



WHITEPAPER

C-DAS & Capacity Management Empower Metros & Campuses

A study in how our wireless technology
empowers Metros and Campuses

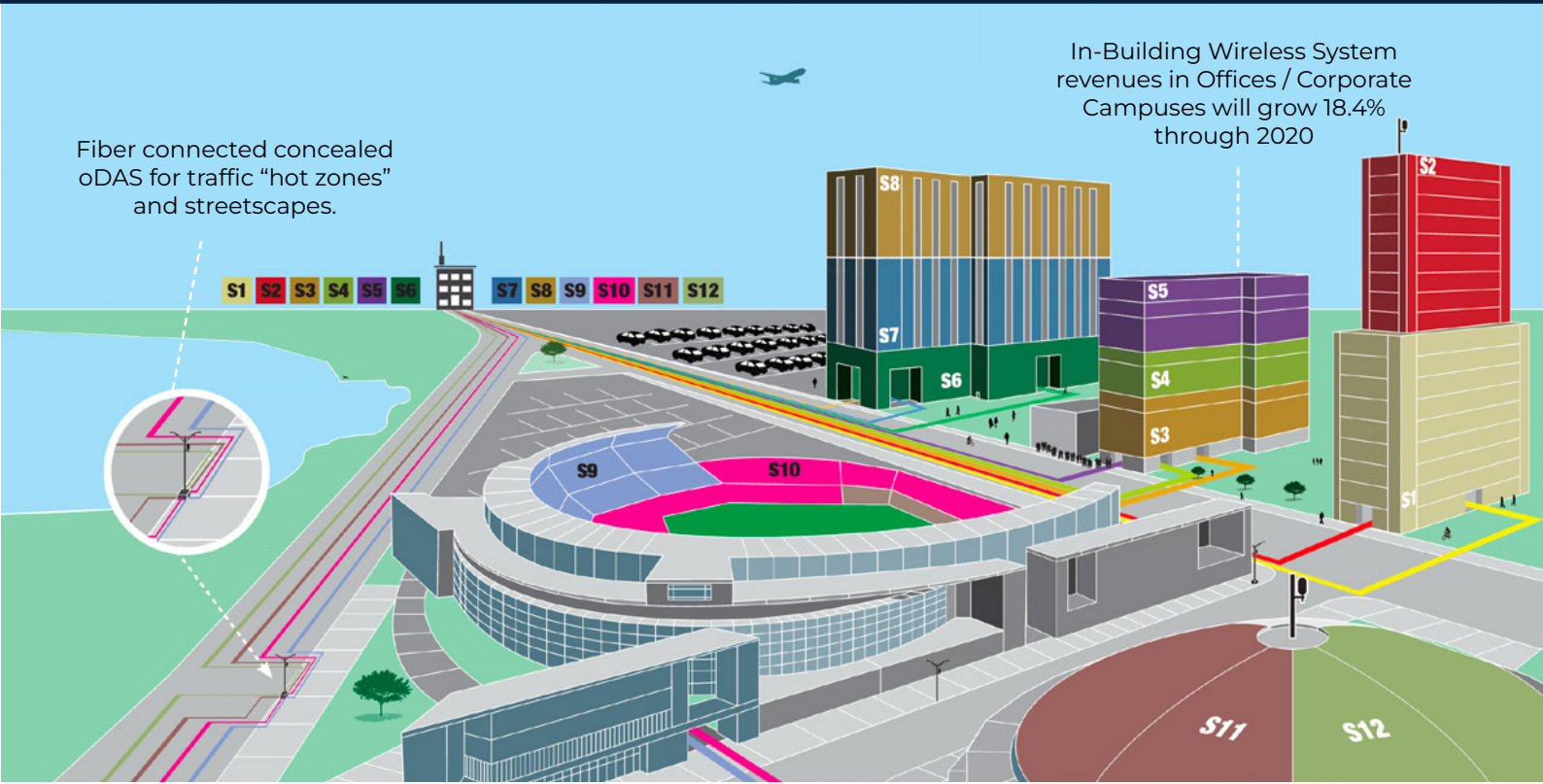
Business Day

BTS WITH C-DAS HEADEND

Information on C-DAS provided by JMA Wireless

Fiber connected concealed oDAS for traffic "hot zones" and streetscapes.

In-Building Wireless System revenues in Offices / Corporate Campuses will grow 18.4% through 2020

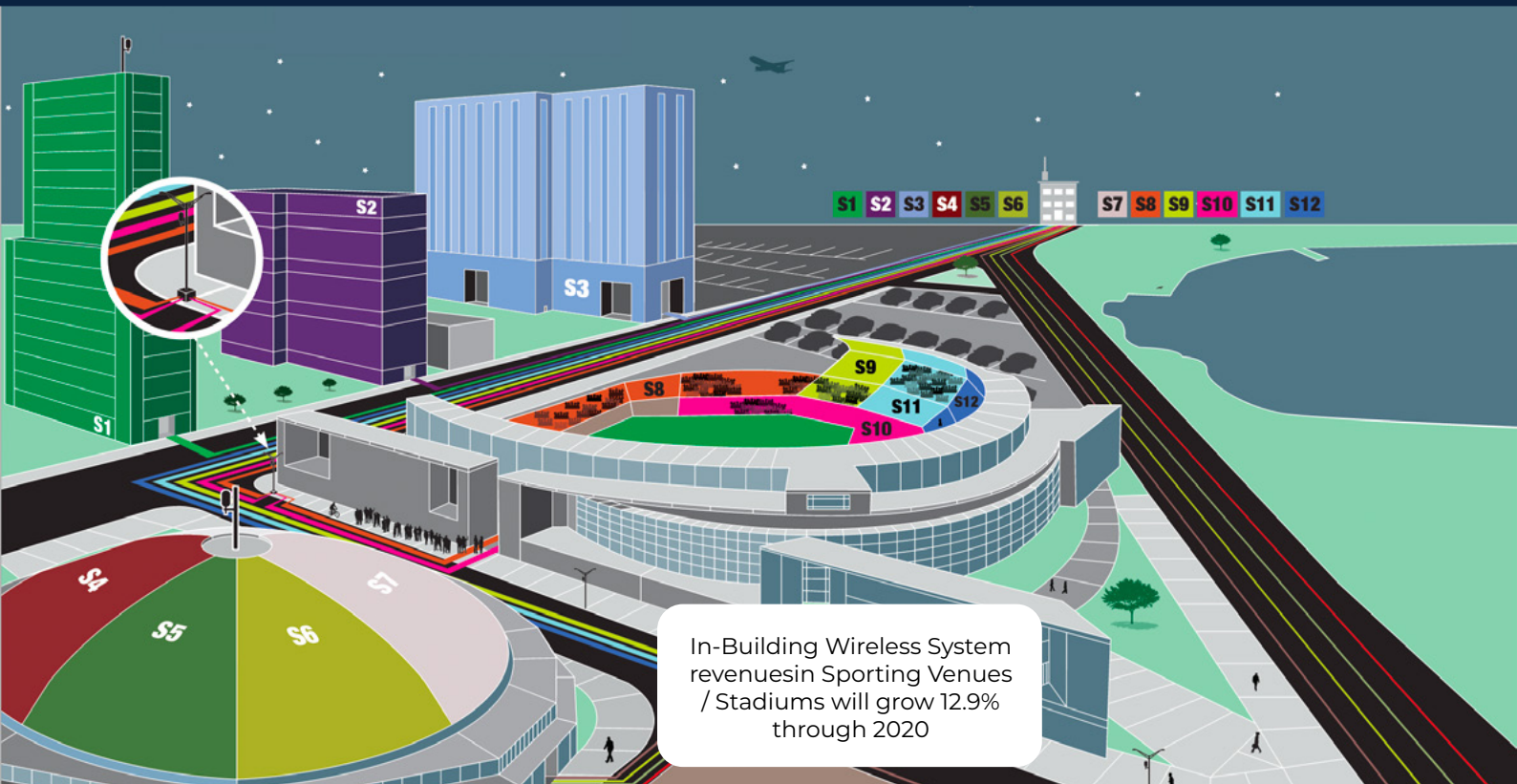


Game Night

BTS WITH C-DAS HEADEND

Information on C-DAS provided by JMA Wireless

In-Building Wireless System revenues in Sporting Venues / Stadiums will grow 12.9% through 2020



C-DAS: Centralized Distributed Antenna Systems **C-RAN:** Cloud Radio Access Network **BTS:** Base Transceiver Station

Market Shift

Of the approximately 6.7 million commercial buildings, venues and campuses in the United States 6.6 million do not have a wireless coverage or capacity solution.

- As metros and campuses adopt C-DAS (Centralized DAS) the solution becomes more cost effective for smaller facilities
- Small Cells will align to fulfill small offices and certain outdoor areas
- Centralized services will optimize the ability to deliver wireless connectivity swiftly and economically, lowering OPEX costs
- Dynamic capacity will reduce infrastructure CAPEX costs in metro and campus solutions

Why C-DAS & Capacity Management?

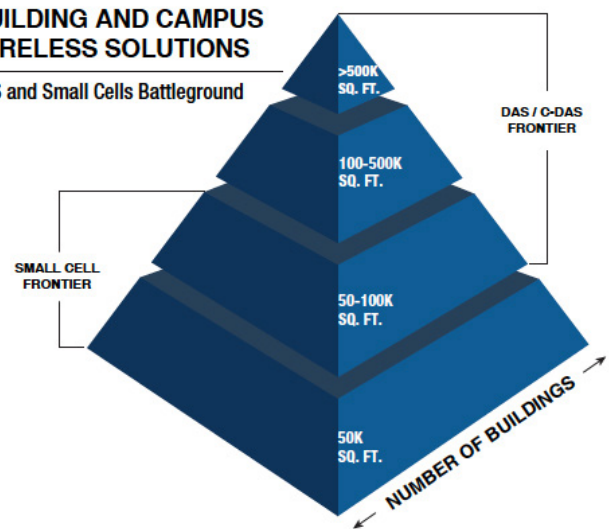
C-DAS is an architectural approach that embraces Centralized RAN. In addition, the Capacity Management system facilitates the distribution of RF capacity across venues as needed.

KEY BUSINESS BENEFITS INCLUDE:

- Utilize lower cost real estate for head-end equipment
- Allow individual operators to be converged at the venues
- Can manage an entire system centrally
- Coordinates RF capacity across venues, based on varying demands over time
- Preserves valuable in-venue real estate
- Limits or eliminates physical build-out requirements
- Uses the same system for in-building and outdoor wireless needs
- Supports multiple operators and multiple bands
- Provides support for LTE-Advanced and future technologies
- Reduces fiber front haul and centralizes backhaul

BUILDING AND CAMPUS WIRELESS SOLUTIONS

DAS and Small Cells Battleground



JMA Wireless Delivers the C-DAS Architecture

JMA Wireless is leading the C-DAS infrastructure market with its Teko platform.

KEY HIGHLIGHTS:

- Based on modular and flexible Teko DAS platform
- Managed locally or remotely via Teko OMT / OMC or SNMP
- Supports single or multiple operators
- May be adapted as required on a per operator basis
- Easy to upgrade or adapt to future needs

CAPACITY MANAGER HIGHLIGHTS:

- Can reduce BTS requirements by up to 25%
- Reduces HVAC power and space requirements
- No fiber bandwidth limitations
- No additional delays introduced

About JMA Wireless

JMA Wireless is the leading global innovator in mobile wireless connectivity solutions that ensure infrastructure reliability, streamline service operations, and maximize wireless performance. Employing powerful, patented innovations, their solutions portfolio is proven to lower the cost of operations while ensuring lifetime quality levels in equipment and unrivaled performance for coverage and high-speed mobile data.

JMA Wireless solutions cover macro infrastructure, outdoor and indoor distributed antenna systems, small cell solutions, and virtualized RAN software. JMA Wireless corporate headquarters are located in Liverpool, NY, with manufacturing, R&D, and sales operations in over 20 locations worldwide.

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