

## **Criteria for European Technology Platforms**

### *1. The “European” factor:*

- *A prerequisite is the realisation of genuine **value added** through a European level response. It must be evident that it is only through combining efforts at this level that the **necessary scale, scope and quality of research** can be addressed effectively.*
- *The scope is to provide a framework for addressing **major technological challenges** through the **mobilisation of a critical mass** of research and innovation effort at European level*

**EMC is an important topic in all high technology industrial areas where electromagnetic transport and treatment of energy and information becomes pervasive. By bringing them together research can be carried out much more effectively and efficiently, while at the same time new prevention and protection technologies will become available in other sectors. The variety in stakeholders proves this statement. A European level response is required as only in this way EMC can become embedded in the design and practices of all industries irrespective of size or location. EMC does not recognise barriers and is as good as the weakest link. Therefore it must be addressed in its totality and comprehensively by all involved in the design and introduction of new advanced technologies.**

**The CEM insurance responsibility is more and more shared over an increasingly complex industrial chain from which every player has now to work in close cooperation with the others, at the European level at least. The physical equipment frontiers are namely not necessarily E.M. frontiers anymore when parasitic fields are not confined anymore into wires above some GHz signals. The global E.M. behaviour of a system is neither simply deduced anymore from individual E.M. behaviours of sub-parts due to non-linearities and complex signal processing etc..**

### *2. Operational aspects:*

- ***Openness** is obligatory and “**closed shops**” of narrow industry groupings or other stakeholder lobbies must be avoided. Each platform must ensure “**clear rules of the game**” that ensure openness to all relevant stakeholders of all sizes.*
- *A **clear operational focus** must be put in place **from an early stage** so that research activities begin in a concrete way.*

**The openness and transparency of activity will be assured via a dedicated website, regular publications and conferences. The platform is accessible to any new stakeholder on a voluntary basis. All stakeholders elect through the majority voting procedure once per year, 1/3 of the members for the Steering Board. The Strategic Research Agenda (SRA) has been and will continue to be developed in an open and interactive procedure. The numerous industrial players are very happy to see the opportunity to push towards applied and profitable research, and they will, via their majority share in the Steering Board, push towards concrete results.**

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The clear operational focus of the platform is to target an optimised global approach to EMC by combining “just needed” prevention (e.g. standards, functional robustness etc...) and protections (e.g. shielding, filtering, etc..) in a synergistic way over all involved players (e.g. part founders, equipment suppliers, system integrators, customers etc..).

### *3. Involvement of stakeholders and financial sources:*

- *When developing their structures they should take into account the **committed involvement of national authorities**, given the value added that can be achieved through the co-ordination of national research activities. The experience with Member State “mirror groups” has proved a good model in this regard.*

**Mirror groups can be beneficial, but we are Europeans, and employees of European world players. However, the ETP-SEE activities will be disseminated very well to the national authorities responsible for EMC. The major stakeholders have extensive and active links with their corresponding national authorities to ensure wide dissemination and involvement.**

**National authorities of the largest stakeholders (e.g. Germany, France, Netherlands, Italy, Spain...) already support various research actions concerning EMC issues, but most generally limited to a particular industrial domain, e.g. EUREKA programs for electronics and micro-electronics sectors, “GDR Ondes” in France for radiated EMC and antennas. It is the intention of the ETP-SEE to federate partners of these actions to better coordinate them.**

- *They should be **proactive in identifying sources of financing** (not focus exclusively on Community and national public funding sources, but identify potential sources of private funding and seek to develop a viable financing engineering strategy, that avails of loan and equity funding and accesses guarantee facilities where possible). The role of public funding should be to leverage substantial private investment in European Technology Platforms.*

**The ETP-SEE SRA will be used as reference for national research projects, which will leverage private investment too.**

**The basis for public authorities funding within EC as well as many other programs (e.g. EUREKA, RNTL, RMNT in France etc...) is always through a strong participation of industrial private funding (between 50 to 70% generally). The high level of industrial voluntary participation in the current ETP-SEE preparation is already an indication of the strong commitment and confidence of industrial partners into finding resources, including self-funded investments. Such investments in fact already exist at least in major system integrating companies e.g. in aeronautics, automotive and electronics due to the growing criticality of EMC constraints. The point is really to optimize these investments by sharing pre-competitive researches among as many interested partners as possible to explore innovative but risky concepts under the leverage and risk sharing participation of public funding sources.**

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### **4. Some general technological criteria as examples for “good practice”:**

*Most of the European Technology Platforms address technological challenges that can potentially contribute to a number of key policy objectives which are essential for Europe’s future competitiveness including:*

- *timely development and deployment of new technologies that offer the potential of radical change in one or more industrial sectors (hydrogen and fuel cells, nanomedicine and new electronic media);*
- *technology development to reconcile different policy objectives with a view to sustainable development (plant genomics, water supply and sanitation, photovoltaics, sustainable chemistry, global animal health, road transport, rail transport, maritime transport, forest resources, industrial safety clean power and advanced engineering materials);*
- *new technology-based public goods and services with high entry barriers and uncertain profitability but which offer significant economic potential (innovative medicines and mobile and wireless communications);*
- *ensuring the achievement of the necessary technological breakthroughs to remain at the leading edge in high technology sectors that have significant strategic and economic importance (aeronautics, nanoelectronics, embedded computer systems);*
- *renewal, revival or restructuring of traditional industrial sectors (steel, textiles and clothing, manufacturing and construction).*

**The ETP-SEE will have major impact in the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> groups. It is a supporting, i.e. horizontal, but a very important and major technological issue with high economical and social impact.**

**The ETP-SEE is “process” rather than “product” oriented, like e.g. the ETP on Industrial Safety. With this respect it is nevertheless key for many of the sectors addressed by product oriented ETPs like EUCAR, ACARE, ARTEMIS etc... Such platforms are not addressing today EMC as such and in fact none of them would be individually able to address satisfactorily the transverse characteristics of EMC which are however necessary to consider to get the full benefice of a synergistic approach.**

**Considering the very broad product basis, including homeland security aspects which would benefit from improved EMC techniques, the contribution to Europe competitiveness and security is undisputable. It is namely very clear that the EMC risk is rapidly growing with the number of products using electronics, the density of electronics within these products and the speed/frequency of operations. The industrial cost of CEM failures increases too along with more important effects (sometimes boosted by medias pressure...), more expensive re-design of strongly integrated systems and ever faster markets which require ever quicker reactions.**

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5. *If already possible, it might be very helpful to anticipate the following questions:*

- *What is the ambition the ETP in your area? What is its European added-value?*

**The key ambition is to combine efforts in order to increase innovation strength and decrease costs for EMC management. The costs due to electromagnetic interference (EMI) are increasing rapidly. Cooperation is needed to :**

**establish a clear strategic vision on EMC  
strengthen EMC innovation  
enhance international cooperation and interdisciplinary research  
improve cooperation between industry and research institutes  
alleviate fragmentation in research**

- *What are the main technology challenges addressed by the ETP and what would be their market impact?*

**Aspects such as**

- **increased data rates in and between systems,**
- **increase integration density of electronic systems**
- **increased use of non-hardened equipment in hostile environments,**
- **new technologies with high EMI risk (power converters, composite structures),**
- **changes in standardisation,**
- **increased customer (and society) awareness about EMC and EM radiation hazards**

**result in a continuously increasing demand for EMC (and hardening) support.**

**Key issues in the next decade will be ultra high-speed electronics above 10 GHz, High Power and Malicious Microwave weapons, radiation hazards (personnel), reliability and safety of wireless services, advanced modelling techniques and (cost-effective) test and standardisation issues.**

**The market impact is huge, as mentioned already in the status report: the EMC financial impact is in the range of 5 to 25 Billion euro a year with a growing importance (cost).**

- *How to follow-up possible recommendations of the ETP in the best manner? What would be the role of research, what the role of other policies?*

**The ETP-SEE should coordinate or at least give awareness of existing and future program opportunities at national and European level, fitting with the objectives of its SRA. The SRA defined by the ETP-SEE should be at least implemented through the action plans evolving from FP7 (e.g. Specific Program), with a large involvement of industry to indicate most important objectives for research institutions.. There is role both for research and for properly informed standards development.**

- *How active is our “constituency” in the setting up of the ETP. Who are the main industrial players involved and what is their opinion/position and main concerns so far?*

**The initiators represent the most important high-tech European industries in e.g. automotive, military, medical, consumer electronics, space, aeronautics etc.. (i.e. THALES,**

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**EADS, PHILIPS, AUDI, SIEMENS, ST-microelectronics, FREESCALE etc...), but any industry and organization dealing with electro technical/electronic components has to manage EMC issues. Many top managers of these companies have clearly expressed their concerns w.r.t. EMC in all the letters (~15) which have been already sent to the EC.**