SIP-based Video Conferencing System

Project Code: WA1-03

Students:
Chan Tsz Ho
Lai Kai Ming

Fung Yiu Wai
Wu Wing Wang

Supervisor:
Professor Albert Wong
Traditional video conferencing systems require pre-installation and tedious configuration. In this project, we have developed WebConf, a Web-based video conferencing system which eliminates the need of pre-installation and allows users to securely enjoy video conferencing from any terminal with web access.

WebConf enables users to conduct conferences anytime, anywhere, and with anyone. Archiving and reviewing of conferences in industrial motion-JPEG video standard and dynamically scaled audio are supported by WebConf. WebConf also provides a suite of collaboration tools to aid the conference meetings. With these multimedia capabilities, the latest SIP technology and well-tested reliability, WebConf provides you the spontaneous interactivity of a live meeting, and changes any terminal you access into a multimedia link to the outside world.
**What Does WebConf Provide?**

- **Audio**

- **Video**

- **Video Conference**
  It allows conference participants to deliver audio and video contents to others during conference mode.

- **Java Servlets**
  For conferences management, users registration and user info directory.

- **ShareBoard**
  A whiteboard tool for conference participants to share their ideas by drawing graphics on a canvas.

- **ShareText**
  A group chat program which provides a common location for conference participants to discuss with each other.

- **WebConf User Interface**

- **ShareDesk**
  It enables other clients to view or control one’s desktop. The sharing host may open a set of PowerPoint slides and present to the viewers via this technology.

- **ShareFile**
  It enables clients to transfer files.

- **Instant Messaging**
  It allows a client to message another client on the buddy list instantly.
Audio Mixer

The audio mixer receives packets from different sources and combines them into a single output while dynamically scaling the output energy level. Storage space for archiving is conserved by saving the mixed output.

White Noise Substitution

A lost packet is replaced by white noise with energy level determined by our own algorithm, which takes into consideration of the energy level of previous successfully received audio packet and the number of successive missed packets.

Java Web Start

Users can launch WebConf on any machine which has a Web browser. This is made possible by the Java Web Start Technology, which allows secured execution of programs on public computers.