

CULTURESAMPO

– Finnish Culture on the Semantic Web

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This paper presents the semantic portal “CULTURESAMPO—Finnish Culture on the Semantic Web”¹ [1, 2]. The portal provides memory organizations and other cultural content publishers with a national, shared semantic publication channel for heterogeneous cultural contents. The content comes from over ten organizations and is annotated using various ontologies of the FinnONTO infrastructure [3]. For the end-user, intelligent semantic search, recommendation, and visualization services for accessing and learning about cultural heritage are provided.

The portal extends our earlier work on MUSEUMFINLAND² [4] as follows:

1. *Dealing with cross-domain heterogeneous contents.* The portal contains not only artifacts, but cultural contents of different forms, including paintings, photographs, folk poetry, biografies, skills, videos, buildings, historical events, maps, and music.
2. *Event-based knowledge representation.* CULTURESAMPO uses event-based modeling for representing implicit knowledge embedded in the various metadata schemas of the content types, for more detailed annotations of e.g. images, narrative stories, and historical events, and for making all this metadata mutually interoperable at a semantic level [5].
3. *New forms of semantic search.* The faceted search paradigm is being extended to deal with multiple metadata formats and for viewing search results in two orthogonal dimensions [6]. In addition, “relational search” where associations between search objects are searched is being developed [7] to answer questions such as “How is Pablo Picasso related to Napoleon I”.
4. *New forms of semantic browsing.* New methods for creating automatically semantic recommendation links are being developed [8]. These methods utilize the rich event-based knowledge representation scheme in use in the portal.
5. *Visualization and mash-ups.* The results are visualized using mash-ups and graphics. CULTURESAMPO uses e.g. Google maps that may be layered dynamically with old historical maps [9]. Timelines are used for projecting contents, and graphs for visualizing semantic relations between e.g. different artists.

The portal makes different content types semantically interoperable and provides its end-users with several accessing and visualizing approaches, called *perspectives*, to

¹ <http://www.kulttuurisampo.fi/>

² <http://www.museosuomi.fi/>

the RDF contents: 1) Semantic search based on semantic autocompletion and semantic categorization of results. 2) Relational search perspective for finding out semantic association chains between resources. 3) Historical event perspective, where content is aggregated based on a timeline of semantically annotated historical events. 4) Location perspective for finding and visualizing contents on contemporary maps [9]. 5) Historical map perspective, using historical maps and an ontology of Finnish historical places on top of Google Maps [9]. 5) Skill perspective, aggregating content based of semantic cultural process descriptions (e.g. farming or ceramic making). 6) Biographies, providing narratives from the Finnish National Biography interlinked with other collection contents. 7) Semantic Kalevala where culture is accessed through semantically annotated folklore [10]. 8) Karelia perspective, where Wikipedia pages related to a central cultural area in Finland are used for accessing semantically collections of CULTURESAMPO.

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³ <http://www.seco.tkk.fi/projects/finnonto/>