

# Transparent ISDN Substitution



## Client Requirement Summary

- Transparently support voice, video, data
- No clock slips or re-syncs
- Must work with existing broadcast equipment such as Telos Xstream and Glensound coders

## Key Benefits

- No change to remote site or central site equipment
- Adaptive clock means transparent switch to IP
- Virtual Access FastSync algorithm means older equipment can synchronise
- Switched from ISDN to IP without quality reduction
- Fully supported, up to date solution
- Centrally managed
- Single remote site device with ISDN, pseudowire, adaptive clocking, DSL, Ethernet and LTE
- Packet loss minimisation techniques
- Adaptive duplication: if it detects a fault, it will send duplicate packets
- Predictive loss avoidance
- Dual & single path operation: in a dual path router packets are sent on the second link if a fault is detected

## Requirement

The client is a nationwide broadcaster in the Nordics that requires a high quality voice and data network for outside events, remote studios and international broadcasts. The broadcast equipment uses ISDN interfaces and requires ISDN synchronisation to prevent slippages or dropouts. The service is typically used for commentating at sporting, music, exhibitions and other events. A reliable, high quality service is vital – poor quality or dropouts result in complaints and loss of revenue. Broadcast equipment is currently connected to an ISDN line and traffic is backhauled to central sites over PRI or BRI. The customer wants to continue using their existing equipment over an IP network.

## Virtual Access Solution

The ISDN network will be replaced by an IP network without the need to change the client's equipment. The broadcast equipment ISDN interface is moved from the existing network interface device to the Gateway. The Gateway has a fast synchronisation algorithm that rapidly adjusts the clock, thereby preventing synchronisation failure in older equipment. The remote and central site synchronise and traffic is sent over an IP network to the destination site where the Gateway converts the traffic to a BRI or PRI interface. The solution includes features to minimise the effects of packet loss, for example, bursts of lost packets are common on LTE; if a packet is lost - rather than waiting to detect lost packets, the router predicts the likely loss of packets and proactively switches packets to the second link or duplicates packets. Rather than waiting to detect lost packets, the router uses its knowledge of LTE typical operation to predict the likely loss of packets and proactively switches packets to the second link or duplicates packets.

