Compra publica innovadora
Perspectiva Europea

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Why innovation procurement

WIN-WIN FOR INNOVATORS

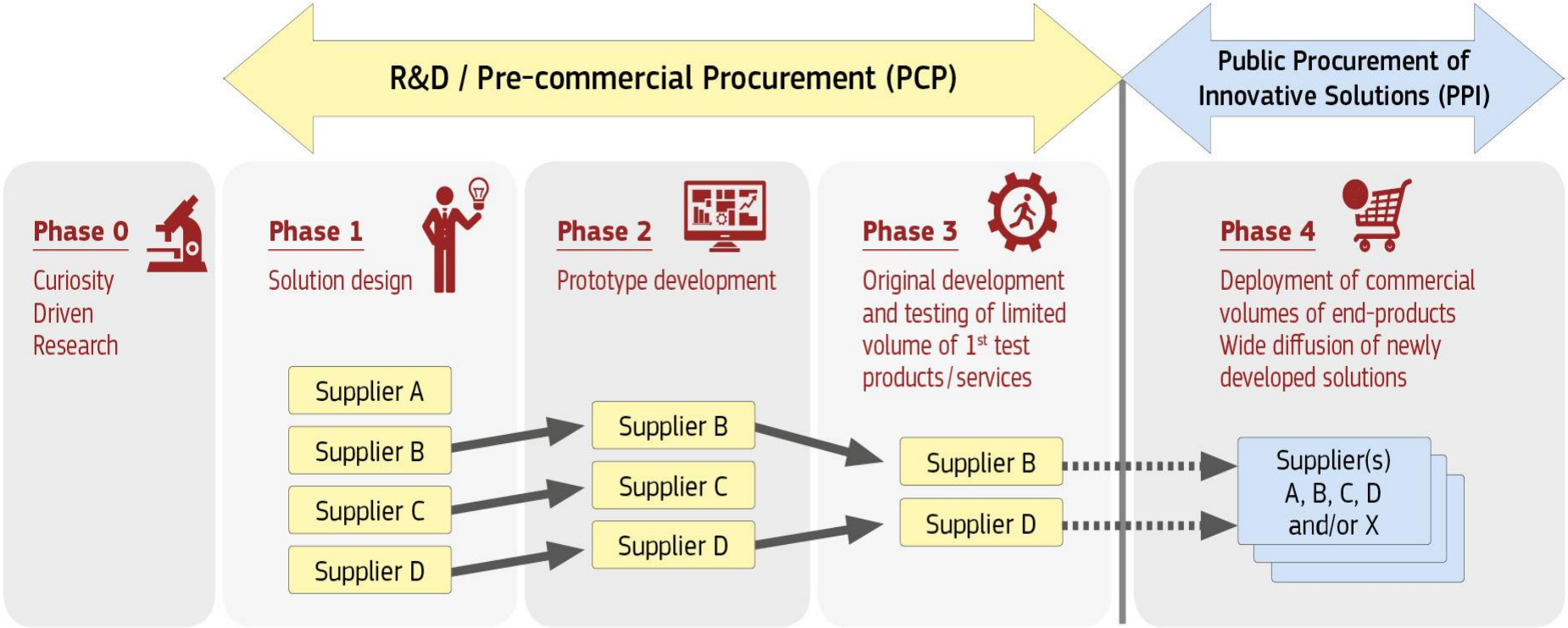
- Driving innovation from customer needs helps shortening time-to-market for innovative products / services
- The power of the public pursue can open up market/sales opportunities for innovative companies in Europe, in particular also SMEs and start-ups
- It helps innovative businesses in Europe to scale up and finally go to market. First customer reference helps attracting investors.

WIN-WIN FOR PUBLIC SECTOR

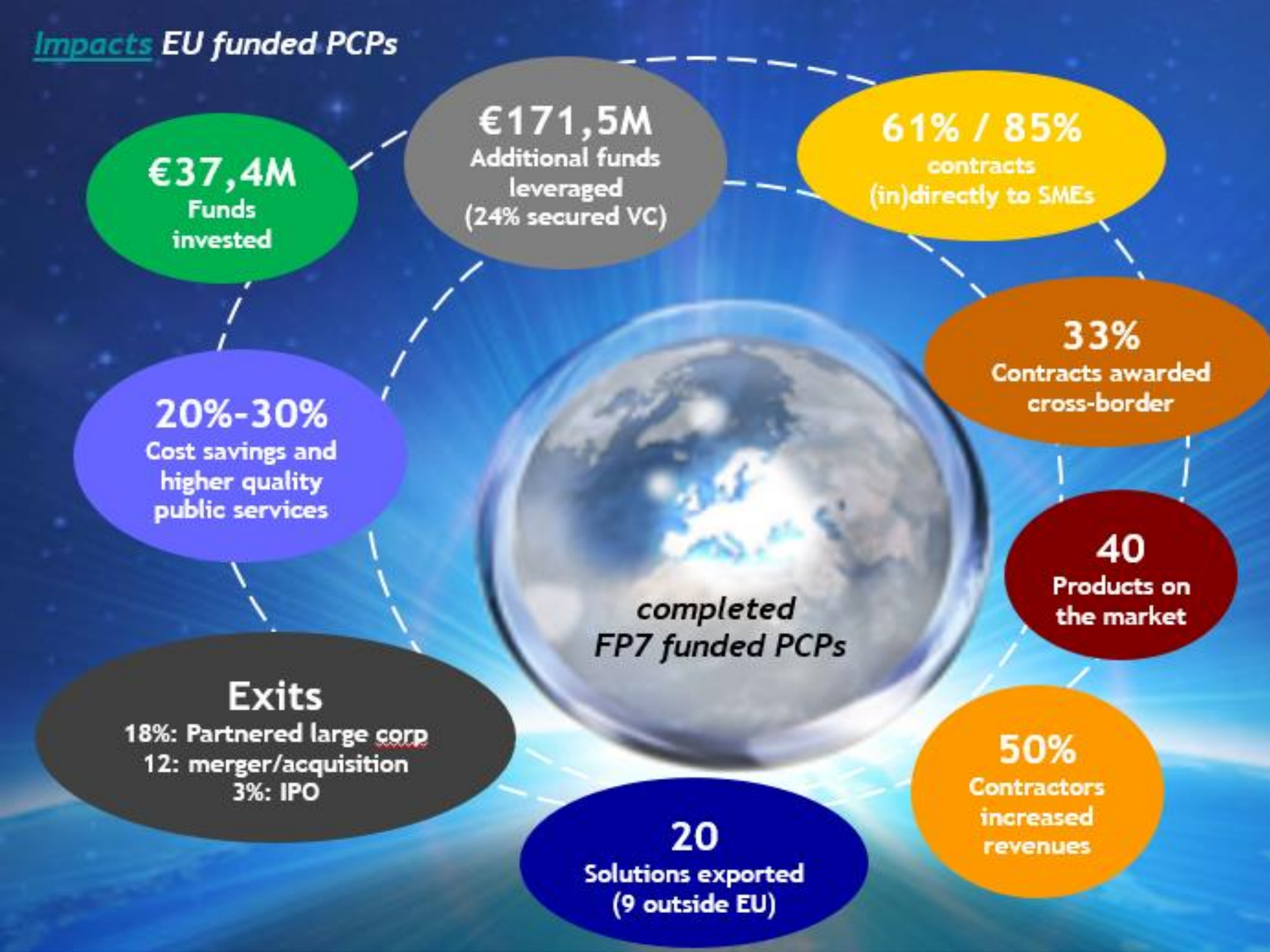
- Modernization of public services – improving the quality and efficiency of public services and tackling societal challenges with innovative solutions
- Get better value for money - enable public sector around Europe to share cost + experience to buy new solutions that can respond to concrete public needs
- Smart use of the procurement budget to remove supplier lock-in and obtain more open, standardized and better value for money solutions in a cost effective manner
- Create growth and jobs in Europe (in PCPs, suppliers can be required to do the majority of R&D in Europe)

PCP & PPI

- **PCP** to steer the development of solutions to concrete public sector needs, while comparing/validating alternative solution approaches from various vendors + possibly first deployment (non-commercial volumes)
- **PPI** to act as early adopter / first buyer of commercial volumes of innovative end-solutions newly arriving on the market



The following slides only provide information about results of PCPs (not PPIs)


Impacts EU funded PCPs
€37,4M
Funds invested
€171,5M
Additional funds leveraged
(24% secured VC)
61% / 85%
contracts
(in)directly to SMEs
33%
Contracts awarded cross-border
20%-30%
Cost savings and higher quality public services
completed
FP7 funded PCPs
40
Products on the market
Exits
18%: Partnered large corp
12: merger/acquisition
3%: IPO
50%
Contractors increased revenues
20
Solutions exported
(9 outside EU)

Lessons learnt

- Separating PCP (R&D) from PPI (commercial volume deployment) and using a phased PCP approach
  - Opens the market for small players/SMEs (smaller gradually growing contract sizes)
  - Enables procurers to steer industry R&D to meet their needs, achieve desired quality and efficiency improvements in public services and reduce vendor lock-in
  - Stimulates cooperation with universities and larger companies
- Joint cross-border PCP procurement
  - Stimulates cross-border company growth
  - Facilitates the creation of more open standards based interoperable solutions
- Leaving IPR ownership rights with contractors
  - Reduces the cost / the R&D risk for procurers with 50%
  - Encourages wider commercialisation of solutions by vendors
- Using a place of performance condition in PCPs
  - Can effectively stimulate growth and job creation in Europe

Lessons learnt

- ✓ Understanding of the PCP instrument – improved, but still action need to build capacity and to enlarge uptake
- ✓ Withdrawing procurers – one of the most difficult problems to address
- ✓ Phase 0 & drafting of the Framework Tender documents is a crucial part of the process
- ✓ Continuous commitment of consortium decision-makers important
- ✓ Consortia encouraged to bring together multidisciplinary teams (clinical/IT/legal/finance/EC grants experts) or seek external expertise to ensure smooth implementation
- ✓ Embedding innovation in HC is a dynamic & time-critical process (state of the art of solutions)
- ✓ Dialogue with the industry is fundamental
- ✓ User involvement and clear definition of the need

Ongoing and completed PCP procurements in healthcare

- 8 PCPs have been completed (phase 3 finished)
  - SILVER (Robotics for elderly care)
  - THALEA (Telemedicine for intensive care unit patients at increased risk)
  - Human Brain Project (High Performance Computing for brain simulation)*
  - DECIPHER (Cross-border mobile health services)
  - NYMPHA-MD (Mental care for bipolar disorders)
  - PROEMPOWER (Diabetes patient empowerment)
  - MAGIC (Post stroke recovery)
  - RELIEF (Pain self-management)

*HBP PCP doesn't result from a PCP call. HBP decided itself to implement a PCP in the HBP research project.

- 5 PCPs are ongoing (procurement contracts ongoing)
  - NIGHTINGALE (Wearable sensors for safer patient monitoring/care)
  - LIVE INCITE (Lifestyle interventions in perioperative medicine)
  - STARS (Health stress reduction)
  - ANTISUPERBUGS (detection/reduction of superbugs and other infections)
  - SHUTTLE (Toolkit for trace analysis by forensic laboratories)

PCP procurements in preparation in healthcare

- 9 buyers groups are in open market consultation, preparing the PCP or in the tendering phase of the PCP

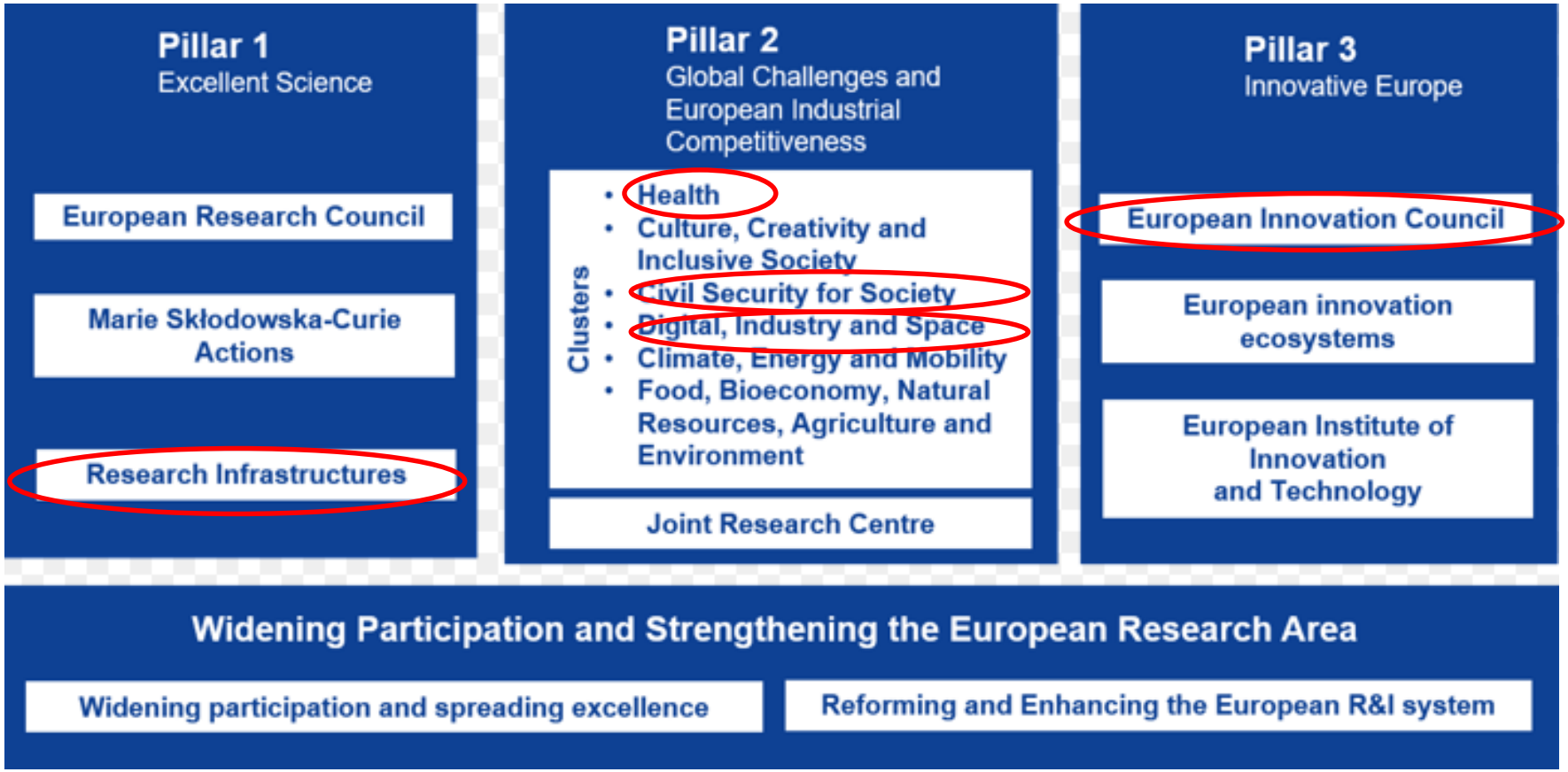
  - eCARE (Continuum of care for frailty prevention in old adults)
  - HSMONITOR (Health status monitoring + optimise hypertension care)
  - oncNGS (Next Generation Sequencing diagnostics in 21st century oncology)
  - Instand-NGS4P (Next Generation Sequencing workflows for Personalised therapy)

  - Rosia (digital solutions for remote rehabilitation services for isolated areas)
  - Incareheart (digital integrated care for multidisciplinary health/care for chronic heart patients)
  - Carematrix (integrated care solutions for addressing multi-morbidity)
  - Tique (integrated care for complex advanced heart failure patients)
  - Crane (comprehensive treatment of chronic patients in rural areas)

Horizon Europe

European Commission

- Stay tuned for more upcoming Innovation Procurements under **several Horizon Europe pillars**!



Next MFF

European Commission

Horizon Europe

Reinforcing PCP / PPI support and the link with startup / SME support EIC and startup Europe

Connecting Europe Facility

New Defense program
Support for PCPs

RECOVERY AND RESILIENCE FACILITY

DIGITAL EUROPE

Deployment of digital technologies to modernize the public sector
Training / education on digital
Testing / experimentation with public sector - DIHs

INNOVATION FUND

Driving clean innovative technologies towards the market

Support for green innovation procurement &
Demonstration / go to market

Regional Development programs
Support for innovation procurement

Help us spread the message

There are still plenty of public procurers out there that don't know yet about this type of EU support for innovation procurement!
Who can help promote EC support to help public procurers carry out PCPs/PPIs across the EU Member States and Associated Countries?

There are still plenty of companies out there that don't know yet about these innovation procurement sales opportunities!
Who can help promote upcoming open market consultations and call for tenders in for PCP/PPI procurements in their countries?

More info - Overview EU funded innovation procurements
https://ec.europa.eu/digital-single-market/en/innovation-procurement
http://ec.europa.eu/digital-agenda/en/eu-funded-projects

Thank you!

@EUScienceInnov

#EUHealthResearch

http://ec.europa.eu/research/health

Telemedicine for ICU-patients at increased risk
THALEA: benefits for procurers

Thalea

PCP: procured the R&D, testing and deployment (for 4 years) of the resulting pre-series systems

June 2015 -> Nov 2016
5 suppliers (ph 1) -> 3 suppliers (ph 3)

Certification of solutions
Scaling up development
SMEs grow their business
Enlarged buyers group

Thalea II

PPI: larger scale wider deployment of final certified systems

Procurement ongoing

Procurers PCP: Univ Clinic Aachen (DE), Univ Hospital Maastricht (NL), Hospital East Limburg (BE), Parc Tauli Sabadell University Hospital (ES), Northern Ostrobothnia Hospital District (FI)

Enlarged buyers group for the PPI: includes also Austrian procurer (Vienna hospital).

Benefits for procurers and intensive care patients:

- **Interoperable (lower cost)** platform for tele-detection / tele-care of ICU-patients at increased risk
- Significantly **improved risk-detection**, **earlier diagnosis** and **higher efficiency** in the ICU, enabling a **reduction in sepsis mortality by 25% and in length of hospital stay by 20-50%.**
- **Faster time to market**: From research to deployed systems in 1,5 year time. The three pre-series systems delivered during the PCP by Dendrite Clinical Systems (UK/IE), New Compliance (NL) and Philips (DE) all met the procurers' needs. They are **deployed and in use** in the hospitals since 2016.

Telemedicine for ICU-patients at increased risk
THALEA: benefits for companies

- THALEA enabled companies to grow their business cross-border and bring disruptive innovations to the market: Telemedicine center with big data analysis, self-learning and prediction capabilities.

Nov 2016 (end of PCP) → *Certification as medical device (2018)* → **Today**

NEW COMPLIANCE
SME, NL

Company setup office in the US (12/2016)
Distributor agreements (2017)
Integration with hospital platforms of big corporates (e.g. GE, Johnson, Philips..)
ERDF funded safety demonstration (2018)
Finalising VC investment round (2019)

OR Cockpit Solution *already installed in 30 European and 10 US hospitals.*

DENDRITE CLINICAL SYSTEMS LTD
SME, UK

CLINICAL ICView
SME, IE

Setup new company ICView specifically for commercialising the solution in Europe, Middle East, Russia (2017)

ICView Solution *running as a pilot system in several hospitals*

PHILIPS Healthcare
DE

Further solution enhancements in cooperation with hospitals (2017-19)
Marketing ongoing

eICU Solution *deployed in several clinics. Commercialisation of TeleICU extensions for critical care ongoing now*

In their own words

Improving the quality of public services for European citizens

"I couldn't really believe how good the innovative telemedicine solutions are that were developed in our THALEA PCP, until I saw it in action with my own eyes. Last week the system predicted the risk that a sepsis infection would occur in the intensive care unit in our hospital. Four hours later this situation really happened and thanks to the telemedicine solutions we were able to save lives.

The novel algorithms and improved risk-detection of the new telemedicine solutions result in earlier diagnosis and improve efficiency in the ICU significantly, enabling a reduction in sepsis mortality by 25% and a reduction in the length of hospital stay of patients by 20-50%."

Robert Deisz, Head Doctor, Intensive Care Unit, University Hospital Aachen (procurer in THALEA PCP)

Robotics for independent living of elderly SILVER: benefits for procurers

SILVER
Supporting Independent Living for the Elderly through Robotics

INDIVIDUAL PURCHASES by public procurers (DK,SE), elderly persons and elderly care organisations (worldwide)

End 2016 - Present

PCP: procured the development and testing in 5 countries

Oct 2013 -> Aug 2016
7 suppliers (ph 1) -> 3 suppliers (ph 2-3)

Certification of solutions
Scaling up production
SMEs grow their business

Procurers PCP: City of Odense and region of Southern Denmark (Denmark), city of Västerås (Sweden), city of Vantaa and Oulu (Finland), city of Stockport (UK), city of Eindhoven (Netherlands)
Deployment: Only SE and DK cities are responsible for buying elderly care equipment. NL, UK, FI cities promoted SILVER to elderly (wide deployment depends on sickness reimbursement schemes).

Benefits for procurers and elderly people:

- Concrete contribution to the goal to market solutions that enable to **care by 2020 with same amount of staff for 10% more elderly people** living a **higher quality independent life** at home
- **Choice between 5 new products**: 5 out of 7 contractors are successfully commercialising their solutions: Robot Care Systems (NL), Bioservo (SE), Camanio (SE), Robosoft (FR), Marsibionics (ES)
- Several hundreds of the robotics solutions resulting from SILVER have already been **sold and deployed** in the SILVER countries and beyond. **Elderly users are very happy**.

Robotics for independent living of elderly SILVER: benefits for companies

- SILVER triggered the creation of new start-ups and helped existing startups grow their business.

Aug 2016 (end of PCP)	Certifications as medical device (2017-18)	Today
ROBOT CARE SYSTEMS *SME, NL*	*SME ph1 grant (2012) setup the SME* *Lerovis merged into RCS (2014)* *Raised equity investment (2016)*	*~32 LEA robots (walking and other assistance) sold in NL, UK, DE, Scandinavia*
BIOSERVO *SME, SE*	*Agreements with NASA, Airbus, GM, GE,…* *3 equity investment rounds ('13,'14,'16)* *NASDAQ listed (2017)* *SME ph2 grant (2018) wider commercialisation*	*~ 245 i-Hands (smart wearable giving muscular support) sold worldwide to industrial and health market*
robosoft Services Robots *SME, FR* KOMPAÏ robotics *SME, FR*	*Equity investment round (2013)* *Spun out Kompaï robotics company (2016)* *Partnering with AGFA healthcare*	*~ 50 Kompaï robots (walking+other assistance) installed in several nursing homes + hospitals*
Bestic AB *SME, SE* CC *SME, SE*	*Merger and renamed Camanio Care (2016)* *Stocklisted on Spotlight (2017)* *Office in US, distributors in China, AU, EU*	*~350 Mealtime devices (eating assistance) sold worldwide*
marsi-bionics *SME, ES*	*ECHORD ++ support* *Agreement with ESCRIBANO (2016)* *SME ph2 grant (2018) wider commercialisation* *Clinical trials (ES) & crowdfunding ongoing*	*Wearable bionic exoskeleton (muscular assistance) in trials now*

Interactive HPC for Human Brain research
HBP PCP: benefits for procurers

Human Brain Project

PCP: procured R&D and testing. Pilot solutions also deployed at the end

July 2014 -> End 2016
3 suppliers (ph 1) -> 2 suppliers (ph 3)

Preparing larger scale deployment

FENIX RESEARCH INFRASTRUCTURE

No need for PPI for open source part of solutions. €30M PPI for wider deployment of other part is ongoing (FENIX/ICEI)

Today

Buyers HBP PCP: Juelich Supercomputing Center (DE) in collaboration with Swiss National Computing Center
Buyers FENIX/ICEI PPI: Juelich Supercomp. Center (DE), ETHZ/CSCS (CH), BSC (ES), CEA (FR), CINECA (IT)

Benefits for procurers and other HPC end-users:

- The Human Brain Project PCP delivered innovations for specific High Performance Computing requirements for brain simulation, including **interactive supercomputing** and **large memory capacity**.
- **Two vendors successfully completed** the final phase of the PCP: Cray and IBM / NVIDIA consortium. Both performed all R&D in Europe and deployed pilot systems based on their solutions, which are now **deployed and widely used for brain research**.
- Procurements for **wider deployment across an enlarged buyers group** are taking place in the ongoing FENIX / ICEI procurements. Some contracts have already been awarded to vendors from the HBP PCP.

Interactive HPC for Human Brain research
HBP PCP: benefits for companies

European Commission

- HBP accelerated the developed of interactive computing and large memory capabilities for HPC. It opened up business opportunities for companies to partner with other HPC players on the market.

End 2016 (end of PCP)		Today
CH IBM DE NVIDIA	*The PCP strengthened the cooperation between NVIDIA and IBM Together they are successfully commercialising and rolling-out the solution*	***JURON*** ***Interactive in-situ HPC visualisation with NVIDIA graphical processing unit accelerators in IBM Power Processors***
CRAY DE	*The core technology developed in the PCP has grown further and split into two strands of engineering (for which Cray attracted also further funding) that will likely result in products*	***JULIA*** ***KNL-based compute nodes. Intel processors. Omni-path 100 Gbps network***

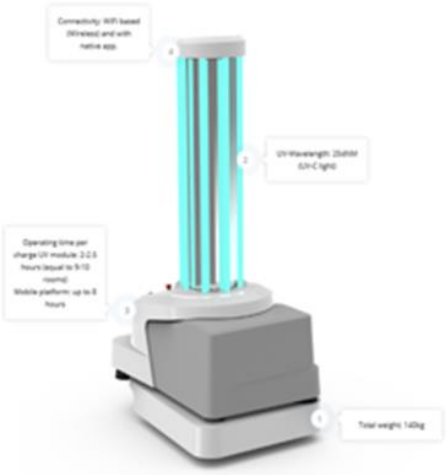
Benefits for start-ups

European Commission

Procurement of R&D
Pre-commercial procurement (PCP)

Solution design, prototyping, development, testing and installation of first products

- Co-creation shortens time-to-market for innovations
- First customer reference
- Attract financial investors / Scale up internationally
- Create jobs / strategic autonomy in ICTs 'in Europe'



EXAMPLE

PCP by Danish hospitals

Blue Ocean Robotics

(Danish startup grew into unicorn)

Its disinfection robots are sold worldwide to fight COVID-19

EC bought 200 robots for hospitals across Europe

Public procurement of innovative solutions (PPI)

Wider diffusion of solutions across different customers and markets

- Diffuse solutions widely
- Diversify the offering to new market segments
- Business expansion: Grow really big

EXAMPLE

PPIs across EU countries

Gnomon Informatics

(Greek SME)

Is now selling across Europe its AI enabled interoperable e-health solution that was developed in EU funded PCP project DECIPHER

Procurers involved

SILVER
Supporting Independent Living for the Elderly through Robotics

Vantaa

CITY OF ODENSE

OULU

Region Syddanmark

VÄSTERÅS STAD

STOCKPORT
METROPOLITAN BOROUGH COUNCIL

City of Eindhoven

Thalea

UNIKLINIK RWTH AACHEN

OYS OULU UNIVERSITY HOSPITAL

Maastricht UMC+

Ziekenhuis Oost-Limburg

Parc Taulí Sabadell
Hospital Universitari
Fundació Parc Taulí

nympha

REGION Mental Health Services

Parc Taulí Sabadell
Hospital Universitari

HP

JÜLICH
FORSCHUNGSZENTRUM

in cooperation with

BSC Barcelona Supercomputing Center
Centro Nacional de Supercomputación

KIT
Karlsruhe Institute of Technology

EPFL
ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

ETH zürich

CINECA

DECIPHERPCP

TicSalut
Tecnologia, innovació i salut

ESTAR
Ente di supporto tecnico-amministrativo regionale

TRUSTECH
The North West NHS Innovation Service

Procurers involved

Relief

resah
Réseau des Acheteurs Hospitaliers

JUNTA DE ANDALUCIA
Servicio Andaluz de Salud
CONSEJERÍA DE SALUD

AKADEMISKA SJUKHUSET
UPPSALA UNIVERSITY HOSPITAL

empattics

ACIS acis
AXENCIA DE COÑECEMENTO EN SAÚDE

salud
Servicio Aragonés De Salud

midt
regionmidtjylland

sesan
SERVICE NUMÉRIQUE DE SANTÉ

magic

HSC Business Services Organisation

HSC Public Health Agency

HSC Health and Social Care Board

A.S.L. TO3
Azienda Sanitaria Locale di Collegno e Pinerolo

Ud'A
Università degli Studi "G. d'Annunzio"
Chieti - Pescara

Azienda Ospedaliero Universitaria
OSPEDALI RIUNITI
Ancona Umberto I | G.M. Lancisi | G.Salesi

Anti-SUPERBUGS

Agència de Qualitat i Avaluació Sanitàries de Catalunya
AGENCY FOR HEALTH QUALITY AND ASSESSMENT OF CATALONIA

PROVINCIA AUTONOMA DI TRENTO

Sheffield Teaching Hospitals NHS
NHS Foundation Trust

NHS
National Institute for Health Research

ICO
Institut Català d'Oncologia

UNIKLINIK RWTH AACHEN

D4D
Devices for Dignity
Healthcare Technology Co-operative

STARS

academisch ziekenhuis Maastricht
azM

Andalusia HEALTH

INRCA
Istituto di Ricovero e Cura a Carattere Scientifico
HEALTH AND SCIENCE ON AGING

SJD

Parc Taulí Sabadell
Hospital Universitari
Fundació Parc Taulí

Procurers involved

LIVE INCITE

KAROLINSKA UNIVERSITY HOSPITAL

CLÍNIC BARCELONA Hospital Universitari

REGION H Bispebjerg og Frederiksberg Hospital

Nightingale
Smart monitoring, safer care

UMC Utrecht

KAROLINSKA UNIVERSITY HOSPITAL

University College London Hospitals NHS Foundation Trust

UZ LEUVEN

PROEMPOWER

T.C. Sağlık Bakanlığı

SPMS EPE
Serviços Partilhados do Ministério da Saúde

Servicio Murciano de Salud

SORESA
Soggetto Aggregatore della Regione Campania

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ALLEANZA CONTRO IL CANCRO

institutCurie

ICO
Institut Català d'Oncologia

INSTITUT JULES BORDET

CHARITÉ
UNIVERSITÄTSMEDIZIN BERLIN

LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

HOSPICES CIVILS DE LYON

Instand-NGS4P

Medical University of Graz

Erasmus MC
Universitair Medisch Centrum Rotterdam

St. Anna Kinderkrebsforschung
CHILDREN'S CANCER RESEARCH INSTIT

Centre Léon Bérard
LYON ET RHÔNE-ALPES

C A U Christian-Albrechts-Universität zu Kiel

FLORENTINA STUDIORUM UNIVERSITAS

UNIVERSITÀ DEGLI STUDI DI MILANO BICOCCA

Procurers involved

eCare

AZIENDA SANITARIA LOC
BENEVENTO

Szpital Specjalistyczny im. A. Falkiewicza
Wrocław

Consorci Sanitari Integral

AYUNTAMIENTO DE SANTANDER

Health Status Monitor

T.C. Sağlık Bakanlığı

Azienda Ospedaliera Universitaria Federico II
Integrata con il Servizio Sanitario Regionale

REGION JÄMTLAND HÄRJEDALEN

DOM ZDRAVLJA ZAGREB – CENTAR
ZAGREB

Regione Lombardia