



National IT and Telecom Agency

Ministry of Science
Technology and Innovation

The Danish Approach to semantic interoperability

Mr. Per Schultz Eeg
Head of Data Standardization Division
Ministry of Science, Technology and Innovation
National IT and Telecom Agency (NITA)
PSEEG@itst.dk



National IT and Telecom Agency

Ministry of Science
Technology and Innovation

What is interoperability?

- Technical
 - connecting systems and services together on the physical/technical level
- Syntactic
 - mutual exchange formats based on common vocabularies and grammars
- Semantic
 - exchanging meaningful information across systems harmonized by both sender and receiver
- Organisational
 - coherent collaboration of business processes between heterogeneous systems



National IT and Telecom Age

Ministry of Science
Technology and Innovation



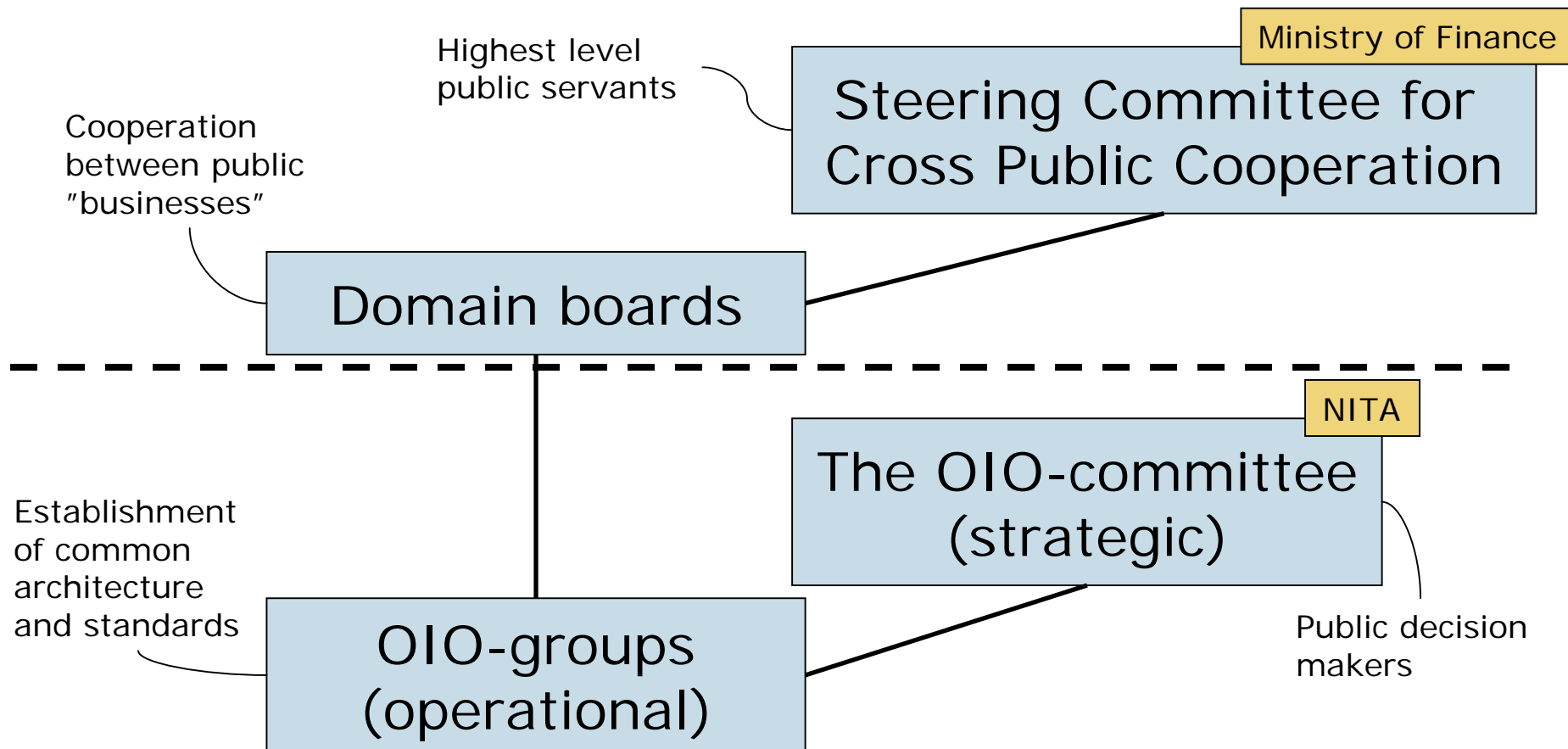
“Now! That should clear up a few things around here!”



National IT and Telecom Agency

Ministry of Science
Technology and Innovation

Danish governance setup

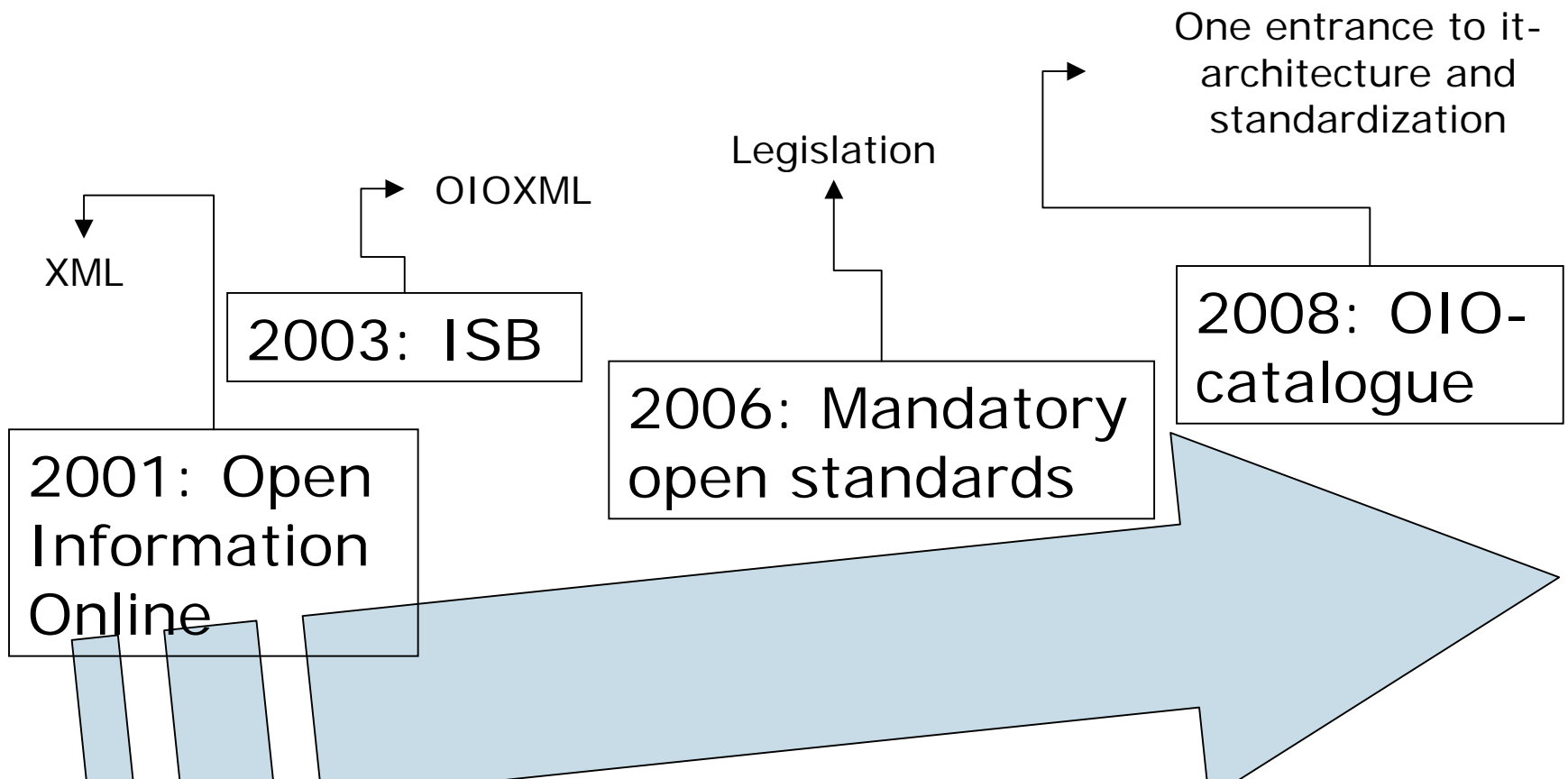




National IT and Telecom Agency

Ministry of Science
Technology and Innovation

A brief history of the Danish interoperability effort





National IT and Telecom Agency

Ministry of Science
Technology and Innovation

Current actions

- Spearheads
 - E-business
 - Electronic Records Management Systems
- OIO-catalogue



National IT and Telecom Agency

Ministry of Science
Technology and Innovation

OIO-catalogue

- Establish one entrance to public IT architecture and standardisation, promoting good standardisation and interoperability



Homepage

Choose your preferred entry

Repository Quick Search

Enter Query...

Include these types of standards:

- | | |
|---|--|
| <input type="checkbox"/> Data Standard | <input type="checkbox"/> Webservices |
| <input type="checkbox"/> Technical Stand. | <input type="checkbox"/> Architectural Demands |
| <input type="checkbox"/> Process Stand. | <input type="checkbox"/> Directories |
| <input type="checkbox"/> Method Stand. | <input type="checkbox"/> Information Model |

Find standard

FORM

KLE

By Ressource Type

Advanced Search

Last Submitted



Transport- & infrastructure

Anlæg af fysisk infrastruktur | Trafikinfor-
mation | Postbetjening | Kollektiv trafik |
Tilskud til transportydelse | flere...



Health

Almen behandling | Sygesikring |
Patientservice | Sygehusanlæg | Vet-
rinær kontrol | flere...



Social Care

Personlig og praktisk hjælp (hjemme-
hjælp) | Hjælpe midler | Bevilling af
kontantydelse | flere...



Democracy & Order

Straf & rehabilitering | Pant & ejendoms-
ret | Valg | Servicering af demokratiet |
Beredskab | flere...



Education & Work

Work-related Injuries | Science Appropria-
tions | General Education |
Education (municipal primary and lower
secondary school) | flere...



Buildings & Supplies

Byggesager | Ejendomsregistrering |
Stedbestemmelse | Fysisk planlægning
| Kommunikationsnet | flere...



Finance



Defense



Culture, leisure & nature

News

- Over 3000 standarder are now available in the repository. 2008-10-27
- 200.000 visitors in the first week 2008-10-08
- The new OIO-katalog is online! 2008-10-01

Standard of the Day

Course Enrolment Process Specification

Describes the process, in which a person signs up for a course.



FORM Entry: Education & work > General Education > Adult Education > Course Enrolment

Process specification: Course Enrolment

Obligatory

About the process specification

Description: The Course Enrolment process describes the sequence of events in which a person states an interest in participating in a course, whereupon the course provider registers the request in his system and returns a receipt.

Created:
10-11-2008

Last modified:
24-02-2009

Classification:
Obligatory

Version:
1.0.0

Services

The following web services utilise this process specification.

[Course Enrolment \(DFH\)](#)

Companies and institutions who often need to enrol a considerable number of employees in one of several courses can utilise DFH's course enrolment web service.

[Apply for a course \(KU\)](#)

This web service allows you to apply for participation in a course at the University of Copenhagen.

References

Technical standards

BPMN | OIOXML | DOC | PDF

Data definitions:

KursusNavn | PersonNavn | TilmeldingKvittering | UddannelseFag | AdresseDansk

more...

Architectural demands:

Forretningservices - Valg af webservice standard

Directories:

"Personregister"
(Københavns Universitet)
"Kursusoversigt" (DFH)

Topic references

Contexts:

Education | HR | SSU for Education

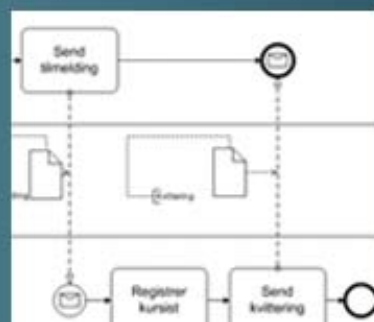
Nøgleord:

Education, course, learning, class

Contact

Peter Hansen
Ministry of Education

Graphic model of the process (BPMN)



> Download .png

> Download .xml

> Download .doc



National IT and Telecom Agency

Ministry of Science
Technology and Innovation

Challenges

- Market structure (monopolies amongst IT vendors)
- “Leave standardisation to the market”-attitude
- Strong political focus – on a very limited part of the problems
- Lack of knowledge among public actors
- Standardisation seldom (never) has a business case of its own
- Difficult to align business and standardisation



National IT and Telecom Agency

Ministry of Science
Technology and Innovation

Lessons learnt

- Data standards must be both syntactic AND semantic
- Strong governance structure needed
- Standardisation should be integrated part of business process redesign
- Proper mix of consensus seeking and passing laws
- Standardising must be as easy as possible



National IT and Telecom Agency

Ministry of Science
Technology and Innovation

Visions for semantic interoperability

- IT supports business
- Semantic standardisation as integrated part of new regulation
- Business (not IT vendors) in control of concepts and processes

Ultimately leading to

- Understanding the business
- Lower costs
- Higher efficiency



Coherent standardisation

