



# Athens October 2005

## Scope

The purpose of this workshop is to present and to discuss the principles of **Autonomic Communication (AC)** – a new communication paradigm to assist the design of the **Next Generation Networks (NGN)**. This workshop explicitly focuses on the grounding principles to achieve purposeful behavior on top of self-organization (self-management, self-healing, self-awareness, etc.). Papers are solicited that study network element's autonomic behavior exposed by innovative (cross-layer optimized, context-aware, and securely programmable) protocol structures (as opposed to traditional stack) in their interaction with numerous often-dynamic network groups and communities. The goals are to understand how autonomic behaviors are learned, influenced or changed, and how, in turn, these affect other elements, groups and the network.

The self-organized Internet will be able to sense its environment, to perceive these changes and to understand the meaning of these changes, thus facilitating new ways to perform network control, management, middle box communication, service creation, etc. This will be based on universal and fine-grained multiplexing of numerous policies, rules and events which are done autonomously but facilitate desired behavior of groups of network elements. Though the primary application domain is the Internet, papers addressing autonomic communication principles for mission critical distributed systems are also welcome.

The emphasis of the event is on long-term research agenda with *broad interdisciplinary approach* to explore concurrently *multiple paradigm spaces*. Along with invited papers and a panel the conference will offer possibility for technical papers and position statements.

## Papers will be solicited on at least the following topics:

- Policy-based communication and policy multiplexing in NGN
- Group communication for control and management plane
- Designing evolvable next generation networks
- Self-organisation for NGN re-configurability
- Management of nomadicity
- Large AC testbeds
- AC calculi
- Modelling and analysis of AC systems
- Theoretical foundations of autonomic network control
- Mobile code and network programmability for AC
- Generic network-level service composition at run-time
- Context handling within AC;
- Theoretical foundations of rule-based systems;
- Security, immunity and resilience of AC;
- Applied AC (QoS, traffic engineering, routing, etc.);

WAC 2005 is technically co-sponsored by **IFIP TC6 WG6.6** and will be organized by the FP6 project "Autonomic Communication: Coordination Action" of Future and Emerging Technologies program of the IST.

## Communication Paradigms for 2020

IST Program Future and Emerging Technologies plans to launch a long-term research (proactive initiative) in the area of novel communication paradigms; it will address high-level visionary and risky research of fundamental nature and shall explore its limits and opportunities in increasingly important areas of economical and social development in Europe. Autonomic Communication addresses these challenges from a network-centric technological viewpoint to enable true ambient intelligence and I-centric communication scenarios.

### General workshop Chair:

I. Stavrakakis, UoA, Greece

### Programme Committee:

M. Smirnov, Fraunhofer – Co-Chair

I. Stavrakakis, UoA – Co-Chair

E. Biersack, Eurecom, France

R. Boutaba, Waterloo, Canada

L. Chapin, ACM, US

C. Diot, INTEL, UK

S. Denazis, Hitachi, France

H. Einsiedler, DTAG, Germany

S. Fdida, UPMC, France

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G. Leduc, ULG, Belgium

J. Liebeherr, Uvirginia, USA

I. Matta, Uboston, USA

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G. Pujolle, UPMC, France

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C. Tschudin, Uni Basel, Switzerland

J. Vicente, Intel, USA

L. Wolf, U. Braunschweig, Germany

L. Yamamoto, Hitachi, France

Enrico Gregori, CNR

Vassilis Siris, FORTH

..... more to be added .....