

SteelBase - Implementing product data exchange for constructional steelwork

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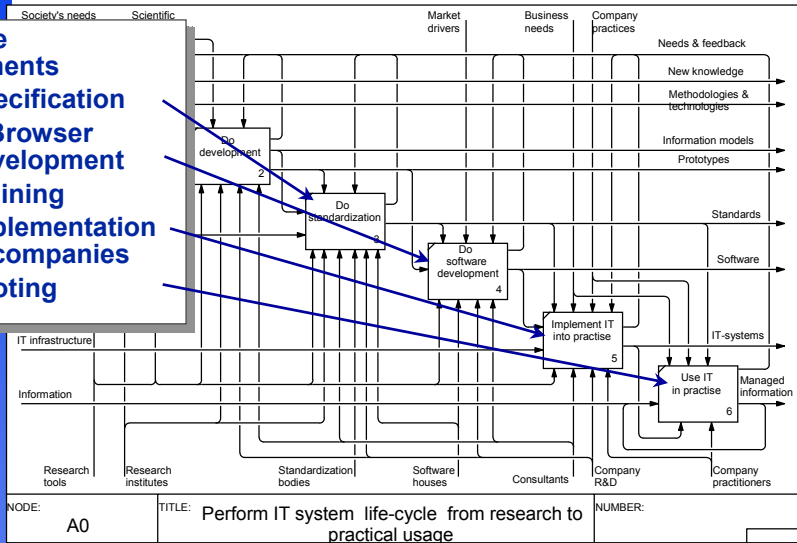
FINNSTEEL-PROGRAM & STEELBASE-PROJECT

- **FINNSTEEL is a Finnish technology program for the development of steel construction during 1995 - 1999**
- **A framework for a number of R&D projects**
- **Main objectives:**
 - Promotion of constructional steelwork in general, and its export
 - Reducing the building costs
 - Reducing the construction lead time
- **Participants:**
 - TEKES (Technology Development Center)
 - Rautaruukki Ltd, Kvaerner Pulping Ltd
 - FCSA (The Finnish Constructional Steelwork Association) representing number of smaller companies (# ~25)
 - VTT
- **Overall budget 38 million Fim ~ 7 million US\$ ~ 1 billion ¥**
- **SteelBase-project:**
 - A project within FINNSTEEL program
 - Objective: Development of the exchange of constructional steelwork product data between designers and manufacturers

FROM IT RESEARCH TO PRACTISE

SteelBase developments

- Specification
- StBrowser development
- Training
- Implementation in companies
- Piloting



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NODE: A0

TITLE: Perform IT system life-cycle from research to practical usage

NUMBER:

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STEELBASE DATA EXCHANGE COMPONENTS

- **Data exchange specification:**
 - Based on CIMsteel Integration Standards CIS Version 1.1, Data Exchange Protocol DEP 4: Detailing
 - Finnish flavouring of CIMsteel DEP4:
 - Section profile, Material & Bolt identification coding
 - Encoded description attributes for additional info requirements
 - Additional product data models & data exchange formats:
 - StB-model & exchange (EXPRESS/STEP P21 -based)
 - TXREC-data exchange format (SteelBase definition)
 - Model usage rules
 - Standard report types
- **StBrowser product model browser for the promotion of SteelBase specification and usage of constructional steelwork product data**
- **CAD applications' pre and post processors (commercial development)**



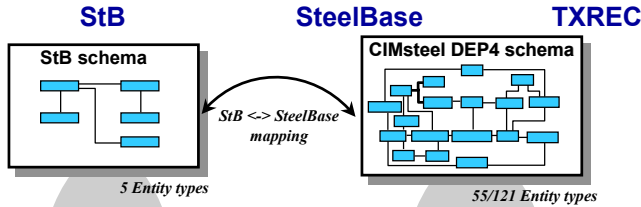
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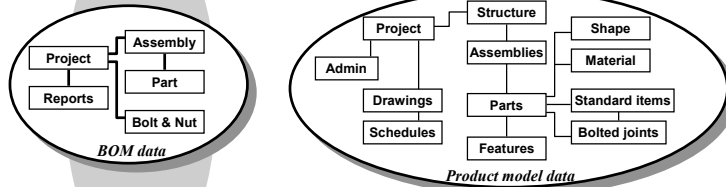
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MODELS AND EXCHANGE FORMATS OF STEELBASE

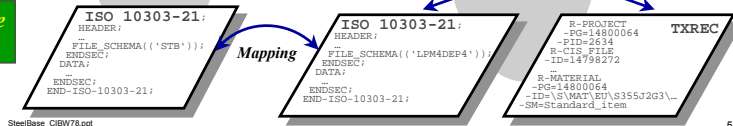
Schema



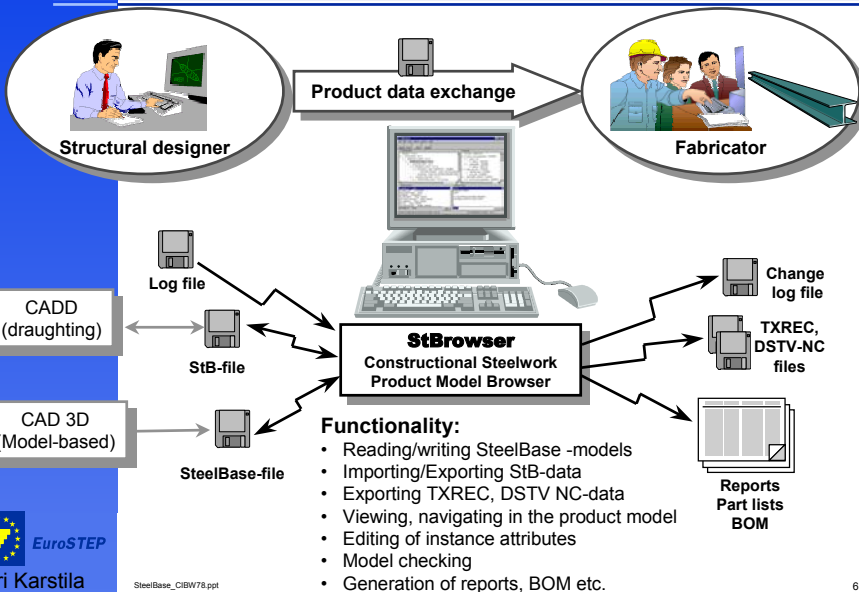
Scope



Exchange format



StBrowser SYSTEM OVERVIEW



StBrowser USER INTERFACE

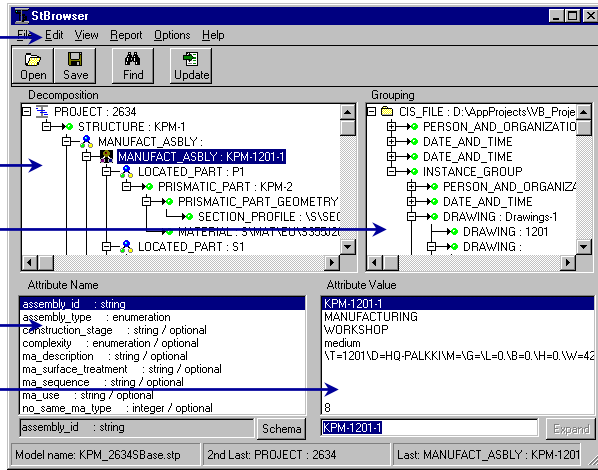
- Functions:**
- Model navigation
 - Model/format conversions
 - Checking
 - Editing
 - Report generation

Composition

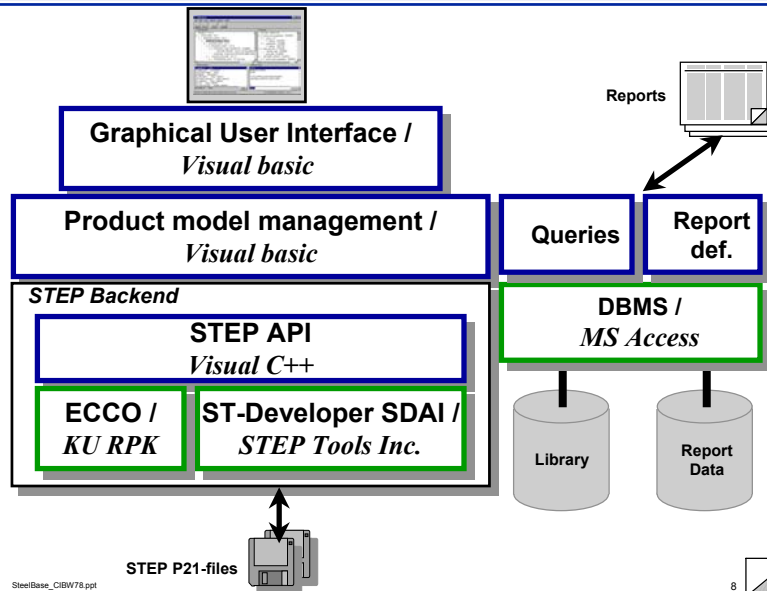
Admin & Grouping

Properties

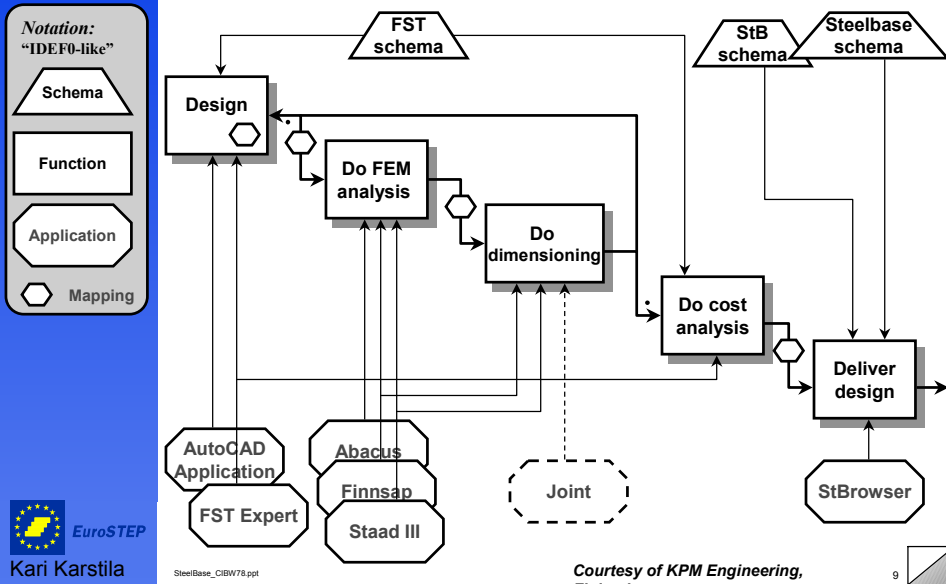
Property values



IMPLEMENTATION TECHNOLOGIES



INTEGRATION OF STEELWORK DESIGN - A practical example



CONCLUSIONS

- SteelBase is an example of a development project exploiting PDT and CIMsteel specification, and aiming at practical product data exchange
- SteelBase status:
 - Specification
 - Data exchange support tool (StBrowser) *Today*
 - In-house / Commercial implementations
 - Implementation in companies
 - Data exchange pilots
 - Production use
- Future work:
 - Suppliers coding
 - Graphical visualization (VRML ?)
 - Participation in interoperability between CIMsteel & IA/IFC
- Lessons learned:
 - *Product data for every desktop is emerging !*
 - Practical implementation of product data exchange requires multiple components to co-exist
 - Product data exchange future: Neutral, multiple specification exchange & (automated) mapping