

## AT A GLANCE

# CBRS IN RETAIL

### OVERVIEW

The distribution center is the heart of retail today. Online ordering has grown by 20% in 2020 and shows no sign of slowing down in the future. This has caused retailers to develop innovative approaches to how they handle order fulfillment from “dark stores” – converting unused retail stores to distribution and pick spots – to pop-up fulfillment centers for ecommerce. Additionally, more and more of these warehouse and distribution centers are being staffed by robots to improve operational efficiencies and better protect the health and safety of employees. When you go in a distribution center, what often stands out is how few people there are.

### CHALLENGES

Warehouse robotics and autonomous vehicles on the distribution center floor have clearly defined connectivity needs: low-latency connections and interference-free spectrum. They can only be as effective as the networks supporting them. But what happens when there is not enough network capacity or too much noise and interference to guide the robotic pickers? How might poor quality connectivity impact the safety of the employees on the floor?

### SOLUTION

Aruba can help improve operational efficiency and increase resilient connectivity – while at the same time minimizing safety risk. That’s why Aruba is partnering with Celona to change the way retailers deploy private mobile networks. With Celona CBRS, your IT team can take advantage of unlicensed 3.55 to 3.7 GHz U.S.-only spectrum to spin up turnkey private LTE networks that help you meet the increased demand in your distribution centers and in retail stores. CBRS works alongside your existing Wi-Fi footprint to provide clean, interference-free spectrum and greater range while enforcing latency, jitter, throughput and packet error rate metrics on a per application basis.

Unlike private LTE networks provided by cellular carriers, our CBRS solution includes all the ingredients necessary – indoor/outdoor LTE Access Points, Celona Edge software with



4G/5G mobile core, SIM cards and provisioning software, Spectrum Access System license for CBRS spectrum access, and cloud-hosted Celona Orchestrator for remote operations. It also includes policy-based enforcement capabilities for applications, devices, and users. Furthermore, there is a growing portfolio of router and gateway devices, in addition to mobile devices from Apple, Google, HP, RuggON, Samsung, Zebra, that are compatible with CBRS. These options make Celona CBRS solution ideal for robotic and autonomous device connectivity on the floor where previous generation of devices may not natively support CBRS LTE connectivity - complementing investments in Wi-Fi to support IoT and edge use cases. Robots, vehicles, and humans all win.

### WI-FI AND CELONA WORKING TOGETHER

Today’s retailers recognize that advanced network connectivity across all operations is needed to remain competitive in the marketplace. Both private mobile networks and Wi-Fi 6 are critical enabling technologies to digitally connect assets, customers, systems, devices and IoT sensors. Aruba’s offerings span both the latest innovations in Wi-Fi and emerging new technologies such as Passpoint-based services for seamless data and voice connectivity between cellular and Wi-Fi and CBRS-based private mobile networks. Furthermore, Aruba has been repeatedly recognized as a wireless leader by industry analysts and was the first to market with Wi-Fi 6.



## A REAL-LIFE EXAMPLE

For one national retail chain, using CBRS made perfect sense to help achieve their goal of reaching 90% of U.S. customers with same-day and next-day delivery by building a network of distribution centers. Unfortunately, enterprise-owned, employee-operated handheld devices were repeatedly dropping connections to their business-critical inventory application and requiring warehouse employees to reconnect manually. This level of manual effort was causing excessive delays and impacting their ability to drive efficiencies and pass these savings along to their customers.

CBRS is well suited to provide connectivity for the business-critical warehouse application since it delivers greater range but at lower total capacity and client density than Wi-Fi. Since CBRS monitors the connections for each device, it knows what other devices are available and initiates fast handoffs to ensure the best possible connection. The broad coverage provided by a few radio installations and the ability to form connections around the shelves plus the giant moving trucks makes a CBRS-based private LTE network a good fit for their operational needs.

When exploring options, the retailer was impressed with the ease of deployment and seamless enterprise integration of Celona CBRS, especially compared to operator solutions that require additional equipment and complex network configuration. They are testing Celona CBRS in their warehouses and distribution centers with end-user handhelds and forklift terminals to complement their investments in Wi-Fi and provide additional interference-free capacity for autonomous vehicles and robots.



## ADDITIONAL USE CASES

In addition to deployment in the distribution center, retailers are looking to CBRS to provide interference-free network capacity to supplement their existing Wi-Fi footprint. For example, one electronics retailer benefitted from using CBRS to provide dedicated spectrum for employee handheld point of sale (PoS) devices so that it would not suffer from interference with guest connectivity or consumers test driving products in the store. Other retailers plan to use CBRS to backhaul high-definition video surveillance and enable computer vision use cases.

## SUMMARY

To drive operational efficiency, fast, reliable connectivity in the distribution center is key. Fortunately, retailers can take advantage of Aruba's partnership with Celona to rapidly deploy CBRS-based private LTE networks for interference-free spectrum, network segmentation, and wide area coverage. With CBRS and Wi-Fi, retailers can benefit from the best of both worlds to get goods to customers faster and more efficiently than ever whether in the store or at home.

Learn more about [CBRS solutions](#).



Celona, the enterprise 5G company, is focused on accelerating the adoption of business-critical apps on enterprise wireless and helping organizations implement new generation of digital business initiatives. Taking advantage of the Citizens Broadband Radio Service (CBRS) in the United States, Celona's solution architecture is designed to automate deployment of cellular wireless technology by enterprise organizations and their technology partners. For more information, please visit [celona.io](https://www.celona.io) and follow Celona on Twitter [@celonaio](#).

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