IC1301 -WiPE

Wireless Power Transmission for Sustainable Electronics

WG4 – Issues and Plan
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Agenda

» WG4 Objectives

» Industry's viewpoint:

> WPT status

> Key parameters

> Advises and recommendations

» WG4 Organisation

» Proposed Actions for WG4

» Some ideas to work upon

WG4 Objectives

» To act as a guide/help to the research actions and investigations in the other WGs

» To help increasing the impact of the outcomes from the other WGs

WPT Status

» An increasing number of players in the field, from IC providers to products vendors

» Many research in the field, but not much variety in the proposed solutions

» Competition between WPT and Energy Harvesting solutions

=> Question: how to position WiPE in the field ?

Key parameters for industry

» Cost (it's a standard + competition from emerging countries in Asia)

» Performance (the cost for the value)

» Reliability (still a standard in european industry, not so much in Asia…)

» Competition

Advises and recommendations

» We need competition on ideas…

» and collaboration on demonstrations

» IPRs have to be clearly defined (the closer the product, the more difficult the IPR issues)

WG4 Organisation

» Proposed actions to be discussed with **_all_** partners (now !)

» Actions to be implemented by the WG4 and sub-WG4 leaders

» All actions to be reported to the WiPE leader

» Transversal communications between WG4 and other WG through leaders:

> Increase opportunities of collaboration between partners

> Good ideas should be supported and not be lost

> WG4 should help setting WiPE as a collaborative platform

Proposed Actions (1/4)

» Priority 1: To prepare a ***workplan*** for WG4 activities with these objectives:

> Set a list of action lines to address the different applications targeted and the problems to be addressed by the consortium through the COST actions (WIPE mainly, *but not only...*), so to have a maximal impact towards the industrial community.

> To outline the interactions between WG4 and the other WGs. This step is necessary for the consortium to have a clear picture of the whereabouts of the research actions to be undertaken.

> To initiate more contacts with external users to get back their trends and target specifications.

> To prepare the diffusion of the results obtained by the WIPE partners up to now, and the targeted results of their ongoing actions (in WIPE and outside), that could help diffuse the ideas and the technology.

Proposed Actions (2/4)

» To map the applications and the technologies (power levels, authorized frequencies, time cycling profile, on-demand or automatic ...). This is an essential part of work for WG4 that should present (as completely as possible) the panel of technical solutions available today and worked upon for tomorrow.

» To collect specifications (internal to WIPE and from the EUG-see next slide) per domain of application, and present them to the other WIPE's WGs (quantified figures and the doos/dondoos for each domain). This should be done at the next WIPE meeting.

Proposed Actions (3/4)

» To setup an EUG (External User Group):

> To set a mailing list of users (public and private) potentially interested in the outcomes and results from WIPE

> To get specifications and research paths from these users (possibly through questionnaires)

> To diffuse on a regular basis the informations and results obtained by the other WIPE's WGs

» Define the limits (*if necessary...*) of the techniques and technologies to be investigated:

> EM harvesting is not WPT. WPT uses intentional ad hoc EM broadcasts. *However,* receivers might look the same and technologies also...

> Power beaming/focusing can use EM waves from a few Hz up to optical frequencies, through millimetric and THz waves) => possible actions for WG5 activities on standards.

Proposed Actions (4/4)

» To publicize at conferences the outcomes and results from all WIPE WGs, presented at WIPE meetings, and that might impact the users businesses.

» To collect coordinates of companies acting in the domain of WPT (fields of operation, types of products, links to their websites)

» Summarising the objectives and outcomes of ongoing European projects on WPT(with the help of the EC POs). This would address the increasing concern by the EC of increasing the impact of the funded R&D projects and programs through aggregation of new interested users to the ongoing actions and projects, and possible third parties agreements (i.e. outside the projects) to increase the industrial impact.

» Initiate ideas and trigger R&D actions with WG1/WG2/WG3/WG5 (list of these ideas being drawn up and to be debated in Edinburgh)

» Initiate at least one European project for H2020 on WPT with the most innovative ideas. The exact time for a suited CFP has to be pinpointed through reading the H2020 WP planning …

Some Ideas to work upon with WG1/2/3/5

» Smart cables: deliver power only where necessary along a cable (WG1/WG2/WG3)

» Self-adaptive focusing schemes: iterative search/beam/focus (WG1/WG3/WG5)

» Artificially EM absorbing materials, with embedded antennas or distributed EM power converters (WG3)

» Diode-less frontend schemes: various possible schemes (WG1/WG2/WG3)

Advisable for young and less young people

» "It's not possible" is a forbidden sentence in all WGs (and BTW should be forbidden by law…): The "impossibilities" from yesterday are the research actions of today and the products of tomorrow.

» Break the rules / Think different / Be agile. That was the mammals' motto that helped them take over dinausors…