May 9, 2008

From: CableLabs®
          via Jean-François Mulé, jfm@cablelabs.com, CableLabs liaison manager to IETF

To: Jon Peterson jon.peterson@neustar.biz -- IETF RAI AD

          Cullen Jennings fluffy@cisco.com – IETF RAI AD

This note provides input to the IETF workshop on P2P Infrastructure to be held on May 28, 2008. It is in response to the RAI Area Directors' call for papers. It should not be taken as a "position" paper; as it is intended to help describe the problem space more than take a firm position on a specific solution.

CableLabs would like to bring the following points to the attention of the attendees of the workshop:

1) Cable operators are experiencing a significant increase in Internet traffic consumption in general and some operators believe that a significant percentage of this traffic comes from peer-to-peer applications.

2) Some independent research has been conducted by James J. Martin and James M. Westall of Clemson University on the impact of some peer-to-peer protocols (BitTorrent) on commercial DOCSIS networks (based on the CableLabs DOCSIS® 1.1 and 2.0 specifications). In one paper available at http://people.clemson.edu/~jmarty/papers/bittorrentBroadnets.pdf, it is noted that "as few as 15 BitTorrent users can significantly reduce the service quality experienced by other subscribers."

3) The potential degradation of quality of service experienced by these "other subscribers" may affect real-time applications such as Voice over the Internet, SIP applications for deaf and speech impaired customers, and in particular, SIP sessions to emergency service operators.

The IETF community has accomplished a significant amount of work in the RAI, Transport and other areas (AVT, SIP, SIPPING, MMUSIC, ECRIT, p2pSIP, diffserv, tsvwg, nsis, pcn to cite a few). This work provides applications with the ability to signal their needs of quality of service or bandwidth consumption, signal emergency calls, indicate the QoS mechanisms SIP applications support, and for routers or hosts to provide or signal differentiated services, congestion notification, etc. However, these mechanisms cannot work effectively in situations where some applications like peer-to-peer clients impair the network services available to other users.

CableLabs believes the IETF can play a role in providing operators and application developers with Internet protocols, techniques and best current practices to better manage the application-to-network dialogs so that all applications on a given network can deliver the expected quality of service to the end-users.