Case Study: EST4 Residential New Construction

INTRODUCTION

Campus-style and multifamily building complexes require advanced IT networking designs that challenge fire safety practices in new ways. In connecting to outside networks, up-to-date fire safety panels should utilize modular architectures that incorporate advances in network configuration, audio, survivability and cybersecurity while supporting a variety of flexible network topologies such as mesh, star and hybrid – all while complying with the latest codes and standards.

Edwards EST4

In conjunction with these building design trends, Edwards has launched EST4, an advanced UL 864 and UL 2572-listed networked fire alarm and emergency communications platform for facilities that need to adapt now to a wider range of panel-to-panel alarm network configurations than traditional Class A and B wiring but that also want to scale for future growth. The EST4 system provides the capability of two-way communication with external devices, such as building management systems, enabling real-time system status and decision making from anywhere.

RELATED CASE STUDY

SITUATION

The developer of a five-story residential complex initiated a change order to implement a phased approach, allowing occupants to move into one section while construction was going on in other areas. The initially approved fire panel design was comprised of equipment centralized in one room to serve each wing of multiple floors, including:

- Three network nodes – circuits for a Class A network and two audio networks in different directions
- Additional annunciator with microphone and controls
- Auxiliary Power Supply (APS) panels with Input Modules (SIGA-MCC1s) for speaker circuits as well as strobe circuits to serve an entire wing of multiple floors

A large amount of cabling would travel through areas under construction, but no circuit integrity (CI) cable was required either by code or the Authority Having Jurisdiction (AHJ) for the fire alarm and voice communications systems in the initial system design.

CHALLENGE

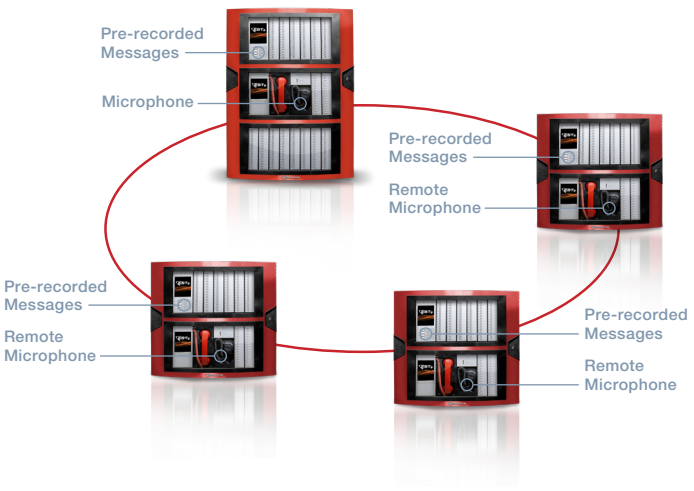
Upon review of the change order, the AHJ would only allow phased construction if the fire alarm system used CI cable in each wing's centralized fire panel. Because the AHJ was concerned about survivability of critical circuits, the CI cable requirement was intended to provide for standalone coverage as well as areas between phases. The initial design would have required not only the multiple Class A network cables to be run in CI cable, but also Signaling Line Circuit (SLC), strobe, speaker, and auxiliary power circuits. The project cost to install CI cabling with a 2-hour fire resistance rating was expected to be in the six figures.

SOLUTION

Applications Engineer Mike Murphy, SET, CFPS, of ADT Commercial, New Jersey Metro (an Edwards Authorized National Partner), recommended the situation could be addressed without the heavy CI requirements by installing EST4 panel technology. Bart Fraley from ADT Commercial took the concept and convened meetings with the electrical contractor, the project developer and the AHJ to review the options.

The EST4 system offered features that paved the way for the AHJ to reconsider the requirement for CI cable. Besides its simplified network cabling using only a single twisted pair to deliver network, audio and remote microphones, the AHJ noted the EST4 system's increased operability in degraded mode such that:

- The system database, including the audio messages, could be stored digitally in each panel's CPU (central processing unit), allowing the normal system messages and tones to be produced by one node if it became orphaned from the rest of the network
- A remote microphone could be added to each node without further cabling to enable local communication with the fire alarm panel



RESULTS

Confident that his concerns about standalone fire panel performance had been addressed, the AHJ eliminated the requirement for CI cabling on the initiating and notification circuits for the simplified fire alarm network. In turn, the building owner saved approximately 25% of the installation cost in labor and cabling by switching to the EST4 platform, saving $200,000.

To learn more please visit us at edwardsfiresafety.com/Home/EST4.