Ageing FIT 2022

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European Commission
DG Communications Networks, Content & Technology
Digital Society, Trust and Cybersecurity
eHealth, Well-Being and Ageing

European Commission

HORIZON EUROPE

EURATOM

SPECIFIC PROGRAMME: EUROPEAN DEFENCE FUND

Exclusive focus on defence research & development

- Research actions
- Development actions

SPECIFIC PROGRAMME IMPLEMENTING HORIZON EUROPE & EIT*

Exclusive focus on civil applications

Pillar I
EXCELLENT SCIENCE

- European Research Council
- Marie Skłodowska-Curie
- Research Infrastructures

Pillar II - €58.9 billion
GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters

- Health – €8.25 billion
- Culture, Creativity & Inclusive Society
- Civil Security for Society
- Digital, Industry & Space
- Climate, Energy & Mobility
- Food, Bioeconomy, Natural Resources, Agriculture & Environment

Joint Research Centre

Pillar III
INNOVATIVE EUROPE

- European Innovation Council
- European Innovation Ecosystems
- European Institute of Innovation & Technology*

WIDENING PARTICIPATION AND STRENGTHENING THE EUROPEAN RESEARCH AREA

- Widening participation & spreading excellence
- Reforming & Enhancing the European R&I system

EURATOM

- Fusion
- Fission
- Joint Research Center (JRC)

* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme

European Commission

Horizon Europe – funding modalities

- *Grants to individual researchers/fellows, teams, infrastructures, innovators*
  under Pillar 1 (ERC, MSCA) and Pillar 3 (EIC)
  → bottom-up open competition

- ***Grants to collaborative R&I projects*** *(Pillar 2, incl. Cluster 1 'Health')*
  → top-down open competition by multi/international consortia proposing projects on specific topics in response to calls for proposals

- ***Grants to contracting authorities/entities*** *(Pillar 2, incl. Cluster 1 'Health')*
  → *for pre-commercial procurement of R&I services and procurement of innovative solutions*

- *Partnerships between R&I investors and funders (Pillar 2 and Pillar 3, incl. Cluster 1 'Health')*

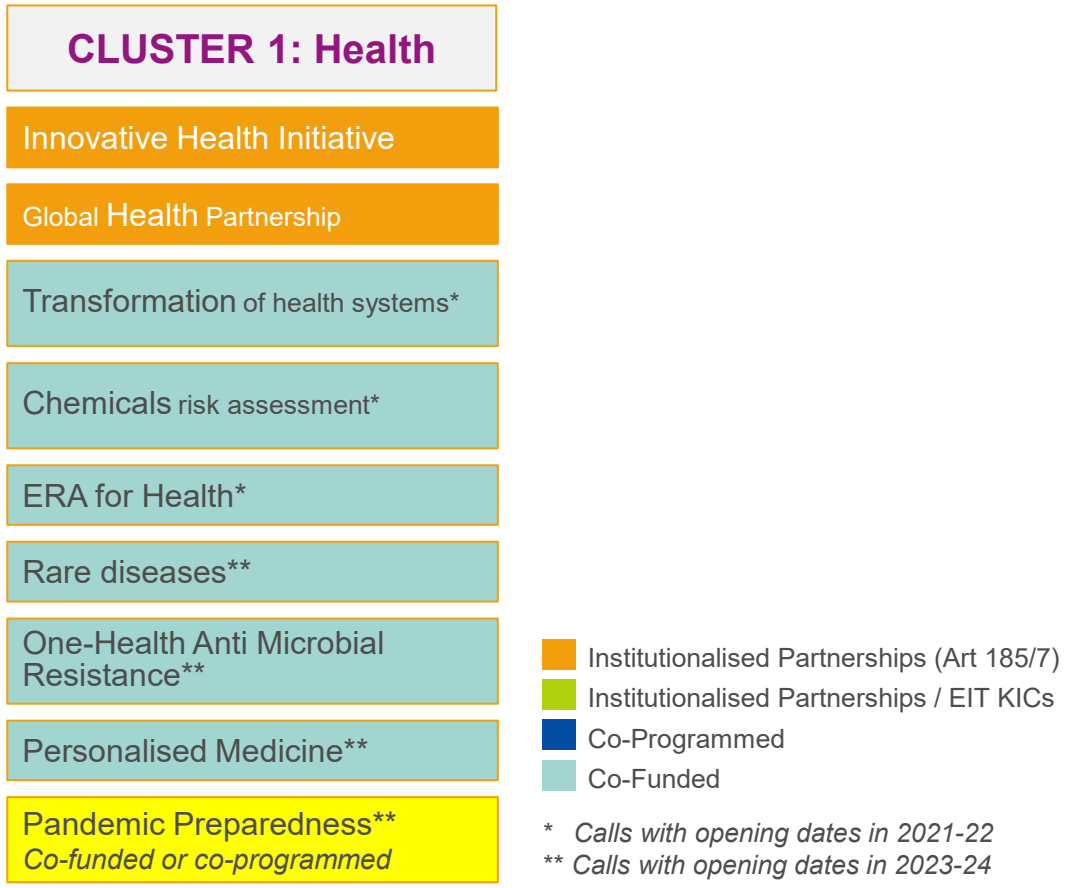
- *Missions driven by inspirational goals for impact (Pillar 2, incl. mission on cancer)* update of Missions WP 2021-22

- *Synergies with EU4Health, Digital Europe Programme, InvestEU, other*

Horizon Europe – 49 European Partnerships

Partnerships

- Strategic Plan identifies 49 co-programmed and co-funded partnerships:
  - public-public;
  - public-private;
  - global initiatives.
- EC proposals for 10 institutionalised partnerships based on Art 185/187 (23 Feb 2021, link)
- link to HE partnerships website



Horizon Europe – 5 Missions Areas





Adaptation to climate change, including societal transformation	Cancer	Healthy oceans, seas, coastal & inland waters	Climate-neutral & smart cities	Soil health & food

Mission on Cancer

Goal: by 2030, more than 3 million lives saved, living longer and better

- 5 intervention areas (+ cross-cutting actions)

Understanding	Prevention	Diagnostic and Treatment	Quality of Life	Equitable Access	Cross-Cutting Actions

- 13 recommendations for bold actions (link to Reports of the Mission Boards)

European Commission

Digital Europe Programme

recap the main objectives

strategic autonomy

Compete globally

Other regions of the world invest huge amount of public capital in advanced technologies. For example, the US and China spend € 10-20 billion annually on AI alone

Better address Europe's economic and societal challenges

E.g. climate, health, mobility and public services

Achieve scale through collective co-investments

Given the size of investments needed, scale required and risks involved Europe needs to pool the resources together

Ensure broad take-up of digital technologies across all regions of EU

In deploying latest technologies to offer best services to citizens and business

Regain control over Europe's value chains

and ensure Europe's technological sovereignty

Support SMEs to acquire or access the latest technologies and skills

More than 400,000 EU vacancies in these fields

Health in Digital Europe Work Programme 2021-22

Artificial Intelligence, data and cloud

Data spaces

Genomics

1st Call open

Cancer Imaging

2nd Call Q1/2022

Testing and Experimentation Facilities

TEF for Health

2nd Call Q1/2022

Cybersecurity and trust

Support to cybersecurity in the health sector

1st Call Q1/2022

(Cybersecurity Work Programme)

Accelerating best use of technologies

Uptake of digital solutions in Health and Care

1st Call open

An ecosystem for digital twins in healthcare

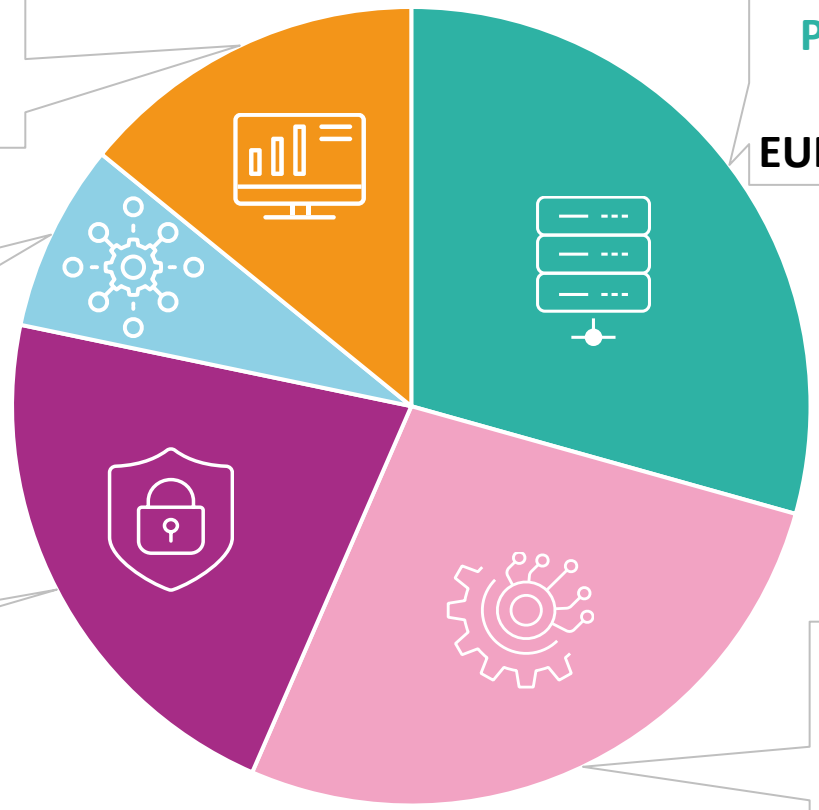
1st Call open

*… plus activities under advanced **skills**; benefits through **HPC** and **cloud** infrastructures; European **Digital Innovation Hubs**…*

Digital Europe is complementary to other programmes with investments in digital

EU-wide collective effort					National regional and local			Financial instrument
Horizon Europe	Digital Europe	CEF	Creative Europe	**Health**	Cohesion	Agriculture Funds	RRF	InvestEU
Research Innovation	Strategic capacities: computing, data, testbeds, etc. **Advanced digital skills** EU-Wide deployment	Broadband and 5G roll out Connecting Communities	Creative industry Media	**Telemedicine** eHDSI	Digital connectivity in white and grey areas Support to enterprises in line with Smart specialisation Digital skills for all citizens	Making use of Big Data for CAP monitoring Broadband rollout in rural areas	Connect Scale-up Modernise Reskill and Upskill 20% digital	Leverage private capital for investments in SMEs, research, digital, infrastructure, skills…

Budget as in Regulation



Deployments and Best Practice
EUR 1072 million

High Performance Computing
EUR 2227 million

Advanced Digital Skills
EUR 577 million

Cybersecurity
EUR 1650 million

Artificial Intelligence, Cloud and Data
EUR 2062 million

Total :
EUR 7588 million
over 7 years

Digital Europe programme structure

ACCELERATING THE BEST USE OF DIGITAL TECHNOLOGIES

BUILDING ESSENTIAL DIGITAL CAPACITIES

European Digital Innovation Hubs

High impact deployments

High Performance Computing

Artificial Intelligence

Cybersecurity

Advanced Digital Skills

In summary

High-performance computing

- Procure exascale machines
- Upgrade existing supercomputers
- Quantum computing
- Widen the access to and use of supercomputing

Artificial intelligence

- Data4EU : common Data Spaces, clouds, platforms and infrastructure
- Large Testing and Experimentation Facilities for Agriculture, health, mobility, manufacturing and AI edge HW
- Scale up the European AI platform to access tested AI technologies

Cybersecurity

- Deploy competence centers network
- Cybersecurity shield, quantum communication infrastructure - QCI
- Certification schemes
- Cybersecurity tools

Advanced digital skills

- Master courses
- Short term trainings
- Job placements
- Platform for Skills and Jobs

European digital innovation hubs

- At least one per MS or Associated Country

Deployments : emphasis on

- Destination Earth
- Digital twins for smart communities
- Further investments (CEF – ISA2) & Interoperability
- Blockchain
- Enhancing confidence in the digital transformation

Edge Computing and Reference Systems

Digital Tools for Healthy Living

at home and when mobile

DEI Health & Care cluster

HORIZON 2020
LE PROGRAMME DE RECHERCHE ET D'INNOVATION DE L'UNION EUROPÉENNE

SMARTBEAR
€ 22.379.512
CNR
(Italy)
2019-2023

SHAPES
€ 20.944.318
University of Ireland Maynooth (Ireland)
2019-2023

InteropEHRate
EHR in people's hands across Europe
€ 7.192.592
Engineering
(Italy)
2019-2022

Smart4Health
€ 21.781.120
UNINOVA
(Portugal)
2019-2023

ACTIVAGE PROJECT
€ 25.202.348
Medtronic Iberica
(Spain)
2017-2020

GATEKEEPER
€ 22.596.059
Medtronic Iberica
(Spain)
2019-2023

pharaon
€ 21.319.813
Scuola Superiore S. Anna (Italy)
2019-2023

ADLIFE
€ 7.450.948
Kronikgune
(Spain)
2020-2023

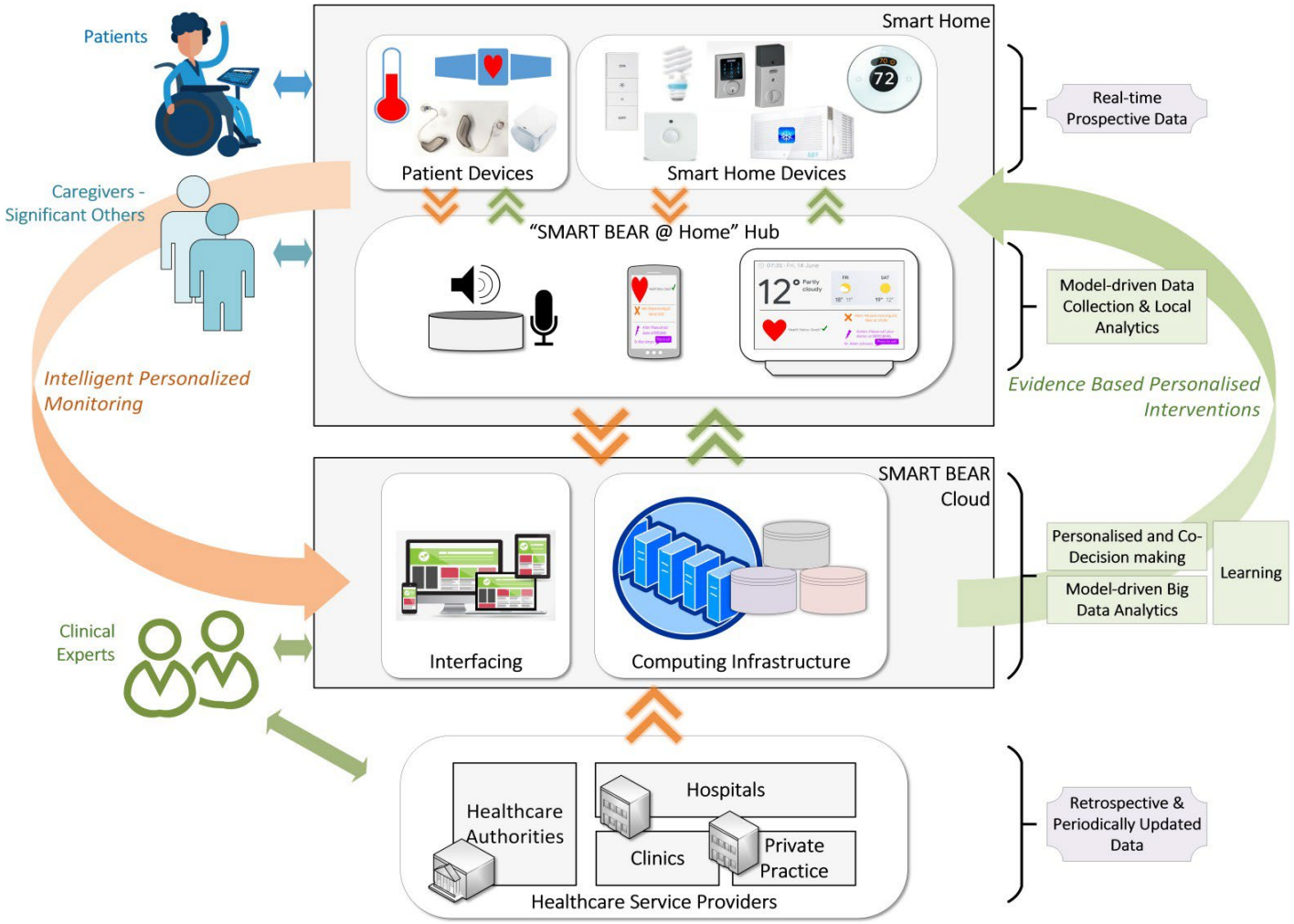
FAITH
€ 4.831.233
Waterford Institute of Technology (Ireland)
2020-2022

Health&Care Cluster
> 150 M€

Large Scale Pilots **> 87 M€**

- Very large innovation actions
- Focus on open platforms and standard-based solutions
- Value-chain approach
- A set of compelling use cases with evidence of impact
- Cascading Funding (open calls)

CASE STUDY: SMART BEAR



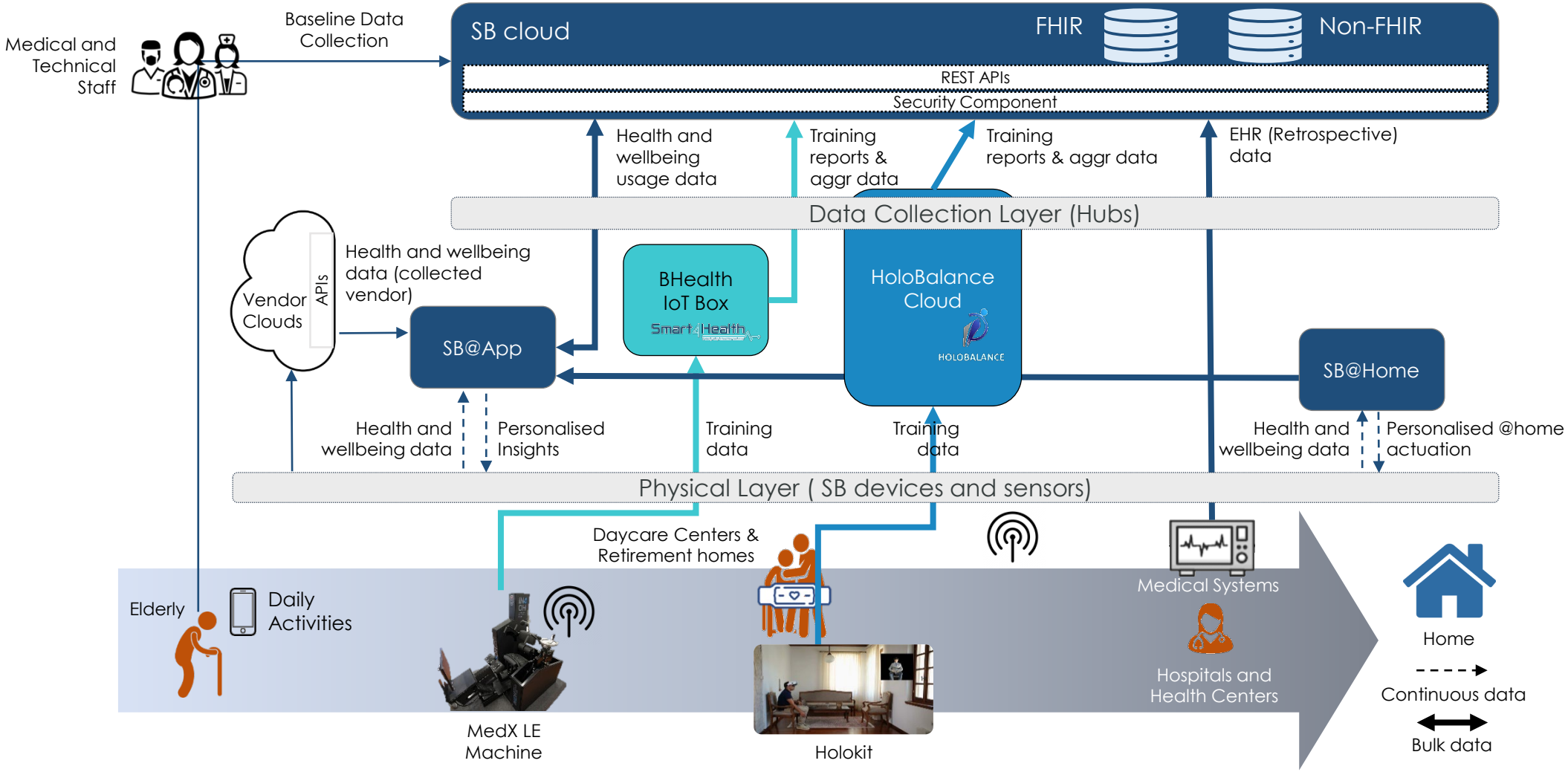
Objective: To integrate heterogeneous sensors to enable the continuous data collection from the everyday life of the elderly, which will be analysed to obtain the evidence needed in order to offer personalised interventions promoting their healthy and independent living

Validation: five large-scale pilots involving 5.000 elderly in France, Greece, Italy, Portugal, Romania and Spain

Grid of Interventions

Sensor Ecosystem	 Hearing Aid, Smartphone	 PPG, Activity, BP trackers	 Sleep, Light trackers, Smartphone	 Home sensors, Smartphone	 Scale, Nutrition App	 IMU sensor, Smartphone	 Smart Oximeter & Thermomether
SMART BEAR Middleware							
Data Analytics							
Medical Condition	Hearing Loss	Cardiovascular Disease	Depression	Cognitive Disorders	Frailty	Balance Disorders	Covid-19 or similar pandemic
Risk Factor / Indicator	Poor Compliance Poor Fine Tuning	Physical Activity Diet Heart Variability Non-compliance to TTT	Sleep Quality Social Interactions Inappropriate Lighting Non-compliance to TTT	Social Interactions Behavioral Changes	Weight Gain / Loss	Frequent Falls	High Temperature Low Oxygen Saturation
Intervention	• Personal alerts • Alert to experts • Auditory training • Remote fitting	• Personal alerts • Alert to experts • Diet advice • Physical activity Apps	• Personal alerts • Alert to experts • Social activity advice • Light adjustment	• Personal alerts • Alert to experts • Social activity advice • Serious Games	• Personal alerts • Menu suggestions	• Serious Games • Virtual coaching	• Personal notification and alerts

INTEGRATION AT SYSTEM LEVEL



INTEGRATION AT PROJECT LEVEL

HOLOBALANCE (HB)

SMARTBEAR (SB)

Smart4Health (S4H)

HB dashboard

(Same) patient

Patient recruited in SB Inclusion criteria shared between SB and HB

(Same) patient

SB dashboard

(Same) patient

Patient recruited in SB Inclusion criteria shared between SB and S4H

(Same) patient

S4H Health Monitor

1. Registration

HB patient ID

SB pseudo-Id1
(used for SB smartphone pairing)

S4H pseudo ID
Patient questionnaire data (FHIR format – S4H profile)

2. ID Mapping

SB pseudo-Id1 → SB pseudo-Id2
HB pseudo ID → SB pseudo-Id2
S4H pseudo ID → SB pseudo-Id2
.....

IDs management
SB Security Component

[JSON – FHIR format]

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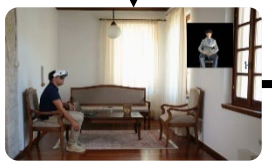

Holokit

Training data

HB cloud

FHIR transformations

SB Repository FHIR

Questionnaire data & training reports

BHealth IoT box

FHIR transformations

MedX LE Machine

3. Data transfer