# EOTSS Defined Standards
## Guidance for Cellular Extenders

## Contents

# Background

## What is a Cellular Extender?

All major cellular carriers have the capability to provide a device that plugs into a network, establishes a connection via the internet to the carrier's data center, and provides localized cellular service within proximity around the device. These are known as "cellular extenders", "femtos", "efemtos", "Super Femto Cell Access Points", etc.

While these devices are a quick and easy way for carriers to address in-building coverage issues, this approach shifts support to EOTSS and simultaneously puts the customer at risk.

## How Did EOTSS Make this Decision?

**For the reasons listed in more detail below, EOTSS will not allow or support any cellular extenders on the Commonwealth network.**

### Decision Point 1: Single Point of Failure

Use of cellular extenders on the Commonwealth network will potentially establish a single point of failure. Because these devices would leverage the Commonwealth network over a standard internet connection, all data, voice, and cellular communications would be contingent on the network's availability. While EOTSS strives for 100% uptime, unforeseen technological failures can occur, rendering all communication methods inaccessible until the Commonwealth network is restored.  In the event of an outage caused by factors like weather, there is risk of an extended period without communications.

### Decision Point 2: Support

Given that these devices are not commodity devices or part of our portfolio (like laptops and desktops), EOTSS cannot provide support for installation or the use of these devices. Additionally, utilizing EOTSS infrastructure would shift the responsibility for addressing cellular quality issues and cellular coverage within facilities to EOTSS, aspects for which we are presently not equipped to support.

### Decision Point 3: Security

These devices are considered "Internet of Things" (IoT) since they require internet connectivity. The communication involves encryption, making it challenging for EOTSS and our security systems to discern whether the traffic is legitimate or malicious.

## Guidance

We are committed to offering guidance on available options and continue to actively participate in discussions between our customers and ITT72 Category 1 approved cellular carriers to identify acceptable solutions, ensure a mutual understanding of our concerns, and collaboratively work towards comprehensive solutions for their services.

## Solutions

EOTSS has provided and encouraged the carriers to offer two (2) solutions:

**Option 1:**

A fully managed network solution, where the cellular provider (and/or their third party) provides a diverse internet connection, installs the cellular extender(s) and manages the cellular extender(s) on that network connection.

**Option 2:**

Known as "inbuilding cellular", cellular repeaters are used where antennas are placed on the exterior of the building and cables from those antennas are run to a central device that "repeats" the signal to the interior of the building.

### Multiple Agencies in One Facility:

For facilities accommodating multiple agencies, carriers are urged to collaborate with the facility manager to establish a unified offering for an entire facility.  This will minimize the number of solutions per location.

### Multiple Carriers in One Facility:

In situations where buildings need support for multiple carriers, it is advisable to contemplate the use of a carrier-agnostic cellular repeater.  This approach aims to reduce the space and infrastructure requirements necessary to accommodate the communication needs of the building's occupants.

## Contact EOTSS

We at EOTSS certainly understand the situation and agree that cellular (like any wireless medium) is a necessity today.  If you have any questions or would like EOTSS to participate in discussions between with your carrier to find an acceptable solution, you may reach out to Brad Steele, Director of MassVoice: brad.steele@mass.gov.

## Document History

| Version | Author/Editor | Reason for Change | Date |
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