IPITEK
INTEGRATED PHOTONICS TECHNOLOGY
ISO 9001 Registered

MSP-300 for Telcos: Carrying HD Video and IP over One Network

Telcos are facing increasing pressure to deliver high definition (HD) content to meet the ever growing demand for high quality HDTV. It is possible for HD to be transported after having HD-SDI signals get compressed; however, to guarantee best quality, HD video video signals are transported in their native (uncompressed) format. Thus, transmission of uncompressed HD (and 3G) video content creates a new market for service provides but at the same time creates several challenges arising for the large bandwidth needed for these signals (1.485 Gb/s for HD and 2.970 Gb/s for 3G) which is orders of magnitude of SD video circuits being used today (270 Mb/s).

Telcos Challenges from HD Video Perspective

However, supporting HD/3G video is only one of telcos challenges story. In addition to the need for HD video circuits, users of video circuits (e.g., broadcasters) require private data connectivity services, typically in the form of Ethernet. As of today, these customers meet this requirement by buying costly Ethernet connections. Telcos have three requirements: (1) the ability to support multiple services over single network infrastructure, (2) the ability to support multi-rate uncompressed video over the same infrastructure, and (3) to interface their systems to different network types (fiber and SDI coax).

Solutions for Telcos: IPITEK MSP-300

To solve these challenges, IPITEK has introduced its MSP-300 family which allows for carrying Ethernet and uncompressed video (AS to 3G) over SD-SDI, HD-SDI and 3G-SDI which is a game changer for the way Telcos will provide video and IP services to their customers.

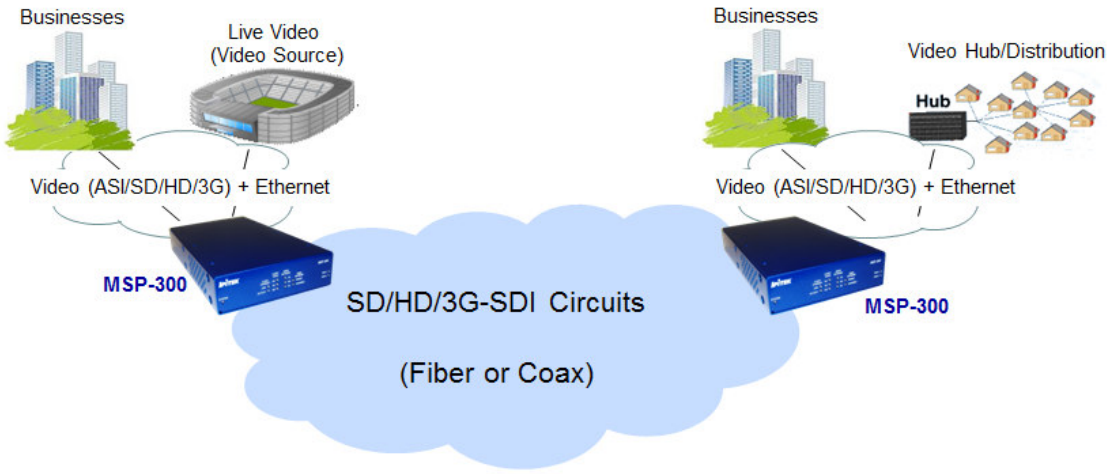

Figure 1: Using MSP-300 for supporting Ethernet and uncompressed video over multi-rate SDI networks

The MSP-300 supports the transmission of two-way video circuits. Each video trunk carries a separate video signal. This feature allows Telcos to support two-way uncompressed SDI video circuits as well as Ethernet (which requires bidirectional connectivity). Thus, this feature aligns with Telcos first requirement, i.e., the ability to support multiple services over single network infrastructure and thus, cut

capital expenditure by half. The flexibility of the MSP-300 does not stop at support Ethernet and video services over SDI video networks. In addition to these features, the MSP-300 provides a rich mixture of Ethernet/video services in various configurations. The MSP-300 does not require the input/output video trunk ports or input/output video client ports to operate at the same video rate. In fact, customers can have differential video rates on different video ports.

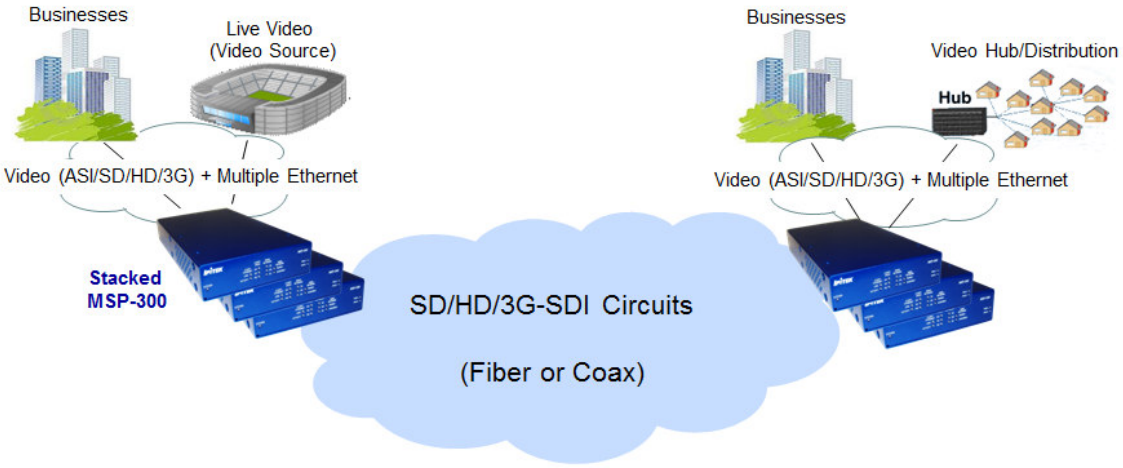

Figure 1: Daisy chaining of MSP-300 units to support for multiple Ethernet and uncompressed video services over one or more SDI video circuit

For example, one of the video trunks may operate at HD-SDI while the opposite direction one operates at 3G-SDI or SD-SDI. Note that the speed of the Ethernet service depend bandwidth permitted by the rate of the video trunk and the rate of the client video signal such as the ability to support partial ASI video and Ethernet services over SD-SDI circuits. Moreover, the amount of ASI provided can vary depending on the rate of the Ethernet rate, and vice versa. Another approach to further expand and exploit the capabilities of the MSP-300 is by using multiple units with different configurations and interconnections to yield different clients service configurations as needed. For example, three MSP-300 units can be daisy chained to provide for multiple Ethernet services and an ASI service carried over one 3G-SDI video circuit. As such, the MSP-300 perfectly aligns with Telcos second requirement, that is, the ability to support multi-rate video and Ethernet services using one infrastructure.

In addition to supporting coax SDI video trunks, the MSP-300 has SFP port for interfacing with C/D-WDM optical fiber networks. This outstanding feature allows users of the MSP-300 utilize the same unit for interoperating with different types of networks without the need to use separate equipment. It also allows the MSP-300 to be utilized by various applications. Thus, this feature aligns with Telcos third requirement, which is, interfacing their systems with different network types (fiber and SDI coax).

In summary, IPITEK has introduced the MSP-300 to help Telcos provide mixed IP/Ethernet and multi-rate uncompressed video by meeting all of Telco's requirements of supporting multiple services over single network infrastructure, supporting multi-rate uncompressed video over the same infrastructure and interfacing with different network types.