

# **Network of National Construction Technology Platforms**

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## **PRESENTATION**

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This is newsletter No.12 of the network of National Construction Technology Platforms or similar National organizations in some European countries.

This network aims to promote synergies on R&I in the construction sector among these countries, in collaboration with ECTP ([www.ectp.org](http://www.ectp.org)) and the European Commission.

Up to now, there are contacts between this network and 17 countries (Austria, Belgium, Cyprus, Denmark, France, Germany, Greece, Hungary, Italy, Lithuania, Norway, Poland, Portugal, Slovenia, Sweden, Spain and UK) and some occasional contacts in other countries.

This Newsletter No.12 includes contributions from:

- DG Move on the Collaborative Innovation Clouds
- ECTP General Secretary on the ECTP and NTPs network
- ECTP Materials & Sustainability committee on the FP9 2021-2027 Position Paper
- Portuguese NTP on the 6<sup>th</sup> Strategic PTPC Forum
- Spanish NTP on 10<sup>th</sup> PTEC workshop and 14<sup>th</sup> PTEC conference

During 2017, the construction NTPs network has been working on:

- Enlarging the number of contact persons and countries in this network.
- Interacting with ECTP
- Organizing two webinar meetings of the network, in March 20<sup>th</sup> and November 23<sup>th</sup>, respectively. In the last meeting, there were representatives from ECTP, Austria, France, Germany, Greece, Italy, Norway, Spain and UK.
- Editing and distributing Newsletters No.11 (June 2017) and No.12 (December 2017).

After three and a half years of this NTPs network, the Spanish Construction Technology Platform PTEC has to leave the coordination.

However, PTEC wishes the continuation of this network as a way to add value to ECTP strategies and initiatives linked to Member States for the sake of the innovation in the construction sector.

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## EUROPEAN COMMISSION



### The Collaborative Innovation Clouds

The Collaborative Innovation Clouds were a series of events aimed at assessing major advances in key areas of Freight Transport and Logistics and Transport Infrastructure. The objective of these events was to consolidate progress and draft future visions and plans, as well as to facilitate collaboration and cross-fertilization among the projects.



Results of the thematic workshops have been presented in final conferences addressing a wider attendance and are aimed at enhancing awareness of the progress made in the sectors and at fostering further exploitation and implementation of research results.

<http://collaborativeinnovationdays.eu/>

The Final conference on Transport Infrastructure Cloud was organised in October 23rd, 2017, in Cologne, Germany, just before the Infravation annual event. The programme of this conference included:

- Introduction. Robert Missen, European Commission DGMOVE.
- Objectives and Expectations of the Infrastructure Cloud. Steve Phillips, CEDR
- Wrap up of the 1<sup>st</sup> workshop on Infrastructure Cloud - Construction and Maintenance. Ruud Smit, Rijkswaterstaat
- Panel discussion on Construction and Maintenance. Ursula Blume, BAST; Thierry Goger, FEHRL; Jon Aurtenetxe, TECNALIA; Manfred Haider, AIT.

- Wrap up of the 2<sup>nd</sup> workshop on Infrastructure Cloud - Operation and Services. Ewa Zofka, ERICA Consulting
- Panel discussion on Operation and Services Martin Boehm, AUSTRIATECH; Christophe Nicodème, ERF; Karin De Schepper, EIN
- Parallel session on Strategic cooperation between infrastructure managers of all modes and industries. Miguel Segarra, ENCORD.
- Parallel session on cohesion between research and training networks. Prof. Francesca La Torre, University of Florence

The presentations of this conference are available at:

[http://collaborativeinnovationdays.eu/Infrastructure\\_1st/presentation.html](http://collaborativeinnovationdays.eu/Infrastructure_1st/presentation.html)

A report on the results from the Collaborative Innovation Days is under preparation by DG Move

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## **ECTP**

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### **ECTP and NTPs Network**

The ECTP network of National Technology Platforms (NTPs) was re-launched in 2014, under the coordination of PTEC, the Spanish NTP, and with the full support from ECTP. Over the past years, it has been growing and active at various levels. Growing up to including at present representatives from 17 countries throughout the EU 28, and with a new representative having recently joined (Nobatek, as French NTP).

Active in dissemination of European R&I news and EC project results – through the continuous organization of webinar meetings, local events in different EU countries, and the publication of several newsletters per year.

It has played a key role too in stimulating exchanges of information between NTPs on national programmes, best practices, feedback on experiences, etc. It has contributed as well to the elaboration of strategic research agendas of ECTP Committees, typical examples being its recent involvement and commitment to the REFINET project and the Infrastructure & Mobility Committee roadmap, or its role in the prioritization of R&D topics on energy efficient buildings.

This NTPs network is characterized by a variety of actors with different status, structures, activities, achievements. It is still instrumental in nurturing or strengthening the connections that ECTP, beyond all European stakeholders being ECTP members, can establish at a National level, as well as regional and local levels, so as to erect bridges with authorities (like regions, cities, etc.), industry players, SMEs, all who have close links with each specific NTP member of the network.

To reinforce the link between ECTP and its network of NTPs, the network coordinator, PTEC, was invited as an observer for ECTP Steering Committee meetings in Brussels, to ensure feedback and enhance collaboration between the two entities.

The coming months in 2018 will reveal essential in the preparation of FP9, the successor of H2020, and as such, crucial to the ECTP so that the Construction and Built environment sector finds its appropriate place in the next European framework of Research, Development and Innovation.

It is about putting the spotlight on the ambitious vision of ECTP, which is a long-term provision throughout Europe of a high quality sustainable built environment, to the largest number of citizens, with the lowest environmental impact.

It is also about revisiting the objectives and prioritized actions of ECTP for the coming years; and about revitalizing the relationships among all the ECTP stakeholders (from academia and research centers to industry players and SMEs) and with stakeholders from districts, cities, regions, etc.

The NTPs network has an evident role to play in supporting ECTP along the way towards its revisited vision and roadmap, by intensifying constructive exchanges with and contributions to the ECTP so as to move towards an effective and innovative framework for construction R&D&I, integrating European, national and regional research businesses.

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## FP9 2021-2027 Position Paper

### Introduction

The current EU RTD Framework Program, Horizon 2020, will run until the end of 2020. Discussions and preparations for the next (9<sup>th</sup>) Framework Program, most likely to cover the period 2021 – 2027 are about to begin. As part of the European Construction, built environment and energy efficient building Technology Platform ECTP, it is the Material and Sustainability (M&S) Committee's goal to develop a common Vision and Strategic Research Agenda for all construction material stakeholders. This common view will serve as a starting point for future networking and R&D cooperations that will develop solutions helping to overcome societal challenges and to ensure that the construction material sector will, in the long-term, secure its competitiveness and sustainability. This Position Paper was consequently developed with the purpose to provide insight into those current and upcoming construction material related key-challenges that we strongly believe deserve to be addressed within FP9.

### Scope and approach

A dedicated working group was set up for the development of this paper. The group was formed from experts coming from industry and academia to ensure that a broad range of competences and experiences was covered.

The first step of the working group towards developing this roadmap was to identify key societal challenges which clearly need to be addressed over the next decade and where innovations in construction materials will make a difference. Climate change, circular economy

and resource preservation, competitiveness and economic viability, health and safety, and user comfort are the five key missions that were identified as the main drivers for action.

Chapter 3 of the position paper is on priority topics for FP 9 and is consequently centred on these 5 areas identified. It also addresses an additional mission dedicated to evaluate, to ensure and to valorise the performance of the new material related innovations for sustainable constructions. An FP9 implementation plan for the identified priority topics is suggested in chapter 4 on "Implementation".

The scope of ECTP is continuously evolving, and this is reflected by the scope of this position paper which is no longer limited to buildings: material-related missions for districts and cities are also addressed, as well as for infrastructures and solutions for the energy transitions and other applications.



*Materials for additive manufacturing in construction*  
Source: TECNALIA-IAAC

### Priority topics FP9 2021-2027

The priority topics for FP9 have been identified by the Working Group according with the following layout:

- Climate change
  - Reducing embodied energy in construction materials

- Contribution of construction materials to the reduction of energy demand and CO2 emissions of constructions in use
- Materials for the energy transition
- Circular economy and resource preservation
  - Waste hierarchy and circular economy
  - Material research for enhancing circularity and resource preservation
- Competitiveness and economic viability
  - Improving the efficiency of construction materials
  - Maximizing the efficiency of the construction process
  - Materials for reducing life cycle costs of constructions
- Health & safety
- User comfort
  - Optimal comfort of living
  - Well-being in the built environment
  - User experience
- Enabling robust and fast innovation in construction
  - Robust innovation in constructions.
  - Fast innovation in constructions



*Experimental platform located at the French National Institute of Solar Energy (INES) near Chambéry / France. The experimental platform is used for testing novel materials and systems, e.g. by the EU funded HOMESKIN project (<https://homeskin.net/>) in their development of thinner insulation systems and by other EU-funded projects*  
*Source: INES Platform*

## **Implementation**

The position paper includes a detailed plan for the proposed implementation at FP9 with early, mid-term and later stage priorities, to provide material related answers to the key societal challenges identified and discussed in this position paper.

The related timeline is the result of intense discussions amongst the working group members bringing in a broad range of competences and experiences. It goes without saying that the timeline builds on previous roadmaps, in particular on the multi-annual roadmap for the contractual PPP under Horizon 2020 “Energy-Efficient Buildings” and that it clearly reflects the Commissions’ previous and on-going efforts in funding a significant number of successful projects under the current EU RTD Framework Program Horizon 2020.

The full version of the M&S Position Paper can be downloaded at:

[http://ectp.ectp.org/cws/params/ectp/download\\_files/21D4112v1\\_ECTP\\_M&S\\_Committee\\_Pos.pdf](http://ectp.ectp.org/cws/params/ectp/download_files/21D4112v1_ECTP_M&S_Committee_Pos.pdf)

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## NATIONAL TECHNOLOGY PLATFORMS

### Portuguese Construction Technology Platform



#### 6<sup>th</sup> Strategic PTPC Forum. CLUSTER AEC “BUILDING THE PRESENT – CREATING THE FUTURE”

Last October, the Portuguese Construction Technology Platform presented, at its 6th Forum, the newly created *Cluster AEC - Architecture, Engineering and Construction*, its strategy and projects to be developed by 2020, as well as its alignment with the principles and concepts of Industry 4.0 and Circular Construction.



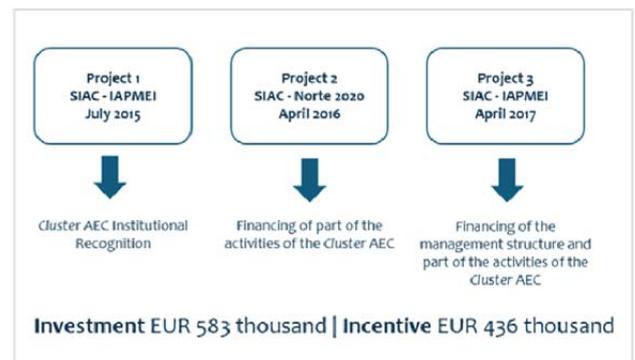
The session, which had more than 100 participants, was held in the auditorium of the Rectory of the Universidade Nova de Lisboa.

The key lecture “Digital Construction, Building the present – Creating the Future” was presented by Eng. Menno de Jonge (Director Digital Construction of Royal BAM Group - The Netherlands) who spoke about the current trends of the Construction industry and showed what Royal BAM is doing regarding digital construction.

The Board Members of PTPC presented the Mission, Vision, Strategic Objectives and Axes of Performance, Representativeness,

Performance Goals, Governance Structure and the *Cluster AEC Strategy 2017-2020*.

With regard to the Strategy, the projects proposed in the scope of the Cluster were highlighted, focusing on the areas of rehabilitation, innovative public procurement, smart and sustainable cities, innovation and competitiveness in future building sites, forecasting and modeling of the evolution of the coastline, infrastructures of transport, protection in earthquakes, development of materials with reduced environmental impact, innovation in information management systems (BIM, GIS) and standardization, as well as planned and already partially implemented activities under new applications.



The event includes a presentation of the project to create a Construction and Demolition Waste Management Agency (EG RCD).

It was also included in this event the "BIM Excellence Award 2017" Ceremony, which aims to promote BIM implementation at the national level through the dissemination and promotion of good practices. The company A400, Designers and Engineering Consultants, Lda., in the category of "Simulation and Design", and Teixeira Duarte, Engenharia e Construções, S.A, in the category of "Construction and Coordination" were winners.

### Cluster AEC Activities

1. *Strategic plan for innovation and competitiveness 2030 for the AEC sector*
2. *Technological surveillance observatory*
3. *Umbrella brand, associated with AEC Cluster - Architecture, Engineering and Construction*
4. *Dynamization, consolidation and sustainability of the AEC Cluster at national and international levels*
5. *Promotion of national and international interclusterization actions*
6. *Promote the participation of members in Horizon 2020 and FP9 projects*
7. *International Conferences*
8. *Promoting exchanges between businesses and the research and higher education community*
9. *Strategic plan for innovation and competitiveness 2030 for the AEC sector*
10. *Technological surveillance observatory*
11. *Umbrella brand, associated with AEC Cluster - Architecture, Engineering and Construction*
12. *Streamlining, consolidation and sustainability of the AEC cluster at national and international levels*
13. *Promotion of national and international interclusterization actions*
14. *Promote the participation of members in Horizon 2020 and FP9 projects*
15. *International conferences*
16. *Promoting exchanges between enterprises and the research and higher education community*



At the roundtable with the same theme of the Forum "*Building the Present - Creating the Future*", moderated by Dr. Paulo Sande (CIDOT, Communication Studios), participated several guests with experiences in innovation and participation of different sectors: president of the building regulator institute - Dr. Fernando Silva, IMPIC; representative of the real estate company - Dr. Almeida Guerra, CEO of Rockbuilding; automotive industry representative - Eng. José Henriques, CEO of Boxplot Management Consulting Services; Startups representative - Dr. Miguel Fontes, CEO of Startup Lisboa; and Rita Moura, President of PTPC and Cluster AEC, representing Teixeira Duarte.

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## Spanish Construction Technology Platform



The Spanish Construction Technology Platform PTEC organises dissemination events to contribute to the promotion of the innovation in the construction sector.

Workshops are organised twice per year in order to exchange experiences on innovation between PTEC members. Speakers are coming from PTEC and there are invited speakers that do not belong to PTEC. Participants used to be between 30 and 70 and a relevant part of the workshop is oriented to the debate between participants.

Conferences are also organised twice per year in order to interact between all interested stakeholders on innovation with participation of 120-170 persons. These conferences include about 10-12 invited presentations and an exhibition of R&I projects in posters.

In October 18<sup>th</sup>, 2017, 10<sup>th</sup> PTEC workshop was organised on the Innovation in the construction processes in order to reduce accidents of the workers at the construction sites. They were presentations on research developments carried out by research organizations as IBV, Cimne, Eurecat, Itainnova and Cartif. Then, there were presentations on innovations by companies as Acciona, OSSA, Eiffage, SIMA, Ferrovial, and Dragados.



During the colloquium, several items were covered regarding training and education, health of the workers, applications of ICTs to

construction processes and innovation strategies at construction companies in order to reduce the numbers of accidents.

In November 21<sup>st</sup>, 14<sup>th</sup> PTEC conference was organised in Madrid with the collaboration of the Institution of Civil Engineers (*Colegio de Ingenieros de caminos*) and with 170 participants. Members of the Organising Committee were Cemosá, Dragados, Ferrovial & Institution of Civil Engineers, Ineco, Sacyr, Tecnalia and Vías.

The Opening session of this 14<sup>th</sup> PTEC conference was chaired by the General Secretary of Infrastructures and the Closing session by the R&I State Secretary, both from the Spanish Government. The key lecture by Arup during the Opening session dealt with Fast Forward –Rethinking mobility in times of disruptive change.



The 1<sup>st</sup> session on R&I strategies in transport infrastructures includes 5 presentations:

- Innovation in harbours. Puertos del Estado
- Innovative Public Procurement. Town Hall of Madrid
- R&I projects on roads/railways. Tecnalia
- Hyperloop: the transport of the future. Zeleros
- The future of R&I in transport infrastructures by ECTP. Dragados

The 2<sup>nd</sup> session on innovations applied in design, construction sites and services included 8 presentations:

- Innovation through CEF. Ministry of Fomento
- BIM in transport infrastructures. Ineco
- Durability case studies (bridges, harbours, etc.). CIMNE
- Innovations at Crossrail project. Ferrovial
- Cable-stayed bridge. Sacyr

- Innovation in maintenance. Cemosa
- Integrated control centre for a concession company. OHL
- Data capture for infrastructures management. Ingeniería Insitu



During the conference, there was an exhibition of posters with 26 R&I projects on transport infrastructures.

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