

TRANSMITTAL**PROJECT:** [REDACTED]**ADDRESS:** [REDACTED]**PERTAINING TO:**

Emergency Responder Radio Communications System - Active System Overview and Technical Advantages

ATTN:[REDACTED]
[REDACTED]
[REDACTED]

The intent of this letter is to provide an explanatory statement proposing the technical advantages of implementing an Active (Networked) Emergency Responder Radio Communication System (ERRCS), as opposed to deploying Passive (Individual) systems located in each building, at the above-referenced location.

Active Topology Overview:

An active ERRCS is a system topology that utilizes a single head-end Bi-Directional Amplifier (BDA) unit connected to remote BDA nodes, traditionally via fiber-optic cabling. In this configuration, the head-end BDA is the only system component with a donor antenna plant, acting as the sole point for uplink/downlink signal transmissions with the designated donor site.

Radio frequency signals are transmitted and received at the head-end BDA, then distributed to each remote BDA via the network infrastructure. Each BDA unit (head-end and remotes) includes its own indoor service antenna port, providing in-building coverage specific to its associated structure.

Active Topology Technical Advantages:**Minimizes Noise Floor Impact:**

By consolidating donor site communications to a single point located at the ERRCS head-end, an active ERRCS architecture limits overall system noise. In contrast, passive systems in close proximity may introduce conditions where multiple independent BDAs simultaneously transmit on the uplink frequency, raising the cumulative noise floor and impacting the broader public safety network. Additionally, passive BDAs in vicinity may lead to scenarios where donor antennas pointed at or over other site buildings - also containing BDAs - creates potential for internal system oscillations.

Ensures Signal Consistency Across Buildings:

The networked configuration supports signal equalization, synchronized delay compensation, and uniform performance across the campus. This is particularly relevant for simulcast or trunked radio systems, where timing and phase alignment are critical for effective communication.

Centralized Control and Safety Functions:

An active system enables single-point configurability for all buildings. Essential functions such as Emergency Power-Off (EPO) can be executed centrally for the entire campus, avoiding the need for separate, manually coordinated actions across multiple independent systems.

Please do not hesitate to contact me directly should any additional explanation or clarification be necessary.

Sincerely,**CASCODE**



PROJECT: [REDACTED]

ARCHITECT PROJECT #: [REDACTED]

ADDRESS: [REDACTED]

RFI #1

ATTN:

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

ISSUE DATE: 07-27-2025

DUE DATE: 08-03-2025

SPECIFICATION SECTIONS: SECTION 284800 - EMERGENCY RESPONSE SYSTEMS

DOCUMENTS REFERENCED: FIRE ALARM CONTRACT DRAWINGS (FA001, FA-101, FA-102, FA-103, FA-201)
ERRCS Signal Survey (07-03-25)

PERTAINING TO: Emergency Responder Radio Communications System (ERRCS) - Active/Networked System Requirement

REASON FOR REQUEST: ☐ INSUFFICIENT INFORMATION ☐ ENGINEERING CONFLICT ☒ ALTERNATE PROPOSALACTION REQUESTED: ☐ CLARIFICATION ☒ CONFIRMATION ☐ APPROVALPROBABLE IMPACT: ☒ FUNCTIONALITY ☐ COST ☐ SCHEDULE**CONTENTS:**

Emergency Responder Radio Communications System (ERRCS) Benchmark Signal Survey conducted on 07-03-25, identified multiple in-building areas and critical areas that fail to meet minimum code specified signal strength thresholds required as per 2020 NYS Fire Code - Section 510.4.1.1. These results are expected to experience additional degradation upon further construction progress.

Fire Alarm Contract drawing FA-101, Key Note 7, instructs contractor to provide *Bi-Directional amplifier for the emergency responder radio coverage system*.

Fire Alarm Contract drawing FA-201 depicts above referenced Bi-Directional Amplifier (BDA) as a stand-alone or passive system, operating independently of network interface with other BDA's, potentially in close proximity or also on campus.

AHJ Application Instructions specifies the below:

Multiple ERCES/BDAs on the same campus or in close proximity will not be approved without FCC License Holder pre-plan approval. When multiple ERRCS/BDAs are planned, an expandable system is required (EX. Fiber DAS or an expandable coaxial design allowing one system to serve multiple buildings)

Proposed Contract Modification:

Vendor will generate a proposal for the design, equipment, and technical labor adjustment associated with the provision and integration of active or networked ERRCS components within Building, to provide required emergency responder radio coverage supplementation in accordance with AHJ (FCC License Holder) requirements. Vendor will provide a BDA remote unit within Building, capable of network interface with an on-campus Head-End BDA (Head-End BDA under separate contract). This Head-End BDA will be located in alternate on-campus location for the purposes of optimal line-of-site to AHJ specified donor site location. Vendor will provide passive system components for future in-building coverages within Building, however, final power-up and commissioning of BDA remote unit within Building will not occur until after interface with and commissioning of the campus Head-End BDA.

Please review and confirm.

