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PALESTRA

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Palestra: Dia 18/05/06 das 13:00 às 14:30 – Sala H - 301

Networking in Autonomic Communications

Abstract - The term "self-organization" is mentioned in diverse domains, ranging from engineering to physics, economy and sociology. It is also increasingly used in the networking area. A self-organizing network (SON) lacks a priori infrastructure, that would be present in a traditional network (i.e., the Internet) at power-up time; instead, the infrastructure is built-up progressively, as, for example, nodes join the SON, and has to be rebuilt as nodes leave the SON, or to ease the management of such networks. The proper operation of self-organizing networks (SON) relies on the autonomous behaviour of their individual nodes. This lack of a priori infrastructure and the need for (sometimes frequent) infrastructure updates poses design requirements that are not present in traditional networks. Moreover, nodes are often mobile that requires providing a location service. In this talk, we propose a fundamental framework to analyse and structure SONs by decomposing the routing functionality into four fundamental blocks: addressing, dissemination, discovery, and forwarding. Therefore, we argue that any (proposed) routing architecture is composed of a combination of one, some, or all of the fundamental blocks, and that a particular composition determines the behaviour of the routing architecture and its associated protocols. We give some examples of original contributions for these fundamental blocks, starting with routing and following with dissemination and discovery. Finally, a few research projects within the European IST framework or the French one will be described in order to illustrate these research issues.

Prof. Serge Fdida is a full professor at the University Pierre et Marie Curie (Paris) since 1991. He received the Doctorat de 3eme Cycle in 1984, and the Habilitation a Diriger des Recherches specializing in Modelling of computer networks in 1989 from the University Pierre et Marie Curie. His research interests are in the area of content networking, pervasive communication, resource management and performance analysis. He is heading the Network and Performance group of the LIP6 Laboratory (CNRS-University of Paris 6). Professor Fdida was a Visiting Scientist at IBM Research during the 1990/91 academic year. He is on the editorial boards of many journals : Computer Communication, SIGCOMM CCR, Computer Networks Journals, Journal of Wireless and Optical Communications, and Annales des Télécommunications. Currently, he is coordinating the IST WIP project (an all-wireless Internet architecture) and the IST Onelab project (An Open Networking Laboratory Supporting Communication Network Research Across Heterogeneous Environments). He is a senior member of IEEE, a member of ACM and also involved in two IFIP working groups on networking . Serge Fdida is also the Co-Director of EURONETLAB, a joint laboratory established in 2001, between University Paris 6, CNRS, THALES, ENST and 6WIND, developing research and development work on "QoS Routers" and "Radio Routers". He is since two years the Vice-President of the french national research network on telecommunications involving academia and industry (RNRT).