

European Technology Network

Sustainable Electromagnetic Environments

Minutes COST 286 meeting

Date: Wednesday 22 March 2006, 14:30 h – 18:30 h

Location: Universitat Politècnica de Catalunya (UPC) in Barcelona

Present:

M van Doorn, Philips Applied Technologies, Netherlands
A Soubeyran, EADS CCR, France
F Leferink, Thales, Netherlands
C Christopoulos, University of Nottingham, United Kingdom
A C Marvin, University of York, United Kingdom
J Catrysse, Katholieke Hogeschool Brugge-Oostende, Belgium
V Beauvois, University of Liege, Belgium
V Roje, University of Split, Croatia
P Degauque, University of Lille, France
H Garbe, University of Hannover, Germany
G Varju, University of Budapest, Hungary
P Bernardi, University of Rome La Sapienza, Italy
L van Deursen, Technical University Eindhoven, Netherlands
J Skrzypczynski, Wroclaw University of Technology, Poland
Z Joskiewicz, Poland
F Silva, Universitat Politècnica de Catalunya, Spain
Balbaste, University of Valencia, Spain
J Welinder, Sweden
Rachidi, Polytechnique de Lausanne, Switzerland
J Newbury, Open University, United Kingdom
J Dwyer, TIST Rapporteur
M D'Amore, University of Roma La Sapienza, Italy
M Feliziani, University of L' Aquila, Italy
L Nuno, University of Valencia, Spain
C Carobi, University of Florence, Italy
S Verdaguer
T Haynes, Selex, United Kingdom

Main subject: Initiative of the ETN-SEE to define European research topics in the field of EMC and EMF

Agenda:

1. Opening by Andy Marvin (COST)

After the introduction of all participants Prof. Marvin indicated that the main subject of this COST 286 meeting was the initiative of the ETN-SEE to define European research topics in the field of EMC and EMF. Experts from industry were invited to elucidate their ideas.

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2. Status of ETP-SEE / ETN-SEE / Associated ETP-SEE by Christos Christopoulos

During his presentation Christopoulos gave an overview of the history and planned future actions of the initiative to come to a European Technology Platform on Sustainable Electromagnetic Environments (EMC and EMF). The following topics were presented:

- Overall policy objectives
- Overview of presentations, meetings, and status reports
- Letters to and from the European Commission
- Short-term planned actions (e.g. to be present at the high-level meeting on Technology Platforms in Vienna on May 4th and 5th).

All correspondence and information related to the technology platform initiative can be found on the website www.emc-esd.nl, including Christopoulos' presentation.

3. EMC technology roadmapping by Marcel van Doorn

The following topics were presented:

- The application of the technology roadmapping methodology on the EMC technology domain
- Trends and needs of the electronics industry and the consequences for EMC and EMF
- Main themes and topics that should be included in an EMC technology roadmap

This presentation is also available on the www.emc-esd.nl website.

This roadmapping approach has resulted in the main research themes, topics, and sub-topics as included in the questionnaire that has been sent to the stakeholders for completing, prioritizing, and indicating short-, medium-, or long-term relevance.

4. Feedback from stakeholders by Amaury Soubeyran

Soubeyran presented the results and ranking process of the questionnaires that were returned to the core team. 137 Questionnaires were sent to the stakeholders of which 39 were returned. During a lively discussion some stakeholders indicated that certain research topics were insufficiently highlighted in the questionnaire, e.g. nanotechnology, Security in Transport, and Power Line Communication. Because adding new topics without the possibility for all stakeholders to express their interest and ranking would create another unbalance, the core team proposed to include these topics, for the time being, in existing topics like 'innovative materials for EMC applications', and 'wired interconnects'. It was noted that, based on new technological developments and needs of the electronics industry the list with EMC research topics will be updated yearly.

The evaluation of the current questionnaires resulted in 18 main research topics that should be worked-out in more detail.

5. Creation of working groups by Frank Leferink

Based on the feedback on the questionnaire 18 main research topics in the field of EMC were defined that should get attention in the coming decade. Working groups were established for each topic (see table and excel sheet). The task of the working Groups is to create a short high-level description for their specific research topic (half A-4, an example has been attached). Each working group should assign a Work Group leader to coordinate this action. The ranking obtained via the questionnaires should be leading within every topic, such that the subject with highest ranking will be mentioned predominantly. The work plans should be sent to the ETN-SEE Core Team, ultimately April 20th. The objective of the ETN-SEE is that these work package texts will be used for FP7 call for proposals in due course.

Action Work Group leaders
Deadline 20 April 2006

6. Links with existing ETPs by Frank Leferink

Leferink presented the links between the different EMC research topics and existing European Technology Platforms (ETPs) as indicated by the stakeholders in the questionnaire. In the coming months contacts will be established between the ETN-SEE and relevant ETPs. This is also one of the goals of the coming European Technology Platforms meeting in Vienna on 4 and 5 May, where the ETN-SEE will be present with 4 delegates.

Action ETN-SEE
in Vienna 4-5 May

Leferink mentioned the possibility to get funding from the European Community for the coordinating and steering activities we are doing now, via a so-called SSA (Specific Support Action). The deadline is 25 April. Leferink will investigate the possibilities.

All information including the presentations will become available on the website www.emc-esd.nl

Marcel van Doorn/ Frank Leferink

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OVERVIEW WORKING GROUPS

No	EMC RESEARCH TOPICS	WORKING GROUPS
	THEME I: EMC METHODOLOGIES	
1	Materials / meta-materials - Innovative materials for EMC applications - Incl. nanotechnology, shielding, and filtering	d'Amore , Catrysse
2	Signal- & Power Integrity	Orlandi , Degaugue
3	EMC impact of new technologies - Communication technologies - Automotive hybrid drives - Power electronics drives - Sensor technologies	Feliziani , Welinder, Degauque
4	Interconnects - Wireless (antenna's, co-existence) - Wired (PLC, High-Speed buses, ...)	Canavero , Van Deursen, Feliziani
5	EMC of semiconductor devices	Sicard , Ramdani, Robinson, Gielen
6	Transients protection (ESD, lightning)	Rachidi , Ter Haseborg
	THEME II: EMC STANDARDIZATION / CONTROL	
7	New test methods - Test methods above 1 GHz: RVC, TEM, ... - Statistical vs. deterministic data evaluation - Diagnostic methods - IC/module testing for system characterization - Methodologies for translation of EMC requirements between various (sub)-system levels - In-situ testing - Measurement / compliance uncertainty - Fast emission measurements in time domain	Marvin , Garbe, Silva, Carobbi
8	Unification of standards - Multimedia, Defense, Automotive, Aerospace, Electro-medical devices	Kerry , Welinder
9	EM spectrum control - Intentional and unintentional radiators	Joskiewicz , Feliziani, Catrysse
	THEME III: EM SAFETY / SECURITY	
10	EMF: Human exposure to EM fields - Exposure assessment and mitigation techniques	Beauvois , Bernardi, De Leo, Roje
11	Product Safety (EMC for functional safety) - Risk based EMC	Newbury , Catrysse, Armstrong, Haynes, Carobbi
12	IEMI: Intentional Electromagnetic Interference	Garbe , Rachidi, Backstrom
	THEME IV: EM MODELING & SIMULATION	
13	New computational techniques	Christopoulos , Dawson, Canavero, Balbastre, Nuno
14	Modeling of novel materials	Dawson
15	Non-deterministic modeling	Canavero , Tjihuis
16	Expert systems / design tools	Leferink , Van Doorn
17	Certification by simulation	Welinder , Balbastre, Nuno, Haynes
18	EM dosimetry	Beauvois