

Emergency communication system

At the National Centre of Excellence in Technology for Internal Security (NCETIS), our group has conceived, designed and developed an emergency communication system for Public Protection & Disaster Relief (PPDR). This system facilitates real-time video streaming by first responders (police / anti-terrorist forces / disaster response teams) to maintain direct communication between team members in the field and to provide a global view of the operation at a single point.

The system operates in sub-GHz frequency band and has been designed in consultation with elite forces in the country. The system comprises of a client unit (CU) and a portable base station. The CU is a lightweight wearable device that is mounted on the first responder's ballistic vest. It is integrated with a wearable micro-camera fitted on a ballistic goggle and is powered by a field swappable battery. The rapidly deployable base station is designed to be man-portable or vehicle mounted and is integrated with a control centre where, a team can remotely monitor ongoing

public safety operations in a geographical area. The system supports peer-to-peer communication among CUs when the base station is unreachable.

The system has been developed based on proprietary modifications to previous generation wireless standards and has been successfully put through extensive field trials.

Currently we are working towards the design and development of a state of the art system leveraging 4G+ technology, to support Public Safety features such as Push To Talk and Group Communication. Such a system would support faster call setup, enhanced real-time video experience and rapid exchange of contextual data between incident sites and control centres, in comparison with the current version of the system. We have collaborated extensively with the industry for the customisation of hardware platforms and software stack for the development of this public safety system.

