

MPEG-4 Satellite Transmission for International Expedition Team



The Customer

Recently, an expedition of 50 people departed from Israel to the Australian outback, on the 6th annual Isuzu Challenge, under the auspices of the Israel Geographic Society, with support from Isuzu and UMI Motors. The expedition team, which included ecologists, anthropologists, wilderness guides, mechanics, photographers, and journalists, spent three weeks exploring the northeast peninsula of Australia, from Lown Hill Park (in the northernmost point of the continent) and through the rugged, sparsely inhabited regions along the Great Barrier Reef. One major goal of the expedition was to contribute to research on how the hole in the earth's ozone layer affects the ecological systems in these little-studied regions.

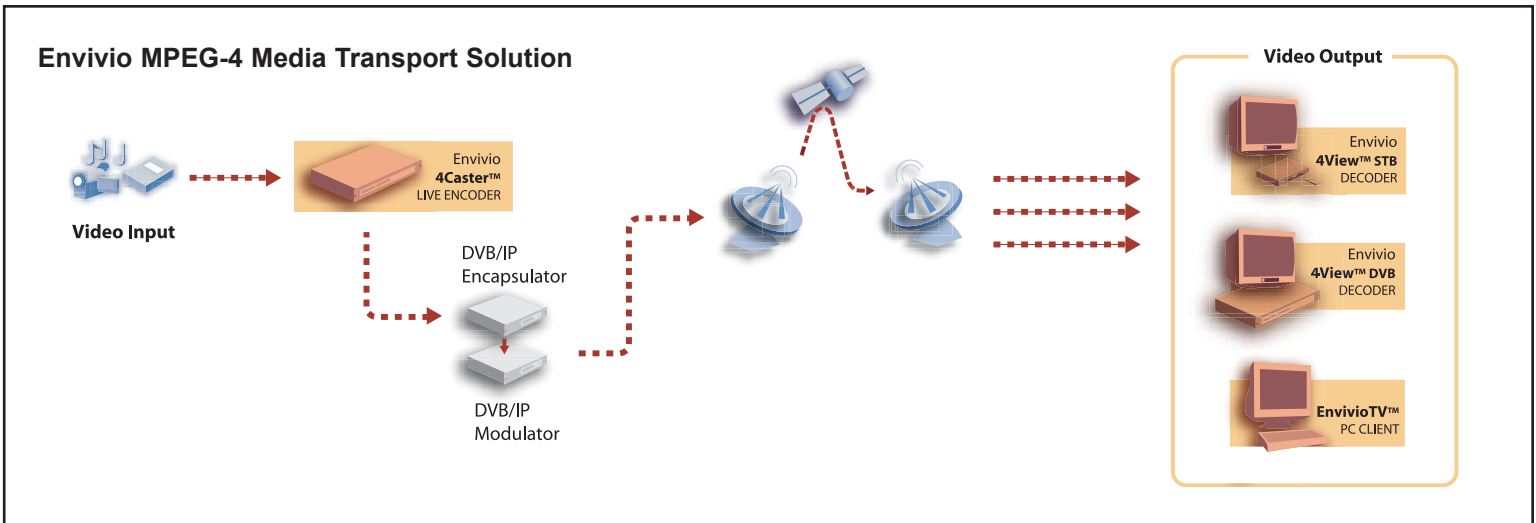
The challenge was to provide real-time coverage of the expedition, via satellite, so that a wider television audience in Israel could enjoy vicariously — through daily broadcasts — the unique wilderness experience.

The Solution

Thanks to Envivio MPEG-4 broadcast technology and the launching of New Skies Satellite's NSS-6 satellite and the Satlink mediaport, it was possible to conduct remote field trials of the emerging MPEG-4 digital compression standard in one of the most technically challenging and productive tests to date of the new platform.

The system worked over an existing IP infrastructure, and content was delivered over terrestrial, satellite, and wireless networks in multicast and unicast modes. Recipients viewed the content on all major media players and on different devices, including PCs, TVs, and PDAs.

“With Envivio's
4Caster™ MPEG-4
encoding systems,
broadcast-quality
video was delivered at
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distribution.”



Over the course of the two-week journey, the team digitally transmitted coverage of the event from remote locations throughout the outback using NSS-6, one of the only satellites offering complete coverage of Australia with connectivity extending across Asia to the Middle East. The signals were accessed by Satlink in the Middle East, New Skies' partner mediaport, for distribution to several major media centers as well as Reuters, APTN, CNN, and other news agencies.

The provision of real-time broadcasts of the Isuzu Challenge depended on use of the latest satellite communications technology. By combining Paradise innovative Turbo Coding technology with Envivio's 4Caster™ real-time MPEG-4 encoding system, broadcast-quality video was delivered at half the cost of conventional MPEG-2 distribution.

The Savings

The combination of Envivio's 4Caster MPEG-4 real-time video encoding system and Paradise Turbo Forward Error Correction Coding enabled broadcasters to transmit at half the bandwidth of the MPEG-2/DVB-S systems they typically used. This bandwidth saving lead directly to reduced space segment costs. On the uplink side of the transmission chain, the Envivio 4Caster real-time, full-resolution MPEG-4 encoder interfaced directly to the Paradise 300i L Band Internet modulator via an IP interface.

On the downlink side, the 300i L Band demodulator received the IP stream from the satellite and interfaced with one of Envivio's MPEG-4 decoders. The system was used for live encoding and offline encoding with store-and-forward to the receive site. The encoder was set up to automatically save the sessions as MPEG-4 files.

The MPEG-4 Advantage

MPEG-4 is a relatively new compression standard that delivers a higher level of interaction with content in multimedia broadcast and mobile communications, while at the same time enabling broadcasters to transmit at half the bandwidth of MPEG-2 systems. It allows content authors to create and define the individual objects in multimedia content, how these can be synchronized and related to each other in transmission, and how users are to be able to interact with the media objects.

Scott Sprague, New Skies' senior vice president of global sales, said, "New Skies is delighted to be collaborating with some of the leading communications companies in their respective sectors on such an exciting and ambitious project. The Isuzu Challenge allows us to demonstrate the unique coverage and capabilities of NSS-6, while also gaining invaluable, real-world experience with emerging technology. New Skies prides itself in its understanding of the trends that are shaping the future of the industry, and our participation in field trials such as these will better position us to help our customers exploit them."

The Envivio Advantage

Envivio has established itself as the most experienced creator of high-quality MPEG-4 and H.264 solutions that enable broadcasters, network operators, and content developers to build new revenue streams and use the efficiencies of delivering content to the full range of MPEG-4 capable devices.

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