International Organization for Standardization

www.iso.org

ISO/TMB/AHG/St_DB

&

The ISO Concept Database

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Structured content

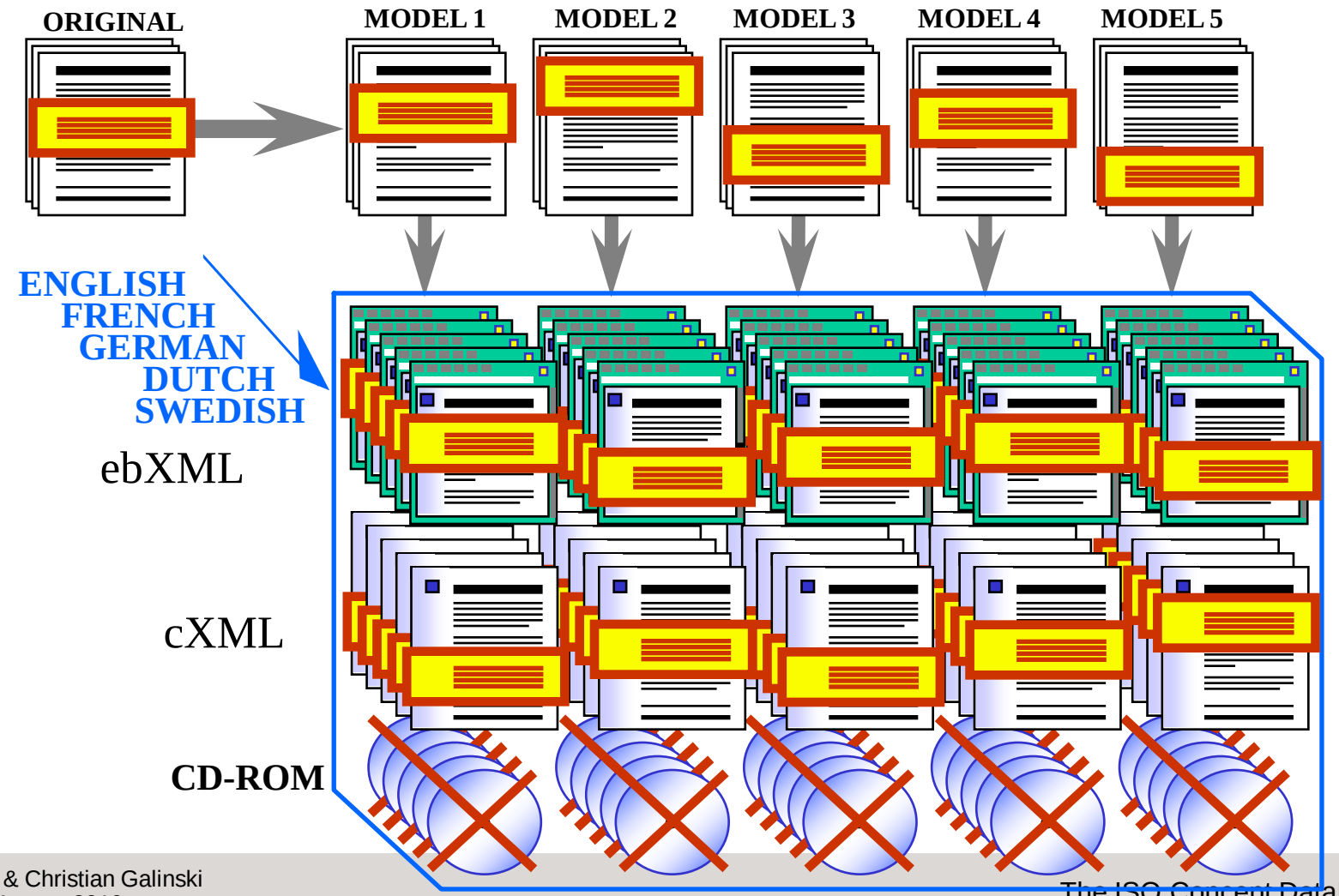
- Textual databases vs. numerical databases
- Non-verbal communication in applied linguistics
- Non-verbal representations in Technical Documentation
- Databases with non-verbal content elements
- Metadata/data category registries

➔ global content integration ➔re-use

➔ content interoperability ➔re-purposing

Updating Item Descriptions

… ideally into various languages Source: Ben Martin (J.D. Edwards) 2002



Databases of structured content

- Chemical formulas
- Quantities and units
- Brands and logos
- Traffic/road signs
- Graphical symbols (for graphical design)
- Bliss symbols and other kinds of AAC
- Video clips

➔ Increasingly combined with or embedded in each other ➔standardization

Structured content: Example 2: traffic informatics

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

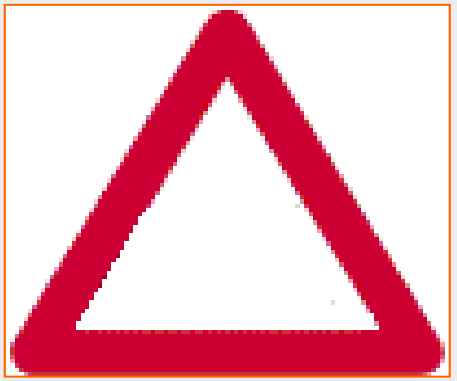
➔variable message sign boards

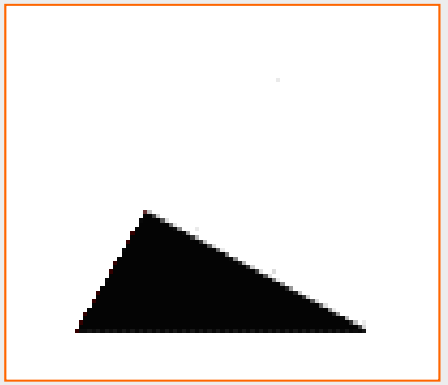
“Morphology” of pictogrammes

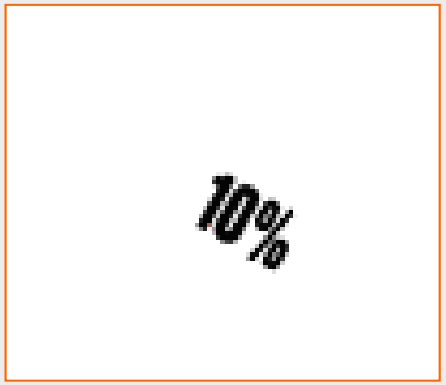
- Representation elements

- automatic segmentation?
- “fuzzy search”?

=







e-Engineering – Processes throughout the entire product life-cycle

Manufacturer

- R & D
- Development
- Procurement
- Production/ Installation
- Maintenance & Support
- Disposal

Product Specification, Retrieval und Classification

e-business Protocols

Procurement XML / EDI

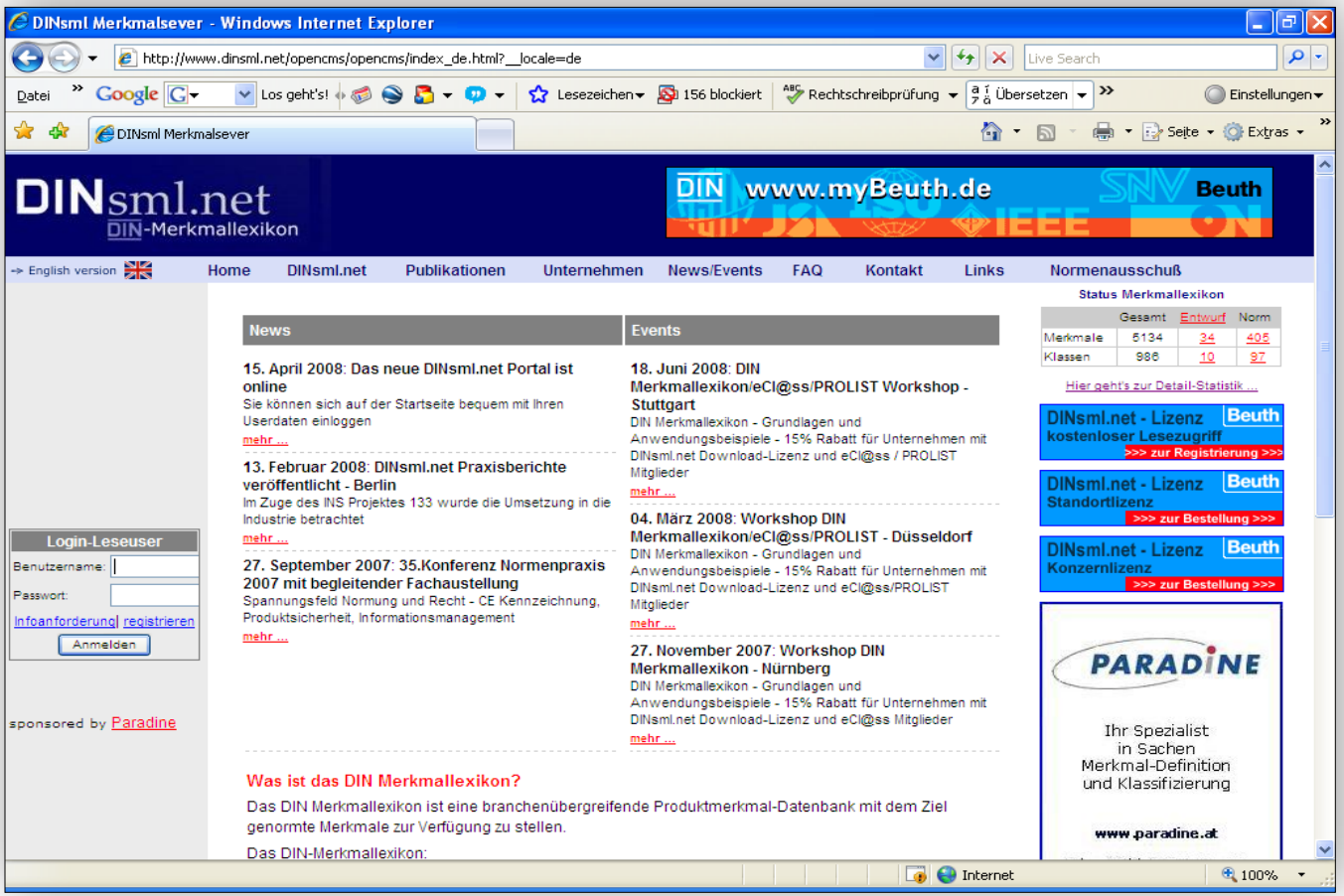
Delivered Product Specification

Engineering Data Management for Maintenance/Support

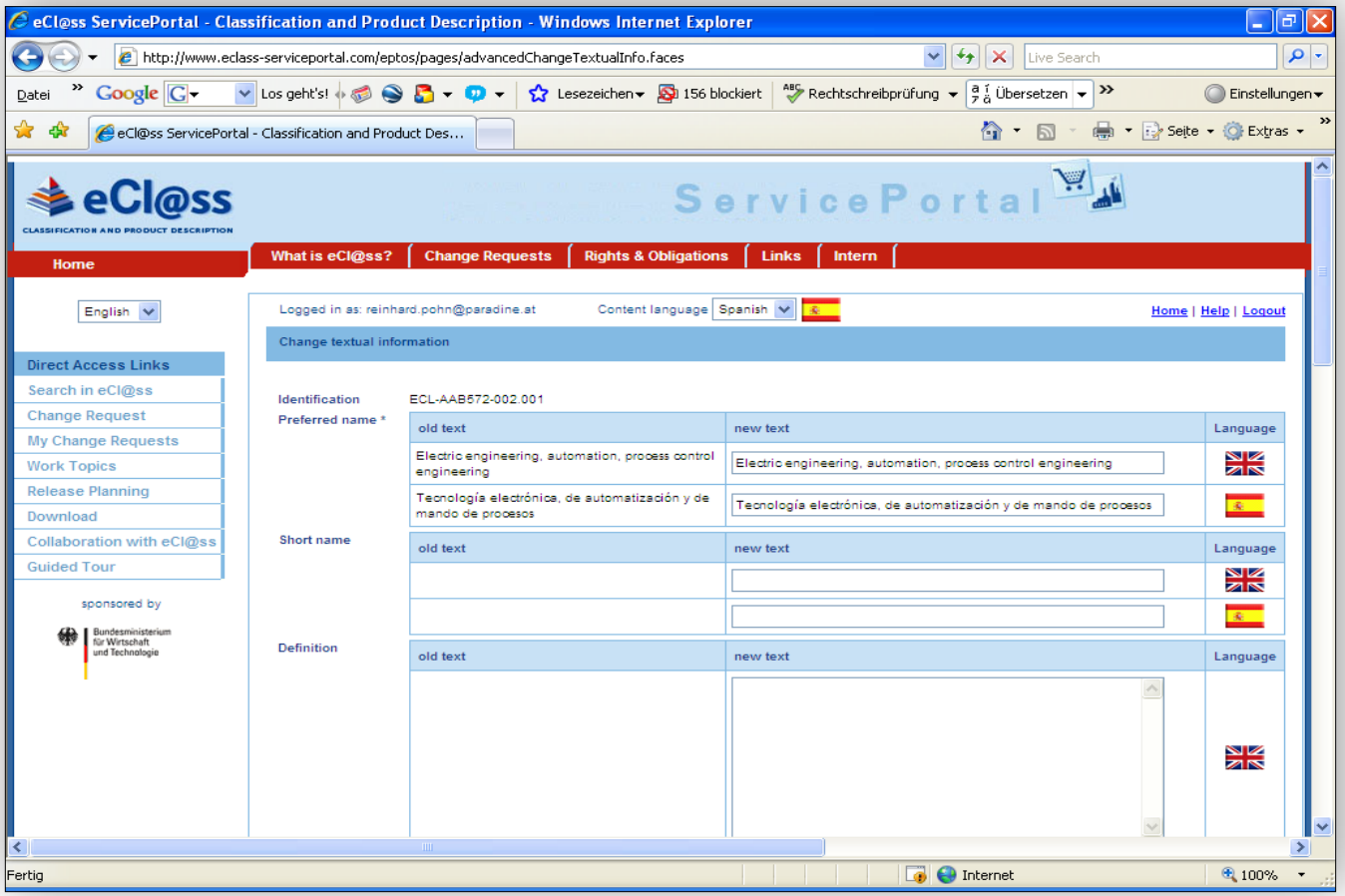
Product Disposal

Supplier/Customer

www.DINsml.net – multilingual product properties



www.eclass.net
– multilingual product classification



Applicability of the CDB approach

Standard consists in full or in part of a “**collection of items**” (of structured content), e.g.

- graphical symbols
- terms and definitions
- product properties
- data dictionaries of all types
- classification systems
- codes (for various types of objects)
- etc.

ISO/CDB – Content (1)

- ISO standards containing terminology
  - Vocabulary standards: app. 800
  - Other standards with terminology: app. 8000
  - App. 180.000 - 200.000 terms in ISO standards
  - → Cooperation with EAFTerm (China, Japan, Korea): ISO/CS obtained around 120.000 terminology records from ISO standards entered during a project implemented by CNIS

ISO/CDB – Content (2)

- Graphical symbols
  - App. 4500 (in ISO standards)
  - App. 1000 (in IEC standards) [inclusion to be discussed]
- Other types of representations (codes, product properties etc.)
  - Numbers - ????

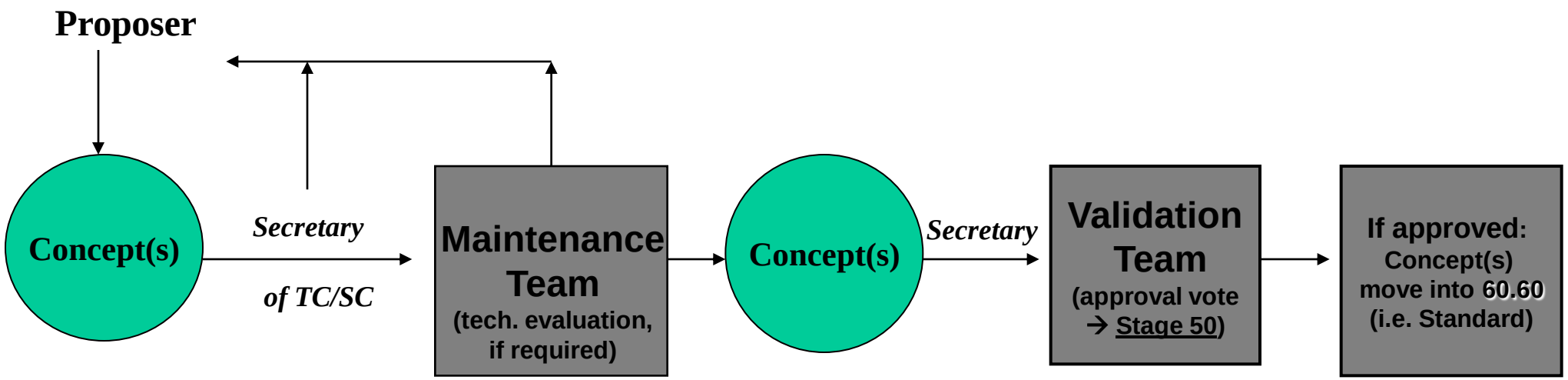
Increasing use of DBs in standards development

Result of a survey done by ISO Central Secretariat:

- June 2005: Approximately 15 TCs/SCs
- June 2007: Over 40 TCs/SCs
- March 2006: First DIS disseminated in the form of a database (ISO/TC 61/SC 1 – *Plastics vocabulary*)

→ Emerging approach to standards development

ISO/CDB – Procedure (3)
« Normal » DB-procedure [2 – 6 months]



ISO/TMB/AHG/St_DB – Participation

Committees represented in the TMB AHG:

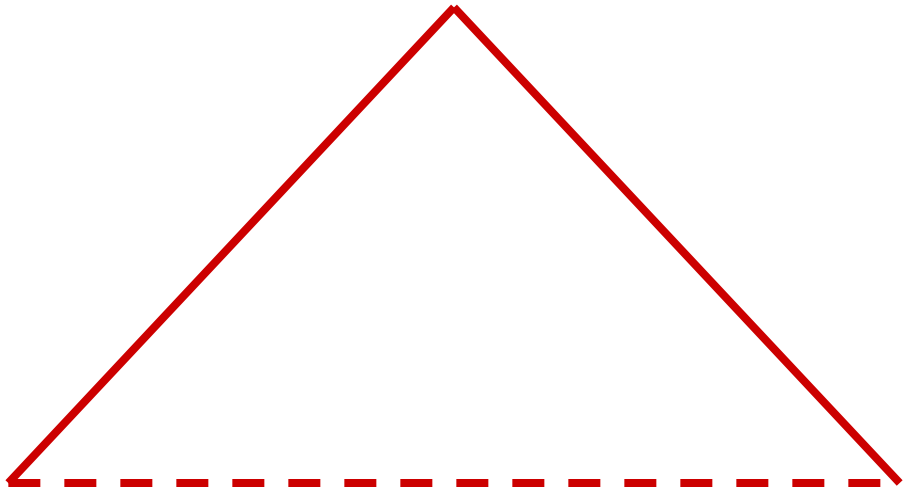
- ISO/IEC JTC 1 *Information technology*
- ISO/IEC JWG 1 *Product classification*
- ISO/TC 10/SC 10 *Technical product documentation*
- ISO/TC 23/SC 19 *Agricultural electronics*
- ISO/TC 29 *Small tools*
- ISO/TC 37 *Terminology and other language and content resources*
- ISO/TC 145 *Graphical symbols*
- ISO/TC 172 *Optics and photonics*
- ISO/TC 184/SC 4 *Industrial automation*
- ISO/TC 199 *Safety of machinery*
- ISO/TC 215 *Health informatics*
- IEC TC 3 *Information structures, documentation and graphical symbols*

- IEC Central Office, representatives from AFNOR, BSI, DIN, JISC

Why a « Concept » database?
Concepts – Designations – Referents/Objects

Unit of thinking (concept)

(Unit of thought, unit of knowledge etc.)



Designation

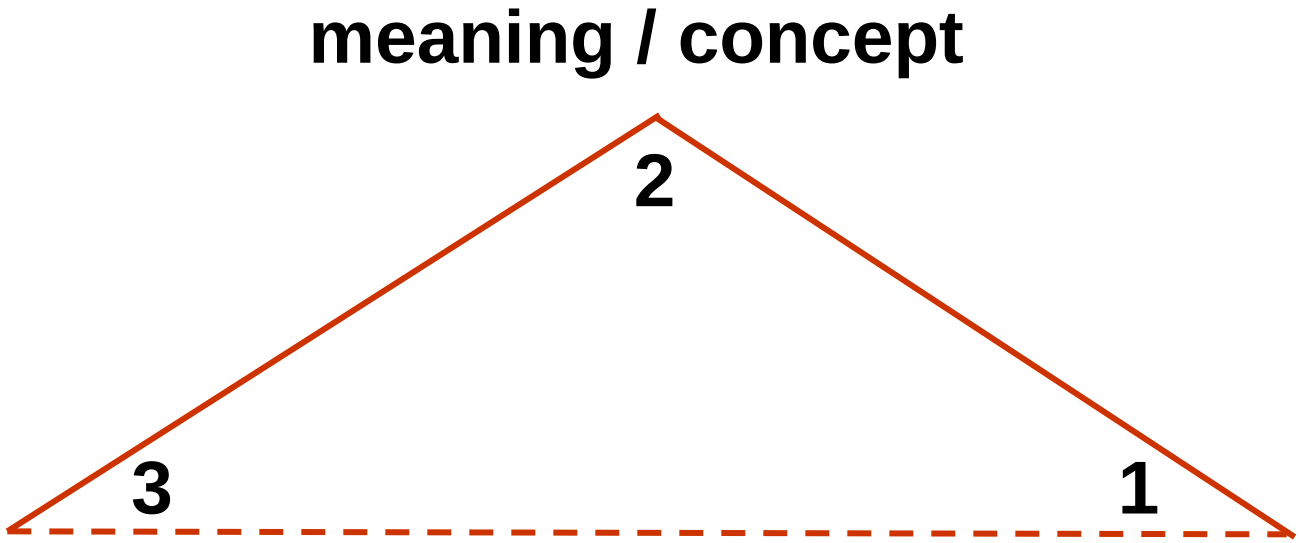
(Symbol, sign, term, formula etc.)

→Different types of designations/representations

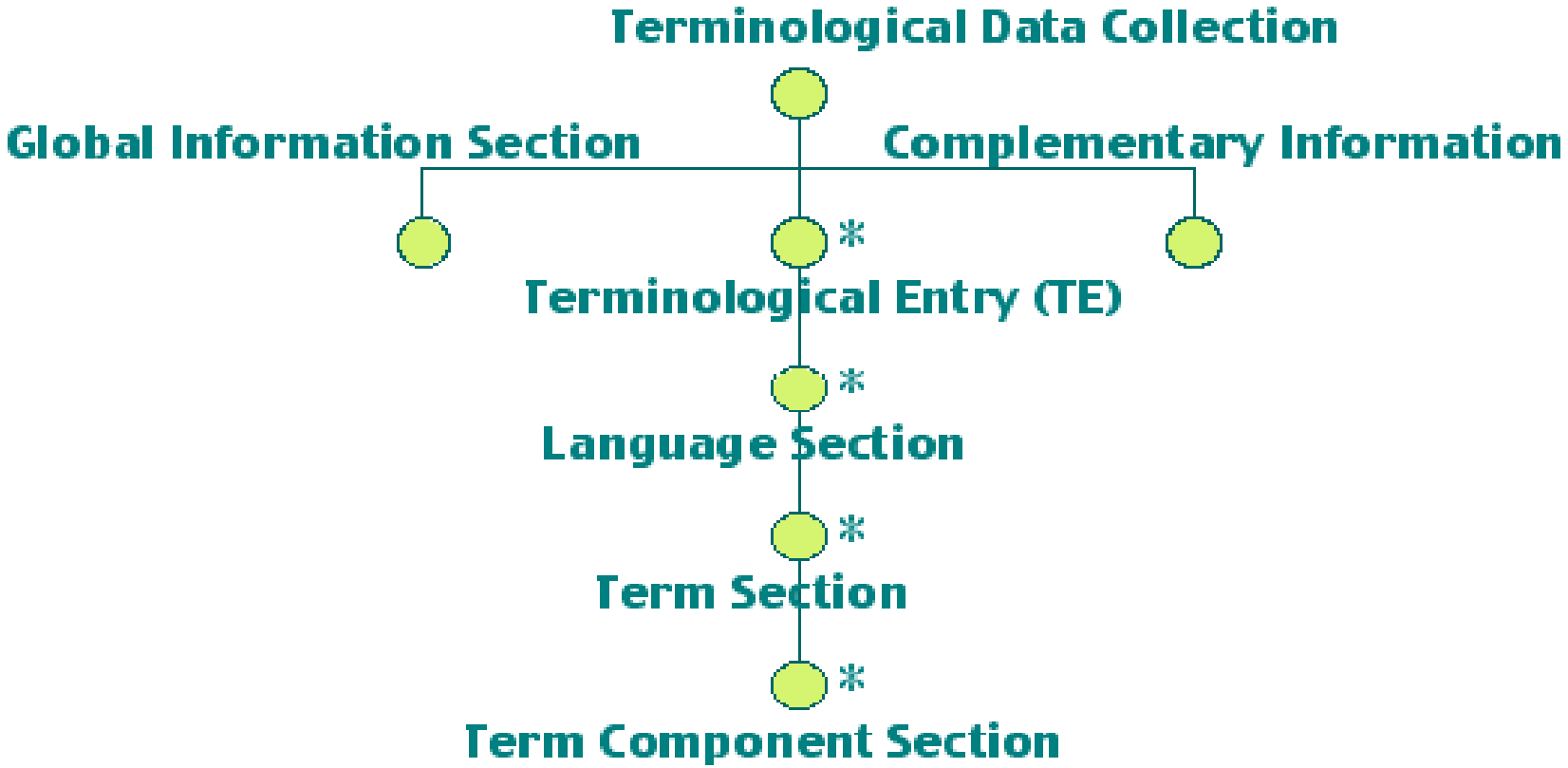
Referent

(Material object, conceived object, something real etc.)

The “semantic triangle”

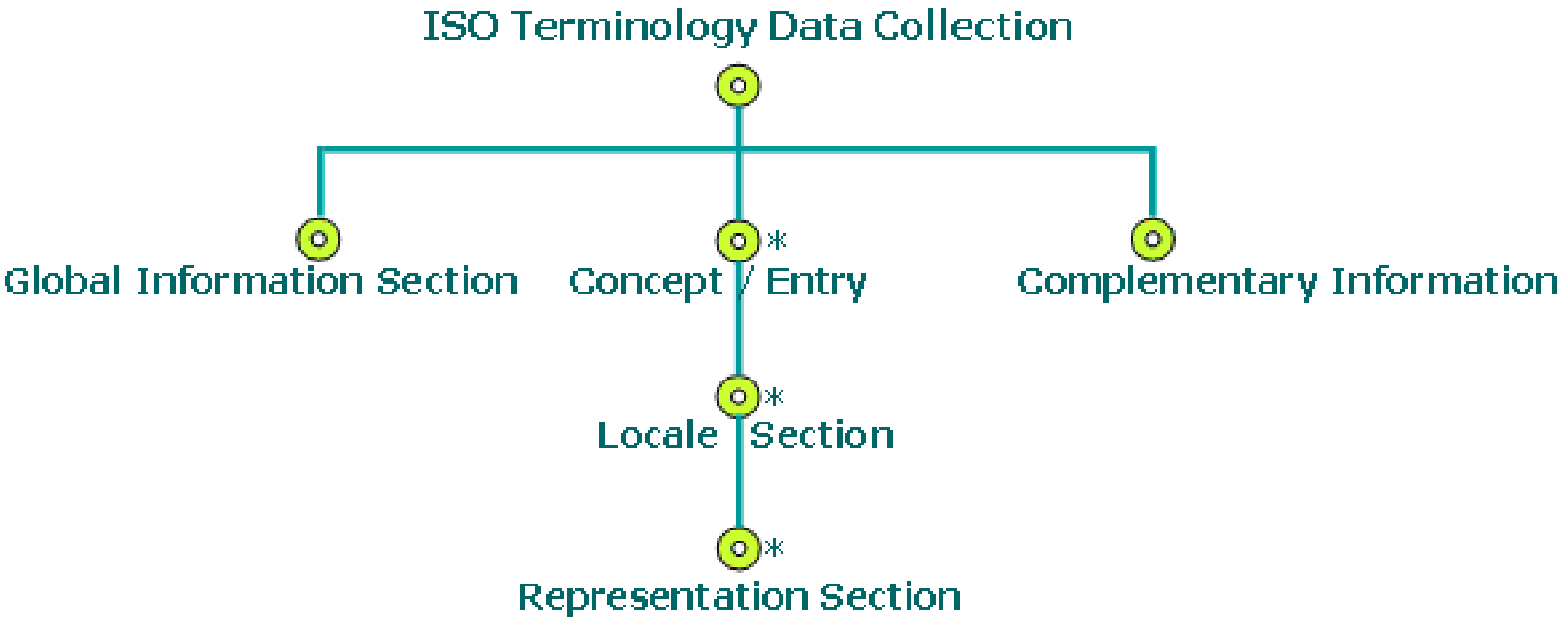


Terminological metamodel



Source: Klaus-Dirk Schmitz 2005

Terminological Metamodel revised



Source: Klaus-Dirk Schmitz 2005

ISO/CDB – Data model

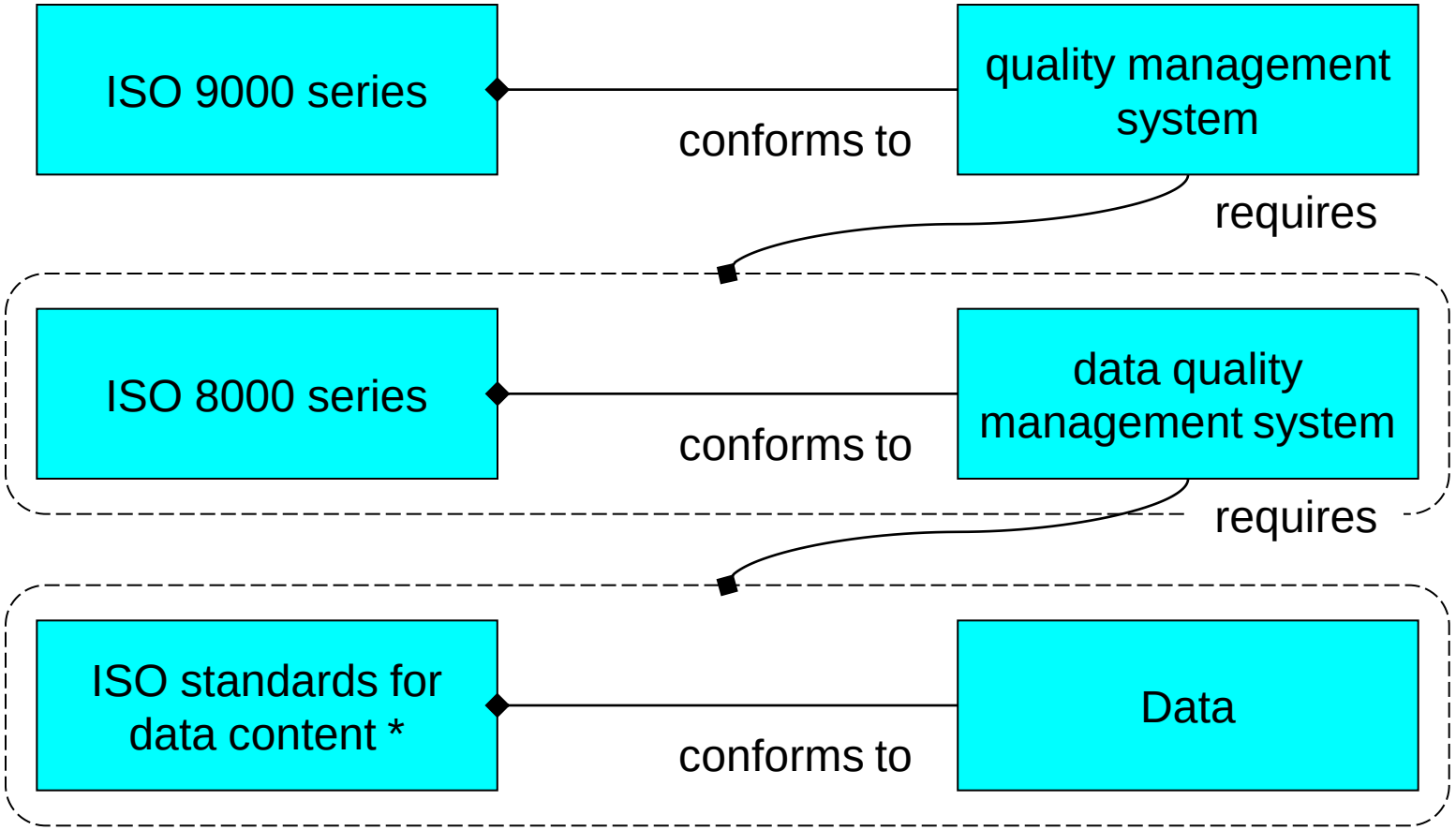
- Extended data model based on ISO 16642:2003
  - Concept-oriented
  - Support for concept representations other than terms (graphical symbols, codes etc.)
  - Multilinguality & multimodality
- Model needs to be further tested with other types of representations

Conclusion and outlook

- **Content integration** – whether in the form of virtual or real data integration – and **content interoperability** must be based among others on:
- **Consistent methodology standards for datamodels and data modelling (of structured content);**
- **Coordinated standardization of several kinds of structured content;**
- **Standardized identification systems for individual pieces of information (of structured content);**
- **Standardized transfer protocols and interchange formats (for structured content);**

➔in order to be efficient and reliable.

The quality stack from ISO/TC 184/SC 4



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

Thank you!

QUESTIONS?