Real-Time Video Communication System

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Nowadays, the demand of pursuing face-to-face meeting over the Internet is increasing. Also, security problems exist at home such as burglaries. People want to remote monitor the situation in their homes and working places.

There exist many video communication tools for both conference and surveillance. But most of them are unaffordable for the general public. Also, they only provide fundamental functions and the quality is not fine.

In our final year project, we aim to develop a low-cost, user-friendly and multi-functional PC-based video communication system.

Our system consists of six main components: Video and speech capturing H.263 video encoder and decoder, G.729A speech encoder and decoder, video and speech rendering, Networking Streaming Design, Graphical User Interface. Our system includes conferencing functions such as instant message service and surveillance functions such as motion detection.
Video and speech are captured by web-cam and microphone respectively.

**Encoder**
- H.263 for video
- G.729A for speech

**Decoder**
- H.263 for video
- G.729A for speech

**Conferencing features:**
1. instant message service
2. video and speech transmission
3. file transfer
4. Four multi-location(s) conferencing

**Surveillance features:**
1. motion detection
2. sound alarm
3. web-based surveillance
4. digital video and speech recording
5. Support color or black and white video
The user can meet and talk with 4 other users at the same time.

“Video Recording” signal pop up when the user starts to record video.

A user can choose partners to communicate through online bar.