European
Media Wrapper
Round Table **VIII**

Jeudi
16
mai

UTC, Hall Centre Pierre Guillaumat 1(amphithéâtre L103), rue du docteur Schweitzer, 60200 Compiègne

De l'Empire des Lumières ...
à l'**Empire du Sens** !

Président: Bruno Bachimont (UTC – France)

12:00 - 13:30 : Accueil des participants – déjeuner buffet

13:30 - 13:40 : "Ouverture de la Round Table"
Mot de bienvenue – Alain Storck (UTC)

13:40 - 14:00 : ''L'empire du sens au service de l'informatique'' – Bruno Bachimont (UTC)

14:00 - 14:30 : "MediaMap et la construction d'une ontologie audiovisuelle de production" Benjamin Diemert (UTC)

14:30 - 15:00 : " De la structuration radicale de l'information à l'aide d'Upper-Ontologies et de systèmes de gestion de configuration" - Guy Maréchal (Titan asbl)

15:00 - 15:30 : "La machinerie sémantique : le développement des outils" Steny Solitude (Perfect Memory)

15:30 - 16:00 : Pause-café

16:00 - 16:45 : "De l'avenir de la sémantique souveraine"
Débat avec les participants

16:45 - 17:00 : Conclusions de la Round Table

17:00 - 17:30 : Cocktail interactif

12:00 – 17:30 : Démonstration : Perfect-Memory Limecraft – Capegemini - GEOL Semantics

Organisation: UTC-Heudiasyc, Titan, Projet MediaMap+, MediaNet Vlaanderen et Cluster TWIST.

utc Université de Technologie Compiègne — heudiasyc — cnrs — TITAN

EMWRT-VIII

Towards the AXIS-OK project !

AXIS-CRM

Autonomous packages eXchanges for Interoperable Systems - Conceptual Reference Model

TITAN

www.titan.be

iasa

www.iasa-web.org

AXIS-CRM

Guy Maréchal on behalf of TITAN & IASA-OK

guy.noel.marechal@gmail.com

Plan of the presentation

1. **INTEROPERABILITY**
2. **AXIS-CRM**
3. **The IASA "Organizing Knowledge" dynamics**
4. **Towards an AXIS-OK project**
5. **Conclusions**

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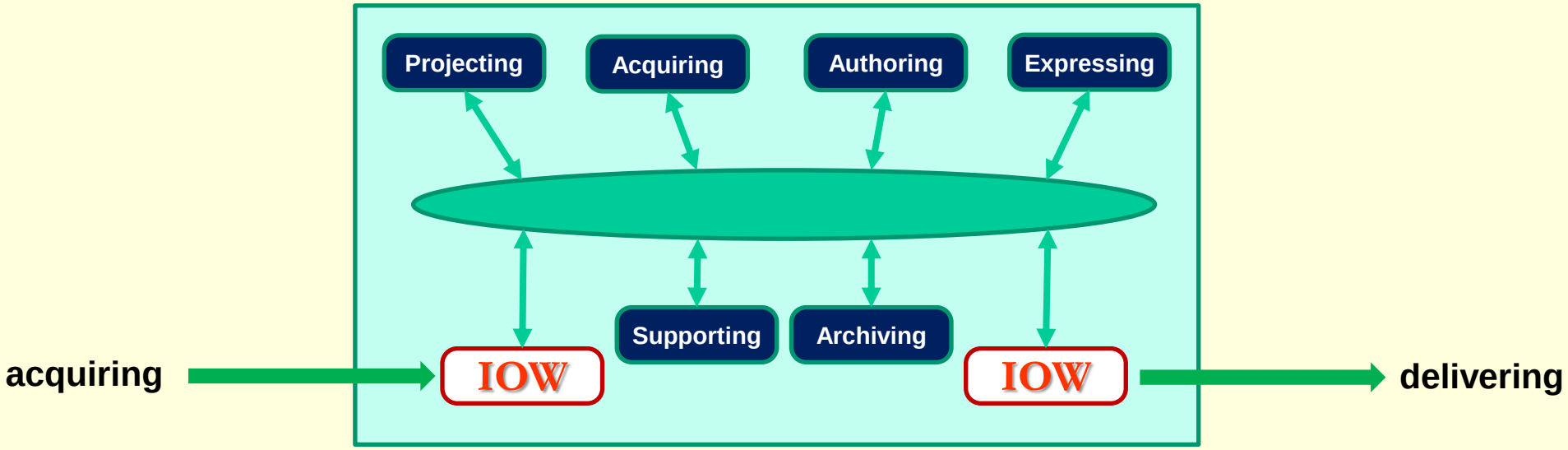
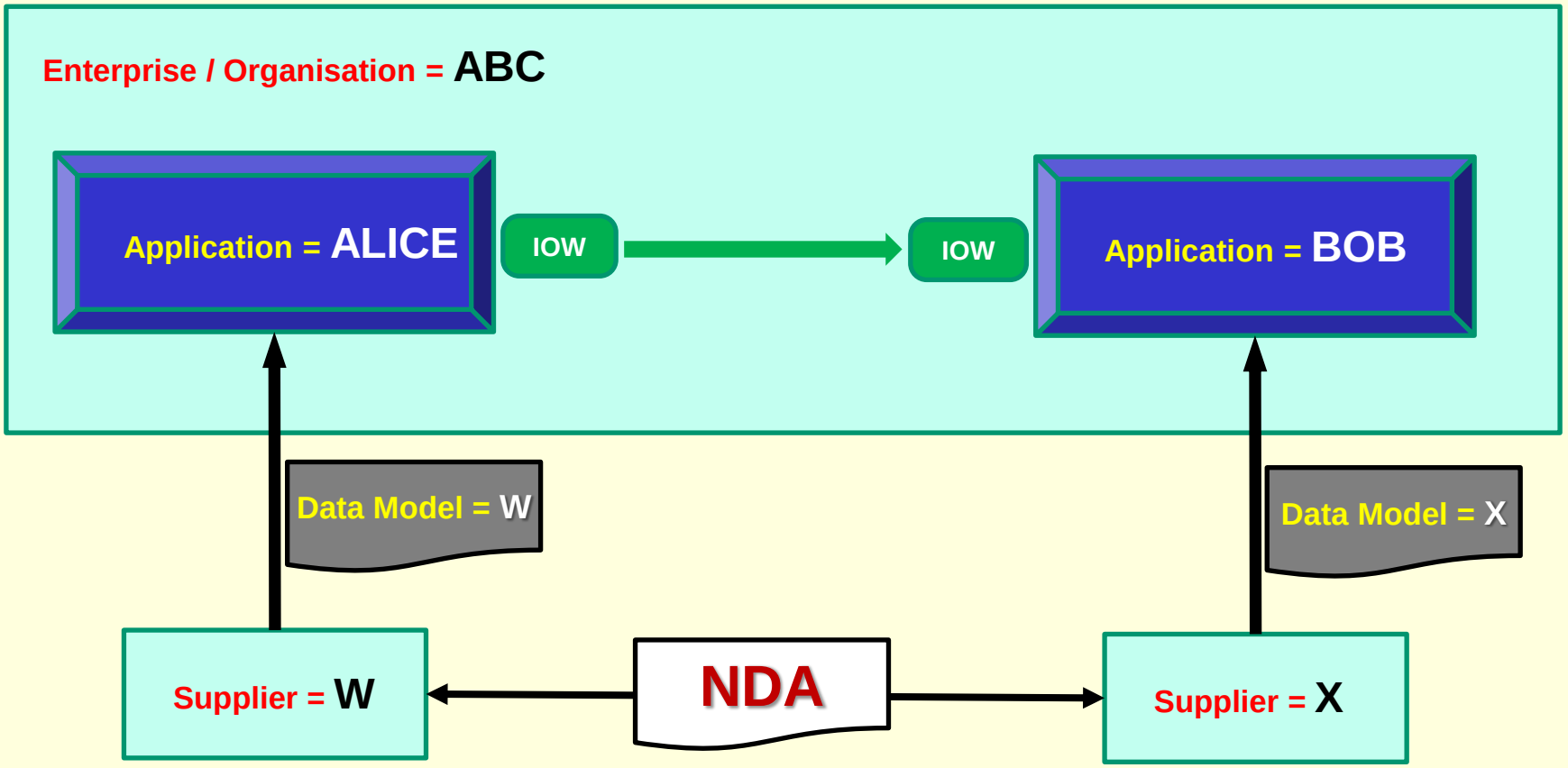
The concept of “Inter-Operability Wicket” : IOW



Sharing a common data model ! Mapping the inputs and outputs to that model !

The usual solution: an Non Disclosure Agreement NDA

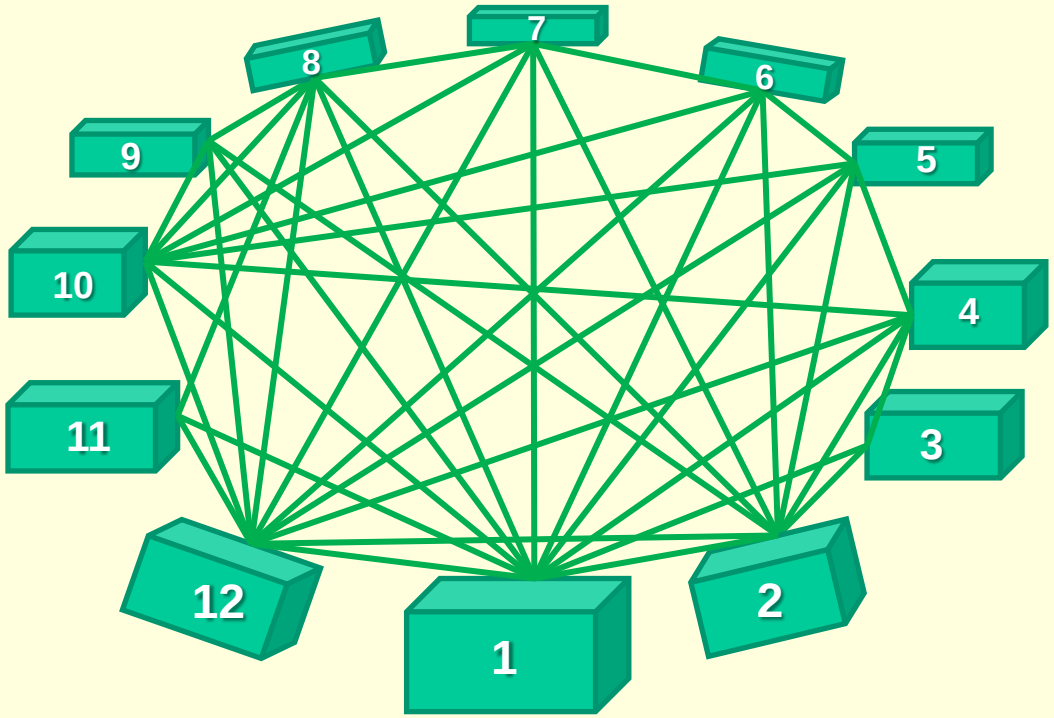


Main impacts:

- The suppliers discloses proprietary information
- Any change of an application could impact the interoperability
- The customer has limited control on his data
- The customer is tied to the suppliers
- The customer cannot archive as a whole
- …

$$\text{Links} = \frac{N \times (N-1)}{2} \approx \tfrac{1}{2} N^2$$

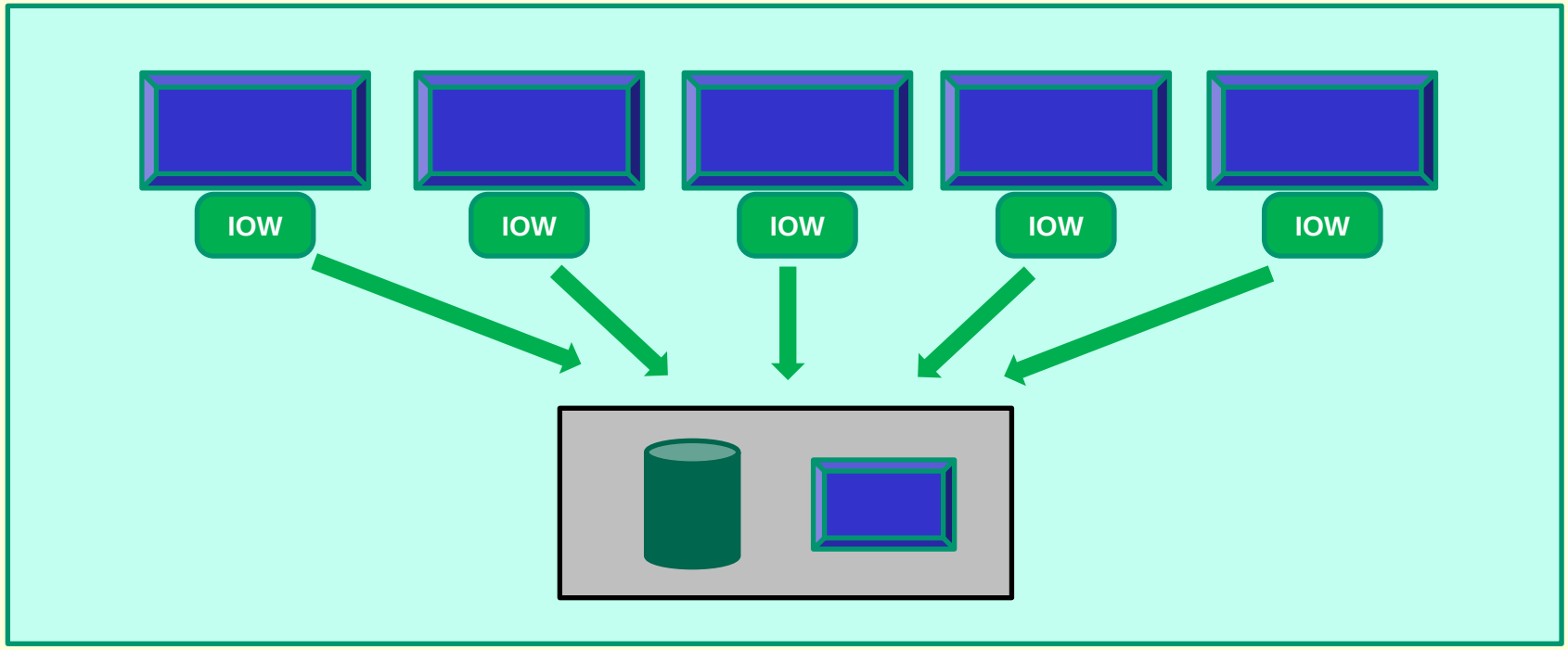
$$\text{IOW} \approx N^2$$



With N = 12 → Links = 66

IOW ≈ 132

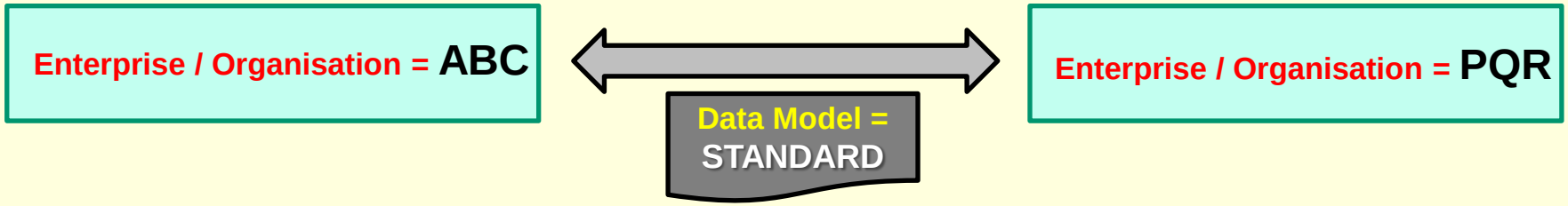
Ad hoc solution: Archiving data base



Main impacts:

- The suppliers discloses proprietary information
- Any change of an application could impact the interoperability
- The customer has **better** control on his data
- The customer remains tied to the suppliers
- The customer **can** archive as a whole
- No warranty of coherence of the possible bidirectional links
- …

The good solution: Use of Current 'FLAT' Standards

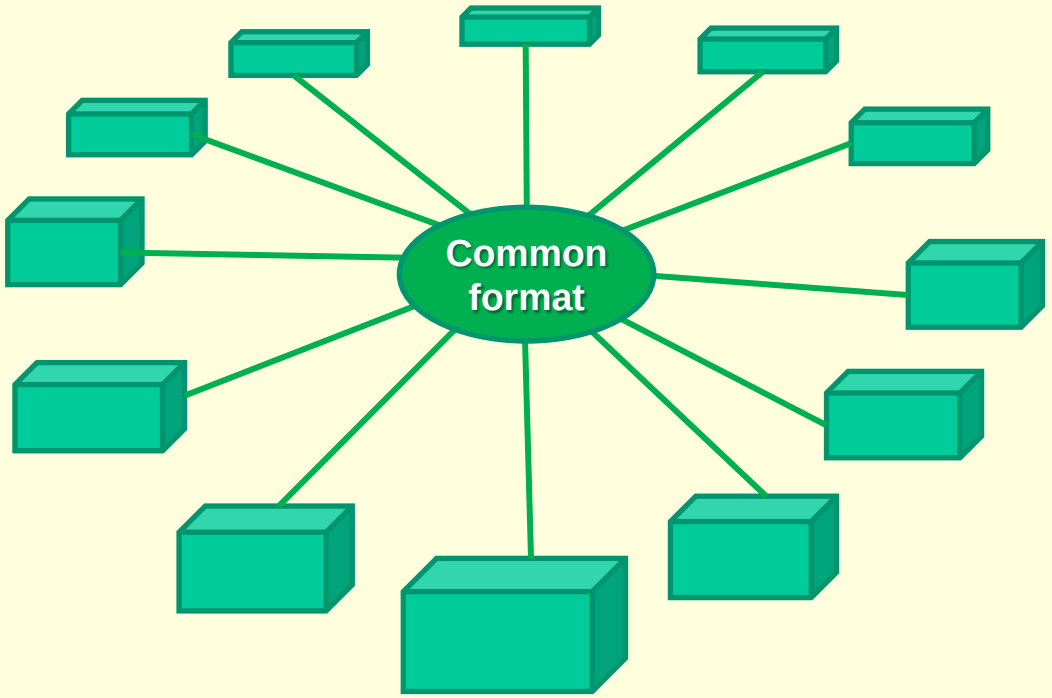


Main impacts:

- The changes of technologies and formats require new IOW
- The changes of business require new IOW
- The lack of fitness of the existing standards for the intended business
- The difficulty of empowering "differentiating factors"
- …

Links = N

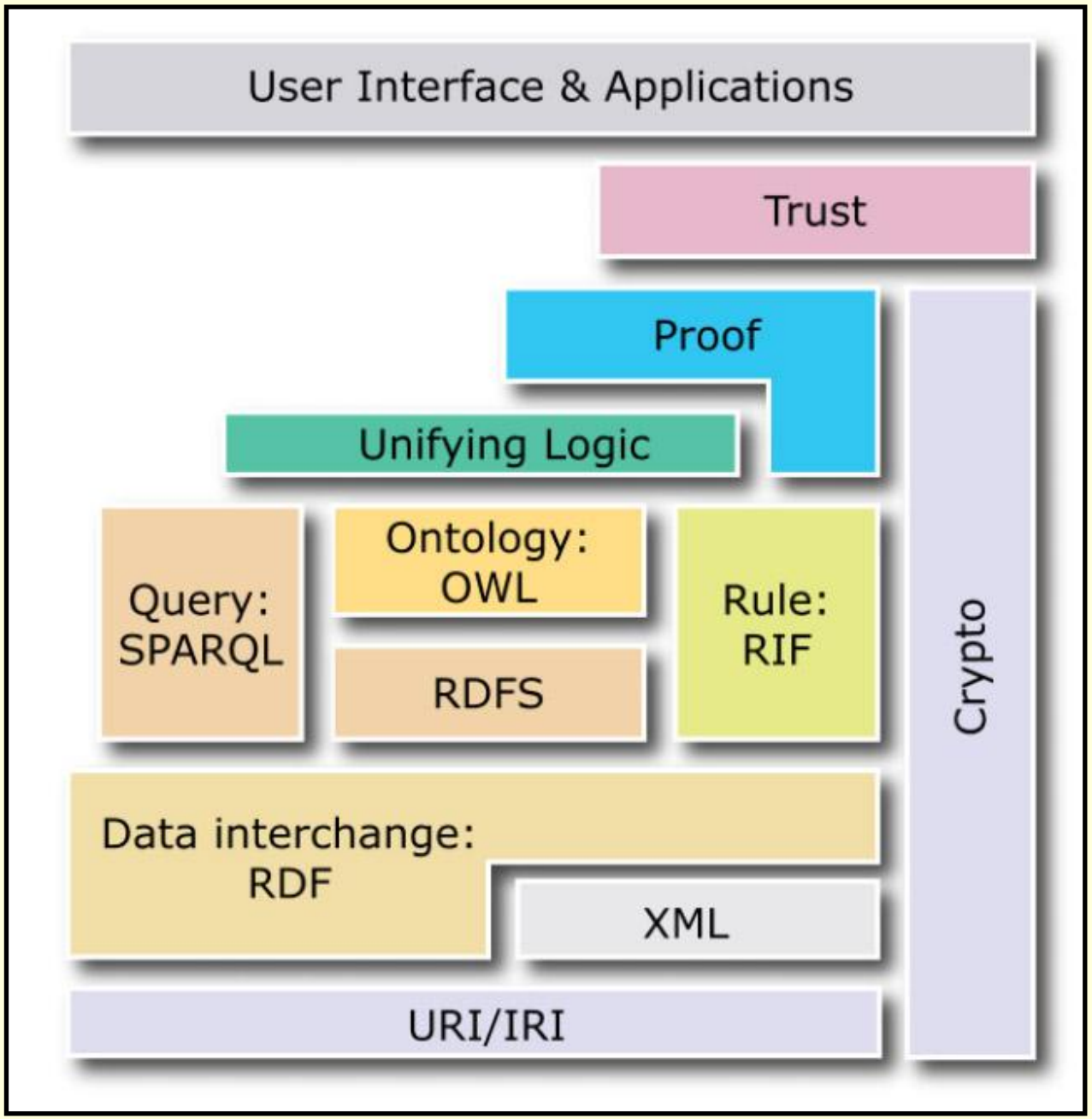
IOW ≤ N



Links = 12

IOW ≤ 12

The new opportunities of the Standards for the Semantic Technologies



The semantic technologies can integrate the power of the Texts, Tags, Taxonomies and Thesauri

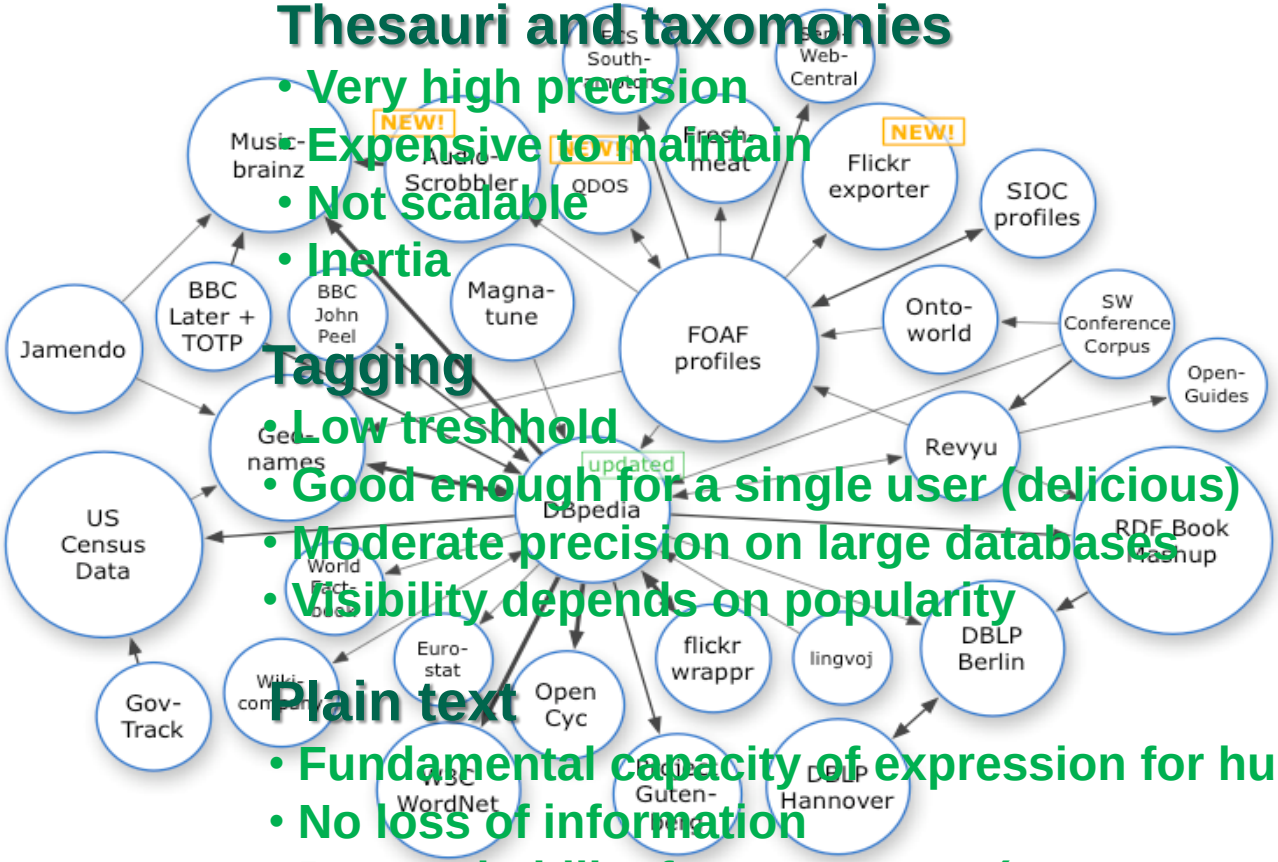
machine began to work. He knew that they were out there already, seeing people, making telephone calls; and he knew that they must be very expensive.

At first, he took a lively, even rather self-important interest in the question of who had hired the men and their machine. Who would bother to do this to him? There was his brother, a huge exhausted man whom Denton had never liked or disliked or felt

stopped liking them. Whatever happened to me? thought Denton. Sometimes he would get a repeated image of himself at the age of six or seven, running for the school bus, a satchel clutched to his side, his face fresh and unanxious — and suddenly Denton would lean forward and sob huskily into his hands, and stand up after a while, and make tea perhaps, and gaze out at the complicated goings-on in the square, feeling drunk and

Excellent precision
- **Very scalable**
- **Dynamic**

Thesauri and taxomonies
- **Very high precision**
- **Expensive to maintain**
- **Not scalable**
- **Inertia**

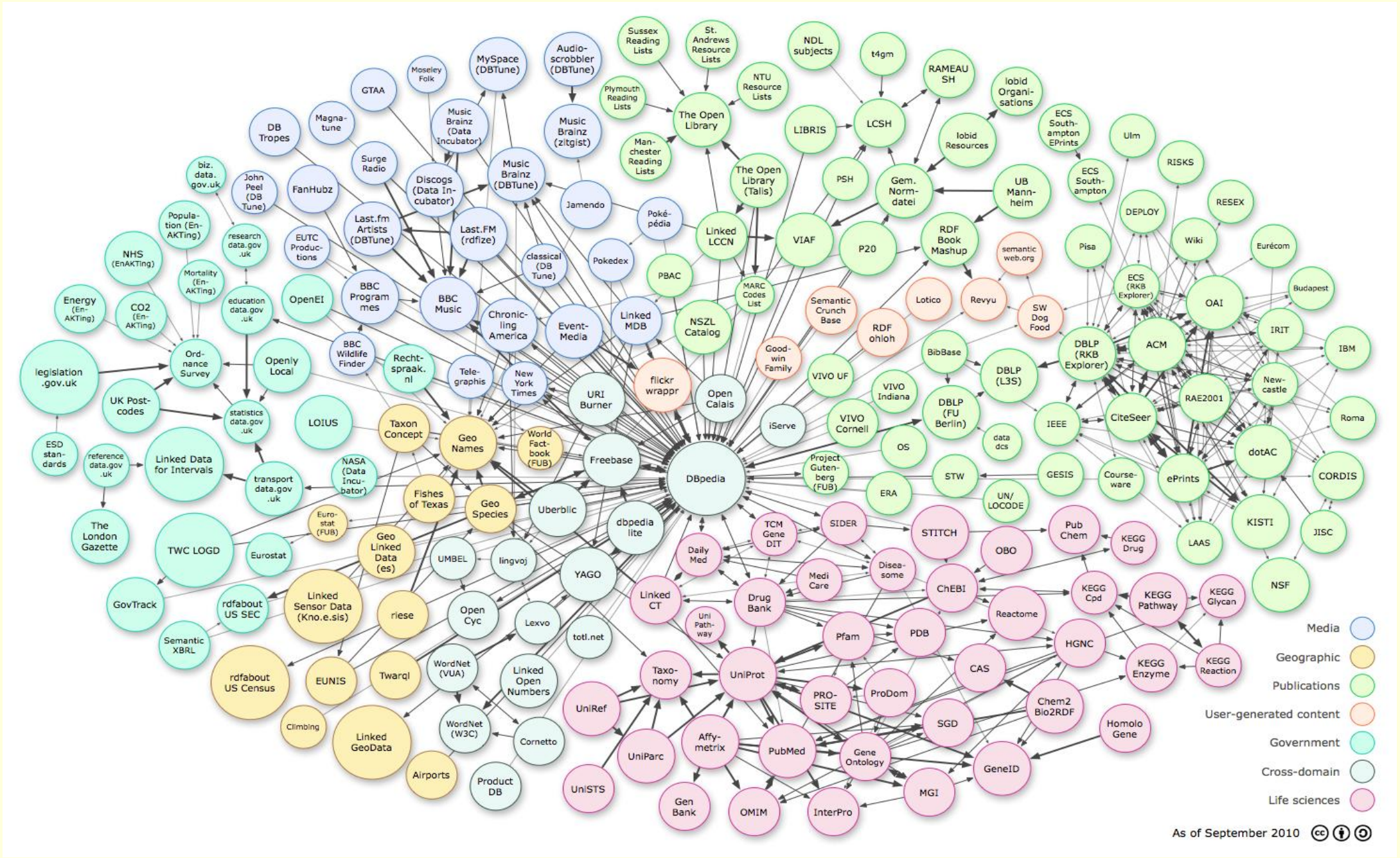


Tagging
- **Low treshhold**
- **Good enough for a single user (delicious)**
- **Moderate precision on large databases**
- **Visibility depends on popularity**

Plain text
- **Fundamental capacity of expression for humans**
- **No loss of information**
- **Poor suitability for computers (aka searches)**

Limecraft

LINKED DATA


Sussex Reading Lists
St. Andrews Resource Lists
NDL subjects
t4gm
RAMEAU SH
Iobid Organi-sations
Audio-scrobbler (DBTune)
MySpace (DBTune)
Moseley Folk
GTAA
Plymouth Reading Lists
The Open Library
NTU Resource Lists
LIBRIS
LCSH
ECS South-ampton EPrints
Ulm
Magna-tune
Music Brainz (Data Incubator)
Music Brainz (zitgist)
DB Tropes
Man-chester Reading Lists
Iobid Resources
RISKS
Surge Radio
The Open Library (Talis)
PSH
Gem. Norm-datei
UB Mann-heim
ECS South-ampton
biz. data. gov.uk
John Peel (DB Tune)
Discogs (Data In-cubator)
Music Brainz (DBTune)
FanHubz
Jamendo
Poké-pédia
DEPLOY
RESEX
Popula-tion (En-AKTing)
Last.fm Artists (DBTune)
Last.FM (rdfize)
Linked LCCN
VIAF
P20
RDF Book Mashup
Pisa
Wiki
Eurécom
NHS (EnAKTing)
research data.gov .uk
EUTC Produc-tions
classical (DB Tune)
Pokedex
PBAC
MARC Codes List
semantic web.org
ECS (RKB Explorer)
Budapest
Mortality (En-AKTing)
Energy (En-AKTing)
CO2 (En-AKTing)
education data.gov .uk
OpenEI
BBC Programmes
BBC Music
Chronic-ling America
Event-Media
Linked MDB
NSZL Catalog
Semantic Crunch Base
Lotico
Revyu
SW Dog Food
OAI
IRIT
IBM
BBC Wildlife Finder
Recht-spraak. nl
Tele-graphis
New York Times
Good-win Family
RDF ohloh
DBLP (RKB Explorer)
ACM
New-castle
legislation .gov.uk
Ord-nance Survey
Openly Local
URI Burner
flickr wrappr
Open Calais
VIVO UF
BibBase
DBLP (L3S)
RAE2001
UK Post-codes
statistics data.gov .uk
LOIUS
Taxon Concept
Geo Names
World Fact-book (FUB)
Freebase
DBpedia
iServe
VIVO Indiana
VIVO Cornell
DBLP (FU Berlin)
IEEE
CiteSeer
Roma
ESD stan-dards
reference data.gov .uk
Linked Data for Intervals
transport data.gov .uk
NASA (Data Incu-bator)
Fishes of Texas
Geo Species
Uberblic
dbpedia lite
Project Guten-berg (FUB)
OS
data dcs
GESIS
Course-ware
ePrints
dotAC
CORDIS
ERA
STW
UN/ LOCODE
KISTI
JISC
The London Gazette
TWC LOGD
Eurostat
Euro-stat (FUB)
Geo Linked Data (es)
UMBEL
lingvoj
YAGO
Daily Med
TCM Gene DIT
SIDER
STITCH
OBO
Pub Chem
KEGG Drug
LAAS
NSF
GovTrack
rdfabout US SEC
Linked Sensor Data (Kno.e.sis)
riese
Open Cyc
Lexvo
totl.net
Linked CT
Drug Bank
Medi Care
Disea-some
ChEBI
Reactome
KEGG Cpd
KEGG Pathway
KEGG Glycan
Semantic XBRL
rdfabout US Census
EUNIS
Twarql
WordNet (VUA)
Linked Open Numbers
Uni Path-way
Pfam
PDB
HGNC
KEGG Enzyme
KEGG Reaction
Climbing
Linked GeoData
WordNet (W3C)
Cornetto
Taxo-nomy
UniProt
PRO-SITE
ProDom
CAS
Chem2 Bio2RDF
UniRef
Affy-metrix
PubMed
Gene Ontology
SGD
Homolo Gene
Airports
Product DB
UniParc
UniSTS
Gen Bank
OMIM
InterPro
MGI
GeneID
Media
Geographic
Publications
User-generated content
Government
Cross-domain
Life sciences
As of September 2010

Why SEMANTIC modelling?

- Going to the representation of the concepts = "the eagle view", means becoming independent of the FORMATS ! Hence constructing the interoperability

- Linking Persons / Resources / Documents (Web-2)
- Linking DATA (Web-3)
- Structural navigations
- Inference
- Enhancements (Negentropy)
- 'Unstructured' to 'Structured'
- 'Active' to 'Passive' / 'Passive' to 'Active'
- Structural queries
- Interoperability in 'time', 'space' and 'formats'
- Modelling according to W3C standards OWL // RDFS // SKOS // …
- Mixing models: 'Flat' + 'Contextual' + 'Ontology' + 'Topic Maps' + …
- …

Constructing the INTEROPERABILITY = PERSISTENCE

PERSISTENCE

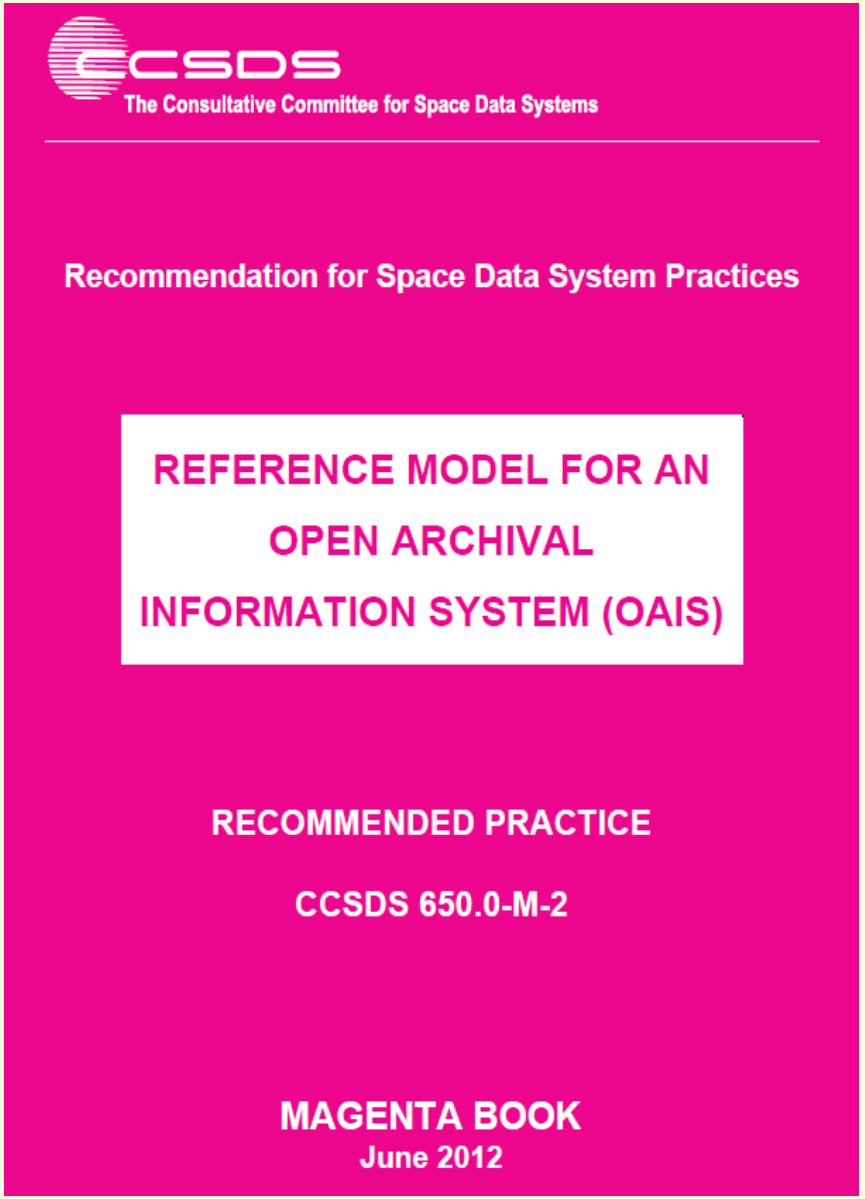
The ability of a technology system to ensure to the **citizen of today** that the **citizen of tomorrow** will be capable of **enjoying** the current cultural, sociological, economical … assets.

Abdelaziz Habid (*Memory of the World*) UNESCO

INTEROPERABILITY

The ability of a technology system to ensure to the **citizen of here** that the **citizen of there** will be capable of **enjoying** the current cultural, sociological, economical … assets.

The ISO OAIS Standard *(ISO 14 721 V2)* is the reference for constructing the persistence (hence the interoperability !)



Build-in assurance of the management of the persistence

With the semantic technologies, the Packages (**SIP** and **DIP**) are fully expressed according to standards and so are as well human and machine understandable

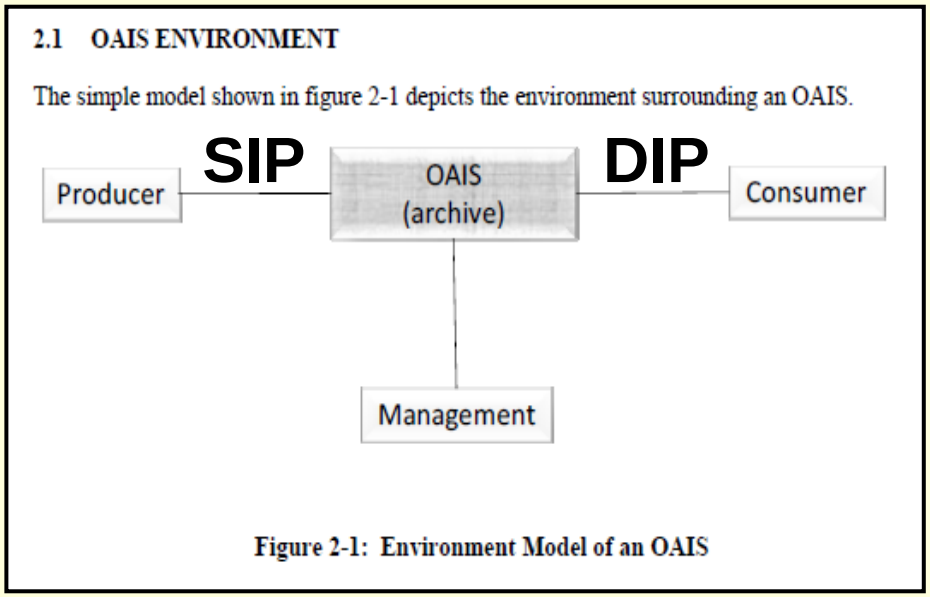


Figure 2-1: Environment Model of an OAIS

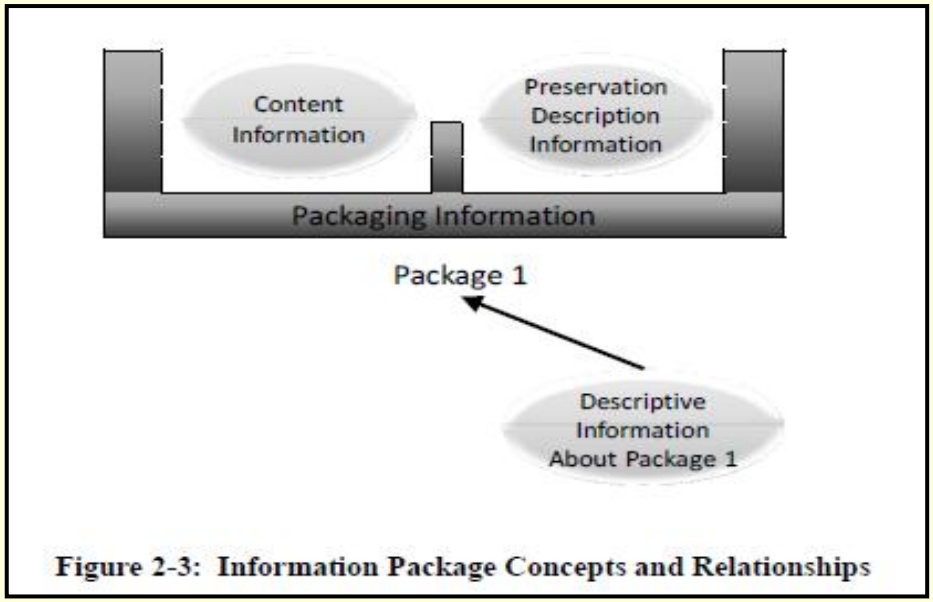
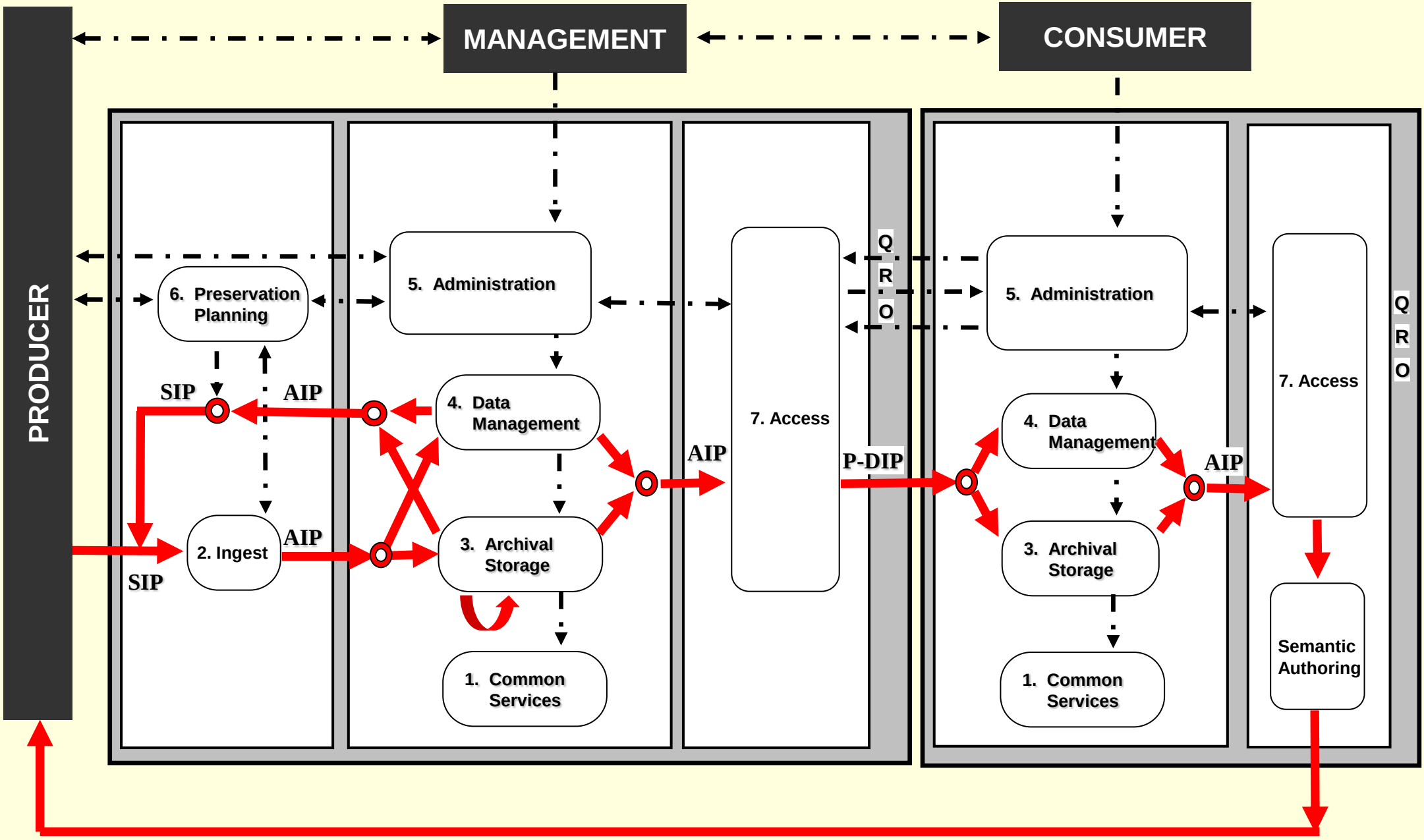


Figure 2-3: Information Package Concepts and Relationships

SIP = **S**ubmission **I**nformation **P**ackage

DIP = **D**issemination **I**nformation **P**ackage

The compatibility with the OAIS model (ISO 14 721)



Plan of the presentation

1. INTEROPERABILITY
2. **AXIS-CRM**
3. The IASA "Organizing Knowledge" dynamics
4. Towards an AXIS-OK project
5. Conclusions

AXIS-CRM

AXIS-CRM is a Conceptual Reference Model based on the semantic technologies

AXIS-CRM is a project of the Non Profit Association "TITAN"

Made in collaboration with the UNESCO (Memory of the World program)

The writing of the AXIS-CRM document is at finalisation stage

It is suitable for any static and dynamic resource

It will be illustrated by a few examples expressed in OWL and SKOS

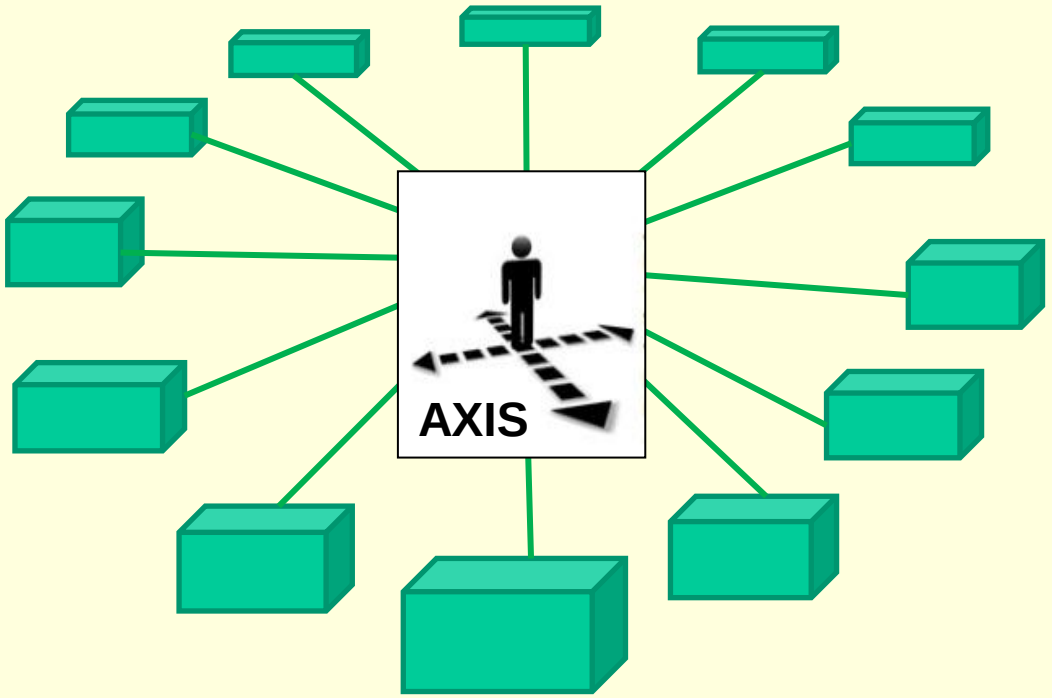
It has been validated by several initiatives (projects and trials)

It is based on the OAIS standard

It includes:

- **A reference architectural environment**
  - Definitions, Guidelines & Upper concepts
  - Upper Functional modelling
  - Interoperability layers
  - Configuration management services
- **An upper profile** (mainly an upper ontology; taxonomy …)
- **A few domain profiles** (in particular: EBU-Core / News / Interviews / …)

The AXIS-CRM logo



CONCEPTS & DEFINITIONS

Definitions *(ISO)*

INFORMATION :

The **meaning** that human assigns to **data** by means of **conventions** applied to the data

DATA

A **representation** of facts, concepts or instructions, in a **formalized** manner, suitable for communication, interpretation, storing or processing by **human** or by **automatic means**

UPPER PROFILE

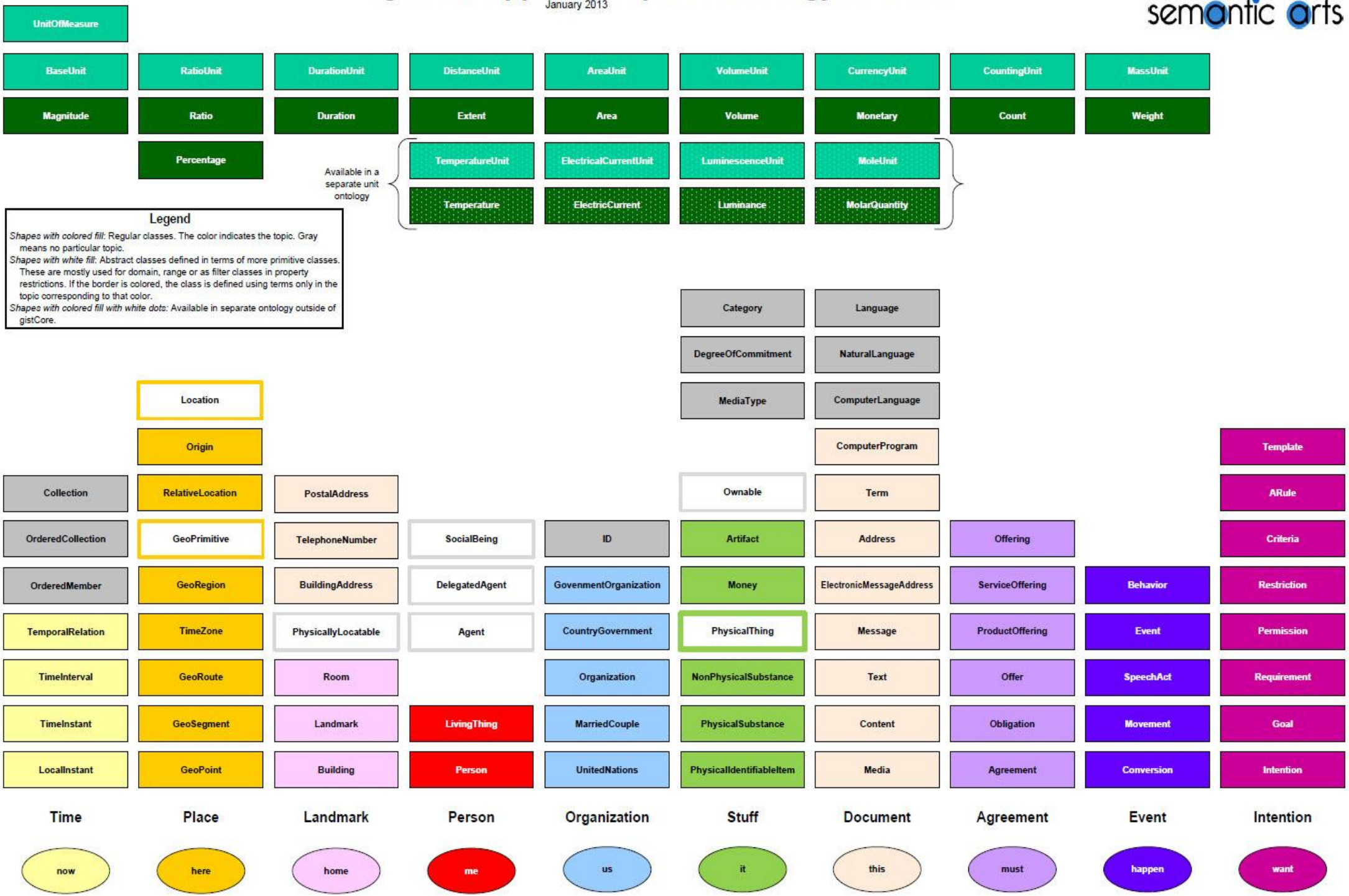
- **Based on the W3C standards**
- **Based on the GIST upper ontology** *(Dave McComb)*
- **Based on the UNESCO thesaurus and taxonomy**
- **Based on the existing good practices:**

  FOAF / Geo Names / EBU-Core / DBpedia / CCDM / MediaMap / …
- **…**

gist 6.7 Upper Enterprise Ontology: Classes

January 2013

semantic arts



http://ontologies.semanticarts.com/gist/gist.owl

Documentation: www.semanticarts.com/gist

UPPER Modelling
Base for the Management of the Rights

A generalisation of the FRBR standard

Functional Requirements for the Bibliographic Records

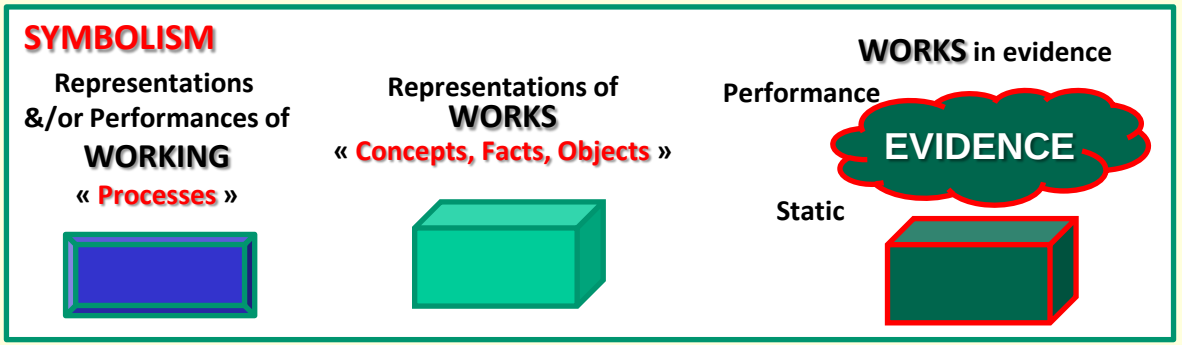
In

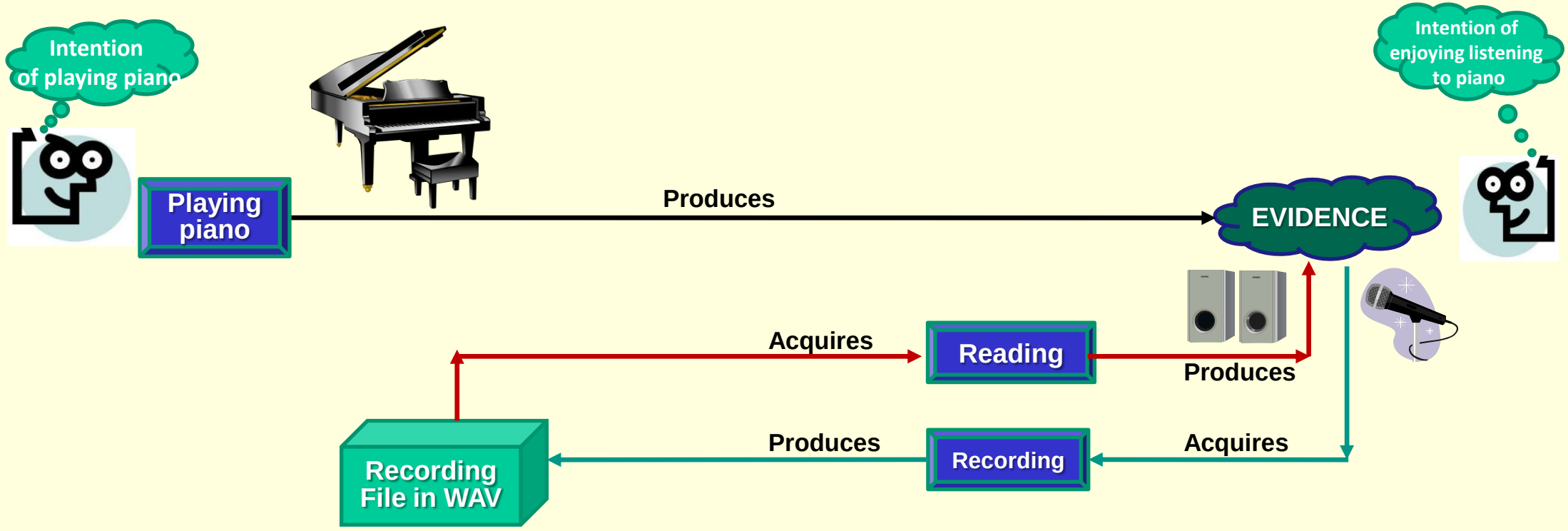
Functional Requirements for the Assets Recording & Rights

FRAR

FRAR = FRBR revisited

Paradigm of the flow for “LIFE RECORDING”





AXIS-CRM

FRAR = FRBR revisited

Paradigm of the flow for "COMPOSING MUSIC"

SYMBOLISM

Representations &/or Performances of **WORKING** « Processes »

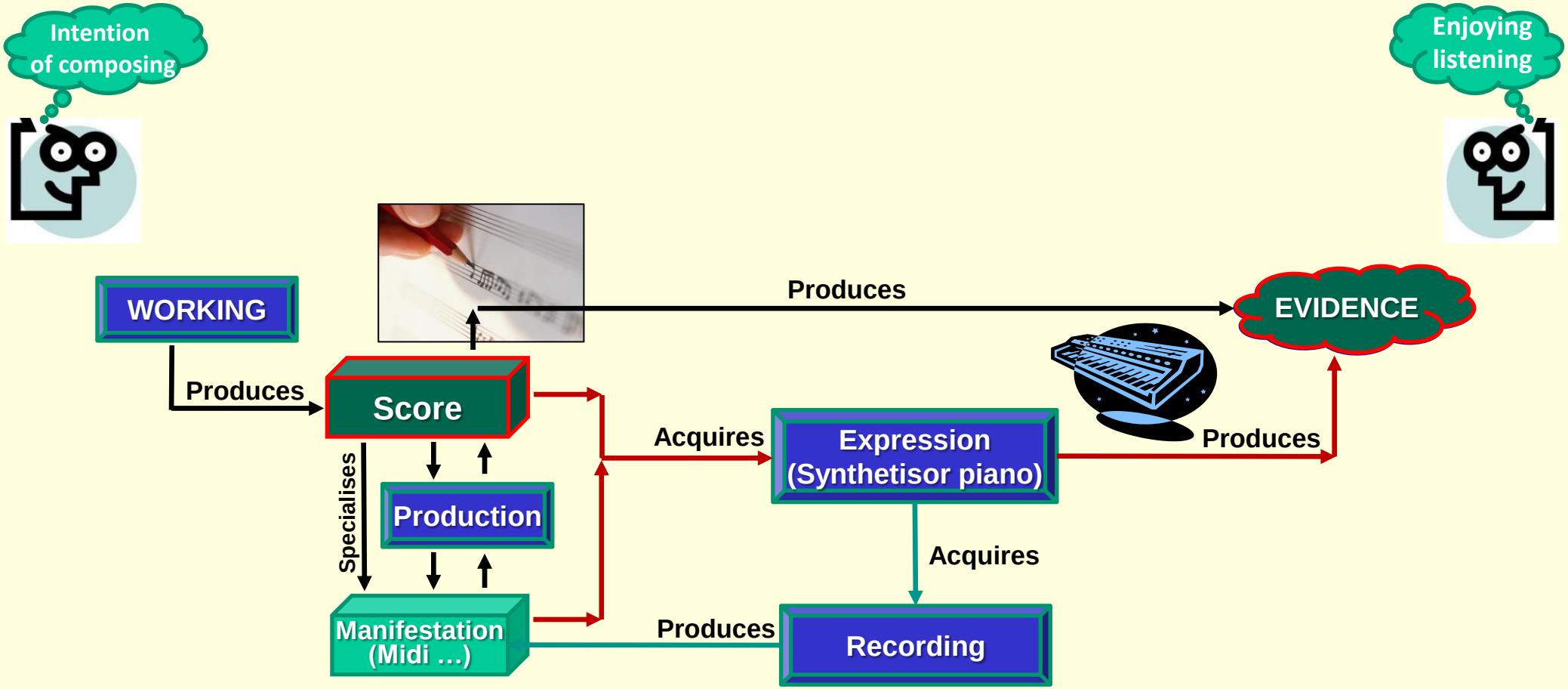
Representations of **WORKS** « Concepts, Facts, Objects »

WORKS in evidence

Performance Work

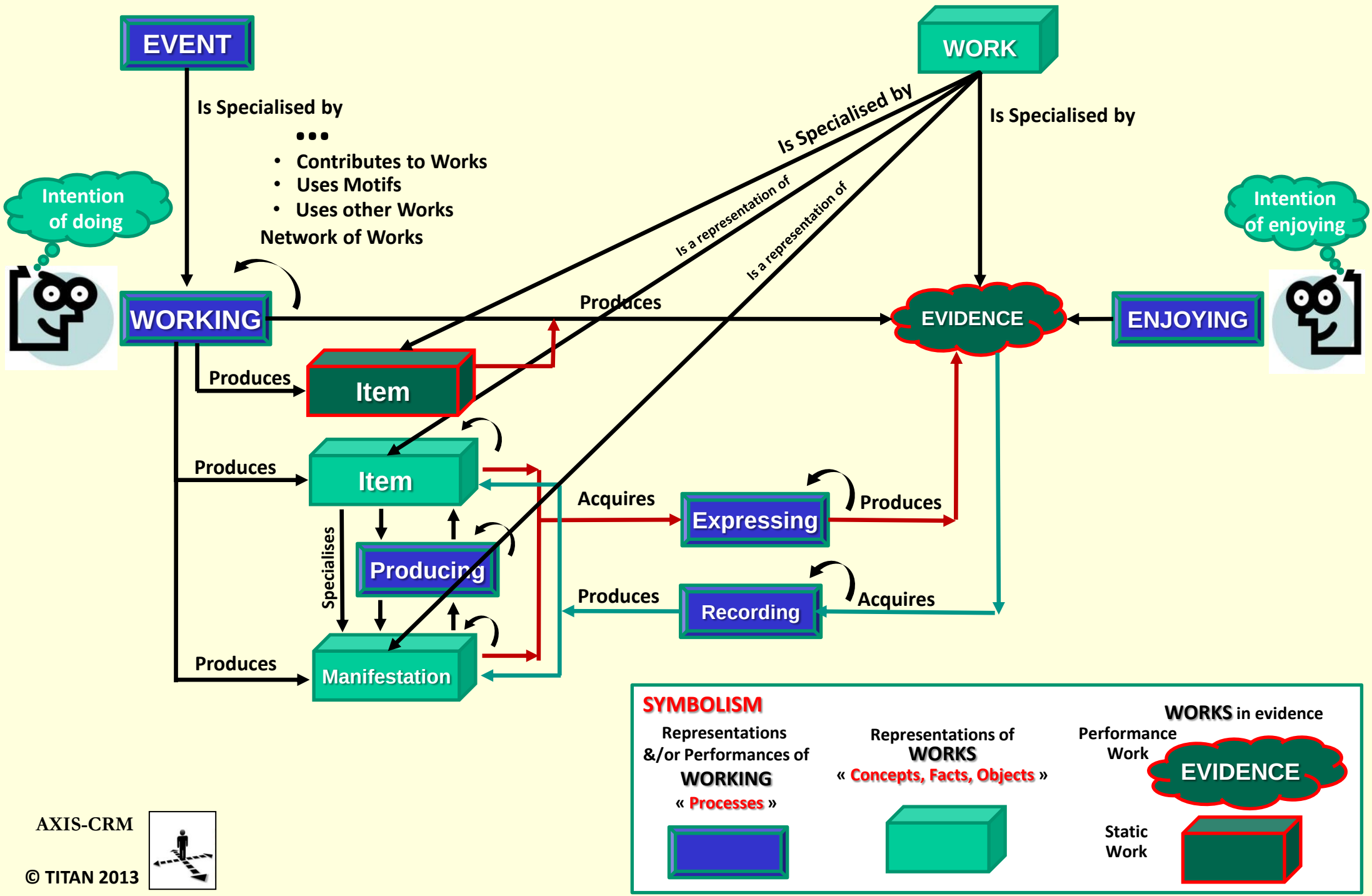
EVIDENCE

Static Work

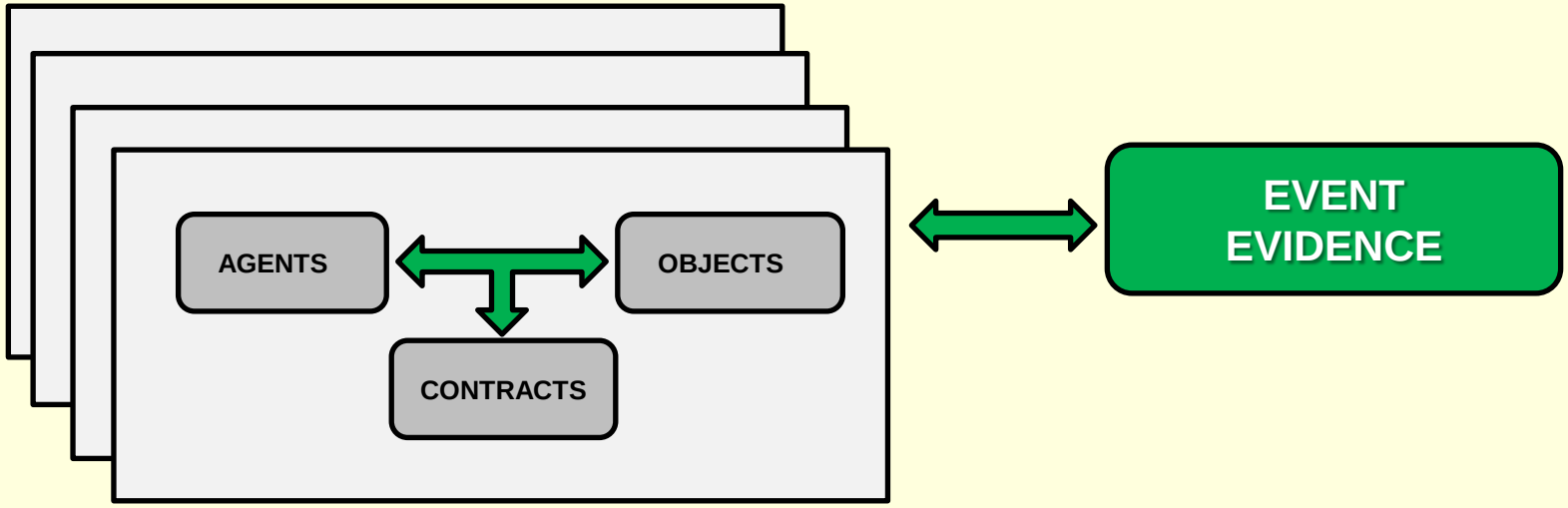


AXIS-CRM

Reference Modelling Flow (*FRAR*)



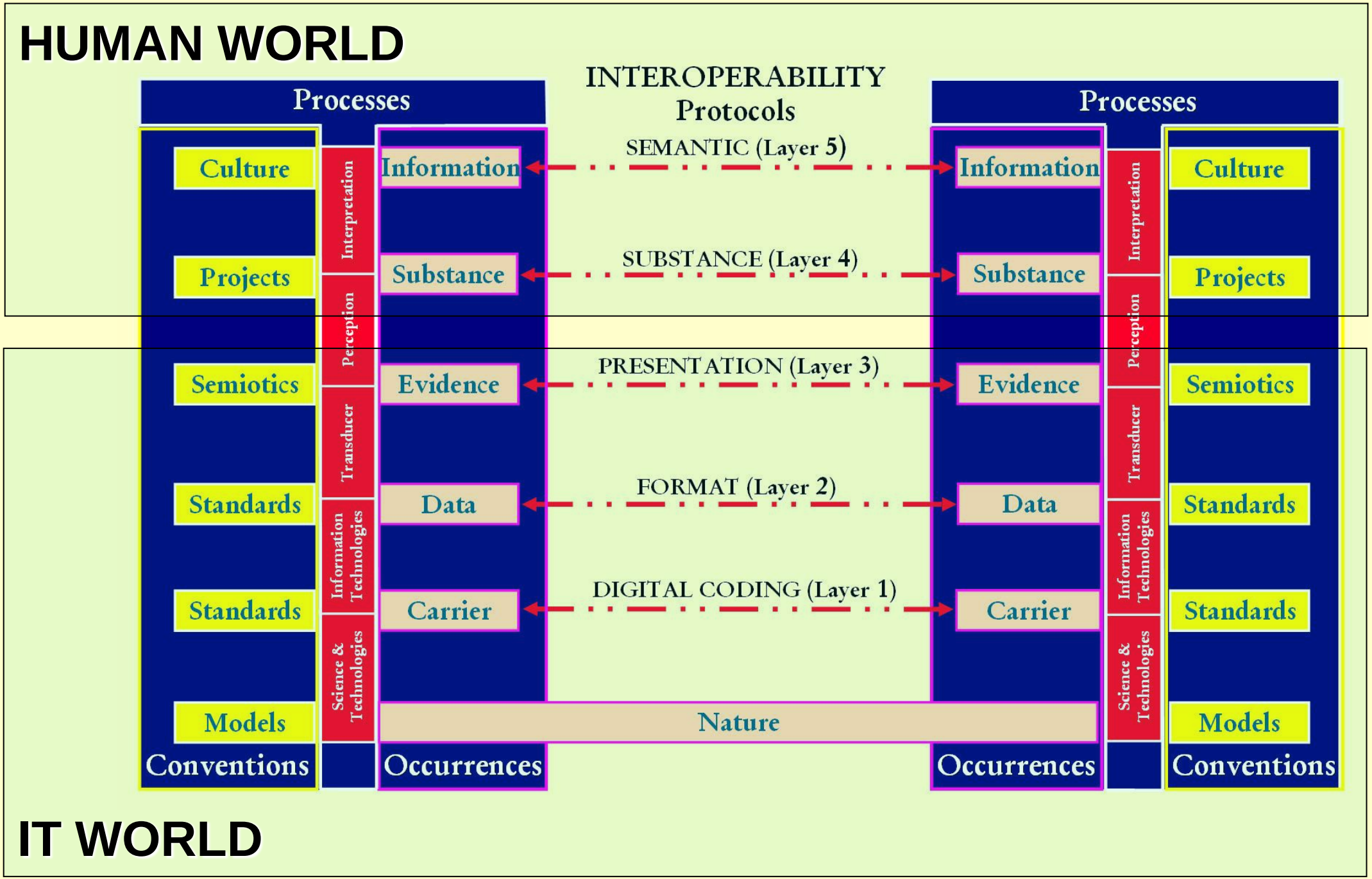
Rights management in AXIS-CRM



INTEROPRABILITY LAYERS

Base for the Management of the Changes

INTEROPERABILITY LAYERS



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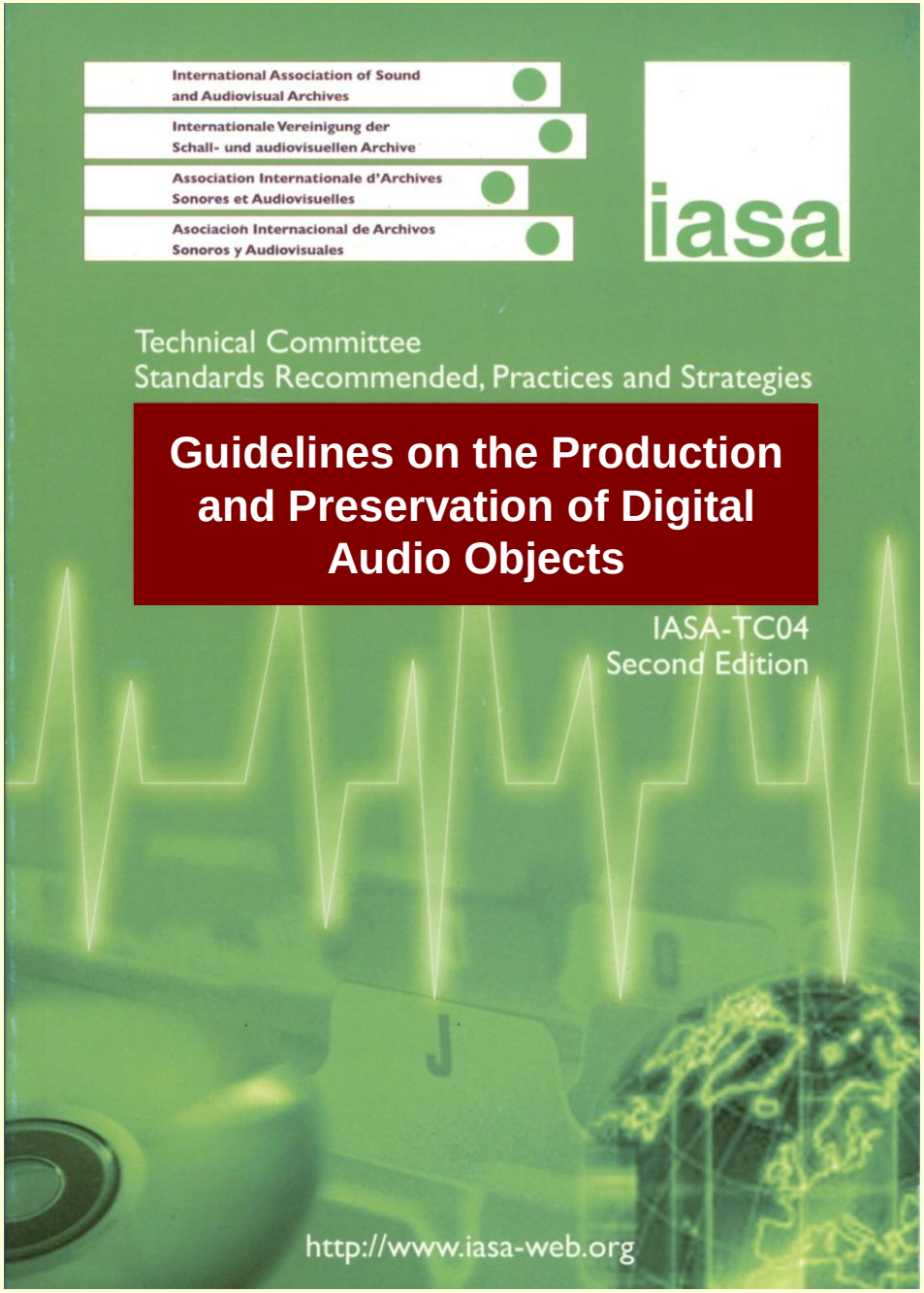
www.iasa-web.org

International **A**ssociation of **S**ound and **A**udio-visual **A**rchives

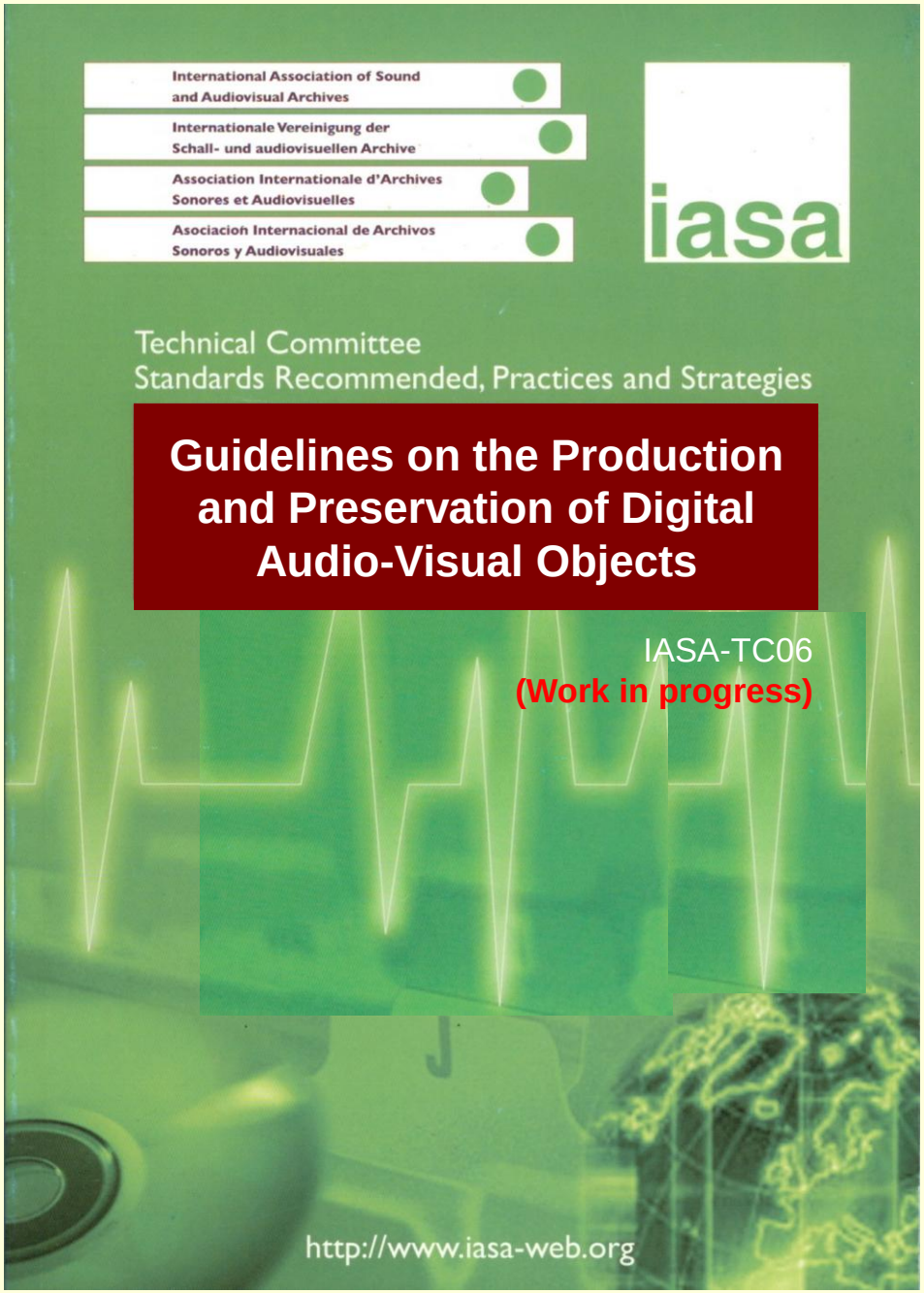
IASA has members from **70 countries** representing a broad palette of audiovisual archives and personal interests which are distinguished by their focus on particular subjects and areas, eg archives for all sorts of musical recordings, historic, literary, folkloric and ethnological sound documents, theatre productions and oral history interviews, bio-acoustics, environmental and medical sounds, linguistic and dialect recordings, as well as recordings for forensic purposes.

- UNESCO
- Library of Congress
- British Library
- Australian Public Library
- BnF
- INA
- BBC
- …

International Guidelines for digitisation & annotation



IASA TC-04 (Second Edition)



IASA TC-06 (In preparation)

IASA is entering in a new phase!

1969 Foundation : *Phase 1*

AV assets represented according to ANALOGUE models

Preservation of the supports
Cataloguing
Metadata
Ethic rules

2000: *Phase 2*

AV assets represented according to DIGITAL FLAT models

AV Carriers
Records in databases

2012: *Phase 3*

AV assets represented as NETWORKS of SEMANTIC ENTITIES

Preservation of the substances
Profiles: Ontologies, Taxonomies, Cataloguing ...
Metadata according to several standards
Interoperability & Linked open Data [LoD]

The “IASA-Organizing Knowledge” dynamics

Conveners: **Lars Gaustad** Lars.Gaustad@nb.no

Guy-Noël MARECHAL guy.noel.marechal@gmail.com

MISSIONS

- **Awareness & education**
- **Definition of guideline for the migration & the empowerment of archives**
- **Promotion of an AXIS-OK project**

Plan of the presentation

1. INTEROPERABILITY
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Invitation to setting-up an AXIS-OK project

My presentation is an invitation made by IASA and TITAN and by a few other contributors to the AXIS initiative (in particular, the UNESCO and the EBU) to contribute and/or join for the setting-up a concrete project aiming at

- Defining the detailed specification of an axis format
- Designing illustrative samples of domain / media specific profiles and at
- Implementing an open platform demonstrating the capabilities of the approach.

Nor TITAN, nor IASA, nor EBU, nor UNESCO are willing to take the lead of such a project but well be members of the consortium. They consider that the success of the initiative will occur if the industrial partners are endorsing the project as a way for them to make profit of the INTEROPERABILITY constructed by the project.

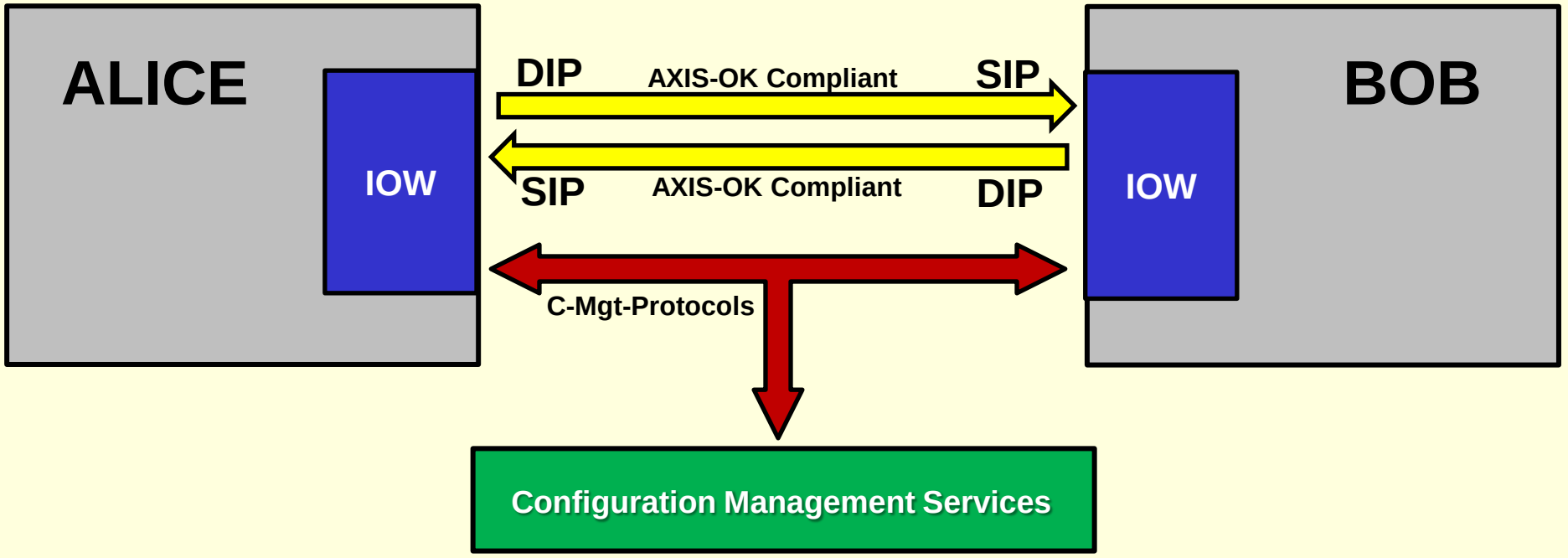
TITAN will give to the project a full free access to the AXIS-CRM document and examples. It should help for the progressive definition by the project of the final AXIS-CRM.

Guidelines for an AXIS-OK project proposal

- **Based on the use of the semantic technologies *(expression close to the concepts)***
- **Exclusive use of "Open Standards"**
- **Encapsulation of proprietary elements with 'pro forma' proxies**
- **Free use of the specifications of the package formats *(under Open Licence)***
- **No interference with proprietary information**
- **Modelling of the rights *(intentions, processes, roles, characters, … and contractual matters)***
- **Modelling of the evolutions & Finite State Machines**
- **Autonomous Packages *(Incorporation of the profiles in the exchanges)***
- **Wrapper agnostic *(BagIt // ZIP // RAR // …)***

- **Implementation of 'Configuration Management Services':**
  - **URI management *(allocation & registration & resolving for URN // URL)***
  - **ITEM management**
  - **Authentication of Resources**
  - **Change management *(in particular for the four loops of the OAIS Standard)***
  - **Repository of profiles**
  - **Clean semantic cutter**
  - **Clean semantic gluer**

Suggested demo setting for a possible AXIS-OK project



Suggested Work-Packages for a possible AXIS-OK project

Work-Package	Typical contributor	Main deliverables
WP-1 : Architecture	Academic EBU / PASIG / SNIA / TITAN	Upper profile
WP-2 : Users	UNESCO-MoW IASA Public archives Broadcasters	User's requirements Contents Evaluations & Validations
WP-3 : Configuration Management Services	Academic Open source middleware (Fedora / Drupal ...)	C Mgt Protocols Meta URI Rules DEMOs
WP-4 : ALICE	Industrial partners	Domain profiles DEMOs
WP-5 : BOB	Industrial partners	Domain profiles DEMOs
WP-6 : Dissemination AXIS-Center	Industrial partners EBU PrestoCenter	Guidelines SDK DEMOs

NOTE: The IASA-OK conveners have suggested the names of some enterprises or organisations soly for illustration!

THREE KEY DOCUMENTS

TITAN

fiat ifta
Fédération Internationale des Archives de Télévision
INTERNATIONAL FEDERATION OF TELEVISION ARCHIVES

TORONTO 2011 May 26 to 27
Media Management Seminar
5th In Series: Changing Scenerios Changing Roles
New Challenges in audiovisual archiving for the digital domain

Ontology

Constructing the interoperability through semantic modeling!

By Guy Maréchal
(guy.noel.marechal@gmail.com)

Towards an open, flexible, interoperable semantic format & environment

AXIS-CRM

Autonomous e**X**change packages for **I**nteroperable **S**ystems

Conceptual **R**eference **M**odel

The AXIS – CRM Project – version UK/FR 2013_05_14

Guy Maréchal – Roger Roberts (Titan asbl)

Secrétariat: Marie-Laure Schellings (RTBF)

EBU MIM Semantic Web Activity Report

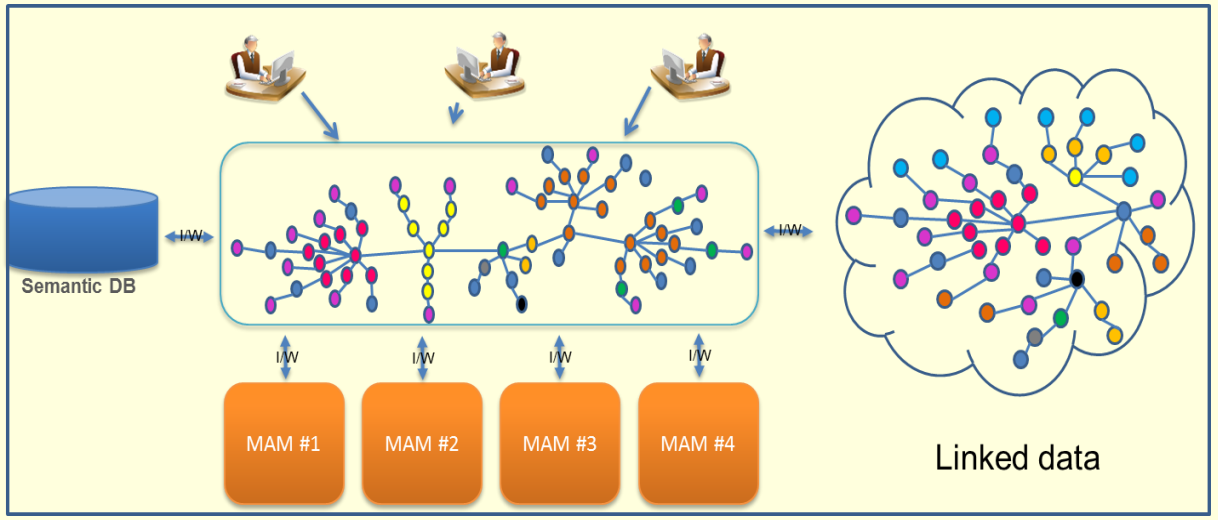
Executive summary

This document provides an introduction to Semantic Web technologies and several use cases in the broadcast environment.

The purpose of this report is to **raise awareness on the importance and high potential of Semantic Web technologies** now rapidly developing from initial conceptual prototypes to services in real production also in the **broadcasting and media domain**. Several successful applications of these technologies now exist for media archives. Others are being considered to enrich second-screen applications or search engines.

The MIM Strategic Program has developed the following report with contributions from **ABC Australia**, **BBC**, **Memnon**, **RAI**, **Perfect-Memory**, **VRT** and **RTBF** as well as reports from various international activities like **IASA-OK** and the **Media-Mixer** project. These reports show that Semantic web technologies can be in fact used **at all stages** from commissioning through production, archiving down to distribution.

Based on these findings, the present Semantic Web report is an invitation to explore these technologies and what they can bring to the broadcast business. The MIM Strategic Program is looking forward to more updates on further implementations by EBU members and will continue to study and promote Semantic Web technologies and their applications in media and broadcasting.



Plan of the presentation

1. INTEROPERABILITY
2. AXIS-CRM
3. The IASA “Organizing Knowledge” dynamics
4. Towards an AXIS-OK project
5. Conclusions

Main CONCLUSIONS

- **Going to SEMANTICS cannot be avoided and is the key for constructing the INTEROPERABILITY & the PERSISTENCE**
- **Progressively, 'born digital' works will be created SEMANTICALLY modeled**
- **Modeling SEMANTIC objects is easy and funny**
- **Retrieving & exploiting SEMANTIC objects is easy**
- **The technologies of the SEMANTICS are ready , powerful and easy to use**

In practice

We will send the PDF of the three associated documents to all the participants of the EMWRT-VIII:

1. **Constructing the INTEROPERABILITY & the PERSISTENCE** *(FIAT/IFTA 2012 Toronto [by Guy Maréchal])*
2. **AXIS-CRM** *(Proceedings of the MediaMap+ project [By Guy Maréchal & Roger Roberts]) Release planned end 2013*
3. **EBU-MIM** report *(Proceedings of the MIM project [by Alberto Messina (RAI); Johan Hoffman (VRT); Jean-Pierre Evain (EBU); Roger Roberts (RTBF); Yves Raymond (BBC); Guy Maréchal (PROSIP & TITAN); Mike Matton (VRT); Laurent Boch (RAI); Annarita Di Carlo (RAI); Lizbeth Moore (ABC) ; Tris Hoyne (ABC); & altera] Release planned mid 2013*

If you are interested to be further informed or involved in the AXIS-OK project ...

Leave your business card in the circulating envelope or write your name and E-mail address on the associated form