

Effective Technology Solutions for Public Safety

PURVIS Systems Delivers Results for the FDNY

Many of the fire department's systems and associated equipment have been used for some time. Core systems, such as fire incident dispatch and citizen emergency reporting systems, were developed in the 1970's and 1980's. As such, the FDNY determined that many of its systems needed to be modernized and upgraded to meet the operational requirements of the future. The identified systems included:

- STARFIRE Computer Aided Dispatch (CAD) System: Receives, processes and dispatches orders to more than 220 firehouses.
- Voice Alerting System (VA): Provides voice alerting to firehouses and serves as the primary back-up the STARFIRE CAD system.
- Firehouse Alerting System: Alerts firehouse personnel by communicating alarms throughout the firehouse.
- Emergency Reporting System (ERS): Receives and processes emergency reports from voice call boxes installed throughout the City.
- Electro-Mechanical Alarm Display System (EMADS): Receives and processes emergency reports from mechanical ("pull") alarm boxes installed throughout the City.

The systems had to be designed to support interfaces to several disparate systems, including: New York City Police Department (NYPD) and Emergency Medical Services (EMS) CAD systems, the FDNY radio system, phone systems, and data logging and recording systems. Each system also had to be designed to accommodate various forms of communications protocols. Systems' communications to firehouses needed to be designed to operate over fiber, the FDNY copper and dedicated Verizon lines.

THE CHALLENGE

Modernize the FDNY incident dispatch, firehouse voice alerting system, and citizen emergency reporting systems and associated equipment, which had been in use since 70s and 80s.

THE SOLUTION

Via a systematic, comprehensive, and customer-sensitive approach, PURVIS was able to modernize the target FDNY systems while enabling the department to achieve lower operating costs and improved reliability.

NEW YORK CITY FIRE DEPARTMENT

The New York City Fire Department (FDNY), the largest municipal fire department in the United States and the second largest in the world, protects the lives and property of City residents and visitors from fires and critical health threats. It consists of more than 11,200 fire officers and fire fighters, 3,200 emergency medical technicians, paramedics and supervisors, and 1,600 civilian employees. The FDNY is responsible for covering 322 square miles, which encompasses over 8 million residents across five City boroughs: Manhattan, Bronx, Queens, Brooklyn and Staten Island.



THE GOALS

The modernization efforts were highly complex and the FDNY required that they have no impact on the department's daily operations and its ability to respond to emergency calls. When completed, the efforts must result in increased system reliability, lower operating costs and improved public safety in New York City.

PURVIS SYSTEMS

THE SOLUTION

The FDNY began by conducting a series of internal meetings with operational and technical staff to define a detailed set of modernization and upgrade requirements for each system. Once requirements were defined, a competitive procurement process was conducted to identify possible solutions and vendors to implement them. This process led the FDNY to the selection of PURVIS Systems.

For four decades, PURVIS Systems has been providing systems engineering services to Public Safety and Department of Defense (DoD) customers nationwide. The company has a 39 year history of uninterrupted service to the FDNY. PURVIS's current role with the FDNY spans across every key communications system and technology in the department. Services provided include system modernization, software and hardware development, system implementation and 24x7x 365 maintenance and support.

While each system modernization effort was treated as a separate project, the FDNY and PURVIS ensured regular communication occurred between each project team in order to implement common architectures and user interfaces across systems. PURVIS project managers for each system regularly attend weekly status meetings for each of the other projects and the PURVIS engineering team held weekly status meetings across all projects to ensure common goals were met.

PURVIS established a common architecture for the VA, ERS, and EMADS systems using Commercial Off-The-Shelf (COTS) hardware and software modules. PURVIS has since developed the Fire Station Alerting System (FSAS) as the modernized solution to firehouse alerting and the FSAS was designed using the common architecture as well.

A common Management Information System (MIS) component was also designed by PURVIS. The MIS lowers development time, costs and effort associated with documentation, end user training and system maintenance, including spares. Technical and implementation risks are also minimized by the MIS.

A dedicated FDNY and PURVIS test and evaluation team monitored system design and development efforts to ensure systems were being modernized in accordance with requirements. PURVIS provided critical Independent Validation and Verification (IV&V) testing services that ensured system reliability as well as rapid installation and cutover to a live environment.

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

"PURVIS SYSTEMS HAS HISTORICALLY PROVEN ITSELF TO BE A DEDICATED CONTRACTOR ON GOOD STANDING, AND IS ALWAYS READY TO SUPPORT THE FIRE DEPARTMENT OF NEW YORK DURING ANY SITUATION THAT MAY ARISE."

– DONALD E. STANTON
Assistant Fire Commissioner
Bureau of Technology Development & Systems
Chief Information Officer
Fire Department of New York

"PURVIS SYSTEMS TECHNOLOGIES AND AROUND-THE-CLOCK IMMEDIATE TECHNICAL RESPONSE ENSURES THAT THE FIRE DEPARTMENT OF NEW YORK IS ABLE TO PROVIDE ALL THE NECESSARY LIFE SAVING SUPPORT TO THE CITIZENS OF THE CITY."

– ROBERT L. SCOTT
Director
Bureau of Fiscal Services
Fire Department of New York

THE RESULTS

PURVIS's experienced team has adhered to disciplined processes throughout the modernization efforts to consistently deliver successful results. Working in partnership with PURVIS, the Fire Department of New York City is well on its way to having the modernized, state-of-the-art systems it requires while meeting its goals of achieving increased system reliability, lower operating costs and improved public safety in New York City.

The Starfire CAD system has been modernized and deployed and the new Emergency Reporting and Electro-Mechanical Alarm Display systems have gone live in the boroughs of Staten Island, Manhattan, Bronx and Queens. The new Voice Alarm system is installed in all 243 firehouses and the flagship Fire Station Alerting System is scheduled to be deployed across all 243 stations beginning in January, 2014 and continuing over the next three and a half years.

Each of these critical systems was implemented with no impact to the FDNY's daily operations. They are all used on a regular basis and they consistently perform at or in excess of the FDNY's required performance levels.



FIRE HOUSE ALERTING

PURVIS is currently implementing its Fire House Alerting System across New York City's more than 240 fire houses. The automated alerting system includes an interface to the FDNY's CAD system and to the citywide IP network used by the department for fire station communications. The system features an array of new in-station devices, including...

- Station Control Units
- Tower Lights
- Speakers
- urnout Timers
- Thermal Printers
- Drive Bay Motion Sensors
- Reader Boards
- Flat Panel Displays

PURVIS will provide 24 x 7 maintenance on the system, as the company does for many other mission-critical systems used by the FDNY. PURVIS is a trusted public safety technology supplier to FDNY, supporting their varied technology requirements in hardware, software, and communications for over 40 years.