ETSI Industry Specification Group on Autonomic Network Engineering for the Self-managing Future Internet (ETSI ISG AFI)

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A Call for Contributions to the Specifications for Self-managing Future Network Devices

The area of Autonomic/Self-Managing Networks is still faced with problems of the lack of harmonized steps and efforts towards the establishment of common Specifications of the architectures and functionalities for Self-Management within Future Networks such as the envisaged Future Internet. Ideally, the harmonization can now be achieved through a newly established and well-focused Special Working Group in ETSI – a world renowned Telecommunications Standardization body. The Special Working Group is an Industry Specification Group (ISG) called "Autonomic network engineering for the self-managing Future Internet (AFI) [4]. The AFI aims to serve as a focal point for the development of common Specifications and engineering frameworks that guarantee interoperability of nodes/devices for Self-managing Future Networks.

In [1], [2], the authors ague that, whether an evolutionary approach or revolutionary approach could be taken towards designing the Future Internet, there is a requirement for a Generic Autonomic Network Architecture (GANA) – an architectural Reference Model that allows for the production of "Standardizable" Specifications of Autonomic Behaviors, i.e. Self-* functions of context-aware, policy-driven autonomic Decision-Making-Elements (DMEs) that potentially exhibit cognitive properties, designed for the self-management of diverse networking environments and nodes thereof. We believe that, from such a common, unified architectural Reference Model, either clean-slate based architectural requirements and implementations (which could be similar to the ones addressed in [3]) or incremental evolutionary architectural requirements and implementations

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should then be derived, such that the experiences gained during the implementations can then be used for the evolution and further development of the GANA Reference Model. In [2], authors present how a viable Evolution Path for today's network models, paradigms and protocols like IPv6, can be created as guided by the GANA Reference Model.

In [2], the authors present the rationale behind the call for contributions to the development of a Standardizable Reference Model for autonomic network engineering that should be used as a guide for creating an Evolution Path towards the Self-Managing Future Internet. In [2], different instantiations of the GANA approach (though the GANA is still evolving and is calling for contributions from diverse stakeholders), are presented, which demonstrate its use for the management of a wide range of functions and services, including both, basic network services such as Autonomic Routing and Autonomic Monitoring, as well as enhanced ones such as Autonomic Mobility and Quality of Service (QoS) Management. In order to further develop the GANA Specifications, Requirements Specifications for the desired properties of the Self-Managing Future Internet must be specified by the AFI, and should then be used as input to the development of the GANA. Therefore, contributions to Requirements Specifications must come from end-users, operators, content-providers, etc. We argue that the contributions to GANA must come from the Services/Applications development community as well as the networking community, in order to ensure that the GANA Specifications take into account the behavior of the Services/Applications Layer and its need to inter-work with the adaptive mechanisms of the underlying Network Layer. Therefore, the main motivation of this paper is to bring about awareness to wider communities that potentially can provide input to the activities of the AFI by contributing to the Group Specifications to be produced by AFI in 2010, which are meant to guarantee interoperability for nodes/devices of Self-managing Future Networks such as Future Internet.

References

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