



# BELDENIBDN™

**Belden IBDN's state-of-the-art 10 Gigabit structured cabling system — the first to guarantee 625 MHz network performance — is installed in mission-critical Operations Support Building II in Merritt Island, Florida.**

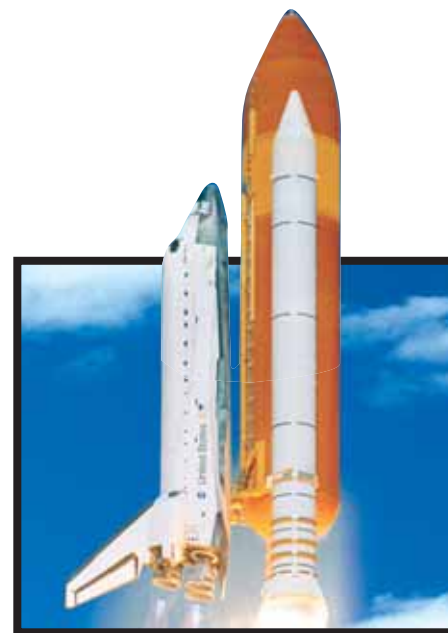


## **Belden IBDN™ Launches System 10GX™ at NASA's Kennedy Space Center**

When the National Aeronautics and Space Administration (NASA) decided to upgrade the communications network in its Operations Support Building II at Kennedy Space Center, Florida, performance, reliability and price ranked high on the list of selection criteria.

The five-story, 190,000-sq-ft building designed by the architectural and engineering firm of Wolfberg Alvarez & Partners, houses training facilities, as well as operations, for 960 engineers and other professionals who play a crucial role in NASA's space program and the shuttle launches at the Kennedy Space Center (KSC). The communications network is essential to NASA's missions, and a robust structured cabling infrastructure is critical to the reliable performance of their network.

NASA awarded the contract for this vital project to Olson Electric Company Inc. of Sanford, Florida, a communications design and installation firm serving commercial, industrial and defense clients in the southeastern U.S. For the cabling products, Olson turned to Belden IBDN, a world leader in the design and manufacture of structured cabling systems and connectivity components.



**NASA's Kennedy Space Center in Florida has been the scene of numerous shuttle launches over the last decades. Most recently, the 2005 launch of Space Shuttle Discovery, shown here on its way to the International Space Station, enthralled the nation.** (Photo courtesy of NASA.)

System **10GX**  
**SUCCESS STORY**



**Equipment racks in the first floor main data center/telecom room house the servers and other components required for NASA's Operations Support, a highly data-intensive environment.**



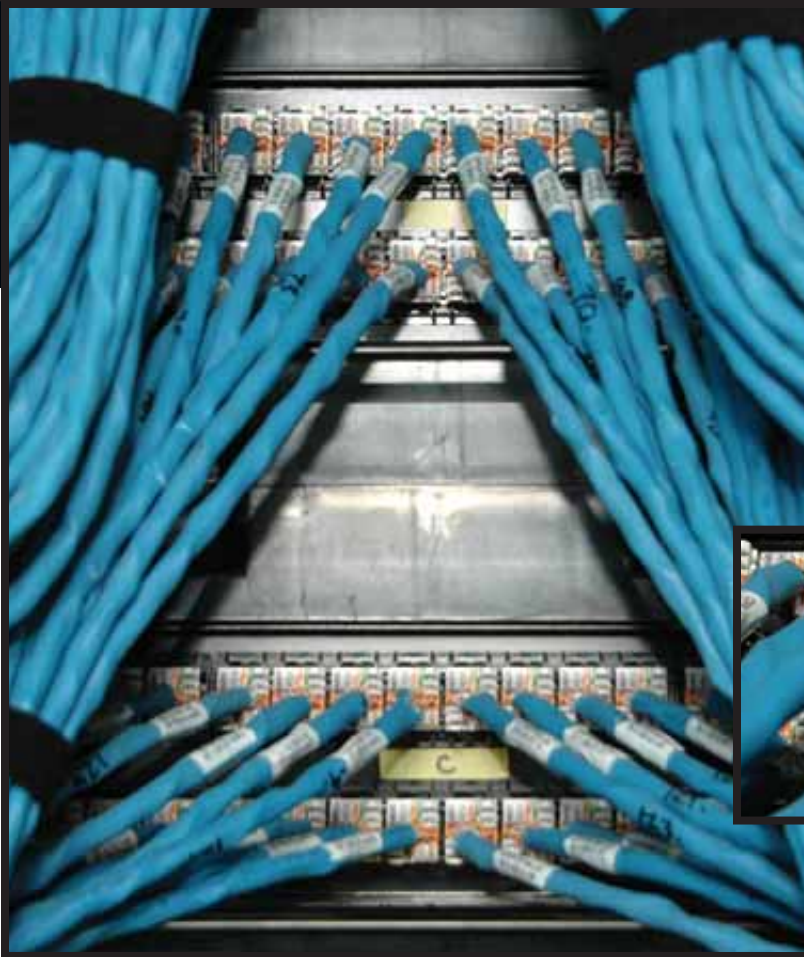
### Designing a 'Future-Proof' Network

According to Olson Electric Vice President and General Manager Andrew G. Spencer, NASA's goal for this project was to migrate to a high-performance, integrated communications system – either Category 5e or Category 6. The system had to be capable of supporting all current voice, data and broadband video functions, and offer sufficient headroom to accommodate additional data-intensive applications in the years ahead.

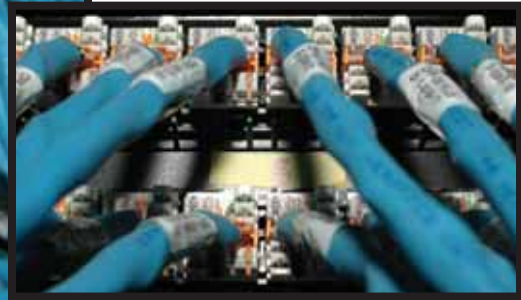
When the project was originally bid, the horizontal infrastructure was Category 5e with multimode fiber to the desktop. A change in NASA standards drove the move to a 10Gb copper solution.

"When this change was implemented, we proposed Belden IBDN based on technology, price and delivery," said Spencer, who is project manager for the communications system implementation. In early 2005, Belden IBDN introduced its System 10GX, a revolutionary UTP cabling solution designed to support 10 Gigabit Ethernet. Belden IBDN backs this new system with an unprecedented guarantee of





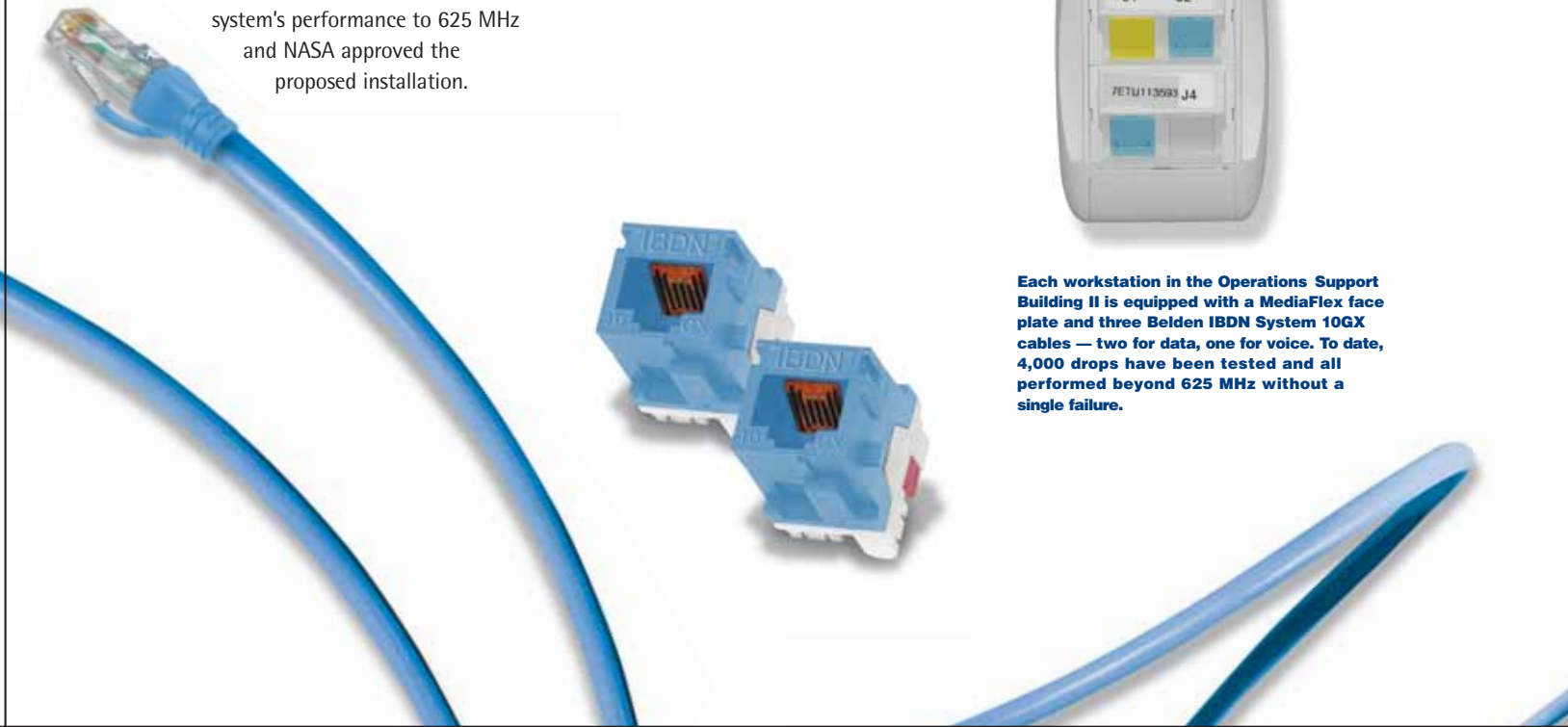
Within the main data center, bundles of blue Belden IBDN System 10GX data cables provide a robust, "future proof" 10 Gigabit copper backbone which is run vertically up the riser from the first floor to the upper floors.



reliable performance up to 625 MHz, which goes far beyond what any other manufacturer can support. Most vendors will certify their Augmented Category 6 systems to only 500 MHz. After careful evaluation and testing of the products in the presence of the NASA selection-team, Olson Electric verified the cable system's performance to 625 MHz and NASA approved the proposed installation.



Each workstation in the Operations Support Building II is equipped with a MediaFlex face plate and three Belden IBDN System 10GX cables — two for data, one for voice. To date, 4,000 drops have been tested and all performed beyond 625 MHz without a single failure.



When complete, NASA's five-story Operation Support Building II will provide operations and training facilities for 960 engineers, technicians and other professionals. The Belden IBDN System 10GX plays a key role in the building's mission-critical communications network.



## About the Belden IBDN System 10GX

Unlike other 10 Gigabit Ethernet cabling solutions, System 10GX is not simply an improved Cat 6 system, but rather a whole new UTP solution incorporating a series of dynamic (patent pending) enabling technologies involving the 10GX cable design, as well as the design of the 10GX Modular Cords, Patch Panels and Modules. These performance-enabling technologies make it possible for System 10GX to dramatically improve Alien NEXT, NEXT and impedance over traditional technologies, resulting in performance well beyond proposed standards for Augmented Category 6. In fact, Belden IBDN guarantees System 10GX channel performance to a minimum value of 625 MHz.

In addition, because System 10GX is copper-based, it offers the greatest overall economies in new installations and provides a seamless, cost-effective migration path from existing 100BASE-T and 1000BASE-T cable plants. Because of these economies, the system is typically able to meet users' pricing requirements and reduce total cost of ownership, while meeting the most demanding performance objectives and protecting the customer's technology investment. Each 10GX solution installed by a Certified System Vendor (CSV) is supported by a 25-year Product Warranty and a Lifetime Application Assurance program.

For these reasons, the Belden IBDN System 10GX is proving to be an ideal choice for high-speed Local Area Networks (LANs) and commercial, institutional, healthcare, university and government data centers where data-intensive applications might include:

- > Uncompressed, High-Resolution Video
- > Complex Imaging and Digital Animation
- > CAD/CAM
- > High-Speed Data Storage
- > Cluster Computing
- > Advanced Multimedia
- > IP-Based Services Such as Voice-Over-IP (VoIP)

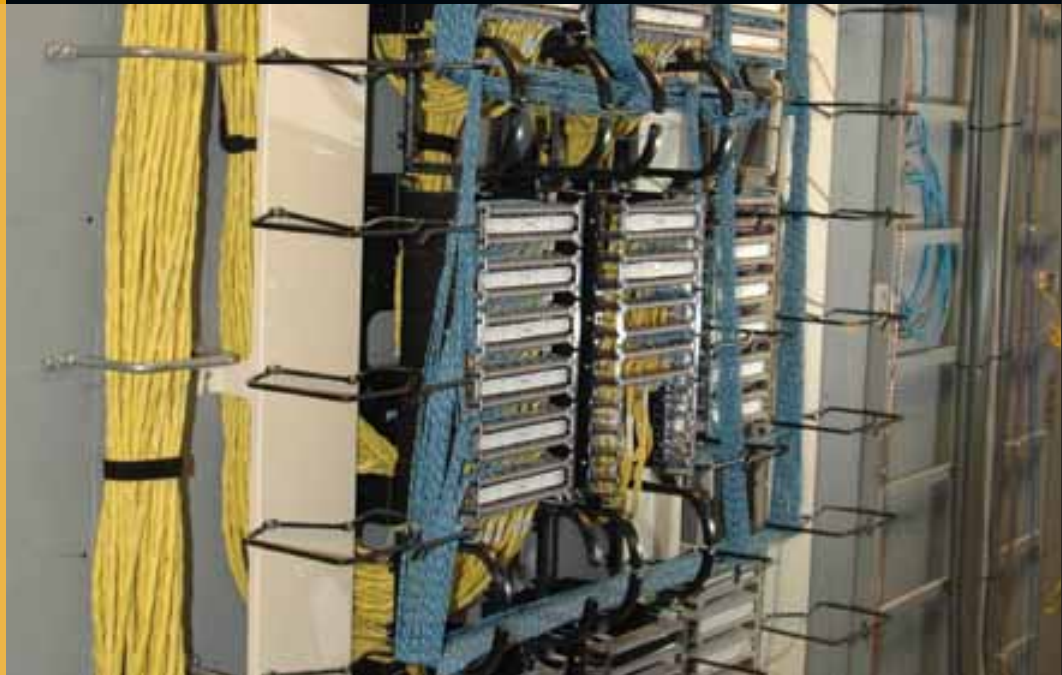


Adjacent to NASA's new Operations Support Building II is the agency's space vehicle assembly building, seen here from the fifth floor.





**The main telecom room is served by 288 incoming fiber strands from an installed fiber optic backbone in which Belden IBDN FiberExpress panels and connectors are utilized. GigaBIX hardware is installed in each floor's telecommunications room to provide space-saving voice terminations and cross-connects.**



### **Cabling NASA's Operations Support Site**

According to installers at NASA's Operations Support Building II, the Belden IBDN System 10GX cables are run through cable trays configured in a star topology to the offices on each floor, where the majority of workstations are equipped with three 10GX cables – two for data and one for voice. The 10GX cables are also used to support broadband and video applications on the building's 5th floor.

The main telecommunications room, located on the first floor, houses 2,400 incoming copper pairs, as well as 288 incoming fiber strands from an installed fiber optic backbone in which Belden IBDN FiberExpress® panels and connectors are utilized. Belden IBDN GigaBIX® hardware is installed in the main telecom room and in each floor's telecom room to provide space-saving voice terminations and cross-connects.

As the System 10GX installation neared completion, with all horizontal links installed, Olson Electric and Belden IBDN performed testing on 4,000 drops. According to Spencer, all performed beyond 625 MHz, with not a single failure. "The NASA project, which is the largest 10 Gigabit system to be installed at the Kennedy Space Center, has been very successful and our customer has expressed a high degree of satisfaction with both the Belden IBDN communications system we installed and the professional work performed by Olson Electric."



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