

Case Study: SecureSync® New Broadcast Synchronization System

Background

One of the largest broadcasting organizations in the world, provides a variety of services, including national TV channels with regional programming, national and local radio stations, and an extensive website. The company faced the challenge of integrating the latest technologies to upgrade the organization's facilities. The broadcast organization, through its systems integration contractor, is updating its synchronization infrastructure to provide precise timing and frequency control of its studio operations and broadcast transmissions. Reliable and accurate synchronization plays a critical role in the reliable operation of both new digital equipment as well as legacy systems.

Solution

Orolia selected to provide a new synchronization system for the broadcasting facility upgrade. The system includes a replacement master clock for the original site and two identical master clocks for new buildings. The master clocks will generate precise 10 MHz, 1 pulse-per-second, and other timecode synchronization signals. Even though each of the three master clocks will be precisely synchronized to GPS satellites, their frequency and timing signals will be distributed via fiber optic connections to a fault-tolerant switching system to ensure these signals are the same throughout the facility and to accommodate a temporary outage of any one of the master clocks.

Orolia's SecureSync® time and frequency synchronization system platform was configured to match their exact master clock requirements. The SecureSync can be customized to provide a variety of synchronization input and output signals. In addition to the 10 MHz and 1 PPS signals generated by a special low-phase noise internal OCXO oscillator locked to GPS, Orolia engineers have built programmable timecode modules to accommodate the needs of various equipment requiring European Broadcasting Union (EBU) Longitudinal TimeCodes (LTC) standards. Orolia's Epsilon Switch and Amplifier (SAS) is used for the distribution of SecureSync's 10 MHz and 1 PPS signals.

Results and Benefits

Orolia master clocks and distribution units are an outstanding addition to the new state-of-the-art broadcasting facility. Orolia's solution is an integral part of the project, providing reliable and accurate synchronization throughout the organization.

