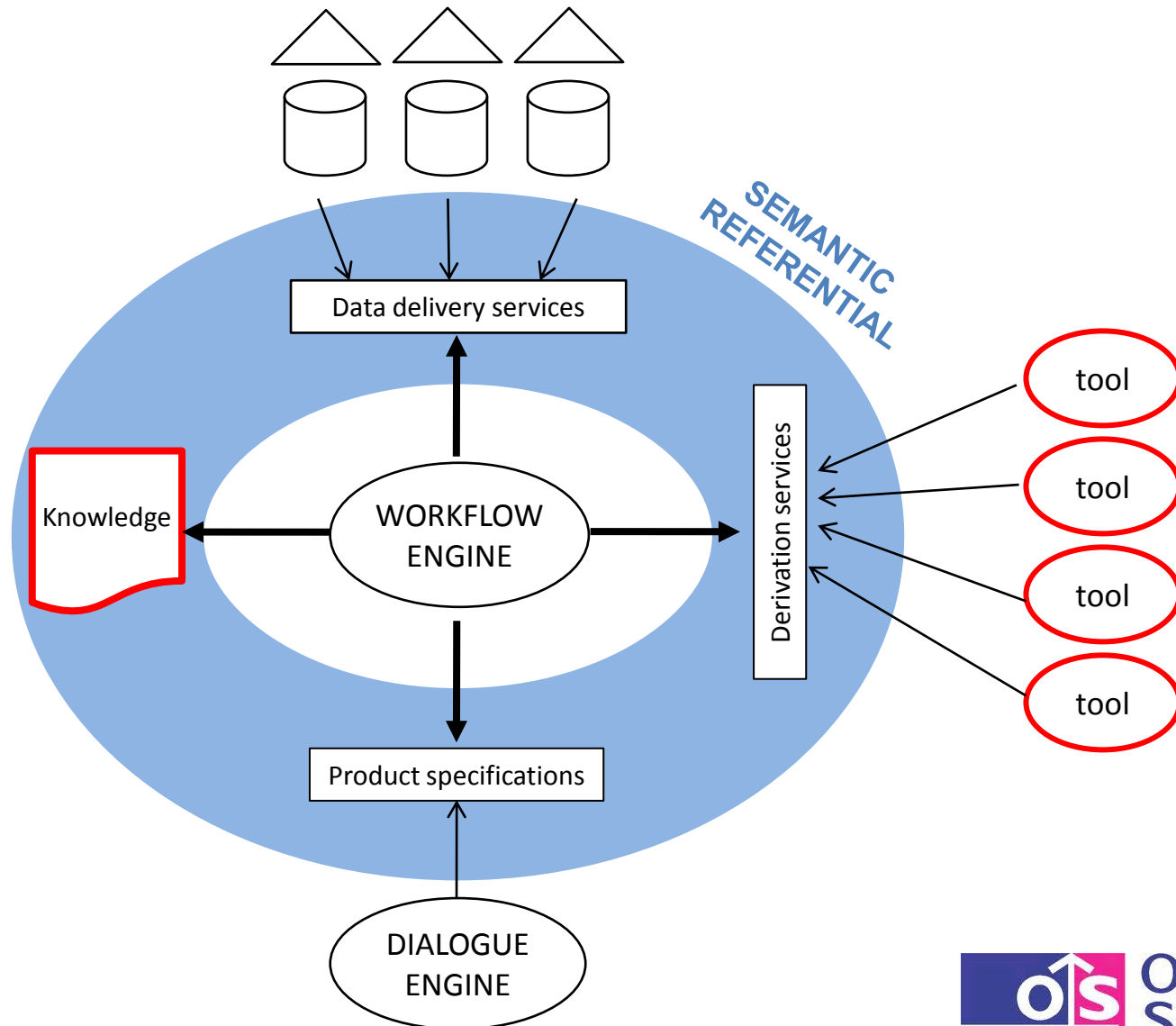
Collaboration: Building modules?

**Nicholas Gould,
MMU:**

*A workflow
management
system for on-
demand
mapping*

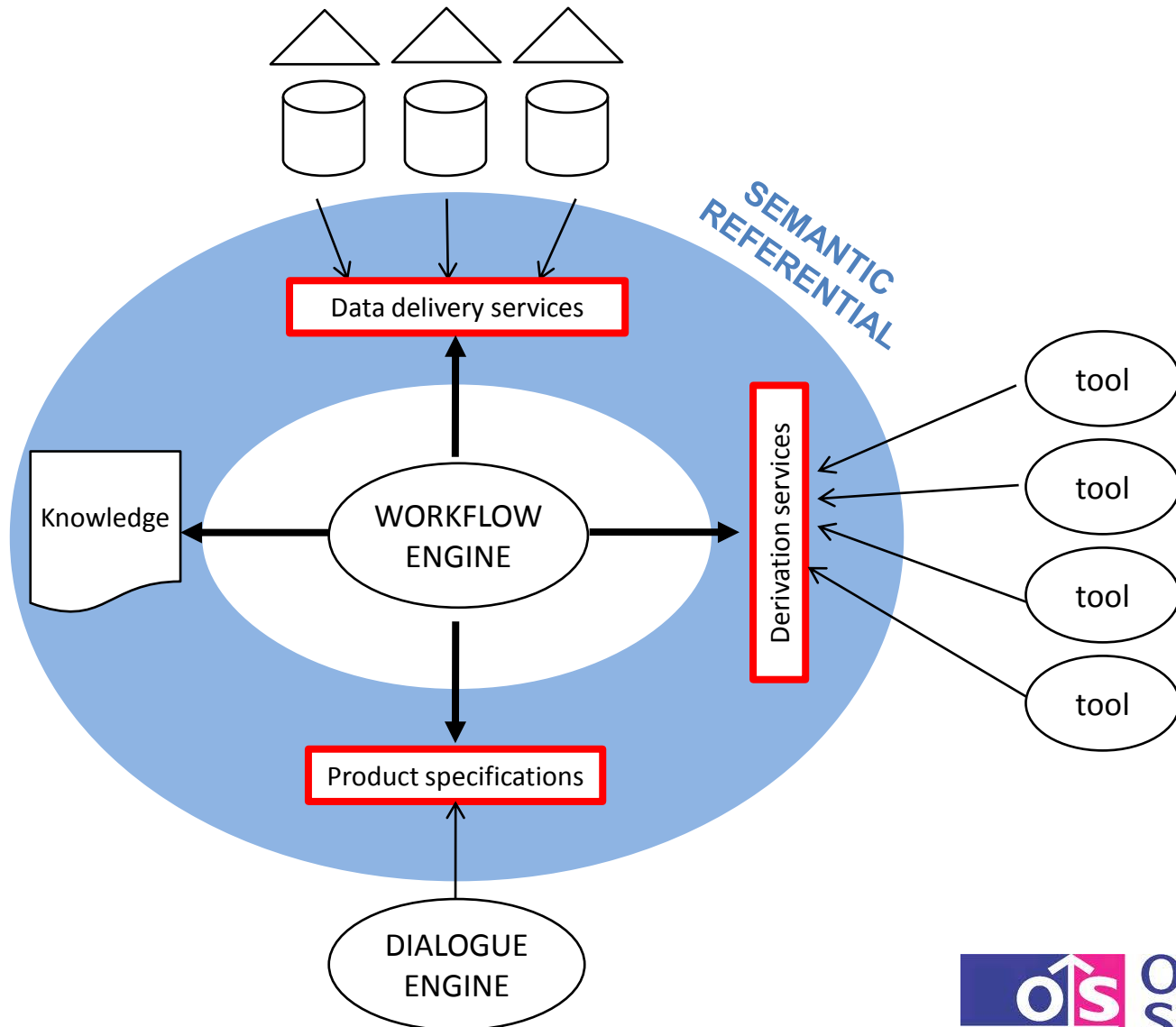


Collaboration: Sharing resources?

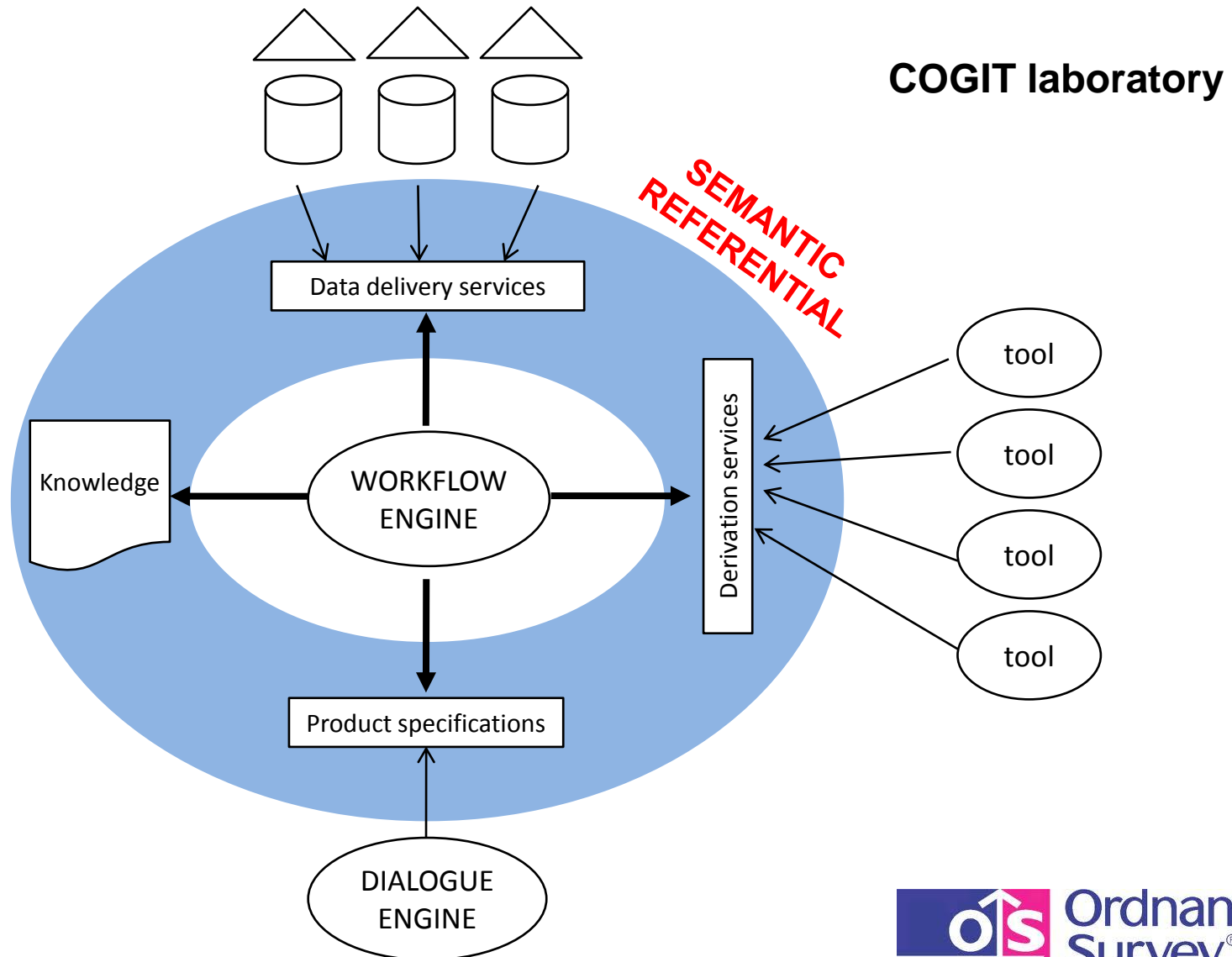


Collaboration: Sharing models?

Standards



Collaboration: Sharing a semantic referential?



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Motorway

Definition [\[edit\]](#)

A major classified road, and associated approach road and slip roads, consisting of separate carriageways with separate flow directions, the carriageways are partitioned by barriers.

[Back to Geo Concepts](#)

Motorway	
Meta information for the Geo Concept	
Proposed by	SB
Proposed on	04/05/2011
Definition source	OS RWO Catalogue
Similarity to source	identical
Scope	first use case
Status	first draft

IGN-OS WIKI

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Scale range

Minimal and maximal scales defining the domain of "relevant use" of a digital product.

We could use as a reference the six scale ranges defined by the Multi-Resolution Database Programm at Ordnance Survey.

Detailed	around 1:2500	from 1:1000 to 1:10.000
Local	around 1:10.000	from 1:5000 to 1:40.000
District	around 1:40.000	from 1:20.000 to 1:100.000
Regional	around 1:100.000	from 1:70.000 to 1:500.000
National	around 1:500.000	from 1:250.000 to 1:2.000.000
International	around 1:2.000.000	from 1:1.250.000

Scale range

Meta information for the GIS Concept

Proposed by	SB
Proposed on	01/06/2011
Definition source	Ordnance Survey
Similarity to source	-
Scope	global
Status	first draft

[Back to GIS concepts](#)

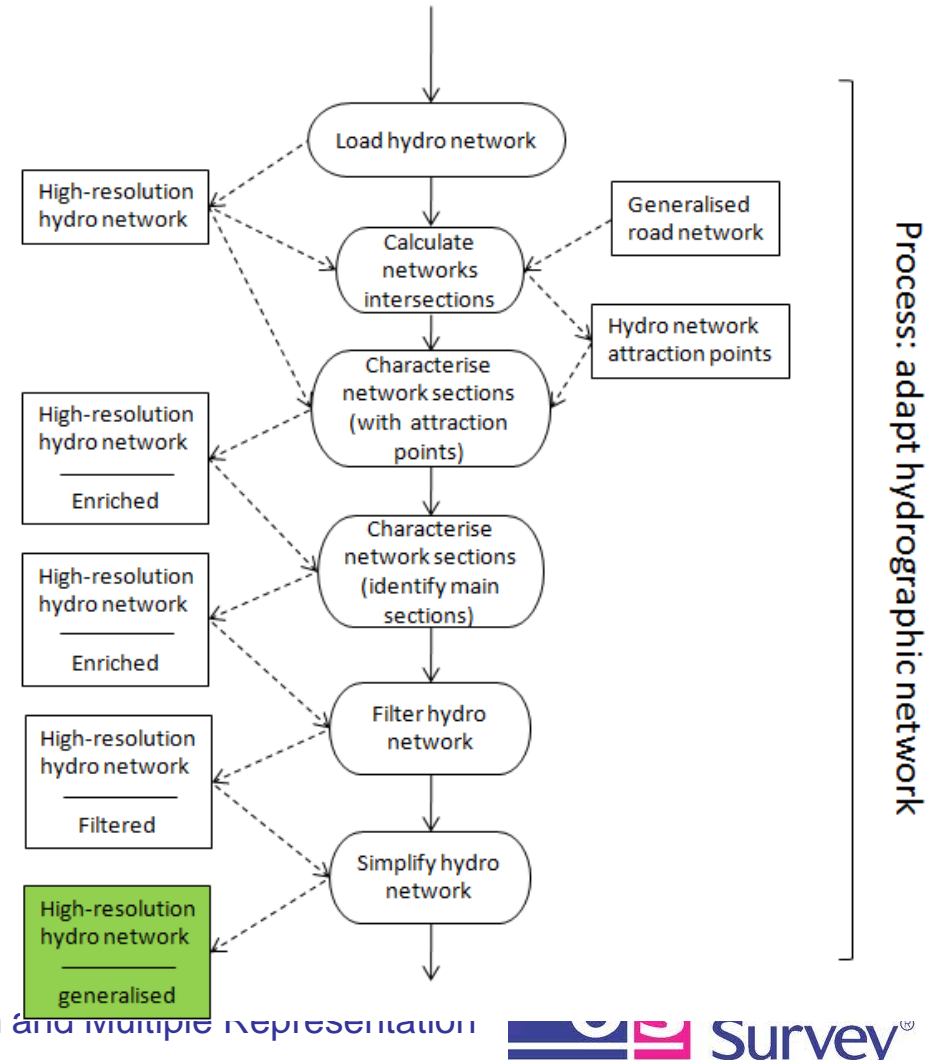
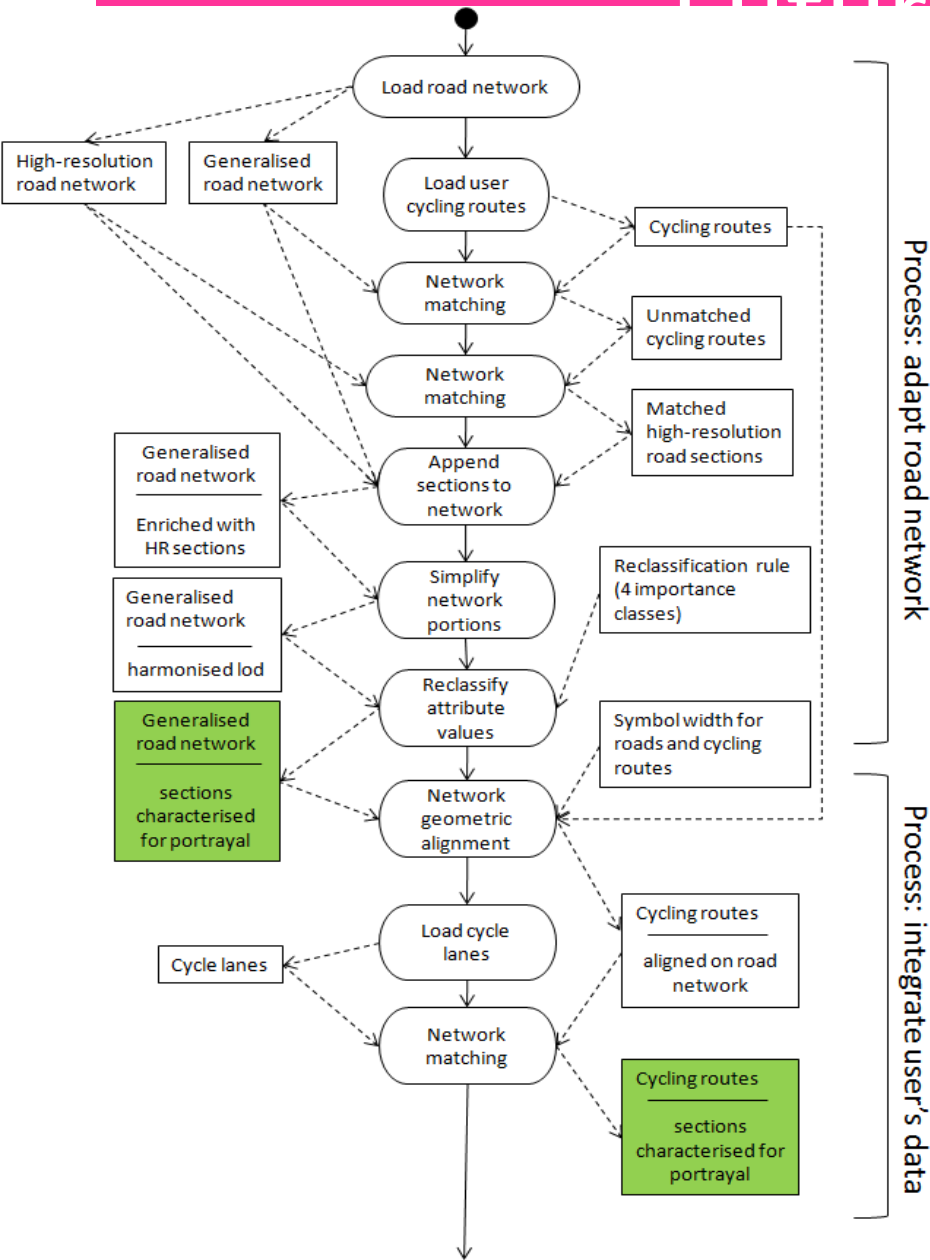
Conclusions

- On-demand mapping is a long-term goal
- Many projects required
- Agree on a framework now to share contributions later?

Future work

- At Ordnance Survey:
A demonstrator restricted to a use-case to prove some parts of the high-level architecture.

Future work



and multiple representation

Future work

- At Ordnance Survey:
A demonstrator restricted to a use-case to prove some parts of the high-level architecture.
- Further modeling with our current partners
- Reflect about collaboration modalities
- Enlarge the consortium?

Thank you