

INVENTION DISCLOSURE

1. **Invention Title.**

Method and process to detect & report DAVIC channel congestion

2. **Invention Summary.**

Cable operators currently do not have visibility to the level of data channel congestion on their legacy out of band (DAVIC) communication channels. The method described here uses an algorithm based on the DAVIC communication protocol along with message latency measurements to detect the level of congestion for the data channel.

3. **Invention Description.**

a. Describe the invention in detail.

Set top boxes using DAVIC communication channels share the channel with other set top boxes on a contention basis. This means that one set top box could be trying to communicate at the same time another set top box is trying to communicate. When this happens the messages collide and do not make it through the channel. The DAVIC system has been designed with a message acknowledgement mechanism so that the communicating set top boxes can detect when their message did not get through. When the set top box detects that a collision occurs it waits a random amount of time and retransmits the message. As more and more collisions happen the wait time increases. A DAVIC channel congestion warning system can be developed by measuring the increasing message latency and alerting cable operators to the level of contention on the channel before failures occur.

b. Why was the invention developed? What problem(s) does the invention solve? How is it better?

Cable operators are rolling out more and more applications (video on demand, switched digital video, network based digital video recording and interactive Enhanced TV applications) that use two way communication channels, including legacy out of band (DAVIC) communication channels, to communicate from the set top boxes to application servers in the cable headend systems. As these services are rolled out the communication channels become more congested until the messages cannot make it to their destinations. Cable operators need visibility into the level of congestion on their communication channels. Cable operators need this visibility so that they can plan their networks effectively and apply network receiver equipment where it is needed the most. Currently cable operators do not have visibility into the level of congestion on their DAVIC communication channels and do not know that a channel is being heavily used until a failure occurs.

c. Briefly outline the potential commercial value and customers of the invention.

The customers of this invention are the cable operators with DAVIC based set top boxes.

There are over 10 million set top boxes deployed in the united states that rely on a DAVIC communication channel for their return path. The combined revenue for

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interactive services from these set top boxes exceeds hundreds of millions of dollars. Ensuring that these services are running smoothly and that the cable operators customers are getting an outstanding user experience is worth millions of dollars.

4. **HOW is this invention different from existing products, processes, systems?**

I am not aware of product that addresses this problem.