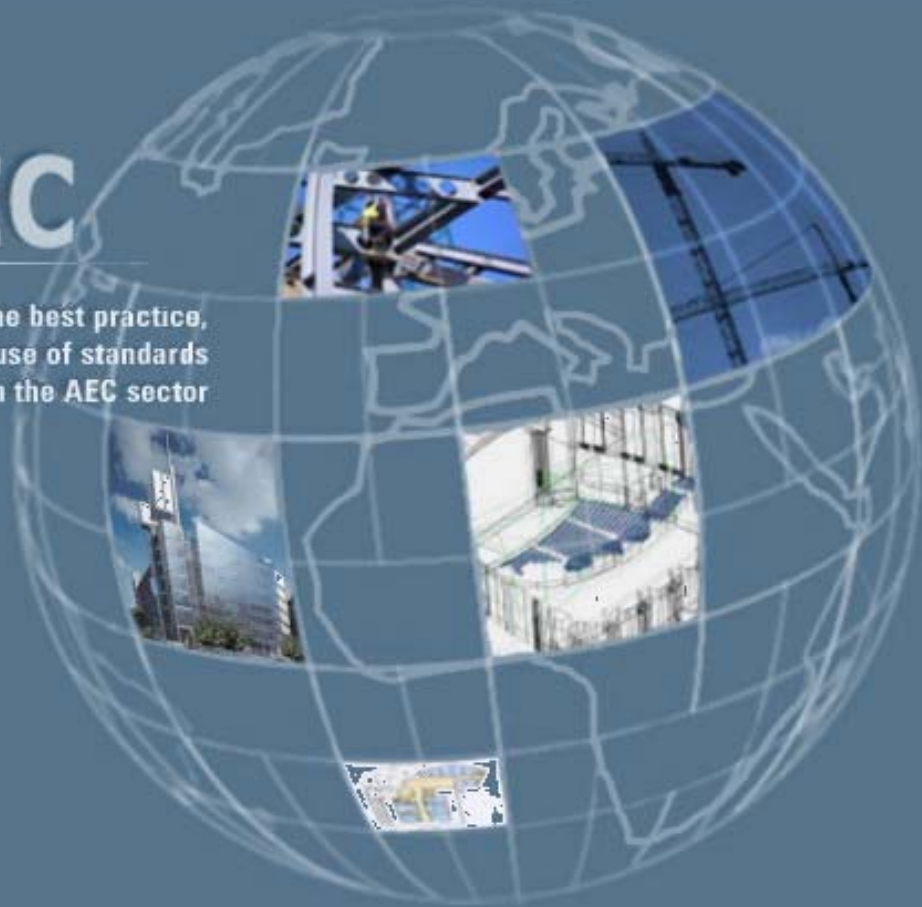




prodAEC






European Network supporting the best practice,
harmonisation, implementation and use of standards
for data exchange, e-work and e-business in the AEC sector



**French NIP : Parisa Ghodous (Lyon I University),
Celson Lima (CSTB)
Project Manager : Manuel Martinez (AIDICO)**



prodAEC Goals

-  Be the primary source of information for standards on data exchange and e-business in European AEC/FM sector
-  Support and bring together national, local and industrial initiatives promoting standards development/use in AEC/FM
-  Increase SME competitiveness by adoption/implementation of standards
-  Provide an extensive process-based overview of proper modelling standards
-  Promote harmonisation of standards in the AEC sector

prodAEC project

Industrial Needs

- Findings of past inquiries into ICT needs of European AEC
- **prodAEC Benchmarker**

ICT related Standards in AEC

- State of the art, gap analysis, and roadmap for harmonisation
 - Procurement
 - 2D-CAD data exchange and Layering
 - 3D-CAD data exchange & Building Models
 - Metadata interconnecting EDM/PDM
- **proMAP tool. Process-oriented**

e-Business in AEC

- State-of-the-art e-business in AEC
 - eMarket places
 - Software tools
 - B2A
- e-Business Standardisation Initiatives
- **Best practice cases**

Industry ICT requirements

Summary on results of previous investigations into industrial requirements undertaken at a European level including:

- eLSEwise, discussion workshop, 2 industry working groups, 3 projects

prodAEC Observations on achievements of past initiatives

- EC hosted Discussion Workshop 23rd Sept. 1999
- Construction Competitiveness ICT WG Phase 2 (2003)
- SCENIC (Best practice network in ESPRIT programme)
- ECCREDI Working Group June 1999
- ELSEwise ESPRIT Project #20876
- CIMsteel EUREKA project (#130)
- ICCI IST-2000-33022 Project

RESULTS OF PREVIOUS REQUIREMENT INVESTIGATIONS

Page: 1/26
 (25923 total words in this text)
 (25 reads) [\[E\]](#)

1. ELSEWISE PROJECT

ELSEwise is the acronym of ESPRIT Project 20876 which investigated the information and Communication Technology (ICT) needs of large-scale Engineering (LSE) construction over the next 15 years. ELSEwise investigated the business needs related to market and client demands for change in the future delivery processes of LSE construction projects and how the contributors perceived their roles changing in response. It also considered a state-of-the-art review of the existing and emerging technologies. From these investigations ELSEwise then prioritised a vision for LSE projects to be delivered in the future, fully utilising the benefits of advanced technology to satisfy the business needs. The project also considered how companies might progress from their present condition towards this future view, leading to basic development strategies.

1.1. Vision [ELSEwise]

During the next decade (starting in 1999) the sector of large-scale building requiring society's advanced LSE project will grow. Clients' future needs also have to be addressed while life and operations issues during the construction, reducing the project delivery period. To achieve this, they must adapt the following:

- The ability to respond quickly to world market changes and demand.
- The ability to compete with different or the client's needs while satisfying them in proposed LSE facilities.
- The ability to simulate different variations.
- The ability to develop project processes that meet the changed goals.
- The ability to procure materials from the market.
- The ability to use past experiences and to
- The ability to supply and hand over entire

2. Results of Previous Requirement Investigations

Conducted by [prodAEC](#) on Thursday, July 07 @ 09:58:31 WEST
 Continued by [prodAEC](#) 

Equipment summarises the findings of a number of investigations into determining the ICT requirements of the European construction industry. Each summary is followed by a short 'Synthetic Observations' section which makes comment on the findings and affirmations of that particular initiative.

The most successful investigation into defining construction industry requirements for ICT development appears to be the Phase 2 of the ECCREDI IT Working Group which has been in existence since 1996. The results may appear to be superficial but they are a consistent and usable. Previous investigations into more detail have not been as successful, especially related to difficulty in analysing and presenting the results. Also, it can be a problem for their capacity to formulate an action plan from the detail. The requirements have been added into a list of as follows. Looking at the results of the investigations, even though many of them are at a high level, it is clear that the same requirements keep reoccurring.

- Co-ordination, collaboration and effective communication.
- Support for the front end activities involving the client and promoter: This is the inception and briefing stage.
- Support for Facilities Management from the early stages.
- Support for the disposal end of the life cycle.
- The major benefits are across disciplines and phases.

RESULTS OF PREVIOUS REQUIREMENT INVESTIGATIONS

1.1. ELSEwise
 1.2. ELSEwise Summary
 1.3. SCENIC Observations
 1.4. ECCREDI Working Group June 1999
 1.5. ELSEwise
 1.6. The Future of the Technology in the Field
 1.7. The Impact of ICT on the Construction Industry
 1.8. prodAEC Observations
 1.9. EC hosted Discussion Workshop 23rd Sept. 1999
 1.10. CIMsteel EUREKA
 1.11. prodAEC Observations
 1.12. Construction Competitiveness ICT Working Group Phase 2 (2003)
 1.13. Construction Group Eureka
 1.14. Terms of Reference
 1.15. Construction Group Competitiveness
 1.16. prodAEC Observations
 1.17. ICCI
 1.18. ECCI Annex
 1.19. Lapsed Results
 1.20. Industry Requirements
 1.21. Industry Requirements
 1.22. Industry Requirements
 1.23. Industry Requirements
 1.24. Industry Requirements
 1.25. Industry Requirements
 1.26. Industry Requirements
 1.27. Industry Requirements
 1.28. Industry Requirements
 1.29. Industry Requirements
 1.30. Industry Requirements
 1.31. Industry Requirements

RESULTS OF PREVIOUS REQUIREMENT INVESTIGATIONS

Page: 15/26
 (25923 total words in this text)
 (25 reads) [\[E\]](#)

1.3. prodAEC Observations [EC Workshop 23rd Sept. 1999]

The briefing document listed the thinking of a small number of the expert attendees at the workshop who integrated requirement with vision. Many of the ideas suggested and discussed at the Workshop are being followed up across Europe. The Workshop suggested timescales and priorities relating to the research and development required and set looking towards Keskime.

The Workshop staff did not continue and did not lead to a developing strategy because the attendees did not contribute significant meeting. The main reasons for this are probably:

- There was no funding.
- The attendees would have to share their R&D plans.
- Competition for research funding between the attendees.
- There was no organisation to keep the workshop running.

At the time there was no co-ordination between national programmes.

However, the ECCREDI IT working Group continued into a Phase 2 and followed up some of the ideas. It is interesting to note the experts who attended the Workshop later contributed to Phase 2 of the ECCREDI IT working group. The topic identified for an end valid and being developed four years later. It is even possible that projects such as prodAEC and ECCI were more workshop.

[Previous Page \(14/25\)](#) - [Next Page \(16/26\)](#)
[\[Back to Industrial Needs | Software Index \]](#)

Benchmarking Service (I)

Compare relative position in ICT use and awareness in AEC ...

- With companies of same profile/segment,
- Without effort for collecting competitor's data

Multilingual enquiry. Web forms

Automated & personalised immediate report available.

Useful hyperlinks to glossary.

Information updated on-line and in a single international database

Identify lacks in ICT awareness level and implementation at industrial level

Updated knowledge about the actual awareness level and the status of ICT in AEC/FM. Keep track of the sector evolution

The screenshot displays the 'PARTICIPATE!!!' web form and a corresponding results report. The form includes sections for language selection, company profile definition, and ICT infrastructure usage. The results report shows a bar chart for 'A1. How would you define your company profile?' comparing the user's response to other companies in the database.

Company Profile	Total percentage
Property Owner	0%
Manufacturer	22.33%
Main Contractor	0%
Cost consultant/Quantity Surveyor	22.33%
Specialist/Trade Contractor	0.67%
Property Developer	0%
Architect Office	0%
Supplier	0%
Engineering Office	0%
Public Administration	0%
Multi-professional	0%
Constructor	0.67%
Other	20%

Benchmarking Users

Industry

- Designers
- Contractors.
- Supply chain.

R/D community

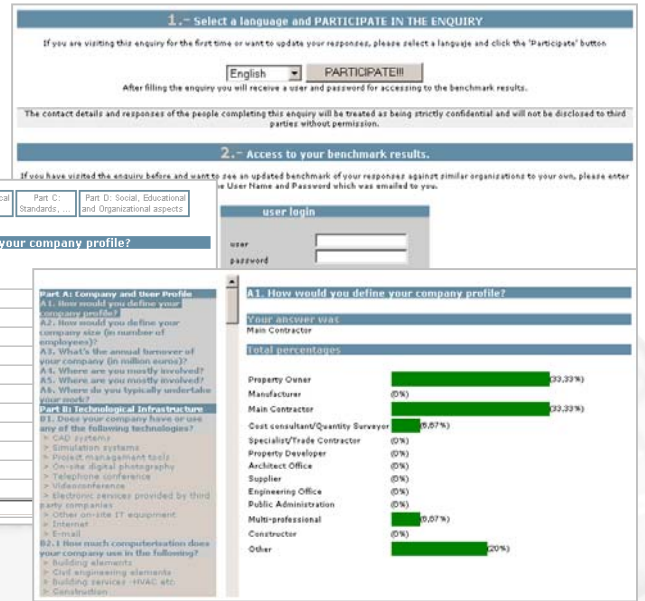
- Tech Needs

Education

- Training needs.

Vendors

- Product development strategies.
- Country, discipline and topic specific reports.



1. - Select a language and PARTICIPATE IN THE ENQUIRY

If you are visiting this enquiry for the first time or want to update your responses, please select a language and click the 'Participate' button.

English

After filling the enquiry you will receive a user and password for accessing to the benchmark results.

The contact details and responses of the people completing this enquiry will be treated as being strictly confidential and will not be disclosed to third parties without permission.

2. - Access to your benchmark results.

If you have visited the enquiry before and want to see an updated benchmark of your responses against similar organizations to your own, please enter your User Name and Password which was emailed to you.

user login

user

password

A1. How would you define your company profile?
Select only ONE item

Property Owner
Manufacturer
Main Contractor
Cost consultant/Quantity Surveyor
Specialist/Trade Contractor
Property Developer
Architect Office
Supplier
Engineering Office
Public Administration
Multi-professional
Constructor
Other <input type="text"/>

Part A: Company and User Profile

A1. How would you define your company profile?
A2. How would you define your company size (in number of employees)?
A3. What's the annual turnover of your company (in million euros)?
A4. Where are you mostly involved?
A5. Where are you mostly involved?
A6. Where do you typically undertake your work?
Part B: Technological Infrastructure
B1. Does your company have or use any of the following technologies?
 CAD systems
 Simulation systems
 Project management tools
 On-site digital photography
 Telephone conference
 Videokonferenzen
 Electronic services provided by third party companies
 Other on-site IT equipment
 Internet
 Email
B2. How much computerization does your company use in the following?
 Building elements
 Civil engineering elements
 Building services - HVAC etc.
 Construction

A1. How would you define your company profile?

Your answer was

Main Contractor	
Total percentages	
Property Owner	30,33%
Manufacturer	0%
Main Contractor	30,33%
Specialist/Trade Contractor	0%
Cost consultant/Quantity Surveyor	0,07%
Property Developer	0%
Architect Office	0%
Supplier	0%
Engineering Office	0%
Public Administration	0%
Multi-professional	0,07%
Constructor	0%
Other	20%

Benchmarking Service (II)

Part A: Company and User Profile

A1. How would you define your company profile?

A2. How would you define your company size (in number of employees)?

A3. What's the annual turnover of your company (in million euros)?

A4. Where are you mostly involved?

A5. Where are you mostly involved?

A6. Where do you typically undertake your work?

Part B: Technological Infrastructure

B1. Does your company have or use any of the following technologies?

- > CAD systems
- > Simulation systems
- > Project management tools
- > On-site digital photography
- > Telephone conference
- > Videoconference
- > Electronic services provided by third party companies
- > Other on-site IT equipment
- > Internet
- > E-mail

B2.1 How much computerisation does your company use in the following?

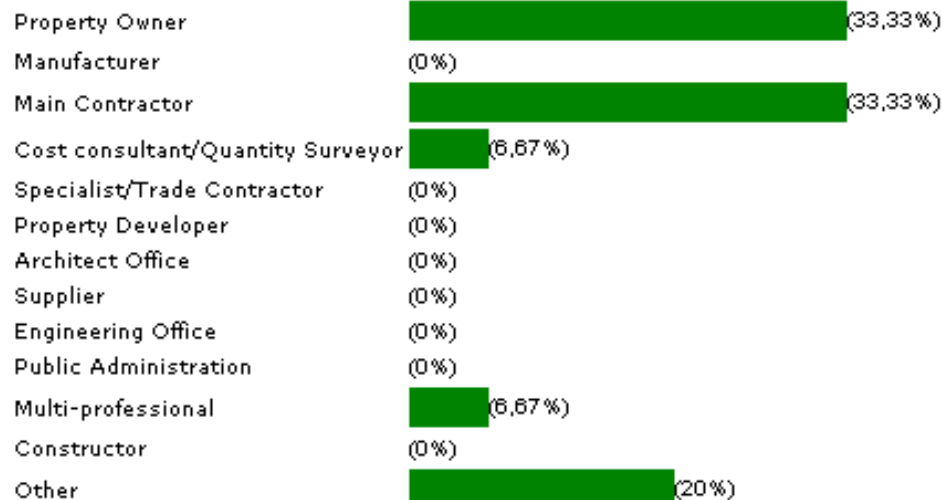
- > Building elements
- > Civil engineering elements
- > Building services -HVAC etc.
- > Construction

A1. How would you define your company profile?

Your answer was

Main Contractor

Total percentages



Standards

Current situation concerning ICT standards in European AEC sector

Procurement

- Existing standards and methods of working for procurement and related topics investigated in Europe

3D-CAD data exchange & Building Models


- Current situation on use of building model related standards in AEC: **IFC, AP225**, but also CIMsteel, PSS, funSTEP, and other related ISO standards

2D-CAD data exchange and Layering

- Standards for exchange of 2D design drawings with layering mechanisms

Metadata interconnecting EDM/PDM

- Identify standards, specifications and technologies relevant for exchanging metadata; evaluate usage and corresponding EDM systems in AEC/FM; implementation level by software



CURRENT AEC SITUATION ON STANDARDS FOR PROCUREMENT - TECHNICAL STANDARDS

Page: 1/18
(1408 total words in this text)
(7 reads)

From SIMAP:
Standards play a crucial role in the entire procurement process. They help purchases define the products and, where appropriate even the services they intend to acquire. They also help suppliers offer state of the art products and services.

Standards can only play this role if they are at the same time sufficiently precise and up to date to provide the right level of information, communication, coordination and

CURRENT AEC SITUATION ON STANDARDS FOR PROCUREMENT - CLASSIFICATION SYSTEMS

Page: 2/7
(632 total words in this text)
(7 reads)

1. CLASSIFICATION SYSTEMS IN THE NETHERLANDS

For cost estimation and CAD layering the most used system is the "Elementenmethode 19,9,1", consisting of Elements derived from NISB. The NISB Elements have been extended with two levels of detail, which yields a notation with the format #.#.#.#.#. The first two digits conform to the NISB Element number. For cost estimation a new standard (NBN 2624) is developed, using a classification based on NISB, but extended with an additional main grouping.

The product information system published by the Nederlandse Bouwdocumentatie (NBD) uses the NISB system, together with a keyword index. NISB is the Dutch version of CISO. For the product classification system in the HVAC sector UNIS is used, which again is derived from NISB.

The Dutch specification systems (RAW for civil engineering, STABU for building construction and HVAC) use Work sections as their main division, allowing regrouping for project specifications. Project specific regrouping using RAW is up to the user, suggested is a grouping based on composition. STABU supports a built-in regrouping based on composition, but also allows user defined regrouping, for example by using the Elementenmethode.





STABU uses a low-level classification, so called "specificatiegroepen" (Specification groups), organized in main categories: A (general), B (products), C (construction parts), F (functional descriptions) and R (results). Each group is identified by notation consisting of the category character and a two digit number. Each group can have a number of "variants".

Standards-Process oriented Matrix

Stage ID	Process Identity	Stage Name	Process Name	Referenced Standards (see and extend sheet 'Standards' for numbered codes)							
				0. Process (design/construction/FM standards) -- no input needed --	1. Basic Information Type (META Data Standard) -- input by TUD, ALL --	2. Generic Data Type (Classification System) -- input by STABU --	3. Data Model (EDM, PDM Standard) -- input by AEC3 --	4. Layering System (Drawing Standards) -- input by H+P --	5. Communication Protocol (Comm. protocol standard) -- input by TUD, ALL --	6. Exchange Format (Standard for data exchange) -- input by AEC3, H+P, ALL --	
	00100	Demonstrating the need	Client briefing: specification of functional requirements		EXPRESS XSD		IFC-REQ				SPF (1,3) ifcXML (1,3)
	00200	Conception of need	Model-based development of business plan								
	00400	Conception of need	Model-based Initial Site Planning								
	00600	Conception of need	Capturing and realising clients needs		EXPRESS XSD		IFC-REQ				SPF (1,3) ifcXML (1,3)
	00300	Outline feasibility	Conceptual sketching								
	00500	Outline feasibility	Model-based Site Planning (Capture Design Intent)		EXPRESS XSD		IFC-REQ				SPF (1,3) ifcXML (1,3)
	00700	Outline feasibility	Model-based Cost Planning (magnitude)		EXPRESS XSD		IFC-COST				SPF (1,3) ifcXML (1,3)
	00100	Outline conceptual design	Issue the building sketch		ISO-LAYER BS1192						

ID	Acronym	Name	Edition / Version	Year of issue	Source / Issuing Organisation	Reference / URL	Status	Functional Focus	Scope	Distribution	Language
00	HTML	Hypertext Markup Language	4.0		W3C	www.w3.org/MarkUp	final	Document	Data Exchange/Sharing	International	English
00	IFC	Industry Foundation Classes	2x	2000	IAI	www.iai-international.org	final	Product	Composite content	International	English
205	IFC-COORD	IFC Coordination View					final	Product	Data Definition	International	English
210	IFC-PAS	ISO PAS 16739		2002	ISO	www.iso.org	final	Product	Data Definition	International	English
230	IFC-AR	IFC Architectural Design Support	2x2	2003	IAI	www.iai-international.org	draft	Product	Data Definition	International	English
280	IFC-REQ	IFC Requirements Capture Support	2x2	2003	IAI	www.iai-international.org	living doc	Product	Requirements	International	English
00	SGML	Standard Generalized Markup	ISO 8879	1986	ISO	www.w3.org/MarkUp/SGML/	final	General	Metadata Exchange/Sharing	International	English
410	Topic Maps	Topic Maps		2000	ISO		draft	General	Metadata Exchange/Sharing	International	English
00	XML	Extensible Markup Language	1.1		W3C	www.w3.org/XML	final	General	Metadata Exchange/Sharing	International	English
510	X3D	Extensible 3D Markup Language	1.1	2000	W3C	www.w3.org/MarkUp/X3D/	final	General	Metadata Exchange/Sharing	International	English

Service on standards. ProMAP

-  Web engine enabling access to meaningful modelling, data-exchange standards represented in a process-oriented approach
-  Direct link to accurate/structured information regarding standards
-  Extensive construction process outline in processes/sub-processes
-  Action identification with associated actors and roles

- Retrieve info concerning standards on AEC
- Reference framework describing project activities
- Aware of available standards process-oriented
- Use standard ways, not proprietary solutions
- Open path for project centred collaboration
- Identify clusters, gaps, coherencies, requirements
- Capture processes info and ICT requirements
- First step in the application development process



The image shows two screenshots of the ProMAP web application. The top screenshot is titled "Specify new process." and shows a form for creating a new process. The bottom screenshot is titled "Please type in the data for the new project." and shows a form for entering project data. Both screenshots include a navigation menu on the left and a "PROCESS Matrix" section on the right.

Specify new process.

Fields with an "*" at the end of the line are mandatory!

View Extensions: Information Extension, Communication Extension

Process Body

ID: 1433a

Process Name: Foundation Design using remote ASP Foundation Design Service

Please type in the data for the new project.

Projectname: j01truce

Description: 60 1st project.

Privacy: public

URL 1: www.jaforce.com

URL 2:

Project PWD:

Reltype PWD:

PROCESS Matrix

ID: 15

Name: Product Model

Description: After the major design elements of the single solution have been decided upon, the detailed design work can be carried out. This will aim to present the design in the form of the product model. It should take into account any site related information available and be fully responsive to any prescribed statutory requirements.

The model will become more defined as more detail is added to it. Depending on the phase of the process at which the product model is considered it will be termed as:

- "Coordinated": comprise all of the major design elements such as structural, mechanical and electrical and it should be prepared to a high level of technical detail with corresponding specifications. The "buildability" aspects of the design should be considered and reviewed.
- "Operational": the coordinated product model is presented in terms of "work packages" to enable the construction work to be carried out. When the compatibility between "work packages" has been established, there should be complete production information to enable construction works.

<< List of all GPP Deliverables

eBusiness

- **Includes the electronic trading of physical goods and of intangibles such as information**
- **All the trading steps such as online marketing, ordering, payment, and support for delivery**
- **The electronic provision of services (after-sales support or online legal advice), electronic support for collaboration between companies (collaborative design)**

e-Business AEC in Europe

- E-Marketplaces (services, modus operandi, etc)
- Software tools for e-business (capabilities, costs, providers)
- Business-to-Administration (e-public services, competitors)

E-MARKETPLACES

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(19252 total words in this text)
(34 reads)

I. POTENTIAL B2B E-COMMERCE MARKET SIZE IN BUILDING & CONSTRUCTION

The first step in the analysis of e-marketplaces is to estimate of their impact on the AEC sector business, in order to keep in mind their potential economic relevance in further analysis steps. The estimations are usually an exercise of faith, much more when dealing with e-business issues, as the developed estimations have had to be revised very often in the past.

According to specialised consulting reports and to some prodAEC members' estimations based on the knowledge about the sector and the technology availability, the expected buying volumes in B2B in the European Union for 2003 are over 60 K Millions €, and it could reach 10% of total buying volume (Figure 1).

Sector	Percentage
Real estate/services	7%
Construction	10%
Wood, glass, ceramics/tile	11%

Figure 1. Expected impact of B2B in some construction-related sectors. The percentages refer to the quota of e-commerce in respect to the total of transactions in the sector. (Source: prodAEC calculations based on Eurostat statistics for 1st quarter 2002, and BCG report in Germany, 2000).

The main government site is www.governo.gov.pt in which one can find information about the development of these issues across all government departments.

In terms of services directly related to the AEC sector in Portugal it was identified the website of the department for the public construction, transport and housing (MOPTR) www.moptr.gov.pt, but it currently is reconstruction. Hierarchically under the MOPTR department there exists the institute for the public construction markets and real estate (INMPPE). At www.inmppe.gov.pt website one can find detailed information about all the different steps that a company needs to follow in order to apply for certification and qualification to be able to work in the public or private construction markets. The user can check detailed information about the Portuguese legislation and consult the forms and procedures needed in path for certification.

eBusiness related standards

- Analysis of standards
- Applicability
- Best practice cases
- Recommendations

SOFTWARE TOOLS

Page: 1/5
(13221 total words in this text)
(26 reads)

In order to enrich this section, an additional NP. For illustrative purposes only, the

- Identify ASP solutions or any other...
- For each one of the tools previous:
 - How the tool is accessed?
 - What is the "domain" language?
 - Document exchange
 - Product data exchange (catalogues, design files)
 - Which transport method do you offer/support?
 - Software and hardware requirements to get the tool?
 - How the access rights are controlled? (by co-operative)
 - How security-related issues are handled by the tool?
 - How digital certificates / encryption / e-signatures?
 - Is there any procedure supporting document approval
 - If yes, how is the procedure flow defined? Are there any steps?
 - Does the tool support the definition of an audit documents in case of delay, suggestion of new documents?
 - If the tool support collaborative work, is there any mechanism for project management, is there any...
 - Decisions to be made?
 - Suspended actions waiting to be performed?
 - If the tool support document exchange, are the user proprietary clients or is there a need to use an external client?
 - Tracking changes and managing group actions:
 - Does the tool keep track on all actions performed?
 - Are activity reports sent automatically to the user?
 - Are the exchanged documents "editable" on the client side?
 - Are the changes in any document detected and notified?
 - Is it possible to know if there are partners working on the document?
 - Is it possible to manage document versions?
 - Is it possible to manage the users' profile?
 - Mode of payment: annual subscription, volume of documents...

Please notice that some of the software vendors are operating in different countries whilst others are purely national ones.

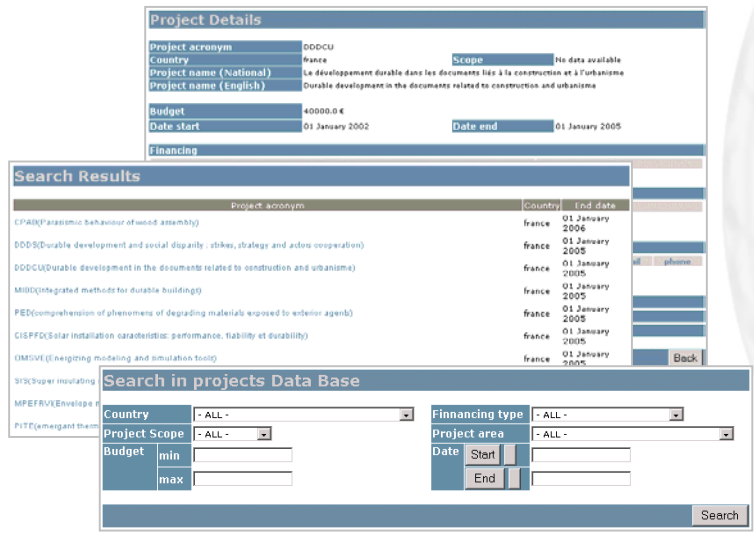
National Contact Points

- Open structure of National Contact Points
- 10 founding countries
 - 28 organisations



AEC-IT Projects Database

- Web based IT projects database on AEC/FM at National and European levels with sensible querying & filtering engine
- Project description, objectives, results and scope
- Scheduling facts (Project Start, Duration and Global Budget)
- Financing data (by Region, Kind of, Rate of)
- Categorisation by Area (e-Work, Legal issues, Procurement, ...)
- Partnership information (including contact information)



Project Details

Project acronym	DDDCU	Scope	[No data available]
Country	France		
Project name (National)	Le développement durable dans les documents liés à la construction et à l'urbanisme		
Project name (English)	Durable development in the documents related to construction and urbanism		
Budget	40000.0 €		
Date start	01 January 2002	Date end	01 January 2005

Search Results

Project acronym	Country	End date
CPABQ(Acoustic behaviour of wood assembly)	France	01 January 2006
DDDS(Durable development and social disparity : strikes, strategy and actors cooperation)	France	01 January 2005
DDDCU(Durable development in the documents related to construction and urbanism)	France	01 January 2005
MIDD(Integrated methods for durable buildings)	France	01 January 2005
PED(comprehension of phenomena of degrading materials exposed to exterior agents)	France	01 January 2005
GISFFC(Solar installation characteristics: performance, liability et durability)	France	01 January 2005
DMOVI(Energizing modeling and simulation tool)	France	01 January 2005

Search in projects Data Base

Country	- ALL -	Financing type	- ALL -
Project Scope	- ALL -	Project area	- ALL -
Budget	min: <input type="text"/>	Date	Start: <input type="text"/>
	max: <input type="text"/>		End: <input type="text"/>

Search

- State-of-the-art update information on AEC/FM IT
- Know about projects in a specific area and/or country
- Identify/contact people with experience in designated areas to share knowledge, experience and expertise
- Process data for statistical purposes: position each country against EU, retrieve the global EU picture of IT on AEC/FM and match with the world, obtain funding characteristics, etc

Web AEC-IT Projects Database

Project Details

Search Results

Project acronym	Country	End date
CPABO		01 January 2005
DDDSO		01 January 2005
DDDCI		01 January 2005
MIBDO		01 January 2005
PEDCO		01 January 2005
CISPF		01 January 2005
OMSVE(Energizing modeling and simulation tools)	france	2005
SIS(Super insulating materials)	france	01 January 2005
MPEFRVI(Envelope materials and product faced to visible and infra-red radiance)	france	01 January 2005
PI TE(emergant thermic isolant products)	france	01 January 2005

Search in projects Data Base

Country	- ALL -	Financing type	- ALL -
Project Scope	- ALL -	Project area	- ALL -
Budget	min	Date	Start
	max		End

Search

Results

Keywords

Comments

charlot_valdieu@cstb.fr

Back

Main deliverables produced



Standards related

- Standards Analysis. Current AEC Situation
- Analysis of detected tendencies
- Standardisation Roadmap for the AEC Sector



eBusiness related

- e-Business state-of-the-art in AEC
- Analysis of e-Business standards applicability
- e-Business Best Practices in AEC



Industrial requirements related

- Achievements of Previous European Projects & Initiatives
- Requirements Analysis Report (Industrial Needs)
- Enquiry Results. (Benchmarking service)



National Contact Points

- Countries Information Report

prodAEC Details



prodAEC

European network for Product and Data exchange, e-work and e-business
in Architecture, Engineering and Construction

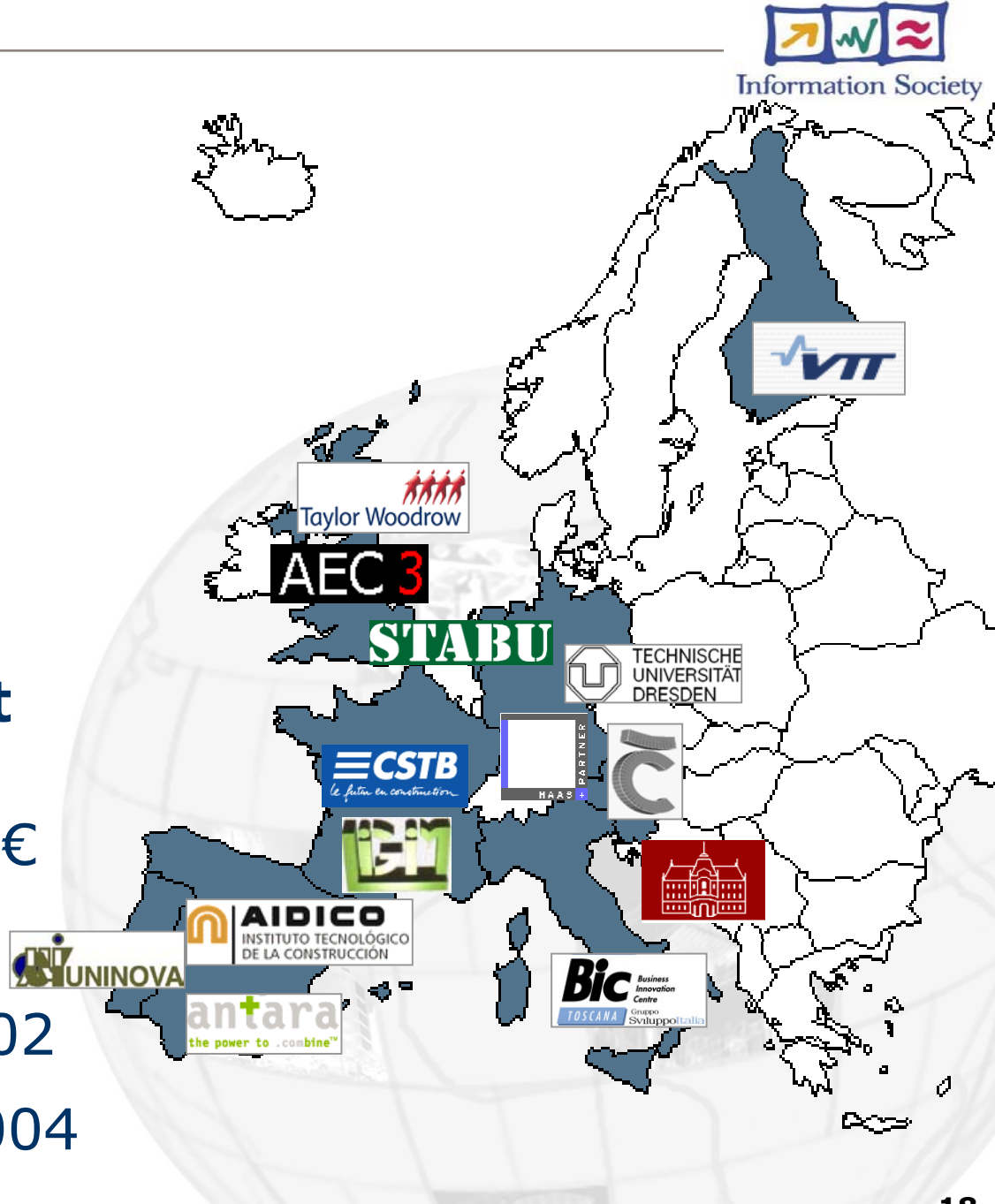
www.prodaec.net

Budget: ~1 Million €

IST 2001-32035

Start: February 2002

Finish: February 2004



E-COGNOS Project Technical Overview



Methodologies, tools and architecture for electronic, consistent knowledge management across projects and between enterprises in the construction sector





Outline

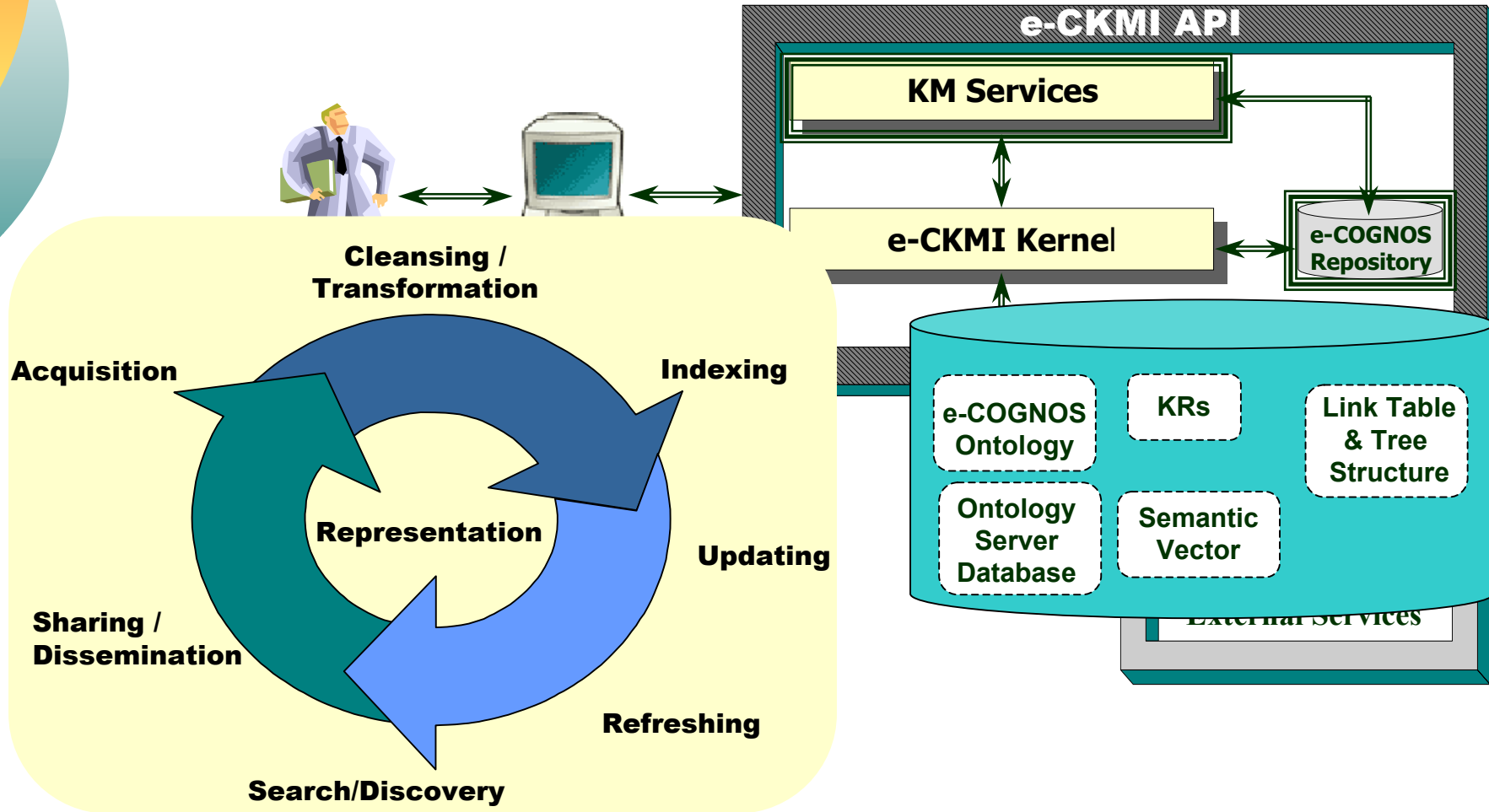
- ✓ Requirements
- ✓ The e-CKMI
- ✓ The end users Applications
- ✓ The Ontology
- ✓ The e-COSer
- ✓ Lessons Learned
- ✓ Open points



End Users' Requirements

- Approach: selection of "**Knowledge Intensive**" BPs
- Requirements identification
 - **Functional: human-centred**, easy to use, coverage, appealing, adaptive, **configurable**, rely on results/solutions already found, **flexible**, based on autonomous processes,
 - **Technical: Web-centred, ontology-based, push mechanisms**, autonomous processes, and interdependence among knowledge layers
 - **Architectural: interoperability, integration, flexibility, scalability, sustainability, heterogeneous inter-related knowledge sources**, and large knowledge sources

The e-CKMI Architecture





The e-CKMI Main Features

Capture and manage diverse organizational knowledge: documents, actors, projects, organisations, interests, user profiles

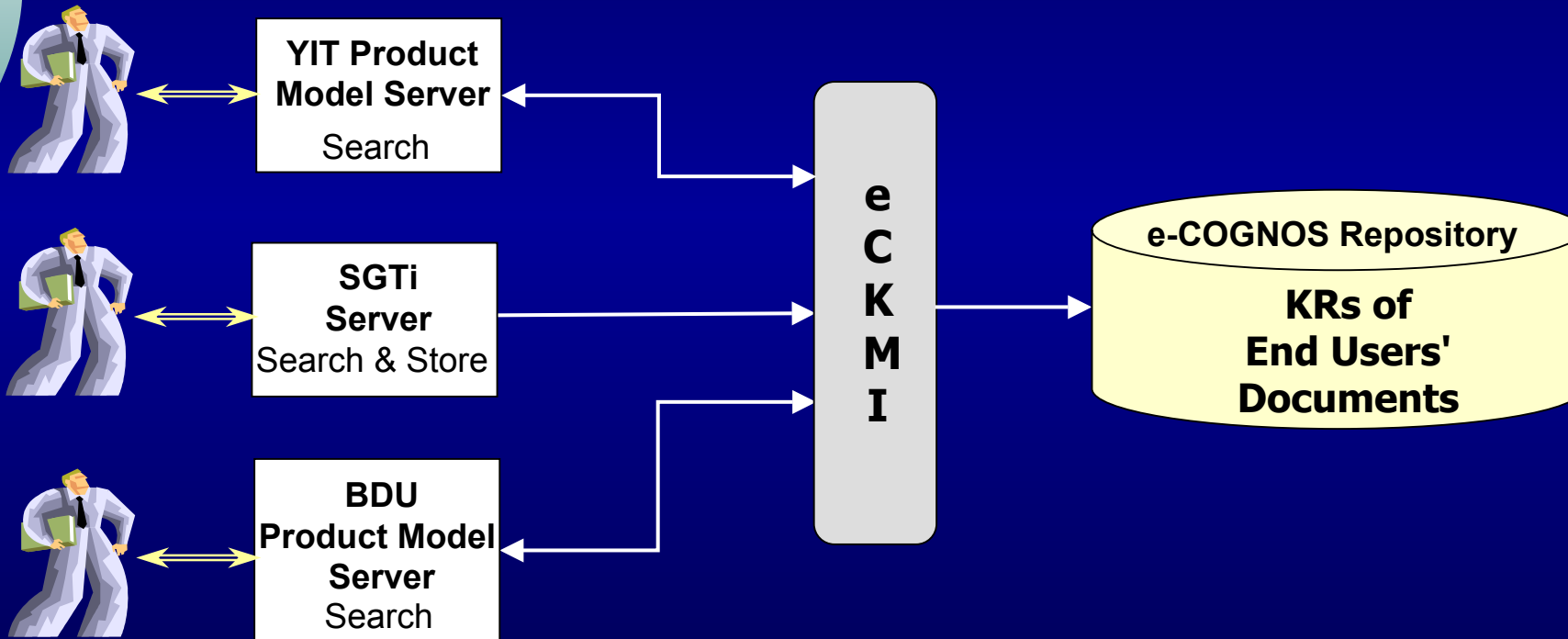
Provide support for knowledge acquisition, transformation, indexing, updating, refreshing, searching, and dissemination

"Service"-based, flexible, open framework (end-user chooses appropriate services)

Linguistic and semantic functionalities based on ontology-enabled mechanisms

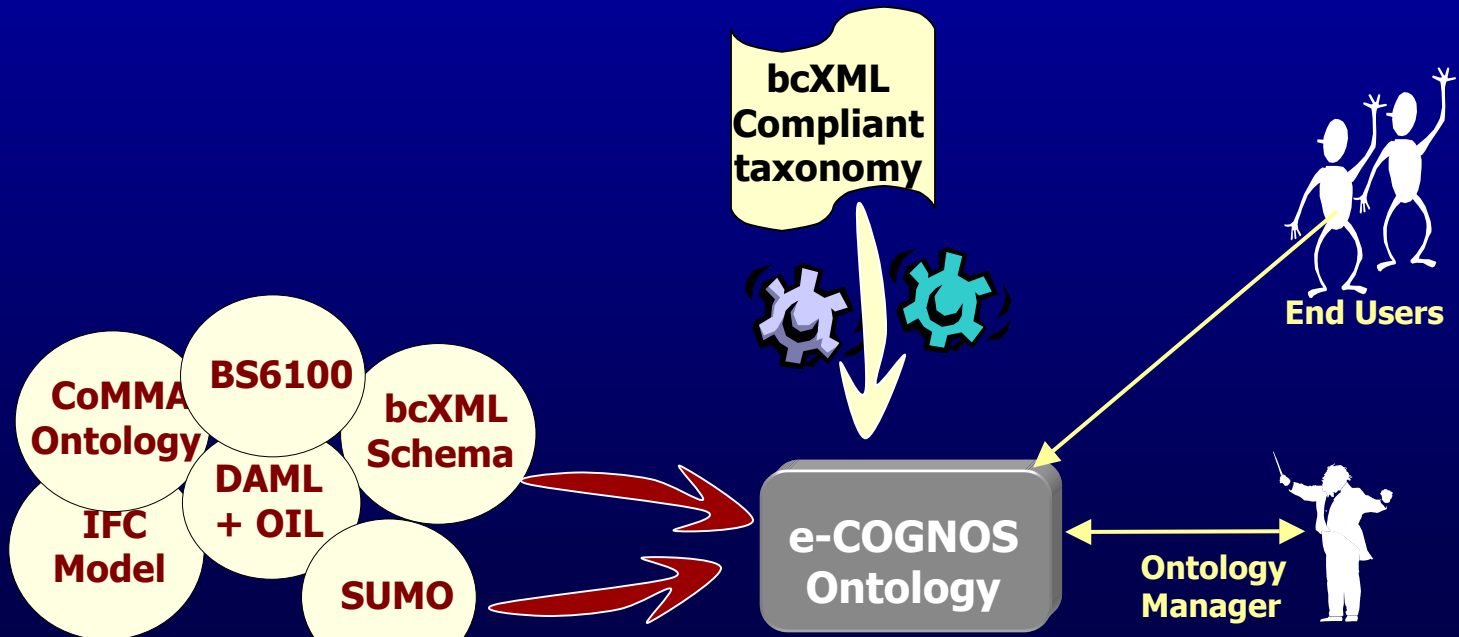
Human-centred, Web-based, configurable, API-based, ontology-based, open source

End User's applications

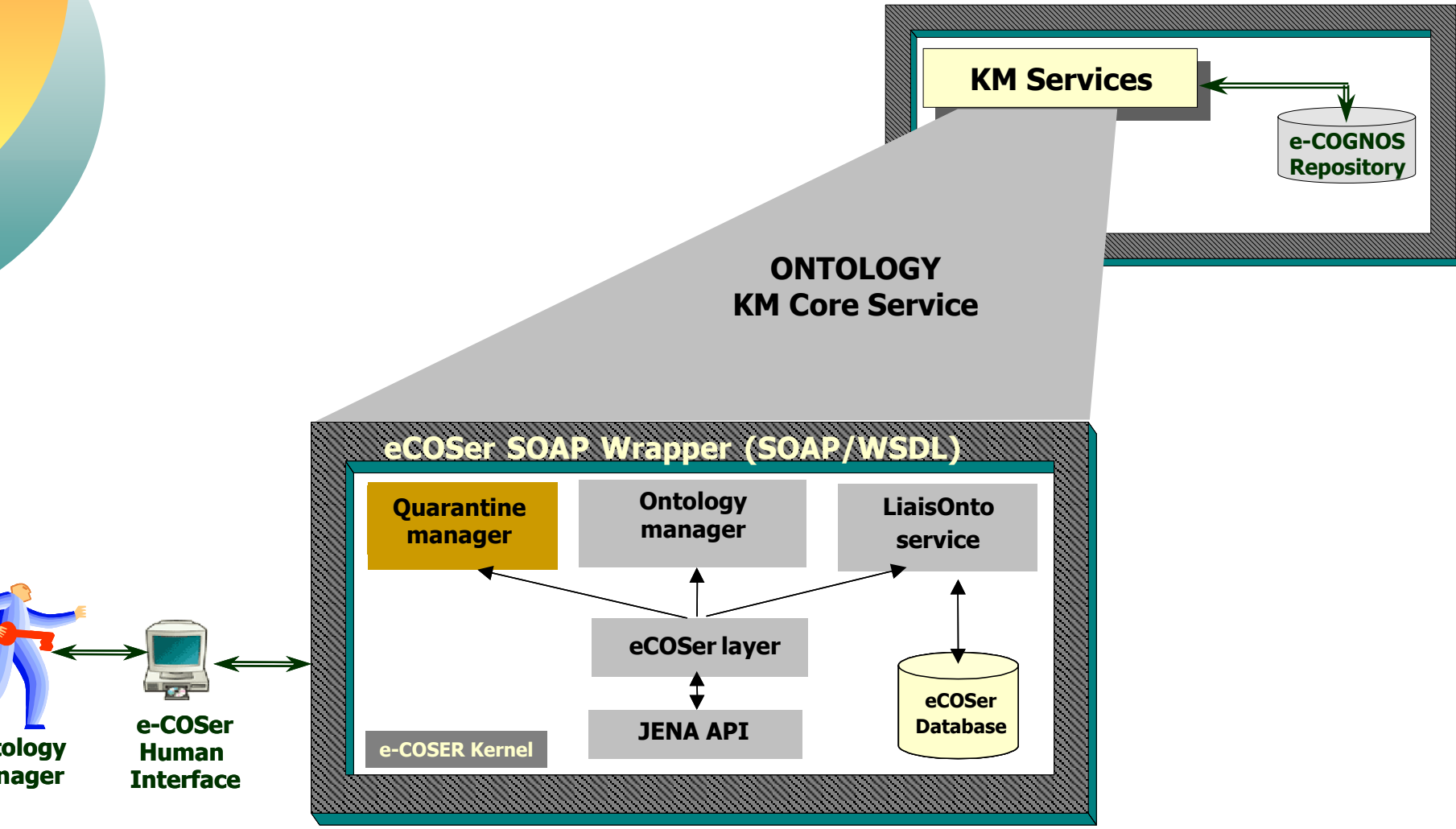


The e-COGNOS Ontology

- Sources of inspiration: IFC, bcXML, W3C, ...
- Development process: iterative approach
- Current status: \pm 15000 concepts
- Growing mechanism: bcXML based



The e-COSer Architecture

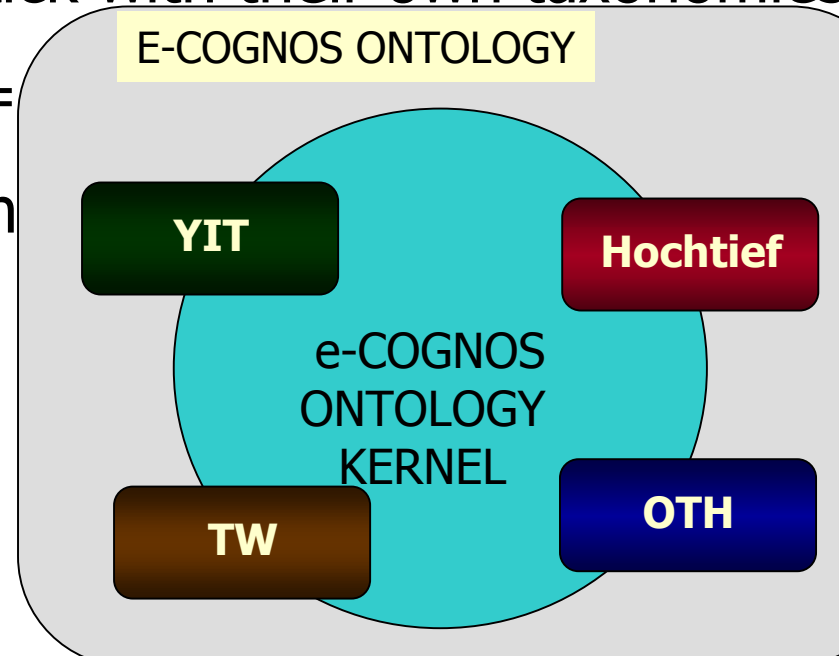


Lessons Learned - e-CKMI (1/3)

- Prototype as early as possible – exposure to new functionalities generates new requirements
- User Interface: not really required in the context of e-COGNOS but necessary to promote the e-CKMI functionalities
- Innovative visualization methods are required – very difficult to display the spectrum of knowledge in an accessible, meaningful way
- While organizations desire the benefits of KM, they remain protective of their knowledge assets – all end users have prototyped the e-CKMI within their corporate firewalls
- Must remain flexible and adaptable – the KM world is a rapidly changing environment

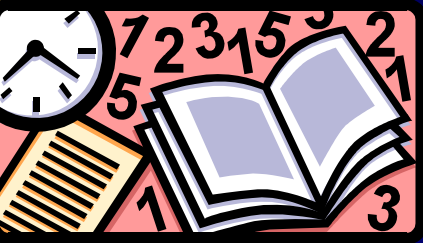
Lessons Learned - Ontology (2/3)

- Ontology Editor DAML+OIL compliant
- Bigger ontology = better ontology
- Standards: good idea, interesting approach, but ...
- End users prefer to stick with their own taxonomies
- Ontological indexes $> =$
- The real challenge: con
- Current approach



Lessons Learned - Ontology (3/3)

- Ordinary users



- Ontology: they don't want to hear about it!
However ...

- It would be great to have richer indexes

- They have to be convinced that the ontology can really help them

- Advanced users: willing to do more in order to get more

- The "poor" Ontology manager





Open Points

- Visualisation will allow the development of new KM possibilities
- Knowledge sharing culture – have organizations the confidence to open their knowledge ‘doors’?
 - Forge tighter links with the Semantic Web initiative
- Extend the e-COSer functionalities to support
 - Capture of implicitly defined knowledge: Inference Rules, semantically structured KRs
 - Ontology: Migrate to OWL

FUNSIEC

Feasibility study for an **UN**ified
Semantic **I**nfrastructure in the
European **C**onstruction sector



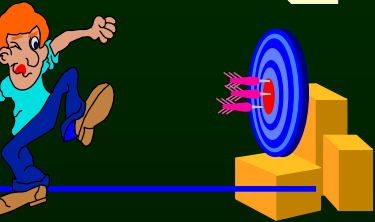
- 1. Objectives**
- 2. Results & Organisation**
- 3. Framework**
- 4. Deliverables**
- 5. General Information**

Study the feasibility to build an **O**pen
Semantic **I**nfrastructure for **E**uropean
Construction **S**ector (**OSIECS**) to support the
development of **e-services**

OSIECS

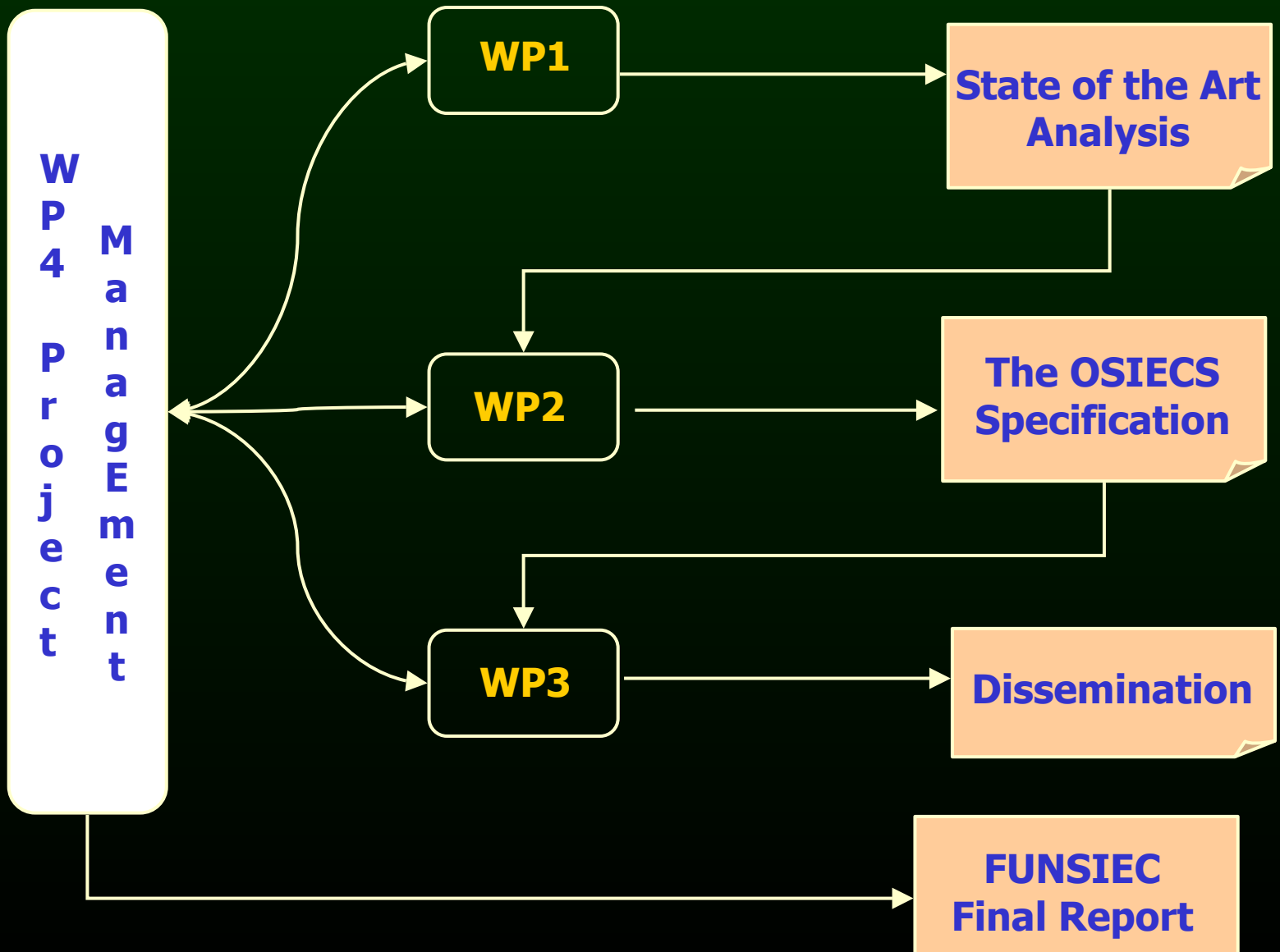
- Semantic and linguistic e-resources devoted to the construction sector
 - Exploit public results produced by international initiatives and European projects

□ FUNSIEC specific goals

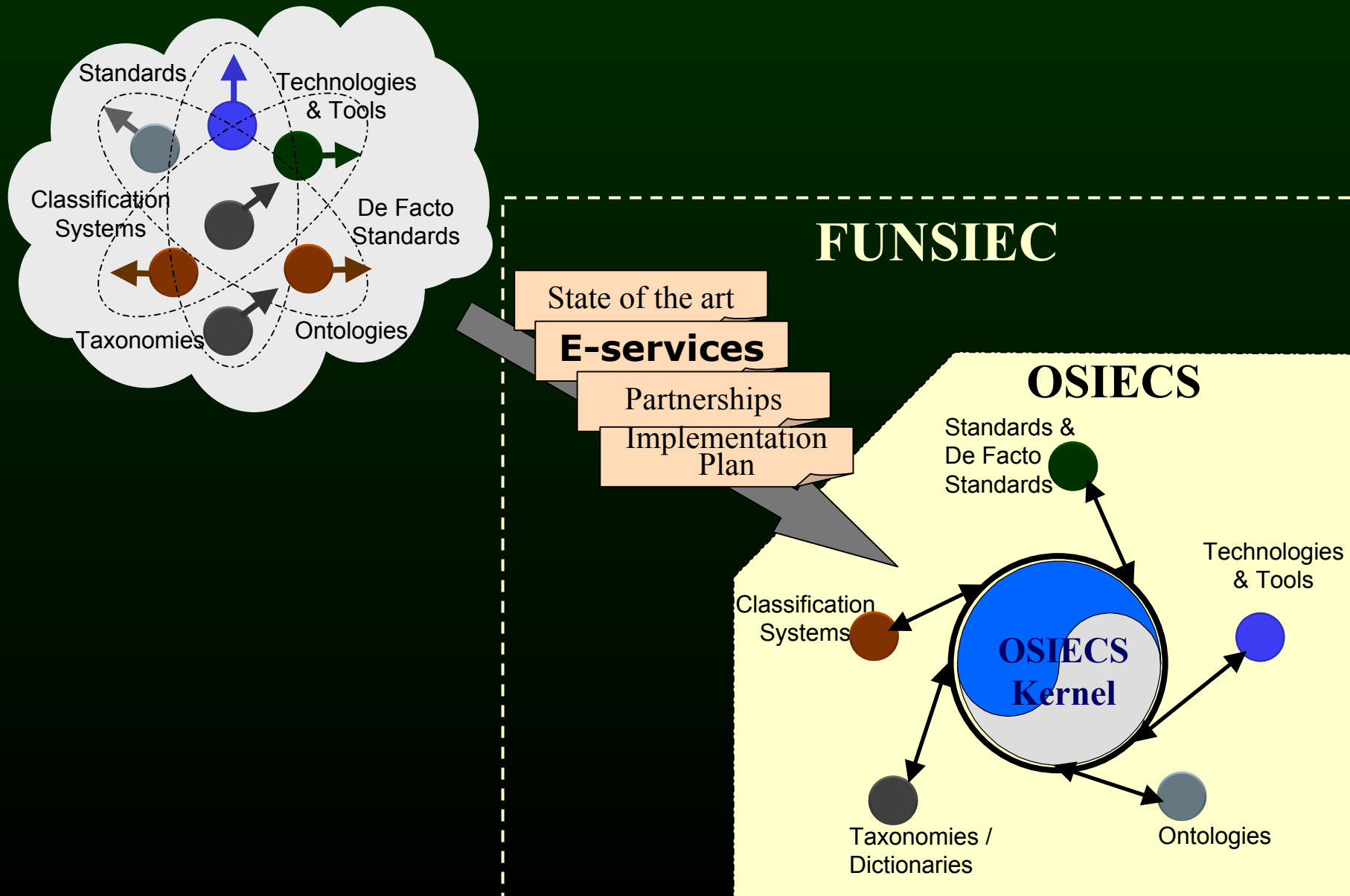


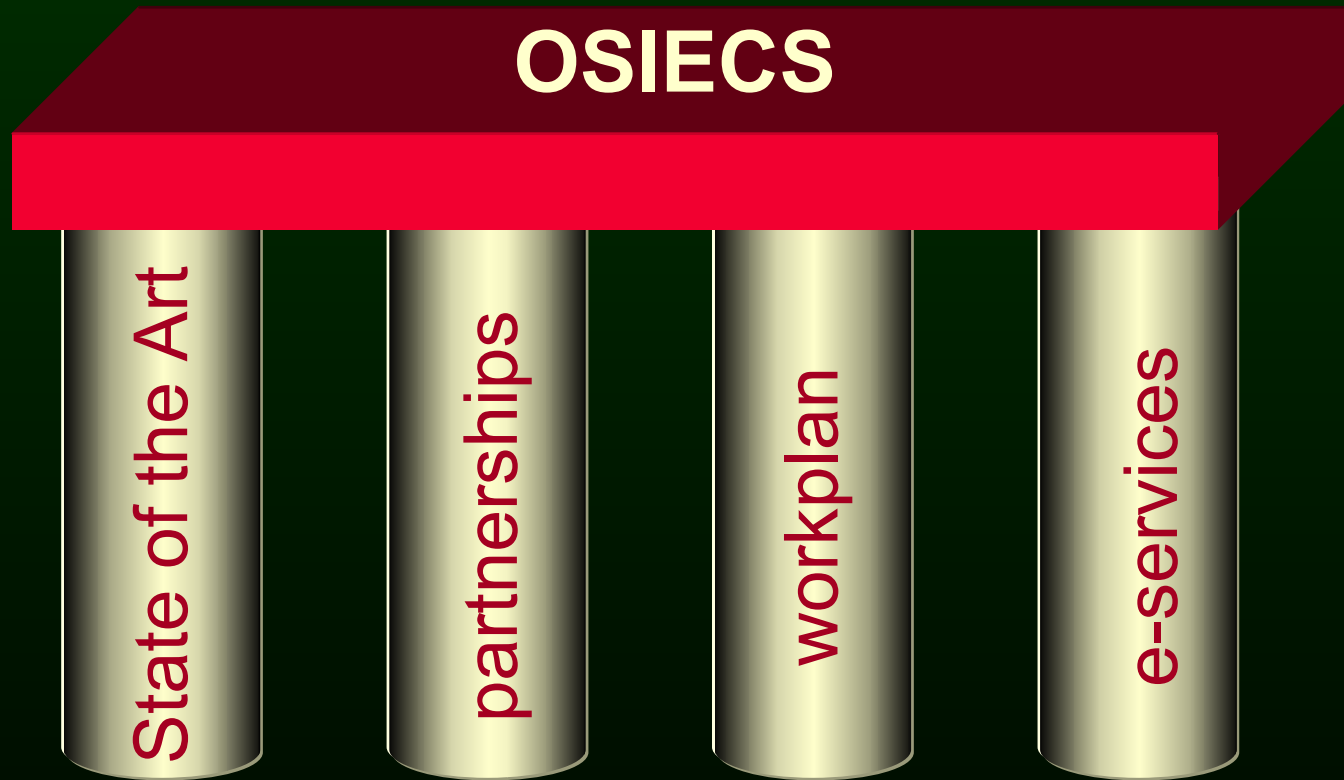
- Establish a technical framework that allows to gather **semantic and linguistic e-resources** to be used by **e-content providers** and **e-service suppliers** operating in the construction sector
- Define guidelines for **partnerships** that allow the creation, evolution and maintenance of OSIECS and the semantic resources
- Propose an **implementation plan** to help the adoption of OSIECS within the European construction sector
- Contribute to the establishment of European standards (including reference linguistic resources) for construction while allowing the preservation of language diversity in Europe
- Identify and characterize the **e-services** to be developed by **e-service providers** aiming at to capitalise the benefits of the OSIECS

2. Results & Organisation



3. FUNSIEC Framework (1/2)





Partnerships: identification of the more representative organisations in Europe (skills / complementarity) that should work together in order to produce and deploy OSIECS

Workplan: the definition of the various actions required to foment the cooperation among key institutions from Europe

E-services: offered by the existing or to be developed (preferable freeware)

	Deliverable title	Milestone	Dissemination level
D1.1	State of the art analysis	M4	Public
D2.1	The OSIECS Infrastructure	M8, M12	Public
D2.2	OSIECS Infrastructure – Assessment and validation	M12	Public
D3.1	FUNSIEC Web Site	M3	Public
D3.2	Dissemination, Exploitation and Business Strategy Plan	M12	Public
D4.1	Project Presentation	M3	Public
D4.2	Periodic Progress reports (PPR)	M6	Public
D4.3	Final Report	M12	Public
D4.4	Public Annual Report	M12	Public

- ❑ Consortium



- ❑ Associated Partner: **Fraunhofer Information Centre for Regional Planning and BuildingConstruction (IRB)**

- Information about market & semantic resources construction-oriented in Germany

- ❑ Project Duration: **12 months**

- ❑ Budget: **199 781€**

- ❑ Focus: **Semantic Resources** web-based, **Construction-oriented**

- ❑ Contact

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