Intelsat
Intelsat S.A. (NYSE: I) is the world’s leading provider of satellite services, delivering high-performance connectivity solutions for media, fixed and mobile broadband infrastructure, enterprise and government and military applications for 50 years.
Intelsat’s satellite, teleport and fiber infrastructure is unmatched in the industry, setting the standard for transmissions of video and broadband services. From the globalization of content and the proliferation of HD, to the expansion of cellular networks and mobile broadband access, with Intelsat, envision your future network, connect using our leading satellite technology and transform your opportunities. Envision…Connect…Transform…with Intelsat.

Ericsson
Ericsson’s TV solutions help content owners and operators to maximize content and consumer value by enabling them to efficiently utilize multi-platform infrastructure and ecosystems to deliver rich, blended multiscreen consumer experiences on all devices. Our offering spans the media value chain of content acquisition, creation, management, exchange and delivery to consumers. As a change agent for television we are shaping the future of TV with our multi award-winning products. Our integrated solutions and extensive TV services are helping operators become more profitable by expanding their offering, driving new revenues and controlling the total cost of ownership.

Newtec
Newtec is specialized in designing, developing and manufacturing equipment and technologies for satellite communication. As a pioneer in the industry, Newtec is dedicated to creating new possibilities for the broadcast, government and defense, IP trunking and consumer and enterprise VSAT markets. For over 28 years, our dedicated team has been setting industry standards with the development of the most efficient, scalable and economical technology solutions. New challenges and customer needs offer opportunities to explore new boundaries. This empowers us to work even harder, helping our customers to perform their best so that, together, we can make the world a safer, more informed and connected place.

TV Globo
Established in 1965, TV Globo currently comprises 5 television owned stations, and 117 affiliated stations, covering 98.53% of the Brazilian territory and reaching 99.47% of its population. Over 90% of the network broadcast is produced in-house. Globo’s productions have been exported to more than 130 countries worldwide.
A truly self-contained production facility, the 18 million square foot (1.65 million square meter) Globo TV Studio Facility in Rio de Janeiro is the largest, state-of-the-art studio complex in Latin America.
Intelsat, Ericsson, Newtec and TV Globo have partnered to demonstrate a true 4K Ultra-High Definition (4K UHDTV), end-to-end video transmission via fiber and satellite, to the TV Globo Production Facility during the WBU-ISOG Forum in Rio de Janeiro.

The diagram above shows the transmission chain for 4K UHDTV content that is being displayed today. True 4K UHDTV video feed is delivered over four 3G-SDI cables (12 Gbps total) to Ericsson’s AVP 2000 Contribution Encoders, where it is live-encoded down to 100 Mbps using MPEG-4 AVC (H.264) compression. The resultant Transport Stream is transmitted via the IntelsatOne fiber network from Intelsat’s teleport in Ellenwood, Georgia, to its Riverside, California teleport, where it uplinks to the Intelsat 805 satellite using Newtec’s M6100 Broadcast Satellite Modulator with Clean Channel Technology (using 16APSK, 4/5 FEC, 5% roll-off). At the TV Globo Production Facility in Rio de Janeiro, the signal is downlinked on a 3.6m antenna using Newtec’s AZ910 Demodulator and decoded with Ericsson’s RX8200 Receiver/Decoders with Simulsync technology, restoring the True 4K UHDTV video feed. This is then fed to an 84 inch 4K UHDTV monitor.

What is 4K UHDTV?

“Ultra-High Definition”, or “Ultra HD” typically refers to video signals and displays that have an aspect ratio of at least 16:9 and a minimum resolution of 3,840 x 2,160 pixels. “4K” UHDTV is so-called because it generally refers to a television resolution of 3840 pixels by 2160 lines, which is 2x the horizontal and 2x the vertical dimensions of HDTV. The frame rate for “true” 4K UHDTV would also be twice the level for HDTV, about 60 frames per second. While Ultra HD can be shown on a display with a lower frame rate, high motion (such as sports) will not be as smoothly rendered as at the higher rate.

The Evolution of 4K UHDTV

4K UHDTV is the next evolutionary step for television broadcasting. Just as Intelsat supported the smooth transition from SD to HD, the company is ready to support the transition to full-time distribution in this new format. The transition from SD to HD took almost 10 years, so it is important to be realistic about the 4K UHDTV adoption timeline. Although the popularity of 4K UHDTV adoption will be driven by content availability, the entire industry is involved in the development of the ecosystem.

4K UHDTV will enable a new premium tier of programming with images that are four times richer than current HDTV images. Some of the most attractive applications for 4K UHDTV technology include:

- Linear 4K UHDTV sports and movie channels
- xVOD file delivery to pay TV operators
- Telemedicine: Remote supervision / direction of surgical procedures
- Oil & Gas and Mining
- Telepresence
- Military: Intelligence Gathering and Remote Warfare
- Digital Cinema / IMAX

Intelsat’s global network is the critical link in distributing programming to regional and global audiences. Intelsat is able to deliver 4K UHDTV content today via its fleet of over 50 satellites and the IntelsatOne fiber and teleport network. And, we are innovating for the future. With the launch of our next-generation satellite network, Intelsat EpicNG®, programmers will benefit from increased throughput for 4K UHDTV transmissions and a spot beam architecture for customized content within regions according to language and cultural nuances.