

Networked Knowledge Organization Systems and Services

The 5th European Networked Knowledge Organization Systems (NKOS) Workshop

Workshop Proposal for ECDL 2006

Duration: 1 day

Expected number of participants: 40

Organisers

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Workshop organisers (short CVs)

Traugott Koch is Research Officer at UKOLN, University of Bath, UK, primarily concerned with e-Science, service registries and terminology services projects. During his 21 years at Lund University, Sweden, he co-founded 1992 the Digital Library development department NetLab and worked there as a Senior Librarian and Digital Library Scientist until 2005. Traugott is still a member of the Knowledge Discovery and Digital Library Research Group (KnowLib) at the Department of Information Technology at Lund University. Other affiliations were OCLC, the Technical Knowledge Center & Library of Denmark, the Maastricht McLuhan Institute and the FAO. Traugott has worked in European Union, Nordic and national digital library projects, i.e. the EU projects DESIRE I and II, EULER and Renardus, a TEMPUS project in Lithuania, the Networks of Excellence DELOS and E-Culture Net, the Nordic Metadata Project, EELS (the Engineering Electronic Library Sweden) and the project "Intelligent components in a distributed Digital Library". He has published more than 60 scholarly papers, edited one book and four journal special issues and has presented a large number of lectures, papers, courses and workshops. Traugott serves on many programme committees for conferences, reviews papers and chairs sessions (e.g. ECDL since 2000). In 2003 he was the Program Chair of ECDL. He is Theme Editor Information Discovery of the electronic peer reviewed journal "Journal of Digital Information" (JoDI) and a member of several other editorial and project boards (eg IJDL). Traugott has been a member of the Networked Knowledge Organization Systems/Services (NKOS) network since the beginning 1997 and served as organiser, chair and presenter at NKOS workshops and events both in the USA and Europe. He was editor of two NKOS special issues in JoDI 2001 and 2004. He has been involved in all four prior NKOS workshops at ECDL.

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Sebastian Ryszard Kruk is a Researcher in Digital Enterprise Research Institute, National University of Ireland, Galway, Ireland and a lecturer affiliated with Gdansk University of Technology, Poland (since 2002). Together with Henryk Krawczyk (GUT) he came up with an idea of the semantic digital library which was first implemented at GUT under the Elvis-DL project. At the moment he continues to work on this system under JeromeDL project, established as a joint project between DERI and GUT. To improve the quality of Elvis-DL/JeromeDL system he has started MarcOnt Initiative, FOAFRealm and HyperCuP project. All are at the moment supported by DERI and GUT under the hood of Corrib.org.

Marianne Lykke Nielsen holds a first degree in Librarianship (1983) and a MSc in Library and Information Science (1992) from the Royal School of Library and Information Science, Denmark. She received a PhD from Åbo Akademi University, Department of Information Studies, Finland in 2002. From 1994 she is Associate Professor at the Royal School of Library and Information Science, Denmark. From 1983 and 1994 she worked as information specialist in private and national organizations: FAO (Chile); CPEIP (Chile), APV Pasilac (Denmark), and Aalborg Business College (Denmark), with responsibilities in the area of information retrieval and design of information retrieval systems and domain-specific, in-house thesauri. Her principal teaching areas are metadata, indexing and knowledge organization systems (KOS). Her present research activities concentrate about design, construction methodologies, and use of thesauri and taxonomies in digital libraries and other retrieval systems. She collaborates with H. Lundbeck and Verity Inc to test corporate thesaurus for query expansion and automatic tagging. She works together with OGI School of Science & Engineering, Oregon Health & Science University, the Computer Science Department, Maseeh College of Engineering and Computer Science, Portland State University and the USDA Forest Service to evaluate a multi-hierarchical taxonomy for indexing and searching. She has carried out consultancy work for several Danish companies and organizations concerning design and evaluation of KOS. She is co-editor of Danish Library Research, and she serves as a reviewer for various journals and international programme committees. She is member of the ISO Records Management Metadata Working Group, and the Danish Research Network of E-gov IT Architecture.

<http://www2.db.dk/mln/>

Douglas Tudhope is Reader in the School of Computing, University of Glamorgan and leads the Hypermedia Research Unit. He graduated from the University of Edinburgh in 1976 with a 1st class Honours BSc in Computer Science. He received a PhD from the University of Wales in 1981. Before joining the University of Glamorgan, he worked as a Programmer/Analyst, at the University of California, San Diego for the Hubble Space Telescope Project 1984 – 1989, with responsibilities in the areas of image processing and analysis and system management. His main current research interests are the intersecting areas of information science, digital libraries and hypermedia and in the emerging semantic web/grid. He directed the UK national science research council (EPSRC) funded FACET project in collaboration with the UK Science Museum; J. Paul Getty Trust (provided the Art and Architecture Thesaurus for the project); Museum Documentation Association; Canadian Heritage Information Network. This project investigated semantic query expansion in thesaurus-based retrieval and the close integration of the thesaurus in the search interface. Since 1977, he has been Editor of the journal, *New Review of Hypermedia and Multimedia* and he is currently Theme Editor, *Information Discovery, Journal of Digital Information (JoDI)*. He serves as a reviewer for various journals and international programme committees. He is a member of the Networked Knowledge Organisation Systems/Services (NKOS) network and has organised or co-organised all 4 NKOS workshop at ECDL. He co-edited the 2004 NKOS JoDI issue with Traugott Koch and is co-editing the 2006 KOS NRHM issue with Marianne Lykke Nielsen.

<http://www.comp.glam.ac.uk/pages/staff/dstudhope/>

Extended Abstract

We propose a full-day workshop of projects, research, and development related to next-generation Networked Knowledge Organization Systems/Services (NKOS) in digital libraries. This proposal builds on the well-attended NKOS workshops at ECDL 2000, 2003, 2004 and 2005. We would expect 40 attendees at this workshop.

The proposal is supported by the international NKOS network, its website and discussion list. Presentations are made available on the workshop website. Previous NKOS workshops have resulted in journal special issues (see References). Authors presenting significant results at the workshop will be encouraged to submit papers for consideration in a future issue of the Journal of Digital Information (Koch and Tudhope are JoDI theme editors for Information Discovery).

Knowledge Organization Systems, such as classifications, gazetteers, lexical databases, ontologies, taxonomies and thesauri, attempt to model the underlying semantic structure of a domain. Modern digital information systems afford more options for mapping and presenting alternative orders of information than traditional physical libraries. The digital environment offers more possibilities of presenting information from different interests and discourses. Thus, the challenge is as much intellectual as technical when we want to develop knowledge organization systems that are useful and meaningful for the end-users operating in complex, interdisciplinary knowledge domains. The workshop would address the following general themes, although we will also remain open to emergent issues:

- **User-centred design issues.** User-centred design strategies for KOS. How to develop understandable and thorough descriptions of concepts and terms? How to show and explain relationships? The challenge is to find the appropriate level of explanation, clarity and conciseness. Innovative visualisations of KOS content may assist – how to achieve these in networked situations?
- **KOS Interoperability.** Cross-browsing and cross-searching between distributed KOS services, mapping between terms, classes and systems, mapping between KOS and ontologies. How to achieve semantic interoperability?
- **KOS representations and service protocols.** A basic infrastructure is needed in order to achieve programmatic access to KOS services. We need to provide protocols for networked access to a variety of vocabularies for different end users and applications. These require standard representations in formats such as RDF/XML. What is the appropriate granularity of base services to apply in evolving Web/Grid environments?
- **Terminology services.** We need to identify and specify terminology services for different applications, within a service-oriented approach/architecture, building on the basic infrastructure.
- **Social tagging.** Participative user-based approaches to knowledge organization and cataloguing are emerging and attracting significant community support. What is the role of social tagging and informal knowledge structures versus established KOS?

Semantic Web Special Session. A significant feature of this NKOS workshop will be a special session, highlighting Semantic Web applications of KOS in Digital Libraries. This builds on Semantic Web contacts established at previous NKOS workshops at ECDL and represents a convergence of semantic Digital Library efforts from LIS and Semantic Web communities. This session will be chaired by Thomas Baker and Bernhard Haslhofer.

The Semantic Web effort has provided standards and technologies for expressing, exchanging and processing metadata. Initial infrastructure possibilities for tomorrow's semantic Digital Libraries are now emerging. Projects such as BRICKS, JeromeDL, SIMILE and SWAD-Europe (for example) are exploiting semantic descriptions to enhance machine-support for end users in their search for content and information and interoperability generally. Possible themes for the session include:

- Architecture and design issues for Semantic Digital Libraries
- Enabling standards and technologies
- Case studies and application scenarios

- P2P solutions for interconnecting Semantic Digital Libraries
- Enhanced semantic-aware search, browsing and retrieval functionalities
- Integration of existing metadata into a Semantic Digital Library
- Enabling ontologies, thesauri, and other controlled vocabularies

Workshop Structure

An open call for papers will be combined with selected invitations from major projects and demonstrations. The workshop is planned to consist of an introduction, technical presentations and a concluding directed discussion. The program committee will assist the review process as first-tier reviewers. The organisers will coordinate the process.

Indicative agenda structure, covering approximately 8 hours, including lunch and breaks:

- Session 1: Welcome and introduction (hrs 0:30)
- Session 2: Presentations drawing on five themes outlined above (hrs: 2:30)
- Session 3: Special Session focusing on Semantic Web issues (hrs: 2:30)
- Session 4: Briefing session in which emergent issues may be presented and discussed (hrs 1)
- Session 5: Concluding directed discussion, including options for co-operation (hrs 0.30)

Supporting material for the workshop would, following standard NKOS practice, be available via the NKOS website. This would include abstracts of presentations, information on participants, list of resources, projects and plans for the workshop before the conference. After the workshop, copies of presentations will be made available on the website.

Program committee

Hanne Albrechtsen, The Institute of Knowledge Sharing, Denmark

Thomas Baker, SUB - Goettingen State and University Library, Germany

Ian Davis, Talis, Birmingham, UK

Ron Davies, Information Consultant, Brussels, Belgium

Stefan Decker, Digital Enterprise Research Institute, National University of Ireland, Galway, Ireland

Lois Delcambre, Computer Science Department, Portland State University USA

Stella Dextre Clarke, Luke House, Wantage, United Kingdom

Martin Doerr, Institute of Computer Science, Foundation for Research and Technology (FORTH), Greece

Bernhard Haslhofer, ARC Seibersdorf research, Studio Digital Memory Engineering, Austria

Carlo Meghini, Istituto di Scienza e Tecnologie dell'Informazione, Pisa, Italy

Eva Mendez, Universidad Carlos III de Madrid, Spain

Libby Miller W3C, Bristol, UK

Alistair Miles, CCLRC - Rutherford Appleton Laboratory, United Kingdom

Erich Neuhold, Fraunhofer IPSI, Darmstadt, Germany

Axel Polleres, DERI Innsbruck, UIBK, Innsbruck, Austria

Dagobert Soergel, University of Maryland, USA

Diane Vizine-Goetz, OCLC Research, USA

Marcia Zeng, Kent State Univ, USA

Technical Requirements

The usual PC and projector, with 2-3 side tables for demonstrations if possible.

Expected participants

- Digital library and information infrastructure developers,
- Resource discovery service providers (search engines, directories, subject gateways, portals etc.),
- Information scientists, library, museum and archive professionals,
- Thesaurus and ontology developers,
- Standard developers in the area of terminology usage and exchange,
- Computer scientists interested in semantic web/grid issues, topic maps, XML/RDF technologies, web engineering, peer-to-peer researchers
- User interface designers for KOS and Semantic Web applications
- Social tagging and community-based application developers and users
- Language engineering and terminology studies researchers and developers,
- Knowledge managers.

References from past NKOS Workshops at ECDL

Report of the 2005 NKOS workshop, DLIB Sept 2003.

<http://www.dlib.org/dlib/november05/tudhope/11tudhope.html>

Special Issue of New Review of Hypermedia and Multimedia, 12(1), (forthcoming 2006).

Report of the 2004 NKOS workshop, DLIB Oct 2004.

<http://www.dlib.org/dlib/october04/nielsen/10nielsen.html>

Special Issue of the Journal of Digital Information (JoDI), 4(4), 2004.

<http://jodi.ecs.soton.ac.uk/?vol=4&iss=4>

Report of the 2003 NKOS workshop, DLIB Sept 2003.

<http://www.dlib.org/dlib/september03/09inbrief.html#TUDHOPE>

Special Issue of the Journal of Digital Information (JoDI), 1(8), 2001.

<http://jodi.ecs.soton.ac.uk/?vol=1&iss=8>

NKOS network website. <http://nkos.slis.kent.edu/>