Using DLNA Cloud for Sharing Multimedia Contents beyond Home Networks

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Abstract— **The recent emergence of Digital Living Network Alliance (DLNA) standard has made multimedia content sharing among devices in home networks easier than ever before. Several studies have focused on extending the operation of DLNA devices beyond the home networks based on devices called home gateways (HGs). However, these architectures just limit on sharing between two home networks. In order to connect with another home network or when the IP address of a HG is changed, they require the reconfiguration from users. This paper proposes a novel architecture in which a DLNA cloud (DC) plays a role in managing all of HGs. The HGs just need to be configured in the first time connecting to the DC. Sharing policy is built based on the users' relationship in a social network. In this architecture, DLNA users can easily share their content with their friends over the Internet. External multimedia content is transparently played in the home network as if it is located at user's HG. In addition, we also propose procedures for communication between the HG and the DC; as well as between the HG, the DC and the social network system (SNS).**

Keyword—**DLNA, home network, content sharing, n-screen, DLNA Cloud**

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