DCPAPERS

Using Schema and Value Vocabularies to Provide Consistency Across Structured Content

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Abstract

Application profiles provide a framework for structuring information through two types of vocabularies: schema vocabularies, which specify properties and attributes, and value vocabularies, which define valid instances for those properties. While schema vocabularies are crucial for interoperability across federated resources and data systems, value vocabularies ensure consistency, discoverability, and reusability by reducing ambiguity in tagging, filtering, and concept relationships. This panel brings together experts in taxonomy, content strategy, and semantic technologies to examine the interplay between these vocabulary types in structured content environments. The discussion addresses challenges in vocabulary agreement, domain use case specification, and technical considerations for compliance with application profiles such as Dublin Core, DITA, DCAT, and iiRDS, with particular attention to how automation can optimize the linked data ecosystem.

Keywords

application profiles, schema vocabularies, value vocabularies, Dublin Core, DITA, DCAT, iiRDS

1. Panel Abstract

Schema vocabularies define the structure of an application profile by specifying which properties and attributes can be used to describe resources. These vocabularies establish the framework for metadata interoperability, enabling consistent representation of information across different systems and domains. Standards such as Dublin Core, DITA, DCAT, and iiRDS provide well-established schema vocabularies that organizations can adopt or extend to meet their specific requirements. The selection and implementation of schema vocabularies directly impacts how data can be shared, integrated, and reused across federated information systems.

Value vocabularies, in contrast, define the controlled sets of terms that can be used as values for properties specified in schema vocabularies. These include taxonomies, thesauri, authority files,

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and other knowledge organization systems that provide consistent terminology for describing resources. Value vocabularies are essential for ensuring that similar concepts are described using the same terms, enabling effective search, filtering, and aggregation of resources across collections. They reduce ambiguity by establishing preferred terms and relationships between concepts.

This panel brings together practitioners from taxonomy development, content strategy, and semantic technologies to explore how schema and value vocabularies work together in real-world implementations. The panelists will address the following questions:

- How do organizations negotiate vocabulary agreement when implementing shared application profiles across institutional boundaries?
- What are the key considerations for specifying domain use cases that require both schema and value vocabulary alignment?
- How can automation and artificial intelligence support the development, maintenance, and application of vocabularies in the linked data ecosystem?
- What technical infrastructure is needed to ensure vocabulary compliance across distributed content systems?
- How do different application profile standards (Dublin Core, DITA, DCAT, iiRDS) approach the integration of schema and value vocabularies?

2. Bios

Joseph Busch (moderator) is serving as the Senior Business Classification Consultant at the African Development Bank. He is the Founder and Principal Consultant of Taxonomy Strategies. Taxonomy Strategies guides global companies, government agencies, international organizations, and NGO's such as Teck Resources, the Center for Medicare and Medicaid Services, the African Development Bank, and the Robert Wood Johnson Foundation in developing metadata frameworks and taxonomy strategies to help information achieve its highest value. Before founding Taxonomy Strategies, Mr. Busch held management positions at Interwoven, Metacode Technologies, the Getty Trust, PriceWaterhouse, and Hampshire College. He is a Past President of the Association for Information Science and Technology, and a past member of the Dublin Core Metadata Initiative Executive Committee.

Lief Erickson is the Founder and Principal Strategist at Intuitive Stack. He holds a master's degree in Content Strategy from the University of Applied Sciences—Joanneum (Graz, Austria), where he also teaches information architecture. With expertise in taxonomies, search optimization, and content operations, Lief has held roles as an information architect and technical writer. At Intuitive Stack, he helps organizations modernize their user assistance content strategy so they can focus on their next innovation.

Heather Hedden (panelist) is the Taxonomy Manager with Northern Light, vendor of a market and competitive intelligence search platform. She has been working in the field of taxonomies and information management for nearly 30 years, starting with the library database vendor Gale. Heather has also worked as a taxonomy consultant for various clients, both independently and as an employee of consulting companies. She has taught online workshops

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in taxonomy creation through the continuing education program of Simmons University School of Library and Information Science and continues to offer taxonomy training workshops through Hedden Information Management and other organizations. Heather served on the committee to revise the ISO standard for thesauri, and she is author of *The Accidental Taxonomist*, (Information Today Inc., 2010, 2016, 2022).

Noz Urbina (panelist) has been working in content design and strategy for over two decades. In that time, he has become a globally recognized leader in the field of content and customer experience. He's well known as a pioneer in customer journey mapping and adaptive content modelling for delivering personalized, contextually-relevant content experiences in any environment. Noz is co-founder and Programme Director of the OmnichannelX Conference and Podcast. He is also co-author of the book *Content Strategy: Connecting the Dots Between Business, Brand, and Benefits* and lecturer in the Master's Programme in Content Strategy at the University of Applied Sciences of Graz, Austria.

Peter Winstanley (panelist) is an ontologist in the Semantic Arts team. He has a diverse background with experience in medical research, government, and in standards development. He was a contributor to the W3C "Data on the Web Best Practices" recommendation and an editor of the W3C "Data Catalog" vocabulary recommendation. A former interoperability specialist with the UK Government Linked Data and Data Architects' Working Groups and the European Commission "Joinup" semantic technologies community, he is currently co-chair of the W3C Dataset Exchange Working Group.

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