

Networks and Systems

The “Networks and Systems” department gathers LIP6 research activities related to networks, systems, and distributed systems. We analyze and design solutions for constructing and managing networks, systems, and distributed systems of the future. Those themes are represented by three complementary teams: NPA, Phare, and REGAL (the latter being a joint research team with INRIA Paris-Rocquencourt).



NPA Team

NPA team aims at developing a vision for the future Internet as well as designing solutions to shape and manage it. The target of the team is the control of ubiquitous, mobile and versatile networks that expand everywhere in our private and professional environments. The core of our work concerns problems related to multimedia and mobile networks, resource management, scalability, ambient networks, and content networking. Moreover, significant work is developed in the area of Internet measurement, modeling and traffic engineering.

REGAL Team



REGAL is joint project-team with INRIA Rocquencourt.

The Regal team aims to manage resources in large scale networks. REGAL investigates solutions to deploy applications (with code and data) in highly distributed environments. The project targets large scale configurations (in terms of the number of nodes and distance between them), highly dynamic (with failure, deconnexion and partitioning). Regal is focused on replication techniques to tolerate failure, to increase the availability, and to provide efficient access to distributed services.

Phare Team

The PHARE team aims at developing the future generation of telecommunications networks. The IP (Internet Protocol), TCP (Transmission Control Protocol) and UDP (User Datagram Protocol) protocols provide communications in the Internet world. These protocols are badly adapted to new generation of networks in particular wireless, ad hoc and sensors networks. The objective of PHARE is to propose a new generation of protocols able to adapt to its environment. This intelligent protocol will have to be able to change link by link to take into account local constraints. In this research, various solutions, resulting from the autonomic networks, active networks and intelligent systems, will be tested and compared.

Keywords

Algorithms for dynamic environments, Distributed data management in multicore architectures, Content management, Wireless and Mobile networks, Metrology and Internet governance, Next generation access networks, Internet and Sky computing, eHealth, Internet and Cybercriminality.

