Semantics and Semantic Interoperability

Webinar on Semantics and Semantic Interoperability – Electronic Business Memorandum of Understanding (eB-MoU)

what is semantics?

what is interoperability?

ontologies

how technologies enable semantic interpretation?

how to achieve interoperability?

lessons learnt, challenges and best practices

benefits of using a semantic process

Webinar

27 June 2023

12:00 - 15:00 CET

"Semantics and Semantic Interoperability - SHARING KNOWLEDGE - DEFINING, EXPLAINING, and CONNECTING"

Event page:
www.unece.org/webinar-on-semantics

UNECE Webinar connection link:
https://unece.webex.com/unece/j.php?MTID=mbd15d38cd07d8bcf7b2d6d6bf820ff65

Webinar password:
semantics101 (73626843 from phones and video systems)

Introduction:
In today's data-driven world, organizations face the challenge of efficiently integrating and making sense of vast amounts of diverse data. Semantics and semantic interoperability provide a solution by enabling the meaningful interpretation and integration of data across heterogeneous systems. This 3-hour webinar aims to explore the significance, anticipated benefits, and challenges associated with semantics and semantic interoperability. Expert speakers will share their experiences and insights, providing attendees with practical knowledge and best practices for successful implementation.

The webinar is planned for 27th June 2023.
Time: 12:00 to 15:00 (Geneva, Switzerland) – 15 to 20 minutes for presentations with 5 minutes for Q&A.

In this informative session, participants can look forward to gaining a deep understanding of the fundamental concepts and practical applications of semantics and semantic interoperability. Attendees will learn how semantic interoperability facilitates seamless data exchange and integration across systems, promoting efficient communication and collaboration among diverse stakeholders. *The following provides an indication of the key areas to be covered during the webinar session:*

1. ***(What are semantics and semantic interoperability? What does semantics mean in your organization? Achievements?)***

Understanding Semantics in the Organization:

The webinar will begin by providing an overview of semantics and its relevance. Speakers will define semantics within their organizational context, showcasing how it enables a deeper understanding of data and fosters effective communication and collaboration among stakeholders. *Attendees will gain a clear understanding of how semantics contributes to the organization's data strategy and decision-making processes.*

2. ***(How are your semantics created or developed?)***

Defining and Developing Semantics:

The webinar will delve into the process of defining and developing semantics. Esteemed speakers will discuss methodologies such as ontology development, knowledge representation, and natural language processing. They will highlight the importance of capturing the meaning and context of data through semantic models and standards, emphasizing the iterative nature of semantics development and refinement. *Participants will gain insights into the tools and techniques employed to extract valuable insights from structured and unstructured data.*

3. ***(How are semantics applied across domains?) For example, in Global Supply Chains, Smart Cities, and Manufacturing why are you using semantics and semantic interoperability in your area, and why is it important for digitization and digitalization?***

Applying Semantics across domains and the importance of Semantics and Semantic Interoperability:

In addition to exploring the creation and development of semantics, the webinar will highlight how semantics are applied across diverse domains. *Expert speakers will discuss specific use cases and demonstrate how semantics and semantic interoperability are leveraged in various industries and sectors and whether the methodology can be shared potentially.*

Why semantics and semantic interoperability are vital in today's data landscape. Speakers will share how these technologies enhance data integration by bridging the gap between different systems, databases, and formats. Examples where semantic interoperability is important. *Participants will understand the role of semantic interoperability in fostering collaboration, knowledge sharing, and innovation across diverse domains such as healthcare, finance, e-commerce, and government. Real-world use cases will demonstrate the transformative impact of semantics on data-driven decision-making.*

4. *(What are the anticipated benefits of following your semantic processes or doing it in this way?)*

Anticipated Benefits of Semantic Processes:

The webinar will showcase the anticipated benefits of following semantic processes and leveraging semantic interoperability. Attendees will gain insights into the following advantages:

a. Enhanced Data Integration: Semantics enables seamless integration of disparate data sources, facilitating a holistic view and improved data quality and consistency.

b. Improved Data Understanding: Semantic models and standards provide a shared understanding of data, promoting effective communication and collaboration among stakeholders.

c. Advanced Search and Discovery: Semantics enhance search capabilities, enabling accurate and efficient retrieval of relevant information, resulting in improved productivity and decision-making.

d. Interoperability and Scalability: By adopting semantic interoperability, organizations can overcome compatibility challenges, enabling scalable data integration and system interoperability.

5. *(What are the challenges you face and the best practices you have applied to resolve such challenges? What goes wrong?)*

Challenges and Best Practices:

The webinar will address the challenges associated with semantics and semantic interoperability and share best practices to overcome them. Speakers will discuss challenges such as data heterogeneity, ontology alignment, and ensuring data privacy and security. They will share successful strategies, including data standardization, semantic mapping, and privacy-preserving techniques. *Attendees will learn from real-world experiences and gain practical insights to implement best practices in their own organizations.*

Target Audience:

This webinar is tailored for professionals, researchers, and decision-makers working in areas such as data management, information technology, artificial intelligence, knowledge engineering, and data integration. It is also beneficial for individuals interested in understanding the benefits and challenges associated with semantic interoperability and seeking best practices for successful implementation.

By participating in this webinar, attendees will gain a comprehensive understanding of how semantics are created and developed, the significance of semantic interoperability in data integration, and the anticipated benefits of adopting semantic processes. They will also acquire practical knowledge of best practices to overcome challenges and leverage semantic interoperability to unlock the full potential of their data assets.

Agenda:
Moderator: Stephen Dutnall - IEC Technical Officer (Chair of the eB-MoU/MG 2022-2023)

12:00 – 12:05: Brief opening statement by the Chair (TBC)

12:05 – 12:25: Semantics Introduction - Definitions, Importance, Lessons, and Achievements (UN/CEFACT Chair - Sue Probert)

12:25 – 12:45: The Pallas Project – a practical experience of semantic interoperability (Leo van Ruijven, ISO TC 184/SC 4)

12:45 – 13:05: Semantic Technologies - VC's, Knowledge Graphs, and Linked-Data (UN/CEFACT Expert - Steve Capell)

13:05 – 13:15: Coffee Break

13:15 – 13:35: The Semantic Vision (UN/CEFACT Vice Chair - Hanane Becha)

13:35 – 13:55: Semantic Interoperability and Digital Transformation (Laurent Guise, IEC/SMB/SG 12)

13:55 – 14:15: Introduction to what semantic interoperability means, its principles, and how concept systems play a role (Denise Warzel, ISO/JTC 1/SC 32)

14:15 – 14:30: SyC Smart Cities (IEC - Chair of SyC Smart Cities - Michael Mulquin)

14:30 – 14:45: Supporting information exchange (semantic interoperability) in Smart Manufacturing ISO/IEC CDD (JWG 24 co-Convenors Hiroshi Murayama and Gernot Rossi)

14:45 – 15:00: The importance and challenges of interoperability: Notes on the 20-year quest for semantic interoperability in financial services. (Jim Northey, ISO/TC 68)