CASE STUDY :
OPPORTUNITIES FOR SATELLITE TV BROADCASTING WITH THE
INTRODUCTION OF DIGITAL TV (ATSC) AND MPEG4 ENCODING

The conversion of the Television Networks in the United States from Analog TV (NTSC) to Digital TV (ATSC) is opening new opportunities for TV broadcasting, multiplying the number of TV Channels available.

The bandwidth occupied by an analog channel (6MHz) will be used by a Digital TV Channel at 19.39Mbps .

The digital channel can be used by a single program or it can be divided in several streams multiplexed , called sub-channels .
For example a Digital Channel 53 can be divided in four sub-channels of 4.85 Mbps each, designated by 53.1 , 53.2, 53.3, 53.4 ,each carrying a different programming.

Broadcasters owing a digital channel can now lease some sub-channels to a variety of newcomers in the broadcasting market at affordable rates.

The increasing number of digital sub-channels in the market brings also new opportunities for satellite distribution of programming to the head-end terrestrial transmission sites.

For satellite distribution, one of the major issues is the cost of bandwidth. The use of the new encoding **MPEG4** allows transmission of broadcast quality TV with a bandwidth about half of the existing MPEG2 encoding.

Here we will address to one major project in the US in the programming distribution over satellite to Digital TV affiliated transmission sites, using **MPEG4** technology.

This Broadcaster based on Tennessee is distributing over satellite a total of **132** different programs to terrestrial transmission sites, with varied contents and advertising packages.

These programs are individually encoded to **MPEG4** using **UPCOM Technologies UC-350E+** Encoders, set at **1.8 Mbps per MPEG4** encoded program.

The output of the individual encoders is fed to an array of Transport Stream **Multiplexers UC-8MX** and **UC-16MX** also from **UPCOM**, with 8 ports and 16 ports respectively.

The Multiplexers are cascaded according in order to reach the number of MPEG4 encoders required to be multiplexed into one satellite transponder. Several transponders are being used.

DVB Modulator

TS Multiplexer Bank

Play Out

MPEG4 Encoder

ATSC Digital TV