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| Subject: ECO activity on research projects (progress report) |  |
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| Summary:  |
| This document reports about the ECO activity on research projects since the ECC meeting in Vilnius (October 2012). After consultation with the ECC and its constituent bodies, the ECO decided to focus on five areas of research activity which in the short term could influence the ECC work programme. This process has led to an increased and more direct involvement from academia in the ECC activities. Representatives from academic institutions are now taking part in the meetings of PT SE24, PT SE43, SRD/MG, ECC PT1 on a regular basis. ECO representatives attended a number of relevant Conferences and Workshops and have developed some further contacts with research projects and academia.  |
| Proposal:  |
| The ECC SG meeting is invited to consider and comment on the presented document. This document will, after any advised modification, or update, be presented as an input paper to the ECC Plenary meeting |
| Background:  |
| The ECC published its Strategic Plan in March 2010. Within this five year strategy, the ECO’s tasks include to “develop relations with universities and relevant scientific institutes that would be willing to do research in spectrum management, and (to) give advice to research institutes on issues to investigate or on specific research” and to “explore relationships with European research programmes”.The Office is adopting a step-by step approach to developing these relationships, presenting progress reports at the ECC subordinate bodies’ meetings. The research activity page of the CEPT/ECC web-site gives a summary at <http://www.cept.org/ecc/topics/research-activity>. |

**Progress report on the ECO activity on research projects**

The ECC meeting (October 2012) has revised the paper describing ECO’s step-by-step approach to develop relationships with research organisations. The ECC endorsed the Office proposal and recommend its subordinate bodies to review their Work Programmes in order to identify areas to be considered for more close cooperation with research institutions. Therefore, ECC (12)050 was presented to WGSE, WGFM and a number of their PTs.

1. **Discussions at the Working groups and Project teams level**
* SE7 at their February 2013 meeting has reviewed the ECO research activity paper (doc. ECC (12)050). The comment was made by the SE7 chairman about current Finnish project RFI (<http://radio.aalto.fi/en/research/space_technology/rfi-detection_and_classification_of_radio_frequency_interference/>) dealing with measuring of unwanted emissions under the territory of Finland and Denmark in the passive band 1.4 GHz where all emissions are prohibited in accordance with the RR footnote 5.340.
* WGFM and SRD/MG received information from the EU project Mozarim (MOre Safety for All by Radar Interference Mitigation) Test Campaign (2012), about field measurements concerning the compatibility between 76-77 GHz  fixed surveillance radar installations along roadsites and automotive applications such as the 76-77 GHz Long Range Radar application. ETSI is preparing SRdoc on fixed applications and SE24 is expected to conduct studies in the future.
* WGFM at their 76th meeting received a presentation containing results of SAPHYRE project with respect to the resource sharing in mobile networks. SAPHYRE is analysing the most advanced forms of spectrum sharing: orthogonal spectrum sharing and non-orthogonal spectrum sharing. Results of the study show that gain through orthogonal sharing with symmetric traffic loads seems modest and decreases sharply when more spectrum becomes available for the networks. The gain through non-orthogonal sharing is substantial. Results of the study show that spectrum sharing is promising, but actual gain depends on many factors.
* The University of Dortmund has indicated to provide additional results of their studies regarding propagation conditions for the bands under study for Smart Metering/Smart Grids to SRD/MG when these become available.
* PT FM53 at their next meeting in Helsinki, Finland in September 2013 is expecting to receive a presentation of the Finnish TVWSD trial in relation to activities in Finland such as the VTT Technical Research Centre of Finland.
1. **Outcome of the meeting with Microsoft Spectrum Observatory representatives**

The ECO attended the WISE TV White Space workshop sponsored by TEKES on 10th December 2012 in Helsinki, Finland where the presentation was made by Microsoft Spectrum Observatory dealing with measurements of spectrum occupancy in the range from 30MHz to 6000MHz.

The ECO was visited by the representative of Microsoft on 31 January 2013.

The Microsoft Spectrum Observatory made a presentation regarding their concept of spectrum occupancy measurements at fixed locations across a wide frequency range (30 to 6000 GHz). The received data should become available via a web interface in three different visualisations with individual frequency and time scales – as a spectrum (PSD graph), a spectrogram and an occupancy chart. A new measurement station has been installed at the Executive Briefing Center in Brussels, Belgium to support this effort by collecting spectrum usage data.

The ECO has recommended to present description of Microsoft Spectrum Observatory to the FM22 meeting.

Follow the ECO recommendation Microsoft has presented a contribution for the April 2013 meeting of FM22. FM22 reviewed implications of Microsoft Spectrum Observatory’s approach – its potential and its limitations - and will report to WGFM and ECC.

ECO was invited to attend a workshop on 9 May 2013 hosted by Squire Sanders and Allied Spectrum Associates, The Centre for White Space Communications, Fairspectrum, Microsoft, Neul, Sky and Spectrum Bridge in Berlin. At this workshop Microsoft clearly indicated that the market for their white space “Wi-Fi” - applications is more seen in developing countries than e.g. in Europe.

1. **ECO involvement in the Projects and Conferences**
	1. **ECO participation in the external advisory board of FP7-ICT project ABSOLUTE**

ECO is participating in the FP7-ICT project ABSOLUTE external advisory board as an advisor, consistent with previous guidance from ECC (to assist projects to understand the regulatory environment).

A factsheet about the project is provided here:



The project tries to describe a flexible platform based on LTE-A solutions for emergency communications by developing a quick and reconfigurable network with high capacity impact.

This can typically be achieved via geostationary satellites in L-, S-Band, and for backhauling in Ka-Band, with dynamic spectrum management capabilities.

A presentation from the ECO was provided to the first ABSOLUTE external advisory board meeting on 18th February 2013 and informed the project participants about the existing framework and CEPT/ECC deliverables regarding work on PPDR and in particular about the ongoing work on BB-PPDR in CEPT (WGFM/PT FM49).

The ECO has also been requested in this context to provide a presentation to the Future Network and Mobile Summit in Lisbon on 4 July 2013 regarding factual information about the ongoing activities on BB-PPDR.

The ECO intends to provide information about this project at the PT FM49 meeting 13-14 June 2013.

* 1. ECO is planning to attend the C-PMSE Demonstration Workshop, May, 29th 2013 in Berlin, see information about C-PMSE project <http://www.c-pmse.research-project.de/index.php/en/about-pmse>. Information from this project can be provided to WGSE and WGFM PTs.
	2. ECO has also undertaken to offer advice on the regulatory environment to another FP7 project (Corpus), which has applied for EU funding in that framework. This is concerned with the application of cognitive radio techniques to the PPDR environment. The ECO has underlined the limitations on its available resources as part of its dialogue to date.