



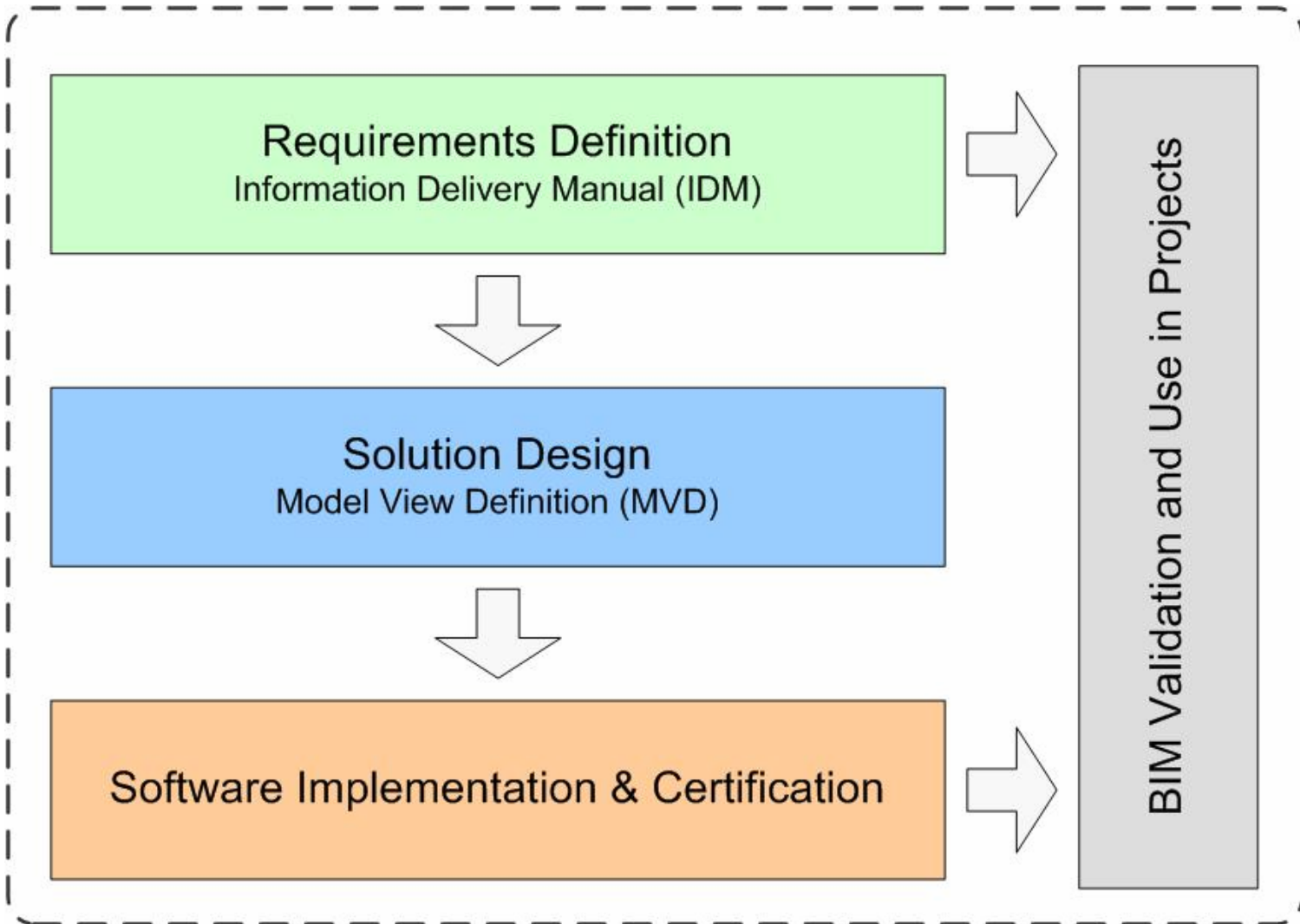
Knowledge for Creating & Sustaining the Built Environment  
CSI*Net* - Home of The Construction Specifications Institute

# IFD Library

Roger Grant

**OmniClass™**  
*A Strategy for Classifying the Built Environment*

 **IFD LIBRARY**  
for building**SMART**



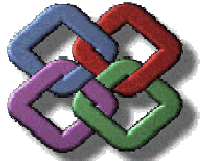
**IFC**  
Model Schema

**IFD**  
Terminology/Ontology



# Goals

- Set the standard for object-based data exchange and sharing of virtual buildings:



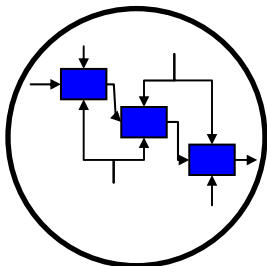
- IFC model
  - create a comprehensive information specification



- Dictionary
  - use standard names and definitions of properties for IFC extensions

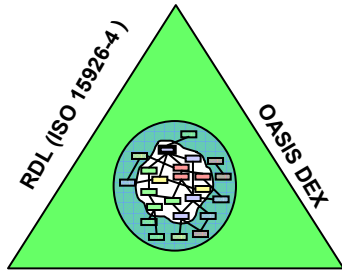


- Exchange Requirements - IDM
  - define information requirements and rules for particular business processes



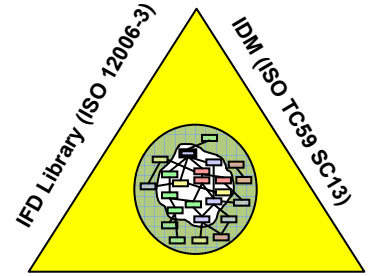
- *Reference Processes*
  - *establish standard process descriptions that can be extended for projects*

# Interoperability through standards



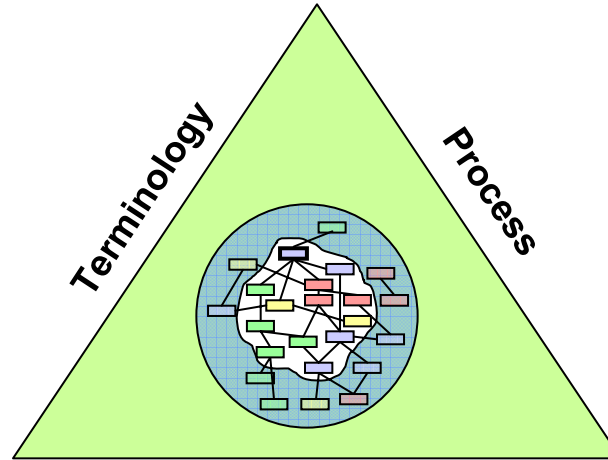
ISO 10303-203, 209, 212, 214, 239,  
ASD 9300-110

**Aeronautics & Space**

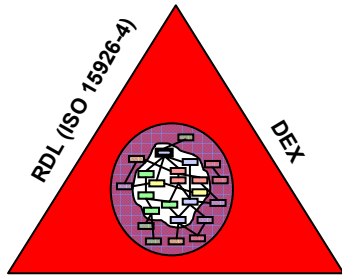


IFC (ISO 16739)

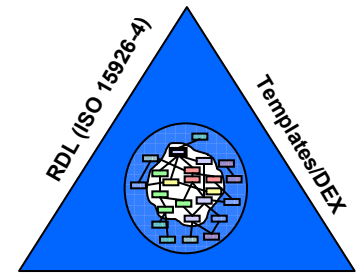
**Built Environment  
(AEC-BIM)**



Digital Storage



PLCS (ISO 10303-239),  
ASD/AIA S1000D,  
ADL SCORM



ISO 15926-2

**Oil & Gas**



**EPM TECHNOLOGY**



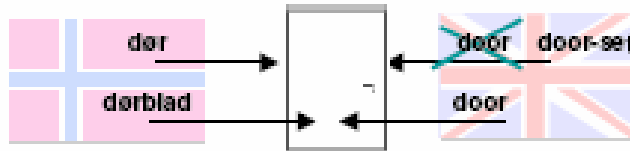
# IFD Library Description

- IFD Library provides:
  - Multilingual and translation capabilities
    - Important in a globalized world
  - Unique global reference to any concept – GUID
  - IFC model enrichment and link to product specific data
  - Database of terminology and definitions
  - A generic API and content
  - Support for business opportunities – market driven

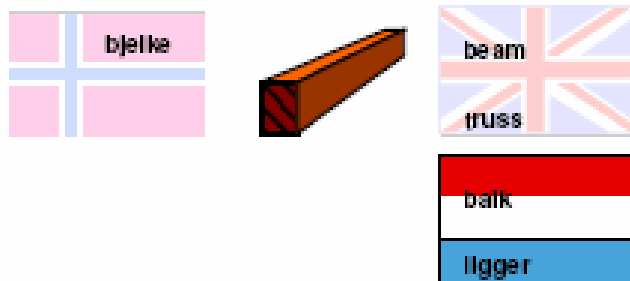


# Establishing a Controlled Vocabulary

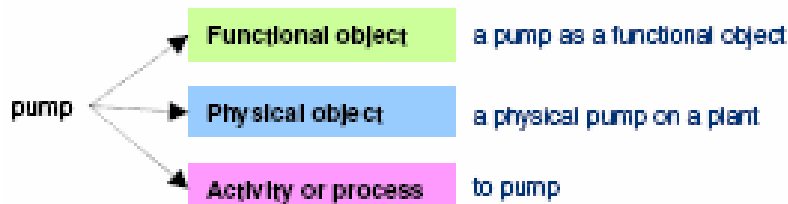
- ✓ Give one concept multiple names in multiple languages
  - Concepts are classified as objects, activities, properties and units, not as verbs, substantives, adjectives, etc.



- A dictionary based mapping does not necessarily refer to the identical concept.



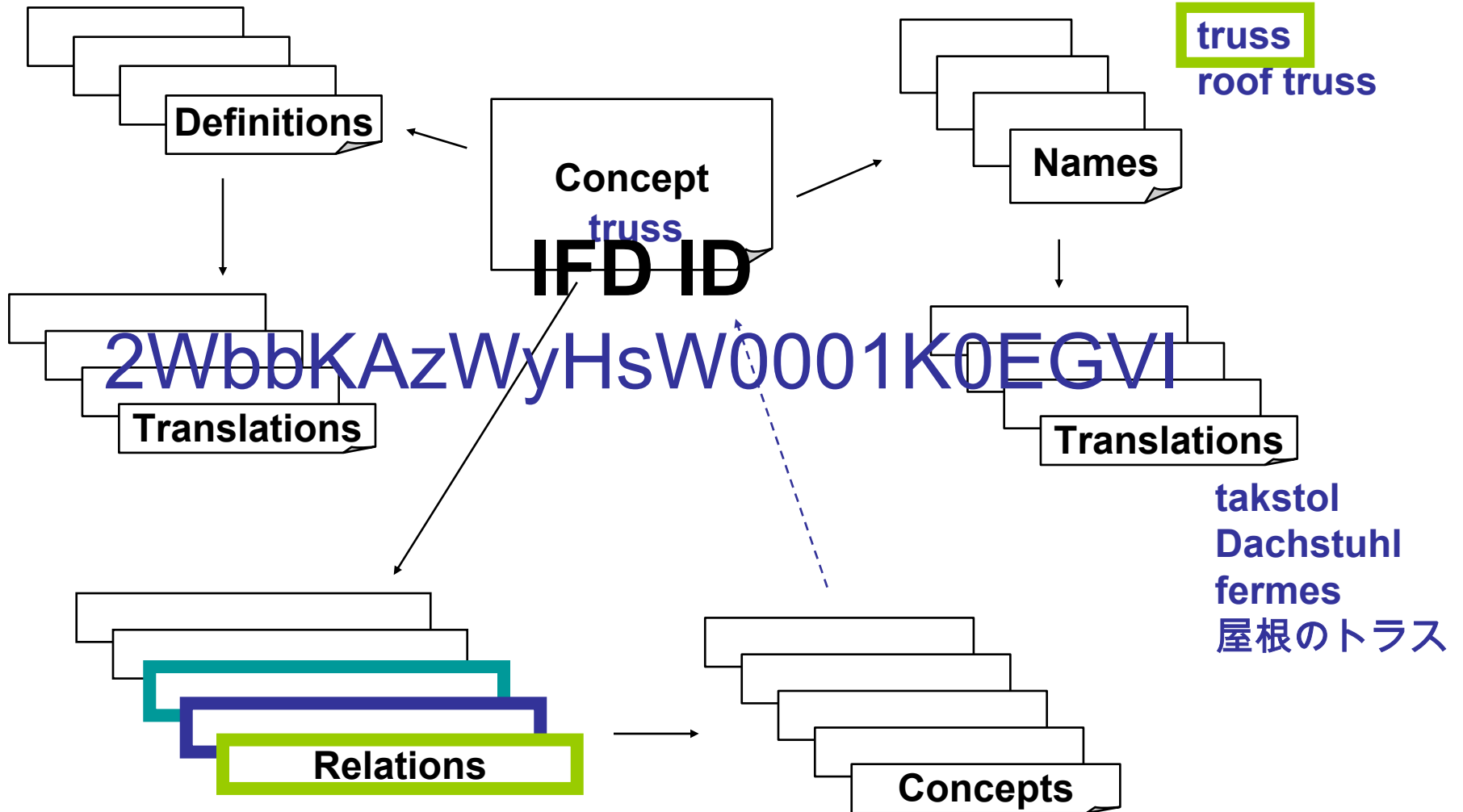
- An concept can have multiple names on the same language



- A name can refer to multiple concepts



# A wooden framework...



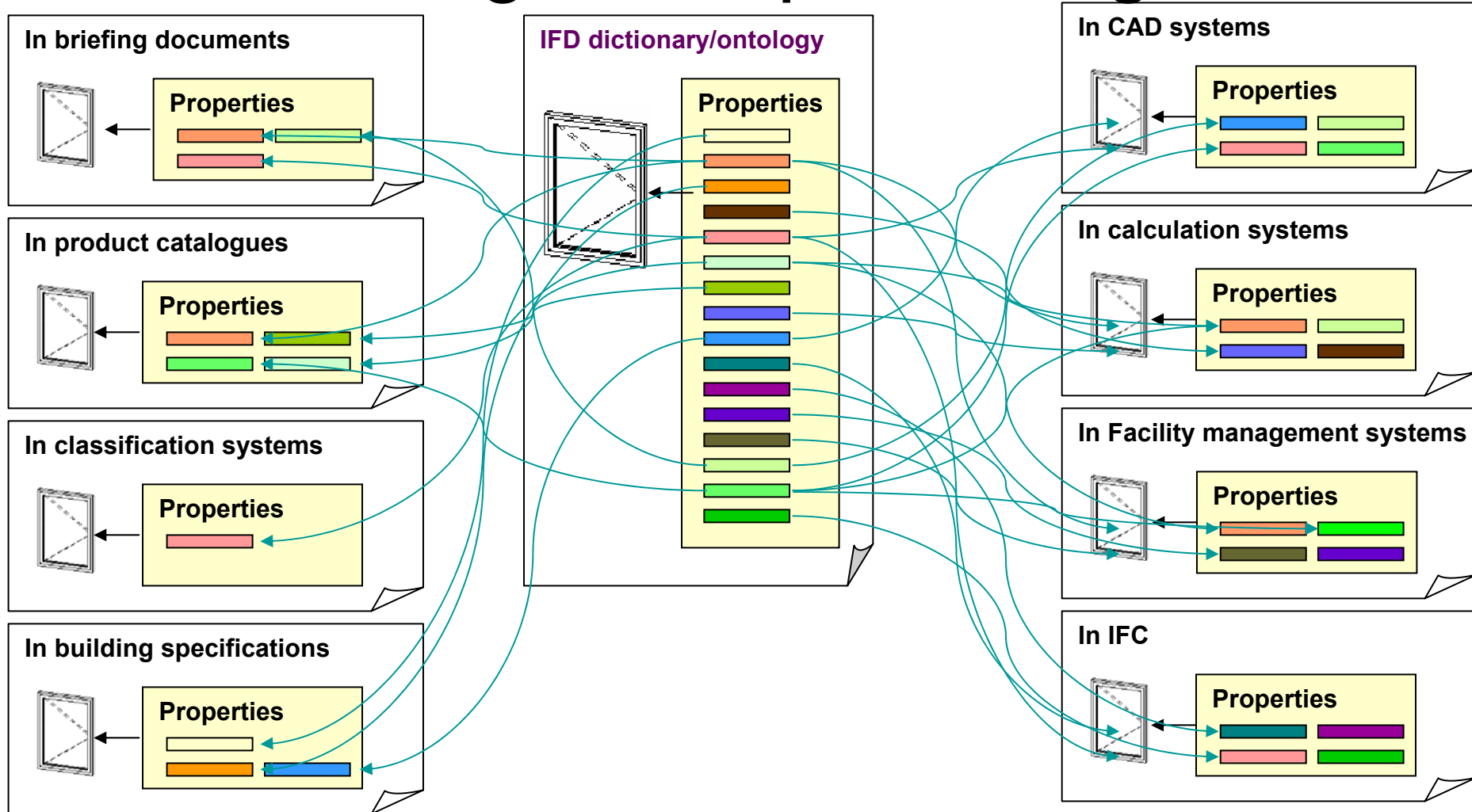
documented in



ISO 15686



# Interlinking concepts through IFD

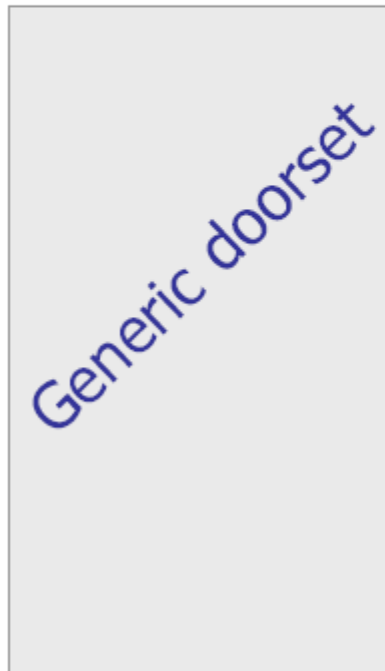




# Property Set Values

## IFD Library

## Product



- Thickness
- Hand of door
- Width
- Height
- Material
- Surface finishing
- Colour
- Hinge

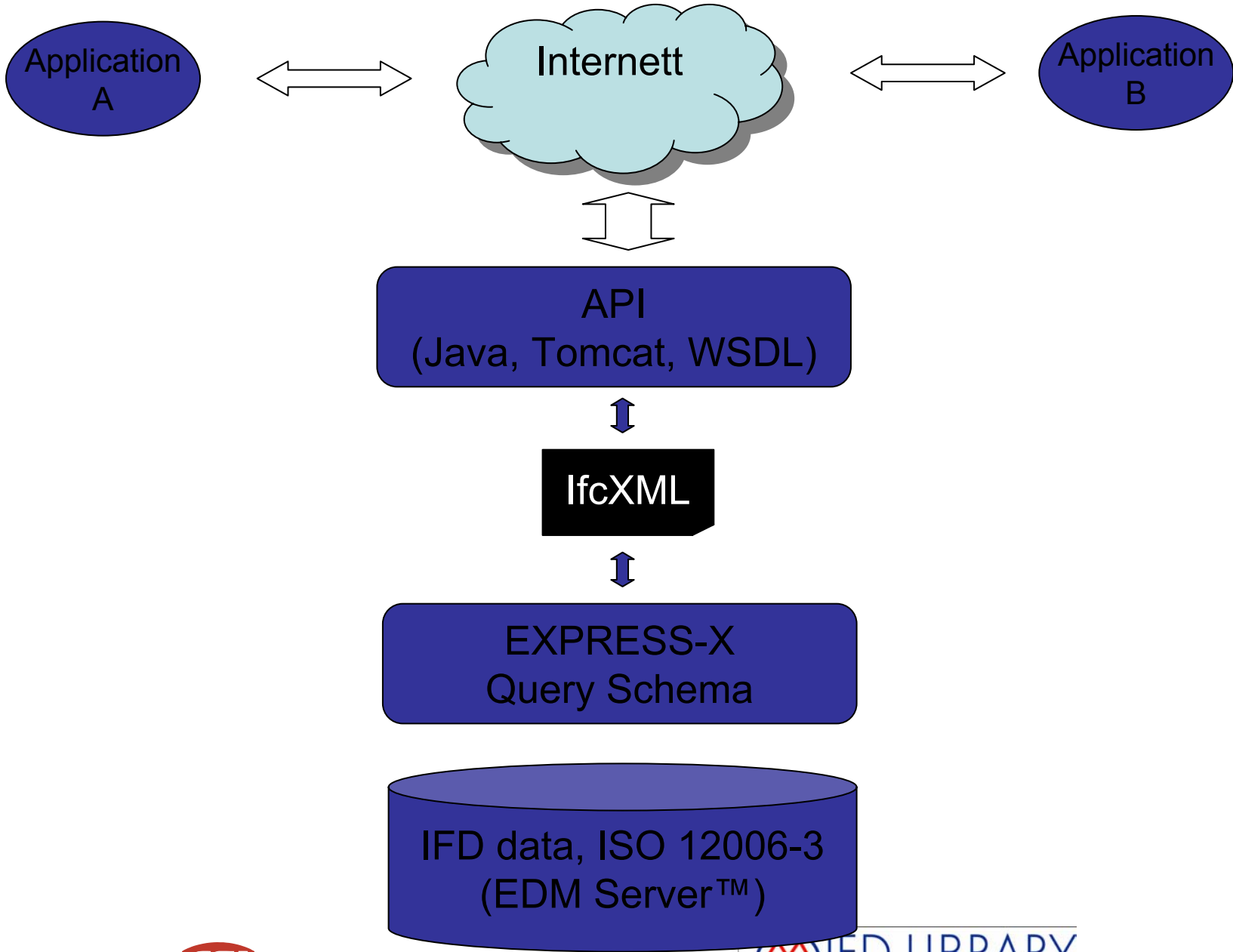
+

- 92 millimeter
- Right
- 890 millimeter
- 2090 millimeter
- MDF
- Painted
- NCS S0502
- 2465 snap-in

=



Graphic courtesy Arne Hammerstad, NOBB



# Propertyizer – IFD Input Device

The screenshot shows the Propertyizer application window. The title bar reads "Propertyizer" and includes standard window controls. The menu bar contains "File", "Edit", and "About Propertyizer". A search bar is located in the top right, with the text "Search in IFD" and the IFD LIBRARY logo. The main interface is divided into three panes: "Product types", "Properties for:", and "Available properties".

**Product types:** A list of material types with "Gypsum plaster board" selected. Other items include Lightweight aggregate, Mineral wool, Precision timber, Render, and Structural timber.

**Properties for: Gypsum plaster board**

- acoustic absorption
- CE-mark
- heat resistance, Thermal resistance
- length [millimetre, mm]
- MUM-documentation
- shear strength
- Sound reduction index, sound reduction index
- thickness
- transverse strength [newton per square millimetre, N/mm<sup>2</sup>]
- Water resistance
- width, Depth [millimetre, mm]

**Available properties:** A list of properties with radio buttons for "In use" and "All". The "All" option is selected. A search bar is present above the list. The list includes: A, depth of insertion; a, total clearance; abraded; abrasion resistance; abrasive load; absolute solids content; absolute value; absorbance maximum; absorption bulb; absorption coefficient of a surface for solar radiatic; abuse; abuse resistance; accelerated ageing test; acceleration amplitude; acceptable level of safety; acceptable quality level, AQL; acceptance number; acceptance test; acceptance testing; acceptance, acceptability; access; access level; accessibility; accidental combination; accidental limit state; accidental situation; accuracy of measurement; acetylacetone method; acid; acid-resistant material; acid salt; acidic; acidic material; acidity; acoustic absorption.

At the bottom, there are buttons for "New...", "Edit...", "Copy...", and "Delete" for both the product types and available properties lists. A "Measure unit" dropdown menu is set to "<none>". The current language is "British English (ENGLISH)".



# IFD Library Background

- IFD (ISO/DIS 12006-3) was developed by ISO/TC 59/SC 13/WG 6
- IFD is an EXPRESS model standardised in ISO 12006-3
- Several countries have been building dictionaries based on IFD
- IFC will have support for IFD information as of version Ifc2x4
- The Norwegian BuildingSMART project and STABU have developed a common WSDL interface (API) to a unified IFD library
- BARBi (Norway) and LexiCon (Netherlands) will be one unified library
- Alpha version of API was up running



# Technical development

- Status:
  - New API (WS) beta release in Lisbon at the end of September
  - New IFD API 2.0 release on November 1<sup>st</sup> – Washington
  - Since then testing and bug fixing
  - Started issuing usernames and passwords for testing in April 2007

# Adding and maintaining content

- Status:
  - Procedure for adding content in Norwegian buildingSMART project established and approved by partner group
  - Terms and definitions in native language and international English
  - Software tool for adding and maintaining content developed – the IFD Library Propertylizer
  - IFD Library Propertylizer 1.0 released in Nov. 2006
  - IFD Library Propertylizer 2.0 released in June 2007
    - Using new API – used for testing and bug fixing
    - Upload and download fully functional
  - Pilot Projects beginning in North America

# Resources

## Presenters:

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## More information:

[www.ifd-library.org](http://www.ifd-library.org)

<http://dev.ifd-library.org/>

The IFD Wiki with introduction to IFD, the API documentation and step by step guides

[www.omniclass.org](http://www.omniclass.org)

[www.csinet.org](http://www.csinet.org)

