

HEART D10.13 - Demonstration Activities I

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0.2	14.09.2018	First version, incorporating input from all participants	Petra Scudo (EURAC)
0.3	25.09.2018	Revision of first version	Petra Scudo (EURAC)
0.4	28/09/2018	Quality review	Claudio Del Pero (POLIMI), Andrea Vallan (FPM)
1.0	28/09/2018	Final version addressing all further comments	Petra Scudo (EURAC)



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EXECUTIVE SUMMARY

The HEART's toolkit is addressed to professionals in the planning, engineering and design of constructions, as well as to policy makers, energy efficiency associations and real estate investors. Due to the complexity of HEART's fabrics, the project envisions - for a more effective dissemination of its content - a series of demonstration activities bearing the role of both communication and learning/feedback gathering events.

Demonstration activities will be organized on-site and involve all project stakeholders and nearly all of the partners. The objective of this early stakeholders' involvement is to analyze their feedbacks in a participatory planning perspective thus incorporating them in the whole value chain of the toolkit realization to maximize the project's output quality and reduce its risks. The activities will be focused and contain both generic presentations as well as technical demos of the toolkit's subcomponents and technologies.

Demonstration activities will start with two test cases at M12 and M13 and then concentrate during M23-M24 and M33-M36, in the formula of 1+1, addressing first the Italian case and right after the French one.

Mid-term activities will be preceded by a press conference advertising the events and the toolkit potentials.



1. DEMONSTRATION IMPLEMENTATION PLAN

The present deliverable (D10.13 - Demonstration activities I) includes a detailed presentation of the structure of HEART's core demonstration activities, to be implemented according the following schedule:

- M12-M13 - preliminary technical installation demos (prior the installation in the case-study buildings);
- M23-M24 - media, academic coverage and main technical stakeholders (during the installation in the case-study buildings);
- M33-M36 - other technical stakeholders (after the installation in the case-study buildings).

The 1+1 formula, followed throughout, is intended to cover the Italian and the French case studies in sequence, both to guarantee replicability but at the same time to allow for adjustments at each replica. Activities are performed in sequence, first in Bagnolo al Piano and later in Lyon.

In its entirety, the deliverable aims at disseminating and communicating HEART's retrofit toolkit - subcomponents' technologies, operating system and user interfaces - to the different stakeholder groups, through a series of on-site demonstration activities.

A demonstration roadmap is conceived to achieve the maximum impact in terms of stakeholder coverage and feedback gathering for fine-tuning system performances.

The second part of the document is devoted to outlining demonstration activities carried out in the period M33-M36, addressing installers, designers and investors. The latter are conceived as preliminary steps towards the toolkit demonstration and marketing and are aimed at showcasing single technologies and components, to gather feedback on their layout and integration.

The aim of earlier demonstrations (M12-M13 and M23-24) is instead to analyze feedbacks in a participatory planning perspective. The strength of this approach resides in involving installers and technical stakeholders starting from the early stages of HEART, thus including them in the whole value chain so to maximize the project output quality and reduce its risks, unforeseen events and potential underperformances.

The document therefore illustrates the planned activities, results and expected feedback.



2. DEMONSTRATION ACTIVITIES OVERALL PRESENTATION

Each demonstration activity will be tailored to fit the specific needs of the target group addressed, while user interfaces and access tools will be customized in terms of information and design content. Each activity will have thus a twofold objective: cover stakeholders needs - in terms of tool acquaintance (teaching aspect) - and add possible stakeholders' feedbacks and comments into the planning and interface (acquisition/interaction aspect).

The philosophy behind this twofold approach is borrowed from the European Commission *Responsible Research and Innovation* approach for Horizon 2020, with specific reference to the concept of *citizen science*. According to this concept "citizens can participate in the scientific research process in different possible ways: as observers, as funders, in identifying images or analysing data, or providing data themselves" (<https://ec.europa.eu/digital-single-market/en/citizen-science>). In this perspective, both technical stakeholders and, separately, end users will be provided with the opportunity to participate in the finalization of the toolkit's interface by choosing images, configurations and access options.

Demonstration activities will include the following project content and address the following objectives:

- showcase of heart subcomponents: Multi-Input/Multi-Output controller; heat pump and thermal storage system; smart DC fan-coils; universal PV tiles; advanced façade insulation panels;
- explanation of the toolkit functions and operational system;
- explanation of the installation procedures;
- depiction of HEART's information flows - data collection, data elaboration and data management;
- illustration of the system's support system and cloud-based platform;
- demonstration of the functionalities and options of the different user interfaces (for each stakeholders group);
- highlighting of the timeline and main steps of the sites refurbishment/energy retrofit works;
- highlighting the main aspects of HEART's ICT and security layout;
- highlighting HEART's environmental impact and carbon footprint (LCA);
- dissemination of the project content to relevant stakeholders for each group;
- dissemination to a broader audience of the project and its content by means of local and national press representatives.

Demonstration activities are part of the project's communication and dissemination work package (WP10) and specifically address HEART's technical stakeholders: building sector representatives (owners, constructors, technicians, associations, etc.); policy makers and local governors; entrepreneurs and investors; academia; media and journalists.

Given the local/national value of this kind of dissemination activities, demonstration activities will be always replicated in the scheme of 1+1 (Italy, France).



3. DELIVERABLE STRUCTURE

D10.13 has the aim to define the structure and the planning of the demonstration activities aimed at the project's dissemination, communication and capacity building activities. It is addressed at all local/national stakeholders in the energy and building sectors who have the means to disseminate the content and potentials of the toolkit before its completion and possible release on the market. In order to be effective, demonstration activities will involve a large number of stakeholders for each group. Besides project partners directly responsible for each project topic, they will also see the participation of firms (public/private entities and businesses) involved in the renovation works.

The two central activities will foresee the participation of the local press (Press Conferences for dissemination of demo activities and project advertising) and political representatives, besides the one of the project's Coordinator.

The first two will serve instead as a testing case for the general methodology implemented and the last two will address specific issues relevant to HEART's final users/tenants.

Demonstration activities will be organized according to topic of interest and content and thus involve different stakeholders as well as project partners, even though a few partners will be present in all activities.

As demonstration activities have the specific objective to demonstrate the toolkit's properties, options of use, functionalities, interfaces and technical components related to the renovation in question, central activities are planned at the fairly advanced stage of the project, during M23-24 and M33-M36, so to include also a realistic demonstration of user interfaces and operating platform.

Specifically, the activities will introduce the system's data management flow, the installation of technical subcomponents, relevant tools for energy management and finance/investments sector. This chronology will also allow a sufficient time lapse for receiving and elaborating possible feedbacks and comments from the stakeholders themselves involved in prior activities so to elaborate them and include them in later ones.

All the demos described in the present document will be hosted by the 2 building owners (ACER RE and EST) to ease the interaction of stakeholders with the case-study buildings (before, during and after the installation of the HEART toolkit) and - more in general - with the specific applicative context.



4. PARTNERS' CONTRIBUTIONS AND SPECIFIC TASKS

HEART's demonstration activities plan:

DEMO 1

- o Demo 1.I (Bagnolo in Piano (RE), Italy)

Time: M13 (Third week of October 2018)

First demonstration testing floor, to be held in Italy. Presentation of the general toolkit potentials, technical subcomponents, operating and management system and installation overview, addressing local stakeholders of the construction, thermal, electric and planning sectors.
Feedback gathering.

- o Demo 1.II (Lyon, France)

Time: M13 (Last week of October 2018)

First demonstration testing floor for France, with the same structure of the previous one. Presentation of the general toolkit potentials, technical subcomponents, operating and management system and installation overview, addressing local stakeholders of the construction, thermal, electric and planning sectors.
Feedback gathering.

DEMO 2

- o Demo 2.I (Bagnolo in Piano (RE), Italy)

Time: M23

Stakeholders involved: building owners; energy efficiency associations; policy makers and public authorities; Academia; media and journalists

In conjunction with: Press Conference

Content addressed: explanation of the toolkit's structure, functions and modes of operation; ICT and information flows; cloud-based platform management and privacy/security issues; highlight of technical subcomponents; overview of interface features; overview of the system's environmental impact and carbon footprint (LCA);
visit to the building site;

Partners involved: EURAC (Deliverable Leader), POLIMI, ZH, VYZ, CTIC, HE, AER RE, REV, QUA

- o Demo 2.II (Lyon, France)

Time: M24

Stakeholders involved: building owners; energy efficiency associations; policy makers and public authorities; Academia; media and journalists

In conjunction with: Press Conference

Content addressed: explanation of the toolkit's structure, functions and modes of operation; ICT and information flows; cloud-based platform management and privacy/security issues; highlight of technical subcomponents; overview of interface features; overview of the system's environmental impact and carbon footprint (LCA);
visit to the building site;

Partners involved: EURAC (Deliverable Leader), REV, POLIMI, ZH, VYZ CTIC, HE, EST, QUA.



Partner's contributions/tasks for Demos 1 and 2

Demonstration activities 1 and 2 have the objective of launching the project in the Italian and French contexts, while contributing to its communication and dissemination through the participation of the media.

The first 2 demos will also serve to collect feedback and comments from the stakeholders involved about the project as a whole (with specific reference to installers of the involved technologies) and its presentation and impact on the public.

EURAC, as deliverable leader, will work to coordinate the events, collect and put together partners' contributions and take care of the demo logistics and invitations to participate.

REV, in quality of communication and dissemination leader, will assist EURAC in the organization of the events, their dissemination and advertisement and in defining the list of stakeholders to be invited. RW will also be responsible for the organization of the press conference opening the demonstration activities.

POLIMI and ZH will present the overall project, specific features and objectives and prepare a set of samples to illustrate the working of the system and its subcomponents.

VYZ and CTIC will prepare an overview/demonstration on the system's platform, data flows, interface options and security features.

HE, ACER RE, EST will present the state of the art and future growth of energy retrofit in the context of social housing, what are the points of strength and criticalities of the sector in the EU.

QUA will illustrate the project's environmental impact and life cycle analysis.

All partners are expected to contribute in technical editing of articles for the press.

DEMO 3

- o Demo 3.I (Bagnolo in Piano (RE), Italy)

Time: M33

Stakeholders involved: Designers, Building owners, Building Constructors

Content addressed: toolkit's structure, functions, modes of operation and technical subcomponents, scope, modes of operation; toolkit potential market; energy efficiency and home automation overview; description of cloud-based platform and information flows; overall security of the system; overview of interface features for design, planning and installation, demo of users' account access, properties and use; visit to the building site;

Partners involved: EURAC (Deliverable Leader), POLIMI, ZH, VYZ, ACER RE, HE, ENTPE

- o Demo 3.II (Lyon, France)

Time: M34

Stakeholders involved: Designers, Building owners, Building Constructors

Content addressed: toolkit's structure, functions, modes of operation and technical subcomponents, scope, modes of operation; toolkit potential market; energy efficiency and home automation overview; description of cloud-based platform and information flows; overall security of the system; overview of interface features for design, planning and installation, demo of users' account access, properties and use; visit to the building site;

Partners involved: EURAC (Deliverable Leader), POLIMI, ZH, VYZ, EST, HE, ENTPE



Partner's contributions/tasks for Demos 3

While the tasks of EURAC and POLIMI essentially remain the ones described above, all other partners will be directly involved in demonstration activities for the utilization of the users' interface and the operational and technical aspects of the system's subcomponents through the use of actual samples installed in the case studies. The latter activities will be further subdivided into a sub-session addressed to designers/architects and another to installers/constructors which will run in parallel.

VYZ will exploit these demo activities to demonstrate the platform and the different user interfaces.

DEMO 4

- o Demo 4.I (Bagnolo in Piano (RE), Italy)

Time: M35

Stakeholders involved: Building owners, Entrepreneurs and business organizations, Institutional investors, Real Estate representatives and investors

Content addressed: toolkit's structure, functions, modes of operation; toolkit potential market; energy efficiency and home automation overview; description of cloud-based platform and information flows; overall security of the system; overview of interface features for investors and real estate experts, properties and use; visit to the building site;

Partners involved: EURAC (Deliverable Leader), POLIMI, ZH, VYZ, ACER RE, HE, ENTPE

- o Demo 4.II (Lyon, France)

Time: M36

Stakeholders involved: Building owners, Entrepreneurs and business organizations, Institutional investors, Real Estate representatives and investors

Content addressed: toolkit's structure, functions, modes of operation; toolkit potential market; energy efficiency and home automation overview; description of cloud-based platform and information flows; overall security of the system; overview of interface features for investors and real estate experts, properties and use; visit to the building site;

Partners involved: EURAC (Deliverable Leader), POLIMI, ZH, VYZ, EST, HE, ENTPE

Partner's contributions/tasks for Demos 4

These last demonstration activities have the objective of introducing HEART in the real estate investment sector and to collect the feedback of real estate operators and investors. Within these activities, Vyz Voice will work on a customization of the user's interface addressed to the financial sector. Partners will prepare a short presentation each for this specific stakeholder group.

Following the series of technical demos, two demos will take place at M37, addressed exclusively to end users to illustrate them the features of their buildings renovation, toolkit properties and interfaces for mobile devices.

The last two demos are formally excluded from the goals of the Deliverable, as they do not relate to technical stakeholders of the project. Nonetheless, we feel that addressing



the specific needs and directly involving end users will promote project acceptance, accelerate its uptake and eventually aid its way to market



5. DELIVERABLE TIMELINE

The series of on-site demonstration activities will take place between M12 and M36, alternating an activity based in Italy with one based in France, so to differentiate partners' efforts and allow for a feedback time in elaborating subsequent steps. The general timeline is presented hereafter, indicating the roles of the main partners involved.

PARTNER	M12	M13	M23	M24	M33;M35	M34;M36
	DEM 1		DEM 2		DEM 3	
EURAC	Organization and timetable of the first set of demos;	Assisting and opening of activities; Presentation of security issues	Organization and timetable of the second set of demos;	Assisting and opening of activities; Presentation of security issues	Organization and timetable of the third set of demos; Assisting and opening of activities; delivering contribution to electricity markets	Assisting and opening of activities; delivering contribution to electricity markets
POLIMI		Presentation of the toolkit specific features and applications	Presentation of the toolkit and components specific features and applications	Presentation of the toolkit and components specific features and applications	Presentation of the toolkit technical design features, market potentials and business models	Presentation of the toolkit technical design features, market potentials and business models
ZH		Presentation of the toolkit applications and installation procedures	Demonstration of the toolkit applications and installation procedures	Demonstration of the toolkit applications and installation procedures	Demonstration of the toolkit applications and technical features-components demos	Demonstration of the toolkit applications and technical features-components demos
REV			Press conference and general project presentation; assistance in identifying stakeholders and defining logistics	Assistance in dissemination activities related to demo events	Assistance in dissemination activities related to demo events	Assistance in dissemination activities related to demo events
VYZ/CTIC			Identification and presentation of 2/3 interface options for categories involved	Identification and presentation of 2/3 interface options for categories involved	Demonstration of platform, interface and users access	Demonstration of platform, interface and users access
ACER RE/EST	Involvement of local stakeholders	Host the event	Host the event	Host the event	Host the event	Host the event

