Jordan University of Science and Technology

A High Level Audio Communications API for the Unicon Language

Authors: Ziad A. Al-Sharif

Abstract: VoIP aims to make voice communication over the internet very easy and less costly, despite difficulties such as the limitations of bandwidth and the supporting technology. VoIP has numerous applications; for example it greatly enhances the potential usefulness of Collaborative Virtual Environments (CVEs). If 3D graphics make a CVE feel like a place, voice communication will help that place feel real and make it more useful. This thesis presents a VoIP facility developed for Unicon, a high level language that simplifies the task of writing programs, reducing their development cost, and programming time. Unicon?s VoIP interface is part of an audio communications API designed to be minimal and consistent with the rest of the language. These goals keep the VM size reasonable and reduce time a programmer spends learning how to write VoIP applications. Through a set of extended and added built-in functions, Unicon now supports peer-to-peer, one-to-many, and many-to-many VoIP sessions with no need for a server. This project uses an open source cross platform library called JVOIPLIB, a C++ library that provides adequate VoIP QoS on both Linux and MS Windows.