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## Study on Focus in a SIP-based E-learning System

Zeng Qingheng, Hu Ruimin

The Key Laboratory of Multimedia and Network Communications Engineering, Wuhan University,  
Wuhan, Hubei Province 430079, China

Email: mmzengqh@msn.com      Tel: 027-87653005

### ABSTRACT

This paper presents a new architecture for e-learning service, which is based on the Session Initiation Protocol (SIP). The key server in the architecture is named Focus. The Focus, maintaining a SIP signaling relationship with each participant in the conference, ensures that each participant receives the proper media streams, and implements conference policies. In this paper, we propose the framework of the Focus and further study its main components related to conference control. To demonstrate the validity of the framework, we test the service set-up delays of the system in LAN, Internet, and wireless LAN access environments, respectively. Experiment results reveals that the service set-up delays are acceptable for an e-learning system. Moreover, the delay under wireless access conditions is longer than those in other access types.

**Keywords:** Focus; SIP, Elearning, Multimedia conference; Conference control, Mobility.