CELLULAR DOOR CONTROLLERS

OVERVIEW

Cellular door controllers apply cellular connectivity to access control, granting access to doors in locations that may be remote or require running a lot of network cables. Whether a door is being retrofitted or added, cellular is a great option for end users. Cellular can be used with on-prem and cloud deployments. Cellular connectivity is a very large field of study so we will focus specifically on how it applies to the access control and security industry. We will look at SIMs, Data Plans, Necessary connection levels, End Point connections, and Security. We will also line out some practical applications for the technology in access control.

SIM CARDS AND SECURITY

SIM (Subscriber Identity Module) cards are becoming increasingly popular and advanced in the world of cellular communications. There are two options for SIMs: physical and virtual (eSIM). eSIM cards are becoming increasingly popular among companies that are looking to shift to a virtual option. Both SIM and eSIM cards contain a unique serial number ICCID along with several other unique identifiers that can be used in access control. Multiple networks can communicate with a SIM/e-SIM card known as roaming agreements. Some networks that you'd typically see in this category are AT&T, T-Mobile and Sprint.

SIM connections can be utilized in access control by connecting the best signal in the area to door controllers. With BlueWave, as long as the SIM has the equivalent of "1 bar", the BlueWave door controller will be able to communicate well with the software. When it comes to more difficult applications, such as low cellular connectivity, a unit with a higher cellular range can be deployed (i.e. larger antenna).

The FCC oversees the communication and security laws for SIM cards and data providers with several security parameters built into the SIM card itself (check digital and authentication key (K)). Additionally, doors can use a VPN connection to connect the two end points (door controller and BlueWave's Software System).

DEPLOYMENTS

ONE TO ONE

One to one deployments are best utilized for a door that has no existing cabling infrastructure. In this case the SIM will be located at the door with a door controller (Cellular door kit). In this type of deployment we use a cellular broker to connect to the door controller. Included in the cellular door kit is a power supply, cellular broker, door controller, battery, SIM, and Antenna. All you will need to do is connect the cellular door kit to an outlet and the cellular connection will be made back to the software.

ONE TO MANY

One to many deployments are best utilized if cabling needs to be run back to a head end/ IT room. These deployments are typically seen with a retrofit. If the existing cabling is in place we will use a BlueWave Cloud Switch to connect the door controllers to the cellular network. Each controller will connect to a dedicated unmanaged switch and that switch will connect to a robust cellular broker. This Broker will hold the VPN connection as well as the SIM for cellular connectivity. Each controller will have its own static IP address that correlates to the cellular network that is built.

SOFTWARE DEPLOYMENTS WITH CELLULAR DOORS

For cellular doors, they can connect to a deployment that is either on-prem or in the cloud. They will operate the same way.

ON-PREM

On-prem deployments require the software to be hosted by the end user. A VPN client is installed on the server to enable connection. The cellular controllers can run side-by-side with Ethernet controllers in a "hybrid" deployment. There is a fixed cost for data on each of the cellular door controllers.

SOFTWARE DEPLOYMENTS WITH CELLULAR DOORS

CLOUD

Cloud deployments are hosted and maintained by BlueWave. BlueWave will manage the connection end-to-end. The door controllers will not touch the end users network because of the cellular connection. The data and cloud hosting cost would then be bundled into a monthly fee as opposed to a fixed rate.

BlueWave's Cellular Door Controllers can connect to an on-prem deployment or a cloud deployment.

PRACTICAL APPLICATIONS

There are many practical applications of cellular door controllers. One of the most common applications is adding access control to a remote site, building, or door needing to connect back to the existing infrastructure. Cellular connectivity allows doors to connect to the system without trenching a road or establishing a fiber connection. Cellular door kits are a secure, simple, and cost effective solution.

A current application of the BlueWave cellular door controllers is for a water Utility. The water utility has several remote buildings that need security but have no network connection. This Utility has leveraged the cellular product to secure the doors while not having to pay nearly $40,000 to run cable to each remote building.

CONCLUSION

When it comes to access control, cellular door kits provide a solution to remote sites or projects that are looking to cut the installation costs. SIMs will connect to a cellular network, such as AT&T or T-Mobile, then to the BlueWave software in order to control the door. There are two deployment types based on your needs (one to one and one to many). Additionally, the option to choose between on-prem and cloud hosting offer flexibility for the end user if they'd like to use their own network or have BlueWave manage it for them. While commonly used in cases of remote doors, cellular door controllers can be used on any door to lower the cost of installation on a new door by removing the need to run network cables.

If you are interested in learning more about cellular connectivity and access control or how BlueWave can assist you in a project involving cellular door controllers, please reach out to us either by phone (760-929-9596), by email (sales@bluewavesecurity.com) or on our website (bluewavesecurity.com).