

Semantic Web Integration of Cultural Heritage Sources



Electronics & Computer Science

University of Southampton

P. Sinclair, P. Lewis and K. Martinez

Electronics and Computer Science,

University of Southampton,

SO17 1BJ, United Kingdom

pass.phl.km@ecs.soton.ac.uk

M. Addis, S. Hafeez, R. Lowe and D. Prideaux

IT Innovation Centre,

Southampton,

SO16 7NP, United Kingdom

mja,djp@it-innovation.soton.ac.uk

CRM Core

Based on the CIDOC Conceptual Reference Model (CIDOC CRM), CRM Core is a simple metadata structure for describing cultural information.

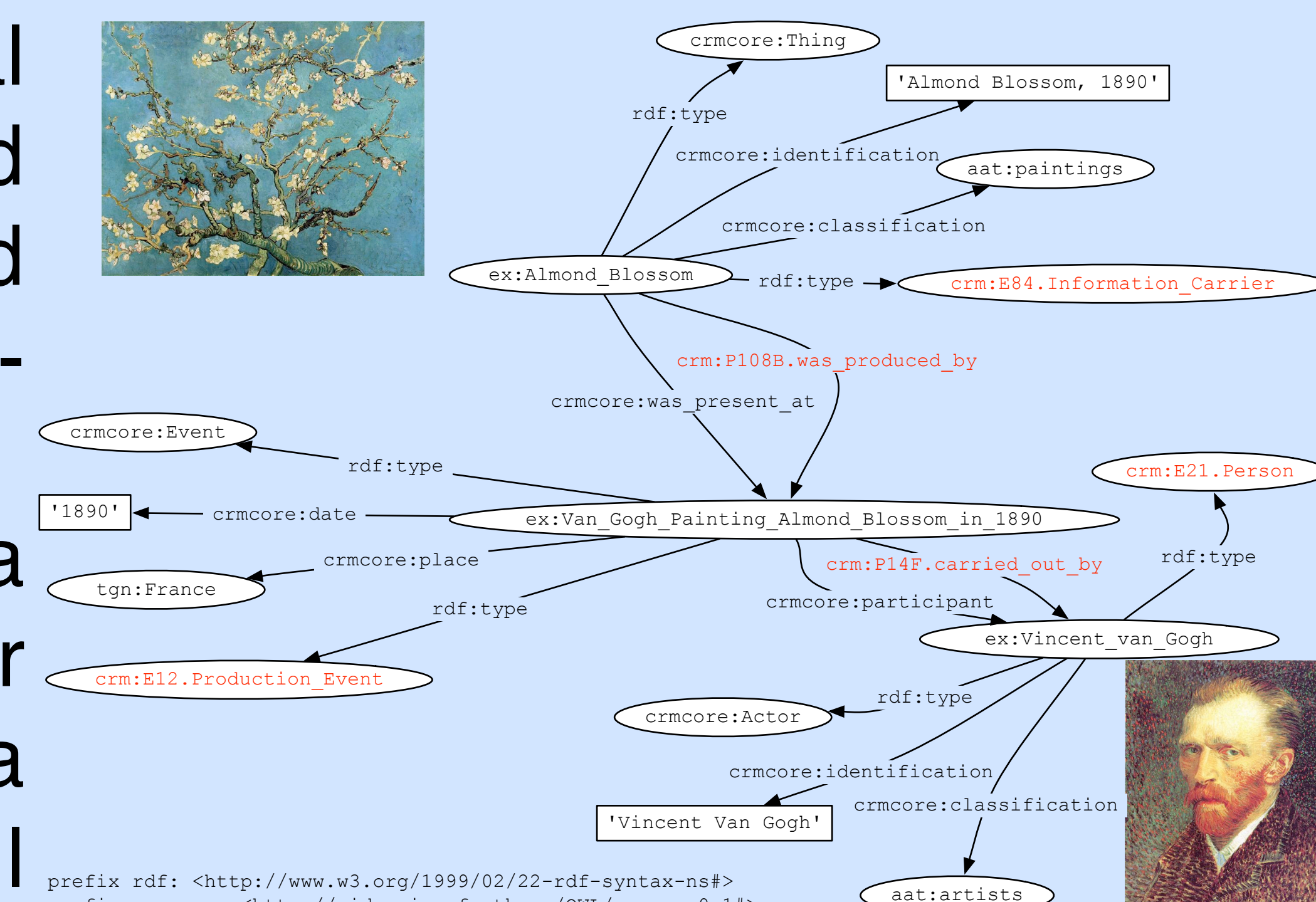
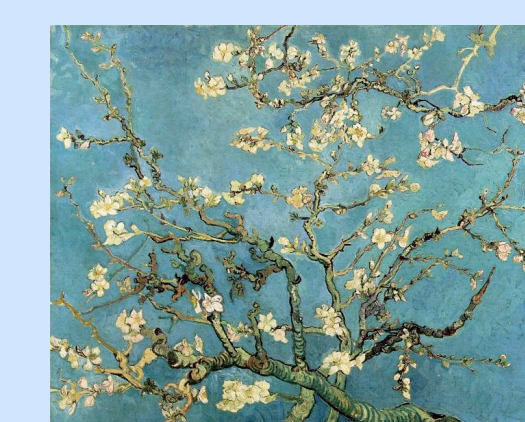
<http://cidoc.ics.forth.gr>

The CIDOC CRM is a core ontology for the semantic integration of cultural information, including library, archive and other information.

CRM Core is a recent proposal from CIDOC for a highly condensed set of metadata elements. It follows the CIDOC

CRM notion that historical context can be abstracted as things, people and ideas meeting in space-time.

CRM Core provides a common model for representing the metadata from different cultural heritage sources.



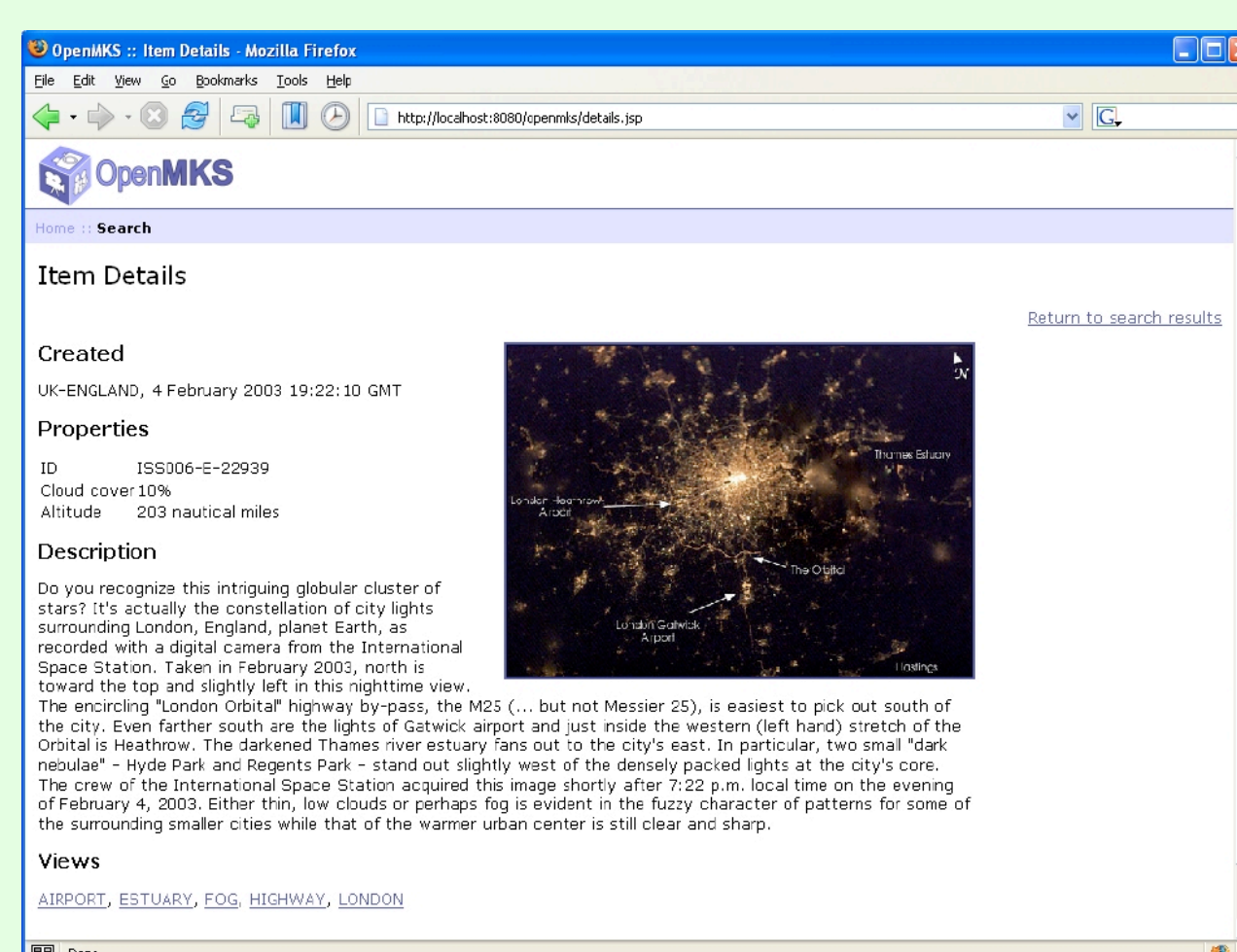
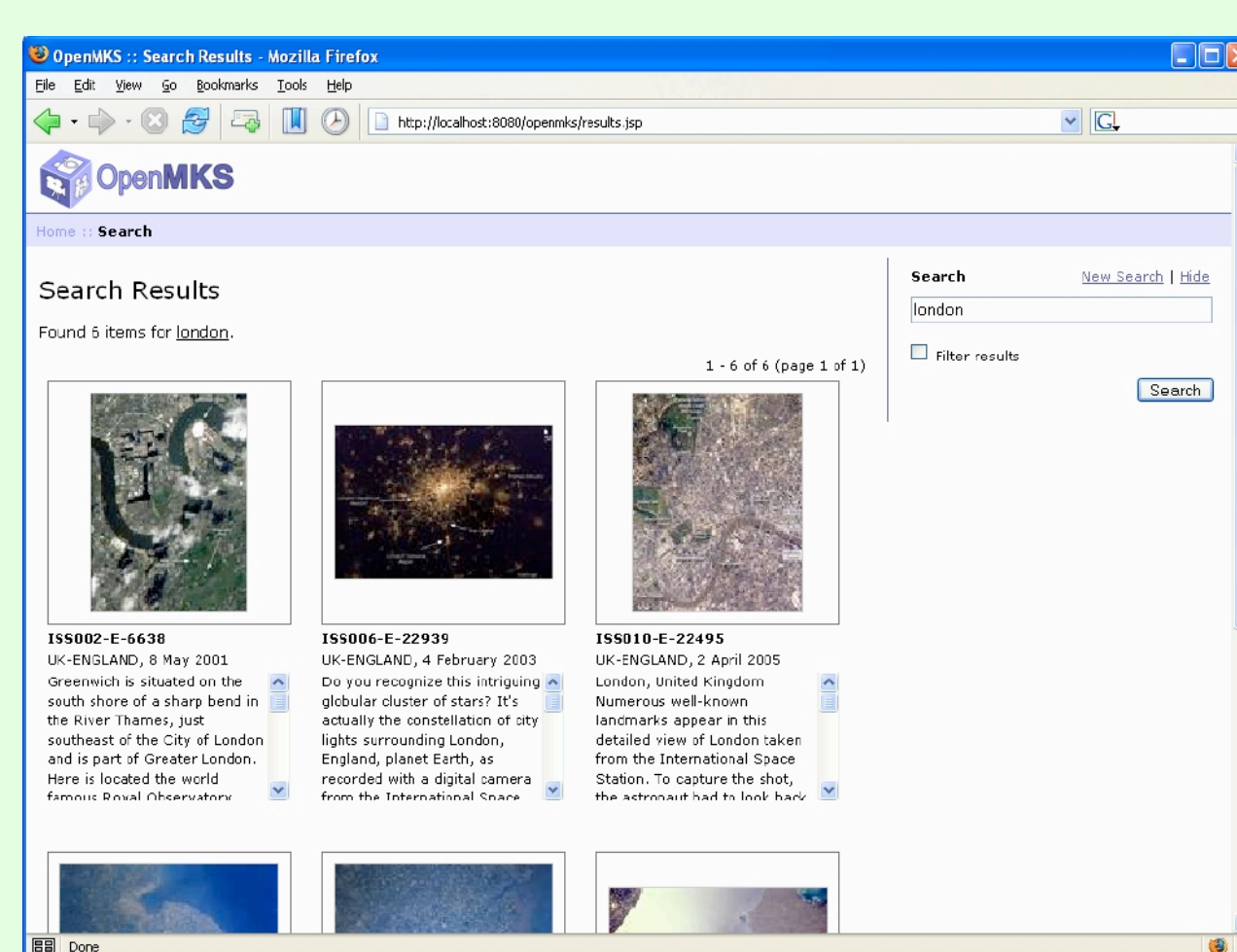
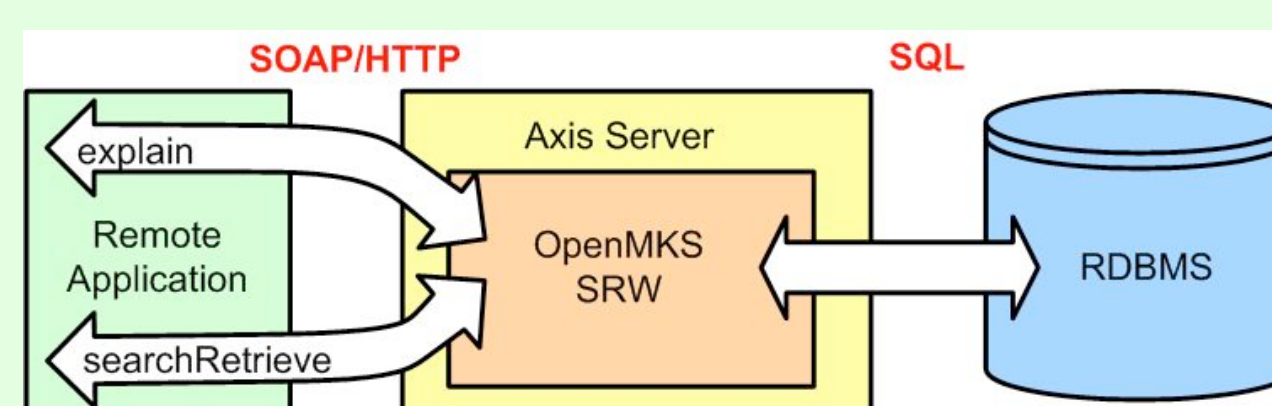
```
prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
prefix crmcore: <http://cidoc.ics.forth.gr/OWL/crmcore0.1#>
prefix ex: <http://cidoc.ics.forth.gr/crm_core/demo#>
prefix tgn: <http://www.getty.edu/research/conducting_research/vocabularies/tgn#>
prefix aat: <http://www.getty.edu/research/conducting_research/vocabularies/aat#>
prefix crm: <http://cidoc.ics.forth.gr/OWL/crm3.4.9#>
```



OpenMKS

OpenMKS is a search and navigation tool for large multimedia collections supporting the z39.50 ZING Community Search and Retrieval Web Service specification (SRW).

<http://openmks.sourceforge.net>



OpenMKS provides a way for external systems to query the contents of a digital multimedia library using Web Services.

Different cultural heritage metadata schemas are semantically mapped to CIDOC CRM and exposed through the SRW using a CRM Core XML schema. This provides the foundation for cross-collection searching as well as easy selection and extraction of data sets for further semantic integration. Web interfaces built on the SRW allow users to directly search, navigate and retrieve metadata and media.



We are using CRM Core and the OpenMKS platform to semantically integrate different cultural heritage collections.



<http://www.echase.org>

Mapping metadata schemas to CRM Core is not enough to achieve full semantic interoperability as the data values used by different sources must be rationalised and harmonized.

The CRM Core metadata obtained through OpenMKS SRW is converted into RDF and loaded into a triple store.

Taverna Workbench, a service oriented workflow system, is then employed as the platform for cleaning and processing data from the different cultural heritage collections.



<http://taverna.sourceforge.net/>

Services that we have developed include:

- mapping place descriptions to a gazetteer
- converting different date formats to a common format
- converting keywording and thesaurus schemes to SKOS.