



Case Study – Fire Department of New York City

Background

The Fire Department of New York City (FDNY), the largest in the world protects the life and property of City residents and visitors from fire and critical health threats. FDNY is responsible to cover 320 square miles (829 square kilometers) including over 8 million residents. It consists of more than 11,400 fire officers and fire fighters. In addition, the Department includes 2,800 emergency medical technicians, paramedics and supervisors assigned to the bureau of emergency medical service (EMS), as well as 1200 civilian employees.

Challenge:

Many of the fire department's applications and associated equipment have been used for some time. Core systems, such as for fire incident dispatch, and citizen emergency reporting systems were developed in the 1970's and 1980's. The City has determined that many of these need to be updated to meet the operational requirements of the future.

The initial systems to be updated include:

- o STARFIRE Computer Aided Dispatch system that receives, process and dispatch orders to more than 250 firehouses.
- o Emergency Reporting System (ERS), which takes emergency reports throughout the city using voice call boxes.
- o Electro-Mechanical Alarm Display System (EMADS), which takes emergency reports throughout the city using mechanical ("pull") alarm boxes.
- o Voice Alarm System (VA), which is the primary back-up dispatching system.

These and other systems are deployed in each borough and on a city-wide basis. In addition to updating their systems, FDNY is updating the dispatch operations centers city-wide and creating a redundancy scheme to enhance reliability and lower costs. This project is called the Emergency Communication Transformation Program (ECTP) project. By 2009, New York City plans to have city-wide systems housed in Public Safety Answering Centers (PSAC) that handle emergency calls for fire, police and EMS.

The effort must occur over multiple years given budget constraints. Moreover, the effort is highly complex and must have zero impact on the daily operations of FDNY to respond to emergency calls. When completed, this initiative will increase system reliability, lower operating costs and improves public safety in New York City.

Strategy & Approach:

FDNY selected the team of PURVIS Systems and IMS for the projects mentioned above. PURVIS Systems, the prime contractor on the efforts is a Middletown, RI-based leader of public safety systems and has 30 plus years of experience serving FDNY. PURVIS is FDNY's leading contractor for the design, prototype, production and installation of these key emergency communications



systems, Computer Aided Dispatch (CAD) software modernization and the 24x7x 365 system/hardware maintenance. IMS brings a long, successful history of managing complex projects, testing systems, and implementing documentation and custom training programs on time and on budget.

PURVIS established a common architecture for the ERS, EMADS and VA systems, using Commercial Off The Shelf (COTS) hardware, software and hardware modules. A common Management Information System (MIS) component has also been designed. This lowers development time and costs as well as minimizes technical and implementation risks. Moreover, this common architecture and design lowers costs and effort for documentation, end user training, and system maintenance, including spares.

IMS provided critical Independent Validation and Verification (IV&V) testing services that ensured system reliability as well as rapid in-situ installation and cutover in a life critical environment.

Together PURVIS and IMS established multi-year, detailed project plans including software, networking & communications, specialty hardware and systems integration efforts for each system that don't impact current fire department first response operations.

For the ECTP project, an experienced team of PURVIS and IMS personnel with fire department systems project management, hardware and software design, test and field service experience was assembled in New York City and Middletown, Rhode Island. They understand the existing FDNY systems and work with the dispatch operations centers in each borough to plan and implement the equipment migrations and upgrades as each center is refurbished or built.

The PURVIS Team with IMS is bringing the complementary strengths to build a customized solution to FDNY for their unique requirements.

Results:

The STARFIRE, ERS and EMADS systems are tightly coupled. New ERS and EMADS systems have been thoroughly tested and have gone live in the boroughs of Bronx and Queens to date. Testing and implementation for the boroughs of Brooklyn, Manhattan and Staten Island are planned for 2007.

The new VA has been tested and has placed into service in Boroughs of Staten Island and Queens. It's scheduled to be tested and implemented in the three other boroughs by the end 2007.

The ERS, EMADS and VA systems have all performed at or in excess of the required performance levels.

In early 2005, the PURVIS and IMS team played a major part in the relocation of the Queens and Bronx dispatch operations centers to swing spaces as both buildings are refurbished. The refurbished Queens and Bronx centers will be fully operational by spring 2007.

New York City is on track to have modernized state-of-the-art city-wide systems housed in PSACs that handle emergency calls for fire, police and EMS which will increase system reliability, lower operating costs and improve safety.