Wireless Data Entry Device for Forward Observers

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The U.S. Army is developing a replacement for the Handheld Terminal Unit to allow forward observers to submit digital calls for indirect fire support. This project explored the use of open-systems platform-independent software on commercial off-the-shelf personal digital assistants (PDA) for this purpose. This article describes the PDA software architecture developed as part of this research.

The purpose of this project was to develop a proof-of-concept Handheld Terminal Unit (HTU) to allow dismounted forward observers (FOs) to create and submit digital calls for indirect fire support (e.g., mortars, artillery, bombs from aircraft, etc.). Feedback from U.S. Army and Marine Corps units, however, indicated that users found the HTU bulky, heavy, and difficult to use. In response, the project manager (PM), Intelligence and Effects contracted the Information Technology and Operations Center (ITOC) and the U. S. Military Academy to conduct a market survey of available commercial off-the-shelf (COTS) solutions to these complaints.

At the time of the survey (1999-2000), no suitable COTS hardware existed; however, the ITOC recommended that the PM develop open-systems platform-independent software so that when personal digital assistant (PDA) technology provided a viable COTS hardware solution, the software would be ready. The purpose of this project, a continuation of previously reported work [1], was to demonstrate the feasibility of such a platform-independent PDA solution.

The proof-of-concept PDA solution developed as part of this research involves a client interface running on a ruggedized PalmOS PDA. The client software is written in a platform-independent, constrained version of Java designed to run on small devices. A Bridge, also written in Java, connects to Army radios via a serial port and to the client via Institute of Electrical and Electronics Engineers (IEEE) 802.11b wireless local area network (LAN) technology.

Due to space constraints, CrossTalk *was not able to publish this article in its entirety. However, it can be viewed in this month's issue on our Web site at <www.stsc.hill.af.mil/crosstalk> along with back issues of* CrossTalk.