
Editorial

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Today, network and service management face numerous challenges, many of which old approaches and solutions cannot solve. Several proposals and paradigms have been proposed in the last few years to offer possible solutions to many of these challenging issues. In many cases such solutions are providing a system-wide view of the network and its services, and shift the emphasis of management and monitoring away from specific devices and interfaces towards users and applications.

This special issue provides the reader with some of the latest results in this field, and provide a common base for researchers and practitioners that need to understand the current status and trends in the area of management of IP networks and services.

A total of eight papers have been selected among more than 50 submissions yielding an acceptance rate of 16%. The first three papers provide an interesting view on how management can be applied to different overlay and mobile scenarios. The first paper presents a general and interesting model for supporting service levels in large scale P2P overlays. The model presented supports service assurance, provisioning, and diagnostics. The second paper focuses on wireless corporate networks and proposes a service-driven management model for QoS and user access-based on Service Level Agreements (SLA). The third paper describes the use of a State Transfer Module (STM) for enhancing mobility and improving multimedia service delivery in Ambient Networking environments.

The next three papers provide innovative approaches to service management. The fourth paper discusses resource management in collaborative grid environments. It provides an awareness and collaboration/cooperation management model called WS-CAM (Collaborative Awareness Management), which uses a set of rules able to optimise resource collaboration and promote resource cooperation in a given environment. The fifth paper provides a new approach to manage bandwidth in the science data network; this approach is applied in this paper to bulk data transfers in a multi-path scenario. The sixth paper presents a service differentiation model over Generalized Multi-Protocol Label Switching (GMPLS) networks. This model is based on a robust policy-based control architecture that leverages the inherent H.264 error resilience tools.

The last two papers focus on real scenarios and describe two solutions based on the lessons learnt from the normal operation of these scenarios. The seventh paper tries to solve the current problems existing in campus networks, where security breaches and P2P connections use a high amount of network bandwidth. To solve this issue, the authors propose a layer-based network bandwidth management framework that uses components present in most campus networks nowadays. The eighth paper discusses the application of a policy-based management paradigm to the Global Information Grid (GIG) for terrestrial networks and its space-based component referred to as the Transformational SATellites (TSAT).