CDMA SUNSET: EVENTUALLY, EVERYTHING CHANGES

Like so many connectivity technologies before it, Code Division Multiple Access (CDMA) will enter its sunset phase within a few years. In some places, CDMA (including all 2G and 3G) will reside for longer periods of time, while in other places, changes will occur much more quickly. As with the 2G GSM sunset that AT&T initiated in January 2017, companies already have plans to sunset additional technologies. After 2018, Verizon has no plans to further certify new CDMA devices and, by 2019, it will have sunset them all. Sprint expects to sunset all CDMA by 2022. Other technologies now in use will last longer, some much longer. But make no mistake about it, eventually all these technologies will be rolled over to new, cheaper, more efficient protocols.

Over the next decade, expect to see CDMA (as well as other connectivity protocols) slowly decommissioned so that service providers can convert, or re-farm, the wireless spectrum to gain more bandwidth. In many places, this might take longer. For instance, in China, which has the largest deployment of CDMA devices in the world, the transition might not occur as quickly due to the massive numbers of users and the cost associated with this enormous transition. But change will come.

Today, with a CDMA shutdown not that far in the future, service providers are looking to move their customer base into newer technologies. For them, the value is in spectrum, as 2G and 3G are spectrally inefficient protocols. For the customer, it will be speed, cost, security, and business continuity. Additionally, CDMA has voice support, and LTE with voice functionality (VoLTE) is just starting to get more widespread. Once VoLTE is fully deployed and common in the business-sphere, the need for CDMA will diminish even further and faster.

Eventually, as a long-term solution to connectivity management, businesses will need to look past the protocols, old or new, and deploy a solution that depends on carrier- and technology-agnostic platforms, using embedded SIMs and hybrid technologies, meaning the platform itself will adapt to the best connectivity option available at that time, in that place.

Stop-Gap Measures

Imagine your business has 200,000 devices using CDMA. You know that you will be sunsetted very soon. How do you move from that protocol to either LTE, or LTE-M, or NB-IoT without incredible disruption?

Changing service to another CDMA carrier can extend your device longevity without changing your equipment. But, depending on the business model, this might not be a good long-term solution (as in any 10-year plan, for example). Another idea would be to temporarily bridge the gap. For instance, 3G HSPA is, in some countries, a strong and growing intermediary step between 2G and 4G/5G, but only has an expected lifetime of 3-4 years before it, too, sunsets. Replacing your old CDMA devices with the new LTE / LTE-M / NB-IoT-capable devices can offer longer technology stability that IoT / M2M applications require today.

However, the long-term solution is to get the underlying platform technology to the point where it can accept any protocol, from any carrier.

CDMA Sunset Options

CDMA to LTE

High data-use devices will need LTE CAT-1 (and higher) for performance.

Many LTE modules with CAT-1 and higher also support “fallback” to other technologies for use in markets where LTE is not yet available.

Be aware: LTE CAT-3 (and higher) modules are more expensive today.

CDMA to LTE-M

Where available, for most current CDMA applications, LTE-M is the most viable choice.

Can allow battery operation in some low-data use applications.

Be aware: Some LTE-M devices will have VoLTE (voice) and fallback, but not all.

CDMA to NB-IoT

When broadly available, for low-power battery application, this is an excellent choice.

Will have the lowest cost modules for large-scale deployments.

Be aware: No voice, no fallback, and limited mobility management. CDMA applications using voice and high data-use applications should use CAT-M (or higher) instead.

CDMA to Hybrid Solutions

A good choice for technology impendence for future sunsets.

Can reduce costs using non-cellular transports (i.e., Wi-Fi).

Be aware: Requires connectivity management software to ensure smooth transitions between transport technologies and what reliance is placed on coverage.

CDMA into the Future

Single platform for all deployments (see next page).

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THE FUTURE OF CONNECTIVITY

For long-term solutions to CDMA sunsets, we need to look at customer needs. OEMs are requiring single-platform functionality, where all technologies, as well as connectivity from multiple carriers, could be implemented, viewed, and managed. The platform needs to provide API integration for visibility and management processes; seamless third-party integration; a simplified process that would reduce costs; and an overall reduction in operational complexities.

But, shifting from an old to a new technology always is a slow, occasionally costly, process if for no other reason but caution. The technology standardization and go-to-market approaches are yet evolving, and with so many technological advances coming at us at unparalleled speeds, along with improved performance, change is the only constant we can anticipate, so be prepared. Work with a technology partner familiar with the issues, one that has a future-proven solution for connectivity management.

Advantages of a Single vs Multi-Platform Deployment

	Single-Platform Deployment	Multi-Platform Deployment
SCALABILITY	**Promotes Scalability** Single management interface worldwide simplifies large scale operations	**Difficult to Scale** Deployment becomes a collection of individually managed groups
COMPLEXITY	**Simplifies Operations** One portal, one set of operational processes to identify and resolve issues	**Increasing Complexity and Cost** Operations teams need to be trained on, and manage, multiple systems
EFFICIENCY	**More Efficient** Issues are identified faster and resolved quicker by fewer resources	**Less Efficient** Operations teams take longer to identify issues, requiring larger teams and a higher cost
VISIBILITY	**Standardized for All Devices** Holistic reporting and analytics provide complete insight into entire deployment	**Dependent on Underlying Carrier** Lack of consistent visibility into devices and usage patterns — impacting end-user experience and billing
SUPPORT	**Streamlined** One support process to follow for all issues and all devices	**Inconsistent and Incomplete** Multiple support processes to follow with no standardized SLAs

ABOUT AERIS:

Aeris is a technology partner with a proven history of helping companies unlock the value of IoT. For more than a decade, we've powered critical projects for some of the most demanding customers of IoT services. Aeris strives to fundamentally improve businesses by dramatically reducing costs, accelerating time-to-market, and enabling new revenue streams. Built from the ground up for IoT and road tested at scale, Aeris IoT Services are based on the broadest technology stack in the industry, spanning connectivity up to vertical solutions. As veterans of the industry, we know that implementing an IoT solution can be complex, and we pride ourselves on making it simpler.
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