PRECEPT - Research Project Fact Sheet

Title of Project	**A novel decentralised edge-enabled PREsCriptivE and ProacTive framework for increased energy efficiency and well-being in residential buildings - completed**
Project Acronym	PRECEPT
Funding Program	H2020 - Building a low-carbon, climate-resilient future (LC.)
Project Identifier	Call Identifier H2020-NMBP-ST-IND-2018-2020, Topic LC-EEB-07-2020
Total Budget/FRC Budget	7654025 € / 321000 €
Starting – Ending Date	10/2020-03/2024
Consortium	1. Watt and Volt AE (GR) 2. Centre for Research and Technology Hellas (GR) 3. Kaunas University of Technology (LT) 4. Frederick Research Center (CY) 5. Cleopa GmbH (DE) 6. Nuromedia (DE) 7. Odin Solutions SL (SP) 8. DEMO Consultants bv (NL) 9. Austrian Standards International (AT) 10. LC Innoconsult International (HU) 11. State Higher Educational Institution Prydniprovska State (UA) 12. Contecht GmbH (DE) 13. Private Construction and Assembly Enterprise (UA) 14. My Energia Oner SL (SP) 15. Politecnico di Milano (IT)
Project Objectives	<u>General:</u> PRECEPT ambitiously aims to set the grounds for the deployment and operation of proactive residential buildings. The proposed framework introduces a "plug-n-play" Pred(scr)ictive and Proactive building energy management system (PPBMS) installed locally at a building level, at the Edge-Enable Proactiveness (E EP) device. The proposed PP-BMS is self-adapted, self-learned, -managed, -monitored, -healing and -optimised, requiring no (or minimum) installation costs and no maintenance. PP-BMS transform traditional reactive buildings to proactive ones, increasing their performance (both energy efficiency and occupants' well-being), exploiting RES, storage, forecasts and energy tariffs. PRECEPT also targets developing a real-time digital representation of the intelligent, proactive residential buildings by employing 6D BIM technology. Further to that, a set of novel indicators leveraging the smart readiness rationale will be introduced to rating the Smart Proactiveness of buildings. Also, PRECEPT approach will deliver advanced data visualisations, utilising big-data and visual analytics techniques, which in conjunction with a social collaboration platform will engage stakeholders to exchange best-practices. Interaction with the grid will be supported in a secured (Hyperledger Fabric) manner through the decentralised EEP device, supporting the implementation of D/R strategies. PRECEPT framework will be demonstrated in relevant environments in 5 use cases, including 250 apartments.
Work Packages	WP1 PRECEPT Requirements, Specifications and Architecture WP2 BIM & Digital Twin Technologies WP3 PRECEPT Distribution, Modelling and Security Technologies WP4 Pred(scr)ictive and Proactive Building Management System WP5 System Integration, Demonstration & Impact Assessment WP6 Dissemination, Exploitation & Promotion WP7 Project Management
External References	https://www.precept-project.eu/ https://cordis.europa.eu/project/id/958284
Role in the Project	Principal Investigator