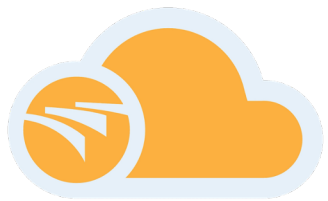


# Clinically-validated **IN**tegrated Support for Assistive **C**are and Lifestyle Improvement: the Human Link

**Horacio González-Vélez, PhD**

ORCID: [0000-0003-0241-6053](https://orcid.org/0000-0003-0241-6053)

NCI Research Day, June 2021



National College of Ireland  
Cloud Competency Centre



# EU Population Trends

- Total: 511M @2016 → 520M @2070
- Working-age: 333M @2016 → 292M @2070

**People aged 65+ to double over the next 5 years**

Source: DG for Economic and Financial Affairs (2018) The 2018 Ageing Report: Economic & Budgetary Projections for the 28 EU Member States (2016-2070). Institutional Paper 079, European Commission, Luxembourg, URL [doi.org/10.2765/615631](https://doi.org/10.2765/615631), ISBN: 978-92-79-77460-7





**Low** physical activity is a lifestyle **Risk** factors for many chronic conditions in the older age

**Tech Assisted Living** can optimise health-related QoL and promote an **Active Longevity**



Interdisciplinary  
research project  
to support  
**Assisted Living**  
for older adults  
via state-of-the-  
art **Assistive**  
**Technologies**

# Wearable Devices



# Software Platform



# Personalised Services



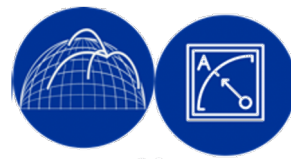
VINCI: "Clinically-validated INtegrated Support for Assistive Care and Lifestyle Improvement: the Human Link" <https://vinci.ici.ro/>, a 3-year project funded by the European Union's Active Assisted Living Programme under grant agreement AAL2017-63-VINCI (2018-2021)







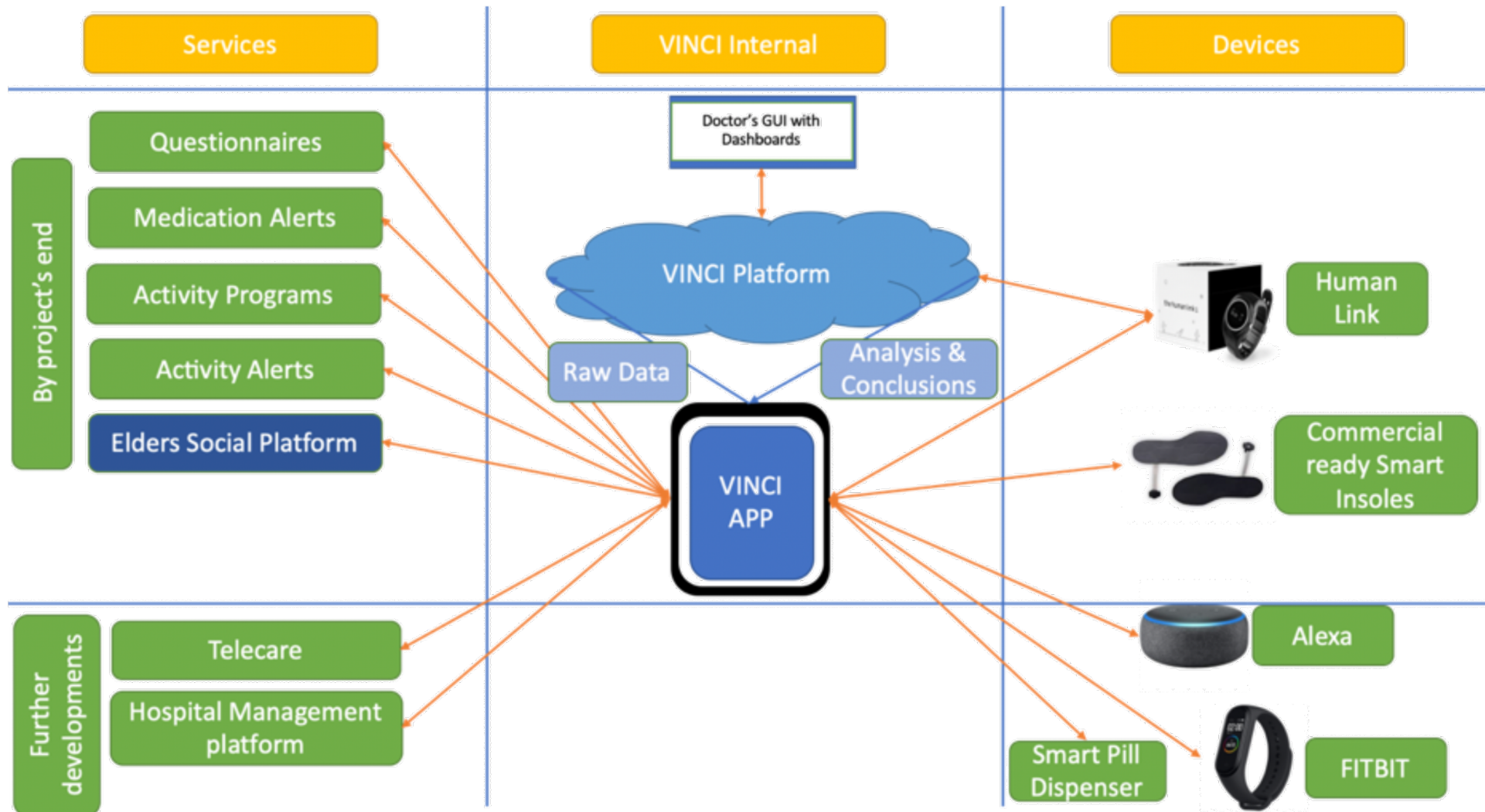
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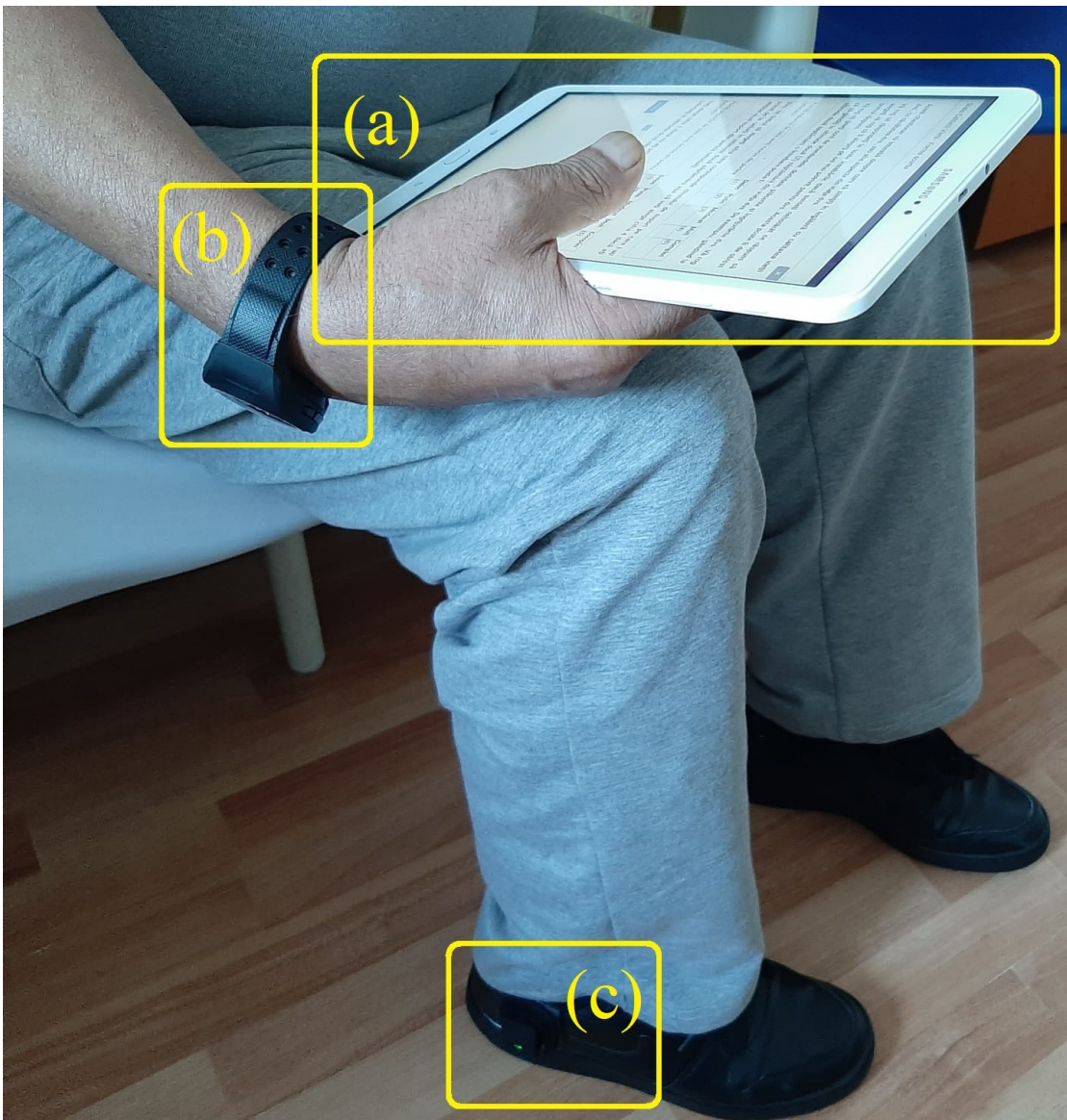
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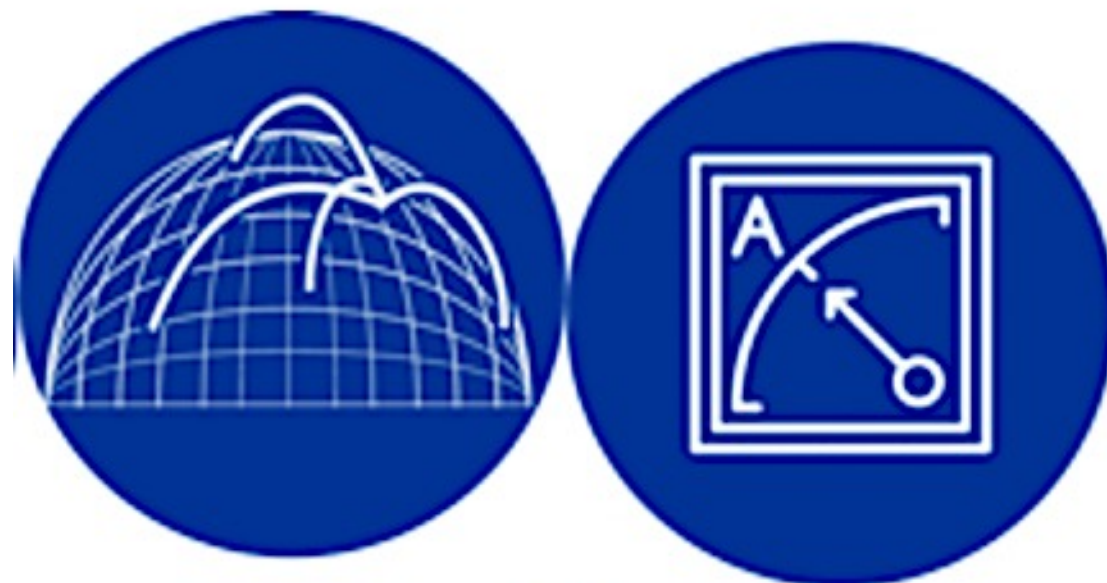
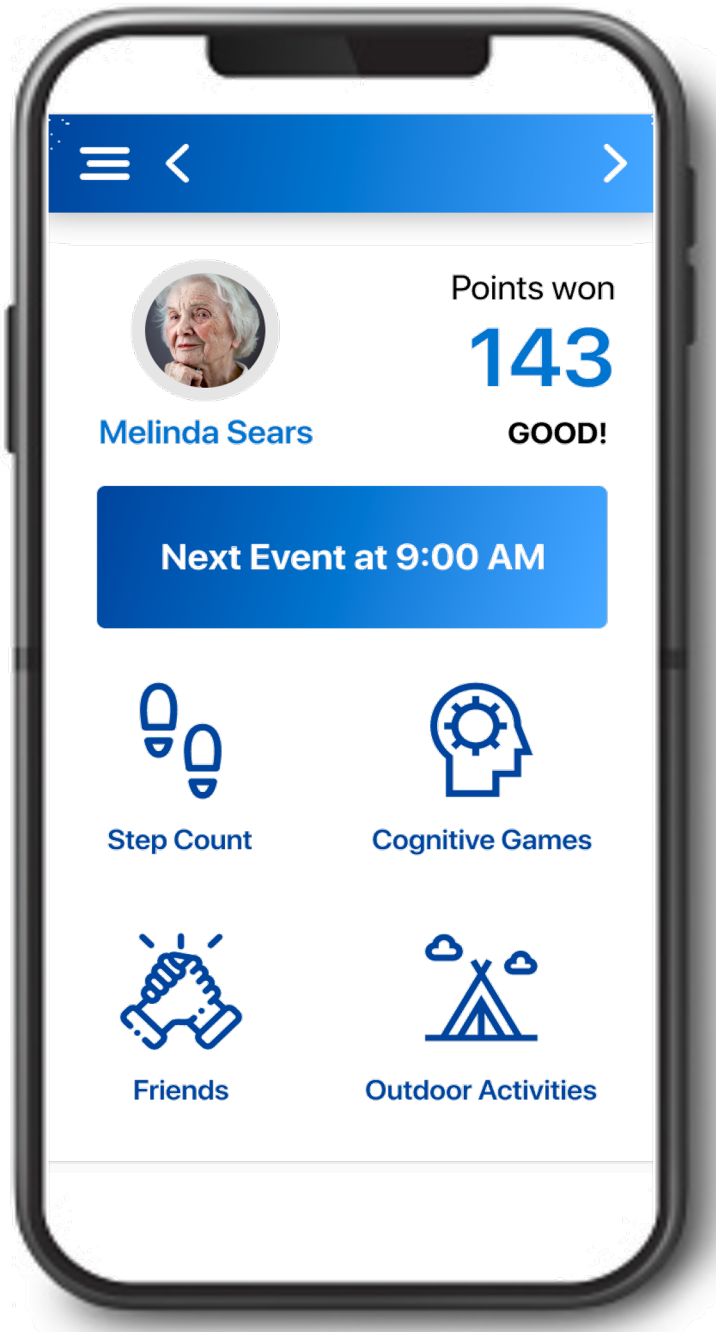


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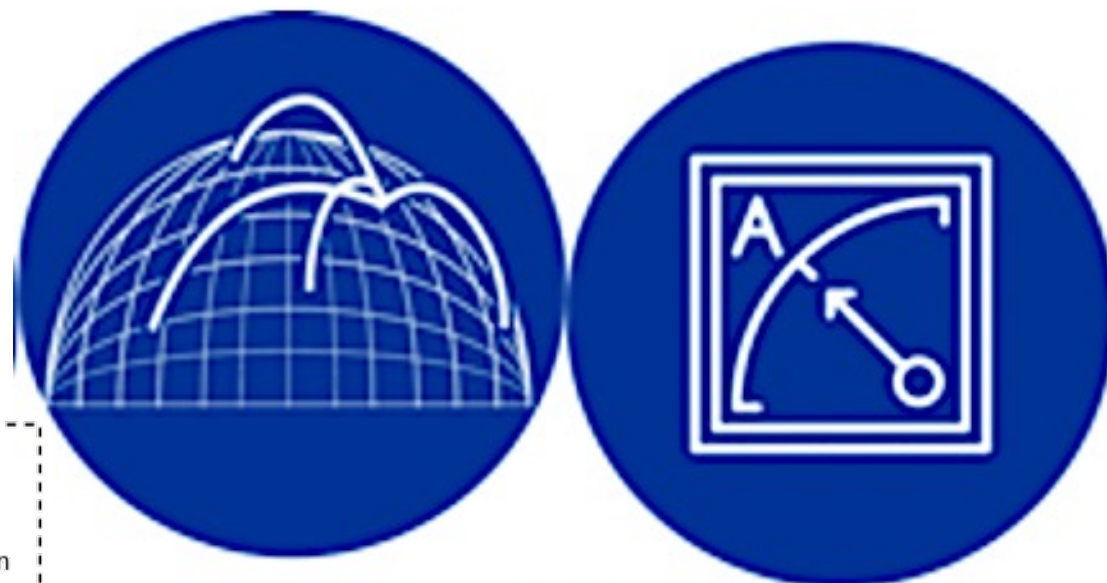
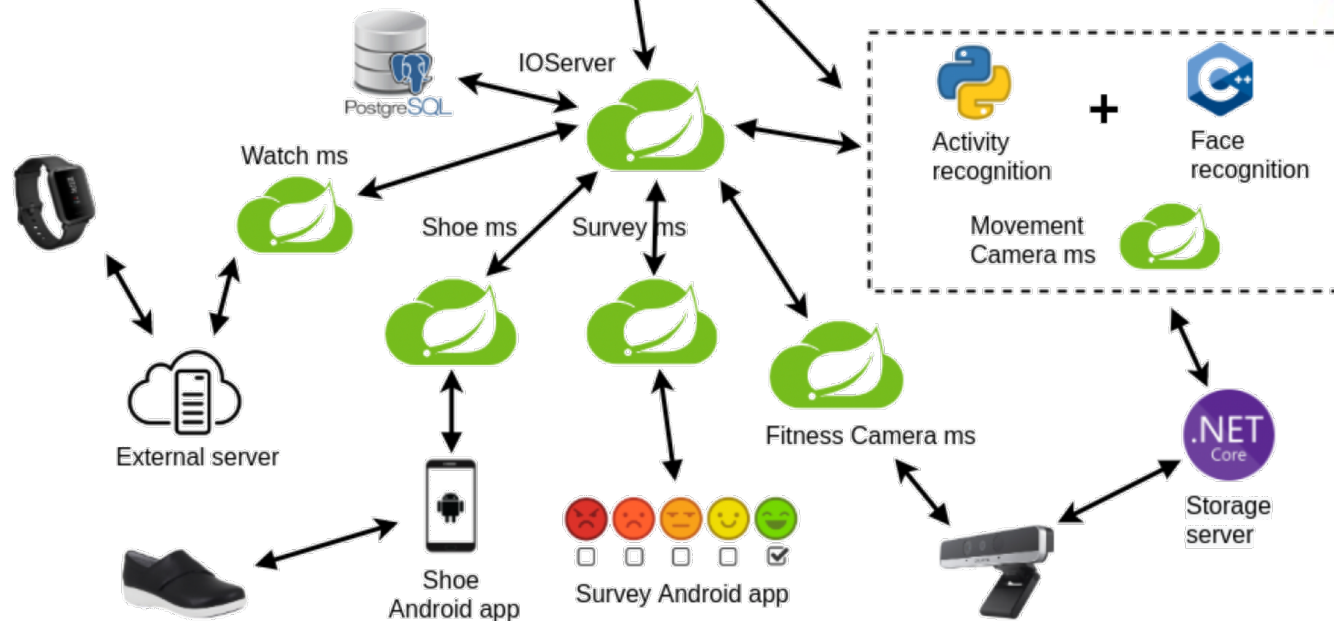
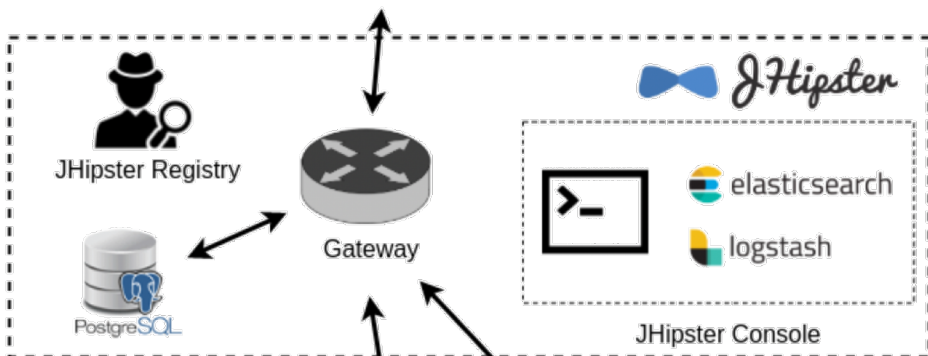






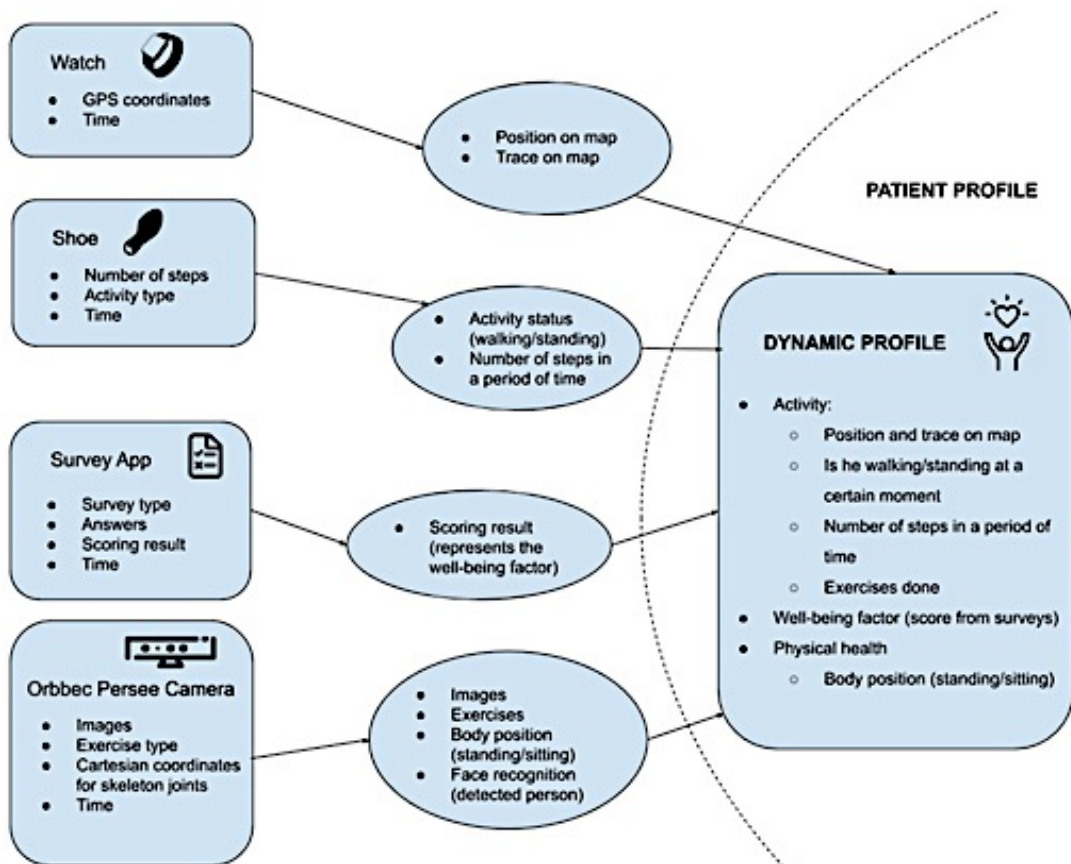
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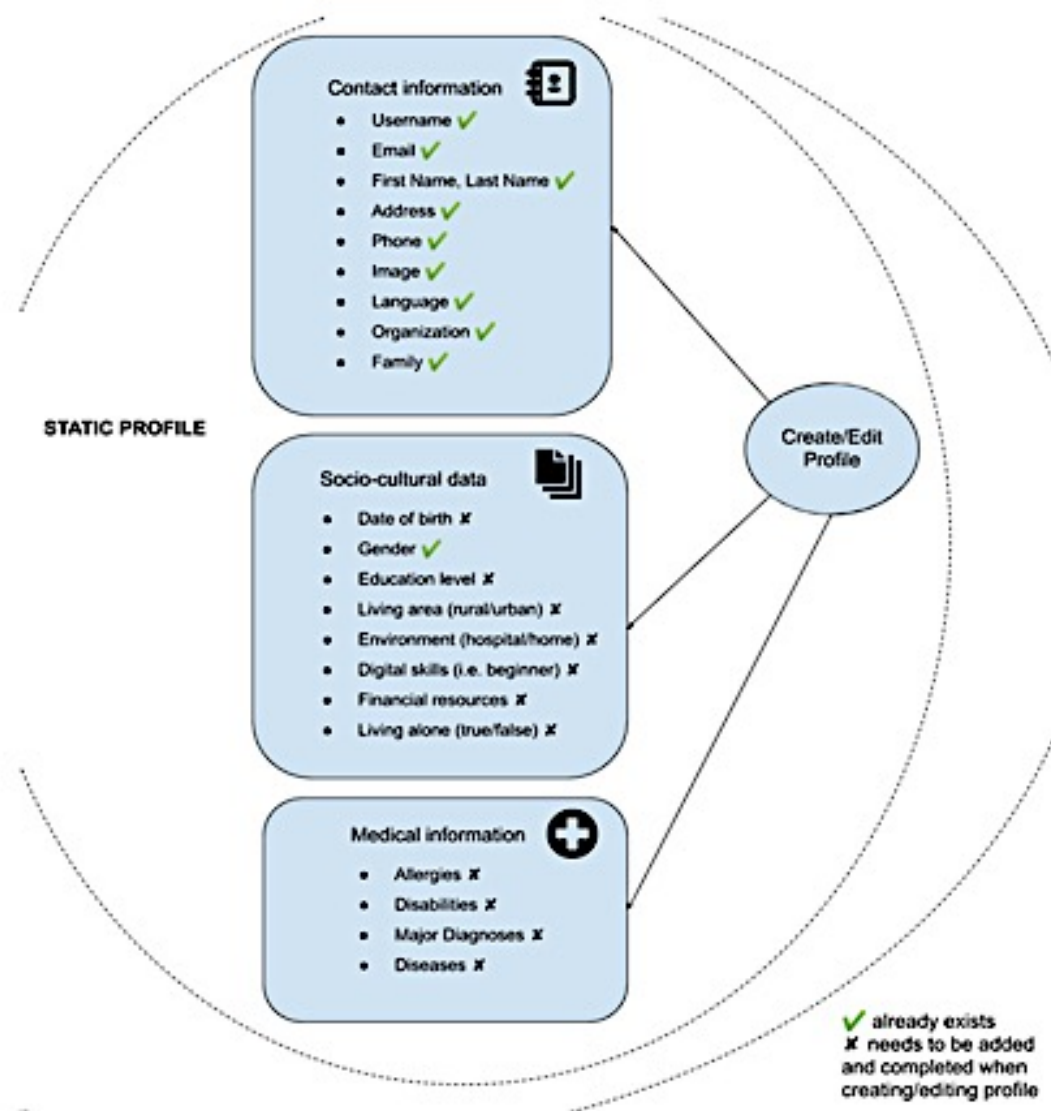
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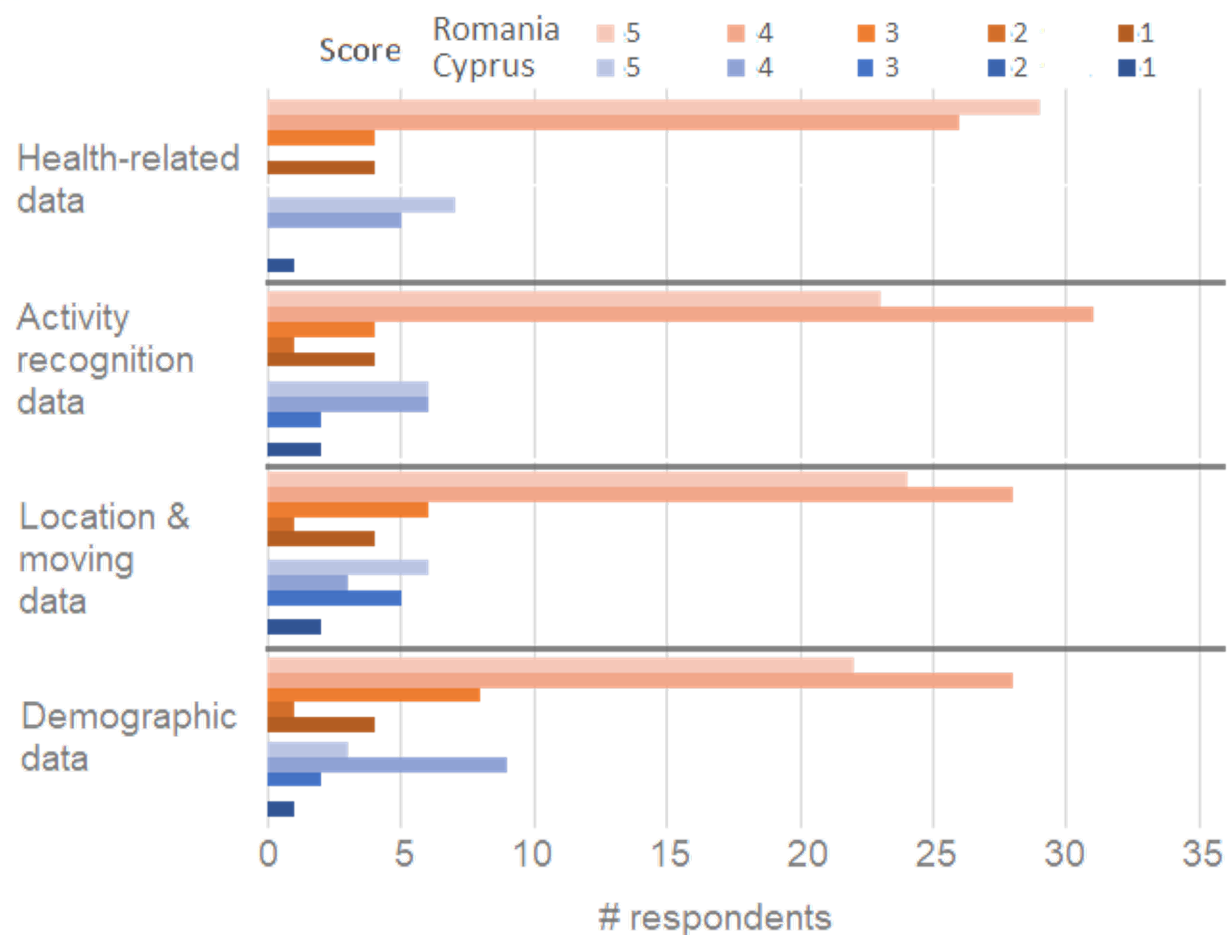


care





# care



# care





## Clinically-validated Technologies for Assisted Living The vINCI Project

Susanna Spinsante · Angelica Poli · Jordi Mongay Batalla · Piotr Krawiec · Ciprian Dobre · Lidia Băjenaru · Constandinos X. Mavromoustakis · Costas S. Constantinou · Gregor Molan · Anna Marie Herghelegiu · Gabriel Ioan Prada · Rozeta Drăghici · Horacio González-Vélez

Received: date / Accepted: date

**Abstract** One of the most important lifestyle risk factors for many chronic conditions in the older age, low physical activity, has shown to have relevant impact on the sustainability of national welfare in many developed countries. Technology-based assisted living solutions can effectively be used to enable older adults

This article is based upon work from vINCI: “Clinically-validated INtegrated Support for Assistive Care and Lifestyle Improvement: the Human Link” <https://vinci.ici.ro/>, a project funded by the European Union’s Active Assisted Living Programme under grant agreement AAL2017-63-vINCI.

Susanna Spinsante and Angelica Poli  
Department of Information Engineering, Università Politecnica delle Marche, Ancona, Italy.

E-mail: {s.spinsante, a.poli}@staff.univpm.it

Jordi Mongay Batalla and Piotr Krawiec  
National Institute of Telecommunications, Warsaw, Poland.  
E-mail: {J.Mongay,P.Krawiec}@itl.waw.pl

Ciprian Dobre and Lidia Băjenaru  
National Institute for Research and Development in Informatics, Bucharest, Romania.  
E-mail: {ciprian.dobre, lidia.bajenaru}@ici.ro

Constandinos X. Mavromoustakis and Costas S. Constantinou  
University of Nicosia, Nicosia, Cyprus.  
E-mail: {mavromoustakis.c,constantinou.c}@unic.ac.cy

Gregor Molan  
Comtrade Digital Services, Slovenia.  
E-mail: Gregor.Molan@comtrade.com

Anna Marie Herghelegiu<sup>†‡</sup>, Gabriel Ioan Prada<sup>†‡</sup> and Rozeta Drăghici<sup>†</sup>

<sup>†</sup>National Institute of Gerontology and Geriatrics “Ana Aslan”, Bucharest, Romania. <sup>‡</sup>University of Medicine and Pharmacy “Carol Davila”, Bucharest, Romania.  
E-mail: {correspondence.nigg, rozetadraghici}@gmail.com

Horacio González-Vélez  
Cloud Competency Centre, National College of Ireland, Dublin, Ireland.  
E-mail: horacio@ncirl.ie

to optimise their health-related quality of life, and promote an active and healthy longevity. This paper describes vINCI—an interdisciplinary research project to actively support assisted living for older adults via state-of-the-art assistive technologies—which seamlessly deploys an ambient intelligence environment to integrate wearable devices, networking, software, and personalised services. It entails clinical validation and feedback at home and residential care facilities via a cloud micro-services platform. Underpinned by blockchain technologies, multiple wearable devices, apps, and cameras securely capture the anonymised facets of different life events, whilst machine learning models create individualised user profiles to analyse any decrease in the perceived health-related quality of life typically associated with old age. Two controlled pilots are being conducted with 80 participants at older adult facilities in Romania and Cyprus. By incorporating clinical validation and feedback from specialised practitioners, the vINCI technologies enable older adults not only to self-evaluate their physical activity level, but also to change their behaviours and lifestyle in the long-term.

**Keywords** Older Adults · Assistive Technologies · Assisted Living · Quality of Life · Blockchain · Cloud Computing · Clinical Validation · IoT · Ambient Intelligence · Machine Learning

### List of Acronyms

API Application Programming Interface  
AL Assisted Living  
BLE Bluetooth Low Energy  
DLA Daily Level of Activity  
EU European Union  
GDPR General Data Protection Regulation

# Clinically-validated Technologies for Assisted Living: The vINCI Project

## *Journal of Ambient Intelligence and Humanized Computing*

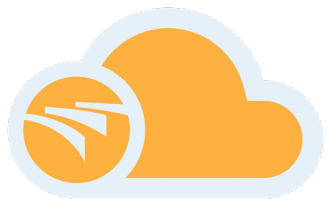
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