EXPRESS

Mobilising Expert Resources in the European Smart Systems Integration Ecosystem

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Smart Systems affect every walk of life. They are bringing diagnostic instruments to clinics. They are bringing automatic safety systems to cars and public transport. They are becoming embedded into consumer goods, into the networks that power and inform society, and they are underpinning the efficient provision of public and private services. Increasingly they sense their surroundings, operate autonomously and collaborate with other Smart Systems.

Smart technologies promise to break the "faster, smaller, cheaper" whirlpool that has for decades now characterised hi-tech commerce and forced the migration of commodity manufacture towards low-cost economies.

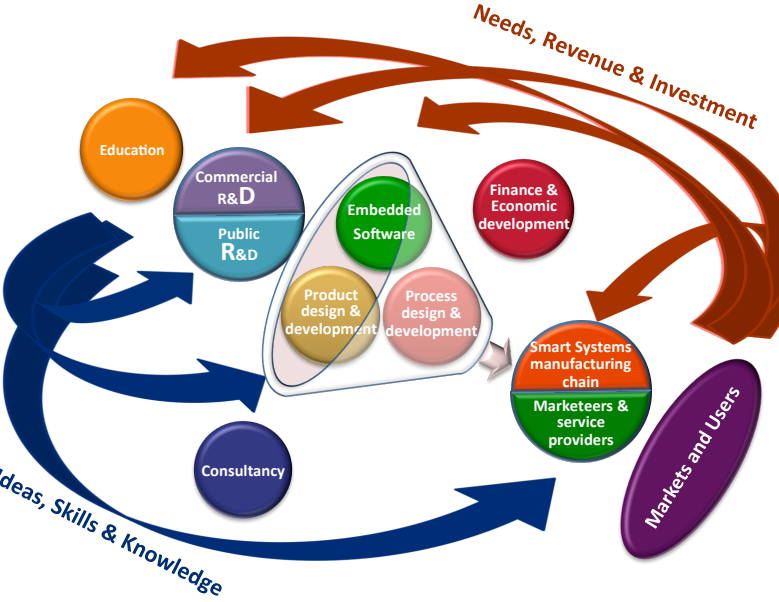
The reason for this potential break is that Smart Systems extract and condense human skills and knowledge to add not only functionality but also value into products: value that is the skills, knowledge and historical genius of European culture.

A stand-alone Smart medical diagnostic instrument encapsulates the skills and expertise of a whole laboratory to provide value far in excess of its component parts. Likewise Smart safety systems and Smart networks deliver a wealth of expertise, care and attention continuously, tirelessly and invisible to the user.

Smart Systems Integration (SSI) is a set of technologies that build products from components, that combine functions in products and systems, that connect and network systems to other systems, and, importantly, enable systems to receive and store a "knowledge base" – the software that makes them "Smart".

Bringing this set of technologies together is far more ambitious than the "faster, smaller, cheaper" objectives of the past.

It needs a concerted effort from education, and on through research and development, product design and manufacture, all the way to the development of new business models and markets: a whole **"Ecosystem"** to nurture competitive advantage for the European Smart Systems community.



EXPRESS is a project funded by the European Commission to examine and accelerate the adoption of Smart Systems Integration in Europe, and as a result to gain global leadership and societal benefits in this fast-developing field.

EXPRESS underpins and promotes the strategic objectives and priorities of the European Technology Platform on Smart Systems Integration (EPoSS), whose Strategic Research Agenda (SRA) is foundation and key resource for a strategy towards a strong, competitive and sustaining European Smart Systems Integration Ecosystem.

EXPRESS receives funding from the European Commission's 7th Framework Programme (FP7/2007-2013) under Grant Agreement No. 610551.

Mission

The mission of EXPRESS is to accelerate the adoption of Smart Systems Integration in Europe, and as a result to gain global leadership and societal benefits in this fast-developing field.

Vision

Europe will become a fertile region for the sustained innovation and development of Smart Systems.

This will be achieved through technological, political and economic engagement to encourage and enable industry, research, investors, educators and user communities to work together to understand and reap the opportunities and benefits of Smart Systems Integration.

Together, these groups will recognise the urgency to act in concert on Smart Systems Integration development and innovation to enable Europe to achieve global leadership in a fast-changing world, and to achieve high economic growth and competitiveness in both products and services.

Abstract

The aim of EXPRESS is to support the development of an Ecosystem for Smart Systems Integration in Europe. In this context, ecosystem is defined as a sustaining environment to promote economic growth, skills growth, and growth in industrial capability and global competitiveness, fuelled by the extension of knowledge, the ambitions of innovators and the business and societal needs of the community at large. The ultimate aim is to accelerate the adoption and thereby bring forward the rewards of Smart Systems Integration.

Partial ecosystems exist in the form of national and regional groupings of business and public research actors, special interest groups, knowledge transfer networks, research collaborations, and the tiered supply chains of major industrial players. These groupings, although many of their members have relevant resources, are not yet marshalled to push EU capabilities in what is becoming a dominant and global industrial arena in the run-up to 2020.

EXPRESS will

- identify the existing strands of capability in groupings and value chain players from research to the marketplace,
- examine the gaps to be bridged and
- create strategies and tools to complete the eco-cycles of skills>research>investment>innovation>exploitation> re-investment that are vital if the economic opportunities and societal benefits of Smart Systems Integration are to be realised.

EXPRESS will also ally itself to other programmes and apply the experience of the extensive EPoSS membership, which has been translated into actions such as the Joint International Master in Smart Systems Integration funded under the Erasmus Mundus M.Sc. programme.

This experience and capability will be deployed in tandem with the outputs of the CSA IRISS, which include a description of the activities and scope of players along the value chain; a Strategic Research Agenda; evidence of global capabilities; and an understanding of the valuable contributions to be made by SMEs.

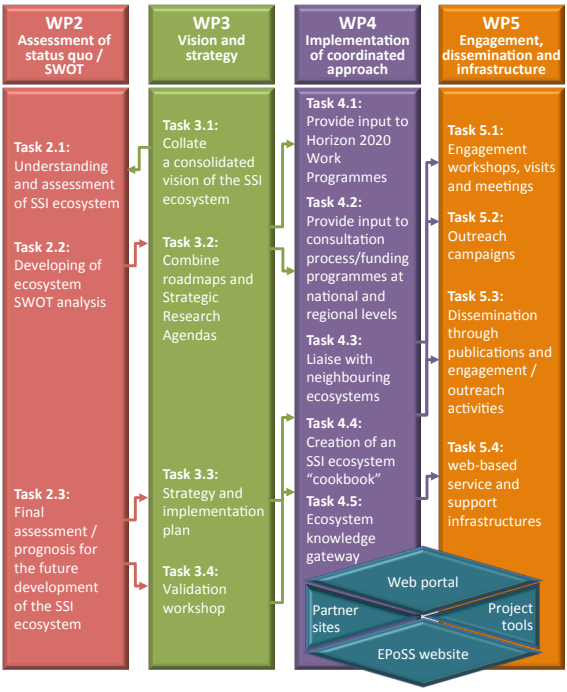
The consortium of EXPRESS consists of 8 organisations from 6 European countries, representing major Smart Systems clusters from regions across Europe, the membership base of which together amounts to some 10,000 organisations, mostly companies, and more than 60 % of which SMEs.

Additional expertise, commitment to the mission of the project and channels to Smart Systems players are brought in by 15 associated partners from 10 countries, representing also Smart Systems communities outside Europe, including those from the US, Australia and Taiwan.

Furthermore, the EPoSS Executive Committee is involved as the advisory board of the project. The group is made up of some 20 leading SSI companies from 10 countries in Europe and of major public and private research institutes from 7 European countries.

Structure & Work Packages

The work in EXPRESS is organised in four thematic work packages (WP2-5) supported by a work package dedicated to the management of the project. These work packages are interlinked and refer to each other as shown in the diagram below.



WP2: Assessment of status quo / SWOT

WP2 commences the work of EXPRESS by providing a basis for the other work packages through an assessment of the status quo of the SSI ecosystem in Europe in terms of industrial competitiveness and innovation capacity. This involves examining organisations, clusters, roadmaps, and the dynamics of performance from education through the value chain to markets, noting best practice, gaps, needs and opportunities. The initial assessment will be validated and refined by the involvement of the wider community in SWOT and focus sessions. In its final phase WP2 will undertake a second assessment to provide a

projection for the future of the ecosystem and the necessary actions to accelerate its development.

WP3: Vision and strategy
This work package sets off with the formulation of a vision for the SSI ecosystem in Europe so as to set the frame for the further work in the project. Following this, it will build upon the EPoSS SRA to encompass relevant content from other SRAs adopted by the ecosystem players identified in WP2, to provide a consolidated resource for use across the SSI ecosystem. The third key activity of the WP is to develop a strategy and implementation plan for the SSI ecosystem, based on the vision, the assessments, SWOT and refinements of WP2 and the consolidated SSI ecosystem SRA. The strategy and implementation plan will be presented for validation with the advisory board, then handed over to WP4 for implementation.

WP4: Implementation of coordinated approach
This work package is responsible for implementation of the deliverables of WP3. A multi-strand approach will see the consolidated SRA and strategy appropriately transformed as input to Horizon 2020, to consultation processes and funding programmes at national and regional level, and for use as the basis for collaboration with other ecosystems. A very practical "cookbook" for best practice transfer and multi-level collaboration will be created, and a sustainable SSI ecosystem knowledge gateway will be implemented within the EPoSS web platform.

WP5: Engagement, dissemination and infrastructure
This work package will go beyond the traditional dissemination activity of publishing and presenting results. It is split into 4 tasks. The first sets out to stimulate and create benefits from engagement at all possible levels between players within the ecosystem and with other ecosystems. The second task will reach out to new players, the wider public and public authorities. The third comprises the multi-strand dissemination of project findings and recommendations. The remaining task underpins the overall project in that it provides the necessary web-based service and support infrastructures and advanced ICT to act as a public introduction to the project, to host and link to the knowledge gateway to be developed in WP4, and to provide enhanced communication and interaction within the project.

Fact Sheet

Project Acronym	EXPRESS
Project Full Title	Mobilising Expert Resources in the European Smart Systems Integration Ecosystem
Grant Agreement No.	610551
Theme	ICT-2013.3.3 b (iv)
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Start Date	2014-01-01
End Date	2015-12-31
Project Cost	1.6 million €
Project Funding	1.1 million €
Project Coordinator	VDI|VDE Innovation + Technik GmbH Steinplatz 1 10623 Berlin, Germany
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Project Partners

VDI|VDE-IT	VDI|VDE Innovation + Technik GmbH	Germany
FSRM	Fondation Suisse pour la Recherche en Microtechnique	Switzerland
HSG	Hahn-Schickard-Gesellschaft für Angewandte Forschung e.V.	Germany
IK4	Asociación IK4 Research Alliance	Spain
MESAP	Centro Servizi Industrie S.r.l.	Italy
MSTBW	Mikrosystemstechnik Baden-Württemberg e.V.	Germany
PmT	Association Pôle des microtechniques	France
ESP KTN	ESP Central Ltd	United Kingdom

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