Autonomic Communication Roadmap

Mikhail Smirnov

Fraunhofer FOKUS, Berlin

FOKUS

Fraunhofer Institute for Open
Communication Systems

WAC 2005 Panel

05.OCT.2005, 11:50 – 13:30, Vouliagmeni - Athens, Greece

Roadmap

Panel Agenda

- Panel Talks
  - Situated and Autonomic Communication in FET F. Sestini (CEC)
  - Management of Reconfigurability N. Alonistioti, University of Athens
- Position Statements
  - Reasons why S&AC may fail and how to avoid it C. Tschudin, UniBas
  - Everything interesting is composition S. Dobson, UCD
  - Behaviour and complexity I. Stavrakakis, NKUA
  - Autonomic governance dynamic D. Lewis, TCD
  - Autonomicity is a property S. Denazis, Upatras/Hitachi SAL
  - Autonomic Communcation: Complexity Issues J. Ayadi, CSEM
  - Applied S&AC J. Scott, Intel Research UK Ltd.
  - ACCA: Networking View S. Fdida, UPMC
  - Roadmap Proposal L. Yamamoto, UniBas

AComp vs AComm

Knowledge Plane

Analyze
Plan

Fitness

Behaviour Rules

Monitor
Analyze
Plan
Execute

Autonomic
Decision
Making in deep
uncertainty

Sense
Assess Risk
Behave

Autonomic NE

Network Climate

Proto Architecture

FOKUS

Fundamental operations, in AC these are network functions implemented by network elements, protocol stacks, etc, i.e. Media and media signalling (MMS) processing

Routine management monitoring of functional control and horizontal coordination

Regulatory center for each fundamental operation including the governance of this regulation, in AC: MMS control per service

System 3

Monitoring & Coordination

Algedonic signalling

Control

Auditing

In AC: Safety, security, danger model discovery and propagation, prevention of catastrophs

System 2

Implementation

System 1

Policy

Intelligence

Meta-systemic

System 5

System 4

In AC: system identity and purpose reflected in laws and policy rules, differs from Coordination in preserving the invariant purpose by a so called M^{3}P system

In AC: looking outside and ahead, understanding the total environment

After Stafford Beer's Viable System Model