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Guidance for Cellular Extenders and the Commonwealth Network Infrastructure

This memo is to provide information, reasoning, and guidance to our customers on cellular service coverage issues.

Background:

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.

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

EOTSS Position and Reasoning:

Single Point of Failure

Our first decision point pertains to the potential establishment of a single point of failure with these devices.

As they would leverage the Commonwealth network, 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 network is restored. In the event of an outage caused by factors like weather, there is risk of an extended period without communications.

Support

Our second decision point is regarding support, particularly concerning device and service. Given that these devices are not commodity devices or part of our portfolio, such as laptops or desktops, EOTSS cannot provide support for installation or an ongoing support perspective. Additionally, utilizing EOTSS infrastructure would entail the responsibility for addressing cellular quality issues and cellular coverage within facilities, aspects for which we are presently not equipped to support.

Security

Our third decision point involves the security aspects of these devices. 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 actively participating in discussions between our customers and cellular carriers to identify acceptable solutions. As part of this commitment, we are currently engaging in discussions with the ITT72 Category 1 approved cellular carriers to ensure a mutual understanding of our concerns and to collaboratively work towards comprehensive solutions for their services.

EOTSS has provided and encouraged the carriers to offer two solutions.

One option is for 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.

The other option is to use cellular repeaters, 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, sometimes referred to as “inbuilding cellular”.

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.

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.

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.