

ERCIM “Alain Bensoussan” Fellowship Scientific Report

Fellow: Martin VARELA
Visited Location : VTT Electronics, Oulu, Finland
Duration of Visit: 9 months

I - Scientific activity

During my sojourn at VTT I worked on several subjects, some related to my previous background, and some new to me. In line with my previous research, I worked on Voice over IP (VoIP) quality assessment. I developed an automatic, real-time quality estimation module for a metrology tool (QoSMeT) developed at VTT within the ITEA Easy Wireless project. This was a direct application of the PSQA (pseudo-subjective quality assessment) technique that I developed during my doctoral research. I also worked on assessing the performance of a pilot UMA (Unlicensed Mobile Access) technology, which uses dual mode phones (GSM/UMTS – 802.11) with seamless roaming capabilities in order to provide operating cost savings and convergence capabilities. Another VoIP-related issue I studied is the performance of Skype on mobile devices over converging networks (e.g. dual-mode smartphones, Mobile IP-enabled laptops).

More recently I have been working on person-to-person unified messaging systems, which allow using many heterogeneous devices in a simplified and more efficient way. I'm currently leading research on this subject at VTT.

II- Publication(s) during your fellowship

P. Perälä, M. Varela. "Some Experiences with VoIP Over Converging Networks". In Proceedings of the Measurement of Speech, Audio and Video Quality in Networks workshop (MESAQIN'07), Prague, Czech Republic, June 2007 (to appear).

M. Varela, I. Marsh, B. Grönvall, F. Hammer. "A Metric for Single-ended Speech Quality Estimation". In Proceedings of the 4th Swedish National Computer Networking Workshop SNCNW 2006. Luleå, Sweden, October 2006.

The following article is still under review by Computer Networks (currently being modified as per the referees' instructions)

A. Couto da Silva, M. Varela, E. de Souza e Silva, R. Leao, G. Rubino. "Quality Assessment of Interactive Real Time Voice Applications". Submitted to Computer Networks.

III -Attended Seminars, Workshops, and Conferences

I participated as a speaker in the International Conference on Artificial Neural Networks, 2006 edition, in Athens, Greece.

I also organized a seminar on Quality of Networked Multimedia Applications at VTT, with participation from VTT, Nokia and the Octopus test network.