

Streaming Live Flight Test Footage and TV Channels with Optibase IPTV System

Customer: NASA Dryden Flight Research Center

Application: IPTV Solutions for Government Facilities

Products: Complete Enterprise Solution with MGW 1100 H.264

The Spirit of Technological Innovation

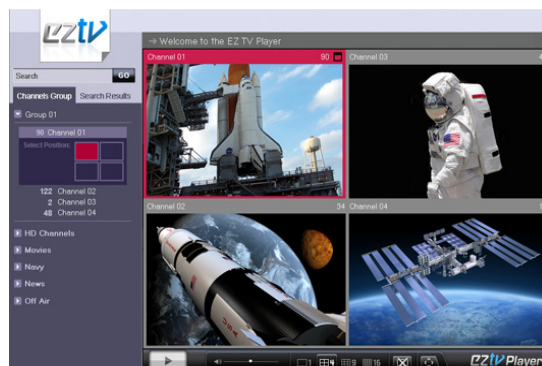
The Dryden Flight Research Center, located on Edwards Air Force Base north of Los Angeles, California, is NASA's primary center for atmospheric flight research and operations.

The center is critical in carrying out the agency's missions of space exploration, space operations, scientific discovery and aeronautical research and development. The Center strives to revolutionize aviation and become a pioneer in aerospace technology. Indeed, the spirit of technological innovation is an integral part of the facility and the services provided to personnel.

Dryden Flight Research Center provides live broadcasts of flight tests directly to all employees across base, as well as TV news and weather channels. The center's current RF-based broadcasting system consists of separate encoder units deployed at strategic locations throughout the base.

Meeting the Technology Challenge

In striving for excellence, the Center searched for a digital broadcasting system. The challenge was finding a comprehensive solution that would fulfill NASA Dryden's unique requirements of combining live test feeds with standard TV channels in a single system.



Key Benefits

- Integrated solution that combines live camera feeds and TV channels on a single platform providing ease of use and cost effective deployment and maintenance
- Simultaneous viewing of four different channels, directly on the desktop, on NASA's IP network, vital for viewing different angles of flight tests
- H.264 video encoding provides top picture quality at low bit rates, necessary for detailed viewing and monitoring
- Carrier-grade system incorporating internal failure protection components to ensure 24x7 reliable performance for mission critical applications

Furthermore, officers at the facility required a sophisticated display system for monitoring live flight tests. It is necessary to closely monitor multiple angles of the flight test simultaneously for early detection of faults that could be of a life threatening nature.

Optibase's carrier-grade IPTV Media Gateway (MGW) H.264 encoding platform complemented by Optibase's Interactive PC Player were the answer. Optibase's IPTV solution included multiple MGW 1100 units located across the base, each

capable of broadcasting both live camera feeds and TV channels on NASA's existing IP network. The use of advanced H.264 encoding provides broadcast quality video at low bit rate, required to study the smallest details of the flight tests.

The carrier-grade MGW platforms provide the reliability required by NASA Dryden's mission critical environment, where broadcasting shutdowns are simply unacceptable. Optibase platforms incorporate sophisticated redundancy methods, thus ensuring reliable video streaming over the Center's broadband network 24x7.

The video streams are delivered to each desktop via an easy-to-use PC client. In public areas, large TV monitors and IP set-top-boxes are used.

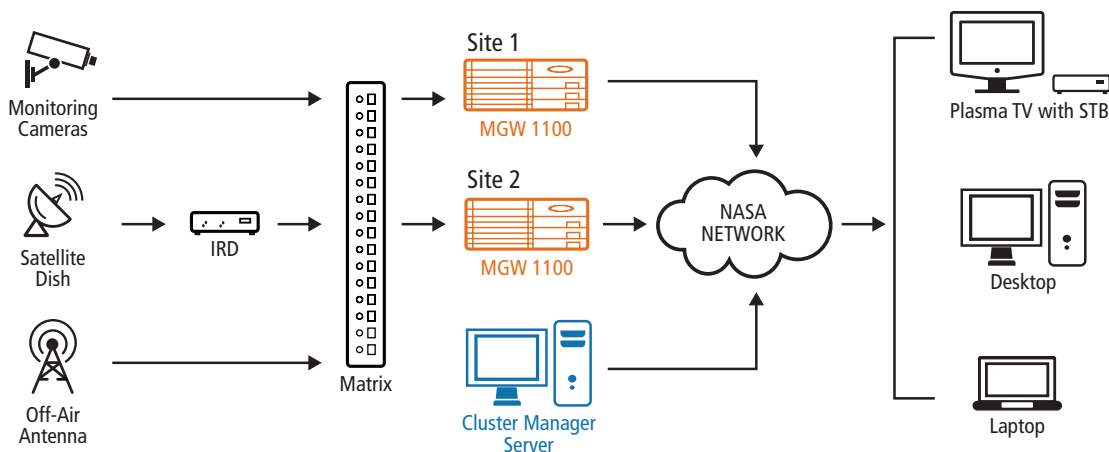
Officers in the NASA Dryden Center utilize Optibase's DisplayManager application providing them interactive multi-channel access to all feeds. The application allows them to view up to four different channels simultaneously directly on their desktop. The channel selection can be changed dynamically at any time simply by selecting a new channel or zooming in on an existing one.

In addition, another requirement from NASA Dryden is that the new IPTV solution had to be cost effective and provide centralized management. "It was getting more and more expensive to maintain and upgrade the RF system," said Will Spencer, information-technology specialist at Dryden Flight Research Center. Optibase's MGW platforms are all managed by a central management system, Cluster Manager. The entire system is configured and monitored from a single, central location.

The Future Is Also Bright

Optibase's fully integrated IPTV solution allows for easy integration of additional channels on the same system. This provides NASA Dryden the ability to scale its broadcasting capabilities while continuing to maintain efficiency, reliability and quality.

Flow Diagram



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