Assistant for Quality **C**heck during **C**onstruction **E**xecution **P**rocesses for Energy-efficien**T** buildings

WP8 – Impact and Innovation Management

D8.14: Collaboration, Clustering and Cross-Disciplinary Cooperation

Deliverable Lead: ASC

Contributing Partners: All

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This deliverable is the first out of three to provide a report for task T8.6 - Collaboration, Clustering and Cross-Disciplinary Cooperation. It first defines the Strategy which is grouped in three phases: Inform, Teach and Inspire; Involve and Contribute; Sharing and Convincing. It lists the collaboration efforts underdone in the first year and allows an assessment of these efforts against defined KPI's.

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This deliverable is subject to final acceptance by the European Commission.

Disclaimer

Project Partners

ASC – Ascora GmbH, Germany	**ANS** – AnswareTech S.L., Spain
IDS – University of Liege, Belgium	**EPI** – EPITESSERA Architects, Cyprus
CYPE – CYPE SOFT, S.L., Spain	**INGL** – Ingleton Wood LLP, United Kingdom
FER – Ferrovial Agroman, Spain	**TIE** – TIE Nederland N.V., The Netherlands
EJD – Entreprises Jacques Delens S.A., Belgium	
IBP – Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V., Germany	**IEC** – Fraunhofer Italia Research Konsortialgesellschaft mbH, Italy

Executive Summary

In the ACCPET Project synergies with other stakeholders should be generated to increase the efficiency of the efforts spend in the context of the project. These synergies shall reach from higher visibility through common dissemination activities or utilising additional channels from other networks or collaborations, over organizing the foreseen workshop with other stakeholders together to increase the impact of these workshops up to integrate or be integrated in/from soft- and hardware solutions from third parties.

The reach these goals a strategy for the project runtime were created. The first phases of this strategy started with the beginning of the project were the consortium created first contacts to other stakeholders and inform and teach them the idea of the project. Each of the three phases defined by the strategy starts which the beginning of each year and last throughout the runtime of the project.

With the start of the next year the first phase will be further intensified, while in parallel the second phase started were other stakeholders will be involved on the one hand while on the other hand the consortium will contribute to the goals of other stakeholders. The main goal will be the first workshop.

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1 Introduction

ACCEPT – **A**ssistant for Quality **C**heck during **C**onstruction **E**xecution **P**rocesses for Energy-efficien**T** buildings – is a project funded by the Horizon 2020 Framework Programme of the European Commission under Grant Agreement No. 636895. The ACCEPT system will run on Smart Glasses and unobtrusively guide workers during the construction on site. This provides a standardized and coordinated process for all workers, ensuring that all benefits of energy-efficient building components are maintained

The ACCEPT system consists of three pillars:

- **Advanced Knowledge Transfer for Energy-efficient Construction**
- **Agile Project Coordination for Bridging Heterogeneities**
- **Adaptive Quality Assurance with Self Inspection-Features**

1.1 ACCEPT Project Overview

One of the major problems in the construction sector today is the potential loss of benefits of energy-efficient building components because of the lack of knowledge or bad implementation during the construction processes. The outcomes of the ACCEPT project will help to overcome this problem with the following applications as a holistic platform:

- The Construction Operator Assistant App (CoOpApp) running on Smart Glasses, which passively collects data and actively provides guidance to the worker on site during the building process. (Pillar I: Advanced Knowledge Transfer for Energy-efficient Construction)
- A Site Manager App (SiMaApp) running on a mobile device, which allows to remotely coordinate the working process as well as collect additional data on site by different sensors. (Pillar II: Agile Project Coordination for Bridging Heterogeneity)
- An interactive web-based Dashboard as a monitoring and quality assurance solution. The Dashboard will use self-inspection methods to determine important characteristics such as U-Values. (Pillar III: Adaptive Quality Assurance with Self-Inspection Features)

To achieve its goals, the project ACCEPT conducts original research from a user centred perspective and applies technologies from the fields of Ubiquitous Computing, Big Data, Cyber Physical Systems, the Internet of Services, and Human-Computer Interaction. For more information, please refer to the project website at http:/www.accept-project.com.

1.2 Deliverable Purpose, Scope and Context

The purpose of this deliverable is to define the collaboration strategy and to provide a feedback report on and the activities performed by the ACCEPT partners in the first year following this strategy. However, this document should be perceived as a living document.

1.3 Document Status and Target Audience

This document is listed in the Description-of-Action (DoA) as “public”, as it provides general information about the goals and scope of the ACCEPT project and can therefore be used by external parties in order to get according insight into the project activities.

While the document mainly aims at the project’s contributing partners, this public deliverable can also be useful for the wider scientific and industrial community. This includes other publicly funded research and development projects, which may be interested in collaboration activities.

1.4 Abbreviations and Glossary

A definition of common terms and roles related to the realization of the ACCEPT project as well as a list of abbreviations is available in the supplementary document “Supplement: Abbreviations and Glossary”, which is provided in addition to this deliverable. Further information can be found at http://www.accept-project.com.

1.5 Document Structure

This deliverable is broken down into the following sections:

- Chapter 1 provides an introduction for this deliverable including a general overview of the project, and outlines the purpose, scope, context, status, and target audience of this deliverable.
- Chapter 2 explains the general idea behind collaboration and clustering and identifies potential collaborators.
- Chapter 3 contains the collaboration and clustering strategy for the ACCEPT project.
- Chapter 4 list the achievements of the last year in regards to the collaboration activities as well as defines KPI as target to validate the success of the collaboration.
- Chapter 5 defines the reaction based on the monitoring described in chapter 4.
- Chapter 6 summarises this deliverable and defines the next steps for the collaboration in year 2.

2 Identify

Collaboration and Clustering among different stakeholders is the best way to optimize the use of resources. Allowing all collaborators to take profit from the common efforts, whilst at the same time the dissemination and exploitation opportunities are pushed. A win-win situation for all collaborators is created for their overall impact.

Stakeholders for collaboration are Association, clusters and forums already established and other research and innovation projects. In regards of the last type of stakeholders the, the following factors are identified as important for considering collaboration and clustering activities. These reasons are the basis for the first contact to the potential collaborators:

- Visibility – Broadcasted among several targeted communities
- Quality – Targets to participate in different clusters and foster exchange with other EU research projects (through mini-cluster approaches on bilateral approaches).
- Completeness – The project has specific objectives and scopes. However, through collaboration initiatives, projects with complementary development can augment their reach towards a more complete/marketable/exploitable solution by connecting components/services/strategies, thus strengthening the win-win situations for both sides
- Closeness – Targets with direct communications channels to the ACCEPT project.

In the context of the ACCEPT project, the Energy Efficient Buildings (E2B) related projects and initiatives (i.e., cooperation with other projects/activities in the same EC Unit) play an important role. To fulfil the expectations for such projects, a collaboration plan must be set up so that the different collaborative activities are perfectly orchestrated to reach the maximum profit for every collaborator, and profitable situations can be created.

The first step to establish the appropriate collaboration framework, consists of getting information about the different clusters and/or forums already established, which reach the audience ACCEPT is targeting or have similar technological approaches.

In short, to enable ACCEPT collaboration means “to spread the correct message and engage with the correct audience in an effective way”. Thus, the collaboration activity is a subset and orchestration between all other tasks of WP8.

2.1 Research and Innovation Projects

Table 1: Research and Innovation Projects

Name	Reason	Short Description	Discipline	Website
ALFRED	**Closeness**	**ALFRED – Personal Interactive Assistant for Independent Living and Active Ageing – is a project funded by the Seventh Framework Programme. It will allow older people to live longer at their own homes with the possibility to act independently and to actively participate in society by providing the technological foundation for an ecosystem consisting of four pillars:** **to allow older people to talk to ALFRED and to ask questions or define commands in order to solve day-to-day problems.** **Personalized Social Inclusion by suggesting social events to older people, taking into account their interests and their social environment.** **A more Effective & Personalized Care by allowing medical staff and (informal) caretakers to access the vital signs of older people monitored by (wearable) sensors.** **Physical & Cognitive Impairments Prevention with serious games that help the users to maintain and possibly even improve their physical and cognitive capabilities.**	**AAL**	**www.alfred.eu**
CREMA	**Closeness**	**CREMA aims at simplifying the establishment, management, adaptation, and monitoring of dynamic, cross-organisational manufacturing processes following Cloud manufacturing principles. CREMA will develop the means to model, configure, execute, and monitor manufacturing processes, providing end-to-end support for Cloud manufacturing by implementing real systems and testing and demonstrating them in real manufacturing environments.**		**www.crema-project.eu/**

SAM	**Closeness**	**SAM develops a Social Media delivery platform based on 2nd Screen and Content Syndication.** **What is SAM's innovation? Instead of users reaching for media-related content, it is the content that finds the users 2nd Screen through SAM's syndication approach.**		**www.samproject.net/**
Eudeco	**Closeness**	**Assisting European science and industry in understanding and exploiting the potentials of data reuse in the context of big and open data. The aim is to establish a self-sustaining data market and thereby increase the competitiveness of Europe.**		**www.data-reuse.eu/**
Sigularity	**Closeness**			
RESILIENT	**Completeness / Closeness**	**The RESILIENT project aims to design, develop, install and assess the energy and environmental benefits of a new integrated concept of interconnectivity between buildings, DER, grids and other networks at a district level. The RESILIENT approach will combine different innovative technologies including smart ICT components, optimized energy generation and storage technologies, also for RES, integrated to provide real time accounts of energy demand and supply at a district level and assist in decision-making process.**	**The ACCEPT team from INGL were invited to attend the Sustainable Places Conference 2015 by the FP7 RESILIENT project, which in conjunction with the FP7 PERFORMER project, acted as a host and organiser for the event.**	
PERFORMER	**Completeness/ Closeness**	**PERFORMER aims to develop an innovative and comprehensive solution towards improved building energy management & guaranteed energy performance.**		
Build2Spec	**Completeness/ Closeness**	**Build2Spec aims to meet EU energy efficiency targets for both new builds and retrofits by development of new and innovative on-site quality assurance tools. In order to achieve this ambitious objective, the**		**Build2Spec**

		Built2Spec project will deliver a new set of breakthrough technological advances such as: **3D and Imagery Tools** **Building Information Modelling (BIM)** **Smart Building Components** **Energy Efficiency Quality Checks** **Indoor Air Quality Tools** **Airtightness Test Tools with air-pulse checks** **Thermal Imaging Tools** **Acoustic Tools**		
INSITER	**Completeness / Closeness**	**INSITER aims to eliminate the performance gaps in quality and energy-performance between design and realisation of energy efficient buildings based on prefabricated components. In order to do this the project will utilise Augmented Reality which will connect the virtual model and physical building in real-time. Through this the project aims to develop self-inspection and self-instruction methodologies for construction workers and other stakeholders during the on-site working processes, supported by a range of hardware and software tools.**	**Another H2020 project, INSITER also attended the SP15 conference in Savona, Italy, where representatives from INGL were able to introduce themselves and ACCEPT to their project representatives through various networking and clustering events throughout the week. Build2Spec also attended the performance gap workshop, within which various projects including**	**http://www.insiter-project.eu/Main.aspx**

			ACCEPT were involved in discussing this prominent issue, and at which the ACCEPT team presented the project. http://built2spec-project.eu/	
Sketsha-Real-time Graphical Sharing	**Completeness**	**The SketSha software offers an electronic pen-box, filled with pencils, markers and highlighters for use on a graphic and digital surface displaying the usual working documents. This dematerialized pen interaction provides access to new space-time configurations: graphically interacting in a large group, sharing ideas in real-time and remotely on documents annotated together. When connected to the Internet, SketSha enables to hold meetings or work in virtual co-presence by sharing the same documents and allowing each participant to manipulate and annotate them in real-time**		**www.sketsha.be**
SpatioData	**Completeness**	**SpatioData is a research project aimed at the development of a collaborative platform for the effective sharing of building-related data and supporting different activities. SpatioData hosts every relevant information in the cloud and allows authorized people to access them rapidly and easily.**		**http://spatiodata.com/**
HOSOMI	**Closeness**	**HOSOMI is a research project aimed at the development of an architectural modeler that supports the life cycle of buildings with a modular construction system. The modeler assists the building composition process, the production of useful documents like drawing plans, quantities and specifications, and the evaluation of the thermal performance of the building at any phase of its design. It maintains a true BIM model of the building and not only a geometrical one.**		

TRANSGRESION	**Closeness**	**Tecnologías de Realidad Aumentada en eNtornos urbanos para la Provisión de Servicios, Gestión de REcursos y Suministro de InformaciON (TRANSGRESION) - Avanza Spanish Program: The general objective proposed in this project was the development of 1) Technology Augmented Reality and 2) support to social networks that enable citizens to fully exploit the possibilities of interaction with its environment in the broadest possible sense.**	**Augmented reality**	
SEMOSA	**Closeness**	**SEMOSA is an open innovation platform for ubiquitous mobile applications and service providers targeting European interoperability of trusted applications and services, such as m-payments.** **ITEA3**	**Turism**	**itea3.org/project/semosa.html**
STIMULO	**Closeness**	**The STIMULO project aims to build intelligent traffic management services through real-time prediction of the state of the transport system components (infrastructure, vehicles, goods, users ...). The main elements of the proposed infrastructure are the simulation model, data mining of heterogeneous sensors in real time, generating traffic indicators and use these indicators with collective intelligence techniques for the provision of services associated with the system transport to allow for greater efficiency and performance.**	**Security**	**http://innpacto-stimulo.org/**
MoSCHA	**Closeness**	**MoSHCA is a mobile health (m-Health) project designed to improve the patient-doctor interaction and control of chronic diseases. MoSHCA provides intelligent, user-friendly, medical and well-being decision-making embedded software, using medical sensors for mobile devices and information systems.**	**eHealth**	**itea3.org/project/moshca.html**
Energos	**Closeness**	**Technologies for automated and intelligent management of power distribution networks of the future - Energos is a research project for the development of knowledge and technologies that advance the implementation of smart distribution networks of electricity (Smart- Grids)**	**Energy**	**innovationenergy.org/energos/**

Imponet	**Closeness**	**Research, definition, design and development of new generation IT platforms for energy management and network optimization - Imponet is a research project for the specification, design and construction of a platform flexible and scalable software that enables the acquisition, processing and management with the different stakeholders of the large amount of energy measurement information , real-time measurements and quality wave will come from the deployment of smart meters and monitoring the distribution network.**	**Energy**	**www.innovationenergy.org/imponet/**
Nemo&Coded	**Closeness**	**The project involves identification, specification and development of the elements that will allow the implementation in the form of distributed dynamic energy efficiency services (recruitment efficiency) for low voltage electrical installations in industrial, commercial and IT areas server structure**	**Energy**	**innovationenergy.org/nemocoded/**
Mar2	**Closeness**	**MAR2 project designs, develops, sets up and starts up the Integral Management System for Responding to Crises (SIGE) for marine pollution events caused by accidental and non-accidental oil spill.** **The system will be able to run high resolution simulations of spills through the acquisition of real-time ocean-meteorological data, centralize and store all crisis-related information, manage the operational response and provide support to the Crisis Manager Team facilitating the access and interaction with the relevant Marine Pollution Contingency Plans.**	**Security**	**www.cetmar.org/?lang=en**
E-SPONDER	**Closeness**	**The E-SPONDER platform is a suite of real-time data-centric technologies and applications, which will provide actionable information and communication support to first responders that act during abnormal events (crises) occurring in critical infrastructures. This information will enable improved control and management, resulting in real time synchronization between forces on the ground (police, rescue, fire-fighters) and out-of-theatre command and control centres.**	**Security**	**www.e-sponder.eu/**

DiCoMa	**Closeness**	**The goal of the DiCoMa project is to ensure effective management of large disasters and complex emergencies by providing a set of tools that aim to improve the effectiveness of decision makers in dealing with disasters by better training and in situ support in the field.**	**Security**	**www.innovation energy.org /dicoma/**
Project in association with UCL		**EJD is elaborating in collaboration with the Université Catholique de Louvain a research project whose objective is the creation of two methods enabling the construction sector to achieve the high energy performance for buildings and optimize the construction process. This project concerns on one hand quality assurance, and on the other hand optimization of the construction process. The quality insurance aspect is processed by developing an in situ testing method enabling to measure the energy performance of a building and to compare those results to the simulation's results. The optimization of construction process is dealt with the creation of a new estimation method of the airtightness performance of the building. This estimation would allow contractors to optimize their efforts and the money attributed to this specific aspect.**		
Coucours passif durable		**interdisciplinary competitions to design a liable and sustainable pavilion in Brussels for future construction professionals. Teams of future architects and builders design and build together a modular pavilion, passive and sustainable for temporary use. The innovation of this project consists in the modular aspect of a passive pavilion and in the educative approach consisting in collaboration in real world conditions between students and professionals from different backgrounds.**		**drbrc.wordpress.com /projet-passif/**
Project Conclip		**Conclip is a European research project aimed to face three new challenges of the new building technologies: construction quality, professionals training and European quality standard. ConClip pinpoints the key construction issues in Passive House contraction and delivers on-the-spot solutions by specifying the execution details of the relevant Passive House construction elements. ConClip provides immediate and easy access via mobile phone to construction know-how for craftsmen and site supervisors by means of a series of**		**http://conclip.eu/**

		short, multi-lingual educational video clips (ConClips). ConClip brings the expertise of ten European building organisations to a single focus by offering a format that can be internationally implemented by vocational training and further education institutions throughout Europe and accessed in 8 different languages through the ConClip website without additional costs.		
GRE Liège Project		**Enhancing energy efficiency and renewable energy by pooling smaller projects, thereby removing technical, administrative and financial barriers that hinder public institutions to realize their projects, in this case both light and deep retrofit projects through EPC models for a minimum of 90 public buildings, such as schools, administrative buildings and historic sites, as well as the upgrade of street lighting systems belonging to the different public authorities.**		**http://www.greliege.be/category/renovation-energetique/; http://www.eeef.eu/tl_files/downloads/TA_Beneficiaries_Projet_descriptionsFTA_pwic**
PRENDE		**It is a project in the national INNPACTO programme. It consists of designing information and services platform that boosts efficient energy use in large city neighbourhoods. The project will deploy advanced communication media together with contracting and management tools that use the Internet and mobile devices. The PRENDE consortium is headed up by Ferrovial Agroman and Ferconsa, with CI3 as the project's technical coordinator.**		**www.proyectoprende.com/**
BREASER		**this project will develop a cost-effective, adaptable and industrialized "envelope system" for buildings refurbishment. The BRESAER's envelope (for façades and roofs) will include a combination of active and passive pre-fabricated solutions which will be integrated in a versatile lightweight structural mesh. This new technology is expected to significantly reduce the building's primary energy consumption and the Greenhouse emissions while improving indoor environment quality through thermal, acoustic, lighting comfort and air quality at the same time. Leader: Acciona Infraestructuras**		**www.bresaer.eu/**

Built2Spec		**this project consists of self-Inspection, 3D Modelling, management and quality-check tools in order to meet EU energy efficiency targets for both new builds and retrofits in a way much easier in the near future**		**built2spec-project.eu/partner/**
RIBuild		**RIBuild is a EU research project that develops guidelines on how to install internal thermal insulation in historic buildings while maintaining their architectural and cultural heritage. The purpose is to reduce energy consumption in historic buildings in order to meet the EU 2020 climate and energy targets. The project stands for Robust Internal Thermal Insulation of Historic Buildings. Leader: University Copenhagen**		**http://ribuild.eu**
Design4Energy		**The project aims to develop an innovative Integrated Evolutionary Design Methodology that can allow the stakeholders to predict the current and future energy efficiency of buildings (both at individual level and neighbourhood level) and make better informed decision in optimising the energy performance at building life cycle level, including operation and maintenance. Leader: Solintel**		**www.design4energy.eu**

2.2 European Conferences and Exhibitions

Table 2: European Conferences and Exhibitions

Event Name	Short Description	Dates and Location	Website
European BIM Summit 2016	**The summit will present the most interesting experiences and the latest advances within BIM, based on managing the information generated throughout the lifecycle of a construction project. A method worth knowing and dominating as a process aimed at improving quality, efficiency and effectiveness in any project, edification or civil work.** **During its conferences and workshops, tools, services and products suitable for all working in this field will be analysed.**	**Feb. 18-19., 2016**	**europeanbimsummit.com**

buildingSMART International Standards Summit 2016	**The summit is a special opportunity to meet with world leaders in the development and delivery of open sharable data. We expect all the buildingSMART Chapters from around the world to be represented, providing an opportunity for experts to share knowledge for further enhancement of buildingSMART's openBIM processes and standards.** **There will be plenary sessions giving information about the most recent standards, processes, tools and projects, as well as working sessions dealing with key themes.**	**April 11-14, 2016**	**www.buildingsmart.org/event/standards-summit-benelux/**
Eco Build 2015	**Ecobuild is the leading UK exhibition and conference for the construction and energy market, inspiring over 44,000 industry professionals from across the supply chain.** **The conference aims to connect building professionals in order to help them to learn, network and discover new ideas and innovative products**	**Attended industry seminar and conference sessions focused on driving down the performance gap.** **Attended trade stalls showcasing new developments in the industry including Smart technologies used to improve the flow of information and quality assurance on a construction site.**	**Eco Build 2015**
CIBSE Technical Symposium 2015	**The Symposium aimed to encourage the participation of both young and experienced industry practitioners, researchers and building users to share experiences and develop networks.** **The 2015 Technical Symposium addressed the theme of:** **Simple buildings, better buildings?** **Delivering performance through engineered solutions**	**Attended 2 day conference comprising technical paper presentation, case studies and posters on the theme of simple buildings, better buildings: Delivering performance through engineered solutions. Sessions included**	**CIBSE Technical Symposium 2015**

		information concerning future building modelling, BIM integration and evaluating building performance.	
Sustainable Places 2015	**Italy. The event provided the opportunity for researchers, engineers and professionals from the building domain to discuss how to ensure long-term environmental sustainability of ever-growing, densifying urban areas, in a resource-constrained world.** **During the course of those three days, not less than nine thematic sessions and eleven workshops were held.** **Building on the last two editions, the Sustainable Places 2015 conference proved to be a fantastic occasion for networking and clustering among projects funded in the framework of the FP7 and H2020 EeB PPP. Participants had the chance to assess the other initiatives and projects' progresses, discuss latest trends and market developments, and envision possible synergies.**	**The ACCEPT team, represented by Ingleton Wood and Ferrovial Agroman attended the Sustainable Places Conference 2015 in September, invite d to participate by the RESILIENT and PERFORMER FP7 European project consortiums, who had co-organised the event.** **This conference was designed to gather researchers from the engineering and construction industry to deliberate pressing issues regarding sustainability within the built environment. Research into Information and Communications Technologies and into construction materials, methods and practices were therefore the core items of discussion throughout the two day gathering of thematic**	

		sessions and workshops. **Throughout the four day event the ACCEPT team were offered numerous opportunities to network and cluster with representatives from various EU RTD projects, and attended numerous informative talks and workshops which generated discussion and critique of project outputs.** **The conference also provided a valuable opportunity for the presentation of the ACCEPT project to representatives from other RTD projects.**	
Digital Construction Week	**A two day event showcasing thought leaders and leading suppliers from across the construction and AECO supply chain. The event focus being on how digital and advances construction together with BIM and new technologies are changing the built environment.** **An exhibition showcased latest technologies and products with 36 hours of live talks and interactive forums.**	**Conference included 2 days of seminars including the cutting edge of digital systems used on construction sites including wearable technology, the internet of things, and augmented & virtual reality.** **Trade Show included advanced technology used in the construction industry including**	

		Daqri, and laser surveys. **Informed Disseminated seminar series to IW offices on the future of digital construction technologies**	
Innovate UK Conference	**Focussing on UK innovation, the conference gathered 3,000+ of the UK's most exciting innovators, international investors and buyers, with representatives from government and academia also present.** **The event was designed specifically to help businesses engage at a sector-specific industry cluster/hub level, a regional level and within the global marketplace.**	**INGL attended Innovate UK Conference as a direct market-watch and industry awareness exercise. In particular, links were established with other project prototypes such as 3D REPO, which may offer opportunities for more streamline BIM interoperability within ACCEPT. INGL also used the conference to network and increase awareness of the ACCEPT project.**	
CDVE	**Cooperative design and engineering**	**Oct, 24- 27, 2016 Sydney, Australia**	**www.cdve.org/**
COLLA	**International Conference on Advanced Collaborative Networks, Systems and Applications**	**November 13 - 17, 2016 - Barcelona, Spain**	**www.iaria.org/conferences2016/COLLA16.html**
ERGO'IHM	**is an international exhibition of the ergonomics and advanced computer science.**	**November 18 - 21, Oct 2016 – not yet**	**not yet**

eCAADe	**eCAADe (Education and research in Computer Aided Architectural Design in Europe) is a non-profit making association of institutions and individuals with a common interest in promoting good practice and sharing information in relation to the use of computers in research and education in architecture and related professions.**	**The 2016 conference is being held at the Oulu School of Architecture, Finland, between Wednesday 24th – Friday 26th August 2016**	**ecaade.org/**
Achi'16	**The Ninth International Conference on Advances in Computer-Human Interactions**	**April 24 - 28, 2016 - Venice, Italy**	**www.iaria.org/conferences2016/ACHI16.html**
SCAN'16	**Seminar about Architectural digital Design**	**November 7 - 9, Sept 2016 - Toulouse, French**	**lra.toulouse.archi.fr/lra/activites/scan16**
International Passive House Conference 2016	**Speakers from all over the world will report on the latest projects relating to highly energy efficient construction and retrofits. In addition to the long-term results, the program covers buildings combining efficiency and renewable energy. The lecture program at the Conference will be supplemented with a series of workshops and excursions to Passive House buildings in Darmstadt and its surroundings – including the world's first Passive House. Leading manufacturers of Passive House components will also demonstrate their newest products at the accompanying specialists' exhibition.**	**Darmstadt, Germany -- 22-23 April 2016**	www.passivhaustagung.de/en
BIM World	**For the first time this year, BIM World will present for two days the new universes of services structured around digital building simulation models. Each universe combines various concepts and leverages previously identified technologies that will reorganize the markets. Standards will converge and interoperate along a**	**Paris, France -- 6-7 April 2016**	www.bim-w.com/

	platform-based rationale serving all businesses related to construction, planning and operation.		
BUILTY	**BUILTY is an innovations platform for construction professionals. The concept of this platform is to fit to the professional needs and focus on innovation and technique. It is then focused on targeted visitor from Belgian construction companies (class 3 to 8), such as technical directors, project and site managers, purchasing managers and cost engineers. Project developers, architects, engineering companies and installers are also welcome. The offer is also strictly selected and limited to the latest innovative materials and techniques available on the construction material market**	**16 – 17 November 2016**	**www.builty.be/**
SIMBA exchange days	**The purpose of these days goes beyond the classic objective of disseminating information on the state-of-the art, the software provides and the rules of good practice. It is to enable practitioners and all stakeholders in construction / renovation of buildings and energy, to propose concrete use cases of simulation and to stimulate trade in the sector to improve practices and move towards an efficient collaborative community around that theme. This community, called SIMBA, gradually born and we are confident that it will grow year after year. Next dates not yet confirmed**	**Charleroi, Belgium**	**http://www.simulation-batiments.be/**
BATIBOUW	**biggest international show for building, renovation and decoration in Brussels. A thousand exhibitors present their innovative construction materials and components.**	**Brussels, Belgium** **25 February – 6 March 2016**	
Bautec	**International trade fair for building and construction technology. The focus of visitor interest was on the concept of energy-saving which integrates the building exterior with intelligent systems engineering, sustainable and energy-efficient solutions, climate protection measures and the use of state-of-the art building materials and methods.**	**Berlin, Germany. February 2016.**	www.bautec.com

Construmat	**is an international exhibition of construction and one of the most important European and world level fairs related to construction sector. The fair shows the latest developments and innovations in the sector in diverse aspects such as new technologies, machinery, construction processes and materials.**		**www.construmat.com**
European Conference on Sustainability, Energy and the Environment	**this event corresponds to an international and interdisciplinary conference will again bring together a range of academics and practitioners to discuss new directions of research and discovery in sustainability, energy & the environment.**	**July 2015, UK**	**iafor.org/conferences/ecsee2015/**
Greencities & Sostenibilidad	**Greencities & Sustainability is a highly specialised professional forum where the latest trends and solutions that help to improve the smart management of cities are presented. In order to achieve this, we focus on three themes; networking and business opportunities, discussion and knowledge forum and product and services samples for the efficient management.**	**Málaga, Spain**	**greencitiesmalaga.com/**
Sustainable places	**Sustainable Places event gathers institutional, researchers, and engineers, around one of the greatest challenges that our societies have ever faced: ensuring long-term environmental sustainability of ever-growing, densifying urban areas, in a resource-constrained world.**	**Savona, Italy**	**sustainable-places.eu**

2.3 Associations, Relevant Communities and Networks

Table 3: Associations, Relevant Communities and Networks

Name	Short Description	Website
European Network of Construction Companies for Research and Development (ENCORD)	**ENCORD is a network of active members from the construction industry, represented by decision-makers and executives working on research, development and innovation (R,D&I) and providing service to experts and the operational sides within the member companies. ENCORD has 21 members with head offices in 11 European countries and operations worldwide. All members are major European contractors and/or suppliers of construction material and are strongly devoted to R,D&I for increased competitiveness and growth.**	**www.encord.org**
5D initiative	**Initiative of the European construction industry for the development of new IT tools for design, realisation and operation of buildings and infrastructure. The 5D Initiative has been initiated by the construction companies MAX BÖGL, ZÜBLIN / STRABAG, CCC, BAM and BALLAST NEDAM with the goal of describing common requirements of the European construction industry for the development of new innovative tools by the hard and software industry.**	**http://www.5d-initiative.eu/**
BuildingSMART	**BuildingSMART intends to drive the development and active use of open internationally-recognised standards, tools, training and certification regimes to support the wider uptake of Building Information Modelling (BIM) by owners, operators, the Architecture, Engineering & Construction (AEC) and Facilities Management (FM) industries across the buildings and infrastructure sectors.** **BuildingSMART is the international authority in respect of a set of standards known as the Industry Foundation Class family which deal with process, data, terms and change coordination for the specification, management and effective utilisation complex geometric assets in the build environment.**	**www.buildingsmart.org**
BuildingSMART German speaking chapter	**The German speaking chapter of BuildingSMART represents respective construction industry developing and transferring European/international standards to national contexts.**	**www.buildingsmart.de**

Planen & bauen 4.0	**German National Platform Company, competence center and a central mediator in the field of research, regulation and market implementation of Building Information Modeling (BIM).**	**www.planen-bauen40.de**
Construction21 International	**Construction21 is a social media dedicated to all professionals active in the sustainable building sector.** **The objective is to accelerate building transition to green by facilitating innovation and best practices dissemination between practitioners, public authorities, researchers and academics.**	**http://www.construction21.org/**
CIBSE	**Chartered Institution of Building Services is an international professional engineering association based in London that represents building services engineers. It is a full member of the Construction Industry Council, and is consulted by the UK government on matters relating to construction, engineering and sustainability. It is also licensed by the Engineering Council to assess candidates for inclusion on its Register of Professional Engineers.**	**http://www.cibse.org**
RIBA	**The Royal Institute of British Architects champions better buildings, communities and the environment through architecture and their membership. The RIBA provide the standards, training, support and recognition that put their members – in the UK and overseas – at the peak of their profession.** **In conjunction with the UK government, the RIBA work to improve the design quality of public buildings, new homes and new communities.**	**https://www.architecture.com/RIBA/Home.aspx**
NBS	**The NBS have produced specification products for over 40 years, including the recognised national standard specification system for the UK. The NBS specification products cover building construction, engineering services and landscape design.** **The NBS also produce a range of information products, including The Construction Information Service, a joint venture with IHS. From 2005 they have been publisher of the Building Regulations Approved Documents for England and Wales.**	**https://www.thenbs.com/**

BRE	**The Building Research Establishment is a former UK government establishment, now a private organisation. BRE carries out research, consultancy and testing for the construction and built environment sectors in the United Kingdom.** **Among the BRE's areas of interest are participation in the preparation of national and international standards and building codes, including the UK building regulations.**	**https://www.bre.co.uk/index.jsp**
NESSI	**NESSI, the Networked European Software and Services Initiative, provides input to the EU Institutions on research actions and technology matters of particular importance to the software domain, and the overall aim is to enable the software and services sector help vitalize the great potential of the European economy and society. NESSI gathers partners and members from all over Europe, both from industry and academia, and engages in close dialogue with the European Commission and other stakeholders on several topics of specific relevance to NESSI - such as Big Data Value, Cloud Computing and Software Engineering**	**http://www.nessi-europe.eu**
BDVA	**The Big Data Value Association AISBL is a fully self-financed non–for-profit organisation under Belgian law. There are 24 founding members from large and SME industry and research. The BDVA shall present an industry-led contractual counterpart to the European Commission for the implementation of the Big Data Value PPP cPPP. A basic principle is openness, transparency and inclusiveness. The main role of the Big Data Value Association will be providing the Big Data Value strategic research agenda (SRIA) and its regular updates, defining and monitoring the metrics of the cPPP and joining the European Commission in the cPPP partnership board**	**http://www.bdva.eu**
PLANETIC	**PLANETIC is the mirror of NESSI in Spain. The objectives of the platform are: the representation of the Spanish ICT sector by sticking together academia, industry and research organizations; Promotion of the innovative technologies available in ICT sector that can provide added value in other vertical sectors and supporting their competitiveness and growth; Definition of mid-term research challenges in different thematic areas included in the platform in alignment with national and European research programs; And making more visible the Spanish ICT sector in Europa and worldwide, better awareness of technology created and developed in Spain to foster its adoption abroad our country.**	**http://www.planetic.es**
Construction21 International	**Construction21 is a social media dedicated to all professionals active in the sustainable building sector. The objective is to accelerate building transition to green by facilitating innovation and best practices dissemination between practitioners, public authorities, researchers and academics**	**http://www.construction21.org/**

BBRI	**The Belgian Building Research Institute is a private research institute founded in 1960 under impulse of the National Federation of Belgian Building Contractors in application of a 1947 decree-law specifically aimed at the promotion of applied research in the construction industry, in order to improve its competitiveness. In application of this decree-law, the statutory members of the BBRI are the more than 90,000 Belgian construction companies. The BBRI has three main tasks are to perform scientific and technical research for the benefit of its members, to supply technical information, assistance and advice to its members and to contribute to the general innovation and development in the construction sector, more specifically by performing contractual research upon the request of the industry and the authorities.**	**http://www.bbri.be/homepage/index.cfm?cat=information**
Confederation Construction	**Confederation Construction is a patronal organisation founded in 1946 and federating more than 15.000 Belgian construction companies. His aim is to promote members companies, to centralise information and disseminate it in an intelligible way to its members and to create events in order to facilitate encounters between professionals.**	**http://www.confederationconstruction.be/**
PMP	**PMP is an association created in 2006 by private persons, companies and institutions that has a big interest for the passive standard. The first goal of the association was to promote the passive standard and to develop activities that encourage its distribution. The association is now also implied in the definition of the new Belgian sustainable reference. PMP is the Belgian reference expert regarding high energy efficiency constructions and based on the passive concept buildings and actively contributes to the establishment of standards connected to energy savings in the building.**	**http://www.maisonpassive.be/**
CDR Construction	**CDR Construction is the Brussels Professional Reference Centre dedicated to the construction sector. The centre work in partnership both with the public sector and the private sector. The CDR has three main tasks: technology watch, promotion of construction trades and support for insertion and training operators active in Brussels**	**http://www.cdr-brc.be/**
UCL	**Architecture et Climat is a research unit of the Université Catholique de Louvain (UCL) dedicated to the sustainable architecture. Its aim is the search for optimum energy efficiency of buildings and their equipment, to meet the needs of occupant comfort, making best use of energy resources. To this end, it also performs studies and assessments of audits and energy guidance. It also includes the development of special teaching methods for the development of training courses for architects and continuous energy technicians. The unit research activities are conducted within the International Energy Agency, the European Community, the Federal Government, the Walloon Region, Flemish Region and Brussels Region, and in contact with the industrial world. In**	**http://www-climat.arch.ucl.ac.be/**

	addition, the team works closely with many national and international research teams	
Ecobuild.brussels	**Ecobuild is the cluster for sustainable construction and renovation in Brussels. It brings together companies that are active in this sector and fosters their business development. Its main missions are to connect, to enhance, to inform and to guide construction actors. Ecobuild gives particular importance to energy efficient retrofitting and circular economy that are considered as essential themes for the future of sustainable construction in Brussels.**	**http://www.ecobuild.brussels/en/professional/ecobuildbrussels**
Greenwin	**Greenwin is a competition cluster created to enhance the economic development of Wallonia, through public-private partnerships between companies, universities, research centres, training centres and public authorities. Its vocation is to support innovation and to encourage the development of collaborative projects in the areas of Research & Development, investment and training, with a view to company growth and the creation of jobs in dynamic markets. Bio sourced chemistry, energy storage and management, eco-districts, the management and purification of water and soil and the recycling of wastes are key domains for the cluster.**	**http://www.greenwin.be/en**
ENCORD	**Founded in 1989, ENCORD is Europe's forum for industry-led research, development and innovation in the construction sector. The members of ENCORD are leading construction companies and suppliers from all over Europe.**	**http://www.encord.org/**
ECTP	**The European Construction Technology Platform (ECTP) was created to raise the sector to a higher world-beating level of performance and competitiveness. One of its main objectives corresponds to the reduction of the use of energy, materials, and other resources in construction and in the built environment**	**http://www.ectp.org**
E2BA	**The overall vision of the Energy Efficient Buildings European Initiative (E2B EI) is to deliver, implement and optimise building and district concepts that have the technical, economic and societal potential to drastically decrease energy consumption and reduce CO2 emissions in both new and existing buildings across the European Union (EU).**	**http://www.e2b-ei.eu**
PTEC	**PTEC is a Spanish organization that aims to contribute to the improvement of the construction sector through public-private cooperation regarding R&D and innovation. The organization is conducted by companies, business associations, universities, and research & technology centers.**	**http://www.plataformaptec.com/**

AEICE	**AEICE, with its 100 members, represents professional and technological agents that encompass the entire value chain of the habitat and construction, working together according to common goals of growth, innovation, collaboration and sustainability.**	**http://www.aeice.org/**
Climate Kic platform	**Climate-KIC is Europe's largest public-private innovation partnership, working together to address the challenge of climate change.**	**http://www.climate-kic.org**
EUREKA	**EUREKA is a publicly-funded, intergovernmental network, involving over 40 countries. The main aim of the organization is to enhance European competitiveness by fostering innovation-driven entrepreneurship in Europe, between small and large industry, research institutes and universities.**	**http://www.eurekanetwork.org/**

2.4 Upcoming Events

Name	Date	Place	Description	Website
Wearable Technologies Conference 2016 EUROPE	26-27/01/16	Munich	Opportunity to try out the latest gadgets in the conference exhibition and talk to international companies about their latest developments in the enabling tech space. High level networking opportunities with prominent figures working on wearable technology.	https://www.wearable-technologies.com/events/wt-wearable-technologies-conference-2016-europe
City Summit: Birmingham 2016	23-24/02/16	Birmingham	UK-GBC's flagship annual event focuses on key sustainability challenges viewed through the lens of a different UK host city each year. This two-day conference will focus on the big sustainability issues facing cities, and delivers in depth learning which is grounded in real life scenarios.	http://www.ukgbc.org/events/featured-event/city-summit-birmingham-2016/overview

Ecobuild	08-10/03/16	EXCEL Centre, London	This two day event aims to explore the carbon economy, technology, urbanisation, resource scarcity, workforce transformation, wellness, social value and transparency, as well as sustainability. The event is closely aligned with construction growth sectors and showcases innovative products and solutions.	http://www.ecobuild.co.uk/the-construction-industry-is-evolving-and-so-is-ecobuild
Wearable Technology Show	15-16/03/16	EXCEL Centre, London	WTS2016 will feature cutting edge technology and provide a forum for networking and developing new business across the wearable, smart device and IOT landscape. Over 6,000 delegates, 200 speakers and 300 members of the press will come together to exchange views, network and do business.	http://www.wearabletechnologyshow.net/home

Augmented Reality & VR Show Conference	15-16/03/16	EXCEL Centre, London	The Augmented Realty conference features keynotes by industry luminaries, classes and tutorials, product and start-up demos, as well as detailed real life use cases from businesses both large and small. Anyone working in or around augmented or virtual reality should attend, including designers, developers, senior executives, futurists, manufacturers, analysts, investors, and press.	http://www.wearabletechnologyshow.net/augmented-reality-vr
International Passive House Conference 2016	22-23/04/16	Darmstadt, Germany	This event will be comprised of presentations, workshops and excursions, offering networking opportunities with other professionals and disseminating the latest Passive House developments. Furthermore, the conference will be accompanied by the Passive House exhibition where manufacturers will present their latest products.	http://www.passivhaustagung.de/en/programme
Augmented World Expo (Europe)	TBC	TBC	Day 1 of this expo will be dedicated to developers, designers, product managers and Enterprise CIO's, and 20+ workshops and tutorials will provide information and demos on the latest technologies. Day 2 of AWE features nearly 100 micro-talks showcasing product demos and industry use cases to provide information on everything concerning AR, VR, wearable and IoT. Day 3 will include talks from the Father of Wearable Technology, Steve Mann, the grandfather of AR & VR, Tom Furness, and many more.	http://augmentedworldexpo.com/

SBE16: Transition Zero	7-8 April 2016	Utrecht	The SBE Conference series is considered to be the pre-eminent international conference on sustainable building and construction, promoted by the international organizations IISBE, CIB, UNEP-SBCI and FIDIC. The SBE16 Utrecht conference aims to rally technology transition professionals in urban sustainability around a number of hot issues to promote international best practices in urban sustainability. The title of the conference is 'Transition ZERO', and the main theme: 'from Demonstrations to large-scale NET-Zero Refurbishment'. The four conference topics are: Upscaling: from prototypes and concepts to market introduction, financial models & business models, strategy to mass market. Circular processes: models & materials, construction chains, eco-materials and embedded energy. Small urban area: improving systems, 0-impact areas related to energy, water & materials, participation of inhabitants and quality of life. Governance: legislation & policies, European chances, stakeholder involvement & alignment, impact of local/national authorities.	http://www.onderzoek.hu.nl/evenementen/Zero-Transition-SBE16-Conference
CIBSE Technical Symposium 2016	14-15/04/16	Heriot Watt University Edinburgh	The sixth annual Technical Symposium aims to encourage the participation of both young and experienced industry practitioners, universities, research organisations, industry, CIBSE groups/committees/societies and others to share experiences and develop networks.	http://www.cibse.org/technical-symposium-2016/booking-for-2016-symposium

3 Strategize

All collaboration activities have to be planned in order to maximise the effectivity and alignment of the actions. Regarding the project milestones and the expected outcome, the strategy will be based on a three-phase model, which is shown in Figure 1. It can clearly be seen that the phases are overlapping and partially parallel, and many activities fall across the boundaries – for example inter-project activity sharing may only come after some activities for dissemination and awareness building, in order to attract the intended audience. The three phases are explained in more detail in the following subsections.

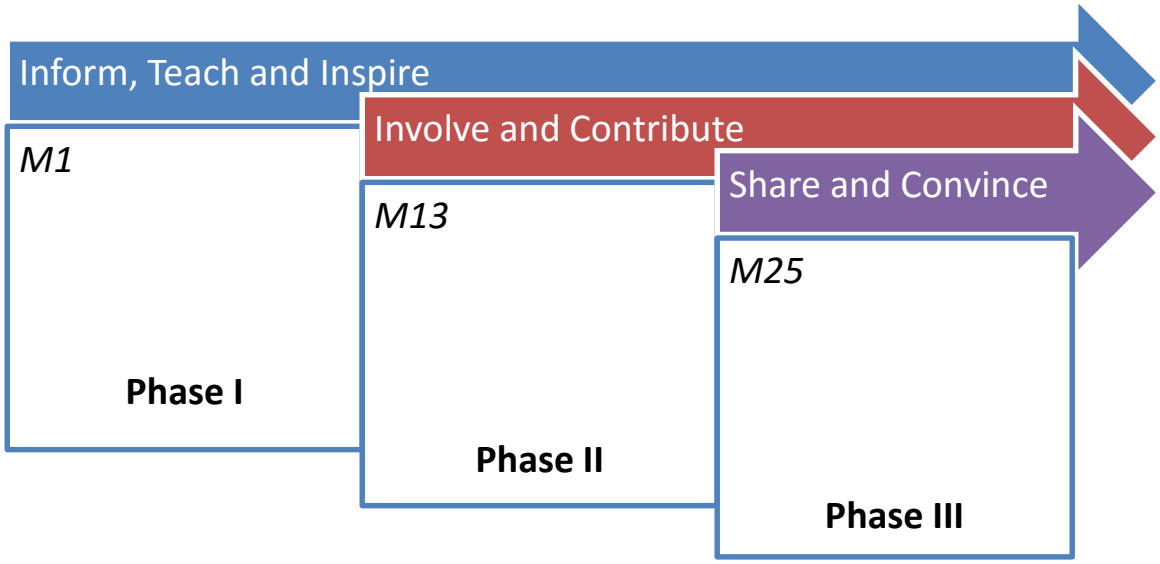

Figure 1: Infographic – Collaboration and Clustering Strategy

3.1 Phase I: Inform, Teach and Inspire

This phase concentrates on communicating the project objectives, concepts and specifications as well as research findings. Furthermore, the participants (early adopters, technology personnel, etc.) of the intended communities have to be invited, inspired and informed about the different aspects of the project.

Primarily, this phase sets out what, for example, ACCEPT intends to achieve. Thus, it is prior to “effective” collaboration, since only with information and inspiration in place, the goals can be clearly communicated and understood by the other parties. Therefore, this phase also involves first rounds of meetings and possible collaboration agreements and mutual exchange of information with the main objective of detecting synergies with other projects.

This phase was the only active one at the first year of the project. This phase continues in an inherent way thorough the project.

3.2 Phase II: Involve and Contribute

The second phase, starting in year two, aims to gather feedback from users and companies and to establish tight cooperation and collaboration links with other projects, with a strong focus on establishing strong contact to create a common workshop (in the context of task T8.2 – Generic Promotion, Materials and Workshops.

Providing ready-to-use examples, proof of concepts, mock-ups or implemented components in an easy and comprehensive way, helps to get feedback from the wider community. Of course, such items, like samples, should be available for potential end users. It is also important to provide light-weight feedback channels such as taking advantage of social media mechanisms. Similarly, the project will contribute its ideas, where relevant, to other activities/projects that may have some similarity to ACCEPT.

3.3 Phase III: Sharing and Convincing

The third phase will focus on the sharing of results and the convincing of industrial end users to use or integrate with the ACCEPT System. The “Share and Convince” phase is bi-directional:

- to share and convince industrial end user to integrate with the ACCEPT System will be performed mainly in the last half year of the project. The success of these collaboration efforts depends on stable results of the project.
- to share and convince industrial end user to allow integration of their systems and information to the ACCEPT System starts with the beginning of the last year, where the infrastructure of the ACCEPT System is planned to be integrated to a ready-to-test state.

As such, technical collaboration typified in research projects tails off as the results are achieved. Then, post project, there can be further collaboration activities (for Marketing Technical work), but this is outside the scope of the project and this deliverable. This document version only covers this phase as generic and also long-term actions.

4 Apply

This chapter describes the applied activities for collaboration and clustering activities accordingly the defined strategy in chapter 3. It allows the monitoring of the planed and achieved activities.

Table x summarises the planed and archived activities for the first year.

4.1 planed and achieved activities KPI

Table 4K - KPIs

KPI	Status quo	Planned	Future
Workshop/conferences	2	2	4
Social network activity	1	1	10
Awards	1	1	2
Publication in magazines	1	1	5

Table 5 – Detailed activities in 2015

Name	Date	Partner
Workshop Impact of Energy Efficient Buildings PPP (Brussels)	27.04.2015 - 28.04.2015	ASC
Internal magazine of Ferrovial Agroman (Innovate).		FER
Enertic awards		FER
Conference with CDTi (Centre for Technological and Industrial Development)		FER/INGL

5 React

In the following version of this document this chapter will explain the adaption to the strategy based on the results monitored. Obviously, in this first version no adaption was needed.

6 Summary and Next Steps

So far the focus of the activities of this task T8.6 - Collaboration, Clustering and Cross-Disciplinary Cooperation – was on the agreement of the strategy and the identification of possible collaborators as well as first contact to these stakeholders.

Beside the participation on the Workshop Impact of Energy Efficient Buildings PPP and conference with CDTi, other smaller collaboration activities were held. Overall the contacted stakeholders were interested in the ACCEPT approach. These contacts will be intensified and widen in the next year. Already a rough agreement for a common workshop was reached. A final agreement for the outline of the workshop has still to be defined.

In addition, cross disciplinary collaboration to especially projects with close links to the consortium were held, from small telos to physical meetings were common approaches in the ICT domain were the focus. Even though these smaller collaborations Are not that visible their impact is big as they help to avoid to do the same mistakes over and over again.

For the next year the focus for the collaboration is the first ACCEPT workshop, while pushing the visibility of the project. Last but not least, further contacts to interesting stakeholders must be secured to build already also a basis for the phase three of the collaboration strategy.