Adapt-&-Play Holistic cOst-Effective and user-frieNdly Innovations with high replicability to upgrade smartness of eXisting buildings with legacy equipment

Résultats

Informations projet

PHOENIX

N° de convention de subvention: 893079

Site Web du projet

DOI
10.3030/893079

Projet clôturé

Date de signature de la CE
12 Mai 2020

Date de début
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Coordonné par
UNIVERSIDAD DE MURCIA
Espagne

Ce projet apparaît dans...

29 Février 2024

CORDIS fournit des liens vers les livrables publics et les publications des projets HORIZON.

Les liens vers les livrables et les publications des projets du 7e PC, ainsi que les liens vers certains types de résultats spécifiques tels que les jeux de données et les logiciels, sont récupérés dynamiquement sur OpenAIRE.

Livrables

Documents, rapports (23)

Business planning, exploitation strategies and communication report - Initial version
provides a report with the initial market analysis, the communication activities, the initial exploitation strategies

Technical requirements and human centric architecture specifications
present all technical barriers and solutions for the realisation of PHOENIX innovations.

Technical upgrades and integration mechanism for legacy equipment - Final Version
updated version of D3.2 that includes final refinements and results of the PHOENIX technical innovations

Business planning, exploitation strategies and communication report - Intermediate version
Updated version of the D8.2.

Business planning, exploitation strategies and communication report - Final version
Final report with final market analysis, the communication activities that were performed and the final exploitation strategies for PHOENIX innovations.

Demonstration and Validation Activity outcome evaluation report

This deliverable presents the outcomes of the activity including the analysis of statistics of the activity results and description of follow-up activities.

PHOENIX Smartness Hub implementation - Initial Version
describes the first release of the Building Smartness Hub describing data analytics algorithms, security, privacy and trust mechanisms, knowledge graphs and semantics.

Refinements in services for building's occupants - Initial Version
updated version of D51 that includes refinements on the diverse services that are offered to the buildings occupants

Services for building’s occupants
describes the definition and implementation of services for the building’s occupants.

Social barriers and enablers, building use cases definition and requirements
describes the potential societal and individual behavioural factors that might leverage or block the deployment of PHOENIX innovations. Furthermore, different use cases will be presented for the diverse PHOENIX innovations

Refinements in services for energy utilities and the grid - Final Version
updated version of D6.3 that includes the final solutions to provide the services to the energy utilities and the grid.

PHOENIX Smartness Hub implementation - Intermediate Version
updated version of D41 that includes refinements on the diverse algorithms and mechanism defined above

Refinements in services for building's occupants - Final Version
updated version of D5.3 that includes the final solutions to provide the services to the residents and managers of the existing building.

Intermediate Pilots Deployment, Operation and Validation
Report of all pilots and their intermediate deployment and operation of PHOENIX innovation and services as well as their validation with special emphasis in solutions and services from WP3-WP6. The validation will report on the achieved metrics, progress indicators and specific achievements in each pilot.

Technical upgrades and integration mechanism for legacy equipment - Intermediate Version
updated version of D31 that includes refinements of the PHOENIX technical innovations

Data Management Plan

It defines the guidelines for data management in order to ensure a high level of data quality and accessibility for final users and stakeholders and to allow the application of data analytics techniques Furthermore a guideline to properly handle any ethic issue related to data will be provided in this deliverable

Demonstration and Validation Activity handbook report
This deliverable captures the activity documents like activity text, guidelines, contract specifications. Furthermore, the subcontracted SME will be introduced.

PHOENIX Smartness Hub implementation - Final Version
updated version of D4.2 that includes the final version of data analytics algorithms, security, privacy and trust mechanisms, knowledge graphs and semantics for the monitoring and control of upgraded legacy equipment.

Technical upgrades and integration mechanism for legacy equipment - Initial Version
describes the first release of the PHOENIX technical innovations to upgrade the legacy systems and appliances

Communication and training
provides a report of all the communication activities and trainings conducted and the results in terms of impact achieved. It includes also any action related to the interaction conducted with consortia of other H2020 project.

Business, market & regulatory requirements
includes a complete description of the diverse requirements for the business exploitation and market instantiation of PHOENIX innovations. Furthermore, all legal and ethical aspect regarding to the regulatory requirements will be presented in this deliverable.

Refinements in services for energy utilities and the grid - Initial Version
updated version of D61 that includes refinements on the diverse services that are offered to the grid

Services for energy utilities and the grid
describes the definition and implementation of services for the buildings occupants

Démonstrateurs, pilotes, prototypes (3)

First feedback from the Proof-of-Concept deployment and Introduction to the other pilots
In this deliverable we will provide the first lessons learned about the proof-of-concept pilot in UMU as well as introduce the other pilots.

Initial Pilots Deployment, Operation and Validation

Report of all pilots and their initial deployment and operation of PHOENIX innovation as well as their validation with special emphasis in solutions from WP3 and WP4 The validation will report on the achieved metrics progress indicators and specific achievements in each pilot

Final Pilots Operation and Validation

Final report of all pilots regarding of PHOENIX innovation and services as well as their validation with special emphasis in services from WP5 and WP6. The validation will report on the achieved metrics, progress indicators and specific achievements in each pilot.

Publications

Articles approuvés par les pairs (11)

Parking Availability Prediction with Coarse-Grained Human Mobility Data

Auteurs: Aurora Gonzalez-Vidal, Fernando Terroso-Sáenz, Antonio Skarmeta
Publié dans: Computer, Materials & Continua, 2022, ISSN 1546-2226
Éditeur: Tech Science Press
DOI: 10.32604/cmc.2022.021492

Reducing Energy Consumption in the Workplace via IoT-Allowed Behavioural Change Interventions

Auteurs: Alfonso P. Ramallo-González, Cleopatra Bardaki, Dimosthenis Kotsopoulos, Valentina Tomat, Aurora González Vidal, Pedro J. Fernandez Ruiz, and Antonio Skarmeta Gómez
Publié dans: Buildings, 2022, ISSN 2075-5309
Éditeur: MDPI
DOI: 10.3390/buildings12060708

A Novel Learning Algorithm Based on Bayesian Statistics: Modelling Thermostat Adjustments for Heating and Cooling in Buildings

Auteurs: Alfonso P. Ramallo-González, Aurora González-Vidal, Fernando Terroso-Saenz and Antonio F. Skarmeta-Gómez
Publié dans: Mathematics, 2022, ISSN 2227-7390
Éditeur: MDPI
DOI: 10.3390/math10142363

Design and Implementation of an Interoperable Architecture for Integrating Building Legacy Systems into Scalable Energy Management Systems

Auteurs: Aristotelis Ntafalias , Sotiris Tsakanikas,Spyros Skarvelis-Kazakos ,Panagiotis Papadopoulos,Antonio F. Skarmeta-Gómez,Aurora González-Vidal,Valentina Tomat,Alfonso P. Ramallo-González,Rafael Marin-Perez,Maria C. Vlachou
Publié dans: https://www.mdpi.com/journal/smartcities, 2022, ISSN 2624-6511
Éditeur: MDPI
DOI: 10.3390/smartcities5040073

"""Democratization of PV Micro-Generation System MonitoringBased on Narrowband-IoT"""

Auteurs: José Miguel Paredes-Parra , Raquel Jiménez-Segura, David Campos-Peñalver , Antonio Mateo-Aroca, Alfonso P. Ramallo-González and Angel Molina-García
Publié dans: Sensors, 2022, ISSN 1424-8220
Éditeur: Multidisciplinary Digital Publishing Institute (MDPI)
DOI: 10.3390/s22134966

A novel method for eliminating the exponential growth of computing optimal demand response events for large-scale appliances re-scheduling

Auteurs: Alfonso P. Ramallo-González, Tomas Alcañiz-Cascales, Valentina Tomat, Ana Fernández Guillamón, Ángel Molina and Antonio F. Skarmeta-Gómez
Publié dans: Sustainable Energy, Grids and Networks, 2022, ISSN 2352-4677
Éditeur: Elsevier Limited
DOI: 10.1016/j.segan.2022.100907

Intrusion Detection based on Privacy-preserving Federated Learning for the Industrial IoT

Auteurs: Pedro Ruzafa-Alcazar, Pablo Fernandez-Saura, Enrique Marmol-Campos, Aurora Gonzalez-Vidal, Jose L. Hernandez-Ramos, Jorge Bernal-Bernabe, and Antonio F. Skarmeta
Publié dans: IEEE TRANSACTIONS ON INDUSTRIAL INFORMATICS, 2021, ISSN 1551-3203
Éditeur: Institute of Electrical and Electronics Engineers
DOI: 10.1109/tii.2021.3126728

A Transfer Learning Framework for predictive energy-related scenarios in Smart Buildings

Auteurs: Aurora Gonzalez-Vidal, Jose Mendoza-Bernal, Shuteng Niu, Antonio F. Skarmeta and Houbing Song
Publié dans: IEEE Transactions on Industrial Informatics, 2022, ISSN 0093-9994
Éditeur: Institute of Electrical and Electronics Engineers
DOI: 10.1109/tia.2022.3179222

Understanding patterns of thermostat overrides after demand response events

Auteurs: Valentina Tomat, Marika Vellei, Alfonso P. Ramallo-González, Aurora González-Vidal, Jérôme Le Dréau, Antonio Skarmeta-Gómez
Publié dans: Energy & Buildings, 2022, ISSN 0378-7788
Éditeur: Elsevier BV
DOI: 10.1016/j.enbuild.2022.112312

Intrinsic and extrinsic quality of data for open data repositories

Auteurs: Aurora González-Vidal, Alfonso P.Ramallo-González, and Antonio F.Skarmeta
Publié dans: ICT Express, 2022, ISSN 2405-9595
Éditeur: Elsevier
DOI: 10.1016/j.icte.2022.06.001

Evaluating Federated Learning for intrusion detection in Internet of Things: Review and challenges

Auteurs: Enrique Mármol Campos, Pablo Fernández Saura, Aurora González-Vidal, José L.Hernández-Ramos, Jorge Bernal Bernabé, Gianmarco Baldini, and AntonioSkarmeta
Publié dans: Computer Networks, 2022, ISSN 1389-1286
Éditeur: Elsevier BV
DOI: 10.1016/j.comnet.2021.108661

Autres (3)

Estudio de gestión de termostatos en las viviendas canadienses mediante los eventos de control de demanda

Auteurs: Tomat, V., Vellei, M., Le Dréau, J., Ramallo-González, A
Publié dans: 2021
Éditeur: V Encuentro de Ingeniería de la Energía del Campus Mare Nostrum
DOI: 10.5281/zenodo.7276487

An open ICT solution to integrate multi-modular battery systems on buildings

Auteurs: SANCHEZ VALVERDE J., RAMALLO GONZALEZ A.P., MARTÍNEZ SÁNCHEZ R., MOLINA GARCIA A., ANTONIO F. GÓMEZ SKARMETA
Publié dans: Results in Engineering, 2023
Éditeur: Elsevier
DOI: 10.1016/j.rineng.2023.101217

Insights into End Users' Acceptance and Participation in Energy Flexibility Strategies

Auteurs: Valentina Tomat, Alfonso P. Ramallo-González, Antonio Skarmeta-Gómez, Giannis Georgopolous, Panagiotis Papadopoulos
Publié dans: Buildings, 2023

Éditeur: MDPI
DOI: 10.3390/buildings13020461

Actes de conférence (4)

A practical approach for modelling PV off-grid systems in EnergyPlus using post-processing of data to identify black out days
Auteurs: Konstantinos Tsatsakis, Giorgos Papadopoulos
Publié dans: 2022
Éditeur: https://promitheasconference.wordpress.com/
DOI: 10.26868/25222708.2021.30133

Holistic IoT Architecture for Secure Lightweight Communication, Firmware Update, and Trust Monitoring
Auteurs: Jesus Sanchez-Gomez, Rafael Marin-Perez, Mirko Ross, Antonio Skarmeta
Publié dans: 2021
Éditeur: IEEE International Conference on Smart Internet of Things (SmartIoT)
DOI: 10.1109/smartiot52359.2021.00066

An SRI based approach to increase building smartness
Auteurs: Tsatsakis, Konstantinos; Papadopoulos, Giorgos
Publié dans: 14th International Scientific Conference on Energy and Climate Change, Numéro 13-15 October 2021, 2022
Éditeur: Zenodo
DOI: 10.5281/zenodo.6372474

Interoperable and Intelligent Architecture for Smart Buildings
Auteurs: Pedro Gonzalez-Gil, Rafael Marin-Perez, Aurora Gonzalez Vidal, Alfonso P. Ramallo Gonzalez, Antonio Skarmeta
Publié dans: IEEE International Conference on Smart Internet of Things (SmartIoT), 2021
Éditeur: IEEE International Conference on Smart Internet of Things (SmartIoT)
DOI: 10.1109/smartiot52359.2021.00067

Ensemble de données

Ensemble de données via OpenAIRE (1)

PLEIAData:consumption, HVAC (Heating, Ventilation & Air Conditioning), temperature, weather and motion sensor data for smart buildings applications

Auteurs: Antonio Martínez Ibarra; Aurora González-Vidal; Antonio Skarmeta Gómez
Publié dans: Zenodo

Logiciel

Logiciel via OpenAIRE (1)

Semantic Smart Readiness Indicator Framework

Auteurs: Anonymous, Anonymous
Éditeur: Zenodo
DOI: 10.5281/zenodo.10047286; 10.5281/zenodo.10299895

Autres produits de recherche

Autres produits de recherche via OpenAire (1)

An SRI based approach to increase building smartness

Auteurs: Tsatsakis, Konstantinos; Papadopoulos, Giorgos
Publié dans: Zenodo

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