

# Construction Platform ECTP: Strategic Agenda “Monitoring and assessment in the strategic plans of ECTP agenda”

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## Abstract

The paper makes a brief presentation of the European Construction Technology Platform (ECTP), of the strategic research agenda and about monitoring and evaluation of its strategic plans. It also features achievements and prospects in research and development activities of the private company SC CEPROCIM SA from building materials area.

**Keywords:** ECTP, strategic research agenda

## 1. European Construction Technology Platform

The European construction sector, representing some 10% of GDP and one quarter of industrial output, is the largest industrial cluster in the EU and supplies our living and working infrastructure. The European Construction Technology Platform (ECTP) will take the construction sector to a new high level, by identifying and analyzing the major challenges that the sector faces in terms of society, sustainability, technology, etc. and by developing strategies for how to address these challenges in the coming decades, in order to fit the society needs.

The European Construction Technology Platform (ECTP) was created as answer of constructions sector at European society requirements. It is an open entity, led by industry, which act as an umbrella for research initiatives from Europe.

In the year 2005 was defined the document “Challenging and Changing Europe’s Built Environment - A vision for a sustainable and competitive construction sector by 2030”, known with abbreviation “Vision 2030”. Based on this was created the strategic research agenda (SRA), and its plan for actions implementation was adopted on 20<sup>th</sup> of June 2007, after the discussions from 2006 with European Commission. The strategic research agenda establishes objectives on long term and organize research actions which correspond both to the innovation required on market and of a vision on long term for a durable and competitive development of constructions sector until 2030. ECTP role is to maintain updated research strategy, depending on global, technological context and market force.

### 1.1. Strategic agenda

In order to fulfill the Vision 2030, the objectives and specific research targets take into account three essential aspects in constructions range: fulfillment of client/users requirements, putting into practice of the concept for constructions durability and transformation of constructions sector in an innovations image (reinvention of constructions process, based on

knowledge, at client’s request).

In this context, ECTP proposes the following priority objects of strategic research for 2007-2013:

- Technologies for Healthy, Safe, Accessible and Stimulating Indoor Environments for all,
- Innovative Use of Underground City Space,
- New Technologies, Concepts and High-tech Materials for Efficient and Clean Buildings,
- Reduce Environmental and Man-made Impacts of Built Environment and Cities,
- Sustainable Management of Transports and Utilities Networks,
- A Living Cultural Heritage for an Attractive Europe,
- Improve Safety and Security within the Construction Sector,
- New Integrated Processes for the Construction Sector,
- High Added-value Construction Materials

### 1.2. General Structure

The structure of the platform is illustrated in Fig.1.

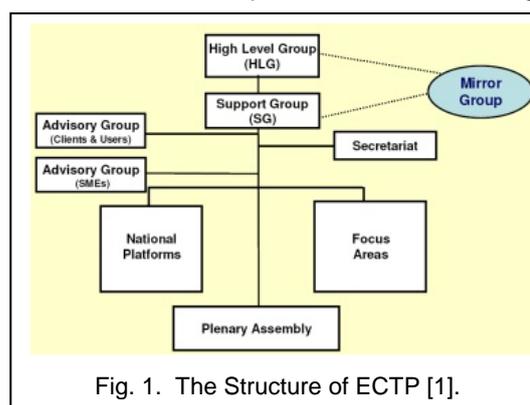


Fig. 1. The Structure of ECTP [1].

The ECTP gathers appropriate members necessary to achieve its Mission. The members come from a range of stakeholder organizations including, but not exclusively, those listed hereunder:

- Contractors, Materials and Equipment manufacturers
- Designers, Architects, Engineers

- Owners / Operators / Clients
- Users / Consumers
- Service and Technology Providers
- Research Centers and Universities
- Cities and Regions
- Financial Institutions

The Mirror Group is formed by representatives from the Member States and DG Research. It assures the link between the ECTP and Member States. The Chairman of the Support Group, the Secretariat and other SG members are regularly invited to participate in the meetings of this Mirror Group.

In order to reach the priority objectives within ECTP seven focus areas (FAs) are defined, these including themes and sub-themes: Underground Constructions, Cities and Buildings, Quality of Life, Materials, Networks, Cultural heritage, Processes and ICTs.

A huge effort is necessary in order to answer to research need and coordination of research efforts at European level. From this reason ETPC promoted creation of a network of National Technology Platforms (NTPs), through which to assure direct connection with the reality of each national constructions sector, with the authorities and standardization committees, a synergy between European projects and an efficient connection with many SMEs which form the biggest number of constructions companies from the area. Presently ECTP counts 131 members (from industry, research unities, associations) - 24 large companies, 13 small enterprises, 37 research centers, 30 universities, 27 associations). At national level 26 platforms for constructions are constituted, which, together with ECTP, put into practice the objectives established in the agenda of research strategy. Romania created its national platform since 2006. CEPROCIM SA became ECTP member from the year 2008.

The Focus Areas and the network of NTPs, as well as Advisory Groups (on SMEs and Clients/Users) and Working Groups (on Standards and Infrastructures), are animated and coordinated by a Support Group (SG). A High Level Group, gathering CEOs (or their representatives) of the various categories of stakeholders, endorses and orientates the work of the Platform. All categories of stakeholders participate to the work of the ECTP (more than 700 members registered today in the Collaborative Work Space of ECTP, without taking account of the members of the National Platforms who have to be added to this figure).

### 1.3. Monitoring and assessment in the strategic plans of ECTP agenda

Monitoring and evaluation of strategic plans ECTP book takes place both in the FAs and at the highest level. The leaders of each FA define the group's topics, organizational structure and meeting frequency. The outputs include specific proposals to the Support Group, contributing to the definition of the Vision 2030, Strategic Research Agenda, Priorities and Joint European Technology Initiatives. The main tasks are:

- Arrange discussion forums, workshops, etc.
- Formulate visions and strategies in coordination with HLG and SG
- Report to the Support Group

- Disseminate all deliverables
- Encourage and support proposals for projects and Joint European Technology Initiatives.

Implementation of this research strategy involves a combination between the collaborative research instruments and initiatives of a common technology, supported by an action plan which coordinates research priorities in constructions at European, national level, trans-national level. Projects proposals which are subject to constructions sector may be done within FP 7 (NMP / ICT / ENV / ENERGY /TRANSPORT / PPP EeB), EUREKA BUILD, COST etc. Some examples of actions in Urban and Transport Development subject to constructions sector that are developed within COST program, with Romanian participation:

- C 25 Sustainability of Constructions: Integrated Approach to Life-time Structural Engineering (until December 2010) Polytechnic University Timisoara
- TU0601 Robustness of Structures (End date: April 2011) – Technical University Iasi, Polytechnic University Timisoara
- TU 0701 Improving the Quality of Suburban buildings stock (End date: March 2012) - Polytechnic University Timisoara
- TU 0802 Next generation cost effective phase change materials for increased energy efficiency in renewable energy systems in buildings (NeCoE-PCM) (End date: April 2013) –SC CEPROCIM SA, National R&D Institute for Nonferrous and Rare Metals
- TU 0901 Integrating and Harmonizing Sound Insulation Aspects in Sustainable Urban Housing Constructions (End date: May 2013) –National Institute For Research And Development In Construction, Urban Planning And Sustainable Spatial Development “Urban-INCERC”

Such action like COST enhancing co-ordination of national R&D programmes & policies, overcoming fragmentation and creating an “internal market” for research, constitutes central axes of the ERA concept [2].

ECTP organizes annually conferences where information obtained in collaborative, trans-national projects or in common technological initiatives are disseminated, brokerage actions are made for projects proposals, and the projects are monitored.

ETCP launches and support a series of European initiatives such as: Energy Efficient Buildings European Initiative (E2B EI), steered by the Energy Efficient Buildings Association (E2BA) founded in November 2008, New Initiative on Infrastructures - ReFINE Research for Future Infrastructure Networks in Europe, or EUREKA.

## 2. Case study –Achievements and perspectives in research and development activities of CEPROCIM

CEPROCIM SA activates on market as private company of research-development in building materials range from the year 1996. Previously to this date, operated as state institute as different denominations: Institute of Studies and Design for Building Materials Industry (1949-1974), Institute of Research and Designing in Binders and Asbestos-cement Industry –ICPILA (1974-1990). In 60 years of existence, the company elaborated documentations and performed engineering technical services necessary for performing and operation of over 80 lines of cement manufacturing in

Romania and abroad (Egypt, Syria, Croatia, Philippines, Iraq, Turkey, etc)

Its competence area contains:

- Fundamental and applicative research in inorganic binders range (cement, lime, composite materials, restoration materials, etc.)
- Studies and investigations for environment protection, strategies, analyzes, technological measurements and of environment
- Technological and process audits for installations from building materials industry (cement, lime, plaster, glass, ceramic materials) and connected ranges
- Thermo-energetic and environment balances for manufacturers and users of thermal energy obtained through fuels burning
- Activities of engineering for works of investments and modernization in order to decrease the costs and facilities in operation.

Presently SC CEPROCIM SA perform at European standards activities of research-development innovation, consultancy and engineering for economical agents from inorganic binders range (cement, lime, plaster, binder composite materials) and from other ranges and also for national programs coordinated by National Authority of Scientific Research, for European programs, sector programs coordinated by Ministry for Economy and Finances or coordinated by other ministries. CEPROCIM participated in the period 1999-2010 at performing of over 70 national projects, from which in quality of coordinator at over 30 national projects.

As result of research-development activity, in the period 1990-2009 has obtained 14 patents and another two are in course of evaluation [3]. The examples are as follow:

- Patent no. 103422 – 01.05.1993 “Well for gases sampling“
- Patent no. 110228 - B1 – 30.11.1995 “Composition for Portland composite cement
- Patent no. 111448 – 1996 “ White Portland cement”
- Patent nr. 113035 – 29.12.2000 “Procedure of obtaining magnesium-spinelic bricks”
- Patent no. 122320 – 30.03.2009” Method of evaluation the standard resistance of the cements based on standard evaluation of cement strengths for the cements based on early hydration heat”
- Patent nr. 122636 – 30.10.2009 “Binder material of injection, for consolidation of plasters and constitutive layers afferent to support of mural pictures”
- Patent no. 9 – TPS/2009 “Topography of Schottky diodes on silicon carbide and diamond for applications of power and high temperature”
- Proposal no. A/00687/2008 “Portland cement obtained from unconventional materials”
- Proposal no. A /00187/ 2006 “Procedure of obtaining Portland cement“

Also, was rewarded with Gold Medal at the 35-th International Salon of Inventions, Techniques and New

Products, Geneva, 18 – 22 April 2007 for invention patent no. 122320 – 30.03.2009 “Method of evaluation for standard strength of cements based on early hydration heat” and with silver medal “Silver Medal at the 23-rd International Salon of Invention, Geneva, 3 April 1995 for invention patent no. 111448/1996 ”White Portland cement”

Unfortunately, the involvement company in international projects was lower, in the period 1999-2010 participating at development of 4 international projects: PHARE (1), NATO (2), and COST – action TU 0802 (from 2009).

In the company, physical and physical-chemical determinations, physical-mechanical testing on constructions materials (cement, lime, mortars on masonry, adhesives, clinker, ash, etc), physical-chemical tests on combustible wastes are determined within the accredited laboratories by national authority RENAR, endowed with performance apparatus.

CEPROCIM SA executes works regarding attestation of products conformity for constructions by third parties bodies of certification and inspection, RENAR accredited, national and international recognized.

It is involved in the activity of standards elaboration within technical committee TC 111 “Cement, Lime and Plaster” and also of the schemes for inter-laboratory tests for cement, adhesives and masonry mortar with international participation.

Another activity performed by CEPROCIM is to organize specialized conferences such as Conference on the Science and Engineering of Oxide Materials (CONSILOX), a traditional scientific conference of the specialists from science range and oxide materials engineering range which is developed once at four years. From the first edition, CEPROCIM (before of 1990 as denomination ICPILA) was co-organizer of the conference and from the VIII-th edition, from Alba Iulia, main organizer and sponsor. Also, CEPROCIM organizes the International Proficiency Testing Conference (2<sup>nd</sup> PT- Conf). This conference is addressed to suppliers of schemes for capability tests (Proficiency Testing – PT), specialists from the laboratories of analyses and tests worldwide and from all ranges (aggregates, chemistry, electrotechnics, food and food stuffs, environment, building materials, plastic materials, mechanics, metallurgy, microbiology, petrochemistry, lasers physics, plasma and radiations, soils, textile etc.). The aim is constituting of a forum where the participants from institutes, universities, laboratories, organizers of PT schemes worldwide, may compare their opinions and disseminate their knowledge, innovatory ideas regarding the organization and participation at tests schemes for capability (PT) and also at connection themes such as using of reference materials, incertitude of measuring, metrology and traceability, etc, once at two years.

Regarding on the perspectives on long and medium term of research and development activities of CEPROCIM, it must intensify effort to:

- strengthening of cooperation connections with partners from country and abroad for accessing of European funds;
- More active participation within organizations in which CEPROCIM SA is member.

## References

- [1] <http://www.ectp.org/>
- [2] Lesniak C., A vision of a European Research Area in Construction, in ECTP-E2BA Conference 2009 Innovation in Construction: Taking the lead in greening the future, Brussels, 24-25 November, 2009
- [3] [www.ceprocim.ro](http://www.ceprocim.ro)