



**Title:** "Cognitive Radio in the Green Communication Paradigm: Vision of the IC0902 Cost Action" by J. Fiorina, COST IC0902, Supélec France

**Abstract:**

This presentation aims at giving a highlight on the COST Action IC0902 and at making bridges with the GREEN communication community. The main objective of the COST Action IC0902 is to integrate the cognitive concept across all layers of communication systems, resulting in the definition of a European platform for cognitive radio and networks. The COST Action IC0902 involves over 150 researchers from almost 30 different countries throughout and outside Europe. The Action proposes coordinated research in the field of cognitive radio and networks. The cognitive concept applies to coexistence between heterogeneous wireless networks, that share the electromagnetic spectrum for maximum efficiency in resource management. Several efforts are currently in place in European research centers and consortia to introduce cognitive mechanisms at different layers of the communications protocol stack. This Action goes beyond the above trend by integrating the cognitive concept across all layers of system architecture, in view of joint optimization of link adaptation based on spectrum sensing, resource allocation, and selection between multiple networks, including underlay technologies. The cross-layer approach will provide a new perspective in the design of cognitive systems, based on a global optimization process that integrates existing cognitive radio projects, thanks to the merge of a wide-range of expertise, from hardware to applications, provided by over 30 academic and industrial partners. The final result will be the definition of a European platform for cognitive radio and networks. To reach this goal, algorithms and protocols for all layers of the communications stack will be designed, and a set of standard interfaces as well as a common reference language for interaction between cognitive network nodes will be defined.

**BIO:**

Jocelyn Fiorina was born in Paris, France, in 1976. He received the engineering degree from the Ecole Supérieure d'Electricité (Supélec), Paris, and the "Laurea" degree in telecommunications engineering (summa cum laude) from the University of Rome, La Sapienza, Italy, both in 2001, and the PhD degree from the Université de Paris-Sud in 2005. He is now Associate Professor at Supélec, France. He gives lectures on telecommunication systems, signal processing and random signals. His research interests are: Ultra Wide Band Systems, MIMO systems and STC design, game theory applied to communication systems, cognitive radio. He is the vice-chair of the COST Action IC0902.