FIRE

Gateway to trustworthy ICT innovations in Europe

PROJECT FULL TITLE: Facilitate **I**ndustry and **R**esearch in **E**urope

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Brokerage workshops

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1 EXECUTIVE SUMMARY

The aim of this paper is to report on brokerage workshops about industry-led research challenges set by the pan-Cluster Industry Working Groups in energy, finance, health and communications which were organized to spur research collaboration and pull-through in strategically important areas.

The main outcomes include a series of brokerage workshops introducing the FIRE project to over 150 attendees, mainly SMEs, researchers and large industrial companies. One to one meetings were organised between these groups, planning potential future research. The discussions at the brokerage workshops were fruitful and the brokerage workshops created additional networking opportunities which may lead to further collaboration between participants.

2 INTRODUCTION

The aim of this paper is to report on the workshops undertaken by partners. The objective of the workshops was to stimulate future collaboration between researchers and industry in each of the Themed areas. The activities were led by partners as follows:

- Energy – NSMC supported by IFIS
- Finance – ADS
- Health – AMETIC supported by SMP
- Mobile Communications – LSEC

A series of workshops was organized with industry-led research challenges set by the pan-Cluster Industry Working Groups in energy, finance, health and mobile communications. Researchers were invited to respond with their ideas in joint workshops to stimulate RTD collaboration between end-users (both small and large businesses), academic and other research bodies and the IT solution providers.

The workshops were organized nationally, and the concept was formulated by discussion within the Pan-Cluster Steering Group.

3 METHODOLOGY

3.1 Objectives of the Workshops

The aim of the meetings was to spur research collaboration and pull-through in strategically important areas.

The main objectives of the brokerage workshops are:

- to provide a structured brokered environment where combined Industry needs/challenges are presented to researchers without them having to separately engage with multiple companies who may or may not be interested in what they have to offer.
- to give an opportunity for researchers to engage with Industry organisations which are looking for expertise from the research community, which could lead to R&D funding opportunities and licensing opportunities.

3.2 Type of Attendees

To gain engagement with the needs of industry it was essential that both industry and researchers were present in the workshops. The lead should come from industry in presenting their needs and the anticipated benefit was expected to be shared by both groups. (Researchers, in this case, also include the IT supply industry who may wish to tackle some of the research challenges using their own in-house resources).

There are three trans-national groups of participants contributing to the project:

- The Industry and Commercial Networks or ICNs (End users) covering Energy, Finance, e-Government, Health and Mobile Communications
- The Research Community (Industry and research organizations active in the field) contributing through a Research Network
- IT Security Industry (the FIRE Partners are working with current solution providers to capture their views)

Each partner represents a cluster of End Users, Research Organizations, and IT Security companies in their region, as follows:

- AMETIC: Spain
- LSEC: Belgium and Netherlands
- ADS: UK and Ireland
- IFIS: Germany
- NSMC: Czech Republic
- CYBERNETICA: Estonia and Baltic states

3.3 Framework of the Workshops

Each project partner held its own RTD brokerage workshop or workshops, with participants from academia and industry. It was a requirement that the meeting or meetings covered the Theme on which each Partner was leading. However they may be extend to the other FIRE Themes, if there was benefit in doing so. Each Partner reported back to the task leader (NSMC), who produced the consolidated report.

The aim of the workshop was to present the industry derived needs and invite participation from the research community. Such participation may be discussed in open forum but participants may also wish to hold private discussions and facilities should be provided to enable this to take place, if required.

Partners may format these events as they consider best to achieve the objectives. The following background documents were suggested for consideration when planning the event but this list was for guidance only and other inputs were worth considering if they facilitated cooperation and engagement between the groups:

- D3.1 - Report on Industry sector research needs
- D4.2 - Draft pan-cluster strategy and research agenda
- D5.1 – Guidelines for clusters
- D2.3 - Research inventory/ database
- Regional initiatives associated with engaging with European funding, e.g. Horizon 2020
- Regional initiatives associated with obtaining national funding from the public or private sector.

Each workshop was reported, using an agreed proforma format. The proposed structure of the RTD workshops report was:

1. Event Title
2. When and where the meeting took place. Language.
3. Agenda and link
4. Type and number of attendees (industry, research, academia, etc.)
5. Methodology
6. Outcomes including feedback (excluding detail of any one-to-one discussions)
7. Some pictures if possible
8. Lessons learnt

As issues of commercial sensitivity may be discussed, participants should be allowed to be anonymous and/or discussions may be offered under the Chatham house rule[1].

3.3.1 General Recommendations

General recommendations were:

- To include a **moderator**, to help the discussion to be structured, meaningful and linked to the topic. As the audiences were composed of experts from different backgrounds, there may be a tendency for the experts to remain within their normal areas of competence so the moderator had to ensure that the discussion stayed linked to the wider agenda topics. Moderators also needed to ensure that important and interesting ideas are not lost amid the pace and speed of the general debate.
- Use of a **Round table** was encouraged. The psychological benefit is immediately obvious to all; a round table is a place where everyone has the same position. This facilitates the mutual respect of other views and equally the right of each participant to express their own views.

[1] http://www.chathamhouse.org/about-us/chathamhouserule.

- For purposes of smaller group discussion the introduction of a real or virtual **speaker's amulet** is recommended. The person with the amulet is the only one permitted to speak. This gives opportunity for an uninterrupted exposition of a view; meanwhile others need to wait for their turn to respond until they hold the amulet. This helps with the debate of clear ideas and structured discussion in smaller, active groups of attendees.

The **audience** is the success key factor. In case of workshops associated with another conference, the profile of the participants is very important and should fit that of the required stakeholders. If the workshop was organized in the context of another event, one must be careful with the "open door" approach.

4 WORKSHOPS

4.1 Security, privacy and trust in Health and Independent Living. How to build it? FIRE Project Workshop

AMETIC presented FIRE in the event "*Security, privacy and trust in Health and Independent Living. How to build it? FIRE Project*."[2]

Date and Place: Madrid, November 28th 2013, 16:30, in the context of the eVIA Annual Assembly 2013[3].

The workshop was held in Spanish and partially in English, due to the participation of some non-Spanish speakers. There was presentation of the FIRE project, presentation of secure ICT needs on Health and individual answers to the template followed by group work filling the template, closed with general discussion.

Number of attendees: (from industry, academia or research): 16

- Private end users (care service providers): 12,5%
- Public end users (health services): 12,5%
- Big industry: 12,5%
- SMEs: 31%
- Researchers: 31%

The workshop was organized in advance by personal invitation to some participants and by open dissemination. Registered and confirmed participants (approx. 50%) received in advance the documentation and templates to be fulfilled. There was a previous phone conversation in order to make them aware of FIRE, goals of the workshop, methodology, etc. The participants were asked them to think previously about their individual vision of the topic.

Main outcomes are described in the next section of this document.

4.2 Energy Research Meeting Workshop

The FIRE project was introduced at a specific workshop organized by partner NSMC. The event title was: "*Energy Research Meeting*", held on 7th January 2014, in Brno, at NSMC headquarters.

The NSMC research topic was energy. The 2 main organisations in the Czech energy market are ČEPS[4] and ČEZ[5] and the key local organisation is Teplárny Brno[6] (heating company). All three were invited together with a few smaller companies focusing their business in ICT for the energy sector. A university delegate also participated.

Number of attendees: (from industry, academia or research): 14

- 0% Public Sector

[2] Http://www.evia.org.es/es/inicio/contenidos/evia2013/evia2013_fire/contenido.aspx.
[3] Http://www.evia.org.es/es/inicio/contenidos/evia2013/evia2013_presentacion/contenido.aspx.
[4] http://www.ceps.cz/ENG/.
[5] http://www.cez.cz/en/home.html.
[6] http://www.teplarny.cz/.

- 14 % Academic
- 86% Industry, of which:
  - 58% energy company
  - 42% ICT company, connected to energy business

Main outcomes are described in the next section of this document.

4.3 Cyber Security Conference 2013 Workshops

ADS together with partner LSEC attended a UK conference involving relevant stakeholders for the Trustworthy ICT Research Agenda and ran workshops there.

- *Cyber Security Conference 2013 (CSC2013) – 9th December 2013 – Lancaster UK*

The Cyber Security Conference run by the University of Lancaster, in partnership with the ICT Knowledge Transfer Network, explored the business opportunities related to the cyber security market with a focus on the Internet of Things (IoT) and Smart Cities. The event discussed how to ensure that UK businesses are ready to defend against these threats, and how they would also be able to take advantage of the gaps in the market place for new products and solutions to help protect others. Attendees (81 in total) covered all the main stakeholder sectors:

- 12 (15%) public sector
- 20 (25%) academic
- 2 (2%) large industry
- 47 (58%) SME

The conference presentations were structured within the 4D themes: Defend, Differentiate, Diversify, and Develop. There were presentations by key UK Government stakeholders including the UK Department for Business Innovation and Skills (BIS) and UK trade and Investment (UKTI).

Main outcomes are described in the next section of this document.

4.4 C6I Workshop

ADS presented an update of the FIRE project and collaborative funding opportunities at a meeting of the C6I (Command, Control, Computing, Cyber, Communications and Counter Intelligence) Special Interest Group. The title of the presentation was:

‘Future EU Cyber Security Research Agenda update and forthcoming Horizon 2020 opportunities’.

There were 26 participants, mostly from industry with an approximate ratio between SMEs and LEs of 2:1.

Requests for further information being developed within the FIRE project (viz the reports on User Needs and the draft Research Agenda) were received from a third of the participants and these reports were circulated after the event. Information was also provided on opportunities for collaborative R&D projects in the upcoming calls of Horizon 2020 and more detailed information was requested by several of the participants.

The meeting also included a presentation from the UKTI International Cyber Security Director on the UK government's Cyber Export Strategy and the opportunities UKTI can provide companies to increase exports to achieve the UK's target of £2B by 2016.

Main outcomes are described in the next section of this document.

4.5 IT Security Situation in Germany Workshops

IFIS introduced FIRE at the following events:

- *"IT Security Situation in Germany",* a workshop organized by the German Federal Office for Information Security (BSI), which took place on 11th and 12th December in Bonn, Germany.

24 attendees were present, covering all man stakeholder groups, including public bodies, large industries, SME, trade associations and research facilities.

The main focus of the event was on research and innovation to improve situational awareness regarding ICT security at the national level, including new cooperation models between public and private sector.

- A workshop hosted by the German Association of Energy and Water Industries (Bundesverband der Energie- und Wasserwirtschaft - BDEW), which was a full-day event held on 20th February 2014 in Bochum, Germany. The topic was presented under the title:

"Cyber Security in the Energy Industry. A practical approach towards Trustworthy ICT"

The number of attendees was 22, representing public sector, large industry and SME.

The primary objective of this workshop was to discuss new types of security threats that emerge as a result of increasing deployment of ICT equipment in critical infrastructures, especially in energy and water supply. Other relevant topics were identified from the context, including the role of non-SCADA components, communication over public IP networks and shortcomings in the conventional relationship between security and safety.

The main outcomes are described in the next section of this document.

5 MAIN OUTCOMES

The workshops all provided an environment to bring together industry (SMEs and large companies) and researchers with the potential to develop collaborations to improve pull-through of the research. The research challenges being proposed for the FIRE Research Agenda provided a framework for discussion of potential areas where the industry participants could work together with academia, and/or where large companies could collaborate with innovative SMEs. Opportunities for funding joint collaborative projects through Horizon 2020 and national funding schemes were also discussed. Networking sessions were provided at all events to allow these links to be further developed.

In addition to the main goal of the workshops, which was to stimulate collaboration as discussed above, the participants also made specific comments on important issues from their point of view. These are discussed below and have also been considered in the development of the next version of the Research Agenda.

5.1 Business Case following Research – No Clear Demand Pull

A University commented that research sometimes does not get taken to market because of the difficulty of creating a business case. Examples were presented including secure computation technology which, to date, has not had market impact. They found that their potential customers each think of a different way they could apply it in their business. The consequence is that the University cannot define a product with a business case that can be invested in and developed. There is no clear demand pull. They think that they need people to talk to the market.

- Comment - The EC has funded projects to help match technology developers and make contact with users, develop business cases, and make contact with sources of private finance to pull technologies through, e.g. COWIN for smart systems technologies. Would a similar type of initiative in Trustworthy ICT be helpful?

5.2 Value of Collaborative Projects is Controversial

A Large Enterprise (LE) commented that they have reduced their involvement in EU research because it is hard work to get value out of collaborative projects. When partners do not deliver their part of a project (which reduces the value of the project as a whole) there is no EU contractual leverage to influence the outcomes. There is room for future improvements regarding the concept of Coopetition, which has not yet seen broad adoption within the European industry. These kinds of collaborative projects may be stimulated by public funding and can be helpful especially in horizontal markets with intense global competition and for products in early stages of Technology Readiness Level (TRL).

5.3 Different Regulations across Europe

The EU needs to be better at tackling cross-border issues such as standards and data protection. It is impossible to comply with all regulations across Europe for any product/service e.g. Cloud Services. IT regulations are different in each country, increasingly specific industries have their own rules impacting IT products and services (e.g. access and custody of the information, how it is transferred, protected, evidence collection and preservation). This is one reason why innovative companies with new solutions so often take them to the US. The EU could help deal with inconsistencies. For example at present UK suppliers thinking of supplying across the EU have to map regulations in separate countries back to compare them with UK regulations. Would it be possible to create an 'EU' regulatory environment which, for example, would allow cloud-hosting to take place according to 'EU' rules, and create one additional regulatory environment (on top of the 27 national EU regulatory frameworks) that companies in any EU country could choose to comply with? This would require creating an environment acceptable to all EU members. Such an idea would need to be investigated to look at costs, challenges, requirements, and the concept design. It would need to be academically rigorous and involve experienced companies in the area, getting interest/ involvement through e.g. Trade Associations.

5.4 Research Plan

Security in the future might be planned in conjunction with selected important public and private organizations and universities; to create a research plan covering defining standards in key areas. A schedule covering short, medium and long term is needed. It is impossible to determine exactly what the most important gaps are. Some recommendations are:

- In the long term, quantum computing will change the security process.
- In the medium term, protection mechanisms are needed for the Internet of Things and Big Data Analytics in general.
- In the short term, protection mechanisms are needed for the data in the Cloud and for the most important and risky areas, including critical infrastructures: Transportation, Energy, Bank, Hospitals and Tax Agency.

A pan-European research plan has to be constantly evaluated and adapted to reflect changes in:

- Paradigms, priorities and requirements of security in research and industry
- Technologies, including disruptive technology shifts and their impact on businesses
- Competitive position of the European industry in relation to global players and markets

A security research plan would help to structure the research demand and more importantly align standards to permit the exploitation of the results of research.

5.5 Timing of Projects

It is very important to quickly implement SME projects in the most demanding topics, as it is the best way to finance projects with high impact in the ICT sector; especially in security where one must demonstrate and pilot something before having the opportunity of creating a product.

Examples include Data integrity and encryption technologies which are able to cope with heterogeneous cloud systems, user empowered privacy, computation in the trusted domain. The impact of user behaviour on security as well as the construction processes (security agile) is also very important.

5.6 Comments on Individual Research Topics

Attendees made comments on individual research topics as follows:

- Establishment of trustworthy relationships should be improved by defining appropriate mechanisms and procedures for information sharing (without exposing sensitive business data)
- Handling and reporting of security incidents should be unified within industries
- Timely and accurate top-level data integration becomes mission critical to provide comprehensive situational awareness and decision support
- More research is needed on security related to network complexity and cascading failure effects (e.g. brownouts)
- Business processes, work flows and user education have to be modified in order to reflect the increased level of importance and dependency on ICT
- Risk and Change Management need to be overhauled by industry, guided by research

6 ANNEX A

Example photographs are shown below of the AMETIC workshop.