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Information Society and Media Directorate –

General



Energy-Positive Local Cluster Dissemination Platform

SmartCoDe

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Author:	Peter Neumann
Lead Beneficiary No.:	1
Lead Beneficiary:	ECN



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1 Introduction

To foster the integration of the SmartCoDe results into global concepts, an energy-positive local cluster Electronic Dissemination Platform (EDP) is developed during the project's life time. The portal will serve as a centre of excellence, where all parties relevant to the "Energy Efficient Buildings"- topic can connect and exchange knowledge. SmartCoDe's Exploitation and Dissemination Manager will actively foster the integration of related web portals, groups, companies, and research projects into this network, while special attention is paid to the aspect of interdisciplinary knowledge transfer. By including a wide spectrum of interested groups, the dissemination platform lays the foundation for de-facto standards in power management strategies and methods also beyond the project's life-time.

The concept is supported by Expert Coordination Workshops, Press Releases and participations to other related conferences to sensitise the public community to the overall goals.

The web-portal of D-5.1.1 delivered in M3 has been the first step to SmartCoDe's EDP and has addressed the basic features:

- Home Page
- Project Overview:
 - o Abstract
 - o Objectives
 - o Impact
- Partners
 - o Project Partners
 - o Associated Partners
- Events
 - SmartCoDe Events
 - o External Presentations
- Press
 - o SmartCoDe Press Releases
 - o SmartCoDe in the Press
- Analysis

This document describes the web portal's functionality that complement above concept:

- Authenticated User
- Dedicated Non-Project Partner User Group & Role Structure
- Public Download Area
- Content Distribution driven by User Interest
- Animation
- Online Demonstrator Interface
- Event Management Support
- Forums
- Survey / Poll Functionality
- Newsletter



2 Authenticated User

The knowledge of a user's identity is mandatory for the portal to provide additional services like newsletters or polls. To attract a growing public community to the project, these services are required to disseminate project achievements in an optimal way.

The CMS underlying the SmartCoDe Web Portal offers the possibility of highly complex user role management whereas the *Authenticated User* role can be regarded as a generic role that is defined to grant access to specific functions and services of the EDP. *Authenticated Users* are persons that have registered to the portal (i.e. they have a known identity) but do not have access to any of the internal SmartCoDe areas. Further roles can be assigned to the portal user in an add-on manner.

In Chapter 9, *Forums*, it is shown how the role of *Authenticated User* can be used effectively by granting access to a dedicated (secure) area of the SmartCoDe portal to non-project partners.



3 Dedicated Non-Project Partner User Group & Role Structure

A system of portal groups and roles have been set up to enable the separation of users which are not project partners into several classes of users. The first group that has been implemented (which serves as a proof-of-concept) is the *Associated Partner* role (please see also chapter 9). With the help of this construct, dedicated confidential items can be made available to a certain class of users (i.e. a non-project company that is interested in exploiting project results) while leaving the public out. Confidentiality of content can be easily administered.

This method allows to establish a web portal where a large user community can be supported while visibility / accessibility of contents is provided in a fine-grained manner depending on the project's requirements. Goal is to target web content, functions, and services to specific user needs / demands and thus making the SmartCoDe dissemination platform more attractive. Figure 3.1 shows the roles currently implemented.

oles Iles allow you to fine tune the security and ivileges as defined in user permissions. Ex Iministrator and so on. In this area you wil	administration of Drupal. A amples of roles include: an I define the <i>role names</i> of t	A role defines a gr onymous user, au he various roles. ⁻	roup of users that have certain uthenticated user, moderator, To delete a role choose "edit".	Press Press Releases SmartCoDe in the Press
lame	Licer level	Onerations		Library
	050110001	locked	edit nermissions	 Data Security Energy Energating
uthenticated user		locked	edit permissions	 Energy Management
dmin		edit role	edit permissions	 Renewable Energies
ssociated Partner		edit role	edit permissions	 System Integration
company Contact Person		edit role	edit permissions	 System Modeling
company Member		edit role	edit permissions	
orum Moderator		edit role	edit permissions	Bulletin Board
				- Ballean Board
industry Partner		edit role	edit permissions	
Project Coordinator		edit role	edit permissions	
Project Manager		edit role	edit permissions	
Project Member		edit role	edit permissions	
Project Office		edit role	edit permissions	
Reviewer		edit role	edit permissions	
Sub-Contractor Contact Person		edit role	edit permissions	
Sub-Contractor Member		edit role	edit permissions	
		edit role	edit permissions	
Work Package Manager				
Nork Package Manager Nork Package Member		edit role	edit permissions	

Figure 3.1: SmartCoDe Specific Roles



The *role* structure described above is complemented by the *group* structure. Both, *role* and *group* structures implement a matrix that allows for a very accurate definition of the status of a user. Figure 3.2 shows the SmartCoDe specific group structure.



Figure 3.1: SmartCoDe Specific Groups



4 Public Download

The SmartCoDe dissemination platform does not provide a central download area, but download functionality in connection with the relevant content. Providing central download areas have the disadvantage, that huge amounts of data will be presented to the user, often only to be distinguished by the file name, without sufficient means to get information on file contents.

The procedure applied here enables the user to have access to downloads in the context of the respective content of a page, therefore providing means to connect filename with overall context of the file's content. Figures 4.1 / 4.2 show the concept for the publication menu item.

July -			
Smart De	Home		
Search this site:	Publications Create new Publication		
SmartCoDe Public	Title	Author(s)	Publication Date
 Abstract 	An Architecture for Energy Management in Smart Appliances	Grimm, Christoph	2010/11/16
Objectives	Smart Energy Management	Schmidt, Fritz	2010/11/16
Impact	Security Considerations for SmartCoDe Network	Hájek, Juraj	2010/11/16
 Project Partners Associated Partners 	Building Simulation and Control	Dr. Gerhard Zucker	2010/11/16
 Publications Events Contact 	Global Energy Perspectives and the Role of New Technologies	Prof. Dr. Nebojsa Nakicenovic	2010/11/16
Imprint	Electric Energy Storage in Smart Buildings	Lenz, Bettina	2010/11/16
FAQ & Help	Energy Forecasting for Distributed Generation in Local Energy Neighbourhoods	Bertényi, Tamás	2010/11/16
nternal Documents Reports Templates Publications	A Smartcard based approach for a secure energy management node architecture	Mahlknecht, Stefan Damm, Markus Grimm, Christoph	2010/07/16
Presentations	Decentralised Small Scale Wind Energy	Bertényi, Tamás	2010/06/25
Deliverables Milestones	Smart Control of Demand for Consumption and Supply to enable balanced, energy-positive buildings and neighbourhoods	Schmidt, Fritz Dan Hildebrandt	2010/06/08
Project Management			C



Smart De	Home	
Search this site:	A Smartcard based approach for a secure energy management node architecture View Edit Outline Devel	Press Press Releases
SmartCoDe Public	Author(s): Mahiknecht, Stefan; Damm, Markus; Grimm, Christoph;	 SmartCoDe in the Press
 Abstract Objectives Impact Project Partners Associated Partners Publications Events Contact Imprint FAQ & Help 	Future buildings and neighborhoods are expected to combine a manifold of Energy using Products ("EuP") ranging from electrical lighting to HVAC with locally available renewable energy sources and energy storages. Until now, advanced techniques for energy management are not yet applicable in an economically reasonable way in the smaller entities like in energy-positive buildings and neighborhoods. The EC FP7 project SmartCoDe is trying to enable a low cost application for demand side management and smart metering in private homes and small commercial buildings and neighborhoods. A new system architecture for secure wireless energy management nodes that specifically considers the requirements of Energy using Products in homes/offices is developed. The focus is the development of an inexpensive wireless System in Package (SiP) solution that allows to build up a fine grained infrastructure of wireless connected Energy using Products. The proposed architecture is a smartcard based solution which is scalable, highly secure, cheap and does not complicate node integration. Publication Date: 2010/07/16	Library Data Security Energy Forecasting Energy Management Renewable Energies System Integration System Modeling
nternal Documents Preports Templates Publications Presentations	Location of Publication: INDIN 2010, Osaka Keyword(s): Energy Efficiency; Energy Management; Security; Semiconductors; System Design; Research/Education; SiP; Download(s): I Full Conference Paper	WP Overview Bulletin Board WP1: Energy Managemer WP2: Networking EuPs

Figure 4.2: Specific Publication with Download



5 Content Distribution Driven by User Interests

The concept of the Electronic Dissemination Platform (EDP) provides measures for the classification of data (see also chapters 2 and 3). On the other hand, chapter 6 of the SmartCoDe EPO deliverable D-5.7 defines the SmartCode user profile, which is implemented in the database that is accessed by both, the EPO and the EDP.

Within SmartCoDe, web content is defined to be available on the basis of group membership, i.e. adding group right to users allows visibility of additional contents. In addition, the SmartCoDe EDP shall enable the user to choose to only see contents specified via user profiles. Figure 5.1 shows the user profile sub-section for the specification of expertise / interest. Pleas note that due to the complexity of the task this web portal feature is still under development.



Figure 5.1: User Profile Expertise / Interest Sub-Section



6 Animation

To effectively explain the project's objectives to the public community it often helps a lot to make use of pictures / film sequences. The SmartCoDe project will provide an animation on what the project is about and how the various project parts fit together to support the EU's 2020 energy objectives. ECN is currently working together with QR on its specification (the "animation script"). The animation is close to finalisation and will then be integrated within the SmartCoDe Dissemination Portal in early 2011. Figure 6.1 shows the animation script, which is a kind of Implementation Specification for an animation designer.

Main Message

- Using energy at times of peak consumption will be more expensive in the future
- The customer end-user can gain a monetary benefit from shifting their energy consumption to times of low-demand/high availability
- This energy use management can be executed automatically via Demands Side Management (DSM)
- The customer's advantage is maximised if DSM is combined with Local Energy Production (LEP)

<u>Script</u>

Blue Screen.

Title: "SmartCoDe".

Sub-title: "Smart Control of Demand for Consumption and Supply to enable balanced, energy-positive buildings and neighbourhoods".

Fade out.

Opening scene:

Three Power Plants on the left, two of them are producing smoke showing that they are operating, energy transmission line runs from power plants to house on the right. Zoom towards house. The power plants and transmission lines are still clearly visible either to the side or through the kitchen window. We can now see inside the kitchen of the house a kettle, a refrigerator, and a washing machine.

Voice:

"The energy demand of end users varies greatly."

End user appears and switches on washing machine:

- more smoke appears from power plants
- a €-counter at the house, located where the power line enters the house, starts to count in red
- the thickness of the transmission line increases to indicate power flow or else dots "flowing" along it indicating power flow



Voice:

"Matching this varying demand of the end user at times of peak consumption is already expensive and will become more so in the future."

Customer switches on kettle:

- the third power plants starts up with smoke pouring out of its chimney, too
- the €-counter spins even fast and glows an ominous red
- the transmission line gets even thicker, indicated even more power flow

Image is reset to the opening sequence with kitchen, no appliances running, and only two power plants operating.

Voice:

"Demand Side Management enables automatic time-shifting of local energy consumption to match availability"

- a box with SmartCoDe symbol between €-counter and the house is high-lighted when narrator says "demand side management"
- a smaller matching box is seen on the washing machine
- a wireless signal symbol (wave fronts) symbol indicate that the two units are communicating to each other
- washing machine is turned on
- when the kettle is turned on, the washing machine machine goes into a paused state

Voice:

"If coordinated with the national energy network, this can translate into a financial benefit for the end-user".

- there is no additional smoke coming from the power plant
- there is no increase in thickness of the transmission lines
- the €-counter slows down or even changes colour
- the end-user smiles (or not)

Voice:

"Things become ever more advantageous if local energy production, such as a small-scale wind turbine, is available"

 picture pans again to show a QR5 turbine with a SmartCoDe node at its base on the roof of the building (or next to it), spinning slowly

- a wire is running from the turbine to the house, indicating power flow from the turbine
- €-counter spins slower still, transmission lines from power plant get thinner still
- after a few seconds, as the wind picks up, turbine starts spinning faster, the turbine's wire gets thicker
- the SmartCoDe node at the base of the turbine signals that it is producing more energy
- the washing machine gets the signal and turns on again
- nothing changes at the counter or power plant or transmission lines

Picture pans and zooms further to show the silhouettes of neighbouring houses.

Voice:

"The varying energy demand of the end-user and their neighbours can now be partially met with local energy production."

- wind increases further, turbine spins faster
- the neighbours use more energy maybe more of their lights turn on or some appliances start humming/vibrating to indicate that they are operational
- €-counter in house starts turning backwards and turns green
- power is seen to flow from our house to neighbour's house
- no increase in smoke from power plant

Closing Screen:

Blue Screen showing SmartCoDe logo and the EU and FP7 logos

Text:

SmartCoDe is a 7th Framework Program (FP7) project funded by the European Commission

7 Online Demonstrator Interface

The dissemination platform will integrate the interface to the demonstrator installation in Vienna as described in Appendix I of the Grant Agreement. A near-real time data transmission will deliver a video stream from the wind turbine as well as energy generation / consumption data from the demonstrator hardware, both located at the Buchberg location in Maria Anzbach (Austria), to the dissemination platform at edacentrum GmbH (Hannover, Germany).

Since the setup of the demonstrator incl. wind turbine is scheduled for Q1 2011, demonstrator online analysis data and video stream will not be available until the actual demonstrator launch. First results are expected to be available at 6/2011. Preparations for web-side inclusion however already are in progress.

Figure 7 below shows the streaming video block from the web camera that has been implemented within the SmartCoDe portal home page. For test cases it currently shows the

office door of the SmartCoDe project coordinator at the edacentrum site. Please note that the view displayed below is only available for the SmartCoDe the admin role, i.e. it is not available for the public.

Home Logout		
141		
6 6		_
SmarrDe		
Search this site:	Welcome to SmartCode	Press
Search	Welcome to omatoode	 Press Releases
SmartCoDe Public	Future buildings and neighbourhoods are expected to combine a manifold of Energy using Products ("EuP")	 SmartCoDe in the Press
	ranging from electrical lighting to Heating, Ventilation, and Air Conditioning (HVAC) with locally available renewable	
 Abstract 	energy in such a local grid would enable customers to participate in the energy market and even contribute to the	
 Objectives 	stability of the power grid. The problem is that such an energy management requires fine grained infrastructure	
 Impact 	and expensive hardware.	
 Project Partners 	Road more	Librany
 Associated Partners 	Neau more	
 Publications 		Data Security Decarge Forecasting
° Events	SmartCoDe Expert Cooperation Workshop 2010	 Energy Forecasting Energy Management
 Contact 	2010-11-16 in Vienna, Austria	Penewable Energies
° Imprint		 System Integration
 FAQ & Help 	The world must de-carbonize its energy production and consumption. But how? How can we achieve the necessary	 System Modeling
	improvements in energy efficiency? How can we give consumers more visibility and control over consumption? How can	-,
Internal Documents	local - often, unpredictable - renewable energy sources schedule their output for maximum efficiency? How can we	Webcam
° Reports	optimize the mix of local energy production and the main power grid for maximum efficiency? How do we manage	
 Templates 	energy consumption at the building level – and even at the level of individual nome appliances and office equipment?	TOTAL STATE
 Publications 	Read more	
 Presentations 	SmartCoDe Interview on SCDsource	
 Deliverables 	Published: Mon. 2010/03/08	
 Milestones 	Found at: SCDsource	
	Consortium to develop smart local grid management SoC/SiP and infrastructure concept	
Project Management	Interview with Bill Murray, Editor-in-Chief, Tech Source Media, Inc., published at SCD source	
 Action Points 	And new manufaction manage cultural realition of the reality and published at occoords.	WP Overview
° Meetings	Download:	 Bulletin Board
 Mailing Lists 	d SmartCoDe on SCDsource	 WP1: Energy Management
 Financial Data 		 WP2: Networking EuPs

Figure 7.1: Web Cam Streaming Video at SmartCoDe Home Page

Figure 7.2 shows test data as it is currently provided by the energy management unit installed at the ennovatis Almersberg location in Austria. Data displayed here however focuses on solar energy generation in contrast to the respective energy consumption data. For the SmartCoDe demonstrator location this will be enhanced by wind turbine energy data. Figure 7.3 shows first analysis data of wind energy generation in contrast to solar energy generation. Please note the tendency for strong wind during times of low solar radiation.

Figure 7.2: Solar Energy Generation in Contrast to Energy Consumption

Figure 7.3: Solar Energy Generation in Contrast to Wind Energy Generation

These measures are set up to demonstrate to the public society the benefit of (near-real time) "Awareness" of local energy generation and consumption of buildings and neighbourhoods, even under remote conditions. The final SmartCoDe goal is to demonstrate that energy consumption can "follow" energy generation, at least to some extend, which simply means that the implemented energy management control structures would succeed in re-scheduling energy consumption on the basis of energy availability.

8 Event Management Support

To support SmartCoDe events, a set of functions and services will be made available to the potential attendees. Actual administrative handling will be structured in the following way:

8.1 Web Form Registration

- Online registration
- Administration of attendee data
- Administration of event dates
- Statistical analysis

8.2 Web Presentation

- Paper upload functionality
- Paper download functionality
- Provision of maps

8.3 Content Distribution

- Automatic Conference Registration Acknowledgement (to user)
- Automatic Conference Registration Details (to conference administrator)
- Event newsletters

8.1 Web Form Registration

Figure 8.1.1 shows the entry page of an online registration form. Text fields are pre-filled with user profile data if the user is logged-in on the web portal, otherwise they are left empty and have to be filled in manually.

Home Logout		
141		
Smarth		_
Undride	Home > Groups > edacentrum GmbH	
Search this site:	SmartCoDe ECWS Registration View Edit Webform Outline Results Devel	Press
SmartCoDo Dublia	You have already submitted this form. View your previous submissions.	 Press Releases SmartCoDe in the Press
· Home		
° Abstract	Wed, 2010/09/08 - 15:31 — Neumann, Peter	
 Objectives Invest 	Unline SmartCoDe Expert Cooperation Workshop Registration	
 Impact Project Partners 	Title:	Libran
° Associated Partners	First Name: *	 Data Security
Publications Support	Peter	 Energy Forecasting
 Contact 	Family Name: *	 Energy Management Descurption
° Imprint		 System Integration
° FAQ & Help	company: * edacentrum GmbH	° System Modeling
Internal Documents	Company VAT ID number:	
° Reports	Company VAT ID pumber if left onen you will be charged the conference for alus VAT due for the second we up to the	Bulletin Board
· Templates	Company with to number, in reliciopen you will be charged the contenence ree plus with due for the respective vende location.	 WP1: Energy Management
 Publications Presentations 		 WP2: Networking EuPs
 Deliverables 	Address: *	 WP3: IC Design WP4: Demonstrator
° Milestones	Schneiderberg 32	 WP5: Dissemination
Project Management	ZIP/City: * 30167 Hannover	° DoW
° Action Points	Country: *	
° Meetings	Germany	
 Mailing Lists 	Dhaper	
 Financial Data Data 	+49 511 762 19 383	
 Ressources 	Fax:	
neumann	+49 511 762 19 695	
My account	e-mail: * Ineumann@edacentrum.de	
 Create content Administer 	Invoice Address: Company:	
° Log out		
	Invoice Address (if different)	
ICT-2009-247473	Company VAT ID number, if left open you will be charged the conference fee plus VAT due for the respective venue location.	
	nau (55).	
Who's online	Invoice address (if different)	
There are currently 1 user and 2 quests online	ZIP/City:	
Online users	Country:	
 Neumann, Peter 		
Development	Registration Details: *	
 Devel settings 	 Regular Participant (SU EUR) C Speaker (free of charge) 	
Empty cache Europete RUB Carda	C Partner / Associated Partner (free of charge)	
 Execute PHP Code Function reference 	© Press (free of charge, legitimation required)	
 Hook_elements() 	Payment: O Payment by bank transfer (you will receive an invoice within the next days)	
PHPinfo() Bohuild monut	C Payment by credit card (you will be forwarded to the secure page of B&S Card)	
 Reputit menus Reinstall modules 		
 Run cron 	Submit	

Figure 8.1.1: Web Form Registration

All registration data is kept within the internal mySQL database. Figure 8.1.1 shows an overview of the total registrations of one registration form. Please note that data shown in the picture are pure test data since the online reservation functionality was not used for the first SmartCoDe Expert Cooperation Workshop because the solution was not fully verified prior to the workshop, end of September 2010.

Home Logout	_				
Smart De	Home > SmartCoDe ECWS Regist	ration			
Search this site:	SmartCoDe ECWS Re	gistration View Edit	Webform Outline	Results Devel	Press • Press Releases
SmartCoDe Public		Table Bownload Clear			• SmartCoDe in the Press
Home	Showing all results. 8 results t	otal.			
 Abstract 	#A Submitted	User	IP Address	Operations	
Objectives	2 2010/09/09 - 10:19	Neumann, Peter	192.168.7.207	View Edit Delete	
Impact	3 2010/09/10 - 10:05	Wahl, Susanne	192.168.7.206	View Edit Delete	
Project Partners	4 2010/09/10 - 10:28	ZTest, User02 First Name	192.168.7.206	View Edit Delete	Library
Associated Partners	5 2010/09/10 - 11:21	Admin, Drupal	192.168.7.206	View Edit Delete	 Data Security
Publications	6 2010/09/15 - 15:38	Neumann, Peter	192.168.7.207	View Edit Delete	 Energy Forecasting
Events	7 2010/09/15 - 16:05	Admin, Drupal	192.168.7.207	View Edit Delete	 Energy Management
Imprint	8 2010/09/15 - 16:29	Sperber, Maren	192.168.7.207	View Edit Delete	 Renewable Energies
FAQ & Help	9 2010/10/01 - 10:29	Admin, Drupal	192.168.7.206	View Edit Delete	 System Integration System Modeling

Figure 8.1.2: Registration Overview

Registration details can be downloaded as tables (free text / MS Excel), see 8.1.2.

Home Logout		
Smart De	Home > SmartCoDe ECWS Registration	
Search this site:	SmartCoDe ECWS Registration View Edit Webform Outline Results Devel	Press Press Releases
SmartCoDe Public		 SmartCoDe in the Press
° Home	Export format:	
 Abstract 	O Delimited text	
 Objectives 	C Microsoft Excel	
° Impact	Delimited text format:	
 Project Partners 	Tab (\t)	Library
 Associated Partners 	This is the delimiter used in the CSV/TSV file when downloading Webform results. Using tabs in the export is the most reliable	 Data Security
 Publications 	you anticipate importing results.	 Energy Forecasting
 Events 	□ ▷ Select list options	 Energy Management
 Contact 		 Renewable Energies
° Imprint	 Included export components 	 System Integration
° FAQ & Help	Download	 System Modeling

Figure 8.1.3: Registration Detail Download

Smart

Statistical analysis of registration data is shown in Figure 8.1.4. Each field of the respective web form is displayed together with information if the field is left blank, if entered fields are user-entered values (in contrast to automatically filled in text) and the average length in words (excluding blank inputs).

Home Logout			_
111			
Smart De	Home > SmartCoDe ECWS Registration		
Search this site:	SmartCoDe ECWS Registration View Edit Webform Outline	tesults Devel Press	
Search		 Press Releases 	
SmartCoDe Public	Submissions Analysis Table Download Clear	 SmartCoDe in the Pre 	BSS
Home	Q responses		
Abstract	1 Title		
Objectives	Left Blank	8	
Impact	User entered value	0	
Project Partners	Average submission length in words (ex blanks)	0 Library	
Associated Partners	2 First Name	 Data Security 	
Publications	Left Blank	 Energy Forecasting 	
Contact	User entered value	 Energy Management 	
Imprint	Average submission length in words (ov blanks)	Renewable Energies	
FAQ & Help		System Integration Output Medaline	
		o System Modeling	
nternal Documents		W/P Overview	
Reports	oser entereu value	Bulletin Board	
Templates	Average submission length in words (ex blanks)	 WP1: Energy Manage 	emen
Publications	4 Company	 WP2: Networking Euf 	Ps
Presentations	Left Blank	0 VP3: IC Design	
Deliverables	User entered value	8 • WP4: Demonstrator	
Miloscolies	Average submission length in words (ex blanks)	1.88 • WP5: Dissemination	
roiect Management	5 Company VAT ID number	° DoW	
Action Points	Left Blank	6	
Meetings	User entered value	1	
Mailing Lists	Average submission length in words (ex blanks)	1.00	
Financial Data	6 Department		

Figure 8.1.4: Statistical Registration Analysis

8.2 Web Presentation

Figure 8.2.1 below shows the public page for the first SmartCoDe Expert Cooperation Workshop (ECWS) in Nov. 2010. The page is partitioned in announcement part, agenda part incl. links to biographies of speaker and presented paper, and organisational part.

Home Logout							
Smarthe							-
South this day	Home						
Search this site: Search	View Edit Outline Revisions Devel						Press Releases
SmartCoDe Public	2010-11-16 in Vienna, Austria						SmartCoDe in the Press
Abstract Objectives	The world must de-carbonize its energy production and consumption. But how? How can we achieve the necessary						
Timpact Project Partners Associated Partners Publications Events Contact	improvements in energy efficiency? How can we give consumers more visibility and control over consumption? How can local - often, unpredictable - renewable energy sources schedule their output for maximum efficiency? How can we optimize the mix of local energy production and the main power grid for maximum efficiency? How do we manage energy consumption at the building level - and even at the level of individual home appliances and office equipment? Just how do we implement intelligent demand management end smart metering and protect them from malicious hack attacks? And how do we implement building-level energy storage?						Library Data Security Energy Forecasting Energy Management
 Imprint FAQ & Help 	This wo wants a industry SmartCo	i better ur experts a De project	anyone who t is given by have to be a &D expert in	 Renewable Energies System Integration System Modeling 			
Internal Documents	areas ri direction	elated to i	increasing energy e	fficiency – and you can contribute ideas to fine	-tune the SmartCo	De project's	WP Overview
 Reports Templates Publications Presentations Deliverables 	Our two Nakiceni	a keynote ovic, a form	presentations are ner IPCC official and	given by prominent players in the climate/en Bettina Lenz, of the EWE Research Centre for En	ergy space: Prof. ergy Technology.	Dr. Nebojsa	Bulletin Board WP1: Energy Management WP2: Networking EuPs WP3: IC Design WP3: IC Design
Milestones	Agenu	<u>a</u>					WP4: Demonstrator
Droja at Managament	Start	Duration		Titel	Speaker		 WPS: Dissemination Dow
Action Points	8:30	0.10	edacentrum SmbH	Kegistration / Corree	P. Neumann /		
 Meetings Mailing Lists 	9.50	0.10	Vienna University	Global Energy Perspectives and the Pole of	Dr. C. Hansen	1	
 Financial Data Ressources 	9:40	0:45	of Technology Quiet Revolution	New Technologies Energy Forecasting for Distributed	Nakicenovic	Keynote Project	
	10:25	0:30	Ltd.	Generation in Local Energy Neighbourhoods	Dr. T. Bertényi	Paper	
P My account	10:55	0:30	Austrian Institute	Coffee		Invited	
Create content	11:25	0:30	of Technology	Building Simulation and Control	Dr. G. Zucker	Paper	
 Administer Log out 	11:55	0:30	ennovatis GmbH	Smart Energy Management	Prof. Dr. F. Schmidt	Project Paper	
	12:25	1:20		Lunch / Coffee			
	13:45	0:45	Next Energy	Electric Energy Storage in Smart Buildings	DrIng. B. Lenz	Keynote	
ICT-2009-247473	14:30	0:30	Ardaco, s.a.	Network	J. Hájek	Paper	
Who's online	15:00	0:30	Meona University	Coffee An Architecture for Energy Management in	Prof. Dr. C	Project	
There are currently <i>1 user</i> and <i>2 guests</i> online.	15:30	0:30	of Technology	Smart Appliances SmartCoDe - On the Way to a Miniaturised	Grimm	Paper Project	
 Neumann, Peter 	16:00	0:30	Austria AG	Wireless Sensor Node for Monitoring and Control of Appliances	T. Herndl	Paper	
Development	16:40	0:00	End		and an international		
Devel settings Empty cache Empty cache Execute PHP Code Function reference Hook_elements() PHPinfo() Rebuild menus Rainstall modules	Locati	on:	Vierina, Austria Hotel Mercure Wier Felberstrasse 4 1150 VIENKA - AUS Tel : (+43)1/9811 Fax : (+43)1/9811 e-mail: h5358@acc	r Westbahnhof TRIA 0 1930 or.com			
Run cron Session viewer			We have a continge Please use the term	nt of reduced hotel accommodations (89€per night plate for hotel reservations provided for download b	incl. breakfast, sing Now.	le room).	
 Theme registry Variable editor 			travel instructions: http://www.mercu	re.com/gb/hotel-5358-mercure-wien-westbahnho	f/iocation.shtml		
	Organ	iser;	edacentrum GmbH Schneiderberg 32 30167 Hannover Germany contact: Maren Sperber email: sperber@ed	acentrum.de			
	Downl	oad:	G SmartCoDe Wor Hotel Reservatio	kshop Registration Template in Template			

Figure 8.2.1: SmartCoDe ECWS Registration Page

Paper download functionality is not implemented central at one location but rather in context of the paper's topic. For example the presented paper is available via the link in the agenda (bold text 8.2.1, see also 8.2.2) whereas the hotel registration template is available in the organisational part of the page.

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, Co		
SmartDe	Home	
Search this site:	Building Simulation and Control View Edit Outline Devel	Press
Search		 Press Releases
SmartCoDe Public	Author/ - Dr. Carland Zushan	 SmartCoDe in the Press
	Addior(s): Dr. Gernard Zdoker;	
	Different tools for thermodynamic simulation of buildings are available today. By creating a model of the building	
Abstract	envelope, room structure, window areas we gain information about the building behavior, i. e. time constants for temperature changes, dead times and so on, adding the building systems to the model we can also simulate HVAC.	
 Objectives Impact 	systems, heater, ventilation chillers and the like.	
 Impact Derivati Destructor 		
Associated Determine	Inermodynamic simulation of buildings can be run in real-time, which allows us to take a look into the future, we can derive how a building will behave tomorrow, and test different control strategies without actually applying it to the	Library
Associated Partners Dublications	building and its inhabitants.	 Data Security
 Publications Sweets 		 Energy Forecasting
 Events 	The next step is to consider weather predictions: having an estimate on how temperature, humidity and sun radiation	 Energy Management
Contact	will be we can adjust the current control strategy to meet the given constraints, e. g. by starting to cool the building earlier in the morning, if a hot and suppy day lies ahead.	 Renewable Energies
	ounier in die menning in einer eine samt falle ines andean	 System Integration
 FAQ & Help 		 System Modeling
	Publication Date: 2010/11/16	
Internal Documents	Keyword(s): Energy Efficiency: Energy Management: Research/Education:	WP Overview
 Reports 	Download(s):	 Bulletin Board
 Templates 	d Building Simulation and Control	 WP1: Energy Management
 Publications 		 WP2: Networking EuPs
O Bracontations		

Figure 8.2.2: Paper Download Functionality

For the ECWS no maps have been provided. The example shown in figure 8.2.3 has been taken from the internal SmartCoDe meeting page to demonstrate this functionality.

Figure 8.2.3: SmartCoDe Internal Administrative Meetings: Maps

8.3 Conference Content Distribution

Distribution of content, namely registration confirmation to user and conference administrator have been implemented within the web portal. An automated registration confirmation is sent to the user as well as to the administrator (see Figure 8.3.1 and 8.3.2). In addition the user gets a confirmation web page after submitting the registration.

Figure 8.3.1: Automatic Conference Registration Confirmation Details (to conference user)

webmaster@fp7-smartcode.eu im Auftrag von SmartCoDe Coordinator [coordinator@fp7-smartcode.eu] Von: An: neumann@edacentrum.de Cc: Betreff: Form submission from: SmartCoDe ECWS Registration Submitted on Tuesday, 2010, October 5 - 15:05 Submitted by user: neumann Submitted values are: Title: First Name: Peter Family Name: Neumann Company: edacentrum GmbH Company VAT ID number: 15116134641 Department: Address: Schneiderberg 32 ZIP/City: 30167 Hannover Country: Germany Phone: +49 511 762 19 383 Fax: +49 511 762 19 695 e-mail: <u>neumann@edacentrum.de</u> Invoice Address: Company: Company VAT ID number: Address: ZIP/City: Country: Registration Details: Speaker (free of charge) Payment: Payment by credit card (you will be forwarded to the secure page of B&S Card) The results of this submission may be viewed at: https://www.fp7-smartcode.eu/node/387/submission/10

Figure 8.3.2: Automatic Conference Registration Confirmation Details (to conference administrator)

Newsletter functionality is described in chapter 11.

9 Forums

Forum functionality has been made available to registered SmartCoDe users. Figure 9.1 shows the forum used for secure knowledge exchange between SmartCoDe Associated Partners, who must not have access to other SmartCoDe internal pages, and SmartCoDe beneficiaries, who have full access to the internal area (please see also chapter 3 in this context). Forum can be set up for any specific topic. Main goal within SmartCoDe is to provide a secure room for discussions between non-project advisors and project members. It is currently not planned to set up public forums, however from the technical point of view this would be a straightforward process.

SmartCoDe Homepage + User Control Panel + 0 new messages + FAQ + Search + Members + Logout [neumann]						
Smart De						
Last visit was: 05 Oct 2010, 16:19 View unanswered posts View active topics		View unread po	It is cu osts View r	rrently 06 Oct 2010, 11:51 new posts View your posts		
Board index » Associated Partners » NextEnergy » Energy Storage			All times a	are UTC + 2 hours [DST]		
Energy Storage Mow Topic Page 1 of 1 [3 topics] ENERGY STORAGE			Unsubscrib	e forum Mark topics read		
Topics	Author	Replies	Views	Last post		
⊕ ⊕ ∅ ∅ Strategic Considerations for Energy Storage	tamasb	0	9	30 Jun 2010, 13:18 tamasb ⊕		
Hennlinien	Christian	2	11	25 Jun 2010, 16:08 neumann ⊕		
Welcome to the SmartCoDe Forum on Energy Storage	admin	0	30	17 Jun 2010, 14:36 admin ⊕		
Display topics from previous: All Topics 💌 Sort by Post time 💌 Descendi	ng 🔽 Go					
New Topic Page 1 of 1 [3 topics]						
Board index » Associated Partners » NextEnergy » Energy Storage			All times a	are UTC + 2 hours [DST]		
Who is online						
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New posts No new posts Announcement You can post new topics in this forum You can exply to topics New posts New posts No new posts						
[Administration Control Panel]						

Figure 9.1: SmartCoDe Forum on Energy Storage

10 Survey / Poll Functionality

A survey / poll functionality has been implemented to the Electronic Dissemination Platform that allows consulting of dedicated user groups, based on roles and rights assigned. Surveys and polls are important utilities to address two major issues:

- First, when setting up a web platform, one of the basic problems is that the provider of the platform is 'blind', i.e. since there is no direct user feedback, identification of user demands is tricky. User behaviour analysis (see figure 10.3) is one method to find out if the structure of the web portal is straightforward enough to lead the user to the information he / she is looking for. Surveys and polls are another method. Since the portal is based on authentication of users, the latter can be interrogated directly.
- Second, surveys and polls can be set up for the refinement of the project's objectives itself. The SmartCode project has a lot of interfaces to other research areas, so it might be necessary to fine-tune the project's objectives to optimally place it in the overall context of energy efficiency.

SmartCoDe survey functionality offers two different approaches: decision selection and decision ranking. Whereas the former offers the user to choose between several options, the latter offers the user to specifying a ranking of the provided decision options. For option ranking, different algorithms like *instant run-off, borda count*, or *condorcet* can be applied. Figure 10.1 shows decision selection and figure 10.2 shows decision ranking functionality using the *borda count* algorithm. Please note that the *decision selection* of figure 10.2 has already been closed while the *decision ranking* of figure 10.2 has still been open.

Due to the fact that until now no real SmartCode surveys have been issued both principles are shown on the basis of dummy polls.

112		
Smart De	Home	1
Search this site:	Choice of Colours 2 View Edit Results Electoral list Outline Reset votes Votes Devel	Press Press Releases
SmartCoDe Public Home Abstract Objectives Impact Srout Partners Associated Partners Events Contact Imprint Event Associated Partners Contact Dublications Events Contact Dublications Dubl	Wed, 2010/09/01 - 10:39 — Admin, Drupal Choose colours Current date: Fri, 2010/10/15 - 16:13 Opening date: Wed, 2010/09/01 - 10:38 Closing date: Thu, 2010/09/02 - 10:38 2 out of 3 eligible voters cast their ballot red 40% (2 votes) white	SmartCoDe in the Press Library Data Security Energy Forecasting Energy Management Renewable Energies System Integration
Internal Documents	green 20% (1 vote)	 System Modeling WP Overview
 Templates Publications Presentations 	20% (1 vote)	 Bulletin Board WP1: Energy Management WP2: Networking EuPs
 Deliverables Milestones 	This decision is currently closed. Add new comment	 WP3: IC Design WP4: Demonstrator WP5: Dissemination

Figure 10.1: Decision Selection Functionality

Figure 10.2: Decision Ranking Functionality

156 pages were viewed a total of 2,591 times

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Co	Content Performance										
Pag 2,5 % of 100 .	e Views ⑦ 591 Site Total: 00%	Unique Page ⑦ Views 1,456 % of Site Total: 100.00 %	Avg. Tin 00:0' Site Avg: (0.00%)	ne on Page 1:22 : 00:01:22	?	Bounce 39.53 Site Avg: (0.00%)	Rate ? % 39.53%	% Exit 14.94% Site Avg: 14.94% (0.00%)	?	\$ Inde: \$0.0 Site Av (0.00 %	x ? 0 g: \$0.00)
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1.	1. 🗗 /			495	283		00:01:37	48.96%	З	6.77%	\$0.00
2.	2. 🖉 /show/project_partners			160		82	00:00:43	10.00%	1	1.88%	\$0.00
3.	3. 🖾 /user			148		70	00:00:44	0.00%		6.08%	\$0.00
4.	🗗 /press/pressre	leases/pr1		133		22	00:02:08	66.67%		7.52%	\$0.00
5.	5. 🖉 /events			114		50	00:00:59	18.18%		7.02%	\$0.00
6.	6. I /show/associated_partners			110		54	00:01:10	35.71%	1	2.73%	\$0.00
7.	7. Prevents/externalpresentations/date2010			88		18	00:02:00	0.00%		5.68%	\$0.00
8.	8. 🖉 /abstract			79		51	00:02:30	0.00%		5.06%	\$0.00
9.	9. 🖉 /press/pressreleases			59		20	00:01:04	0.00%		3.39%	\$0.00
10.	10. 🖉 /objectives			57		49	00:00:46	66.67%	2	4.56%	\$0.00

Figure 10.1: User Behaviour Analysis

11 Newsletters

Periodical newsletters will be provided to the portal user while making use of the role structure described in chapter 3. Control of newsletter subscription for registered users has been implemented within the myAccount area via simple check-box mechanism.

When creating a new account users have the option to subscribe for the conference newsletter. Due to legal restriction, this option has to be off per default and must be chosen from a user explicitly (see Figure 11.1, lower part).

For already registered users subscriptions can be managed via the myAccount page.

For administrative purposes subscriber details can be exported to Microsoft Excell table formats. Exports can be specified in terms of active or inactive users for a selection of provided newsletters (see Figure 11.2).

New Newsletters can be added and existing ones can be administered (see Figure 11.3). Newsletter subscriber information can be filtered and displayed for administrative purposes (see Figure 11.4)

. . .

Professional User Data
Professional Status: *
Please enter your professional status.
Brief Bio:
Please enter a brief professional biography
Subscriptions
Press Releases The content of this field is kept private and vill not be shown publicly.
Newsletters
Select the newsletter(s) to which you wish to subscribe.
SmartCoDe newsletter
САРТСНА
This question is for testing whether you are a human visitor and to prevent automated spam submissions.
36 ^R HY
What code is in the image?
enter the therefore antierh in the Image.
Create new account

Figure 11.1: Newsletter Subscription

Home Logout		_
SmartDe	Home > Administer > Content management > Newsletters > Subscriptions	
Search this site:	Subscriptions List Mass subscribe Mass unsubscribe Export	Press
SmartCoDe Public	Status: *	 Press Releases SmartCoDe in the Press
° Home ° Abstract	□ Inactive users Subscriptions matching the selected states vill be exported.	
Objectives	Subscribed to: *	
 Project Partners 	SmartCoDe newsletter	Library
 Associated Partners 	subscriptions maching the selected newsletters will be exported.	 Data Security
Publications	Export	 Energy Forecasting
Events		 Energy Management

Figure 11.2: Newsletter Subscriber Export

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Home Logout				
Smart De	Home > Administer > Content management	> Newsletters		
Search this site:	Newsletters List newsletter	s Add newsletter		Press
	Newsletter name	Subscribers	Operations	· Press Releases
SmartCoDe Public				SmartuoDe in the Press
• Home	SmartCoDe newsletter	23	edit newsletter	
° Abstract				

Home Logout						
Had Co						
SmartDe	Home > Adminis	ter > Content management > Newsletters				
Search this site:	Subscriptio	ons List Mass subscribe I	Mass unsubscribe Export			Press
SmartCoDe Public Home Abstract	Subscriptio Subscribed Email addre	n filters to: All newsletters SS: Filter				Press Releases SmartCoDe in the Press
 Objectives Impact Project Partners Associated Partners 	Update opt Activate	ions Update				Library ○ Data Security
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• Contact	n cw@e	nnovatis.at	christian		edit	 Renewable Energies
Imprint EAO 9. Help	🗖 damm	@ict.tuwien.ac.at	Markus Damm		edit	 System Integration
- TAQ & Help	E F.Sch	midt@ennovatis.de	enofschm		edit	 System Modeling
Internal Documents	🗖 grimm	@ict.tuwien.ac.at	grimm		edit	M/D Ourselaws
 Reports 	🗖 hanse	en@edacentrum.de	hansen		edit	VVP Overview
 Templates 	🗖 Heinz	.Seyringer@zumtobel.com	heinz.seyringer		edit	Bulletin Board
 Publications 	🗖 hollei	s@ict.tuwien.ac.at	edgar_holleis		edit	 WP1: Energy Management WP2: Networking EuPs
 Presentations 	🗖 juraj.	najek@ardaco.com	hajek		edit	 WP3: IC Design
 Deliverables Milestones 	🗖 mahlk	necht@ict.tuwien.ac.at	mahlknecht		edit	• WP4: Demonstrator
	🗖 malba	sa@uns.ac.rs	malbasa		edit	° WP5: Dissemination
Project Management	🗖 martii	n.pfurtscheller@tridonicatco.com	Martin Pfurtscheller		edit	° DoW
	🗖 milan	lukic@uns.ac.rs	Milan Lukic		edit	
 Accorrections Meetings 	D miros	av.konecnv@ardaco.com	konecny		edit	
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Figure 11.4: Newsletter Details