

Standards-Based Content Resources:

A Prerequisite for Content Integration and Content Interoperability

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International
Organization for
Standardization

ISO/TC 37
Terminology and other language and content resources

*Info
term*

Overview

- **eContent → content-driven ICT**
→ **structured content**
- **Structured content at the level of lexical semantics**
emerging need: → **federated repositories**
- **Standardization – why?**
→ **quality content**
- **eAccessibility & eInclusion**
→ **content interoperability**

Interoperability (IOp)

Technical interoperability

→ software interoperability

→ semantic interoperability

→ organizational interoperability

→ content interoperability

CONTENT INTEROPERABILITY DEFINITION (try)

- semantic interoperability → **content interoperability**
= **capability of content items / entities**
(i.e. structured content at the level of lexical semantics)
- **to be integrated into or combined with other (types of) content items / entities**
 - **to be extensively re-used for other purposes**
(also sub-items/entities to be re-usable & re-purposable)
 - **to be searchable, retrievable, recombinaible from different points-of-view**

What do we need?

Global content interoperability

of content repositories

based on open standards (not proprietary standards)

to achieve quality content (i.e. reliable data)

respecting the requirements of

persons with disabilities (PwD)

→ What is good for PwD is good for ALL!

Actual situation

- **Many heterogeneous ontologies**
 - **Many deficient content repositories**
 - **Persons with disabilities not taken care of**
 - **Many (competing / contradicting) industry standards – gaps in open standards**
 - **harmonization**
 - **→ standards-based content repositories**
- content IOp based on open standards**

→ **new requirements on content!**


**More often than not different kinds of
content items are
combined with or
embedded in
each other**

Structured content

**It's all
catalogues**

→ repositories of structured content

Structured content: Example: Lexicon



⚓ Consultation of the International Hydrographic Dictionary ⚓

Preliminary version (05/05/2000, reduced database) Jean-Luc Husson

Select from fields below, enter your search string and then press the SEARCH button

French Term Contains courant Case

[Help](#)

SEARCH

courant côtier [HR-1074] - n

Définition :

Courant de direction générale parallèle à la côte. Toutefois cette définition ne s'applique qu'au courant que l'on rencontre à l'extérieur de la zone de déferlement lorsqu'une telle zone existe.

coastal current [HR-1074] - n

Definition :

A relatively uniform drift usually flowing parallel to the shore in the deeper water adjacent to the surf zone.

corriente costera [HR-1074] - n

Definición :

Corriente de deriva relativamente uniforme, por lo general paralela a la costa, en las aguas más profundas adyacentes a la zona de rompientes.

courant de densité [HR-1075] - n

Définition :

Courant provoqué par le gradient horizontal de densité de l'eau.

density current [HR-1075] - n

Definition :

A gradient current caused by the horizontal gradient of water density.

corriente de densidad [HR-1075] - n

Definición :

Corriente de gradiente causada por el gradiente horizontal de densidad del agua.

Voir aussi :

- HR-1094

See also :

- HR-1094

Ver también :

- HR-1094

courant de dérive [HR-1077] - n

Définition :

Courant océanique superficiel de faible vitesse et

drift [HR-1077] - n

Definition :

A wide, slow-moving current principally caused by

velocidad de deriva [HR-1077] - n

corriente de deriva - n

aporte - n

deriva - n

Structured content

Example: Traffic informatics



→
5km

Way to the airport – turn right in 5 km



Way to the train station – down to the right



ZONE = verbal

red ring = (morphology) prohibition sign

30 = micro-proposition: max speed 30km/h

→ **variable message sign boards**

communicating with car-driver system



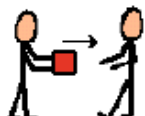














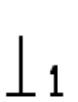


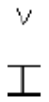
Structured content: Example



Der Flußseeschwalbe (Nr. 51) sehr ähnlich. Die kurzen Füße dieser Möwe verschwinden in Ruhestellung völlig im Federkleid, ihr Schnabel zeigt eine blutrote Tönung.

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	III	III	III

Augmentative and alternative communication – AAC

	Swedish	födelsedag	pappa	ge	jag	gåva	hund	little
	Dutch	verjaardag	vader	geven	mij	kado	hond	klein
	English	birthday	father	give	me	present	dog	small
PCS								
Picto								
Bliss								

Six different ways to express the same sentence:
 "For my birthday, father gives me a small dog".
 Vertically each single concept is represented in different languages (keywords) and in different symbol systems (PCS, Picto, Bliss).

2005: MoU/MG N0221

- **Semantic Interoperability and the need for a coherent policy for a framework of distributed, possibly federated repositories for all kinds of content items on a world-wide scale**

adopted in 2005

http://isotc.iso.org/livelink/livelink/fetch/2000/2489/Ittf_Home/MoU-MG/Moumg221.pdf

ICCHP 2010 Recommendation

Prerequisite for global content integration and aggregation as well as content interoperability:

- Content interoperability is the capability of content to be combined with or embedded in other (types of) content items and to be extensively re-used as well as re-purposed for other kinds of eApplications.
- In order to achieve this capability, software must support these requirements from the outset:

multilinguality, multimodality, eInclusion and eAccessibility need to be considered from the outset in software and content development, in order to avoid the need for additional or remedial engineering or redesign at the time of adaptation

Standardized methodology

Interoperability standards at 3 levels:

- **Meta-ontology** (across eApplications)
- **Meta-models** (within eApplication fields)
- **Metadata / data categories and metadata registries** (or DCR resp.)

→ **standards-based accessible content**

↔ **W3C „Web Accessibility Guidelines“ (WAG)**

Benefits

What is good for PwD is good for ALL!

- **Better software**
- **Less expensive software**
- **Enhanced user-friendliness / usability**
- + accessible content**
- **ISO/IEC TR 29138-2:2009 Information technology — Accessibility considerations for people with disabilities — Part 2: Standards inventory**
 - ➔ **gaps!**

Inmpact

Mobile technology to be used in terminology and other language resources

- **Content creation and maintenance**
- **User interface for mobile devices**
- **Re-purposing for learning objects**
- **Language planning bottom up**

Lever: public eProcurement

EU-level:

- **M371 (2005). Second Programming Mandate addressed to CEN in the field of services**
- **M376 (2005). Standardization Mandate to CEN, CENELC and ETSI in support of European Accessibility requirements for public procurement of products and services in the ICT domain**
- **M420 (2007). Standardization mandate to CEN, CENELEC and ETSI in support of European Accessibility requirements for public procurement in the built environment**
- **M473 (2010). Standardization mandate to CEN, CENELEC and ETSI to include “Design for All” in relevant standardization initiatives**

USA:

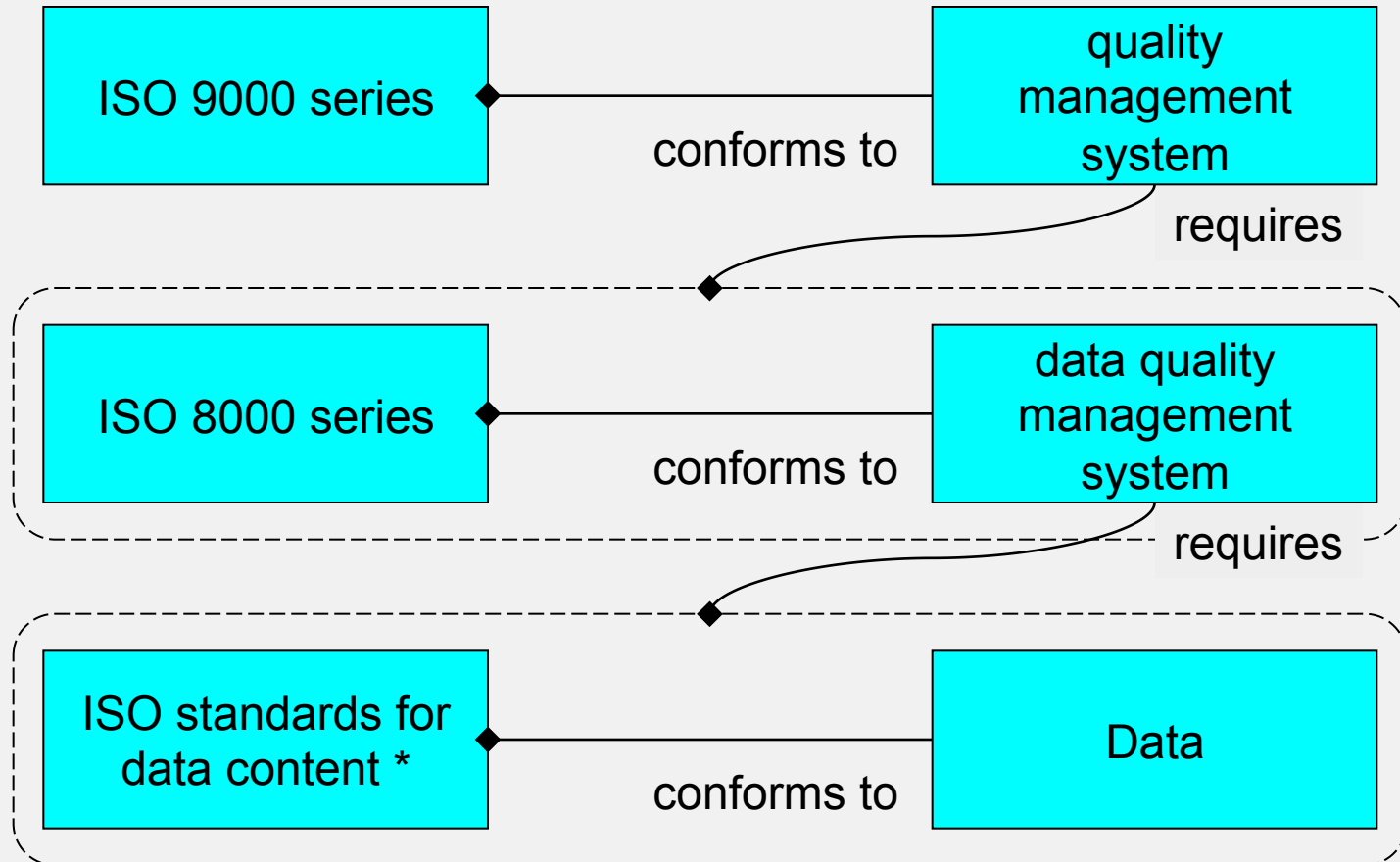
- **Section 508 of the Rehabilitation Act**

Other countries: Japan, Canada ...

Standardization schedule

1. **Include „OntoIOP“ into the programme of work of ISO/TC 37/SC 3 by June 2011** (Korea meetings of ISO/TC 37)
 - cooperation with OWL and Common Logic communities
 - proposal of NWI by DIN
2. **1st meeting 13 June 2011 → establish new WG „OntoIOP“**
3. **Work on ISO standard:**
 - **Regular procedure WD→CD→DIS→FDIS→IS: 2014**
4. **Achievements by end 2011:**
 - **Regular procedure WD→CD ballot by DEC 2011**
→ **DIS ballot by DEC 2012** → **FDIS: 2013** → **IS: 2014**

The quality stack from ISO/TC 184/SC 4



e.g. ISO 10303, ISO 13584, ISO 15926, ISO 22745, ISO 29002, ISO 8000,
ISO/TC 37 standards

Questions?

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