

Invention Title:	Method of adding IP video channel information to a cable system
Invention Summary:	This invention is designed to add the necessary Internet Protocol Multicast data, which is needed for clients to tune to a channel, to a cable system using existing standards. This is for future use in IP-based headends.
Invention Description:	<p>The SCTE 65 standard describes how cable systems are able to transmit information about the system to its clients. One of the tables in the standard is called the "Long-form Virtual Channel Table." This table correlates for the clients the virtual channel, or tunable channel, into a form that the client/settop box/television is able to physically tune. Two of these values are called "carrier_frequency" and "channel_TSID." In the traditional world, these values are necessary for tuning channels, but in an IP-based cable system, these values are not required.</p> <p>The carrier_frequency value is a 32-bit unsigned integer and the channel_TSID is a 16-bit unsigned integer. An IPv4 address can also be expressed as a 32-bit unsigned integer and the IP protocol port is a 16-bit unsigned integer. Therefore, an IP address and port number describing the necessary tuning can be represented within this table.</p> <p>In an IP-based cable system, the lowest multicast address is 224.0.0.0 and the highest address is 239.255.255.255. In decimal/integer form, these are represented as 3758096384 and 4026531839, respectively.</p> <p>This concept allows for backwards compatibility due to the nature of the values. If the multicast address in decimal form is listed as 3.75 to 4.02 gigahertz and a traditional cable system rarely uses frequencies above 1.0 gigahertz, then there is no overlap of frequency ranges. This allows for traditional video and IP-based video to be integrated into the same cable system at the same time.</p>
Invention Commercial Value/Customers:	The invention describes how to transmit IP-based video information with using standards, which are already built into the systems in use today. Only minor software upgrades would be necessary to allow for the data to be generated.
Invention Differences:	Currently, there is no standard describing to IP-based video clients as to how to tune a video channel using a simple channel number. This provides a method that is based on existing standards which requires very few changes for forward capability.