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Topic 1
User Authentication in SIP

The Session Initiation Protocol allows people to set up sessions between each other, make "calls". The session can be anything from Voice-over-IP or video phonecall to instant messaging or file transfer. A critical aspect of the service is making sure the party, either calling or called, is truly the right one. This requires proper user authentication.

SIP security issues: the SIP authentication procedure and its processing load, Salsano, S.; Veltri, L.; Papalilo, D.; Network, IEEE, Volume 16, Issue 6, Nov.-Dec. 2002 Page(s):38 - 44

Authentication of Signaling in VoIP Applications
Srinivasan, R.; Vaidehi, V.; Harish, K.; LakshmiNarasimhan, K.; LokeshwerBabu, S.; Srikanth, V.; Communications, 2005 Asia-Pacific Conference on 03-05 Oct. 2005 Page(s):530 - 533

Providing response identity and authentication in IP telephony
Cao, F.; Jennings, C.; Availability, Reliability and Security, 2006. ARES 2006. The First International Conference on 20-22 April 2006 Page(s):8 pp.

A lightweight scheme for securely and reliably locating SIP users
Kong, L.; Balasubramaniyan, V.B.; Ahamad, M.; VoIP Management and Security, 2006. 1st IEEE Workshop on 3 April 2006 Page(s):9 - 17

SIP signaling security for end-to-end communication
Ono, K.; Tachimoto, S.; Communications, 2003. APCC 2003. The 9th Asia-Pacific Conference on Volume 3, 21-24 Sept. 2003 Page(s):1042 - 1046 Vol.3

IETF RFC documents 3702 and 4474. (ftp://ftp.rfc-editor.org/in-notes/rfc4474.txt, ftp://ftp.rfc-editor.org/in-notes/rfc3702.txt)

Topic 2

Security Mechanisms in WLAN Networks

Wireless Local Area networks are a very popular and constantly growing technology to connect users and devices to the Internet in, e.g., Internet cafe hot spots. Still, WLAN can also be used in more demanding environments as the standards include many security features commonly not used in typical deployment scenarios (e.g. the HUT Aalto network). This topic is about taking a look at the various current security measures in IEEE 802.11 WLAN technology, and what future mechanisms are foreseen.

Good sources include IEEE, ACM and Elsevier databases for scientific publications.