



E.C. Nest Contract n. 012380



## General Integration of the Applications of Complexity in Science

Co-ordinate actions

NEST-2003-Path-1

Tackling Complexity in Science

### WP 3 – Deliverable 3.2 Support of visits leading to common Complexity PhD industry-STREPS

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Organisation: ENEA

Ente per le Nuove tecnologie, l'Energia e l'Ambiente

Revision 1

Project co-funded by the European Commission with the 6 <sup>th</sup> Framework programme (2002-2006)		
Dissemination Level		
<b>PU</b>	Public	X
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	
<b>RE</b>	Restricted to a group specified by the consortium (including the Commission Services)	
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	

### **Meetings with Industries and Stakeholders**

During the period, meetings have taken place with several players in the Italian scenario of Critical Infrastructures (CIs). In particular with:

1. CESI Ricerca, which is a major Italian public company, formerly belonging to the Italian company for electrical Energy (ENEL), which is a repository of competences for resolving engineering problems related to electrical transmission and distribution networks. ENEA is going to establish tighter links with that company which will be a partner of ENEA in proposals of Italian and EU funded projects on CIs.
2. Finmeccanica group, which is the major public company in Italy. Finmeccanica is a holding company for a number of companies, which are active in the field of ICT technologies, including CI control tools.
3. TERNA Spa: this is the major Italian company which holds 98,3% of the whole Italian Network for the Electrical Power Transmission (high- and medium-tension lines). It is also the company managing the power dispatching all over the country and is responsible for the balance between electrical energy demand/supply. The company is, moreover, responsible for the management and the development of the network, also in view of increasing its efficiency.
4. JRC Ispra, in particular the unit SCNI (Security of Critical network Infrastructures)
5. Telecom SpA; this is the major Italian company for TLC. It spans the entire advanced communication services chain (fixed and mobile, internet, media, information technology etc.).

### **Programmed visits**

To establish links with the different companies of the Finmeccanica galaxy, ENEA and Finmeccanica have agreed to carry on an exchange of visits of their scientists and technologists at the sites of the different relevant companies. The main aims of these visits are, on one side, to allow a stable information flow on the research activities carried out in the different sites and, on the other side, to arrange more stable links for research collaborations. In this program, several visits have been organised, with the following schedule:

- ENEA and Finmeccanica, Finmeccanica Headquarters Roma (January 15, 2008)
- ENEA and Finmeccanica visit at CESI Ricerca laboratories in Milan (October 9, 2008)
- Finmeccanica and CESI Ricerca visit at ENEA Casaccia laboratories (October 11, 2008);
- ENEA and CESI Ricerca visit at Finmeccanica site (SELEX S.I.) in Roma (October 11, 2008);
- ENEA and CESI Ricerca visit at Finmeccanica site (Selex Communications) in Genova (November 29, 2008).

### **Meeting related to research activities**

In the frame of several projects that ENEA is carrying out (funded by national and/or EU funds) a number of meetings have been carried out with JRC Ispra and the major companies (TERNA and Telecom) In particular:

1. Visit of the ENEA group to JRC Ispra at SCNI (June 6, 2008)
2. Visit of the JRC Ispra (SCNI group) to ENEA Casaccia Research Center
3. Meeting with Telecom, TERNA in Roma, ENEA headquarters (June 19, 2008) for the kick-off meeting of the MIA/JLS project related to the design of new methodologies for the definition of CI interdependence metrics, where there will be a strong involvement of the Complex Systems methods
4. Meeting with Telecom and TERNA, ENEA headquarters Roma (July 24, 2008) for the advancements of the MIA/JLS project)
5. Meeting with Telecom and TERNA, ENEA headquarters Roma (October 8, 2008) for the advancements of the MIA/JLS project)
6. Visit to the Computer Science Laboratories of the University of Cambridge (September 15-19, 2008). This visit has been performed together with the Ph.D. Student Sandro Meloni with the aim of starting a research collaboration with prof. P. Lio' on themes related to the use of bio-mimetic strategies for the management of complex tlc networks. This theme is of particular interest of tlc stakeholders (as it has been recognized in several meetings). This is the reason for which ENEA is going to activate collaboration with relevant EU groups in this area.
7. Meeting with TERNA (October 21, 2008); definition of a prototype project that ENEA could realize to set up a Decision Support System combining field data from the tlc system which manage the Supervision and Control (SCADA system).
8. Meeting with RFI (Rete Ferroviaria Italiana, Italian Railways Network). RFI is the company which owns and keeps railways network on service. RFI is going to provide ENEA data related to the structure and the topology of its network; these data will be inserted into an CIs database which ENEA is going to realize.

### **Support of PhD Thesis**

In the framework of collaboration with the University of Roma "RomaTre" (Prof. Stefano Panzieri at the Department of Informatics and Automation), ENEA has started a Ph.D. program, hosting and tutoring Ph.D. students on subjects related to the use of Complex Systems models and methods for the study of Critical Infrastructures. Collaboration on these subjects has been started by the Ph.D. student Sandro Meloni (Degree in Informatics Engineering at that University). This Ph.D. studentship is going to allow a tight connection between the Roma group (ENEA and University of RomaTre) with the University of Catania (dr. Vito Latora) and Prof. Helbing's group at ETH Zurich.