P-3: Constructing an Intelligent CSCW System in Telemedicine with IM

Ionuț OLTEANU, IT&C, Andrei CĂRĂUȘU, IT&C
Central University Emergency Military Hospital

Introduction
In this paper, the CSCW (Computer Supported Cooperative Work) technology, IM (Instant Messaging) in Telemedicine is discussed, and a novel telemedicine solution is introduced. The new solution is based on IM, using the XMPP (Extensible Messaging and Presence Protocol) protocol and Jini technology. XML in XMPP helps us to communicate and make various configurations. This IM system makes the medical care information exchange more sophisticated and convenient.

Material and Methods
Telemedicine has been defined as the use of telecommunications to provide medical information and services (by Perednia and Allen, 1995). It also improves access to care, particularly for beneficiaries who face transportation barriers as a consequence of distance or disability. Currently, there are two main kinds of technological dealing methods in Telemedicine. One is of store-transfer manner and an un-synchronized solution. Another is based on interactively, bi-direction transferring, visible technology. Either solutions have some shortcomings, such as being expensive to deploy, lack of mobility, lack of devices support, poor integration ability and so on. Instant Messaging, by enabling us to know the availability of our peers, provides improved communication compared to other technologies. Nowadays, voice, video, SMS transferring are its basic functions. We can integrate more exciting functions into IM. The IM system we referred to uses the open-source protocol XMPP advised by Jabber community. Any IM system based on the protocol can communicate with each other.

Results
In this system, any participants, such as doctors, nurses and the one on the contract can easily communicate with each other. Users can know and access the remote useful devices. We can easily add more plug-ins, such as audio, video, SMS and so on. SMS function enables the doctors and nurses to use their mobiles/PDA to send SMS when they walk through the sickrooms and have no pc to use. Video function helps the doctors and patients make a face to face talk. More importantly, we can integrate all the plug-in functions together.

Discussion
The new IM uses the open-source-XMPP protocol; therefore, it's easier to communicate with other XMPP systems. With the wide portability, inter-network mobility, good integration ability, and low maintenance, it facilitates the people-to-people, people-to-intelligent devices, intelligent devices-to-devices cooperating work.

References
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