

# “nZEB Smart House”

## *Digital Innovation Hub in COMFORTAGE pilot services*



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# Digital innovations into real-world for Healthy Ageing

## ■ Living Labs & Digital Innovation Hubs

### ■ The Living Lab approach:

- Real-life experimentation environment
- Dynamic environments where testing, validation, development, and co-creation
- Act as collaborative innovation hubs, providing valuable insights, serving as testbeds for cutting-edge products, services, systems, and solutions,
- Establish a strong sense of community
- Evaluate digital health solutions, integration of emerging technologies such as AI, IoT, VR, wearables, etc. in testing processes

### ■ The Digital Innovation Hub Approach

- Inclusive Digital Health Ecosystems
- Global Living Labs networks, the European Network of Living Labs (ENoLL).



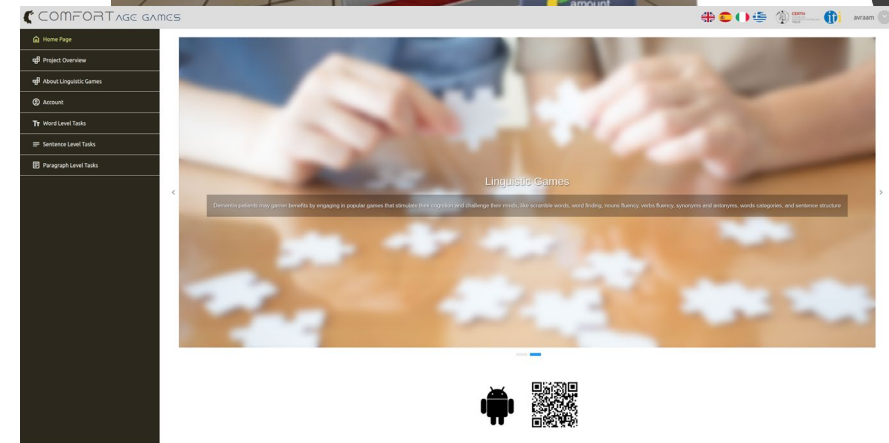
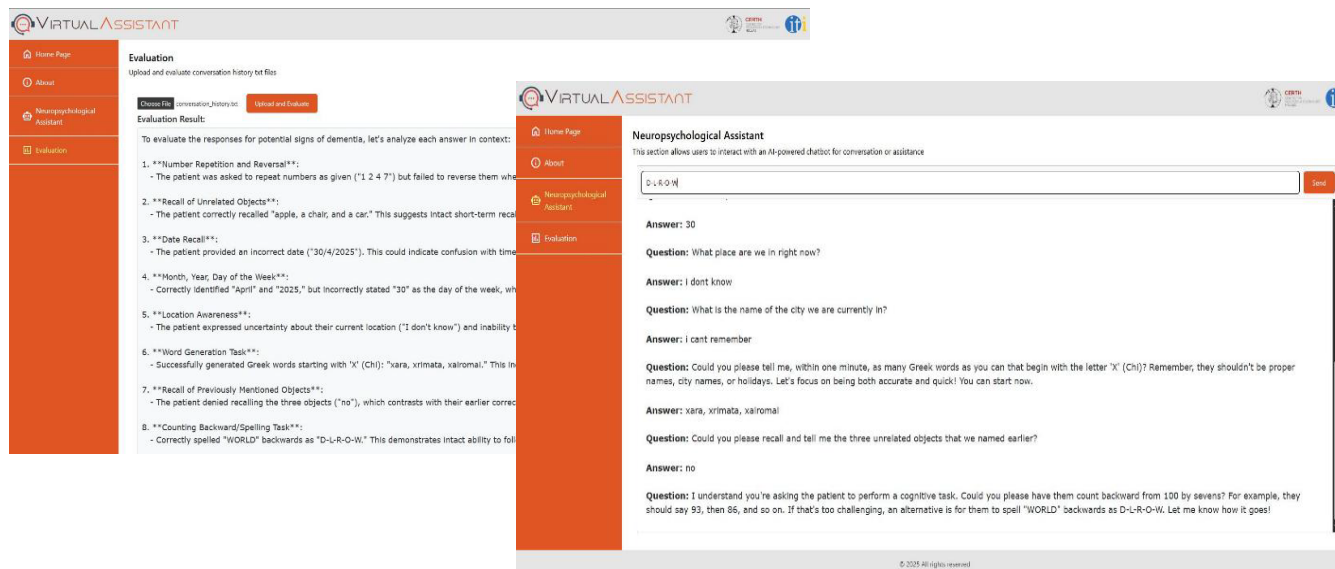
# Digital innovations in COMFORTage context

- Real world experimentations & pilot operations
  - Active-Ageing Observatory: Study of Digital Innovation Hubs and Living Labs for improving wellbeing and QoL, digital and virtual technologies will be extended in Living Labs
  - Implementation of Patients Digital Twins and the utilization of DIHs and Living Labs.
  - Knowledge transfer: Digital Innovation hubs are capable of generating knowledge
  - Openness increase: Digital Innovation hubs become also reach higher levels of openness
  - Are active players in the definition of connections with the best partner for SMEs
  - Act as external enabling factors that foster connections with other stakeholders (companies and institutions)



# Digital innovations in COMFORTage context

- AR/VR gamification techniques
- Computerised tools, mock ups /Linguistic platform
- Wellness and quality of life integrated services, along with **AI-driven Conversational Agent** (Virtual Assistant) for Self-management of chronic diseases







# A Digital Innovation Hub based on a SmartHome





# A Digital Innovation Hub based on a SmartHome

The DIH was registered in the JRC Catalogue in early 2017, consisting the first DIH in the region of Central Macedonia, and has been fully operational ever since

# nZEB Smart Home Services and expertise



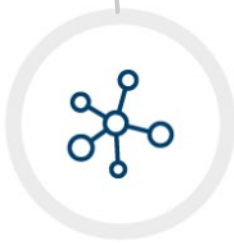
nZEB Smart Home



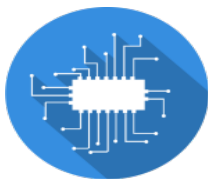
Research  
& Development



Innovation  
Management



Ecosystem



Artificial  
Intelligence



Machine  
Learning



Visual  
Analytics



Internet of  
Things



Blockchain



Big Data



Robotics



Computer Vision



Virtual Reality



Augmented  
Reality



Signal  
Processing

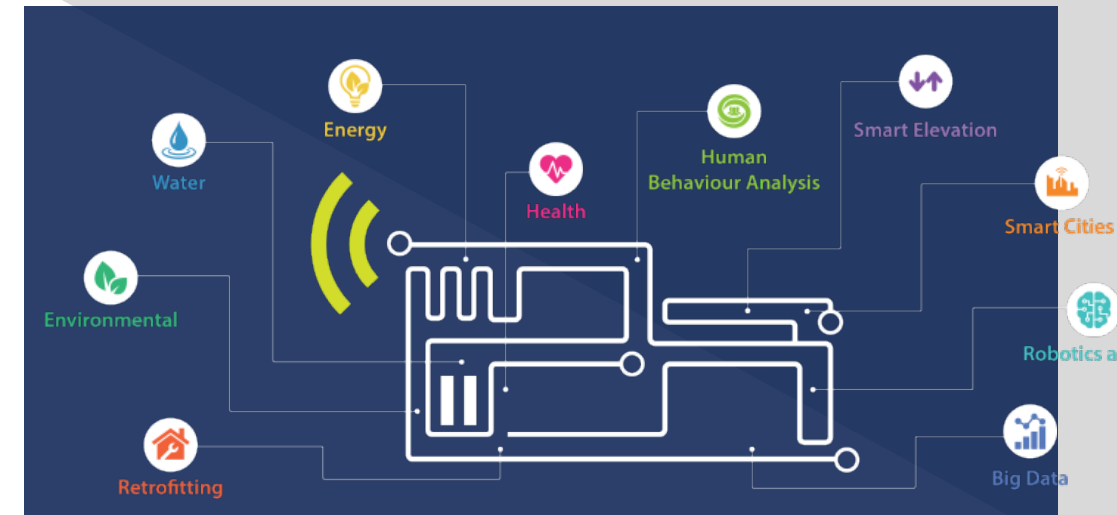


Smart  
Hardware  
Solutions

# nZEB Smart Home services & infrastructures

## The nZEB Smart Home & the IsZEB Cluster, Part of the Digital Innovation Hubs

- Fully operational Digital Innovation Hub since 2017
- Constantly evolving collaborations in Regional, National, & EU level
- Already participates as a pilot infrastructure in more than 20 R&D projects
- Active role in most EU initiatives for DIHs so far
- Enhanced construction materials
- Intelligent ICT solutions
- A future-proof, sustainable and active testing, validating and evaluating ecosystem.



A Digital Innovation Hub *powered by* CERTH/ITI





# Research & Development



The DIH:

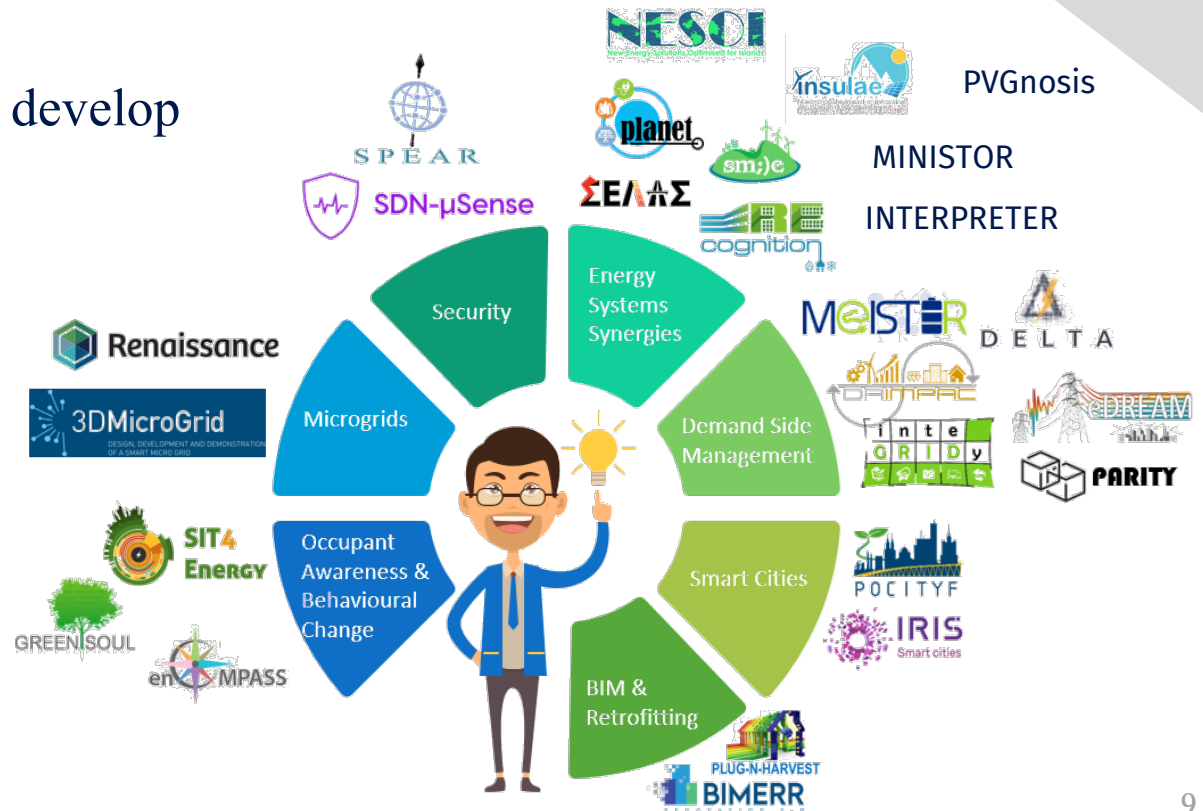
- Emphasises on the role of ICT in **Smart Building Solutions**
- Collects heterogeneous information on building systems & optimize their use to provide real time control strategies for Building Management

It explores **innovative ideas** through basic research, to develop **new solutions** either at software or hardware level.

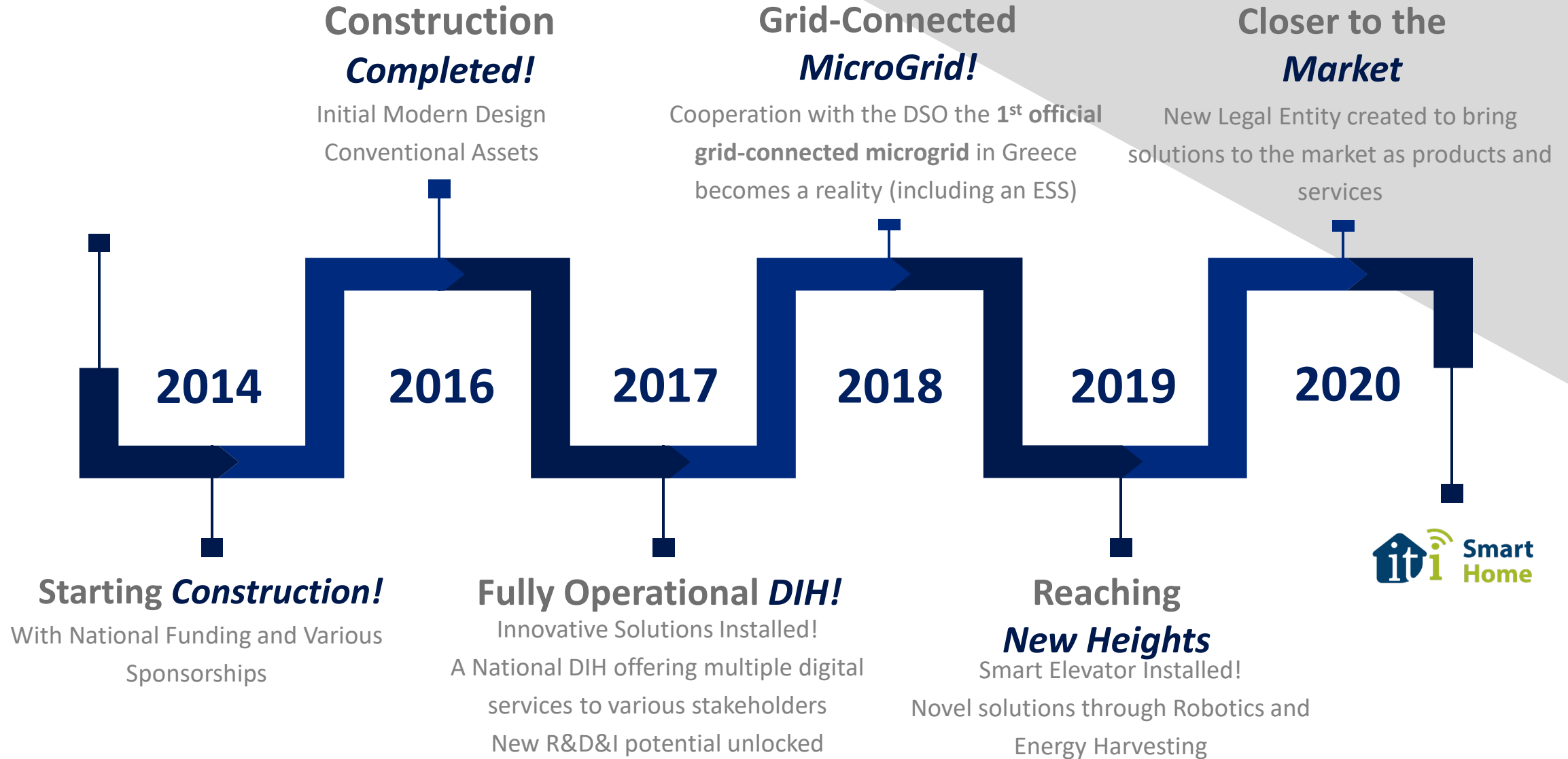
Indicative offered **Services**:

- Specific R&D
- Feasibility study
- Proof of concept
- Access to infrastructure
- Concept validation
- Fast Prototyping
- Trend Analysis

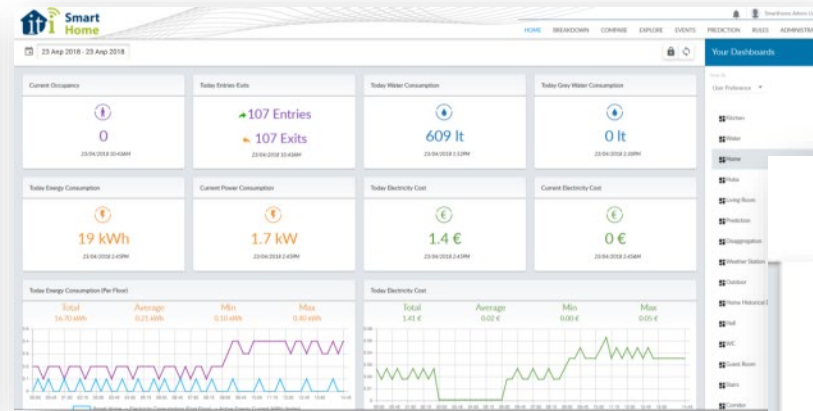
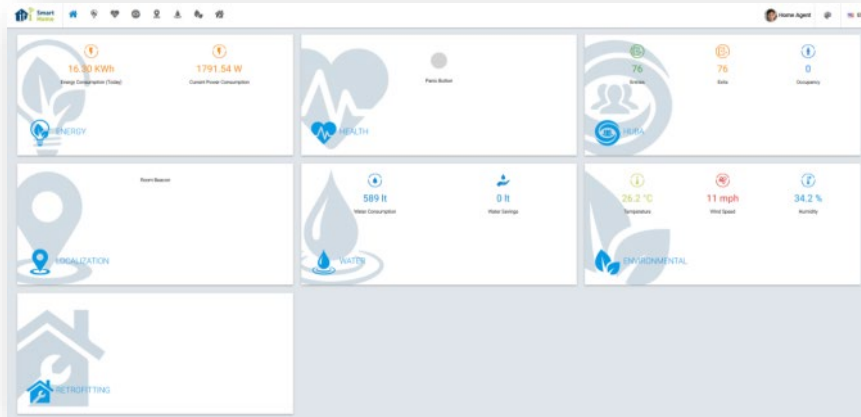
>10 Construction-related ongoing EU & National R&D Projects



# Timeline of the nZEB Smart Home DIH



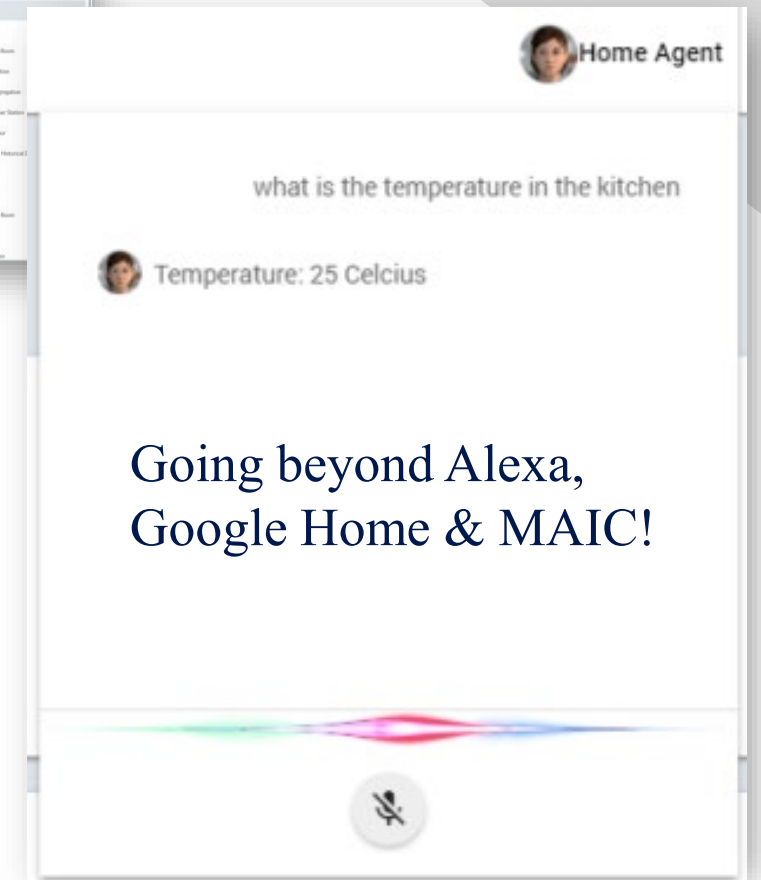
# nZEB Smart Home Infrastructure VI



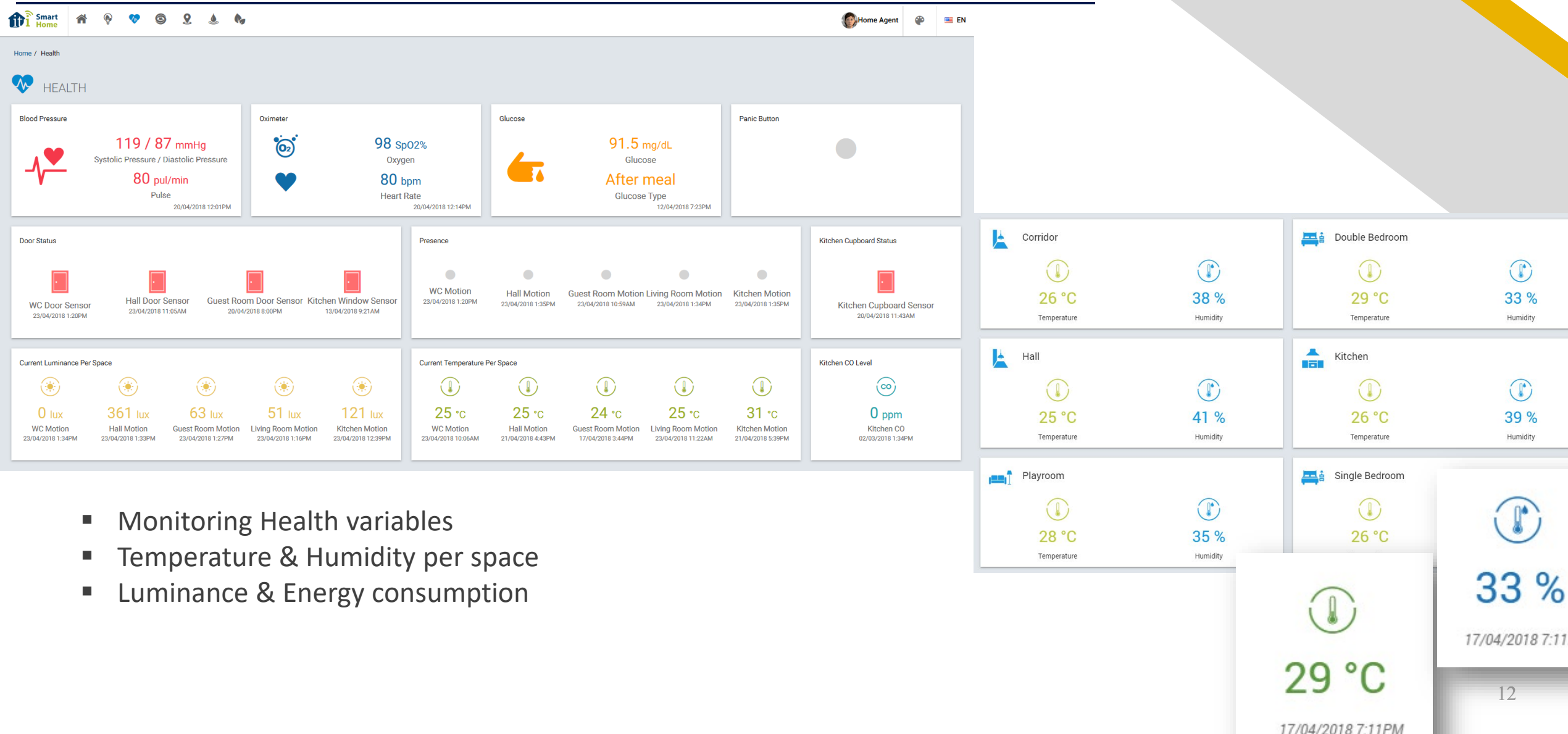
## Flexible IoT interface for optimized Monitoring & Control

Interoperable IoT Platform for Monitoring, control, and intelligence

- Easy deployment & integration
- User friendly
- Voice controlled
- Enhanced Security
- Supports **AI-driven solutions**

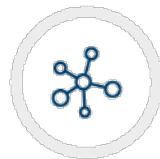


# Health, Enriched Spatial Monitoring



- Monitoring Health variables
- Temperature & Humidity per space
- Luminance & Energy consumption





# As an overall Ecosystem

The **nZEB Smart Home** intend to develop and streamline the flow of ideas, talent, and capital throughout the entire ecosystem:

- Technology Scouting
- Brokerage
- Ecosystem building
- Training on technical & Soft skills
- Communication of best practices



Infrastructure used in  
R&D projects



Case Studies

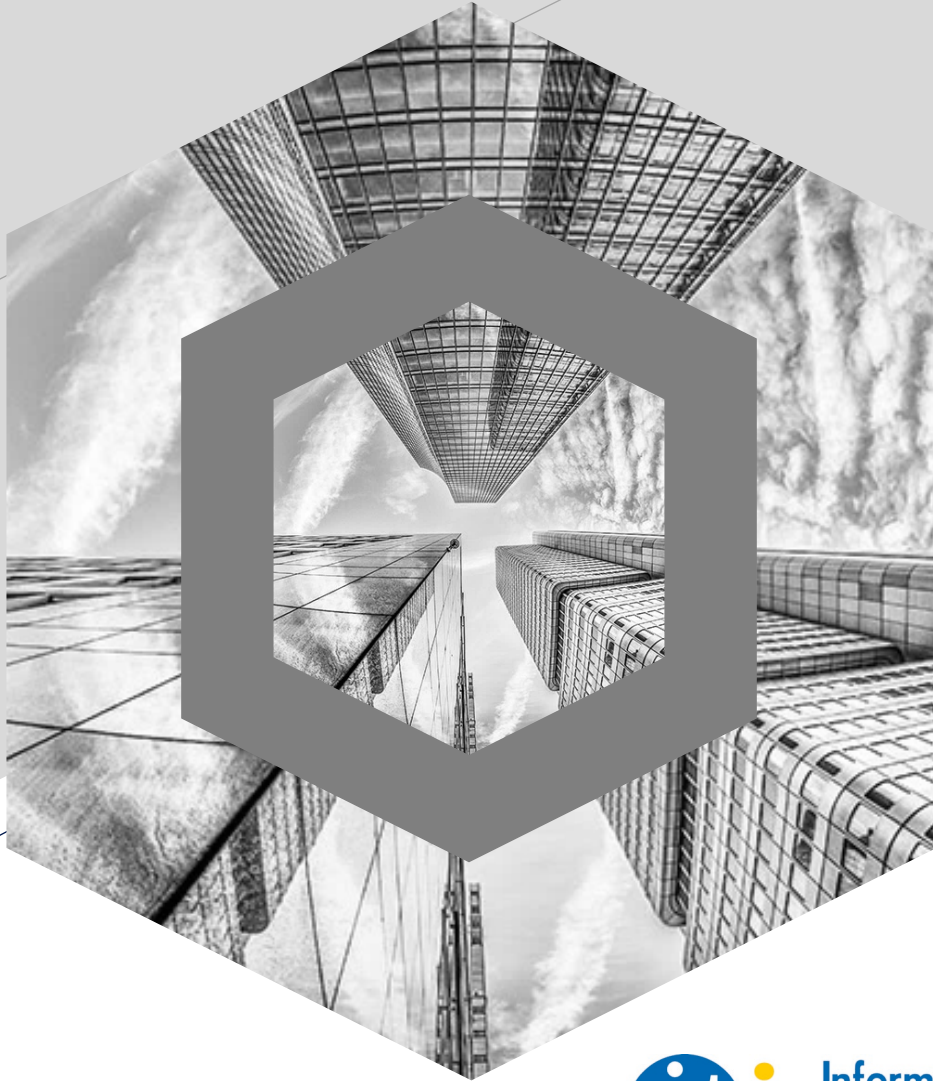


2-4 demos / month to EU/National  
stakeholders

1-2 Technical Seminars  
per year



Expo Participation



# Thank you



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