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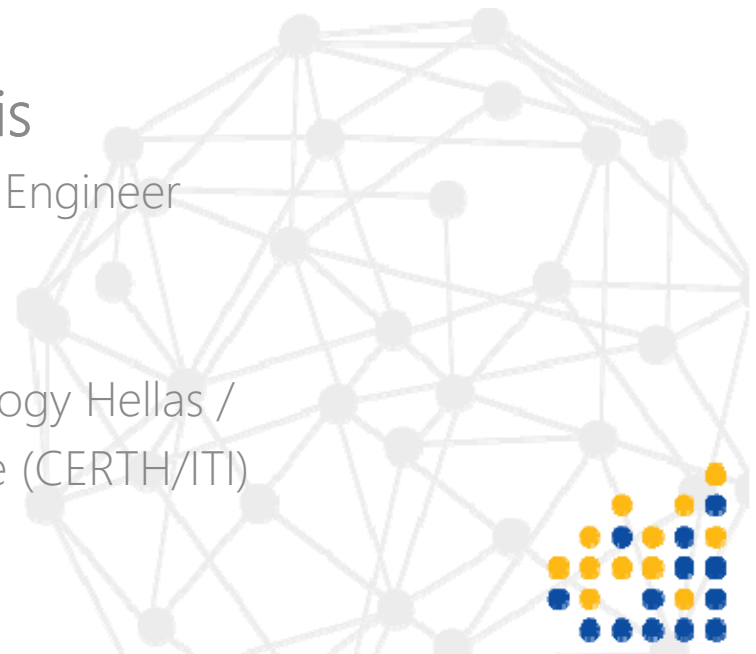
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**VICINITY** *in a Nutshell..*



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# Consortium & Key Data

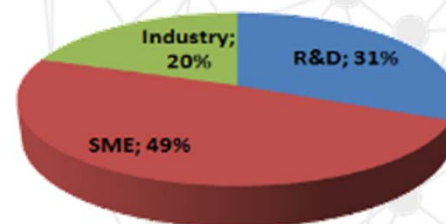
Big RIA Project, 7,5M€ EU Funding

4 Years - 1/1/2016-31/12/2019

15 Partners – 9 countries:



- 1) TU Kaiserslautern, DE (*Project Coordination*)
- 2) ATOS Spain SA, ES (*Exploitation Manager*)
- 3) Centre for Research and Technology Hellas, GR (*Scientific & Technical Manager*)
- 4) Aalborg University, DK
- 5) Gorenje Gospodinjski Aparati D.D., SL
- 6) OTE – Hellenic Telecommunications Organization S.A., GR
- 7) bAvenir s.r.o., SK (*Innovation Manager*)
- 8) Climate Associates Ltd., GB
- 9) InterSoft A.S., SK
- 10) Universidad Politécnica de Madrid, ES
- 11) Gnomon Informatics S.A., GR
- 12) Tiny Mesh AS, NO
- 13) HAFENSTROM AS, NO
- 14) Enercutim – Associação Empresarial de Energia Solar de Alcoutim, PT
- 15) Municipality of Pylaia-Hortatis, GR



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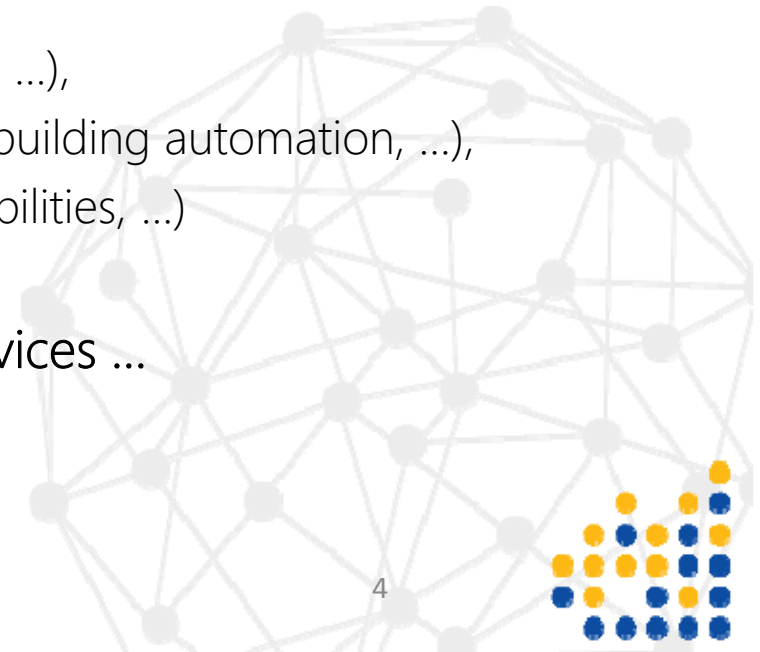


## Challenge and Vision

*IoT arises from  
interoperability of things on semantic layer,  
creating new services*

However,

- "Silos" or "Islands" characterize current status
- Different ..
  - .. standards (W3C, oneM2M, FIware, ZigBee, ...),
  - .. application areas (energy, mobility, health, building automation, ...),
  - .. brands (deliberate vendor locks, incompatibilities, ...)
  - ..
- Gap to users, social networks, market of services ...



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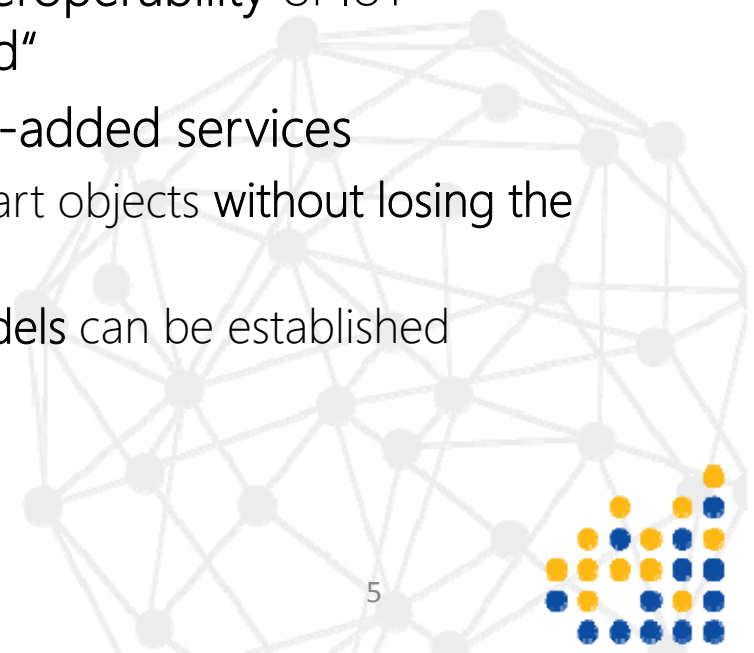
# VICINITY Vision and Objectives

VICINITY's vision is to

- provide "Interoperability" as a service
- create a platform for domain-crossing, value-added services

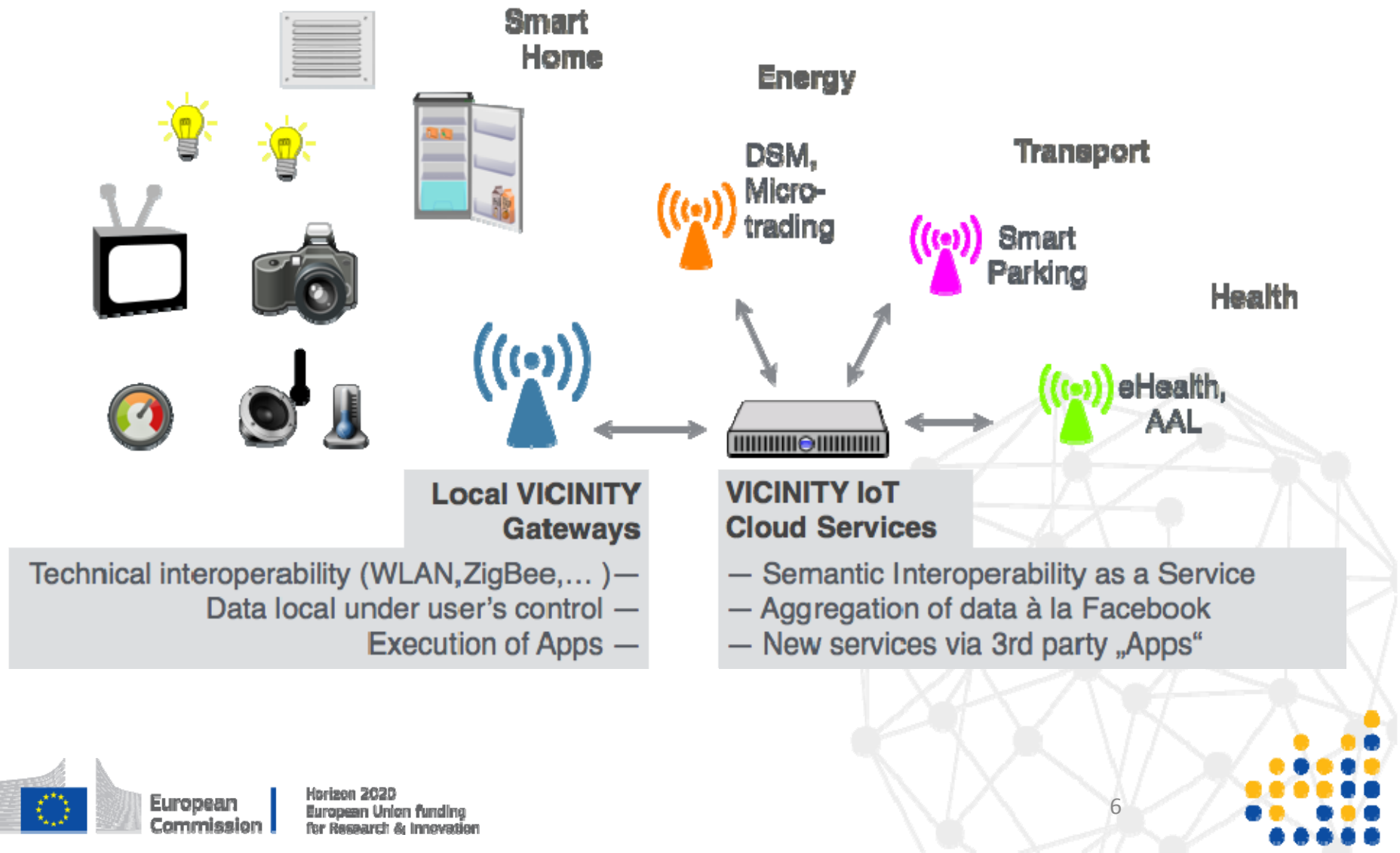
.. by building and demonstrating ..

- a **bottom-up** ecosystem of **decentralised interoperability** of IoT infrastructures, called "virtual neighbourhood"
- like social network for things, enabling **value-added services**
  - where users can **share** the access to their smart objects **without losing the control** over them
  - where **cross-domain services & business models** can be established





# Approach: VICINITY User Platform

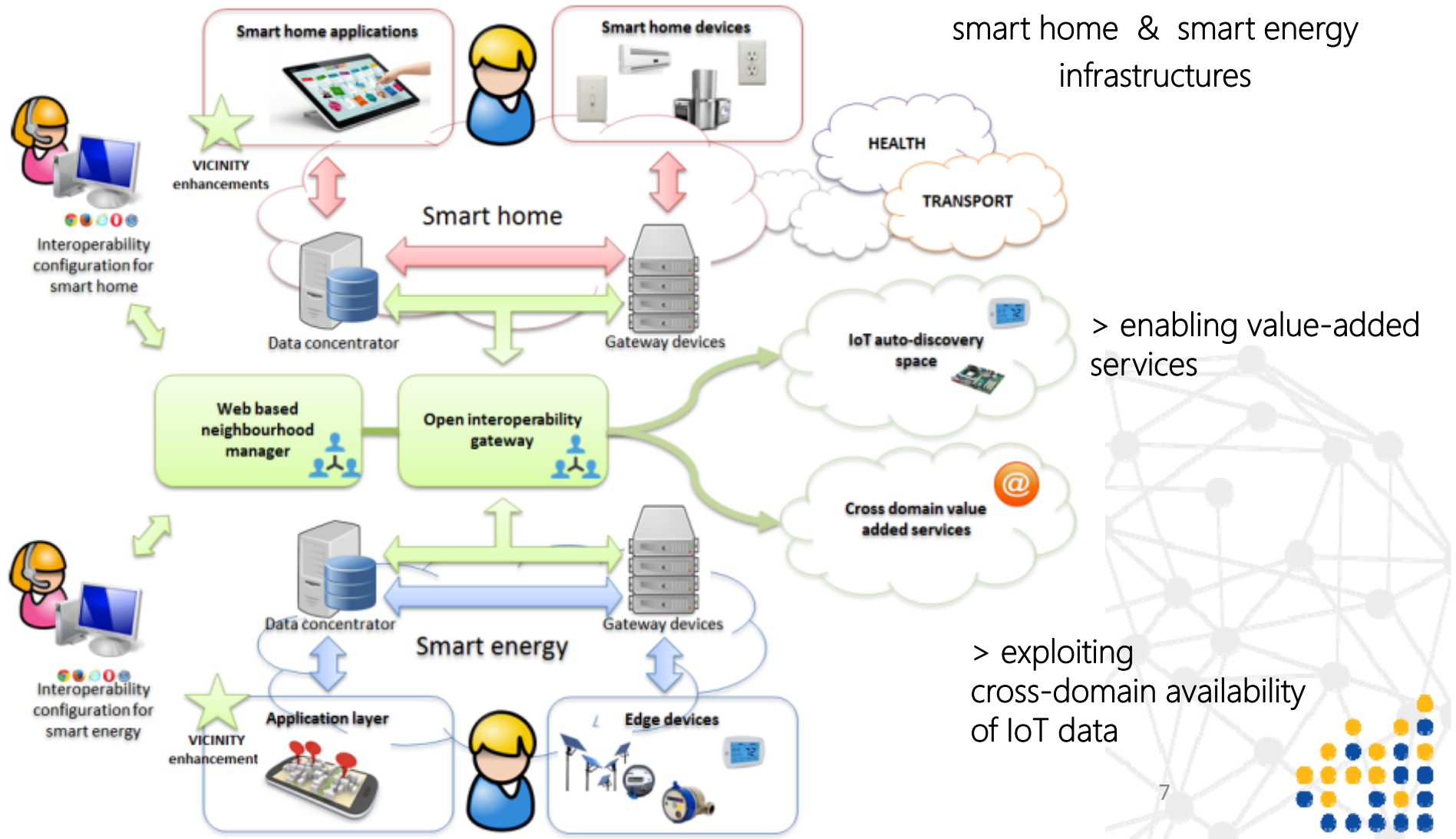






# VICINITY neighbourhood concept

Interconnecting smart home & smart energy infrastructures



# VICINITY Platforms

## HW/SW Platforms

- HW nodes: SmartCoDe FP7, TinyMesh
- Android or OSGI VM
- Protocols: ZigBee, WLAN, Bluetooth Mesh, TinyMesh
- W3C Linked Data Platform (LDP), FIWARE



## Semantic interoperability

- Interoperability middleware building on LinkSmart/Hydra, Ebbits
- Ontologies from Ready4SmartCities, SmartCoDe FP7, OneM2M ...  
(+ *dynamic, user-driven, bottom-up extensibility, ...*)

*Evaluation of APIs and standards by model-based approach within development process*

*=> Feedback to ETSI/OneM2M standardization processes*



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# Pilots: World Wide Vicinity



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# Pilot 1: Smart Energy Microgrid enabled Municipal buildings

Municipal buildings in Algarve region, Portugal

- Community-scale energy microgrid

VICINITY value-added services:

- Data exposition to citizens so that they can understand the value of the investment
- Access to key performance indicators



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## Pilot 2: Assisted Living integrated in Smart Grid Energy Ecosystem

Demand Side Management (DSM) combined with Assisted Living in Tyske, Norway

VICINITY value-added services:

- Real-time monitoring of building facility and occupancy
- User energy profiling
- Assistive services for people with disabilities
- Health personnel services



TinyMesh Sensors



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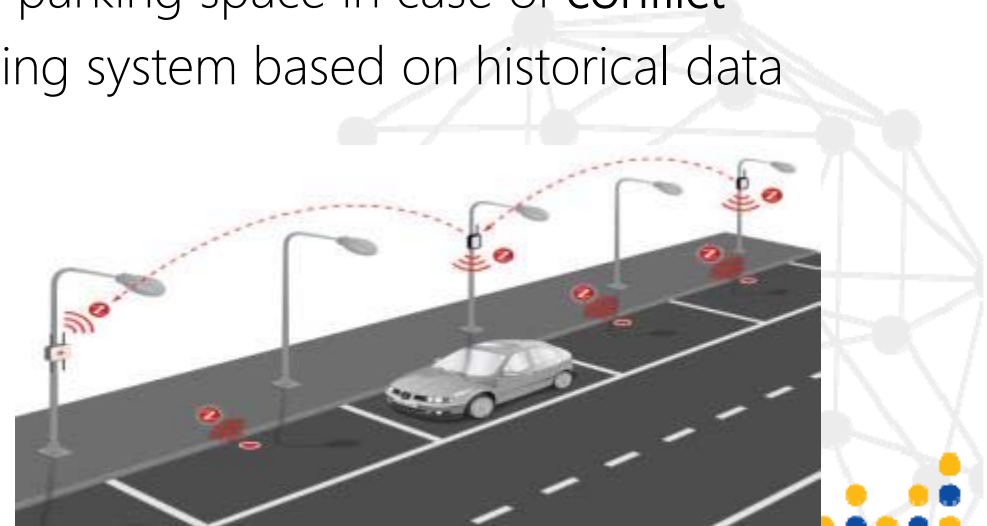


## Pilot 3: Intelligent (Transport) Parking

Demonstrated in Tyske, Norway

VICINITY value-added services:

- Virtualized and distributed Business Intelligence framework providing customized recommendations
- Mobile apps presenting information on parking space options, allowing behavioral incentives
- Intelligent distribution/allocation of parking space in case of conflict
- Payment services with variable pricing system based on historical data analysis



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## Pilot 4: eHealth at Home with social networks

Electronic medical care services demonstrated in homes of the municipality of Pilea-Hortiatis in Northern Greece

VICINITY value-added services:

- Intelligent processing of multi-sensorial signals received to raise events/alerts based on abnormal conditions (e.g. end-user hasn't interacted with any device for a prolonged period)
- Clustering of users with similar profiles and health data streams constructing a social network



Panic Button



Data Center Communication



Location Sensor



Weight Sensor



Pressure



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# Thank you!

More Info: [vicinity-h2020.eu](http://vicinity-h2020.eu)  
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