

# Policy-Based Context-Aware Overlay Networks

I. Al-Oqily

School of Information Technology & Engineering (SITE), University of Ottawa, PO Box 450, ON, K1N 6N5, Canada

A. Karmouch

School of Information Technology & Engineering (SITE), University of Ottawa, PO Box 450, ON, K1N 6N5, Canada

## Abstract:

Overlay networks are becoming widely used for delivering content as they provide effective and reliable services that are not otherwise available. However, they can negatively affect each other as well as the underlying network. It is therefore imperative to employ a management system that controls and adapts the behavior of these types of networks. This will meet not only the specific demands of the users but also those of the network and service providers. This paper describes a policy layer composing a framework that assist in overlay management. The policy layer comprises a set of Policy Enforcement Points and a Policy Decision Point. The goal of this layer is to automate overlay network management. The behavior of the overlay network is adapted to the changing conditions in its environment. The creation, termination, and adaptation of overlays are achieved through policies. Policies are generated and enforced on the fly from the user, network and service provider context information. We show our novel architecture advantages and provide simulation results to varify its effectiveness.

**Published in:** [Global Information Infrastructure Symposium, 2007. GIIS 2007. First International](#)

**Date of Conference:** 2-6 July 2007

**Date Added to IEEE *Xplore*:** 26 December 2007

**ISBN Information:**

**ISSN Information:**

**INSPEC Accession Number:** 9765741

**DOI:** [10.1109/GIIS.2007.4404172](https://doi.org/10.1109/GIIS.2007.4404172)

**Publisher:** IEEE

**Conference Location:** Marrakech, Morocco