

fOCUS europe

January 2018

Spotlighting European developments and projects

SPECIAL EDITION

Innovative Public Procurement in Europe

IMAILE

Innovative Methods for Award Procedures of ICT Learning in Europe

An Overview of Recent Activities and Projects
at the EU level from the IMAILE Group

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Focus Europe

A spotlight on ideas and innovation

Dear readers!

All over Europe and in fact all over the world, public authorities invest huge amounts of money in public procurement processes to obtain goods, products and services for their clients or citizens.

During these procurement processes, basically, two different approaches could be followed:

- *One will be public procurement in relation to solutions, good and products developed in the past and which are therefore already present on the market.*
- *The other, more future-orientated, public procurement approach <https://ec.europa.eu/digital-single-market/en/news/calls-eu-funding-opportunities-pre-commercial-procurement-and-public-procurement-innovativeriggers>, approach a first step, research and innovative development processes to address challenges for which there are no solutions currently in existence or where they are not developed or customised enough to meet the procurer's needs.*

With this second approach, we speak about the Public Procurement of Innovative solutions (PPI) "when challenges can be addressed by innovative solutions that are nearly or already available in small quantities on the market and that do not need new Research & Development (R&D)." In comparison – or better said: in complementation – to PPI, there is also Pre-Commercial Procurement (PCP), which applies "when there are no near-to-market solutions yet and when new R&D is required." PCP can thus compare the pros and cons of alternative competing solutions and approaches. This will in turn enable the de-risking of the most promising innovations step-by-step by solution design, prototyping, development and initial product testing." (for a basic overview of definitions, publications, policies, events, funds and laws in this context, please see <https://ec.europa.eu/digital-single-market/en/innovation-procurement>).

In any case, the key word within this context is always innovation, which the EU defines as being "the implementation of a new or significantly improved product, service or process, including but not limited to production, building or construction processes, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations, inter alia, with the purpose of helping to solve societal challenges or to support the Europe 2020 strategy for smart, sustainable and inclusive growth." (Directive 2014/24/EU, article 2 par.1 (22); Directive 2015/24/EU 2 par. 1 (18))

These are the settings and the background within which traditional public procurement processes need to be partly rethought and reassessed. More and more, modern public procurement policy needs to change from being a relatively passively applied tool (which selects goods, products and services available on the market, but which are not very likely to be tailor-made to a procurer's specific needs and demands) to being more of an active instrument for stimulating and steering innovation processes (leading to customised solutions for the benefit of citizens)! If public authorities, at all levels, learn to apply PPI and PCP successfully, then public procurement will become a cornerstone of Europe's path towards being a knowledge-driven society and an innovative global player within the service sector.

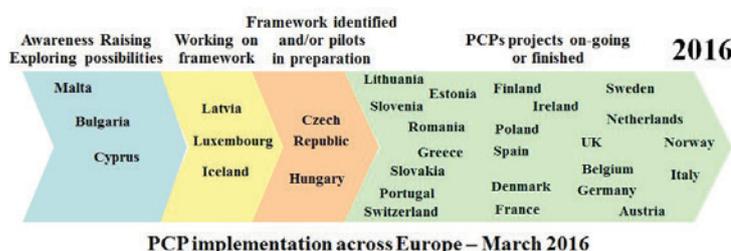
However, despite the wide range of public sector challenges that require the development of innovative solutions, PPI and PCP occur less frequently in Europe than in other developed parts of the world. Although public expenditure represents almost half of the European economy, 20 times less is spent on PPI and PCP in Europe (€2,5Bn/year) than, for example, in the USA (\$50Bn/year).



The reasons for this are as manifold as the difficulties in combatting it: There is the lack of awareness amongst both procurers and suppliers about how to optimise the risk-benefit balance of procuring innovation, and often it is unclear how to procure innovation in compliance within legal frameworks. In addition, the fragmentation of public demand in Europe plays a crucial role.

To raise awareness of the ideas of PPI and PCP as well as for motivating procurers and suppliers to actively utilise these tools and processes, the EU began, some 10 years ago, to put them on its political agenda. The result was the Europe 2020 strategy and the Digital Agenda for Europe, targeted at the increased use of PCP and PPI by 2020. Horizon 2020 reinforces co-financing for public procurers around Europe, addressing common challenges by undertaking PCPs or PPIs jointly. New synergies between Horizon 2020 and the Structural Funds (ESIF) have been possible since 2014 onwards for co-financing PCP and PPI projects." (<https://ec.europa.eu/digital-single-market/en/news/calls-eu-funding-opportunities-pre-commercial-procurement-and-public-procurement-innovative>).

As a result of these efforts it has been possible to enjoy many achievements at the national level; the graph below gives an overview of the PCP and PPI developments achieved in 2016.



Source: <https://ec.europa.eu/digital-single-market/en/news/innovation-procurement-initiatives-around-europe>

Amongst these countries, Sweden is one of Europe's "model students" when it comes to promoting as well as applying PCP and PPI. Already back in 2007, the public research and innovation centre VINNOVA published a paper about public procurement as a driver for innovation and change for the Swedish public sector, and from 2010 to 2011 it developed the Public Innovation Procurement Support Program (Innovation Procurement initiatives in Sweden; *ibid*).

Therefore, it is no surprise that many successful PCP and PPI initiatives funded under FP7 and Horizon 2020 are of Swedish origin. One fine example is the IMAILE project (www.imaile.eu), which worked on the development and implementation of Innovative Methods of Award Procedures of ICT learning in Europe (FP7 - 619231). The project is the first PCP project in Europe in the

field of education and technology enhanced learning. By enabling dialogue between the supply and demand sides it allows research and innovation to focus on the actual needs of the end users (schools, teachers and students), equipping them with personal learning environments to make classrooms fit for Education 2030.

The following are the key data of the project:

- First PCP project on education at EU level
- Funded Period: February 2014 – January 2018
- Partnership: 10 partners from 7 countries
- Buyers Group: 4 partners from Sweden, Finland, Germany and Spain
- Support organisations PCP, ICT and dissemination
- Total budget: € 5.5 Mio
- Funded by the European Commission (75% by the FP7 programme) and procurers (25%)
- Identified challenge: increased demand for personalised learning in primary and secondary education

The project was coordinated by the Municipality of Halmstad in cooperation with the Alexanderson Institute (both Sweden), the Municipality of Konnevesi and the University of Jyväskylä (Finland), the Ministry of Finance of Saxony-Anhalt and the Otto-von-Guericke University Magdeburg/Faculty of Science (Germany), the City of Viladecans (Spain), the Innova Agency Ltd. (Hungary), INOVA+ (Portugal) and, last but not least, the European Network for Transfer and Exploitation of EU Project Results (Austria).

Now, at the end of its funded period, the IMAILE project group wants to take the opportunity to summarise and present its findings, experiences and main products developed to a wider public. Therefore, this special edition of the Focus Europe magazine has been published with the first part dedicated to providing an insight into our project's work, achievements and lessons learnt.

This magazine then gives an overview of many other success stories in relation to EU funded PCP and PPI projects, both recent or currently being implemented all over Europe. We would like to invite you to become familiar with the wide range of areas, sectors and approaches in which PCP and PPI can be utilised for the benefit of Europe's citizens. When professionally applied, both are strong instruments that trigger research and development at almost all levels of public, economic, ecological and social life, leading to new prototypes and solutions that address both current as well as future challenges.

Georg Müllner
Michael Schwaiger
Editors

GISELA NAVARRO, VILADECANS CITY COUNCILLOR

4th Deputy Mayor, Education, Health and Consumer Affairs Councillor (Spain)



Educational success is a priority for us. We believe that quality education is the basis for society, both now and in the future. We also think that technology and innovation are two key elements for future education. That is why we decided to take part in IMAILE as it deals with two themes that are key for Viladecans: education and innovation.

What a local community says ...

Taking part in the project has been a challenge for our city, particularly in regard to the Pre-commercial Procurement process. However, it has allowed us at the same time, to play an active role in the definition and development of the new generation of Personal Learning Environments (PLE). We are very happy and proud that teachers and students from Viladecans have taken part in the design and testing of the future PLEs. I would like to take this opportunity to thank the 14 teachers and 326 students from Viladecans for their work and involvement.

The Project has also allowed us to get to know and learn from other European education realities, as well as to establish links with education professionals in Sweden, Finland and Germany and thus create a community.

We hope that the IMAILE project helps with taking a step forward towards the education of the future in Viladecans, ensuring personalised learning adapted to the different needs and learning paths of every student as well as to professionals to support them with the new educational challenges.

STEP INTO THE FUTURE THROUGH INNOVATION PROCUREMENT

eafip,
DG CNECT, European Commission (EU)

Innovation procurement (IP) occurs when public procurers procure the development or deployment of pioneering, innovative solutions to address specific mid-to-long term public sector needs. It is a tool to provide tax payers with public services of the highest possible quality and efficiency whilst empowering public authorities to obtain innovative solutions customised to their specific needs offering the best value for money.

The European public sector faces significant public interest challenges, including health and ageing, climate change and energy, and resource scarcity. The public sector is also under pressure to modernise internal operations whilst delivering high quality public services.

IP can deliver solutions to these challenges. Impact studies show that IP creates on average of 20% cost savings on public procurement expenditure (which constitutes about one fifth of gross domestic product (GDP) in Europe – or around € 2,400 billion a year). IP is also a way to foster growth and create new jobs, especially amongst smaller innovative companies that are the backbone of the European economy and which are ideally placed to supply these new innovative products and services.

How does innovation procurement work?

Public sector challenges can, in some cases, be addressed by innovative solutions that are nearly or already available in small quantities on the market and which do not need new research and development (R&D). This is when Public Procurement of Innovative solutions (PPI) can be

used to get solutions deployed on a large scale. In other cases, public sector challenges require improvements that 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, while the risks and benefits are shared between the public and the private sectors.

What is eafip?

In order to increase the uptake of IP instruments and to unleash the innovative power of the European public purse, the European Commission (DG CNECT) launched the eafip initiative in 2015. The name of the initiative, "European Assistance for Innovation Procurement" (in short, eafip) stands true to its name. Through an array of instruments, the initiative - which ran from 2015 to 2017 - focussed on promoting the benefits of IP and offers training and assistance to public procurers with a concrete interest in implementing IP. Through an international competition, 12 public procurers from all over the EU were selected to receive legal assistance in the preparation and implementation of a PCP or PPI procurement from eafip IP lawyers. eafip organised nine workshops and three major events over the project period which were open to public procurers, policy makers and procurement law firms.

The initiative also developed a comprehensive IP Toolkit with specialised modules for policy makers, public procurers and legal professionals that can be downloaded for free from the eafip website.



Key notes

IMAILE AT A GLANCE

Ellinor Wallin, Municipality of Halmstad
Coordinator (Sweden)

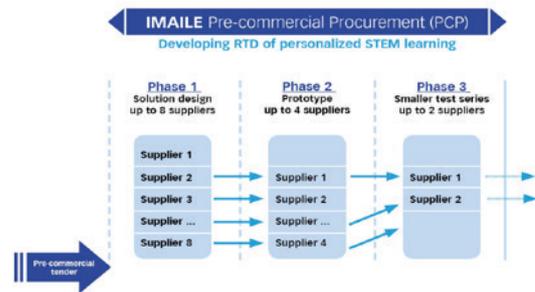
Our traditional European education system practices the "one size fits all" approach, providing a uniform teaching method in class, which assumes that all students learn in the same way, without diversity. In reality, the average EU classroom consists of one teacher educating 23 students, all of whom all have different needs, interests and learning abilities.

To reform this method, IMAILE PCP has challenged the market to develop innovative technology to support the increased demand for personalised learning in science, maths and technology subjects (STEM) with the following indicators:

- Hypothesis – save teachers time. Reduced time for teacher planning and student performance assessment in STEM subjects (minimum 20% per week).
- Hypothesis – full-scale personalised learning approach in primary and secondary education. The Personal Learning Environments (PLEs) shall demonstrate a level of satisfaction amongst a minimum of 75% of the test groups and include interactive and easily understood interfaces for all students, from early school years upwards.
- Hypothesis – increase motivation in STEM and interest in STEM careers. The PLEs shall contribute to an increase of interest amongst the test groups with a minimum satisfactory level of 70%, and include features in the PLE to measure motivation and recommend careers in STEM.
- Hypothesis – reduce early drop-out by 15%. The support of the PLEs shall exceed the EU target of less than 10% early drop-out in 2020 and include features to monitor all students and provide early alerts to teachers and parents.
- Requirements on interoperability, open standards and bring your own device (BYOD) practice.
- Comparison – learning technology development and level of innovation within a PCP compared to the parallel progress of the market.

In 2015, four public sector procurers from Finland, Germany, Spain and Sweden worked in collaboration to launch a Pre-Commercial Procurement (PCP) call for tender for the research & development of services with such innovations.

In the first project phase 8 suppliers from all over the EU were awarded Europe's first PCP framework contracts within the education sector. In the second phase of the PCP project 4 suppliers were selected to renew their contracts to further develop their concept into prototypes. The two most promising solutions were selected for the PCP phase 3 for testing in real classrooms with teachers and students.



The research, development and the tests conducted in real end-user environments, the later in the four procuring countries with over 600 students and 45 teachers participating, resulted by the end of 2017 in two smart and innovative PLEs offering Learning Analytics provided by Artificial Intelligence to primary and secondary schools that no other solutions available on the market offered. Furthermore, the solutions include gamification, Intelligent Tutoring systems, ePortfolios and alerts on early drop-out plus features for motivation in STEM subjects and future careers.

Both PLEs are considered to be at Technology Readiness Level (TRL) 7, and are estimated to reach the market within one to two years. Due to the success experienced during the IMAILE PCP project from both the demand and the supply sides, deployment and a Public Procurement of Innovative solutions (PPI) is planned in 2018 within the up-coming H2020 project Learntech Accelerator (LEA).



PCP FROM THE PROCURER PERSPECTIVE

Ellinor Wallin, Municipality of Halmstad, Coordinator (Sweden)

Why IMAILE PCP from a procurer's perspective?

The PCP experienced added value after 4 years to the IMAILE procurers from Sweden, Germany, Spain and Finland and can be summarised in two parts:

- learning about PCP as an innovative method to procure
- procuring research of innovations to improve education according to our needs

Both these dynamic and innovative actions place dialogue between the demand and supply sides in focus.

PCP offers demand and supply side interaction for a smarter future

Implementing a PCP in education has enabled real supply and demand side interaction in our countries and this has generated mutual understanding and interaction, which is fundamental in order to create smart, sustainable, inclusive and knowledge-based growth within Learning Technology 2020 and beyond.

In brief we can state that with dialogue between the supply and demand sides in education we can remove two major barriers to creating a smarter future:

- procurers' lack of a deeper understanding of learning technology for smart and future orientated purchases of innovations that improve learning in their schools
- suppliers' lack of a deeper understanding of REAL customer needs when creating attractive innovations for the market

PCP to reform traditional European Education systems in the digital era!

The vision of IMAILE www.imaile.eu and Learntech Accelerator –LEA (upcoming H2020 project) is to provide hard evidence and make visible the pedagogical, social and financial benefits that innovative procurement can achieve by challenging the market to develop innovative solutions based upon our actual needs.

The evidence and learnings will hopefully guide more procurers within the education sphere to become drivers of innovation and finally bring our schools into the 21st Century, even if it requires both time and patience, as this illustration highlights.



© source: www.jelli.com

IMAILE Challenges and benefits

IMAILE procurers have challenged the market to develop smart AI and Learning Analytics systems to support personalised learning in STEM to support the average European class at both primary and secondary school levels.

Envisioned Personal Learning Environment (PLE.s) benefits and savings

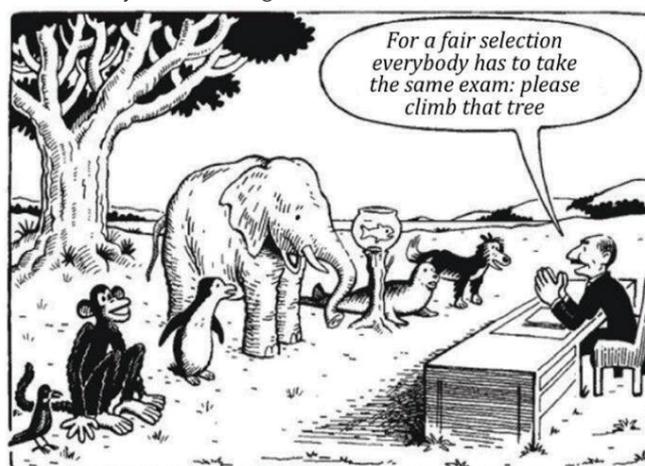
- **Full implementation of personalised learning** to finally move away from the ONE SIZE FITS ALL system in schools
- IMAILE STEM PLE:s **offers time reductions in planning personalised learning** for teachers, which allows **more one to one time** with students in the classroom and staff savings for the school, municipality and region
- IMAILE STEM PLE generates **increased STEM motivation** due to **personalised recommended learning content and tasks**, which leads to better student results
- IMAILE STEM PLE contributes to **decreasing long term costs of early school leaving** (up to 1.5 million per student) through **alert systems** and communication to teachers and parents in terms of early identification and warnings

Impact of IMAILE

The final result of IMAILE, based upon the lessons learnt, was and will be presented at several events during autumn 2017 in Stockholm, Gothenburg, Halmstad, Budapest, Viladecans and Verling, at the BETT show in January 2018 as well as through our final products:

- IMAILE Guidelines and recommendations of the PCP method and its benefits for learning technology
- IMAILE Showcase and Impact Cases of the innovative STEM PLE solutions

Read more about IMAILE and LEA in upcoming sections and our vision to use innovation procurement to modernise and reform the traditional educational system according to Einstein.



Our Education System

"Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid."

- Albert Einstein

© source: www.coolcatteacher.com

www.imaile.eu
<https://twitter.com/imaileproject>
<https://www.linkedin.com/groups/6536874/profile>

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Key notes

IMAILE INNOVATION IN PLE SOLUTIONS

Kati Clements,
University of Jyväskylä (Finland)

Big Data. The Internet of Things. Smart classrooms. Interoperability. Machine learning. Automation. Artificial intelligence. Virtual reality. Augmented reality. Block chains. Learning analytics? Technologies in the 21st Century are changing rapidly. Huge global corporations seem to be the front-runners in adopting cutting edge solutions. The often public-funded educational sector is falling behind: How are European companies keeping up with the technology trend game? Do current personalised learning environments (PLE) ensure that educators and learners benefit from all the tools and support that technologies in 2017 can provide?



Next generation learning involves the provision of “anytime, anywhere” and that learning must be tailored to the students’ needs, interests and learning styles. It would be wonderful if the teacher could plan his/her lesson in just 5-10 minutes, by slightly adapting interactive materials that the PLE recommends? What about if marking exams did not take any time at all? The teacher could just bring up the PLE dashboard and immediately see how the class is performing... Would there be a way for technology to help teachers save time as well as to identify students who are having difficulties? Could technology provide help before a situation escalates into someone dropping out of school? What could be the savings for community funds if students were to maintain their motivation towards topics rather than skipping classes...?

The IMAILE project seeks to tackle the societal as well as technical challenges in relation to future learning. At the start of the project, an analysis of the state-of-the-art of PLE was completed to show how current PLEs use trending technologies. The situation was appalling: Personalised learning environments are currently utilising very little



in terms of the cutting edge solutions that children already use within their daily lives. There is no PLE on the market that could, for example, abstract the learning data from Pokemon Go. In fact, there is no way of measuring what kind of informal learning is happening outside of physical classrooms/PLEs...

Current PLE solutions have only scratched the surface in their use of learning analytics or big data. Perhaps they can give summaries of ‘user data’ to the teacher. For example: how many minutes did the student take to complete one task..., or how many pages of the pdf did they read...? PLE solutions should be measuring learning instead of user data. The IMAILE project has taken on the challenge of drawing on the research and developing PLE solutions for the future.

Innovation within the field of technology enhanced learning is not a simple task to undertake. One must bring to the table something that teachers and students would find useful and easy-to-use, but also something that would improve their teaching and learning processes from the current state. Vivid dialogue between the supply and demand sides has been the key to the success of this project. However, it is not always easy. Teaching in the 2nd grade in a Finnish primary school in Konnevesi is very far away indeed from 8th graders’ work at Catalan schools in Viladecans for example. But still, the solutions need to be adapted to the requirements of all European learners.



IMAILE boldly tested in four different countries with real life users: teachers, students and parents. The innovative solutions developed are steps towards personalising learning paths and content for each individual learner. They provide assistance to teachers in preparing and marking lessons more easily. They visualise student progress throughout all 9 years of school, providing much needed information, not only to learners, teachers and parents but also to potential future employers.

When you test the solutions of Amigo STEM and Yiptree, I urge you to look deeper behind the user interface. These two systems are taking steps that no others on the market have done to date. It may just look like a website, but what is happening in the background is what really matters. The challenge with assessing technological innovations is that they are rarely something you can just see with your eyes.

IMAILE TESTING APPROACH

Ellinor Wallin, Municipality of Halmstad Coordinator (Sweden)



Outside the schools in Viladecans during the IMAILE test period

For IMAILE PCP, we chose to apply a new approach using real classroom environments for the tests in phase 3, including over 600 students and 45 teachers from primary and secondary schools in the four procuring countries (Finland, Germany, Spain and Sweden).

The selection of the test groups was made by each procurer in their local area or region. Many of the IMAILE test schools had previously been involved in the project, by providing input to a needs analysis for a future STEM PLE. The demography and geography of this approach, combined with a lack of previous experience of such an immense EU test bed within a PCP framework, proved to be a challenge to both the procurers and the suppliers.

In each country the tests were divided into several parts, "sprints", enabling risk management and close monitoring of the tests according to the following methodology:

1. Start-up phase
2. Installation and pre-testing phase
3. First real testing phase
4. Interim analysis and Data collection phase
5. Second real testing phase
6. Final analysis and data collection phase

The tests were performed over 10 months with dynamic and engaged contributions from the European schools in order to make the PCP test a reality within the limited time period.

In addition to the test groups in primary and secondary schools around Europe, IMAILE also included a test group consisting of students from the Teacher Education programme at Halmstad University, Sweden, to ensure feedback from the perspective of future teachers. Moreover, an EU-expert test panel was engaged to guarantee feedback and test results reaching out beyond the user perspective.

The approach of using real classroom environments for the tests instead of separated test labs is despite being a challenge also a strong recommendation from the IMAILE consortium to upcoming PCP and PPI projects. We have learned that this is an optimal approach that provides suppliers with access to the actual end-users in the environments where the innovations will be used, and at the same time gives the procurers the opportunity to ensure and monitor their investments at the local and regional levels.

Testing in Sweden



Testing Almerin in Halmstad

What Söndrumsskolan 9th grade say on STEM Personalised learning reflection AMIGO: "The ePortfolio makes me more conscious about how to improve my work".

What physics teacher Sandra Arvidsson says on saving time in relation to lesson preparation and student performance assessments: "AMIGO helps me save time thanks to the innovative lesson creation tool, that enables me to reuse and share the STEM lessons. The automatic assessment tool and the system alerts reduce the assessment time of assignments and monitoring of each student in a personalised manner."

Testing in Spain

In the following film you can see an example of how tests were implemented in the Viladecans schools in Spain with testimonials from teachers and students on the IMAILE STEM PLEs:

<https://www.youtube.com/watch?v=iL7ym4cb620>



Key notes

What a teacher at Escola Teide, Viladecans, Spain, says on the PLE support for students with special needs: "We have a student with Down Syndrome and she has learned a lot using AMIGO STEM PLE."



Testing in Germany

What Ökumenisches Domgymnasium Magdeburg 10th/11th graders (ages 16-17) say on personalised learning support: "AMIGO helps us to see our weaknesses and strengths."



Testing in Finland

What a Lapunmäen School 5th grade male student says about on increased STEM motivation: "I am choosing the Gold Level because I want to complete ALL the tasks."

What a Lapunmäen School 5th grade teacher student says on increased STEM motivation: "Most students found it motivational to be able to choose their own level (Bronze, Silver, and Gold) of assignments."

IMAILE certificate

IMAILE would like to take the opportunity to send its sincere thanks to all the European schools that were involved in the tests and will award the following thirteen schools with the IMAILE STEM PLE Certification badge as a reward for their outstanding contributions to the project in 2018:

Sweden, Halmstad municipality: Söndrumsskolan, Jutarumsskolan, Valhallaskolan and Trönningeskolan

Finland, Konnevesi municipality: Lapunmäen koulu, Kirkonkylän koulu

Germany: Magdeburg: Dreisprachige Internationale Grundschule and Ökumenisches Domgymnasium

Spain, City council of Viladecans: Marta Mata, Sagrada Familia, Teide, Institut Torreroja and Institut Viladecans



JOSÉ PEDRO
MACHADO,
CM BRAGA (BRAGA
MUNICIPALITY,
PARTNER IN THE
UPCOMING LEA
PROJECT)

Project Manager (Portugal)

What a local community says ...

The PCP instrument enables the development of innovative solutions in dialogue with suppliers and end users, responding to the real needs of the public sector. It allows public authorities to act as innovation agents, buying research and development services that include solution design exploration, prototype development and proof of concept in small test series with end-users. One of the most relevant features of this instrument is that it promotes and opens a continuous communication process between the demand and supply sides, in which public needs and expectations are brought up to the fore.



COMPETENCIES NEEDED FOR THE USE OF PLES IN PRIMARY SCHOOLS

Henry Herper, Marcus Röhming,
Otto-von Guericke University Magdeburg (Germany)

Learning is an individual process of building your own image of the world around you. This individuality can be supported by using a Personal Learning Environment (PLE) as a learner centered and problem oriented learning platform. However, students need a solid foundation of competencies to use such systems properly. Particularly primary school students have very little previous experience of using IT systems. What competencies they need only became clear during the testing of the PLE prototypes developed during the IMAILE project.

The 47 primary students who participated in the tests in Germany had worked with their computer in school for 3 weeks prior to the actual

tests. In addition, only a few of them had experience with regard to working with computers. During the testing most students were very open to using the PLE and experimented with the functionalities.

However, the use of a software product demands a level of interaction which is challenging for users, who are still learning about how to operate a mouse and keyboard. Moreover, students in this age group are (if anything) used to touch controls and inputs. Accordingly, a PLE used on tablets or similar devices is preferable. As well as being required to have a solid understanding of IT systems the students are also required to be far more independent than in traditional lessons.

Both are competencies that cannot be expected of students, particularly at such a young age. That is why adaption to new learning conditions needs to be a high priority for school development as well as a priority at the policy level.



OTTO VON GUERICKE
UNIVERSITÄT
MAGDEBURG

ANN-MARI BARTHOLDSSON, HALLAND REGION

Head of Regional Development Department (Halland)

What a regional authority says ...

IMAILE is interesting as it addresses very important elements of society that need to be developed, namely education and procurement. Today we can offer our students digital tools, but we do not utilise the educational potential of these tools to a sufficient extent. IMAILE has found new ways of using technical aids in teaching and has also worked with innovative procurement of the results, and this is a very exciting approach.



BÄSTA LIVSPLATSEN

Region Halland

AMIGO - SMART STEM LEARNING ECOSYSTEM

Holistic and intelligent ecosystem providing the next generation of Personal Learning Environments (PLE) with multiple functions to attract interest towards STEM fields

Raquel Mayordomo and Ignacio Garcia,
Edebé - Ediciones Don Bosco Salesianos de la Provincia de Barcelona
MYDOCUMENTA - Documenta Creaciones Multimedia Avanzadas SL
(Spain)

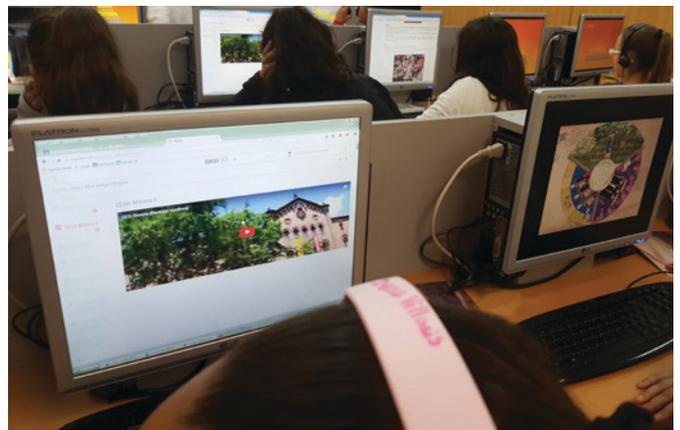
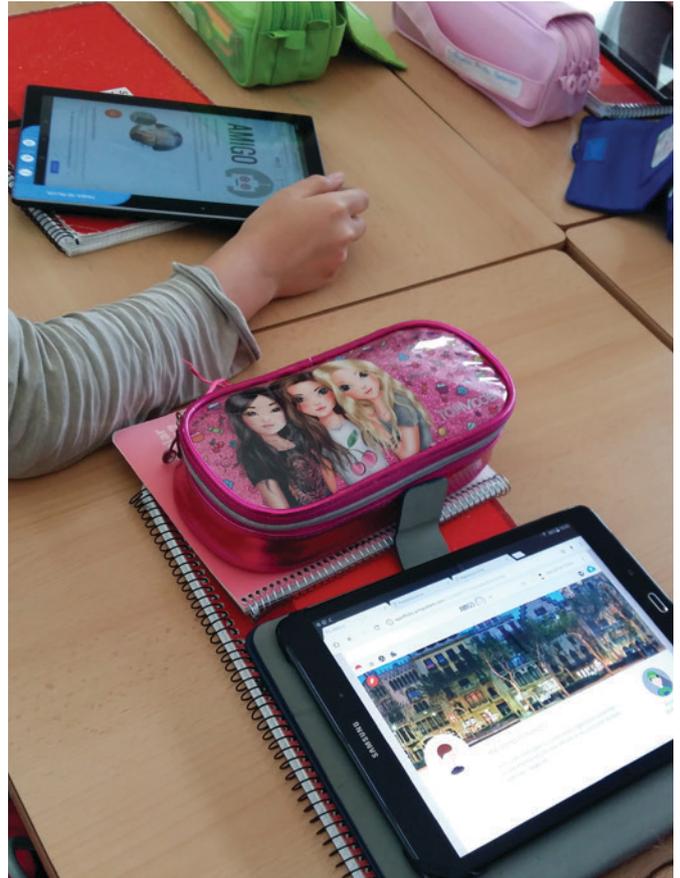
Through the use of innovative technologies and services, AMIGO delivers a holistic ecosystem providing the next generation of Personal Learning Environments (PLE) in primary and lower secondary education within STEM subjects.

AMIGO contributes to standardising a solution for meeting the challenge faced by European classrooms today: access to personalised learning tools to support teachers and students in reaching STEM goals whilst promoting educational change from teacher centred learning to a student-centred perspective. AMIGO enhances by adapting learning to each child's needs and preferences, and increasing teacher time dedicated to supporting this learning by making the evaluation process more efficient. From a societal point of view, AMIGO contributes by preparing children and adolescents for their future professional careers, exploiting in this way the job opportunities that companies create and demand in the 21st Century for activating the economy.

After the work undertaken in Phases 1 and 2 of the PCP, the consortium (composed of two companies EDEBE and MYDOCUMENTA) proposed the development of an extremely rich and functional prototype that is now available at <http://www.amigostem.com/> and that is being tested with teachers and students during Phase III of the PCP.

Thanks to the participation in the IMAILE PCP, the AMIGO team has been able to invest in R&D activities to propose their vision on how to solve the identified market needs concerning the challenge proposed and furthermore to test it with real users in different countries. One of the main lessons learnt is the importance of dialogue and gathering requirements from the wide diversity of visions of the identified challenges (students, teachers, school management teams, public administrations, PCP management teams, pedagogic experts and technological experts). In order to synthesise these requirements and project activities a highly-skilled management team has had to be involved during the whole period.

Additionally, the AMIGO consortium has validated the technical and commercial viability of the designed product. We now have a "long term vision" of AMIGO, and we can glimpse into what we want to achieve through working with educational communities to improve this solution even more to address their precise needs.



YIPTREE

Intelligent environment for personalised learning

Laura Heinänen, Almerin Ltd. (Finland)



Almerin Ltd., a Finnish education technology company and a contributor to the IMAILE project has developed YipTree, a personal learning environment to solve several major issues being faced by education. Over 500 students from ten schools in four different countries (Konnevesi-Finland, Sachsen-Anhalt-Germany, Viladecans-Spain and Halmstad-Sweden) tested YipTree in 2017, thus making it possible for us to provide a service based on real pedagogical needs.

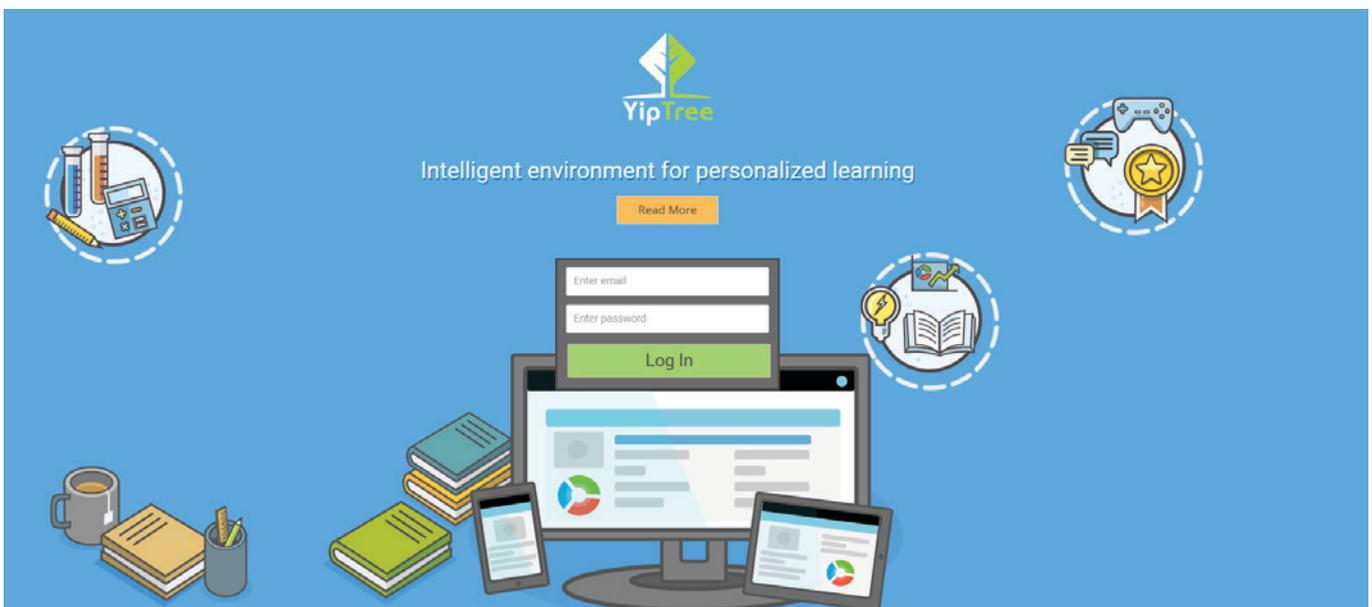
Combining artificial intelligence and Finnish pedagogical expertise allowed us to create a new generation of innovations to overcome many of the current issues within the education sector. For example, time-consuming documentation, low interest in STEM subjects and early dropout rates are some of the problems that are currently challenging everyday school life in Europe.

The lack of individual guidance, which is an outcome of time-consuming documentation and teachers having too many routine tasks, together with large class sizes are the most common reasons why learning is usually not being personalised enough to meet the individual needs of students. Typically, pupils study the same materials and they are taught the same way, although they have individual needs. This phenomenon often leads to poor learning results and poor motivation. Through the utilisation of artificial intelligence, YipTree analyses pupils' learning techniques and skill levels in order to personalise the whole learning path and materials.

YipTree's various tools reduce teachers' workload and allow teachers to focus more on supporting their students individually. Progress tools and real-time analytics offer insights and data about students' learning. YipTree does not only monitor the user's learning results, but also considers other kind of learning activities, such as social activities, time spent on tasks and general activities within the learning environment. YipTree also notifies the teacher immediately when a pupil has problems or difficulties in relation to learning. In addition, YipTree's virtual tutor guides pupil through the whole learning path and gives advice and recommendations concerning problematic situations. This feature is a significant solution to the challenge of decreasing early school drop-out. Documentation and continuous evaluation are also facilitated by tests with automatic checking and user-friendly evaluation, allowing the teacher to see the answers of multiple pupils at the same time.

To increase and maintain pupils' motivation, YipTree has a unique, user-friendly and gamified interface. In addition, teachers can create modern digital learning materials, for example complementary tasks and interactive videos and pictures. The joy in children that we have seen with our own eyes during the testing of YipTree has proven to us that gamification and visuality are vital for this generation of learners.

www.almerin.com
www.yiptree.com
www.facebook.com/AlmerinLtd
www.facebook.com/YipTreePLE



AMIGO – LESSONS LEARNT DURING THE PCP PROCESS

Raquel Mayordomo and Ignacio Garcia,
Edebé - Ediciones Don Bosco Salesianos de la Provincia de Barcelona
MYDOCUMENTA - Documenta Creaciones Multimedia Avanzadas SL (Spain)

The PCP is a funding mechanism that has enabled us to develop innovative technology that is able to address several educational challenges within one solution. In order to build a successful proposal, please make sure that you read all the market research, challenges and requirements from public procurers not only in the invitation to tender but also in the multiple documentation available from the market research activities undertaken by the consortium. Make sure you can fulfil most of them and be clear with your explanations, indicators and strategy to fulfil them.

This mechanism has stretched our research and development performance and has given us the possibility of piloting the solution with a good number of end users and stakeholders during the different phases of the PCP.

Some of the main challenges we have faced, that you may consider for your application, are:

- You only receive a few days' notice of your involvement in the different phases of the project following the contract signature. Plan your resources carefully and if you need to contract new personnel we recommend you selected them in advance.
- The three phases require lot of research, design and development time. If you work within a consortium, make sure you can begin working together from day one.

ALMERIN'S COOPERATION WITH THE IMAILE PCP PROJECT

Laura Heinänen, Almerin Ltd., (Finland)

Almerin's CEO, Teemu Laitinen, first heard about IMAILE in 2014 in Milan. As a teacher and a serial entrepreneur in the IT-industry he knows the challenges that start-up companies face and immediately understood the benefits and opportunities that PCP can offer start-ups. Mr Laitinen built a team and set up Almerin Ltd, one of the suppliers to the IMAILE project, just before the start of the project. So IMAILE was not only a significant factor in launching the product but also in establishing an entire company.

Now it has been two years since the project began, and we can definitely state that the IMAILE PCP project has been a unique and significant opportunity with numerous benefits. The whole PCP process has helped us to recognise real challenges that education in Europe is facing, for example low interest in STEM subjects, financial issues, time consuming documentation and early dropout. The whole process and all the project phases have helped us to develop better innovations and solutions to overcome the recognised

- The management of a PCP is complicated, as you must deal with many actors in the process. We recommend seeking professional support with experience in European projects. In our case, we have been supported by Soros Gabinete during the whole project duration.
- Between the different phases there is always a period where the project is frozen, waiting until the evaluation of the project is approved and only then can work with the next phase continue. Our recommendation is to keep working in order to keep the project alive.

One of the major benefits we have identified, in comparison with traditional tenders, is that the PCP has also introduced our solution to public administrations and thus providing possibilities for beginning to sell the first prototypes of the solution we have developed. So the PCP has some advantages over traditional tenders that clearly benefit the provider:

- The PCP process encourages providers to maintain their IPR and to further invest in R&D and product development. It creates a roadmap for the future and business ambition!
- The PCP process boosts access to the procurement market. We are already discussing and attending bilateral meetings with key stakeholders to support the successful commercialisation of our solution.
- The PCP enables sharing risks with procurers and dialogue. During the whole process you have support from the different entities involved in the process and from experts.
- The PCP provides access to pilot testing with end users. One of the main advantages is that you can fine-tune your solution based on field trials!

Our recommendation and wishes to political decision makers is to boost this public procurement (PCP and PPI) to encourage market entry to innovative solutions amongst SMEs.

<http://www.amigostem.com>

<https://twitter.com/amigostem?lang=es>



issues. The project and its motivated and enthusiastic participants have helped and supported us in every phase and pushed us to achieve our goals.

Participation in the project and the merit gathered from it has proven the capability, knowledge and excellence of our team, not only to ourselves but also to other stakeholders, for example to investors and partners. Due to IMAILE and the attention the project has enjoyed in different media, many potential customers and investors have shown great interest in us.

The community and network created by all the participating organisations, such as companies, project administrations, municipalities and schools have provided us with a great environment for innovative product development that is based on the real needs and challenges of teachers and students. The product testing organised together with participating schools provides us with valuable insights about differences in education between different countries and cultures. Although our own team includes pedagogical experts and as a Finnish company we have great pedagogical knowledge, we could not have discovered national differences in education without the multinational testing process. Product testing with teachers and pupils has shown us what functions and features of our service need the most development. On the other hand, testing has also proven to us that there is a real demand for our solution and above all, testing has proven the functionality and value of our product. It has been a great honour to participate in the European IMAILE project and to be involved in shaping the future of education.



IMAILE LEGACY AND RESULTS

Ellinor Wallin, Municipality of Halmstad Coordinator (Sweden)



At the end of the journey the IMAILE consortium has several results ready to hand-over to other European stakeholders, which are presented as four categories in this section:

- Streamlined PCP Guidelines
- IMAILE STEM PLEs YIPTREE and AMIGO
- PCP impact on learning technology
- LEA project to initiate a PPI and proceed with Innovative procurement

Streamlined PCP guidelines

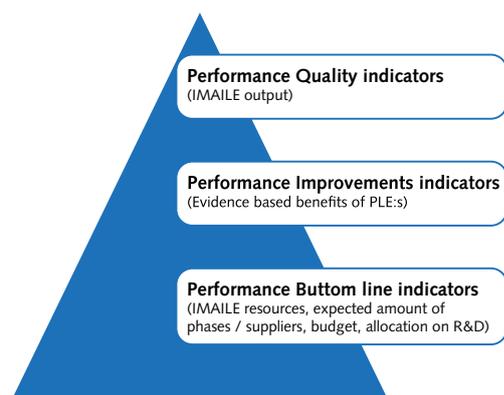
The purpose of gathering all IMAILE data, analysis and results into one joint document is to provide a simplified, streamlined and user-friendly set of guidelines to be used for future PCPs in the area of learning technology including:

- Templates and methodologies for each phase of the PCP project
- PCP specific recommendations for learning technology
- Evidence based advantages of R&D procurement for learning technology using PCP
- Key performance indicators (KPI) adopted for PCP in learning technology

IMAILE Streamlined PCP guidelines can be downloaded from the 15th February 2018 at <http://www.imaile.eu/about/imaile-results/>

IMAILE KEY PERFORMANCE INDICATORS (KPI) and actual INNOVATIONS

To create a methodological approach to result collection the following Key Performance Indicator (KPI) system has been used for IMAILE.



By the end of IMAILE all the Performance Bottom line indicators had been fulfilled. The proposed budget of 4.6 million Euro had been spent on R&D, split into allocated percentages for the three project phases (10%, 40% and 50%) to a total of 7 suppliers.

The minimum user-perspective exceeded the bottom line of 300 students, as 600 students from four countries were involved and the R&D percentage of resources spent by the suppliers had been, throughout the project, well above the minimum threshold of 51%, and in project phase 3 it was around 80% for both suppliers.

Additionally, all IMAILE Performance Improvement Indicators, initially described as hypotheses, went on to be confirmed by a European tested demography of over 600 students, 40 teachers, one group of 9 teacher education students and, last but not least, one EU "beyond user perspective" panel consisting of experts in innovative pedagogical, STEM and learning technology.

The performance improvement indicators hypotheses are:

- **Hypothesis: Saving teacher time confirmed.** All test teachers confirm that both PLE solutions demonstrate potential to reduce their lesson planning time by 30–40 % and their assessment time by 50–60% through features to reuse and share lesson creation tools as well as automatic evaluation, quick assessment tools and alerts. Note that this potential is available to confident teachers who have already learned how to use the systems.
- **Hypothesis: Full scale personalised learning approach in Primary and Secondary Education confirmed.** 60 – 80 % of the test group's students experienced satisfaction of more personalised learning paths with content and learning methods suitable particularly to them. The history of learning creation tools demonstrate constant use in the tests, thus indicating increased reflection upon personal STEM learning by all students involved in the tests. Additionally, the PLEs demonstrate support to students with special needs, such as Down Syndrome and concentration disorders.
- **Hypothesis: Increased STEM motivation and STEM careers confirmed.** Both PLEs provide visible personalised STEM motivation features for teachers and students. 55-75% of the test students experience increased STEM motivation using IMAILE PLEs in the four countries thanks to creative content creation and learning reflection tools, badges and leader boards, gamification and Artificial Intelligence providing recommendations on STEM learning and careers.
- **Hypothesis: Early dropout reduced by 15% confirmed.** Both PLEs provide alerts to detect possible early drop-out at an early stage with greater potential for teachers and parents to identify and anticipate than with other traditional methods. No other systems currently in use provide reports and alerts to parents. Due to this feature the estimation of the result that the test provides is a possible reduction of 20%. This estimation, added to The European wide study into the annual cost of ESLs of approximately EUR 100 billion (corresponding to 1 % of GDP), would make it possible to save EUR 20 billion annually at the EU level by using IMAILE PLEs.
- **Requirement for Interoperability and Open standards confirmed.** Both PLEs are applicable to BYOD (Bring your own device) and can be used on all devices applying open standards. By being compatible with the xAPI specification, both IMAILE PLEs can collect and use learning data from xAPI compatible environments, software or assignments in order to track the users' learning even beyond the PLE in informal learning environments (such as competitive sport). If future learning takes place in distributed learning settings, these PLEs can keep track of the learner's activities and also notify teachers and parents of achievements and challenges. Both IMAILE solutions are also investigating block chain technology as a promising solution to secure the learning data of European Schools.

Key notes

- **Impact on schools' savings.** In an IMAILE example secondary school where annual costs on software per student were 92,6 Euros; using IMAILE PLEs, the savings over the 9 years of education for 900 students would equal to savings of 588.060 Euros.
- **Comparison PCP vs. Traditional Software Development Process.** Via the PCP instrument, the suppliers were able to consult the market and experts during the early stages of development, leading to new innovative features and concepts arising directly from the needs

of users, and who were also advised through supply and demand dialogue to know what they could ask for. This makes the PCP an efficient and agile tool in comparison with traditional developments, where software developers often end up with a final product that does not correspond to what the user really wants or needs. The conclusion is that IMAILE PCP has proven to be an efficient tool with the result of introducing several user-led ground-breaking innovations to the European learning technology market

IMAILE learning technology innovations in detail

The IMAILE PCP wide approach to challenging the market from the demand side based on the procurer's perspective has resulted in the concrete development of the following innovative features:



- Innovative feature - Virtual Tutor
- Innovative feature - Personal learning paths
- Innovative feature - Progress tool for learning
- Innovative feature - Quick assessment tool
- Innovation feature - Notification centre
- Innovation feature - Gamifications (badges and leader boards)
- Innovation feature - K12 compatible user face
- Innovation feature - STEM career recommender



- Innovative feature - Analytics dashboard
- Innovative feature - Intelligent tutoring system (ITS)
- Innovative feature - Gamifications
- Innovative feature - Lifelong learning ePortfolio
- Innovative feature - Portability authoring tool
- Innovative feature - History creation tool

IMAILE Quality of Innovation Levels (1-3)

1 = Emerging innovation – this was a new concept when the IMAILE Challenge Brief was created (2015), but currently most competitors in the field have developed similar concepts OR the maturity of this feature has still not fully fulfilled its potential.

2 = Innovative feature – Most competitors in the field do not have a feature like this and, even if they have something similar, they are not using it this way.

3 = Groundbreaking – Completely NEW functionality. No other solutions known in the field of PLEs currently do this.

Based upon this IMAILE STEM PLEs are proud to present the following four Groundbreaking innovations ready to enter the learning technology market:

- A Virtual tutor to save teacher time, motivate students concerning STEM topics, personalise learning and reduce early drop-out
- STEM career recommendation tool to motivate students concerning STEM topics, personalise learning and reduce early drop-out
- Portability authoring tool for motivating students concerning STEM careers and to provide assessment support
- History creation tool to reflect on their learning. This function of the ePortfolio can be taken with the student when they leave school, which could be act as an additional CV when searching for STEM careers.



IMAILE statements of Performance Quality indicators

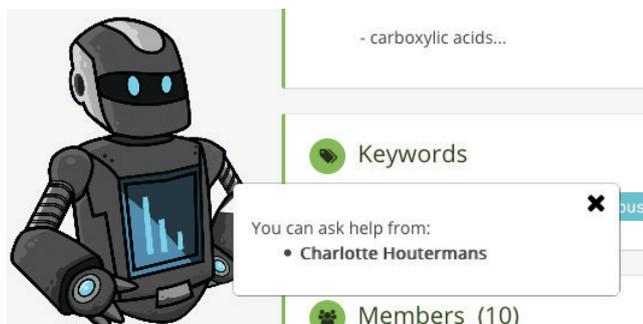
IMAILE performance has increased the understanding of PCP in learning technology at the EU level providing the following improved quality in relation to several topics:

Quality Indicator #1: Hard evidence of PCP as an effective tool to reform learning technology

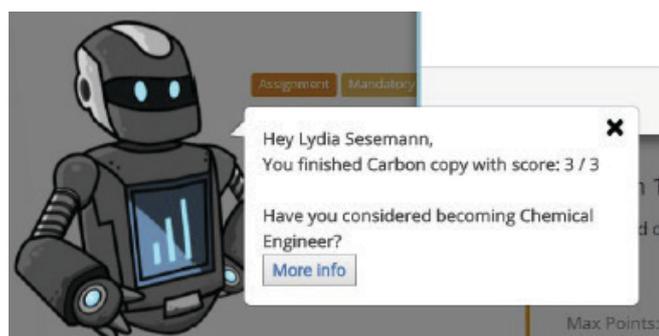
IMAILE STEM PLEs bring four completely groundbreaking innovations to the market, which is hard evidence of PCP as an effective tool to reform learning technology. A PCP speeds up the technical development process and steers the innovation based upon the customer needs and allows early interaction of end-users to give feedback on developed features.

The following four innovations provide specific hard evidence of PCP as an effective tool for reforming learning technology.

Artificial Intelligence (AI) presented as a Virtual tutor recommends students, who are experiencing problems in performing a certain task, to utilise peer learning from other classmates who have completed the same task.



Artificial Intelligence (AI) presented as a virtual tutor provides recommendations on future STEM careers based upon completed tasks.



Portability is a content mash-up tool where teachers and students can combine different multimedia content into simple and stylish bundles called 'portability'. Teachers and students both got very excited about this easy-to-use tool that no other PLE in the market provides. It is motivational for the students and saves teacher time with presentations.



The history creation tool is an easy to use content creation tool integrated into the ePortfolio that allows the construction of "histories" where students can include, in a single linear format, multimedia content, texts, messages and comments from teachers and other students, their own reflections etc. It is especially designed to help students reflecting upon their own learning.

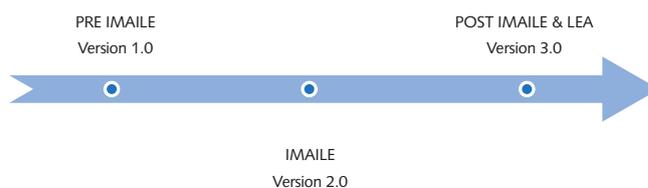
Quality Indicator #2: Strengthened learning technology dialogue between demand and supply sides at the EU level

Supply and demand interaction, understanding and dialogue are fundamental concepts for creating sustainable, inclusive and knowledge-based growth within Learning Technology 2030 and beyond. IMAILE provides evidence that the dialogue is what both the demand and supply sides value as the greatest advantage of the PCP. Recommended tools for successful and strengthened dialogue, apart from the formal assessment of each PCP phase, are a transparent Question and Answer Google Tool, Confidence Criteria Table, Success Criteria Table, formal and informal meetings and, last but not least, for a common understanding of a complex process, the Technology Readiness Level (TRL) table that shall be used for visualisation of progress.

Quality Indicator #3: Improved and customised PCP methods and templates for learning technology

IMAILE PCP is a pilot project and thus development, implementation, assessment lessons learned, recommendations and results need to be highlighted and disseminated to make future learning technology innovation procurement efficient and qualitative.

At the project start on 1st February 2014 only standard PCP documentation, contracts, recommendations and templates existed at the EU level. Through the IMAILE project specific PCP Learning technology strategies/ methodologies have been developed, implemented and assessed in order to create future recommendations, including progress based upon the gathered and analysed results from relevant stakeholders in 2018. As indicated on the graph IMAILE and upcoming LEA are creating giant and unique leaps forward with innovation procurement in learning technology.



Quality Indicator #4: Gathered recommendations on future PCP.s from different stakeholders Change to Gathered recommendations on future PCP.s from different stakeholders

The following summary of performance quality indicators were gathered from interviews and surveys provided by IMAILE procurers and suppliers and learning technology experts.

Key notes



PCP Recommendations from procurers to other procurers

#1 In order to create consistency from user and demand perspective needs assessment groups shall be identified/involved at the local, regional and EU Levels, who will be able to contribute to feedback and tests further on in the PCP process.

#2 In the IPR section of ITT clause of user rights shall be included for future deployment by the procurers, while open standards as minimum requirements shall be included to avoid national legislations and requirements for deployment and purchase.

#3 PCP needs to be monitored at the contract and content level. The contract manager shall monitor the appliance of contracts and Service offers, while the procurers and the technical manager shall monitor the content of the PCP based upon the Challenge Brief.

#4 Dialogue shall be included from Phase 1 using tools like the Success Criteria Table (SCT) and the Confidence Criteria Table (CCT).

#5 Teachers and students shall be motivated with certificates, study visits, peer support and if possible additional funds shall be provided to schools.



PCP Test recommendations from Technical manager Kati Clements

#1 For the future testing of PCP/PPI - the test users should be integrated into and committed to the project through a separate budget. In the case of education, we would recommend having a teacher whose workload in their normal teaching is reduced to 80% of his/her working time and then that teacher could use 20% of the working time to test systems and give on-going feedback to the suppliers.

#2 The testing users (e.g. teachers) should be hired to do the testing for an entire school year and the use of the system should be integrated into their everyday lives.

#3 The interfaces of software solutions need to be intuitive for teachers/students use to enable more effective testing. Mentoring of the users when they first sign into the system - automatic tutorials that say: "Hello, I see you are a teacher. Would you like to prepare a lesson or grade your students today?"

#4 Due to the rapid development of the market "outside" the PCP there should be a continuous cycle of evaluating the innovations in comparison to the market's features and updating the goals.



PCP Recommendations from suppliers to other suppliers

Some of the main challenges we have faced, that you may consider for your application, are:

#1 You only receive a few days notice of your involvement in the different phases of the project following the contract signature. Plan your resources carefully and if you need to contract new personnel we recommend you selected them in advance.

#2 The three phases require lot of research, design and development time. If you work within a consortium, make sure you can begin working together from day one.

#3 The management of a PCP is complicated, as you must deal with many actors in the process. We recommend seeking professional support with experience in European projects.

#4 Between the different phases there is always a period where the project is frozen, waiting until the evaluation of the project is approved and only then can work with the next phase continue. Our recommendation is to keep working in order to keep the project alive.



PCP recommendations by EU STEM/ pedagogical expert Björn Sjöden

#1 Innovation may be assessed at several levels - not only in terms of novel technical features, but also with respect to how scientific principles are considered and deployed in the systems (for example: a system appropriately and purposefully designed to ease students „cognitive load“ in STEM might be more innovative than a system which employs new technical functions without clear relevance to learning).

#2 If testing periods are required/desired, do not underestimate the time need to collect representative (i.e. ecologically valid) data from authentic educational contexts (for example: 7-8 weeks of regular use might be needed for gathering sufficient data for assessing the functions of learning analytics).

#3 There is value to consulting educational technology expertise in the market consultation phase (besides customers and suppliers). This is because the actual potentialities of educational technology, as shown by research, is not yet reflected in present market standards. In effect, both customers and suppliers might in some respects "put the bar too low". (For example, Teachable Agents is a well-evidenced technology for teaching & learning using digital characters, which yet only exists in university-developed software and is little known among teachers; thus they will not ask for it.).

#4 Ensure that there is a common understanding of key concepts used in the call for tenders and specification of requirements. There are certain terms (cf. "innovation" above) whose meaning would require further clarification in PLEs, such as AI (Artificial Intelligence) and "learning styles". Such wide and multi-faceted (AI, innovation) and somewhat controversial concepts (learning styles) may carry with them differences in expectations and understandings between customers, suppliers and experts. For example, suppliers could be asked to formulate how they conceive of AI in their system, and the concept of "learning styles" might be abandoned in favour of more specific and less controversial terms (e.g. individual adaptiveness/adaptability).

Quality Indicator #5: Increased awareness of PCP in learning technology at the EU level

To increase the awareness of PCP, especially in relation to learning technology, a number of events about the experiences gained during the IMAILE project were implemented in partner countries and beyond during autumn 2017. Events were aimed at the core target groups of the PCP in the learning technology process: procurers, suppliers, teachers, headmasters, administration staff in schools and other learning technology users. Among the information and dissemination events organised were:

- 4 regional dissemination events in all testing countries – Finland (October 2017), Germany (October 2017), Spain (October 2017) and Sweden (November 2017) each attracting between 70 and 150 participants.
- 1 national final event in Viladecans, Spain (December 2017) with 120 participants.
- Moreover, IMAILE participated with its experiences and results in a number of conferences and exhibitions across Europe, among them the Online Educa Berlin (December 2017) with a key note to the discussion session “Opportunities and Challenges for Education Start-Ups in the European Market: Understanding Customers’ Needs”, Conference on Innovation Procurement in Tallinn, Estonia (October 2017), Conference organised by the Hungarian Procurement Agency (November 2017), Conference of the National Agency for Public Procurement Sweden (November 2017).
- Final event on BETT London (January 2018).

With these and many other events and awareness raising activities as well as the development of innovative PCP dissemination methodologies it was possible to feed the experiences gained from IMAILE back into the discussion about PCP in learning technologies and how to improve the support of better innovative and customer-oriented learning technology research and development through public procurement.



Dorisz Talas at a Hungarian STEM Innovation event 2017



Ellinor Wallin Project Manager at the EAFIP event Tallinn 2017



Kati Clements, Technical Manager explores innovative learning technology at Online Educa Berlin 2017

NIKLAS TIDEKLEV, SWEDISH NATIONAL AGENCY FOR PUBLIC PROCUREMENT

President (Sweden)

What a national authority says ...

Large welfare investments are needed to meet the societal challenges of the future but these resources are found to be lacking in many municipalities. Therefore, it is necessary to create opportunities for innovative companies digitising the public sector the way that IMAILE does. PCP generates development and more efficient working as well as creating savings.



BENEFITS EXPERIENCED OF PCP IN LEARNING TECHNOLOGY

Ellinor Wallin, Municipality of Halmstad
Coordinator (Sweden)

PCP benefits identified by IMAILE suppliers

IMAILE suppliers during phase 3 recognised several benefits from the PCP process that have created added value for their companies. It should be noted that both suppliers felt that IMAILE is “The most useful European project” they have participated in and the commonly reflected benefits behind this statement concerning software development are:

- the early engagement of end-users in the software development process
- the PCP dialogue at all stages of the software development process
- Learning technology experts (Pedagogical, STEM & technical) consultation resource available throughout the process

Almerin, a Finnish startup, states that the PCP contract has provided R&D resources, access to need analysis and test environments but also highlights market access as well as credibility as top benefits resulting from its participation in the PCP. The credibility consists of proof that there is a market need, proof that their innovation is high-level and that their team is capable. Check out the following link to learn more about PCP from a start-up perspective (Teemu Laitinen, CEO Almerin Ltd.) within learning technology: <https://ec.europa.eu/digital-single-market/en/news/companies-talk-about-their-innovation-procurement-experiences>

AMIGO, a Spanish consortium of two already established companies, highlights the benefits of working to develop R&D based upon challenges (versus requirements in traditional procurement) in dialogue with the procurers based upon a user-driven methodology that is go-to-market oriented.

Both suppliers also state that the IMAILE outreach and challenge to the market forced them to reach beyond the impossible in their research and development work.

“The IMAILE challenge brief and invitation to tender dared the market to research for the development of one innovative solution capable of accommodating the necessary features and technological developments to respond to a large set of challenges (one solution addressing several challenges). Suppliers agree that the IMAILE call for proposals did contribute to stretching their performance and outreach beyond what seemed to be impossible at first glance. Without this opportunity most of the challenges would not have been addressed and certainly not together in the same research workplan”.

PCP benefits identified by IMAILE Procurers

There are several common benefits identified by the four procurers after the almost five-year long learning process of PCP at the EU level. The main benefit is of course the future pedagogical and financial benefits of the developed STEM PLEs, that enable teachers to save time by using automated assessment and recommendation for personalised courses and material, which allow class sizes to grow whilst maintaining the same quality and still providing one to one interaction between teacher and students. The PLEs also enable reduction of paper book costs replaced by e-books and contribute to reduced costs in terms of future early drop-

out. One additional gain is the possible increased future growth and tax revenue for the regions thanks to STEM motivation that arises from using the IMAILE PLEs.

The procurers also identify the PCP as a tool to change, improve and influence learning technology as a whole in the future and for bringing industry and the European classroom closer to each other, with the procurers in the driving seat of learning technology innovations. By participating in a PCP all procurers experienced that their organisations had gained an increased understanding of the European learning technology market, but also that they had found a useful tool for dialogue in increasing the quality of developed innovations according to users’ needs. One additional statement is that tests with end-users in real classrooms bring the learning technology industry and the technology of the future straight into our classrooms, providing learning and education progress at levels beyond current expectations. PCP has also proven to be an effective tool for managing the digital transformation and innovations within public administrations, and consequently IMAILE was awarded the “most innovative European project” at the VII National Congress on Public Services and Innovation in Spain in 2016.



CNIS 2017 award
most innovative
European project



Innovative Methods for Award Procedures of ICT Learning in Europe

PCP benefits for European schools

The European schools involved in IMAILE announced that being a part of the IMAILE PCP process has increased their European awareness concerning learning technology with a strengthened EU STEM/PLE profile. Furthermore, they have experienced PCP as a democratic process including them as co-developers of future technology according to their needs and input. By enabling innovative industry to enter the classrooms of the youngest EU citizens a dynamic meeting and direct dialogue at an early development stage was facilitated between stakeholders, who together can transform learning technology. PCP has proved to be an effective tool for digitalising European Education, not only from a top down level, but also from a bottom up perspective, with capacity building and dialogue directly to the market.

PCP project challenges and how to overcome them from a management perspective

Last but not least here are some recommendations on how to overcome specific PCP challenges within a complex European learning technology project

Challenge	How to overcome the challenge
Diversity and heterogeneity of learning technology	Although the European Commission has been making strong efforts to homogenise policies, instruments, practices and procedures etc., education is one area where heterogeneity and diversity among the EU's 28 countries is still widely visible and noticed, especially when it comes to school curricula, teaching methods, teachers' skills and technological infrastructures available in schools etc. It is important to have this scenario in mind when working with European joint learning technology procurement and take advantages of lessons learned from the IMAILE and upcoming LEA project
Sufficient expertise and skills to form a PCP consortium	The buyers group and its identified need is the core of a PCP but do not forget to include PCP legal experts and technical experts within your consortium to support the process.
Procurers' needs are a priority for a dynamic PCP process	Include sufficient time and resources to identify the common needs and challenges as the core baseline of the PCP. Ensure there is a common picture in all procuring countries using workshops and surveys including the end users (schools) before you launch the call.
Demand and supply side dialogue	Steer the process early and explain your needs over and over again based upon the Challenge Brief (the core Document of the PCP) .
PCP as standalone projects	Use support from the "PCP family " at EC events, PCP meetings and network with other PCP/PPI projects. Take advantage of the IMAILE Streamlined PCP process and guidelines for learning technology as well the upcoming LEA project. Last but not least, allow the innovation procurement process to take its time.

For additional information and downloads of IMAILE results and guidelines visit <http://www.imaile.eu/about/imaile-results/> and/ or contact Ellinor Wallin Ellinor@euprojektconsult.se

ZOLTÁN PAJNA, HAJDÚ-BIHAR COUNTY COUNCIL

President (Hungary)

We, the Hajdú-Bihar County Council, are highly interested in the IMAILE project and its results. The IMAILE project addresses issues critical to speeding up awareness raising in relation to innovative procurement in the learning technology sector. We believe that these issues have not yet been addressed elsewhere at a European level. Therefore, we highly appreciate the objectives of the IMAILE project and believe that the project will represent a very valuable contribution to the field of learning technology at the European level.

What a regional authority says ...



2018

BETT Show and Transfer Workshop Conference and Workshop

Date: 24.-27.01.2018

Location: BETT London, London Excel, Stand B 457

Organiser: IMAILE Project

The BETT Show is one of the largest exhibitions and conferences for innovative learning and education technology. The IMAILE project is proud to be able to contribute to this show with PLE solutions and experiences on innovation procurement. Besides our presence at the BETT Show with a permanent stand, we will offer specific experience transfer workshops at the Novotel, London Excel where the experiences from the project will be presented and discussed in detail.

Experience transfer presentations will be held on the 26th January 2018 at 10am, 1pm and 3.30 pm. Admission to the experience transfer workshops is free upon prior registration.

www.imaile.eu

Email: ellinor@euprojektkonsult.se



24-27 JANUARY 2018
EXCEL LONDON

OUTLOOK FOR A FOLLOW- UP ACTIVITY: THE LEARNTECH ACCELERATOR (LEA) PROJECT

Ellinor Wallin, Municipality of Halmstad (Sweden)



Based upon the findings from IMAILE PCP of Innovative STEM/PLE (www.imaile.eu), the project LEARNTECH ACCELERATOR (LEA) will take a quantum leap forward from being one standalone project to developing a critical mass of European procurers within a network (LEA-N) who will:

- Empower LEARNTECH community stakeholders through knowledge transfer in order to remove barriers of innovative procurement.
- Empower LEARNTECH procurers through the development of common demand policies and identification as first customers.
- Strengthen the dialogue between all LEARNTECH stakeholders (focus on demand and supply sides).
- Prepare a PPI of STEM/PLE innovations based upon the challenge of increased demand for personalised learning.
- Prepare a common PCP based upon the needs identified during the project.
- Investigate innovation partnership procedure for flexible procurement.
- Reduce the fragmentation of public sector/demand side within the LEARNTECH sector.
- Speed up awareness raising of PCP/PPI including cross-sectional value chains.

Implementation of these tasks will contribute to **SMART, INCLUSIVE AND SUSTAINABLE DEMAND BASED DEVELOPMENT OF LEARNING TECHNOLOGY.**

You are welcome to join LEA as an observer organisation and learn more about innovation procurement of learning technology. Contact Ms Kati Clements kati.clements@jyu.fi or Ellinor Wallin ellinor@euprojektkonsult.se for more information.

PHOTO GALLERY CONCLUDING FOUR YEARS OF PROJECT WORK

All pictures by Ellinor Wallin,
Municipality of Halmstad (Sweden)

Meet the IMAILE team in action during the 4 years, a picture says more than thousand words ...

2014



Budapest, need analysis PLE workshop for the procurers using the discussion carousel method.



Finland, PCP and PLE awareness raising event for schools.

2015



Viladecans/Spain, preparing an IMAILE event with citizen dialogue.

Magdeburg / Germany, first face to face meeting between demand and supply side.



2016



May – Halmstad/Sweden, IMAILE consortium united and happy after a successful decision meeting.

2017



March – Luxemburg, outside the DG Connect premises after a successful project review.



May – Berlin, dynamic test interim meeting between the management teams, suppliers and procurers.



September, Finland Konnevesi – IMAILE final project meeting in the "deep forests".



OTHER PCP/PI PROJECTS

PRACE-3IP PCP

Pre-commercial procurement for whole system design for energy efficient HPC

Dirk Pleiter, Fabio Affinato, Philippe Segers, Forschungszentrum Jülich (Germany), CINECA (Italy), GENCI (France)

One of the largest challenges in relation to building faster supercomputers is energy consumption. The world's fastest supercomputers consume up to 18 MWatt. However, many high-performance computing (HPC) centres have already reached their limit in terms of electricity budget. Therefore, making supercomputers faster requires making them much more energy efficient than they are today. For this reason, the European organisation PRACE started a pre-commercial procurement (PCP) on "Whole System Design for Energy Efficient HPC".

The main goal of PRACE (Partnership for Advanced Computing in Europe) is to offer world class computing and data management resources and services to enable scientific discovery and engineering research. The goal of the PCP started by PRACE is to procure innovative R&D services that result in highly energy efficient HPC system components that are integrated into supercomputers. To allow for a fair comparison of the solutions proposed by different competitors, the project defined four benchmark applications. These applications were selected so that they reflect the needs of several relevant scientific user communities in Europe. For all of them both, time-

AT A GLANCE

Programme: Seventh Framework Programme - FP7

Duration: 01.07.2012 - 31.12.2017

Main outcome: Design specifications for realising interactivity for future supercomputers

Website: www.prace-ri.eu

to-solution as well as energy-to-solution were determined at the beginning of the project based on state-of-the-art systems.

The PCP is in its final phase with three competitors deploying pilot systems for final testing within PRACE data centres. This will allow the French company Bull, the Italian company E4 and the British company Maxeler to demonstrate the improvements they were able to achieve.



DECIPHER

Mobile cross-border patient data solutions for EU citizens through Pre-Commercial public Procurement

Jean Patrick Mathieu, Esther Arévalo
AQuAS - Agency for Health Quality and Assessment of Catalonia (Spain)

DECIPHER (Distributed European Community Individual Patient Healthcare Electronic Record) sought the development of mobile solutions enabling secure cross-border connection to existing patient healthcare portals as well as to other solutions for health management. The applications acquired represent a significant step forward towards patient mobility and their continuum of care throughout the EU.

According to data reviewed (2011), 180m people worldwide were known to have diabetes, which accounted for 11% of total annual healthcare expenditure and of major co-morbidities. Through the Pre-Commercial Public Procurement, co-funded by the EU FP7 Programme and coordinated by AQuAS, DECIPHER procurers (Fundació TicSalut, ESTAR and Central Manchester Foundation Trust) challenged the industry to create solutions for type-2 diabetes, which could later be applied to other chronic conditions.

After three tendering phases, the successful contractors were:

NeXtage & Camelot Biomedical Systems - Colibri: cloud-based platform comprised of a mobile app for patients and a web app for doctors. It allows document sharing and patient monitoring and support. Colibri can be interfaced with regional and national personal health record systems. (<http://nextage-on.com/> <http://www.camelotbio.com/>)

AT A GLANCE

Programme: Seventh Framework Programme - FP7

Duration: 01.03.2013 - 01.03.2017

Main outcome: Development of a mobile solution which enables secure cross-border access to existing patient healthcare portals

Website: www.decipherpcp.eu

eResult - OMNIACARE-based DECIPHER solution: mobile app providing multi-language support for health data access, treatment and health monitoring and emergency episode assistance. (<http://www.eresult.it/en-us/>)

GNOMON Informatics – openDECIPHER – HealthDSI compliant solution with Open System – Open source connector. It provides health record access, multi-language information sharing with professionals and relatives, treatment planning and monitoring, emergency support and geolocation, with a focus on patient consent and privacy. (<https://www.gnomon.com.gr/>)

The DECIPHER consortium estimated that the developed technologies could provide savings of up to 24% of actual Diabetes type 2 direct costs.



PREFORMA

PREservation FORMAts for culture information/e-archives

Claudio Prandoni, AEDEKA Srl (Italy)

The importance of file checking for digital preservation

Digital preservation means taking precautions to ensure long term access to digital content. Each different variant of file format and codec held in digital archives should be checked periodically. This might necessitate migrating some content to new formats to mitigate the risk of files becoming obsolete or unusable in the future.

If digital files do not comply to the standard specification then even files of an identical format and using the same codecs can have different properties. This means that subsequent migration or conversion processes may yield unpredictable results, jeopardising preservation workflows.

Three steps to making digital data future proof

1. Validate incoming file formats and codecs against their standard specification. Files that conform with their specification can be parsed, processed or rendered consistently by any software that honours the specification.
2. If necessary, define custom acceptance criteria for archival content and validate whether incoming files comply with such criteria.
3. Make these checks part of the processing workflow.

The PREFORMA solution

The PREFORMA tools help memory institutions check file conformance, define custom policies, and build an efficient ingest workflow. Download and try them at www.preforma-project.eu/open-source-portal.html

Four independent modules

- Implementation Checker: validates compliance with the specification in all respects.
- Policy Checker: enforces custom institutional policies beyond the scope of the specification itself.
- Reporter: produces customisable reports formatted for both human readability and automated parsing.
- Metadata Fixer: carries out any corrections to file metadata, if necessary, to achieve conformance with the specification.

Three media file types

- Electronic documents (PDF/A)
- Still images (uncompressed TIFF)
- Audiovisual files (FFV1 video and LPCM audio in a Matroska container)

AT A GLANCE

Programme:	Seventh Framework Programme - FP7
Duration:	01.01.2014 - 31.12.2017
Main outcome:	Development of open source conformance checkers in digital preservation systems
Website:	www.preforma-project.eu

Three adaptable programme interfaces

- Command line
- GUI
- Web-based

Three deployment options

- Standalone executable available for most operating systems
- Network deployment as a client-server application
- Integration with third-party systems via APIs

Open Source

- All software is released under the GPLv3+ and MPLv2+ open licences
- All digital assets are released under the Creative Commons licence CC-BY v4.0

About PREFORMA

PREFORMA (www.preforma-project.eu) is a pre-commercial procurement project co-funded by the European Commission to enable memory institutions to take control of the conformity testing of digital files intended for long-term preservation. The intention is to reduce preservation costs, improve curation capacity and enhance competences within public organisations, whilst reducing their reliance on individual vendors.

The PREFORMA consortium, coordinated by the National Archives of Sweden, comprises of 15 partners from 9 European countries. These partners include national and local cultural organisations, audio-visual archives, public libraries, research centres, universities and SMEs.

During the project, a community of experts and users contributing to our work has grown to include more than 500 individuals from 50 countries globally. Through cooperation with institutions and organisations interested in validating the most common file-formats they curate, the PREFORMA tools are integrated into production environments worldwide.



HNSciCloud

Helix Nebula - the Science Cloud

Bob Jones, CERN (Switzerland)

Over the coming 10-15 years the generation of vast amounts of data created by scientific research domains will create enormous challenges for capturing, managing and processing this data. Tests have been made but today commercial cloud services do not play a significant role in the production computing environments for the publicly funded research sector in Europe.

Stimulated by the Pre-Commercial Procurement (PCP) commitment of 10 leading research organisations from 7 countries, HNSciCloud will pull together commercial cloud service providers, publicly funded e-Infrastructures and the buyers' in-house resources to build a hybrid cloud platform on top of which a competitive marketplace of European cloud players can develop their own services for a wider range of users. This project will bring Europe's technical development, policy and procurement activities together to remove fragmentation and maximise exploitation.

Through a competitive series of design, prototype and pilot steps, HNSciCloud will contract suppliers to deliver a 5% scale deployment of a hybrid cloud platform that can address the extreme needs of world class scientific research, including:

- Catalogue of secure and interoperable services from multiple suppliers that have successfully passed an international recognised certification process
- Agile procurement process suitable for the dynamic cloud services market and tailored to the needs of the public research sector
- Development of monitoring frameworks to ensure compliance with international security and interoperability standards, performance criteria and financial benchmarking against global market leaders.

The resulting common platform will be evaluated by end-users in the high-energy physics, astronomy, the life sciences including biomedical research, and the photon/neutron science domains, and exploited as the incubator for new businesses and scientific activities engaging a growing number of buyers, suppliers and users.

After having received more than thirty bids from multinational

companies, SMEs and public research organisations, the HNSciCloud PCP is now in its Prototype Phase. Kicked-off in April 2017, the Prototype Phase will end in December 2017 when three prototypes will be presented.

AT A GLANCE

Programme:	Horizont 2020
Duration:	01.01.2016 - 31.12.2018
Main outcome:	Establishment of an European hybrid cloud platform to support the deployment of high-performance computing and big-data capabilities for scientific research
Website:	www.hnscicloud.eu

Major outcomes

The HNSciCloud PCP will:

- develop a set of common requirements for IaaS level cloud services addressing the needs of a group of buyers from across Europe that serve multiple data-intensive research communities and increase adoption of such services
- deliver a set of publicly available tender material that will have been tested and proved in practical deployments at a European scale. This material will serve the public sector and beyond in their future procurements of cloud services
- reinforce Europe's cloud industry by reducing fragmentation across member states and permitting suppliers to offer trusted interoperable services
- contribute to the creation of a flexible common framework of best practices as well as guidelines at legal, technical and operational levels to achieve a trusted digital single market for cloud services in Europe.
- improve cost-effectiveness of public sector IT systems through efficient joint procurement of cloud services, e.g., based on the adoption of standardised solutions and mutual recognition of accreditation requirements.



SELECT FOR CITIES

Using Pre-Commercial Procurement to Create Large-Scale Internet-of-Everything Labs for Smart City Innovation

Susie Ruston McAleer, 21c Consultancy – dissemination leader SELECT for Cities project (UK)

The SELECT for Cities initiative is premised on the fact that modern cities generate vast amounts of data daily thanks to the ubiquity of smart phones and use of sensors in public service management. This ever-growing wealth of data provides unlimited opportunities for intelligence extraction from combining and analysing different sources. The resulting actionable intelligence has the power to boost the effectiveness of existing services, enhance operational decisions and kick-start innovation. However, due to competing demands, many Public Administrations lack the capacity, let alone the tools and techniques required to make sense of this new data tsunami.

Overcoming this challenge through collaboration with their greatest source of innovation – entrepreneurial citizens and organisations – the European Cities of Antwerp, Copenhagen and Helsinki, have joined forces to create the SELECT for Cities competition. The cities seek to solve this challenge by supporting the development of large-scale Internet-of-Everything (IoE) platforms. These IoE platforms will be capable of combining ever growing volumes of data generated daily by numerous smart systems along with personal data generated every day by citizens. The platforms will not only aggregate data, but also act as interfaces to numerous public and private based digital systems, and let entrepreneurial minds develop new services on top of these. Innovations resulting from the SELECT for Cities platforms will transform the way people live and work in urban environments.

With a budget of approximately 4.0 million euro (incl. 21% VAT) to invest on research and development, SELECT for Cities is deploying a Pre-Commercial Procurement (PCP) process to find and select suppliers who will help the Cities achieve their ambition of becoming large scale IoE testing labs.

The PCP procurement is different to traditional methods as it is run through a series of three competitive phases, with the number of participating organisations reducing, but funding levels increasing, as each phase is evaluated. The phases range from design through to prototyping and testing of the solutions in real-life living labs. This competitive approach challenges industry from the demand side to develop innovative solutions for public sector needs, whilst enabling procurers to compare alternative potential solution approaches to filter out the best possible solutions that the market can deliver.

AT A GLANCE

Programme:	Horizont 2020
Duration:	01.12.2015 – 30.11.2019
Main outcome:	The design, research and development of a data-driven, Internet-of-Everything (IoE) platform for European cities to enable large-scale co-creation, testing and validation of smart city apps and services
Website:	www.select4cities.eu

The benefit of using PCP to open conventional procurement approaches, has already enabled the SELECT for Cities team to better hear from those at the forefront of smart city innovation, those organisations and individuals from across Europe who work to solve city challenges daily. Currently in the first phase of the procurement, the Cities are evaluating concept solution designs from 10 consortia (www.select4cities.eu/call) who won the global tender to enter the first phase of the project. The winners of this stage will be invited to move forward into the second prototyping phase from late September. To keep up to date with activities, news and lessons learned follow us on Twitter @select4cities or join our mailing list at select4cities.eu



SELECT

for Cities

STOPandGO

Sustainable Technologies for Older People – Get Organised

Ilse Bierhoff, Smart Homes (Netherlands)

Innovation in public services is something that public administrations need to address due to limited budgets and the requirement (often duty) to maintain high quality services that people need. Plenty of innovative services have been piloted, but few have been procured. STOPandGO is showing how it can be done, developing and validating a method that can be used anywhere in Europe to specify services and outcomes, get the right suppliers working together and use existing procurement frameworks to deliver services to people. Fundamentally, this helps to achieve the objectives of initiatives such as the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA) and the Digital Health Blueprint, whilst serving specific local health and care needs.

STOPandGO (Sustainable Technologies for Older People – Get Organised) is a Public Procurement of Innovative Solutions (PPI) pilot project, funded by the ICT Policy Support Programme as part of the Competitiveness and Innovation Framework Programme of the European Union. It began in April 2014 and will run for four years, focusing on 11 localities in four countries (Italy, Spain, UK and the Netherlands), and serving around 20,000 people with a budget of 17 million Euros.

The STOPandGO procurement process does not focus on one particular technological component, but rather on the integration and simultaneous improvement of models of care and cure. This provides care and cure services augmented by a coherent set of interoperable technological components, with a convincing new stratification of the users, satisfying at the same time managerial, organisational, clinical and technological perspectives. This necessitates a collaborative consortia approach, often with diverse stakeholders so that bidders can develop complete offers which address organisational, technical and user/stakeholder aspects. Procurement is thus outcome based, and introduces elements of Payment by Results.

With a strong focus on organisational aspects the project not only paves the way for a single procurement process, but also creates a favourable landscape for other innovations to flourish.

One of the project's procurement partners is Liverpool City Council. Its procured domiciliary care services for elderly people to enable them to live at home. Involvement in the project provided the team with the opportunity to redesign its model of care to include technology as an integral part of the service. Prior to this contract there was very little technology operating in the sector, with a provider's adoption of technology limited to electronic staff rostering systems in some of the larger organisations. This case study demonstrates how a PPI enabling procurement approach, together with well targeted grant funding, was used to transform social care service provision and create a framework for the further adoption of technology.

Another area where STOPandGO has been implemented is in the Sant Pau Hospital in Spain. The aim of the tender was to guarantee optimal efficiency in connection with the arrhythmic patient care process, through the use of digital technologies, empowering patients and fostering coordination and co-responsibility between the hospital and the successful bidder. The tender specifications defined a new model of collaboration between the hospital and the service provider, whereby the supplier participates in all stages of the healthcare delivery process and shares the risks with the hospital.

The City of Helmond in the Netherlands wanted to put more effort into innovation. It chose 'dementia patients, pre and post diagnosis, and their immediate informal caregivers' (around 12,000 people) as the target group for a STOPandGO tender. The City of Helmond went to the market using the Innovation Partnership procurement method, setting out what the problem is, who the people suffering from this problem are, and indicating

AT A GLANCE

Programme:	CIP-ICT-PSP-2013-7
Duration:	01.04.2014 - 31.03.2018
Main outcome:	Improvement of services for older citizens by applying PPI
Website:	www.stopandgoproject.eu

areas where improvements could be achieved. A modest budget of 100,000 Euros was made available, and the market was asked for an innovative solution to give concrete results. The winning bid surpassed all expectations in terms of the projected results, the number of people that will be able to benefit and the level of scalability that is offered. The STOPandGO process has been very successful, and this method will be used for procurement of innovation more often in the near future.

The Miguel Servet University Hospital (HUMS) is a Spanish Health Institution belonging to Aragon's Health Service. HUMS has procured a service called "Ambulatory patients' drug adherence service". The objective is the complete traceability from the care process', the patient's and the drug's point of view. The ultimate aim of the procurement is to ensure maximum efficiency in the care process of patients through the use of digital technologies, patient empowerment and the coordination and joint responsibility between the HUMS and the contractor, during the whole treatment life cycle. As digital technologies are the basis for the improvement of the procedure, the awarded bidder must guarantee the technological renovation and incorporation of new technologies that may arise during the duration of contract.

Each STOPandGO procurement focuses on a specific service in relation to continuum of care, from welfare or home services to specialised medical care and post-discharge hospital support. Therefore, the procurement team offers good coverage of a variety of topics relevant to the continuum of care. In terms of knowledge transfer, the overall idea is to use the steps in the procurement process as the lead, offering in-depth information in easy to understand sections clearly linked to a specific step in the procurement process to reduce complexity. To show how the theory is put into practice, examples from the STOPandGO procurers will be added for every step. The STOPandGO consortium encourages others to take up on this developed approach by contacting us to learn more about the approach.



ANTI-SUPERBUGS PCP

Fighting Multi-Drug Resistant Organisms in hospitals through Pre-commercial Procurement.

Jean-Patrick Mathieu, Esther Arévalo, AQuAS - Agency for Health Quality and Assessment of Catalonia (Spain)

ANTI-SUPERBUGS PCP aims to improve the quality of care processes in hospitals and to reduce both the costs and the collateral effects caused by Multi-Drug Resistant Organisms (MDROs, aka "Superbugs") and other Health Associated Infections' pathogens. This is to be achieved through the development and testing of prototype devices and ICT services that can: 1) non-invasively test for the presence of MDROs and other pathogens, and 2) provide continuous information and remote alerts to health professionals on contamination by pathogens on high contact surfaces, applicable to existing healthcare environments.

The project, co-funded by the EU H2020 Programme, is coordinated by AQuAS, which also acts as the lead procurer. It currently involves 4 procuring entities (Institut Catala d'Oncologia; Universitaetsklinikum Aachen; Sheffield Teaching Hospitals NHS Foundation Trust and Provincia Autonoma di Trento) plus partners with relevant expertise in public procurement (Sara Bedin) and technology (RISE).

MDROs infections impact significant on morbidity, mortality and increased hospitalisation and costs, which adversely affect patient experience. MDROs are invisible to the naked eye and can survive on surfaces for many days, being transferred via human contact (patients, staff) or surface contact. It is imperative to provide detection systems that can be easily integrated into healthcare facilities, enabling the control of MDROs.

AT A GLANCE

Programme:	Horizont 2020
Duration:	01.09.2016 – 30.08.2020
Main outcome:	PCP for the development of early-and continuous-detection systems of microorganisms in hospitals and healthcare facilities
Website:	www.antisuperbugs.eu

An open PCP will allow R&D service contracts to be awarded to a number of providers, in parallel, in a three-phase approach - 1) Solution design; 2) Prototyping; and 3) Original development and validation & testing. A Prior Information Notice will be published shortly in the OJEU, including information on an Open Market Consultation procedure.



SMART@FIRE

Smart protection for firefighters all over Europe

Dorisz Tálas, INNOVA Észak-Alföld Nonprofit Kft. (Hungary)

The main objective of the Smart@fire project was to develop a smart Personal Protective System (PSS) for individual firefighters comprising of Personal Protective Equipment (PPE) for clothing and a loosely connected ICT system. The ICT system integrates safety critical functions of the personal protection system of individual firefighters, and acts as a communication node for additional personal protection equipment as well as an interface to the local command centre. The system must be compliant with and fitted into the firefighter's clothing.

During the needs analysis it became clear that European countries can work together effectively on ICT developments in different areas. In the case of Smart@fire, despite the different levels of technology, the main aim was the same in all countries: to ensure safe working conditions for firefighters. The result of the Smart@fire project was very satisfactory, as development occurred which fulfilled all the necessary criteria and that proved its effectiveness during testing.

AT A GLANCE

Programme:	Seventh Framework Programme - FP7
Duration:	15.11.2012 – 15.02.2017
Main outcome:	PCP for developing innovative protective suit for firefighters
Website:	www.smartatfire.eu

The developed and tested Good PRO FR3 Fire Shark in smart its version is a certified three-layer protective suit for firefighters, which is designed mainly for extinguishing interior fires under extreme conditions in terms of temperature, fumes, and/or orientation in space. The system can continually monitor and evaluate the safety of the environment in which a firefighter is operating (temperature inside and outside the garment, moisture, humidity, toxic gases), and it also provides information about the position of the body, physiological functions as well as the firefighter's geographic location.



LIVE INCITE

Supporting lifestyle changes, improving outcomes of care

Martina Ahlberg,
Karolinska University Hospital (Sweden)

LIVE INCITE aims at activating the patient as an important actor in positively affecting surgery outcomes. Through support to give up smoking and heavy drinking prior to surgery, research shows that the risk of complications can be halved. With some 3.5 million elective surgical operations being performed annually in Europe on patients who smokers, the cost per complication is estimated at being approximately 10,000 Euros. Therefore, the potential impact on patient safety and healthcare costs are clearly tremendous.

Behavior change is a very complex process, dependent on many individual and contextual parameters, and a cornerstone of any type of solution should be enabling the procurer to develop with insights gained from intervention programme output data on the use, effectiveness and the ability of continuously adapting the support to patients in the various risk groups and risk classifications over time.

The potential impact of optimising the probability of a positive surgical outcome could be harnessed through leveraging professional behavior theory support by means of a digital, scalable solution built upon capabilities of interacting based on generic driving mechanisms for behavior change.

LIVE INCITE hopes to engage companies in developing such a solution, considering the need for continuous improvement in intervention content, timing, and format and enabling use in terms of multiple risk factors and care contexts.

LIVE INCITE further hopes that healthcare organisations and policy makers will harness the opportunity and engage not only with clinicians but also with behavior experts in healthcare to collaborate for improved care.

Some of the great benefits within Horizon2020 projects include being part of a multi-disciplinary international team, which can be both inspiring and rewarding. Having multi-disciplinary teams moving frontiers in terms of what can be achieved today and what might be possible in the future ensures a stronger result.

During the first part of our project it has become clear that knowledge and experience from PCPs are limited, both from a procurer point of view as well as in relation to the wider market. Information, workshops and dissemination of results is therefore critical in order to achieve the wider usage of the PCP tool.

We have also identified a need for increasing adaptation for interaction formats and payment models to support the growth of PCP usage.

AT A GLANCE

Programme:	Horizon 2020
Duration:	01.09.2016 – 30.08.2020
Main outcome:	Empowering patients and supporting lifestyle changes in order to improve outcomes of surgical procedures as well as the cost effectiveness of healthcare providers
Website:	www.karolinska.se/en/int/live-incite



PCP HBP

Pre-commercial procurement for whole System Design for interactive supercomputing

Dirk Pleiter, Forschungszentrum Jülich (Germany)

The Human Brain Project (HBP) is one of two flagship projects funded by the European Commission, which were launched in 2013. These projects are expected to pursue very ambitious goals over a 10-year period. In the case of the HBP the ambition is to build a collaborative ICT-based scientific research infrastructure that will allow researchers across Europe to advance knowledge in the fields of neuroscience, computing, and brain-related medicine. These fields increasingly rely on high-performance computing (HPC) and data analytics (HPDA) for their research. However, the requirements differ significantly from those fields that have already been using HPC for many years. One of these requirements concerns the interactive use of high-end HPC systems.

To enable support for interactive supercomputing in future, the HBP launched in 2014 a pre-commercial procurement (PCP) for research and development services, which was successfully completed in January 2017. During the first and second phases of this PCP, three contractors worked on competing solutions. Contracts had been awarded to the company Cray, and a consortium of IBM and NVIDIA, and a consortium of Dell, ParTec and Extoll. For the third and final phase, for which the competition was reduced, only Cray as well as IBM/NVIDIA received a contract. In order to be able to explore the usability of the developed solutions and their performance, the contractors during this last phase were requested to each deliver a pilot system, i.e. a smaller scale HPC system with new integrated technologies.

One of the technical goals of this PCP was to enable global access to distributed devices based on non-volatile memory (e.g., SSDs). IBM developed a solution called Distributed Storage Access (DSA), for which it could be demonstrated that it allows the achievement of both extremely high bandwidth as well as a high rate of I/O operations. The competitor Cray proposed a solution based on a commodity technology. That technology had to date not been used for HPC.

AT A GLANCE

Programme:	<i>Seventh Framework Programme - FP7</i>
Duration:	01.10.2013 – 31.01.2017
Main outcome:	Design specifications for realising interactivity for future supercomputers
Website:	www.humanbrainproject.eu/en

For many of the HBP usage requirements, visualisation plays a key role and was thus chosen as a second focus of the PCP. The goal was to enable scalable visualisation capabilities that are tightly integrated into future HPC and HPDA systems. Finally, the contractors were requested to address the topic of dynamic resource management. The goal was to facilitate efficient use of the available hardware resources when the system is concurrently used by a diverse set of applications, including scalable brain simulators as well as data analytics and visualisation pipelines for processing the data created by these simulators.

The PCP is quite a new instrument in Europe for working with commercial operators and promoting the development of innovative solutions. Within the HBP, its use could be successfully demonstrated for enabling new HPC capabilities. The solutions developed within the PCP will become available to a broader community and can already be exploited by HBP scientists through the two pilot systems, JURON and JULIA, which have been deployed at JSC as part of this project.



Human Brain Project

SILVER

SILVER Supporting Independent Living for the Elderly Through Robotics

Jon Hazell, Innovate UK (UK)

Summary

SILVER's first objective demonstrated the effectiveness of a Pre-Commercial Procurement approach when addressing societal and governmental needs and provided a generic process for national Pre-Commercial Procurement calls designed outside of the SILVER project.

The second objective of the project was to find robotics based technologies to support the independent living of the elderly. With the development of the LEA (Lean Empowering Assistant), the SILVER project demonstrated the viability of Pre-Commercial Procurement when procuring innovations. LEA is a care robot disguised as a stroller that provides a number of fully autonomous functions to help users in their daily life both in the house and outdoors. LEA Care robot helps the elderly, for example, when getting out of a chair or walking and reminds them of daily routines, such as medication, food and drink. In May 2017 LEA gained Medical Device Certification and is now preparing for production. It is expected to be on the market in the Netherlands and elsewhere in Europe by the end of this year.

Tool for growing a sustainable business

The results of the SILVER project show that SMEs can greatly benefit from participating in Pre-Commercial Procurement projects. The SILVER contractor, Robot Care Systems, encourages other SMEs to enter Pre-Commercial Procurement projects as they provide good opportunities for developing new solutions and even starting up a new company. Furthermore, by participating in EU funded projects SMEs are able to gain credibility which can be helpful, for example, in obtaining additional funding. Robot Care Systems won several innovation awards in 2015 and secured additional investment of up to 5,000,000 EUR which helped them move forward in the further development of the LEA Care robot and grow to be an organisation with >25 employees

ROBOT CARE SYSTEMS



AT A GLANCE

Programme:	Seventh Framework Programme - FP7
Duration:	01.01.2012 – 31.08.2016
Main outcome:	PCP for developing robotic-based technologies to support the independent living of the elderly
Website:	www.silverpcp.eu

– To small and medium-sized companies that do not yet have funding, PCP is a perfect way to move from being a start-up company to becoming a sustainable company that can distribute products all over the world, summarises Maja Rudinac, CEO for Robot Care Systems, the main benefits from the SME's point of view.

– The European Commission should be proud of the way it has helped to develop a new and exciting SME specialising in Robotics from a small spin off into a successful business that is ready to go to market. More importantly, this has all happened within the timeframe of the SILVER project. We look forward to working with Robot Care Systems in the future to scale up LEA to wider markets, says Andy Bleaden, Funding and Programme Manager for the City of Stockport.

– In my opinion LEA provides great potential to our customers or other elderly people who could buy it for themselves. In the future, LEA could be the one piece of equipment that gives elderly people a safer environment and which also supports them to move around more at home, says Satu Siikander, Administration Manager for the City of Vantaa.

My advice for future PCP projects is to engage procurers early in the process with contractors. Procurers can provide valuable support for the development of prototypes and ensure that they meet the needs of the competition in an optimal way, concludes Jon Hazell, SBRI Account Manager of Innovate UK.



SILVER

Supporting Independent Living for the Elderly through Robotics

PPI4HPC

For the first time in Europe, academia and industry join forces in a public procurement process to build the HPC infrastructure of the future

Anna Molinet, Renata Gimenez, Dirk Pleiter
BSC, CEA/GENCI, CINECA, Forschungszentrum Jülich
(Spain, France, Italy Germany)

A group of leading European supercomputing centres decided to form a buyers group to execute a joint Public Procurement of Innovative Solutions (PPI) for the first time in the area of high-performance computing (HPC). The co-funding by the European Commission (EC) will allow for a significant enhancement of the planned supercomputing infrastructure from 2019 and pave the way for future joint investments in Europe. The total investment is planned to be about € 73 million. The participating HPC centres, namely BSC (Spain), CEA/GENCI (France), CINECA (Italy) and Forschungszentrum Jülich (Germany), have a strong track record in providing supercomputing resources at the European level.

The objective of this PPI is to buy innovative, high-performance supercomputers and/or innovative high-performance storage systems.

In its communication on the "European Cloud Initiative" the European Commission, in April 2016, stressed the need for building a European Data Infrastructure including high-end supercomputers, which will, by around 2022, reach the exascale performance level.

This joint initiative will create multiple benefits:

- More supercomputing resources will be efficiently exploitable for science and engineering applications in Europe within PRACE, the pan-European HPC infrastructure, as selected, relevant applications will play an important role in guiding this procurement process.
- R&D on HPC architectures and technologies in Europe will be strengthened

AT A GLANCE

Programme:	Horizon 2020
Duration:	01.04.2017 – 30.09.2021
Main outcome:	Selection and buying of innovative, high-performance supercomputers and/or innovative high-performance storage systems.
Website:	www.ppi4hpc.eu

- The coordinated approach will give us greater weight and allow for greater impact on the design of the solutions according to the need of scientists and engineers in Europe.
- The participants will work together on coordinated roadmaps for providing HPC resources optimised to the needs of European scientists and engineers.

These systems are expected to be deployed in the period 2019-2021. In combination, these systems are expected to power a wide range of applications, including traditional HPC applications, HPDA and AI. They are also expected to be used for common innovation topics.

"This project allows for even stronger European collaboration in shaping a world-class infrastructure for high-performance computing for science in Europe," says Prof. Dirk Pleiter, coordinator of PPI4HPC. "This will prepare the next big step towards exascale computing."

The public procurers involved have organised an Open Dialogue Event (ODE) informing all interested suppliers about their expectations and plans, as well as to gather feedback from the market. The ODE took place on 6 September 2017 in Brussels. All interested suppliers and parties will then arrange one-to-one meetings with interested partners to discuss the procurement.



RITMOCORE

RITMOCORE PPI - Arrhythmias monitoring and comprehensive care

Marcel Olivé Elias and Esther Arévalo de Andrés,
Agency for Health Quality and Assessment of
Catalonia (AQuAS) (Spain)

RITMOCORE builds on the experience of the STOP&GO Project to address the evolution of the treatment of elderly patients who use or who are in need of a pacemaker (PM). The goal is to reduce in-hospital visits and to improve patients' quality of life through effective use of ICT and coordination of care processes.

Despite the benefits reported in several studies, the European Society of Cardiology survey (2015) shows that remote monitoring (RM) was only available for 22% of PM patients. Reimbursement for RM is perceived (83%) as a major barrier to large-scale adoption, as are technical barriers and workload issues (13% each).

To overcome this, RITMOCORE moves from purchasing devices to purchasing a service, in which the necessary ingredients to implement the new care scheme can be encapsulated and combined to complement the resources that not easily available into the care system. The main pillars of the service are: Remote Monitoring of pacemakers, Patients Activation; Coordinated Care and Risk Sharing models.

AT A GLANCE

Programme:	Horizon 2020
Duration:	01.11.2016 – 31.12.2020
Main outcome:	Reduction of in-hospital visits and Improvement of patients' quality of life through effective use of ICT and coordination of care processes.
Website:	www.ritmcore-ppi.eu

RITMOCORE aims to i) contribute to awareness of public procurement to boost ICT innovation applied to active and healthy ageing; ii) contribute to an open and comprehensive socio-economic evidence base for ICT investments in the field that can support the development of sustainable business models; and iii) provide data to regulatory and legislative processes to inform policy measures that foster the take-up of ICT solutions.

Prior Information Notice will be published shortly in the OJEU, and it will be followed by the information concerning an Open Market Consultation procedure.



COMPLETE

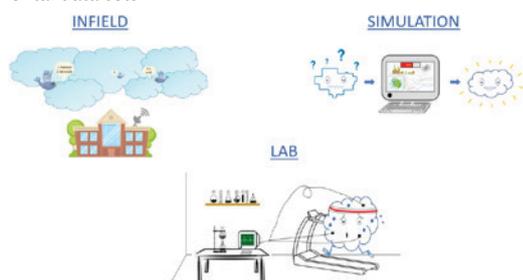
Cloud-MicroPhysics-Turbulence-Telemetry

Daniela Tordella, Politecnico di Torino (Italy)

Understanding cloud behaviour is fundamental to weather prediction and climate modelling, which justifies the need for more explorative observation. The COMPLETE project will contribute to closing the knowledge gap, allowing young researchers to develop their scientific competences specific to this research field as well as key professional skills applicable to both the academic and industrial environments.

Clouds represent the largest source of uncertainty in weather prediction and climate modelling. This is rooted in the fact that clouds depend on physical and chemical processes over a huge range of scales, from the nucleation of droplet at the nanoscale, to the collisions of micro-sized droplets, to airflow dynamics on the scale of thousands of metres.

The mathematical treatment of multi-scale phenomena is currently very difficult. Any improvement depends upon the availability of precise experimental data sets.



AT A GLANCE

Programme:	H2020-MSCA-ITN-2015 Marie Skłodowska Curie Action
Duration:	01.06.2016 – 31.05.2020
Main outcome:	To develop an inter-multidisciplinary training network to prepare high-potential researchers that will advance our understanding of cloud physics
Website:	www.complete-h2020network.eu

The research objective of COMPLETE is to establish connections between events occurring on various scales. Additionally, the project aims to develop an international and multidisciplinary training network that will prepare researchers with both scientific and industry-oriented skills in order to advance our understanding of these multi-scale complex natural phenomena. The training programme will combine the scientific investigation of specific aspects of cloud physics and related turbulent dynamics with training in key professional skills. This includes an exceptional experimental programme, including in-field and laboratory experiments, numerical simulations, the design and development of advanced fast temperature probes, velocity micro-electronic and mechanical devices, and innovative atmospheric mini green expandable radio-probes; all are aimed at the production of new datasets required to reduce the fragmentation of results and knowledge in this field.



INSPIRE

Procurement of Innovation – How INSPIRE Academy addressed the confidence of public procurers

Rossana Alessandrello, Suzan Ikävalko,
AQuAS – Agency for Health Quality and Assessment of Catalonia, Nordic Healthcare Group (NHG)
(Spain, Finland)

INSPIRE received funding from the EU FP7 programme, and was implemented over two years, ending in October 2015. Its main objective was to 'inspire' public procurers in both the healthcare and social services sectors towards the adoption of the procurement of innovation. During the project, different initiatives were carried out by the partners; coordinating entity NHG, AQuAS, BITECIC, The European House Ambrosetti, Resah IDF and BBG. Outcomes included the generation of hands-on material for practitioners (toolkits and manuals), the generation of materials for policy makers (analysis of innovation procurement practices and recommendations for its wider adoption) and the active engagement of public procurers and investor communities through the organisation of workshops across Europe (Helsinki, Vienna, Milan, Barcelona, London and Paris). At the end of the project the INSPIRE Academy was able to share its knowledge and materials with European public contracting authorities, venture capitalists, industry players, academia and research organisations.

Needs Assessment, Open Technical Dialogue and Business Case Modelling were identified as the basic pillars for the successful public procurement of innovations from the practitioners' perspective. From the policy makers perspective: national action plans orientating funding incentives to public

AT A GLANCE

Programme:	Seventh Framework Programme - FP7
Duration:	01.10.2013 - 30.09.2015
Main outcome:	Strengthening innovative procurement strategies in eHealth, active aging and independent living
Website:	www.inspirecampus.eu

procurers and providing coordination support to public procurers engaging in public procurement of innovations were identified as successful practices to incentivise their wider deployment.

As a project result INSPIRE consortium members also initiated several concrete innovative procurement actions such as:

- * Smart Ambulance SAEPP:
<http://www.smartambulanceproject.eu/>
- * EIPonAHA Procurement Platform:
https://ec.europa.eu/eip/ageing/public-procurement-platform_en
- * PRO4VIP
<http://www.pro4vip.eu/>
- * ANTISUPERBUGS PCP
<http://antisuperbugs.eu/>
- * RITMOCORE PPI
<http://www.ritmocore-ppi.eu/>



RELIEF PCP

How to innovate in the chronic pain field

Patricia Martínez Galisteo and Laura Sánchez,
Bravosolution España (Spain)

RELIEF is a H2020 project (GA n° 689476) coordinated by BravoSolution Spain, which is a leading group focused on strategic procurement processes.

The main objective of the project is to prepare and execute a Pre-Commercial Procurement tender to find innovative ICT solutions that improve the self-management of chronic pain patients.

The project has received funding of almost 2 million euros and is composed of 6 partners from Spain, France and Sweden, of which three are public health procurers (Servicio Andaluz de Salud – SAS in Spain, Réseau des Acheteurs Hospitaliers – RESAH IDF in France and Uppsala County Council – CCU in Sweden); additional supporting partners are the Hospital Federation of France – SPH Conseil and one Research Group from the Open University of Catalonia – UOC.

During the first year of the project, the RELIEF consortium has worked on validation at the buyer group level of the common unmet needs to accurately define RELIEF's common challenge: How to improve the self-management of chronic pain patients?

AT A GLANCE

Programme:	Horizont 2020
Duration:	01.12.2015 – 30.11.2019
Main outcome:	The design, research and development of a data-driven, Internet-of-Everything (IoE) platform for European cities to enable large-scale co-creation, testing and validation of smart city apps and services
Website:	www.select4cities.eu



After that, several activities were conducted to present the RELIEF PCP challenge to the eHealth industry to obtain their feedback regarding the PCP tender procedure and the common unmet needs. These Open Market Consultation Activities have served to redefine both the RELIEF challenge as well as some PCP tender aspects to be more in line with the expectations and the feasibility assessment of the supplier's side.

After that, the RELIEF consortium undertook a detailed elaboration of the PCP call for tender documents.

Finally, the RELIEF PCP Tender was launched on 5th July and remained open until 15th September 2017.

The evaluation process ended last 24th November with a result of 7 awarded tenderers. The RELIEF consortium is currently involved in the first phase of the RELIEF PCP which started on the 27th of November 2017.

The RELIEF PCP tender and other innovative procurement actions, which are totally oriented towards bringing together both offer and demand, are necessary and are an opportunity to boost the innovation and

modernisation of public administrations as well as supporting companies in the development of solutions based on real needs.

All information relating to the RELIEF PCP tender can be found at <http://relief-chronicpain.eu>

@RELIEFprojectEU



EPP-eHEALTH

A platform to transform adoption of eHealth

Laura Sánchez Alonso, BravoSolution Spain (Spain)

The application of eHealth in healthcare systems is a powerful tool to increase the efficiency and improve the quality of healthcare services, and to stimulate innovation in the healthcare related industry. However, innovation demands continuous financial support and, in recent years, public investment has gradually decreased. At the same time the medical technology industry needs sufficient demand to maintain investment rates. Thus, healthcare services and industry need to act in a coordinated way to ensure that investment in innovation is profitable.

Public Procurement of Innovative solutions (PPI) can stimulate the supply chain to invest in greater developments and innovations to meet the exact needs of an organisation. The European Commission supports the efforts of those who seek to develop and boosts the use of PPI funding projects such as EPP-eHealth.

The EPP-eHealth project aimed to mobilise the procurement power of healthcare institutions and major companies to help accelerate progress towards the deployment and market uptake of eHealth solutions. The approach to mobilise such procurement power was to develop Joint Statements of Unmet Needs that demonstrate a common need for new solutions. These were then communicated to potential solution providers (through a process known as 'market sounding') with the aim of creating dialogue that resulted in new solutions becoming available to public procurers to cover their unmet needs.

AT A GLANCE

Programme:	Horizon 2020
Duration:	01.01.2015 - 31.12.2016
Main outcome:	Network and platform for procuring organisations in eHealth
Website:	www.innovationinhospitals.com/index.html

The EPP-eHealth network was formed by a core group of procuring healthcare institutions: Andalusian Health Service -SAS, Madrid Health Service -SERMAS, Region Zealand and University Hospital of Krakow, coordinated by BravoSolution, that expanded through engagement and regular dissemination actions.

The EPP-eHealth network invites other organisations across Europe to join it and to lend their support to the broad communication of the Joint Statement of Unmet Needs. Healthcare institutions operating in a cooperative manner have the collective power to create a lead market for new solutions through their procurement functions and these can subsequently be adopted by others in the wider healthcare arena. The results of this project have been communicated to the EC as reference to create future H2020 calls. Periodical updates will be submitted as well to feed future calls.

Find out more information about the network and the EPP-eHealth results via the project website.



SPICE

Support Procurements for Innovative transport and mobility solutions in City Environment

Piia Karjalainen, City of Copenhagen and ERTICO – ITS Europe (Denmark / Belgium)

SPICE starts with the collection of current best practices in public procurements for sustainable transport projects with a focus on:

- Alternatively fuelled vehicles and infrastructure;
- Intelligent Transport Systems (ITS);
- Mobility services
- Other sustainable transport services

SPICE studies such practices and identifies legal and technical challenges for public procurements to support innovative solutions. Based on the analysis of the results, SPICE develops recommendations for more innovative public procurements. Towards the end of the project, SPICE will organise trainings and capacity building events to assist public authorities in the implementation of these recommendations.



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The work in the project will be supported by the SPICE Stakeholder Group, a multi-sector network where stakeholders (public procurers, transport industry, and researchers) meet and discuss their needs and their expectations from public procurements, their experiences and lessons learnt, as well as their suggestions for future processes.

In addition, SPICE facilitates Common Buyer Groups, where buyers that

AT A GLANCE

Programme:	Horizon 2020
Duration:	01.09.2016 – 31.08.2018
Main outcome:	Collection of best practices in public procurement for sustainable transport and mobility projects, analysing and sharing recommendations, which help public authorities implement more innovative procurement practices and lead to more sustainable and efficient transport in Europe
Website:	www.spice-project.eu

share the same needs and plans for procurements can join together to pursue common procurements for their sustainable transport projects. The SPICE Common Buyers Groups can ultimately lead to more harmonisation between solutions, to larger volumes to procure and to a more cost-effective procurement (economy-of-scale). SPICE aims to ensure that during the project lifetime a number of groups are formed that go for a common procurement.



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SPICE
SMART PROCUREMENT FOR BETTER TRANSPORT

2017

PPI4HPC OPEN DIALOGUE EVENT 2017

Renata Giménez and Anna Molinet,
BSC, CEA/GENCI, CINECA, Forschungszentrum Jülich
(Spain, France, Italy Germany)

On 6 September 2017, the Open Dialogue Event was held in Brussels. Main vendors of HPC technology and the leading European HPC centres gathered for the first time in order to execute a joint Public Procurement of Innovative Solutions (PPI).

The objective of this PPI is to buy innovative, high-performance supercomputers and/or innovative high-performance storage systems. The participating European centres in this project are BSC (Spain), CEA/GENCI (France), CINEA (Italy) and Forschungszentrum Jülich (Germany).

In its communication on the “European Cloud Initiative” the European Commission, in April 2016, stressed the need for building a European Data Infrastructure including high-end supercomputers, which will, by around 2022, reach the exascale performance level.

An exascale computer is typically defined as a computer that is capable of executing 10^{18} floating-point operations per second. The co-funding by the European Commission (EC) will allow for a significant enhancement of the planned supercomputing infrastructure from 2019 and pave the way for future joint investments in Europe. The total investment is planned to be about € 73 million. The participating HPC centres have a strong track record in providing supercomputing resources at the European level. The project participants are founding members of PRACE and have made Tier-0 systems available through PRACE.

During the event in Brussels, vendors had the opportunity to learn more about the objective and the process of the PPI as well as the particular needs of each partner. The topics covered were the procurement process, the technical requirements (in which specific requirements were detailed), and the next steps. The vendors had the chance to ask and comment about any further details concerning the process. More detailed information can be found at the PPI4HPC website.

Following this first encounter, the next step is to meet on a one-to-one basis with vendors in order to find HPC solutions for the European

partners. During these meetings, the vendors and the partners will discuss procurement more specifically.

“This project allows for even stronger European collaboration in shaping a world-class infrastructure for high-performance computing for science in Europe,” says Prof. Dirk Pleiter, coordinator of PPI4HPC. “This will prepare the next big step towards exascale computing.”

These systems are expected to be deployed in the period 2019-2021. In combination, these systems are expected to power a wide range of applications, including traditional HPC applications, HPDA and AI. They are also expected to be used for common innovation topics.

Once the project is finished, more supercomputing resources will be available for science and engineering applications in Europe and R&D in relation to HPC architectures and technologies will be strengthened.

www.ppi4hpc.eu



focus europe

Spotlighting European Developments and Projects

Special edition on Innovative Public Procurement

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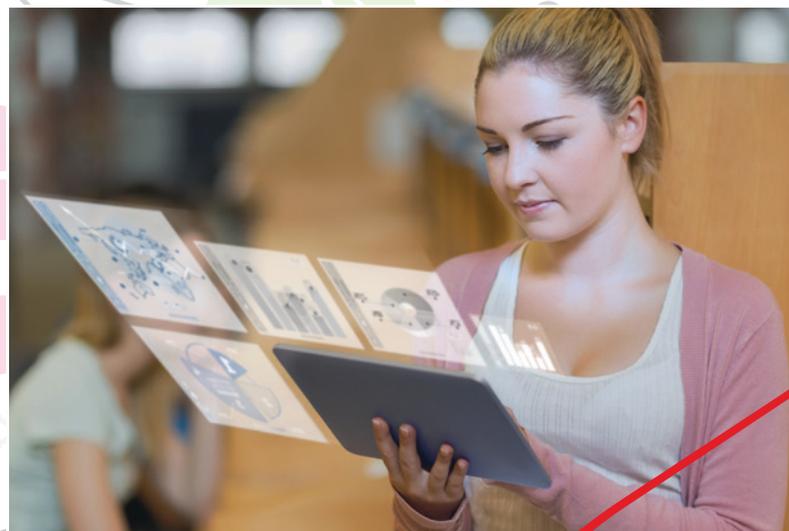
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