European Commission

Innovation Procurement

The power of the public purse

EU funded projects in the ICT domain

Digital Single Market

The Publications Office of the European Union.

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Innovation procurement - Capitalising on innovative solutions to modernize public services

The European public sector is facing significant challenges, including the need to modernise internal operations while delivering high quality public services. Innovation procurement can deliver solutions to these challenges and Information and Communication Technologies (ICTs) play a major role in this.

The EU research and innovation programmes FP7 and CIP, now grouped under Horizon 2020, offer support to innovation procurement in two complementary ways:

- In some cases, public sector challenges can be addressed by innovative solutions that are nearly or already in small quantity on the market and don't need new research and development (R&D). This is when Public Procurement of Innovative solutions (PPI) can be used effectively.

- In other cases, the required improvements are so technologically demanding that there are no near-to-the-market solutions yet and new R&D is needed. Pre-Commercial Procurement (PCP) can then be used to compare the pros and cons of alternative competing approaches and to de-risk the most promising innovations step-by-step via solution design, prototyping, development and first product testing.

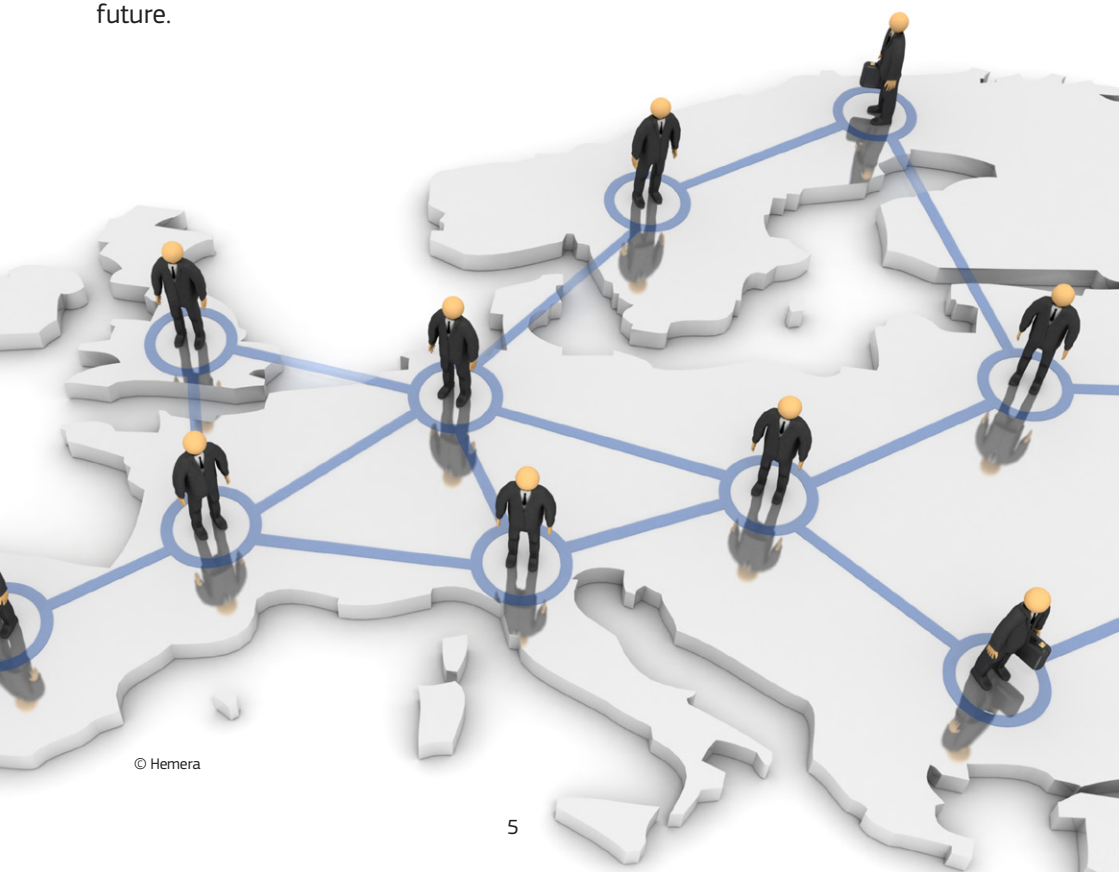
By developing a forward-looking innovation procurement strategy that uses PCP and PPI in a complementary way, public procurers can drive innovation from the demand side. This enables the European public sector to modernize public services faster while creating opportunities for companies in Europe to obtain a first customer reference and gain international leadership in new markets.

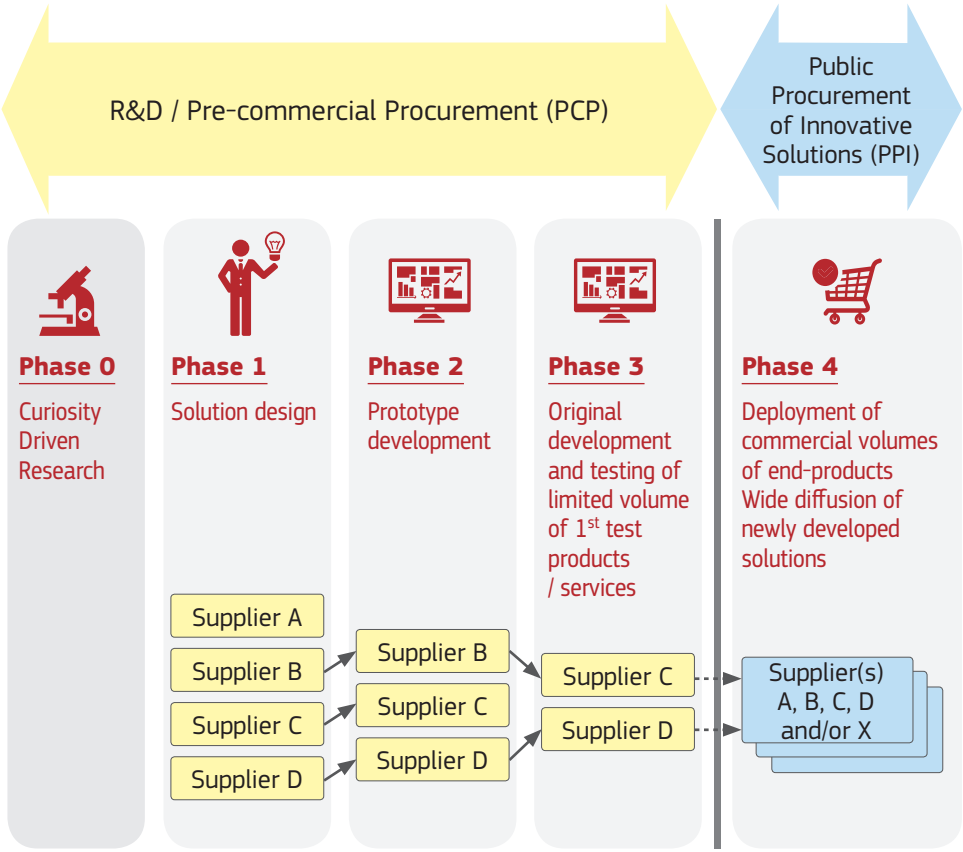
About this brochure

This brochure provides an overview of projects that are focusing on innovation procurement in the ICT domain funded by the EU's research and innovation funding programs FP7, CIP and Horizon 2020. This includes projects in which public procurers from different countries around Europe pool resources to carry out PCP or PPI procurements together, plus coordination and networking projects that prepare the ground for new PCP or PPI procurements in the future.

European cooperation enables procurers to share the costs and risks of carrying out innovation procurements and find common answers to problems that are best tackled at European level for example to address issues such as cross-border interoperability, market fragmentation etc.

This brochure aims to share experiences about how different challenges of public interest in the EU can be addressed via innovation procurement. It provides also links where more information can be obtained so other procurers around Europe can use PCP and PPI approaches as well in the future.




R&D / Pre-commercial Procurement (PCP)
Public Procurement of Innovative Solutions (PPI)
Phase 0
Curiosity Driven Research
Phase 1
Solution design
Phase 2
Prototype development
Phase 3
Original development and testing of limited volume of 1st test products / services
Phase 4
Deployment of commercial volumes of end-products
Wide diffusion of newly developed solutions
Supplier A
Supplier B
Supplier C
Supplier D
Supplier B
Supplier C
Supplier D
Supplier C
Supplier D
Supplier(s) A, B, C, D and/or X

Impacts of the EU funded joint cross-border Pre-Commercial Procurements

Immediate impacts after start of the procurement

So far, EU funded PCPs have strengthened the cross-border cooperation between 154 procurers across Europe that have jointly awarded in total 179 PCP contracts to contractors that involve 379 companies and 68 universities or research centres. From the moment contracts are awarded and R&D implementation starts, a number of impacts can be observed based on which type of players are awarded contracts and how the R&D is committed to be implemented in the contracts.

These immediate results from 32 completed and ongoing PCPs funded through FP7 and Horizon 2020 show that the strategic use of the power pursue to drive innovation from the demand side through PCP has significant positive impacts on:

- **Opening the route-to-the market for new market players:** 71,5% of total value of all PCPs contracts are won by SMEs through direct award (SME as sole or lead bidder), 86% if we count also the indirectly awarded contract value to SMEs (SME as partner or subcontractor). This is more than twice the average in public procurement across Europe (29%).
- **Helping also established market players bring products to the market**: 16% of contracts are won by large companies as single bidder. 19% of contracts consist of consortia of SMEs and larger companies bringing innovative products together to the market. 73,5% of the PCP contracts are won by SMEs (SMEs alone, or as lead bidder)
- **Facilitating cross-border company growth**: 33,1% of PCP contracts are awarded cross-border, 25 times more than the average in public procurement across Europe (1,7%).
- **Bringing research results from the university to the market**: 30% of contracts have universities or research centers as partners in the winning consortia (often together with university start-ups)
- **Contributing to growth and jobs in Europe**: Nearly all bidders (99,5%) are doing 100% of the R&D for the contract in Europe

- **Reducing the R&D risks for procurers and encouraging commercialisation of results by vendors**: Leaving the IPR ownership rights with vendors reduced the R&D cost for procurers on average by 50% as vendors see wider commercialisation potential for their solutions.
- **Improving the quality and efficiency of public services:** All completed PCPs have delivered working solutions that can contribute to the strategic goals of the procurer. 60% of procurers use PCP to obtain more open, interoperable solutions. Procurers from 50% of PCPs that completed by end 2016 have already deployed innovative solutions developed during the PCP.

Longer term impacts a few years after project completion

As all the FP7 funded PCPs and two of the first Horizon 2020 funded PCPs were finalised between 1 to 3,5 years ago, one can start observing some longer-term impacts on the uptake of the developed solutions and on the commercialisation success and growth rate of participating companies. A survey across all the procurers and contractors of the completed FP7 and Horizon 2020 funded PCPs shows the following impacts so far:

Impacts on the procurers:

- **Improving the quality and efficiency of public services.** All completed PCPs delivered solutions that improve quality and/or efficiency. 60% of procurers use PCP also to obtain more open, interoperable solutions.
- **Deployment of solutions by procurers in the projects**: Procurers from 70% of the completed PCPs have already deployed solutions developed during the PCP (SILVER, PRACE3IP, HBP, PREFORMA, THALEA, IMAILE, NYMPHA-MD, SELECT4CITIES, HNSciCLOUD). Some projects deployed solutions as open source without needing further procurement: PREFORMA, SELECT4CITIES, HBP (part open source). Some projects procured the solutions as part of the PCP: PRACE3IP, THALEA, IMAILE. For other projects, the resulting solutions were procured after the PCP: SILVER, HBP, NYMPHA-MD, HNSciCLOUD. Procurers from 30% of the completed FP7 PCPs have not procured yet due to several reasons (certification, standardisation not completed yet etc).
- **Wider deployment of solutions by other procurers on the market**: Procurers from 38,5% of completed FP7 PCPs are already implementing or are preparing additional larger scale procurements

with enlarged buyer groups (THALEA, HNSciCLOUD, PRACE3IP, HBP, IMAILE)

Impacts on the companies:

- **Commercialisation of solutions (product available on the market)**: 86% of the Phase 3 contractors, 75% of the Phase 2 contractors and 30% of the Phase 1 contractors have already commercialised (part of) their solutions. 11% of the contractors (across Phases 1/2/3) still expect to commercialise within 2 years. 17% of the contractors do not plan commercialisation of solutions
- **Business growth**: 50% of all contractors across all the phases already increased their revenues from commercialising the PCP solution. Indeed, a significant number of contractors that do not continue until phase 3 also continue investing to bring their solution to the market. 24,2% of start-ups have secured equity investment and 17% of start-ups concluded partnerships with large corporates since the PCP. On average 1 SME per PCP has attracted additional EU SME instrument financing, either before the PCP to verify the feasibility of their idea and setup their business for the PCP or during/after the PCP, for wider marketing activities and/or to diversify also into other markets.
- **Exit strategy (62,8% of companies in the PCPs are Start-Ups)**: 12,1% of start-ups have undergone a merger or acquisition. 3% of start-ups have done an IPO since the end of the PCP.

Ongoing Projects

eCare

Digital solutions for frailty prevention in the ageing population

In the eCare PCP, four healthcare buyers from Italy, Spain and Poland are challenging industry to deliver disruptive digital solutions for the prevention and comprehensive management of frailty. The main goal is to encourage the independent living and wellbeing of elderly. Therefore, the PCP is looking for digital solutions with a wide-ranging approach that facilitates cognitive and functional decline support, psychological and emotional support, education and empowerment. eCare also aims to facilitate the transition to integrated care models across health and social services, as this is crucial to improve ageing adults' quality of life.

Procuring partners:

Local Health Authority Benevento - Lead Procurer (IT)

Integral Health Consortium in Catalonia (ES)

Santander City Council (ES)

Antoni Falkiewicz Specialist Hospital in Wroclaw (PL)

Website:
ecare-pcp.eu

Health Status Monitor

Addressing the hypertension pandemic challenge through disease self-management

HSMonitor focuses on innovative monitoring solutions to optimise hypertension care and improve patients' health status. The five healthcare providers from Turkey, Italy, Sweden, and Croatia that are implementing together the PCP are serving a combined population of 96 million, of which 31 million already have hypertension. The aim is to bring to the market new solutions that enable a holistic approach that covers early detection and prevention, healthier lifestyle and nutrition, treatment adherence, training and education.

Procuring partners:

Ministry of Health Turkey (Coordinator and Lead procurer) (TK)

University Hospital Federico II (IT)

Region Jämtland Härjedalen (SE)

Health Center Zagreb (HR)

Lombardy Region (IT)

Website:
www.hsmonitor-pcp.eu

Empowering patients to optimise their recovery from a stroke

MAGIC focuses on transforming the delivery of health and social care services via mobile assistance to patients who have experienced a stroke. In an effort to assist healthcare services in keeping pace with demand, the MAGIC PCP has helped develop 3 new ICT based solutions (ARC-Intellicare, WeReha, MAGIC-GLASS) which aim to improve the well-being of patients and optimise their recovery from a stroke. Following the recent completion of all 3 procurement phases and while the buyers are contemplating further exploitation steps, new business opportunities have already been identified by the project's suppliers within the EU/EEA (e.g. Sweden, Norway) and beyond (India). Furthermore, the knowledge gained during MAGIC implementation is being further utilised and developed in local PCPs in Northern Ireland.

Procuring partners:

Regional Business Services Organisation (Northern Ireland - Coordinator and Lead Procurer),

Health and Social Care Board (Northern Ireland), Public Health Agency (Northern Ireland),

Ancona University Hospital (IT),

Local Health Company TO3 (IT),

'Gabriele D'Annunzio' di Chieti-Pescara University department of physical medicine and rehabilitation (IT)

Website:
www.magic-pcp.eu

RELIEF

Improving the monitoring and relieve of chronic pains

RELIEF addresses the needs of European health procurers to bring to the market innovative and sustainable ICT based solutions that improve the monitoring and relieve of chronic pains. Three health procurers from Spain, France and Sweden implement together the RELIEF PCP to empower patients in communication with clinicians to self-manage current and future pains. The RELIEF PCP aims to foster and accelerate the access to market for innovative solutions.

Procuring partners:

Andalucía Health Service SAS (ES), Network of Hospital Procurers

RESAH Ile-de-France (FR) (lead procurer),

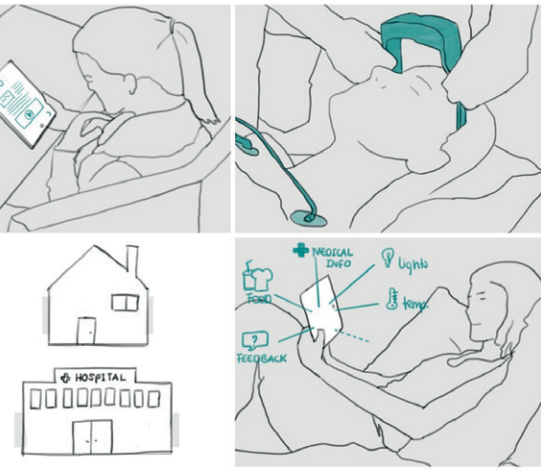
Uppsala County Council CCU (SE)

Website:
www.relief-chronicpain.eu

STARS

Reducing healthcare stress through personalised e-health

Five health procurers from Italy, the Netherlands and Spain are implementing the STARS PCP to reduce unnecessary healthcare related stress experienced by patients during the preclinical phase, the hospitalisation stage and the aftercare period. This will lower the harmful side-effects of sedating drugs, shorten hospital stay, shorten recovery time and relieve carers and related persons from continuous assistance. The PCP is tackling technical challenges related to vital signs measuring as well as wireless real-time transfer, analysis and decision making for big data amounts.



Procuring partners:

National Institute for Rest and Care for Elderly Inrca (IT),

Academic Hospital Maastricht (NL) (lead procurer),

Andalucía Health Service (ES),

Hospital Sant Joan De Déu (ES),

Foundation Parc Tauli (ES)

Website:
www.stars-pcp.eu

LIVE INCITE

EMPOWERING PATIENTS.
IMPROVING CARE.

Empowering patients after surgical procedures

LIVE INCITE aims to improve the effectiveness of healthcare by optimising the success of surgical procedures. It is well known that lifestyle factors such as smoking and drinking strongly influence complications and mortality, therefore patient behaviour change is vital. In the LIVE INCITE PCP, three health procurers from Spain, Denmark and Sweden are challenging the market to develop patient-centered interactive IT-solutions that influence patient behaviour in a personalised way so that they take the necessary actions in their lifestyle both prior and after surgery to optimise the health care outcome.

Procuring partners:

Hospital Clinic De Barcelona HCPB (ES),

Bispebjerg-Fredrikberg Hospital/ Region Hovedstaden (DK),

Karolinska University / Stockholms County Council (SE) (lead procurer)

Website:
karolinska.se/en/live-incite

Nightingale

Smart monitoring, safer care

Developing the ultimate patient monitor

In Nightingale, four health procurers from the Netherlands, Sweden, the UK, Belgium and Germany are undertaking a PCP to develop the 'ultimate patient monitor' and refine wearable technology that can continuously monitor patients' vital signs. This will be integrated with blood tests and other data to ensure early warning of clinical deterioration in and out of hospital. The aim is also that the solutions use self-learning adaptive algorithms in combination with big data analysis to adapt to different individuals in different situations. The new solutions will be used to connect patients, care givers and health professionals to deliver safe, reliable care.

Procuring partners:

University Medical Center Utrecht (NL) (lead procurer),

Stockholm County Council (SE)

University College London Hospitals NHS Foundation Trust (UK),

Catholic University Leuven (BE),

University Clinic Aachen (DE)

Website:
www.nightingale-h2020.eu

PROEMPOWER

Disease self-management to address the diabetes pandemic

ProEmpower aims to make person-centred care for diabetic patients a reality. Four health procurers from Turkey, Portugal, Spain and Italy are undertaking together the PROEMPOWER PCP to enhance the quality of medical decisions by personalised decision support tools that summarise patient clinical characteristics, treatment preference and ancillary data at the point of care. Early detection, personal decision support, self-management and peer support are to be delivered from a platform with interoperable and secure access to devices and health records.

Procuring partners:

Turkish Republic Ministry of Health MOH (TK) (lead procurer),

Shared Services of the Ministry of Health SPMS (PT),

Murcia Health Service SMS (ES),

Regional Healthcare Society SO.RE.SA region (IT)

Website:
www.proempower-pcp.eu

Anti-SUPERBUGS
Pre-Commercial Procurement

Detecting the presence of resistant microorganisms to prevent infections

The Corona pandemics has put the spotlight on the prevention of the spreading of bacteria and viruses in hospitals. In the ANTISUPERBugs PCP, seven health procurers from Spain, Germany, Italy and the UK are challenging together the industry to develop smart ICT solutions able to detect the presence of resistant microorganisms. The aim is to give real-time feedback to the user and at the same time share the information with the healthcare provider electronic record systems linking the infection with the place of the detection.

Procuring partners:

Health Evaluation and Quality Agency Catalonia – AQuAS (ES) (lead procurer),

Catalan Oncology Institute ICO (ES),

Mutual Foundation Terrassa (ES),

University Hospital Aachen UKA (DE), Helios university hospital Wuppertal (DE),

Autonomous Province Trento PAT (IT),

Sheffield Teaching Hospitals NHS Foundation Trust STH (UK)

Website:
www.antisuperbugs.eu

RITMOCORE

Improving treatment for bradycardias through public procurement of innovative solutions

Innovative treatment for elderly patients with bradycardia

Four health procurers from Spain and the UK are implementing a PPI to procure innovative solutions for elderly patients with bradycardia that are using or in need of a pacemaker. The new model of treatment aims to include integration of care pathways, remote monitoring of pacemakers, patient activation and the alignment of interests from all involved stakeholders. To deploy the new model, RITMOCORE approach proposes to shift from a conventional device purchase to an innovative comprehensive service delivery based on a risk-sharing model.

Procuring partners:

Hospital de la Santa Creu i Sant Pau (Barcelona, Spain) (lead procurer)

Liverpool Heart and Chest Hospital NHS Trust Foundation (Liverpool, UK)

University Hospital Bellvitge (ES),

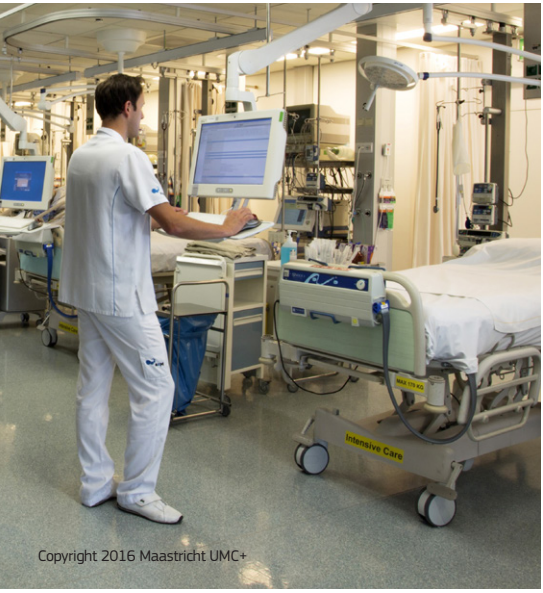
Mutual Foundation Terrassa (ES)

Website:
www.ritmocore-ppi.eu

Thalea II

Deploying telemedicine for high-risk intensive care unit patients

Intensive Care Units (ICU) strive every day to improve the care for acutely life-threatened patients. Hospitals from Germany and Austria are carrying out together the THALEA PPI to pursue wider deployment of highly interoperable telemedicine-platforms for tele-detection and tele-care of ICU-patients at increased risk. The THALEA PPI follows the THALEA PCP during which such innovative systems were first developed, installed and tested in hospitals in Germany, the Netherlands, Belgium, Finland and Spain. The novel algorithms and improved risk-detection of the telemedicine solutions enable earlier diagnosis and improve efficiency in the ICU significantly, resulting in a reduction in sepsis mortality by 25% and in the length of hospital stay by 20-50%.



Procuring partners:

University Hospital Aachen UKA (DE) (lead procurer),

Vienna General Hospital (AT)

Website:
www.thalea-pcp.eu/thalea-2

Autonomous bus lines for Europe's cities of the future

FABULOS focuses on how cities can use automated buses in a systematic way. In the FABULOS PCP, six cities from Finland, Estonia, Greece, Portugal, the Netherlands and Norway are challenging together industry to develop, deliver and test innovative solutions that are capable of operating a fleet of autonomous mini-buses in normal urban environments. The aim is ultimately the operation of an autonomous bus line as part of the public transportation ecosystem.

Procuring partners:

Forum Virium Helsinki Oy (FI) (lead procurer)

Ministry of Economic Affairs and Communication Estonia (EE)

Municipality of Lamia (EL)

STCP – Collective Transport Company of Porto (PT)

City of Helmond (NL)

Gjesdal Municipality (NO)

Website:
http://fabulos.eu

Open standardised smart metering for the water sector

In Smart.met seven water utilities from Italy, Spain, France, Belgium and Hungary are undertaking together a joint PCP to challenge industry to develop more efficient drinking water management solutions, steered through smart meters to improve customer service, decrease operating costs, better prioritize infrastructure investments and contribute to water conservation. The ambition is to arrive to an open standardised framework for smart metering in the water sector to reduce vendor lock- in and enable a whole new wave of innovations to find their way into the water sector.

Procuring partners:

Viveraqua (Verona, IT) (lead procurer),

Promedio (Badaroz, ES)

Eau de Paris (FR)

Water and Sanitation Union, Alsace-Moselle (FR)

CILE (Liege, BE)

Vizmuvek (Budapest Waterworks, HU)

Hydrobru (Brussels, BE)

Website:
smart-met.eu

Deploying cloud services for the European Open Science Cloud

In 2020, the OCRE consortium of research and education networks from 40 countries has launched their Infrastructure as a service (Iaas+) procurement, to deploy commercial cloud services as an integral part of the European Open Science Cloud. This will provide access to commercial cloud services required for interdisciplinary research to the European research community. This OCRE procurement exploits results of the Helix Nebula Science Cloud (HNSciCloud) pre-commercial procurement, in which such type of innovative cloud based solutions were developed and tested. Linking together commercial cloud services and public research organisations' in-house IT resources via the GEANT network provides innovative solutions that enable to better support data intensive science. Read also the story of how HNSciCloud and OCRE brought these solutions to the market.

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Procuring partners:

GEANT network, on behalf of research and education networks from 40 countries around Europe (NL, BE, AT, BG, HR, CY, CZ, DK, EE, FI, FR, DE, EL, HU, IE, IT, LT, LU, MT, PL, PT, RO, SI, ES, SE, SK, CH, UK, NO, Albania, Armenia, Georgia, Iceland, Israel, North Macedonia, Servia, Turkey, Ukraine)

Website: www.ocre-project.eu

FENIX Research Infrastructure

In 2018, the Interactive Computing E-Infrastructure (ICEI) project started a coordinated procurement of equipment and R&D services in the context of the Human Brain Project. The aim is to deliver e-infrastructure services that will be federated across Europe to form the Fenix infrastructure. This will provide European researchers with access to HPC and cloud computing resources as well as active and archival data repositories. ICEI is implementing by different public procurements with a total volume of about 30 €M. Part of the ICEI procurements contain new services and are procured by one ICEI member for of the wider buyers group. Others concern equipment and are procured individually by the ICEI procurers. Some ICEI procurements have already awarded contracts to vendors that participated also in the HPB PCP. Other ICEI procurements are still ongoing. Read also the story of how European procurement cooperation, including ICEI, delivers more powerful supercomputers.

Procuring partners:
Juelich Supercomputing Centre (DE)
ETHZ / CSCS (CH)
BSC (ES)
CEA (FR)
CINECA (IT)

Website: https://:fenix-ri.eu

Modernizing European High Performance Computing infrastructure

In PPI4HPC, four leading European supercomputing centers from Germany, France, Italy and Spain implement together for the first time in Europe a joint public procurement of innovative solutions in the area of High Performance Computing (HPC). The procurers coordinate their roadmaps for providing HPC resources optimised to the needs of European scientists and engineers. This €73 million procurement enables a significant enhancement of the planned pre-exascale HPC infrastructure that enhances performance and versatility without increasing energy consumption. Three of the deployed systems comprise technology from the PRACE3IP PCP. PPI4HPC also paves the path for EUROHPC, a Joint undertaking in which the European Commission and Member States invest over €1 Bn in joint procurement cooperation between 2019-2026. Read also the story of how European procurement cooperation, including PPI4HPC, delivers more powerful and energy efficient supercomputers.

Procuring partners:
JUELICH (DE)
CEA/GENCI (FR)
CINECA (IT)
BSC (ES)

Website:
www.ppi4hpc.eu/

Public administration

End-to-end archival and preservation services that cover the full research lifecycle

In the ARCHIVER PCP four leading research organisations from Switzerland, Germany the UK and Spain are challenging industry to combine multiple ICT technologies, including extreme data-scaling, network connectivity, service interoperability and business models, in a hybrid cloud environment to deliver end-to-end archival and preservation services that cover the full research lifecycle, whilst organisations retain total ownership of the data.

Procuring partners:

CERN (CH) (lead procurer)

German Electron Synchroton - DESY, (DE)

European Bioinformatics Institute - EMBL-EBI,(UK)

Port of Information – PIC (ES)

Website :

https://www.archiver-project.eu

AI accelerating Cities' transition to carbon neutrality

AI4Cities brings together European cities and regions looking for artificial intelligence (AI) solutions to accelerate carbon neutrality. Six major cities (Helsinki, Amsterdam, Copenhagen, Paris Region, Stavanger and Tallinn) are leading the AI4CITIES PCP to encourage suppliers to deliver AI solutions for a series of mobility and energy challenges, that will ultimately contribute to reduce CO2 emissions and meet their climate commitments. A wider group of cities (Barcelona, Budapest, Milan, Porto, Egaleo, Lamia, Istanbul, EUROCITIES and Open & Agile Smart Cities) contribute to the implementation of the PCP to ensure quick wide scale deployment of the newly developed solutions.

Procuring partners:
Forum Virium Helsinki (FI) (lead procurer)
Amsterdam (NL)
CAP Digital (FR)
Copenhagen (DK)
Stavanger (NO)
Tallinn (EE)

Website: www.ai4cities.eu

Smart, inclusive and sustainable demand-based development of learning technology

The learntech accelerator network is creating a network of public procurers in the education domain to deploy personalised learning environment innovations following the IMAILE PCP and to prepare new future PCP and PPI procurements. The network plans to develop common demand policies, strengthen the dialogue between demand and supply side and stimulate knowledge transfer to remove barriers for implementation of innovation procurement in the education sector.

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Procuring partners:
Halmstad Municipality (SE)
Konnevesi Municipality (FI)
Ministerium der Finanzen Sachsen Anhalt (DE)
Gothenburg Region (SE)
Ajuntament de Viladecans (ES)
Citta Di Torino (IT)
Municipio de Braga (PL)

Website:
www.learntechaccelerator.eu

Platform for Innovation of Procurement and Procurement of Innovation

Platform for Innovation of Procurement and Procurement of Innovation (PiPPI)

The project aims to capture unmet needs of university hospitals and to identify opportunities for future PCP and PPI procurements in digital health and care services. The project will identify major clinical needs from 10 university hospitals across Europe and compile a short-list of challenges that could be tackled through digital innovative solutions developed or purchased through cross-border innovation procurements. To this end, the project is building a cross-border Community of Practice that involves all critical stakeholders: health care providers, industry, academia, policymakers, patient organizations and other enablers.

Karolinska University Hospital Photographer Evelina Carborn

Partners:

Karolinska University Hospital (SE),

Erasmus University Medical Center Rotterdam (NL),

San Raffaele Hospital (IT),

Medical University Vienna (AT),

Catalan Institute of Health – University Hospital Vall d'Hebron (ES),

Agency for Health Quality and Assessment of Catalonia (ES),

Helsinki University Hospital (FI),

Kings College Hospital (UK)

Website: www.PIPPI-project.eu

Towards an EU wide network of national competence centers for innovation procurement

Procure2Innovate is creating an EU wide network of national competence centres on innovation procurement. The network is spearheaded by five countries that are reinforcing existing national competence centers (Germany, Austria, Netherlands, Spain, Sweden) and five countries that are setting up new competence centers (Portugal, Greece, Ireland, Estonia, Italy). Together they are inviting other countries to join. In addition to experience sharing across borders, the network aims to raise awareness on innovation procurement among policy makers and public procurers and to improve institutional support and quality of advice for public procurers in their countries on implementing innovation procurements of ICT based solutions, and other product groups.

Participating existing competence centers:

Competence Centre for Innovation Procurement (KOINNO), DE
PPPI Service Point (IÖB Servicestelle), AT,
Expertise Centre for Public Procurement (PIANOo), NL,
Spanish competence centre for innovation procurement (CDTI, ISCIII, INTA), ES,
National agency for public procurement (UHM), SE,

Participating partners mandated with the creation of new competence centers:

Enterprise Estonia (EAS), ES, Ministry of Economy and Development - General Secretariat of Commerce and Consumer Protection (GSCCP), GR,
National Innovation Agency (ANI), PT,
Procurement Transformation Institute (PTI), IE,
Central purchasing agency (Consip), IT

Website: www.procure2innovate.eu

Completed Projects

Thalea

Developing telemedicine for high-risk intensive care unit patients

Intensive Care Units (ICU) strive every day to improve the care for acutely live-threatened patients. Between beginning 2015 and October 2016, five hospitals from Germany, The Netherlands, Spain, Belgium and Finland carried out the THALEA PCP to get a highly interoperable telemedicine-platform developed for tele-detection and tele-care of ICU-patients at increased risk. Three innovation systems were delivered at the end of the PCP. The novel algorithms and improved risk-detection of the telemedicine solutions, planned for wider deployment in the THALEA II PPI, will enable earlier diagnosis and improve efficiency in the ICU significantly, resulting in a reduction in sepsis mortality by 25% and in the length of hospital stay by 20-50%. In this short video the THALEA lead procurer further illustrates the benefits that the THALEA PCP delivers to the hospitals.

Procuring partners:

University Clinic Aachen (DE) (lead procurer),

University Hospital Maastricht (NL),

Parc Tauli Sabadell University Hospital (ES),

Hospital East Limburg (BE),

Northern Ostrobothnia Hospital District (FI)

Website:
www.thalea-pcp.eu

SILVER
Supporting Independent Living for the Elderly through Robotics

Supporting independent living of elderly through robotics

In SILVER, seven local and regional authorities from five different EU Member States carried out a PCP together to tackle the challenges that people face when getting older to continue living independently at home. Between mid 2013 and mid 2016 SILVER developed and tested across all five partner countries new robotics solutions that enable to care for 10% more elderly living independently at home with the same amount of care staff. Five out of seven participating startups successfully commercialized their solutions. Today, hundreds of these robotics solutions have been sold worldwide. Check out for example the story of how this PCP helped the startup Bioservo grow into a world leading supplier of wearable muscle strengthening systems that assist elderly to prevent and recover from injuries and that help factory workers with grip intensive tasks.

Procuring local and regional authorities:
City of Odense and region of Southern Denmark (DK), City of Västerås (SE), Cities of Vantaa and Oulu (FI), City of Stockport (UK), City of Eindhoven (NL)

Website:
www.silverpcp.eu

DECIPHER PCP

Safe mobile medical care for patients with chronic long term conditions

Spanish, English and Italian healthcare authorities implemented the DECIPHER PCP between June 2014 and March 2017. It resulted in three innovative solutions that enable efficient and safe medical care for patients with chronic diseases, such as Type-2 Diabetes, that are on the move across Europe: a cloud-based platform, a mobile app and an open source connector for patients, doctors and relatives. They provide health data access, treatment, health monitoring, emergency episodes assistance and multi-language information sharing with professionals and relatives.

The acquired solutions can generate up to 24% of cost savings (over € 8M) for the procuring regions. The PCP also helped six out of nine participating startups grow their business. Check out for example the case of Gnomon Informatics that is selling its solutions all across Europe now.

Procuring partners:

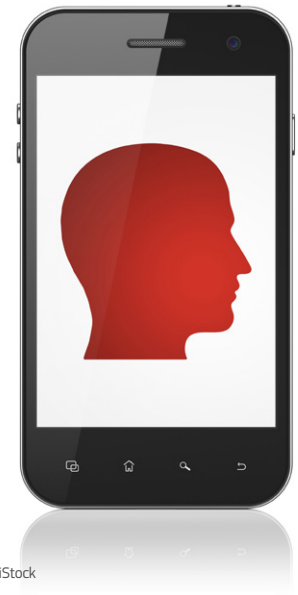
Fundation Agency for Health Quality and Assessment of Catalonia (Spain) (lead procurer),

TicSalut (ES), ESTAV Centro (IT), TRUSTECH – Central Manchester Foundation Trust (UK)

Website:
www.decipherpcp.eu

Mobile services for mental health treatment

NYMPHA-MD focused on improving mental health treatment for patients with a bipolar disorder. Beginning 2018, mental care hospitals from Italy, Denmark, and Spain completed a joint PCP that delivered mobile ehealth services for bipolar disorder treatment. The solutions enable procurers to use objective parameters to quantify the onset of depressive or euphoric episodes linked to mood variations. Examples of such parameters included the amount of physical activity, sleep hours, alcohol intake, etc. This enables doctors to intercept, in between episodes, the patients' trends of behaviour towards manic or depressive states. Check out the story of how the PCP helped SMEs like Monsenso grow their business, attract financial investors and deploy their solution in several European countries to help for example people with stress or a depression get back to work faster.



Procuring partners:

Autonomous Province of Trento (IT) (lead procurer),

Mental Health Services Capital Region Copenhagen (DK),

CSPT – University Hospital (ES)

Website:
www.nympha-md-project.eu

Telecare services for frail elderly people with multiple conditions

Beginning 2018, four health procurers from Spain, the UK and the Netherlands completed coordinated PPI procurements that triggered the market to deliver ICT based telecare services that enable to care for frail elderly that suffer from multiple conditions at the same time such as heart failure, diabetes, etc. In Barcelona for example the purchased implantable cardioverter defibrillators have already led to a 9,8% reduction in hospital visits, decreased risk of death by 29% and the implants were successful in 98,12% cases, compared to 90% under the old approach. In the RITMOCORE project, Catalonian and UK hospitals are doing further procurements to deploy the solutions more widely. In Liverpool (UK) the purchased everyLIFE PASSsystem gives carers instant access to a patient's care plan via their smartphones, allowing them to easily familiarise themselves with the personal needs of a client before they visit. Since STOPandGO this system has seen huge uptake across the UK and is now deployed by over 700 care businesses across every commissioning region in England and parts of Scotland, Wales and Northern Ireland.

Procuring partners:

City of Liverpool (UK), Santa Creu I Sant Pau hospital (ES),

Miguel Servet university hospital (ES),

City of Helmond (NL)

Website:
stopandgoproject.eu

V-Con

Optimizing road infrastructure through virtual modelling

The V-Con PCP improves the efficiency and effectiveness of national road authorities by moving towards an interoperable way to virtually design, plan and manage the construction of road infrastructure. The project resulted in March 2017 in two exquisite semantic web solutions that integrate in a vendor-neutral fashion various tools and standards that are used throughout the whole life cycle of the road infrastructure. Check out the short video about how the V-CON PCP helped SMEs like for example Semmtech grow their business. Moving towards digital building information modeling and an open, standards based data exchange with the commercial parties that are involved in the road operation, maintenance and asset management processes can save 10-20% of the total building cost. If applied all across Europe this would amount to Billions of euros of cost savings.

Procuring partners:

Rijkswaterstaat (NL) (lead procurer),

Trafficverket (SE)

Other procurers associated to the procurement: Centre Scientifique et Technique du batiment (FR)

Website:
www.rws.nl/en/highways/v_con/

Improving traffic management performance

In CHARM national road authorities focused on the move towards an open modular software architecture for traffic management centers. By end 2017 the CHARM PCP developed and tested 6 innovative modules for advanced distributed network management, prediction and prevention of incidents and cooperative ITS (intelligent Transport Systems). This results in optimized network performance, increased road safety and reduced CO_2 emissions. The authorities are currently investigating to launch a follow up procurement to deploy the innovations

Procuring partners:

Rijkswaterstaat (NL),

Highways Agency (UK) (lead procurer).

Other traffic management authorities associated to the procurement:

Department of Mobility of Works (BE)

Website:
www.rijkswaterstaat.nl/english/about-us/doing-business-with-rijkswaterstaat/charm-pcp/index.aspx

Smart personal equipment to reduce the risks faced by firefighters

Every year, more than 100 firefighters lose their lives whilst saving others. The SMART@FIRE PCP reduced these risks by successfully developing and testing the first integrated and affordable solutions for "smart" Personal Protective Equipment in Europe. These solutions incorporate indoor localisation systems and sensors that monitor biometric (e.g. heart rate) and environmental parameters (e.g. toxic gases). This increase safety by giving the commanding officer an overview of the physical condition of his team members, the dangers they are exposed to, and their location on site. So far, two SMEs from the PCP successfully commercialized their solutions to law enforcement, military, fire brigade and critical infrastructure customers around the world: Prevent Deloza and Dune sistemi.

© Extract from presentation – Magelaan

Procuring partners:

Federal Home Affairs Ministry (BE),

SDIS Fire Department Bouches-du- Rhone (FR)

Other procurers associated to the procurement:

Fire Department city Dortmund (DE),

Greater Manchester Fire and Rescue Authority (UK),

National Disaster Response Agency (NL)

Website:
www.smartatfire.eu

SELECT for Cities

Enabling large-scale co-creation, testing and validtion of urban IoE applications and services

Beginning 2020, Antwerpen, Copenhagen and Helsinki completed the SELECT for Cities PCP that addressed the challenge: how can cities reinvent themselves as large-scale interlinked Internet of Everything (IoE) labs, with easy access to developers and innovators to pilot, test and validate solutions? Several participating companies, including three finalist consortia of the PCP - Snap4city / Florence University, Indra Sistemas and Ingegneria Informatica - successfully commercialised their newly developed open, service-oriented platforms that enable large-scale co-creation, testing and validation of urban IoE applications and services. Check out for example the story of how SELECT for Cities helped the SME Ubiwhere double its company growth. The cities tested the platforms with use cases in public transport and elderly care. In the meantime, over fifty other public and private buyers around Europe adopted the solutions and the collection of applications is growing (e.g. monitoring COVID-patients, ensuring city safety, 5G connected car connectivity, citizen engagement).

Procuring partners:

Copenhagen Solutions Lab (DK),

Digipolis (BE) (lead procurer),

Forum Virium Helsinki (FI).

Other procurement associated partners: City of Antwerp (BE) and iMinds (BE).

Website: www.select4cities.eu

PREFORMA

Towards a sustainable ecosystem for long term digital preservation

National archives and musea identified the need to improve the quality of digital files that preserve our cultural heritage for the long term future to prevent degeneration of data storage quality over time. Therefore such memory institutions from nine European countries completed together the PREFORMA PCP in 2017. It successfully delivered three new open-source standardised tools that improve the curation capacity with high digitization accuracy and quality at reduced costs. The tools are still popular and have been downloaded already more than 85000 times by memory institutions from over 150 countries: 60% from EU, 30% from US and 10% from the rest of the world. The tools continue to be maintained and improved by Open Preservation Foundation and MediaArea.net. Check out the PREFORMA story for more info.

Procuring partners:

National Archives-Riksarkivet (SE) (lead procurer), Sound and Image-Beeld en Geluid (NL),

Royal Institute for art Patrimonium- KIK (BE),

Greek Film Center (GR),

Local Government Management Agency – LGMA (IE),

Foundation Prussian Cultural Heritage (DE),

Town Hall Girona (ES),

Ministry of Culture–EVKM (EE),

National Library – Kungliga Biltioteket (SE)

Website: www.preforma-project.eu

HELIX NEBULA
THESCIENCECLOUD

Creating a competitive marketplace of innovative cloud services for scientific users

End 2018, 10 leading European research centres completed the Helix Nebula Science Cloud (HNSciCloud) PCP to meet the growing requirements for handling applications and datasets in the fields of astronomy, high energy physics, life sciences and photon/neutron sciences. Meanwhile, the OCRE consortium procured the deployment of cloud solutions based on the PCP results across research and education networks in 48 countries. The hybrid cloud platform that is now deployed as a result of the PCP, links together commercial cloud service providers and publicly funded research organisations' in-house IT resources via the GEANT network to provide innovative solutions supporting data intensive science. These innovative services support the connection of the research infrastructures identified in the ESFRI Roadmap (European Strategy Forum on Research Infrastructures) to the nascent European Open Science Cloud (EOSC) intended to create a single digital research space for Europe's 1.8 million researchers. Read also the story of how HNSciCloud and OCRE brought these solutions to the market.

Procuring partners:

European Organization for Nuclear Research CERN (CH) (lead procurer), National Institute for Nuclear Physics INFN (IT), German Electron-Synchrotron DESY (DE), National Center for Scientific Research CNRS (FR), Karlsruhe Institute for Technology KIT (DE), SURFsara (NL), Science and Technology Facilities Council STFC (UK), European Molecular Biology Laboratory EMBL-EBI (DE), Institute for High Energy Physics IFAE (ES), European Synchrotron Radiation Facility (ESRF)

Website: www.hnscicloud.eu

Increasing the energy efficiency of high performance computing

The Partnership for Advanced Computing in Europe (PRACE) provides access to 6 leading-edge high performance computing (HPC) systems to academia and industry from around the world. The PRACE 3IP PCP has accelerated key R&D activities in European HPC, and has proven to be a good model for other PCPs, for example in the Human Brain Project. In February 2018 the project delivered three pilot solutions that use different technology approaches that improve the state-of-the art of more energy efficient high performance computing (Bull Atos, E4 engineering, Maxeler technologies). Check out the story of how these results have already achieved a real impact on later HPC procurements and on the larger European HPC community. The PPI4HPC procurements have for example already purchased more energy efficient HPC solutions from vendors that participated in the PRACE3IP PCP.

Procuring partners:

CINECA (IT) (lead procurer),

Forschungszentrum Juelich GmbH (DE),

Genci (FR),

EPCC (UK),

CSC (FI)

Website:
www.prace-ri.eu/PRACE-3IP

IMAILE
Innovative Methods for Award Procedures of ICT learning in Europe

Personalized learning environments for primary and secondary schools

Many children today are more interested in playing computer games than in studying for school. Schools from Sweden, Spain, Germany and Finland decided to address the challenge via the IMAILE PCP. This resulted beginning 2018 in two solutions (from Almerin and Edebe/Mydocumenta) that offer a more personalised, gaming-like learning experience to children in primary and secondary schools by continuously analysing the students' behaviour patterns with the help of artificial intelligence. Tests across the four countries show that the new solutions make students 55-75% more motivated and successful in learning mathematics, technology and science topics and reduce the teachers' planning and assessment time by 30-40%. There is also a positive impact on the environment and school costs: The Tyrnävä school in Finland for example does not use books any more. The license they bought for IMAILE personalised learning software costs less than buying books for 30 students. The COVID-19 pandemic has put the spotlight on speeding up the deployment of digital personalised learning environments, not only in schools but also in private businesses. Check out the short video of how IMAILE helped the start-up Almerin commercialise its Yiptree learning solution in public and private markets.

Procuring partners:
Halmstad municipality (SE),
Ministry of Finance of Saxony Anhalt (DE),
City council of Viladecans (ES),
Municipality of Konnevsi (FI)

Website: www.imaile.eu

Human Brain Project

Interactive supercomputing for human brain research

Brain research requires supercomputing resources but with a higher level of interactivity and memory capacity. Researchers need to steer model simulations or to quickly analyse large amounts of data. The Human Brain Project, an EC FET Flagship project, completed end 2016 a PCP that accelerated the development of interactive computing and large memory capabilities for High Performance Computing (HPC). It resulted in two solutions that both performed all R&D in Europe (Cray and IBM/NVIDIA). Read the story of how the PCP opened up opportunities for participating companies to partner with other HPC players and commercialise their solutions. The ICEI procurement realised wider deployment of the solutions developed in the PCP across an enlarged buyers group around Europe. These solutions are nowadays widely deployed and used for brain research.

© Human Brain Project

Procuring partners:
Forschungszentrum Jülich (DE)
Other associated procurers:
Barcelona Supercomputing Center (ES),
Karlsruhe Institute of Technology (DE),
Federal Politechnical School of Lausanne – EPFL (CH),
ETH Zürich (CH),
CINECA (IT)

Website:
www.humanbrainproject.eu

Network of procurers to foster demand for innovation in eHealth

INSPIRE created a network of procurers that engaged in several PCP and PPI procurements nationally and at EU level (e.g. STOPANDGO, THALEA, RELIEF, ANTISUPERBugs, EMPATTICS). The INSPIRE Academy also created training material that facilitates the introduction of new technologies and ICT-based services in the healthcare delivery system, through evidence based service – and business model thinking. INSPIRE achieved also practical impact on the use of PCP and PPI instruments by linking innovation procurement with venture capital activities.

Partners:
Nordic Healthcare Group (FI),
BITECIC (UK),
AIAQS (ES),
Resah-Idf (FR),
TEHA (IT),
BBG (AT)

Website: inspirecampus.eu

EPP eHealth

Network of procurers for eHealth solutions

EPP-eHealth, that set out to transform the market for eHealth solutions through dialogue and innovation procurement, has created a network of procuring organisations in healthcare to pool demand for e-Health goods and services. The EPP-eHealth procurers also published Joint Statements of Unmet Needs, a Public Procurement of Innovative solutions (PPI) Strategy for eHealth and established a sustainable platform for future collaboration. EPP eHealth procurers have already engaged in a number of new innovation procurements (e.g. STARS, RELIEF).

Partners:

BravoSolution – Coordinator (UK),

Dane-i-Analizy (PL),

Optimat Limited (UK),

Region Zealand (DK),

Andalucia Health Service (SAS), Madrid Health Service-SERMAS (ES),

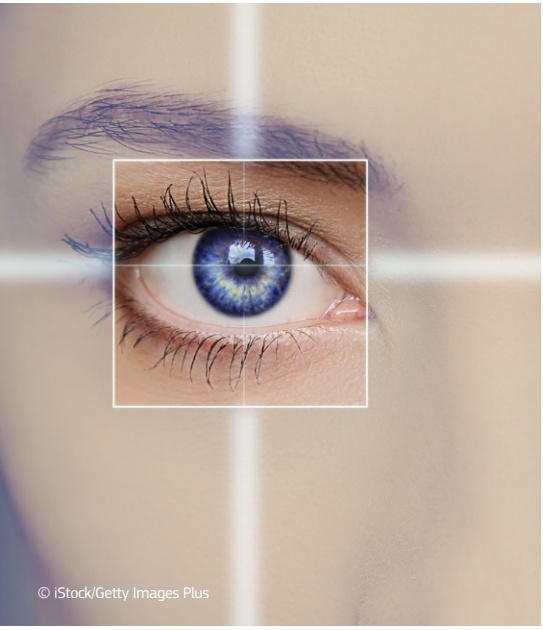
University Hospital of Krakow (PL)

Website:
www.innovationithospitals.com

PRO4VIP
PROcurement for Visual Impaired People

Network of healthcare procurers for visual impairment

PRO4VIP formed a network of healthcare procurers to address the problem of visual impairment, a global issue that is on the rise as a result of the ageing population. PRO4VIP developed a joint innovation procurement roadmap for novel cost-effective ICT-based assistive technologies for visually impaired people and clinical tools that help physicians with the early detection of such conditions.



Partners:

Health Evaluation and Quality Agency Catalonia – AQuAS (ES),

Barcelona Macula Foundation - Research for Vision (ES),

UCL Partners Limited (UK),

University Salerno (IT),

Autonomous Region Friuli Venezia Giulia (IT),

Regional Institute for the Blind Rittmeyer in Trieste (IT),

Vocational Training Center Düren (DE), ZENIT (DE),

European Blind Union – EBU (FR), ECRIN-ERIC (FR),

Sara Bedin (IT)

Website: www.pro4vip.eu

SMART AMBULANCE EUROPEAN PROCURERS PLATFORM

European network of procurers for smart ambulances

The SAEPP network of ambulance procurers and users prepared the ground for innovation procurement focusing on the ICT-equipped ambulance of the future enabling a shift from a means of urgent transport to an onboard mobile treatment space. The objective of the ambulance redesign was to enable pre-hospital care in order to avoid unnecessary hospital admissions and the associated patient distress and hospital costs.

Partners:

NHS Commercial Solutions (UK), Ambulance Today LTD (UK), BITECIC Limited (UK), FALCK Denmark (DK), Fundation for Biomedicine Research Cordoba (ES), Fundation Tecnalia Research and Innovation (ES), Region SJAELLAND (DK), The Royal College of Art (UK); INEM (PT), Lappeenranta University of Technology (FI), South East Coast Ambulance Service (UK), Yorkshire Ambulance Service NHS Trust (UK), The University of Sheffield (UK), South Karelia Social and Health Authority (FI), University of the West of England, Bristol (UK), Academic Hospital Groningen (NL), Saima University of Applied Sciences (FI)

Image supplied courtesy of the Royal College of Art

Website:
www.smartambulanceproject.eu

Network of procurers preparing deployment of Intelligent Transport Systems

P4ITS created a network of public procurers experienced in cooperative Intelligent Transport Systems (ITS) and planning to deploy them in the near future. P4ITS aimed at a more concerted approach to innovation procurement to support a wider market roll-out of cooperative ITS and enhanced traffic management solutions in Europe. A number of partners that participated in P4ITS and its predecessor P3ITS have implemented in the meantime PCP and/or PPI procurements on advanced traffic management and ITS (Province North Brabant, Traffikverket Sweden, ASFINAG).

Partners:
ERTICO – ITS Europe (BE),
North Denmark Region (DK),
AustriaTech (AT), ASFINAG (AT),
Flanders Region (BE),
Vigo City Council (ES), CTAG (ES),
Finnish Transport Agency (FI),
VTT (FI), HBMO (HU),
ITS Bretagne (FR),
City of Verona (IT),
CRP Henri Tudor (LU),
ITS Sweden (SE), Liguria Region (IT),
OHL Concessiones (ES),
TOPOS Aquitaine (FR)

Website: www.p4its.eu

Network of procurers on European Science Cloud

In order for public research organisations of all sizes to take advantage of the best cloud computing solutions the market has to offer, PICSE identified opportunities and developed a roadmap for cross-border cloud procurements. The project ended mid 2016, providing a landscape of ongoing cloud PICSE procurers have already engaged in a number of cloud procurements (e.g. HNSciCloud, OCRE, ARCHIVER).

Partners:

European organization for nuclear research (CERN) (CH),

Trust-IT services LTD (UK),

Cloud Security Alliance Europe (UK)

Website:
www.picse.eu

Network of procurers for novel broadband network solutions

In order to efficiently implement beyond state-of-the-art optical equipment in today's networks, the public sector needs to synchronize efforts by building a common procurement roadmap specifying requirements in the short and mid-to-long term areas of common European interests. COMPLETE created a joint information platform and detailed PCP guidelines that is used by GÉANT, National Research and Education Networks and other public entities to lower barriers and minimize initial costs for future implementation of PCP procedures by European public network operators.

Partners:

Institute of Bioorganic Chemistry Pan (PL),

Greek Research and Technology Network s.a. (GR),

CESNET (CZ)

Website:
www.photonics-complete.eu

Useful links

- Innovation Procurement
  https://ec.europa.eu/digital-single-market/en/innovation-procurement
- Pre-Commercial Procurement
  https://ec.europa.eu/digital-single-market/en/pre-commercial-procurement
- Public Procurement of Innovative Solutions
  https://ec.europa.eu/digital-single-market/en/public-procurement-innovative-solutions
- Innovation Procurement Platform online networking forum for procurers about innovation procurement
  https://www.innovation-procurement.org/
- Overview of Horizon 2020 EU funding opportunities for PCP and PPI and Horizon 2020 template tender documents for PCP and PPI procurements
  https://ec.europa.eu/digital-single-market/en/news/calls-eu-funding-opportunities-pre-commercial-procurement-and-public-procurement-innovative
- First results of ongoing and completed EU funded PCPs
  https://ec.europa.eu/digital-single-market/en/news/updated-results-ongoing-pre-commercial-procurements-pcp-projects
- Applying for Horizon 2020 funding for PCP and PPI–Horizon 2020 participants portal
  http://ec.europa.eu/research/participants/portal/
- Horizon 2020 online manual on innovation procurement
  http://ec.europa.eu/research/participants/docs/h2020-funding-guide/crosscutting-issues/innovation-procurement_en.htm
- Quickfinder Horizon 2020 calls that provide EU funding for innovation procurement
  http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/ftags/innov_proc.html#c,topics=flags/s/InnovationProcure ment/1/1&+callStatus/asc
- Innovation Procurement Newsletter: link to subscription form
  http://ec.europa.eu/information_society/newsroom/cf/dae/subscription-quick-generic-form-fullpage.cfm?service_id=167
- Past and Future Innovation Procurement Events
  https://ec.europa.eu/digital-single-market/node/76799
- Commission Notice : Guidance on Innovation Procurement
  https://ec.europa.eu/docsroom/documents/29261