1. **Invention Title.**

Use of PCMM to configure Non DOCSIS network devices

2. **Invention Summary.**

The new idea is to reuse the PCMM infrastructure (signaling interfaces & devices) for communication with other network elements like Edge routers on a MSO network (instead of just to the DOCSIS CMTS).

3. **Invention Description**.

a. Describe the invention in detail.

The PCMM (PacketCable MultiMedia) Specification defines supports the deployment of various services by defining IP-based signaling interfaces to configure QoS and policy management capabilities in a DOCSIS network.

The latest generations of Edge Routers, as well as other IP devices in the Cable Operators network, have started supporting various QoS mechanisms and related functionality. However, the mechanisms for configuring these QoS capabilities are generally vendor proprietary.

As a result, in order to create an end to end path for QoS, an MSO has to configure QoS on the DOCSIS network using PCMM, static configuration, or some other means; and then independently configure any non-DOCSIS network elements to setup end-to-end QoS.

This invention proposes a solution by which the QoS setup process can be automated, done dynamically at need, and utilizing common consistent interfaces. The basic idea is to have a network element with QoS capabilities (for example, an Edge Router) support the same interface defined in PCMM for a CMTS. This way the pre-existing Policy Server in the MSO's PCMM infrastructure can send QoS Setup messages to both, a DOCSIS CMTS as well as an Edge Router (or similar device), to set up QoS for each traffic flow across the entire MSO network.

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

There are challenges for MSOS around traffic management capabilities and configuring QoS across their quickly expanding access and core networks.

This invention helps leverage the PCMM infrastructure many of the MSOs have invested in to configure and control non-DOCSIS network elements with QoS capabilities from a single source and in a consistent manner. This in turn should enable MSOs to more rapidly and cost effectively take advantage of the QoS capabilities in their networks.

For example, there have been discussions of using IP QoS capabilities in Edge Routers to allow MSOs to institute "aggregate QoS" policies, where the sum total of bandwidth permitted for a customer might be less than the aggregate of all service flows the customer has available to them, because DOCSIS does not support this functionality. However, the question was raised as to how to configure that QoS information into the Edge Router, since it does not participate in the DOCSIS provisioning process. The use of PCMM interfaces would provide MSOs with a single consistent place to configure these QoS policies, using equipment that many of them have already invested in. This in turn enhances their ability to effectively manage their networks to provide the best possible customer experience.

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

For MSOs, there is value created here by enabling them to better take full advantage of the capabilities inherent in the equipment that they already own or are purchasing. It would be implemented by router vendors, and it would create value for them by providing an additional selling point for their equipment when selling to MSOs.

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

At this time, we are not aware of a standardized system to do this type of QoS configuration (for both the Access and Core Network elements at the same time), and in particular we are not aware of one that integrates with a system also used by the DOCSIS devices already in MSO networks.