

國科會計畫；計畫編號: NSC 90-2213-E-324-019；研究期間: 2001/08-2002/07

## 支援 SMIL 多媒體即時同步遠距教學的動態網路調配平台

張英超

### 摘要

本計畫的目的在於延續上年度的計畫『遠距教學環境中之多媒體即時同步資料流伺服器的研發與實作』（NSC89-2213-E-324-008）與『以 SMIL 為基礎的多媒體即時同步遠距教學系統的研發與實作』（NSC89-2218-E-324-003）的成果，整合已經開發出來的全球資訊網上的 SMIL『即時』多媒體『同步』技術與教學環境的『即時多媒體資料流伺服器』，分析 SMIL 中各即時多媒體物件由於網路延遲所造成不同步的問題，設計完成一個動態分配多媒體物件頻寬的一個平台，以建立『即時、同步』的教學環境。

關鍵字：遠距學習；多媒體；即時系統；電腦輔助教學；動態網路；調配平台；同步多媒體整合語言

# **Network-Adaptive Platform for SMIL Multimedia Real-time Synchronous Distance Learning**

張英超

## **Abstract**

The fundamental goal of this project is to continue the achievement of the last projects (Design and Implementation of Multimedia Synchronization Streaming Server for Distance Learning ---NSC89-2213-E-324-008) and (Design and Implementation of a SMIL-based Multimedia Real-time Synchronous Distance Learning System --- NSC89-2218-E-324-003), to integrate the developed real time multimedia synchronization techniques on the WWW, and the novel SMIL real time streaming multimedia server. By analyzing the out-of-synchronization behavior, that is resulted from different end-to-end delays on the transmission paths, of the multiple objects in the SMIL document, we proposed a network-adaptive platform to adjust bandwidth allocations among these multimedia objects to build a true real time multimedia synchronization distance learning environment.

Key words : Multimedia; Realtime; Streaming;Distance Learning; Quality of Service