



OPEN **I**NFORMATION ENVIRONMENT
FOR COLLABORATIVE **P**ROCESSES
THROUGHOUT THE LIFECYCLE OF A BUILDING

D44

DISSEMINATION REPORT

Project no:	IP 026716-2	Project acronym:	InPro
Instrument:	Integrated Project	Thematic priority:	3.4.4.2
Start:	September 2006	Duration:	4 years
Due date:	30 November 2010	Submission date:	7 December 2010

Dissemination: Public

Partners: NCC; Bouygues; Hochtief; YIT; White; Client Forum; Granlund; Bauhaus; Luleå; Maribor; AEC3; P3; CSTB; TNO; Max Bögl; Dortmund; J-CDS; Eurostep

Authors: Erika Kuchar, editor

Revision: Final

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- Bouygues: Bouygues Travaux Publics SA, France
- Hochtief: Hochtief Aktiengesellschaft, Germany
- White: White Arkitekter AB, Sweden
- Client Forum: Swedish Association of Building Construction Clients (Byggherreforum), Sweden
- Granlund: Olof Granlund Oy, Finland
- Bauhaus: Bauhaus-Universität Weimar, Germany
- Luleå: Luleå University of Technology, Sweden
- Maribor: University of Maribor, Slovenia
- AEC3: AEC3 Ltd, United Kingdom
- P3: P3 - Digital Services GmbH, Germany
- CSTB: Centre Scientifique et Technique du Bâtiment, France
- TNO: Netherlands Organisation for Applied Scientific Research, The Netherlands
- Dortmund: Universität Dortmund, Germany
- MaxBögl: Max Bögl Bauservice GmbH & Co. KG, Germany
- YIT: YIT Kiinteistötekniikka Oy, Finland
- J-CDS: JAQAR Concurrent Design Services B., the Netherlands
- Eurostep: Eurostep AB, Sweden

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EXECUTIVE SUMMARY

The goal of InPro is to transform the early design phase in construction by the development of an open information environment for knowledge-based collaborative processes throughout the lifecycle of a building, assuming the early design phase the cooperation from its start to its end of many actors with a common goal.

The goal of Work Package 8 is to inform the industry and academics about the project results and create a sustainable support for InPro ambitions.

D44 "Dissemination report" (T8.1 "Dissemination") aims to present the dissemination activities of InPro which were developed during the four years of research. Chapter 2 of this document describes concepts of *dissemination* and *communication*. In chapter 3 several dissemination activities are presented. Some features of the most important channel of dissemination, the *InPro Cluster*, are described in chapter 1. At the end, some conclusions are presented in chapter 5.

The **final results** of D44 "Dissemination report" consist of the following:

- List of dissemination activities during the project: dissemination material, publications, conferences and presentations, web articles, poster exhibition, references, workshops, personal meetings.
- *InPro Cluster* features.

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1 INTRODUCTION

The vision of InPro is to transform the early design phase of a building (new or renovation) project. The transformation which InPro aims for, addresses important issues as Building Information Modeling (BIM), logistics, collaboration between partners, standardized concepts and information technology. The shift will be achieved through:

- 1) *Business pull*: model-based working and open collaboration between all stakeholders.
- 2) *Technology push*: smart, fully semantic ICT enabling an exchange, sharing and reuse of information throughout the building lifecycle.
- 3) *Industrial transformation*: support actions for direct implementation in the European construction sector

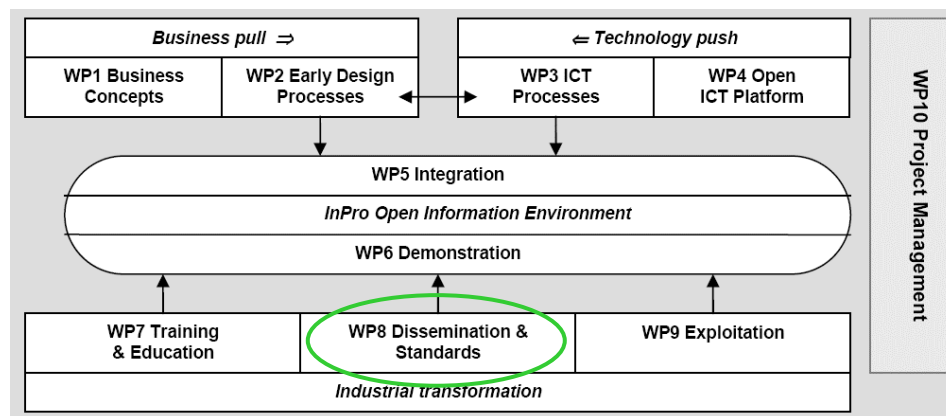


Figure 1.1: Structure of InPro project

The objective of work package 8 was to inform the industry and academics about the project results and create a sustainable support for InPro ambitions. To ensure a high impact of project results, a great effort for a widespread dissemination needed to be accomplished. Consequently, a dissemination concept was defined and implemented in scope of task 8.1 in order to get involvement from companies and academia in the research work.

Task 8.1 "Dissemination" strived during four years to support and involve specific target groups in order to get their awareness and understanding through *singular* and *continuous* activities:

- *Singular activities*: InPro Cluster (process definition, development of cluster communication package, "Welcome Newsletter"), publications, dissemination material (design and development), paper approval process development.
- *Continuous activities*: Cluster (updating and newsletter), media target list and publications list (updating and monitoring), dissemination material (maintenance and distribution to partners), paper approval management.

2 DISSEMINATION AND COMMUNICATION CONCEPT

The InPro vision of change in the construction industry and its research results had to be communicated and disseminated in a clear way to all stakeholders. Even though the research program is successful with relevant results, change in construction industry will only follow if the findings are communicated to the relevant audience.

Disseminate, by definition in communication scope, is to broadcast a message to the public without direct feedback from the audience. Dissemination is an essential part of the research process (and not an after thought) that should evolve from the first day of a research project till the end of it.

For an effective InPro dissemination of research results, the following points were relevant:

- **Identification of target audience:** clients, small and medium-sized companies in the construction, ICT developers, industry organizations, European and national authorities, research community.
- **Development of clear message:** material development such as project presentations, posters and flyers, paying attention to language needs of audience (eg. Invitation letter for *InPro Cluster* in different languages).
- **Messengers of the message:** all partners of the project through several dissemination activities and through building up the *InPro Cluster* (see chapter 4).
- **Dissemination activities:** continuous and singular activities - publication of reports, scientific publication (journal and conferences), newsletter, participation in conferences, workshops, personal visits, media (press-releases and press-conferences), journals, website.

3 DISSEMINATION ACTIVITIES

3.1 Dissemination Material

The objective of the dissemination activities was to create awareness, deeper understanding and support for the project within the industry. For this purpose, in year 1 a poster was developed that introduced InPro facts to interested companies from the construction industry. In addition to the poster, a flyer was created which pointed out the vision and the objectives of InPro in year 2. The digital and printed poster and flyer of the year 3 finally show the project results and achievements.

In coordination with the InPro cluster, publications and presentations informed the international research community about further results. Furthermore the internet activities in the form of a project website and a newsletter presented the current status of the project.

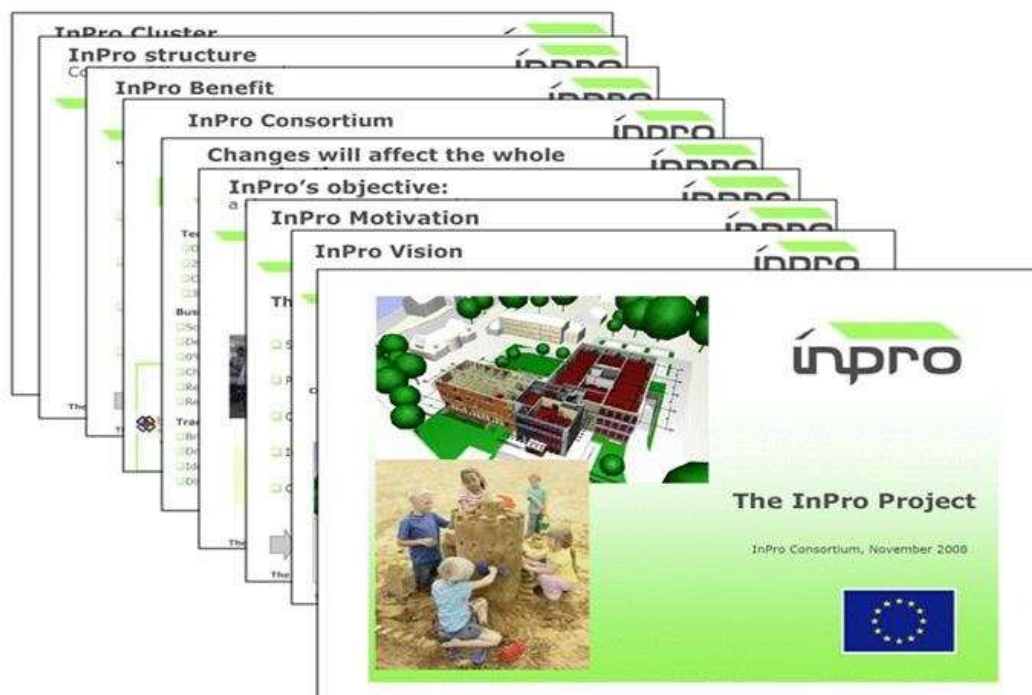


Figure 3.1: Presentation of InPro project (digital format)



inpro OPEN INFORMATION ENVIRONMENT FOR KNOWLEDGE-BASED COLLABORATIVE PROCESSES THROUGHOUT THE LIFECYCLE OF A BUILDING

[Start](#)
[Project Overview](#)
[Consortium](#)
[InPro Cluster](#)
[Media](#)
[Publications](#)
[Links](#)
[Contact](#)

WELCOME TO INPRO

InPro - Open Information Environment for Knowledge-based Collaborative Processes throughout the Lifecycle of a Building - is an industry-led collaborative research project aiming at the early design phase of a building. It is part-funded by the European Commission under framework program 6. It is a four-year project that started 1 September 2006. 20 partners are involved, representing nine countries across Europe.

[Internal Pages \(login required\)](#)

EU integrated project 026716-2
6th Framework Programme 



Figure 3.2: Website of InPro project



inpro

www.inpro-project.eu



INPRO WILL ...

- Introduce 3D-design and Building Information Models in the European construction sector
- Develop strategies and business models for a new building design process which
 - enforce open cooperation between project partners
 - consider the building's whole lifecycle
- Transform the Early Design phase of a building

INPRO FACTS

- InPro officially started in September 2006. It is a European cooperation between twenty partners from nine European countries. The budget amounts to 13 million euro over four years.
- InPro is a part of the European Community through links to a variety of national and international initiatives, companies, and organisations.
- The European Construction Technology Platform, ECTP, and the European Network of Construction Companies for Research and Development, ENCORD, are close cooperation partners.



















GRAPHISOFT.

AEC3








Contact: info@inpro-project.eu

Integrated Project supported by the European Commission within the 6th Framework Programme

Figure 3.3: Poster of InPro project - "Project", 2007

Integrated Project supported by the European Commission within the 6th Framework Programme

www.inpro-project.eu

InPro started in September 2006. It is a European cooperation between eighteen partners from nine European countries. The budget of this integrated project amounts to 13 million euro over four years.

InPro

Open Information Environment for collaborative Processes throughout the lifecycle of a building.

Our Vision

InPro will develop and establish a model-based and collaborative way of working in the early design phase considering the whole lifecycle of a building.

InPro Objective

a change in the way of working

InPro Benefit

"InPro Open Information Environment" is an advanced system that supports and integrates different aspects of Early Design:

- ▶ Open and flexible model-based **collaboration** between all stakeholder
- ▶ Design from a **lifecycle perspective**, based on **Building Information Models (BIM)**
- ▶ Simulation driven **decision support** in the **early design phase** of a building

Contact: Info@inpro-project.eu

Figure 3.4: Poster of InPro project - "Project", 2009

Integrated Project supported by the European Commission within the 6th Framework Programme

www.inpro-project.eu

InPro will transform the early design phase of a building:

- ▶ Define **Business Concepts and Processes** for open collaboration between all stakeholders
- ▶ Demonstrate smart **ICT** environment for all Information throughout the building lifecycle

Traditional

Technology

- ▶ 2D formats and own tools
- ▶ 3D mental model

Business

- ▶ Scope: construction
- ▶ 0% tolerance margin
- ▶ Requirements fixed

Transformation

- ▶ Brief client
- ▶ Discipline optimization

InPro

Technology (push)

- ▶ 3D BIM sharing
- ▶ 3D visualization

Business (pull)

- ▶ Scope: life cycle
- ▶ A% margin philosophy
- ▶ Defining requirements

Transformation

- ▶ Involve client
- ▶ Global optimization

Results after 2 years of Business Pull

- ▶ Capture Stakeholders Values
- ▶ Transfer Values to Requirements
- ▶ Decision making framework (Values and KPI)
- ▶ Product Breakdown Structure
- ▶ Design Change Management
- ▶ Risk Identification
- ▶ Environmental Analysis
- ▶ Facility Management Analysis
- ▶ Energy Analysis (exchange requirements)
- ▶ Model based Scheduling (exchange requirements)
- ▶ Cost Management (exchange requirements)

Results after 2 years of Technology Push

- ▶ (IFC) Object Versioning
- ▶ Excel tool for weighting alternative design
- ▶ IFC extensions for specification of main energy results
- ▶ IFC model verification for BIM requirements for guesstimate of energy consumption
- ▶ IFC Import/export implementation for Energy Analysis
- ▶ IFC extensions for scheduling, 4D simulation and linking with CAD, quantities and costs
- ▶ Prototype developments including 4D-IFC viewer and interface implementation for MS Project
- ▶ Cost Management IFC prototype developments based on ArchICAD (VICO Constructor)

Contact: info@inpro-project.eu

Figure 3.5: Poster of InPro project - "Achievements", 2009



www.inpro-project.eu

CONSORTIUM

Construction industry

- NCC Construction Sverige AB
- Bouygues Travaux Publics SA
- Hochtief Aktiengesellschaft
- Max Bögl Bauservice GmbH & Co. KG
- YIT Kiinteistötekniikka Oy
- Swedish Association of Building Construction Clients
- White Arkitekter AB

Consultant

- AEC3 Ltd
- P3 Digital Services GmbH
- JAQAR Concurrent Design Services B.V.

University / Research

- Centre Scientifique de Technique du Bâtiment
- Netherlands Organisation for Applied Scientific Research
- University of Maribor
- Bauhaus-Universität Weimar
- Luleå University of Technology
- Universität Dortmund

Software vendor

- Olof Grandlund Oy
- Eurostep AB

European Construction Technology Platform 4th Conference, Brussels, November 24 – 25, 2009



Open Information Environment for Knowledge-based Collaborative Processes throughout the Lifecycle of a Building

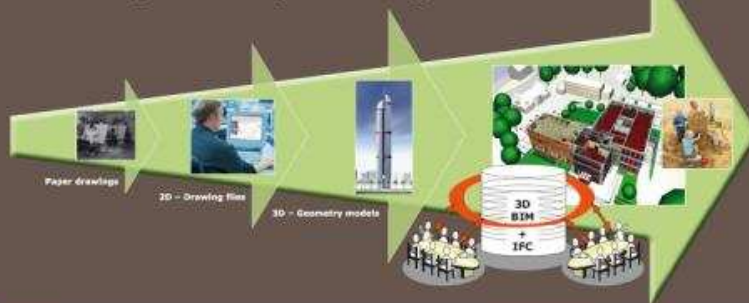


InPro is an industry-led collaborative research project aiming at the early design phase of a building. It is partly-funded by the European Commission under framework program 6. The project started 1 September 2006 and has a duration of four years. 18 partners are involved, representing seven countries across Europe.

The construction industry is standing before a major technology shift - from the traditional 2-dimensional drawings to 3-dimensional Building Information Models. Advanced design, communication and simulation tools give us an opportunity to change the way we work in the industry, including open collaboration between stakeholders, design for increased energy efficiency, flexibility, constructability, comfort, etc.

InPro will develop and establish a model-based and collaborative way of working in the early design phase considering the whole lifecycle of a building.

InPro Objective a change in the way of working



InPro will transform the early design phase of a building:

- ▶ Define **Business Concepts and Processes** for open collaboration between all stakeholders
- ▶ Demonstrate smart **ICT** environment for all information throughout the building lifecycle

Traditional

Technology

- ▶ 2D formats and own tools
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Results after 2 years of Business Pull

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- ▶ Cost Management IFC prototype developments based on ArchiCAD (VICO Constructor)

Figure 3.6: Poster of InPro project - ECTP Conference, 2009

Join the InPro CLUSTER

- The InPro Consortium** consists of a defined group of partners. In addition to this group there is a possibility for other companies to join InPro as members of the InPro Cluster.
- The InPro Cluster** is a forum for communication and interaction, based around a portal and activities.
- Benefits** increase the network of contacts in the related field, access to project results, be an active part of the modernisation of the European construction industry in terms of use of 3D/BIM.
- Who can join** Members of the Cluster are individually selected for their competence or activities of relevance to InPro. They must also commit to being an active member of the Cluster.

Please fill out for further information:

- We would like to keep in touch with the InPro project. Please add us to the dissemination list.
- We would like to participate in the InPro work and want to join the inpro cluster.

More info on www.inpro-project.eu or e-mail info@inpro-project.eu

InPro PARTNERS

www.inpro-project.eu

InPro WILL

- InPro is a European cooperation between 19 construction sector companies, IT companies, consultants and research organisations from 8 countries.
- The project runs from 2006 to 2010 with a total budget of 13 million euro.
- InPro is co-funded by the European Commission under the 6th Framework Programme for Research and Development.

- Introduce 3D-design and Building Information Models in the European construction sector.
- Develop strategies and business models for a new building design process which
 - enforce open cooperation between project partners
 - consider the building's whole lifecycle
- Transform the Early Design phase of a building.

InPro project
 c/o P3 Digital Services
 Johann Jaeger
 Blohmstraße 12
 Channel 10
 21079 Hamburg
 Germany

InPro MISSION

InPro will develop and establish a model-based and collaborative way of working in the early design phase considering the whole lifecycle of a building.

"Change management must address all levels"

Sender:

Name, First name: _____

e-Mail: _____

Function: _____

Company Address: _____

Figure 3.7: Flyer of InPro project, 2007

Integrated Project supported by the European Commission within the 6th Framework Programme

ECTP

inpro

www.inpro-project.eu

InPro started in September 2006. It is a European cooperation between eighteen partners from nine European countries. The budget of this integrated project amounts to 13 million euro over four years.

inpro life cycle design process

(1) Early design (2) Construction design

1 Design 2 Construction 3 Facility Management 4 Reconstruction

InPro
Open Information Environment for collaborative Processes throughout the lifecycle of a building.

Our Vision
InPro will develop and establish a model-based and collaborative way of working in the early design phase considering the whole lifecycle of a building.

InPro Objective
a change in the way of working

Paper drawings 2D - Drawing files 3D - Geometry models

Contact: info@inpro-project.eu

InPro will transform the early design phase of a building:

- Define Business Concepts and Processes for open collaboration between all stakeholders
- Demonstrate smart ICT environment for all information throughout the building lifecycle

InPro Benefit

"InPro Open Information Environment" is an advanced system that supports and integrates different aspects of Early Design:

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- Design from a lifecycle perspective, based on Building Information Models (BIM)
- Simulation driven decision support in the early design phase of a building

Traditional		InPro
Technology	<ul style="list-style-type: none"> 2D formats and own tools 3D mental model 	<ul style="list-style-type: none"> 3D BIM sharing 3D visualization
Business	<ul style="list-style-type: none"> Scope: construction 0% tolerance margin Requirements fixed 	<ul style="list-style-type: none"> Scope: life cycle 4% margin philosophy Defining requirements
Transformation	<ul style="list-style-type: none"> Brief client Discipline optimization 	<ul style="list-style-type: none"> Involve client Global optimization

Results after 2 years of Business Pull

- Capture Stakeholders Values
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Figure 3.8: Flyer of InPro project, 2009

3.2 Conferences and Presentations

CONFERENCES								
Title	Location	Date	Publication	Status	Author	Partic.	Type of audience	Size of audience
YEAR 1								
VaikuttajaFoorumi / D2 presentation	Hämeenlinna, Finland	28.03.2007	30 min presentation		Olli Nummelin (YIT)			40-50
Manubuild	Rotterdam, Netherlands	26.04.2007	InPro - integrated project within the 6th Framework Programme	published	J. Jaeger (P3) S. Siegler (P3)			100
4th Nordic Conference	Luleå Sweden	15.06.2007	Life Cycle Cost Calculation Models for Buildings	published	Jutta Schade			200
24th W78 Conference Maribor 2007 & 5th ITCEDU Workshop & 14th EG-ICE Workshop Main Topic "Bringing ITC knowledge to work"	Maribor, Slovenia	29.06.2007	Manipulating IFC Sub-Models in collaborative teamwork environment	published	M. Nour (Bauhaus Universität Weimar)			250
24th W78 Conference Maribor 2007 & 5th ITCEDU Workshop & 14th EG-ICE Workshop "Bringing ITC knowledge to work"	Maribor, Slovenia	29.06.2007	Project environment and process design of building projects supported by virtual design and construction methods	Published	T. Olofsson, R. Jongeling, B. Toolanen (Luleå), S. Dehlin(NCC)			
24th W78 Conference Maribor 2007 & 5th ITCEDU Workshop & 14th EG-ICE Workshop "Bringing ITC knowledge to work"	Maribor, Slovenia	29.06.2007	Credibility and applicability of Virtual Reality models in design and construction.	Published	S. Dehlin (NCC) and T. Olofsson (Luleå)			

24th W78 Conference Maribor 2007 & 5th ITCEDU Workshop & 14th EG-ICE Workshop	Maribor, Slovenia	29.06.2007	4D construction sequence planning - new process and data model	published	J. Tulke (Hochtief), J. Hanff (Hochtief)			250
YEAR 2								
ECTP conference 2007	Amsterdam	19-20.11.2007		Organising the conference	CSTB		Construction Research and Industry	400
ECTP conference 2007	Amsterdam	19-20.11.2007		Participation		AEC3; Bauhaus;P3; Hochtief		
WP3 Workshop with cluster candidates	Helsinki, Finland	29-30.11.2007			Olli Nummelin (YIT)			12
YEAR 3								
7th European Conference on Product and Process Modelling	Sophia-Antipolis, France	12.09.2008	The InPro Project	published	P3			125
7th European Conference on Product and Process Modelling	Sophia-Antipolis, France	12.09.2008	Decomposition of BIM objects for scheduling and 4D simulation	published	J. Tulke (Hochtief); M. Nour (Bauhaus Universität Weimar K. Beucke (Bauhaus Universität Weimar)			125
7th European Conference on Product and Process Modelling	Sophia-Antipolis, France	12.09.2008	Integrating use case definitions for IFC developments	published	M. Weise (AEC3) T. Liebich (AEC3) J. Wix (AEC3)			125

7th European Conference on Product and Process Modelling	Sophia-Antipolis, France	12 - 14.09.2008		Organising the conference	CSTB		Construction Research and Industry	125
IABSE Conference	Chicago, USA	19.09.2008	A Dynamic Framework for Construction Scheduling based on BIM using IFC	published	J. Tulke (Hochtief); M. Nour (Bauhaus Universität Weimar); K. Beucke (Bauhaus Universität Weimar)			
12th International conference on Computing in Civil and Building Engineering (ICCCBE-XII) & International Conference on Information Technology in Construction 2008 (INCITE 2008)	Beijing, China	18.10.2008	A Graphical User Interface for handling IFC Partial Model Exchange	published	M. Nour (Bauhaus Universität Weimar)			
12th International conference on Computing in Civil and Building Engineering (ICCCBE-XII) & International Conference on Information Technology in Construction 2008 (INCITE 2008)	Beijing, China	18.10.2008	An Open Platform for Processing IFC Model Versions	published	M. Nour (Bauhaus Universität Weimar); K. Beucke (Bauhaus Universität Weimar)			
BuildingSMART Arbeitskreis FM	Frankfurt, Germany	20.04.2009	InPro - Demonstrationsvorhaben zur Datenübergabe in FM - Ausschreibungs- und Kalkulationsprozess	published	Robert Schweisser (Hochtief)			

CIB IDS 2009	Espoo, Finland	10-12.06.2009	InPro training environment and model based working in construction	published	N. Babic (Maribor); D. Ranbolj (Maribor); T. Olofsson (Lulea); S. Schumacher (P3)			
5th Nordic Conference on Construction Economics and Organization	Reykjavik, Iceland	12.06.2009	A model-based design approach with the focus on energy	published	J. Schade, T. Olofsson (Lulea); Marcus Schreyer (Max Bögl)			
YEAR 4								
BuildingSMART ITM Meeting	Berlin, Germany	22.09.2009	Activities Facility Management Working Group	published	Robert Schweisser (Hochtief)			
CONPAT 2009 - The X Latin American International Conference on IT in Construction	Chile	29.09.2009 - 2.10.2009	Modeling in civil engineering and architecture	approved	H. Kirschke (Bauhaus Universität Weimar); M. Nour (Bauhaus Universität Weimar)			
CIB W78 - 26th International Conference - Managing IT in Construction	Istanbul, Turkey	01-03.10.2009	IFC Support for Model-based Scheduling - DISCUSSION PAPER - Version 21.04.2009	published	M. Weise (AEC3); T. Liebich (AEC3); J. Tulke (Hochtief); P. Bonsma (TNO)			

CIB W78 - 26th International Conference - Managing IT in Construction	Istanbul, Turkey	01 - 03.10.2009	IFC Support for Model-based Scheduling	published	M. Weise (AEC3); T. Liebich (AEC3); J. Tulke (Hochtief); P. Bonsma (TNO)			
Changing Roles: New Roles, New Challenges	Noordwijk aan Zee, Netherlands	05-09.10.2009	Changing Roles of Architects, Engineers and Builders through BIM Application in Healthcare Building Projects in the Netherlands	published	R. Sebastian (TNO)			
CIB-W096 - Future Trends in Architectural Management	Tainan, Taiwan	02-03.11.2009	BIM Application for Integrated Design and Engineering in Small-Scale Housing Development: A Pilot Project in the Netherlands	published	R. Sebastian (TNO); W. Haak (HZ University); E. Vos (HZ University)			
PDT Europe 2009 Conference	Paris, France	19.11.2009	30 min presentation		Patrick Houbaux, Eurostep Claude Dumoulin, Bouygues		PLM oriented industries	100
buildingSMART Forum 2009 - 13. IAI Industrietag mit Fachausstellung - Effizienter Planen, Bauen und Bewirtschaften mit Building Information Modeling (BIM)	Berlin, Germany	23.11.2009	30 min presentation - Praxiseinsatz von BIM und Virtual Construction Technologies in Großprojekten		Jan Tulke (Hochtief)			
ECTP conference 2009	Brussels	24 - 25.11.2009		Organising the conference	CSTB		Construction Research and Industry	250
National standardisation committee CEN TC319, facility management & maintenance	Helsinki, Finland	02.12.2009	30 min presentation		Tapio Hirvonen (YIT)			28

Ecobuild America	Washington DC, USA	09.12.2009	30 min presentation		Väino Tärandi, Eurostep		Construction industry	60
OpenBIM	Norra Latin, Aulan plan 3, Drottninggatan 71b, Stockholm	26.01.2010	Hantering av krav i tidigt skede (InPro presentation)	published	Nils Outters (NCC)	nordic building industry: architects, clients, consultants, building companies, program developers		270
BuildingSMART Arbeitskreis FM	Munich, Germany	26.01.2010	Ergebnisse aus dem Forschungsprojekt InPro Demonstrator	published	Robert Schweisser (Hochtief)			
Build IT 2010	Berlin, Germany	16-20.02.2010	Bauhaus-Universität Weimar auf der Build IT 2010 (Forum für Wissenschaft, Industrie und Wirtschaft)	Hosting the conference	Bauhaus Universität Weimar; Hochtief (Participant)			
Facility Management Conference	Frankfurt, Germany	10.03.2010	Integrated model-based data exchange in order to determine building operating costs during the planning stage as a contribution to lifecycle costing	published	Robert Schweisser; Jan Specht; Jan Tulke (Hochtief)			
buildingSMART Korea International Forum 2010	Seoul, Korea	21.04.2010	30 min presentation		Väino Tärandi, Eurostep		Construction industry	100
CIB World Congress	The Lowry, Salford Quays, UK	11.05.2010	Breaking through Business and Legal Barriers of Open Collaborative Processes based on Building Information Modelling (BIM)	published	Rizal Sebastian (TNO)			
buildingSMART Anwender-treffen 2010	Frankfurt, Germany	16.06.2010	Host; Trainingsevent für neue BIM-Guideline		Robert Schweisser, Jan Tulke (Hochtief)			

Conference on Computing in Civil and Building Engineering 2010	Nottingham, UK	30.06 - 02.07.2010	InPro training environment – training platform for BIM based collaborative working	published	N. Čuš-Babič & D Rebolj University of Maribor, Slovenia			
Conference on Computing in Civil and Building Engineering 2010	Nottingham, UK	30.06 - 02.07.2010	Object Versioning as a basis for design change management within a BIM context	published	M. Nour, K. Beucke (Bauhaus-Universität Weimar)			
Conference on Computing in Civil and Building Engineering 2010	Nottingham, UK	30.06 - 02.07.2010	Object Versioning as a basis for design change management within a BIM context	published	M. Nour, K. Beucke (Bauhaus-Universität Weimar)			
BIP Conference	Nyborg and Copenhagen, Denmark	06.09. - 10.09.2010	The InPro Public Demonstration Day was held in combination with the buildingSMART Summit Week		Hochtief, Bouygues, Max Bögl, TNO, Eurostep, YIT, P3, NCC			
ECPPM 2010	Cork, Ireland	14. - 16.09.2010	Use of Standards for filling the gaps towards integrated BIM based ways of working – The InPro example	published	B. Fies, CSTB P. Benning, C. Dumoulin, Bouygues P. Houbaux, Eurostep		Construction Research and Industry	70
ECPPM 2010 in Cork	Cork, Ireland	14. - 16.09.2010	Use of Standards for filling the gaps towards integrated BIM based ways of working – The InPro example	published	B. Fries, CSTB P. Benning, C. Dumoulin, Bouygues P. Houbaux, Eurostep			

Sustainable Community SB 10 Finland	Dipoli, Espoo, Finland	22.- 24.09.2010	Capturing the Stakeholder Values of a Construction Project	published	Ken Dooley, Piia Sormunen Granlund			
Sustainable Community SB 10 Finland	Dipoli, Espoo, Finland	22.- 24.09.2010	Energy and Thermal Performance Management Through Utilisation of Building Information Models	published	Tuomas Laine Vice President for Innovation and Technology Olof Granlund Oy			
ENCORD Virtual Construction Plattform	Paris, France	October 2010	hosted by Bouygues		Bouygues; Hochtief			
SECESA 2010	Lausanne, Switzerland	13. - 15.10.2010	Concurrent Design Applications in Construction, Off-shore Industry and Engineering Education	published	Martin Fijneman, Arne Matthyssen; J-CDS			
National standardisation committee CEN TC319, facility management & maintenance	Helsinki, Finland	20.10.2010	30 min presentation		Tapio Hirvonen (YIT)			
PDT Europe 2010 Conference	London (Reading), UK	17.11.2010	30 min presentation - hosted by Eurostep		Claude Dumoulin (Bouygues), Eurostep		PLM oriented industries	
CIB W78 2010	Cairo, Egypt	16. - 18.11.2010	A Model Based Design approach with the Focus on Energy	published	Jutta Schade, Thomas Olofsson, Luleå University of Technology Marcus Schreyer, Max Bögl			

CIB W78 2010	Cairo, Egypt	16. - 18.11.2010	Learning about BIM in the Early Design using InPro Training Environment	published	N. Čuš-Babič & D Rebolj University of Maribor, Slovenia			
CIB W78 2010	Cairo, Egypt	16. - 18.11.2010	Unveiling-IFC2x4 - The next Generation of openBIM	published	Thomas Liebich, AEC3 Deutschland			
CIB W78 2010	Cairo, Egypt	16. - 18.11.2010	Collaborative Whiteboard: Towards remote collaboration and interaction in construction design	published	Stefan Dehlin, NCC, Sweden - et al			
CIB W78 2010	Cairo, Egypt	16. - 18.11.2010			P3			
SCAN 10	Marseille, France	02.12.2010	Scénario collaboratif autour d'un BIM entre Architecte et BET - L'aide des Normes pour une meilleure interopérabilité		CSTB		Architects	

Table 3.1: Conference articles from InPro partners during the four years of research

PRESENTATIONS

Title	Location	Date	Publication	Status	Author	Partic.	Type of audience	Size of audience
YEAR 1								
Eu projects - buildingSMART initiative, 1st meeting	Brussels, Belgium				TNO; AEC3	Construction research		15
Kompetensbygget (Competence Building Program)	Solna, Sweden (NCC)	23.		published	NCC	Civil engineers students		20
Stumico sponsored Event - Interoperability	Ballast Nedam, Nieuwegein, Netherlands				TNO	Construction industry		20-30
Pais Initiative Meeting	Delf, Netherlands				TNO	Construction industry		20-30
Nibcor Workshop	Helsingoer, Denmark	15-16.01.2007			NCC	Construction research		40
VR-Net	Sophia-Antipolis	23.02.2007	Poster presentation		NCC			
BuildingSMART Day	Washington DC, USA				AEC3	Construction industry		200
Swedish-American construction research workshop	Washington DC, USA; Sweden				NCC	Construction industry and research		50
Oracle Open World Conference	San Francisco, USA				Max Bögl	Construction industry and research		

BuildingSMART Day	London, UK				AEC3	Construction industry and research		
YEAR 2								
BIPS Conference - BIM: Opportunities for the Construction Sector	Nyborg, DK	01.09.2008	45 min Keynote	published	Dr. Marcus Schreyer (Max Bögl)	Danish Design Cons. & Building Industry		400
Strategy Meeting KBN Neumarkt: BIM & Partnering	Neumarkt, D	23.10.2008	20 min presentation	published	Dr. Marcus Schreyer (Max Bögl)	Regional builders, authorities, designers, universities		30
ECTP conference 2007	Amsterdam	19-20.11.2007	Poster		NCC; Bouygues			
YEAR 3								
BIM Grundlagen (Basics)	Neumarkt, D	01.07.2009	4h lecture	published	Dr. Marcus Schreyer (Max Bögl)	Buidling Management students		15
Building Smart 2008	Stockholm	17.09.2008	30 min presentation		NCC			
Autodesk BIM Conference - BIM Einführung: Chancen, Risiken, Erfolgsvoraussetzungen (BIM Implementation)	Berlin, D	22.09.2009	45 min presentation	published	Dr. Marcus Schreyer (Max Bögl)	German Design Consultants		50
BIM Grundlagen (Basics)	Neumarkt, D	30.11.2009	4h lecture	published	Dr. Marcus Schreyer (Max Bögl)	Buidling Management students		13
YEAR 4								
Encord Virtual Construction Platform meeting	Copenhagen, Denmark	21-04-2009	60 min presentation		Väino Tarandi, Eurostep	Construction industry		20

Bautec - Potentiale der modellbasierten Projektentwicklung	Berlin, D	18.02.2010	30 min presentation	published	Dr. Marcus Schreyer (Max Bögl)	German design consultants, authorities, construction		100
Meeting at CAD-Stelle Bayern - standardization initiative resulting from InPro-Demonstration	Munich, Germany	19.02.2010	Standardisierung der IFC-Modellierung von TGA-Objekten	published	Robert Schweisser (Hochtief)			
Cluster Promotion Day	Maribor, Slovenia	02.02.2010	From 2D to 3D		University of Maribor	National Cluster		72
BIM Server Business Strategy Meeting	Utrecht (NL)	01.09.2010	Handout	published	Rizal Sebastian (TNO)			35
Seminar jointly organised by the Dutch architect's association (BNA) and the government body for SME (Syntens)		04.11.2010			Peter Bonsma (TNO)			
Deutscher Bautechniktag	Dresden	23.-24.04.2009	Vortrag		Dr. Frank Neuberger (Max Bögl)			
Autodesk BIM Conference	Berlin	22.09.2009	Vortrag		Dr. Marcus Schreyer (Max Bögl)			
Autodesk Construction Summit: Presentation InPro Use Case Approach	Waltham	10.06.2009	presentation		Markus Pfitzner / Dr. Neuberger (Max Bögl)			

Table 3.2: Presentations from InPro partners during the four years of research



Figure 3.9: Dissemination activity at University of Maribor – Cluster Promotion Day, February 2nd 2010 (Nenad Cus Babic, University of Maribor)



Figure 3.10: Dissemination activity at OpenBIM conference, January 26th 2010 (Nils Outters, NCC)

3.3 Publications

Publications							
Title	Type	Location	Language	Date	Publication	Status	Author
YEAR 1							
Vattenbyggaren (Construction Industry)	Newspaper (press release)	Sweden	Swedish	April 06	NCC leder byggbranschen in i 3D - världen	published	NCC
Research	Newspaper (press release)		English	June 2006	Kick-off of the European reserach project InPro	published	J. Jaeger (P3)
Construction Industry	Newspaper (press release)	Sweden	Swedish	June 2006	NCC leder byggbranschen in i 3D - världen	published	U. Thorne (NCC)
General Public	Newspaper (press release)	Germany	German	29.09.2006	P3 - Digial Services GmbH entwickelt innovative 3D Techniken für die Bauindustrie mit	published	J. Schwarz (P3)
Bygga Framtid (Construction Industry)	Newspaper (press release)	Sweden	Swedish	29.10.2006	EU - projekt för mer 3D vid byggvärdens ritbord	published	S. Lindsköld and B. Berglund (NCC)
General Public	Newspaper (press release)	Netherland	Dutch	08.12.2006	Europese aannemers verbeteren voorontwerp gebouwen	published	M. Böhms (TNO)
Cobouw (Construction Industry)	Newspaper (press release)	Netherland	Dutch	04.01.2007	Voorontwerp moet drastisch verbeterd	published	F. Bas
Aachener Zeitung	Newspaper (press release)	Germany	German	12.02.2007	Aachener 3D-Technik für die Bauwirtschaft	published	P3
General Public	Newspaper (press release)	Netherland	Dutch	March 2007	InPro - betere voorontwerpen	published	M. Böhms (TNO)
Optimierungspotential durch den Einsatz modellorientierter Arbeitsmethoden und Arbeitsweisen innerhalb der Bauablaufplanung und Baulogistik	Diploma thesis		German	March 2007			R. Gartmann (TU Dortmund)

Auswirkungen auf den Planungs- und Ausführungsprozess der technischen Gebäudeausrüstung durch Kollisionsanalyse mit digitalen 3-Dimensionalen Gebäudemodellen	Diploma thesis		German	May 2007			M. Hiester (TU Dortmund)
Bygga Framtid (Construction Industry)	Newspaper (press release)	Sweden	Swedish	May 2007	InPro - ett europeiskt projekt för att utveckla 3D tekniken i byggbranschen	published	T. Olofsson (Lulea)
Note on Open Information Environment	Report			May 2007			C. Dumoulin (Bouygues)
Analysis of Existing Software Tools for Early Design	Report			July 2007			M. Pfitzner (Bögl); F. Neuberg (Bögl); J. Tulke (Hochtief); O. Nummelin (YIT); P. Benning (Bouygues)
YEAR 2							
Auswirkungen auf das Facility Management durch den Einsatz eines digitalen Raumbuches auf Basis eines 3D-Modells in der Planungs- und Ausführungsphase	Diploma thesis		German	June 2008			K. Homik (TU Dortmund)
Teknikforum (NCC internal publication)	Newspaper (press release)	Sweden	Swedish	04.08.2008	Stort kliv mot ett mer effektivt tidigt skede (A leap towards a more effective early design)	published	S. Dehlin and C. Claesson-Jonsson (NCC)
YEAR 3							
EmploiPro 01 Informatique	Newspaper (press release)	France		16.10.2008	InPro-Announcement of a competitive call for additional projects partners	published	P3
Frankfurter Allgemeine Zeitung	Newspaper (press release)	Germany		16.10.2008	InPro-Announcement of a competitive call for additional projects partners	published	P3

ITcon Special Issue Case studies of BIM use	Journal		English	Vol 13, 2008	An evaluation model for ICT investments in construction projects	Published	S. Dehlin (NCC) and T. Olofsson (Luleå)
Vernetzung aller Projektbeteiligten im Bauwerkslebenszyklus durch Anwendung von 4D-Modellen	Diploma thesis		German	2009			K. Meckmann (TU Dortmund)
Nutzen des modellbasierten Arbeitens für die Projektentwicklung	Diploma thesis		German	2009			S. Pollmann
Energy simulation and life cycle costs Estimation of a building's performance in the early design phase	Thesis		English	2009			J. Schade (Lulea)
Life cycle costing for Buildings: Theory and Suitability for addressing uncertainties about timber housing	Journal		English	2009	Methodological and other uncertainties in whole life cycle		E. Levander (Lulea University of Technology) J. Schade (Lulea University of Technology) L. Stehn (Lulea University of Technology)
Public Service Review: European Union 18	Journal		English	2009	Transforming the construction industry...by focusing on the early design phase...	Published	C. Claeson Jons-son (NCC) R. Sebastian (TNO)
TVVL magazine	Journal		Netherlandish	Nov 09	Als alternatief voor de traditionele over-de-schutting ontwerpmethodiek - Een system engineering benadering		P.M. Bluysen, M.A.R. Oostra, H.M. Böhms (TNO)

YEAR 4							
Construction management and economics	Journal		English	2010	Decision-making in a model based design process	accepted	Jutta Schade, Thomas Olofsson, Gustav Jansson (Luleå University of Technology) Väino Tarandi (Eurostep)
Architectural Engineering and Design Management, Volume 6	Journal		English	2010	Integrated Design and Engineering using Building Information Modelling: A Pilot Project of Small-Scale Housing Development in The Netherlands	Published	Rizal Sebastian (TNO)
Engineering, Construction and Architectural Management	Journal		English	2010	Changing Roles of the Clients, Architects and Contractors through BIM	approved	Rizal Sebastian (TNO)
Intelligent Buildings International	Journal		English	2010	A top-down system engineering approach as an alternative to the traditional over-the-bench methodology for the design of a building	Published	P.M. Bluysen, M.A.R. Oostra, H.M. Böhms (TNO)
BuildingSMART BIM Handbook	Report			2010			Thomas Liebich (AEC3)
Strategic Alliances for Innovation - Exploiting and Exploring in Turbulent Times	Thesis		English	2010			Josse Dorleijn (Master Thesis Strategic Management)
Informatik in Architektur und Bauwesen 4 - Kollaborative Terminplanung auf Basis von Bauwerksinformationsmodellen	Thesis		German	2010			Jan Tulke (Dissertation an der Bauhaus-Universität Weimar)

Webzine	Newspaper (press release)	France	French	01.12.2010	InPro - Un projet pour les échanges collaboratifs autour du BIM	planned	B. FIES / CSTB
Webzine	Newspaper (press release)	France	English	02.12.2010	InPro - a research project on collaborative exchanges around a BIM	planned	B. FIES / CSTB
Maskinstyrning: skapandet av en anläggningsmodell och dess inverkan på byggprocessen	Diploma thesis		Swedish	2010		published	Johan Berglund; Erik Davidsson (LTU)
Tekniska bostadsplattformar: erfarenheter av användning och tillämpning i projekteringen.	Diploma thesis		Swedish	2010		published	Frida Haglund (LTU)
Värdeflödesanalys: en metod för effektivisering av bostadsbyggande	Diploma thesis		Swedish	2010		published	Josefin Hermansson (LTU)
Implementering av Virtual Design and Construction: en fallstudie av Veidekke Entreprenad AB	Diploma thesis		Swedish	2010		published	Joakim Tjärnberg (LTU)

Table 3.3: Publications from InPro partners during the four years of research

3.4 Other Dissemination Activities

Other Dissemination activities							
Title	Type	Location	Language	Date	Publication	Status	Author
YEAR 1							
General Public	Web articles (press release)	Netherland	Dutch	March 2007	InPro - betere voorontwerpen	published	M. Böhms (TNO)
Bygghöjden (Construction Industry)	Web articles (press release)	Sweden	Swedish	15.08.2007	Samarbete i 3D ger smartare byggen	published	(NCC) (not author but contributor)
VR-Net Workshop (International Network of Virtual Reality Application of Construction Products and Processes)	Poster exhibition	Sophia-Antipolis, France		23.02.2007			NCC
YEAR 2							
ECTP conference 2007	Poster exhibition	Amsterdam, Netherland	-	19 - 20.11.2007			NCC; Bouygues
ICTs for Energy Efficiency conference	Workshop	Brussels (Belgium)		28.01.2008			CSTB
Conference on "Industrialised, Integrated and Intelligent Construction"	Workshop	Loughborough, (UK)		14 - 16.05.2008			CSTB
ECCL 2008 - European Conference on Construction Logistics	Workshop	Dortmund (Germany)		26.05.2008			CSTB
YEAR 3							
ECPPM 2008 - InPro Workshop	Workshop	Sophia Antipolis		14.09.2008			CSTB, AEC3, TNO, P3
EXPO REAL 2008	Dissemination of flyers, nearly 20 profitable discussions about InPro	Munich		08.10.2008			P3

Tag der Deutschen Bauindustrie	Dissemination of flyers, more flyers will be displayed in the library of "Hauptverband der Deutschen Bauindustrie"	Berlin		27.05.2009			P3
Expansion	Discussions about InPro with exhibiting companies, potentials for Cluster	Hamburg		17.06.2009			P3
PLMforum.com	Web articles (press release)	Sweden	swedish	12.10.2009	En bättre planering i tidiga skeden av byggprocessen ska ge billigare byggande och nöjdare kunder. I EU-projektet InPro byggs nu en öppen samarbetsplattform där alla kan delta. /BIM	published	Eurostep (not author but contributor)
Building information modelling framework: A research and delivery foundation for industry stakeholders	Reference	Australia	english	2009	Automation in Construction		Bilal Succar (University of Newcastle)
Synchro Newsletter	Reference		english	2009	Internet reference		Hochtief (not author but contributor)
YEAR 4							
BIM Collaboration Workshop	Workshop	München, D		19.01.2010			Dr. Marcus Schreyer (Max Bögl)
Build IT in Berlin	Web articles (press release)	Berlin, Germany		16-20.02.2010	Bauhaus-Universität Weimar auf der Build IT 2010 (Forum für Wissenschaft, Industrie und Wirtschaft)	published	Bauhaus Universität Weimar; Hochtief

Bouw & ICT Beurs 2010	Dissemination of flyers	Utrecht, NL		17-18.03.2010			TNO
ICT Delta 2010	Dissemination of flyers	Rotterdam, NL		18.03.2010			TNO
"Client Requirement Workshop" (in scope of T7.2)	Workshop	Netherlands		May 2010			TNO; J-CDS
"BIM collaboration hub-basics" (in scope of T7.2)	Workshop	Stockholm, Sweden		May 2010			Eurostep
Strategy meeting with the Bavarian Building Industry Association	Workshop	Neumarkt, D		11.06.2010			Dr. Marcus Schreyer (Max Bögl)
MEFISTO	Workshop						Max Bögl
ForBau	Workshop						Max Bögl
5D-Initiative	Workshop						Max Bögl
BuildingSmart conference	Dissemination of flyers at Copenhagen School of Design and Technology	Copenhagen, DE		08.09.2010			J-CDS
Symposium - Wie wähle ich die passende Vergabeform für ein Bauprojekt? - Einflussfaktoren, Entscheidungskriterien, Vorurteile	Dissemination of flyers, Discussions about InPro	Dortmund		15.09.2010			P3
Synchro-Newsletter	Reference		english	2010	Internet reference		Hochtief (not author but contributor)
InPro group on LinkedIn	Reference		english	2010	professional networking site LinkedIn: group created for InPro consortium and cluster members		set up by J-CDS, membership and contributions from all partners and consortium members welcome

Table 3.4: Other dissemination activities from InPro partners during the four years of research

4 INPRO CLUSTER

In order to motivate companies to follow and participate in the InPro research work and support the first step to a transformation of the European construction industry, the *InPro Cluster* was created during the four years of the project being considered as one of the most important channel of dissemination.

Figure 4.1 shows the cluster member status during the four years of the project. The number of members has risen sharply especially in project year 3 and 4 to an actual status of 78 members. The InPro Cluster consists of a high variety of members from all different countries and categories (see figures 4.2 and 4.3). Among the 78 members from around the world, 24 are from Germany and 17 from Sweden. The others are from the Netherlands, the United Kingdom, Australia and 12 other countries. A large part of the category of the members represents the research institutions including universities, with 23 members.

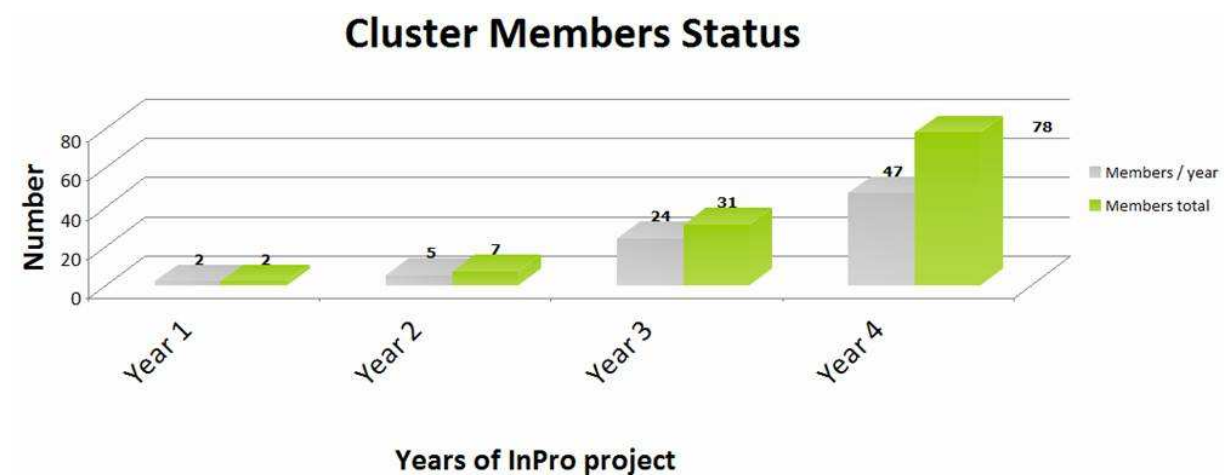


Figure 4.1: InPro Cluster Members status during the four years of the project

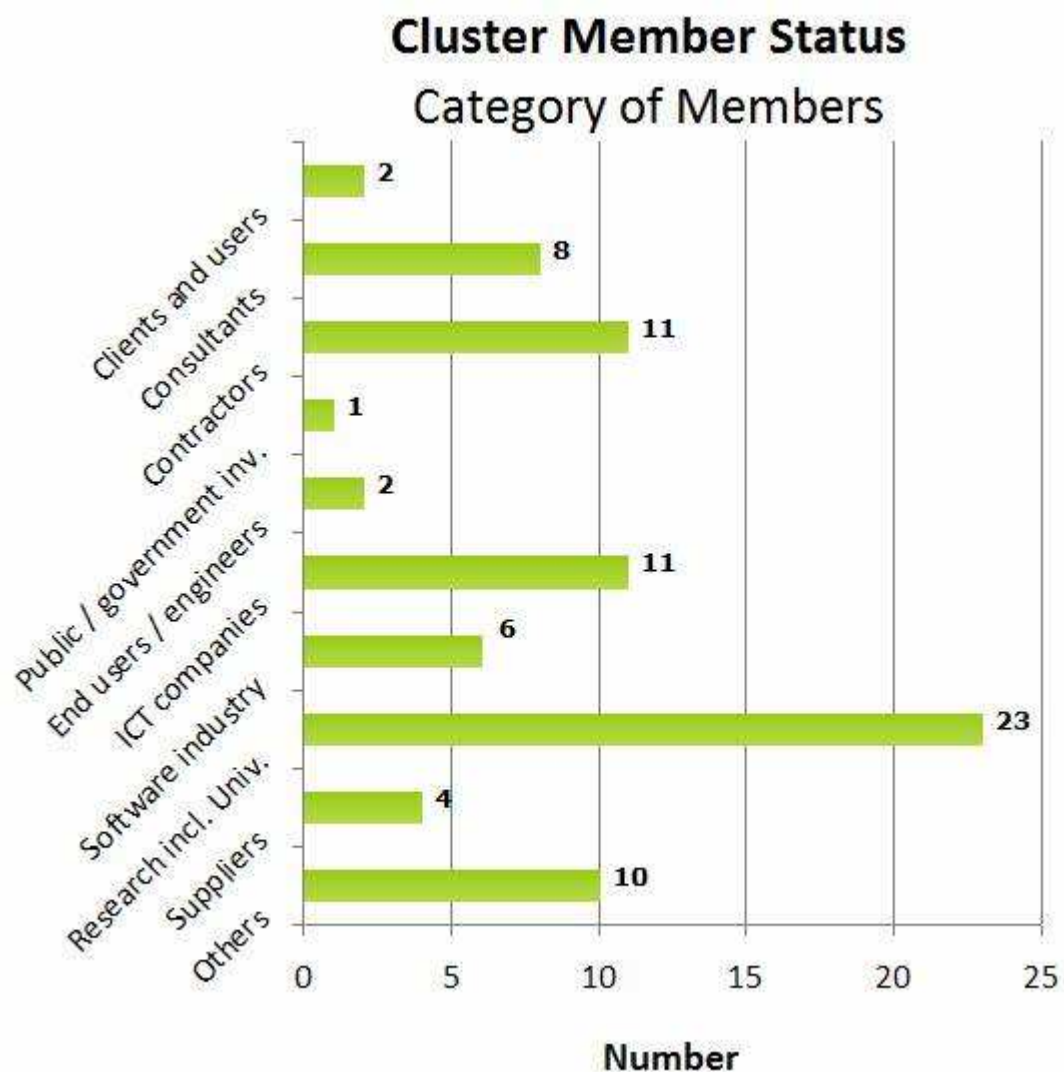


Figure 4.2: Categories of InPro Cluster Members

Countries		Members
	Australia	3
	Bulgaria	1
	Denmark	1
	Finland	3
	France	2
	Germany	24
	Korea	1
	Netherlands	8
	Portugal	3
	Russia	1
	Slovenja	3
	Spain	1
	Sweden	17

	Switzerland	2
	Turkey	2
	UK	4
	USA	2

Figure 4.3: Nationality of InPro Cluster Members

With the *InPro Cluster* it was possible to gather interested organizations and companies from all over the world. The main goal of the *InPro Cluster* was to increase the network of contacts in the European construction field. In this way, several target groups (e.g. client, consultants and contractors) were able to see the benefits of the new way of working proposed by InPro. For more information about *InPro Cluster* see D43 "InPro Cluster".

Cluster members were regularly updated on research results and achievements through the InPro Newsletter (see Figure 4.4). So all cluster members were informed about current project results, InPro related external news and several interesting events regarding InPro.



OPEN **I**NFORMATION ENVIRONMENT
FOR KNOWLEDGE-BASED
COLLABORATIVE **P**ROCESSES
THROUGHOUT THE LIFECYCLE OF A
BUILDING

Newsletter

Dear Cluster Members,

Welcome to the InPro Introduction Newsletter,
On behalf of InPro's team, I send you an overview of our project.

Content:

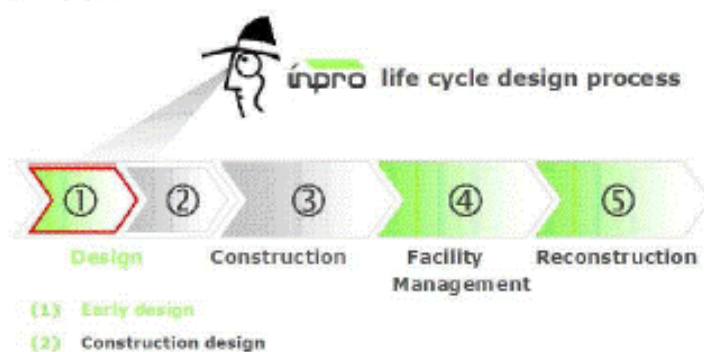
- About InPro
- Vision and Objective
- InPro's Structure
- Results and Publications
- Your Benefit as Cluster Member
- Your Input and Support
- Contacts

About InPro:

InPro is an industry-led collaborative research project aiming at the early design phase of a building. It is part-funded by the European Commission under framework program 6. It is a four-year project that started 1 September 2006. 18 partners are involved, representing seven countries across Europe.

Vision and Objective:

Our Vision:



InPro will develop and establish a model-based and collaborative way of working in the early design phase, considering the whole lifecycle of a building.

Figure 4.4: Cluster "Welcome Newsletter"

5 SUMMARY

“Dissemination is defined as a planned process of providing information on the quality, relevance and effectiveness of the results of programs and initiatives to key actors”. (Glossary at European Commission website)

As explained in chapter 2, for an effective dissemination of InPro results, the target audience was identified, a clear message for audience was developed and the messengers of the message were clearly defined (all InPro partners).

Dissemination of results was made in the course of several activities such as presentations, conferences, public documents, etc., which are listed in chapter 3.

Companies were motivated to follow and participate in the InPro research work creating the most important channel of dissemination, the *InPro Cluster*, whose features are presented in chapter 1.

Dissemination is an essential part of a research process that should evolve from the first day of a research project till the end of it. In the case of the InPro project, figure 5.1 shows that year by year the number of dissemination activities from InPro partners increased significantly and occurred as research results became available. The start-up appears clearly in the first year of research. Figure 5.1 shows the strongest growth in year three and especially in year four with 70 dissemination activities.

Figure 5.2 represents the types of dissemination activities. InPro were presented on many different international conferences of relevance to the research area. In addition to participation in conferences, presentations were held at a variety of events. Furthermore newspapers and journals informed about the Inpro project and workshops were held to discuss specific research results and receive input and comments from outside the project.

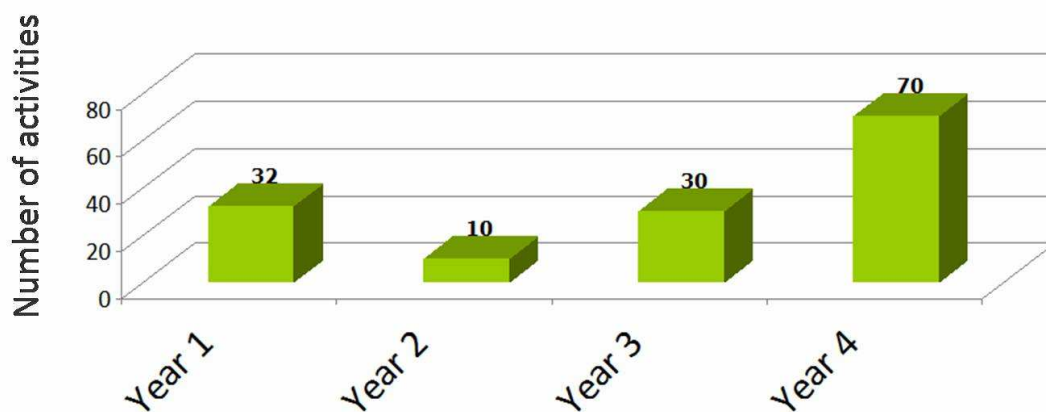


Figure 5.1: Dissemination activities status

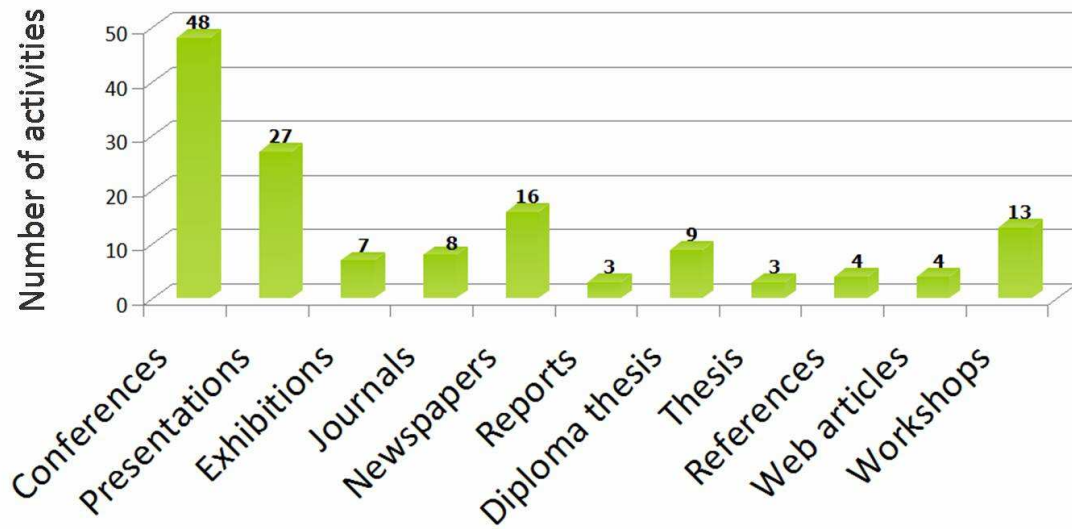


Figure 5.2: Types of dissemination activities

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