



Federal Communications Commission  
Washington, D.C. 20554

April 8, 2015

**VIA ECFS ELECTRONIC DELIVERY**

Ms. Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street SW  
Washington, DC 20554

Re: Measuring Broadband America Program (Fixed Collaborative), GN Docket No. 12-264

Dear Ms. Dortch:

On April 8, 2015, representatives of broadband providers, public interest groups, companies, and other organizations met in person and via conference call with Commission staff to discuss schedules and milestones of the fixed Measuring Broadband America (MBA) efforts.<sup>1</sup>

Mr. Walter Johnston, Chief Electromagnetic Compatibility Division (EMCD) and James Miller, Senior Attorney Advisor, EMCD welcomed collaborative members and introduced Alex Salter, CEO SamKnows Ltd. to explain ongoing development plans for measuring streaming video service's broadband performance.

Mr. Johnston explained that when the Measuring Broadband America Program was launched in 2010 on recommendations in the National Broadband Plan, consumers use of broadband services was very different. Congestion and network management concerns were largely focused on large bulk file sharing and other general Internet services. Mr. Johnston noted that today the broadband traffic landscape of the United States has changed considerably with the majority of traffic on the Internet now composed of video traffic. Mr. Salter remarked that the same dramatic and profound changes are also observed internationally. Mr. Johnston explained that as user behavior has changed, the Measuring Broadband America program has been developing new testing approaches to better understand performance measurements of modern, 'over the top', streaming broadband video services.

Mr. Johnston stated that the current meeting was intended to explore the subject of measuring broadband streaming video service performance, how collaborative members could voluntarily

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<sup>1</sup> A list of attendees and presentation materials are attached to this filing in GN Docket No. 12-264.

participate in this effort and discuss how new testing methodologies could address limitations of what can currently be measured with the existing architecture and technologies. Mr. Johnston mentioned that in the fall of 2013 he had directed SamKnows to begin experimental efforts to test YouTube and Netflix video services. The aim of these experiments was to establish a proof of concept for accurate measurement of video streaming performance.

Mr. Johnston pointed out that the focus of this meeting was to create a working group to develop an accurate methodology for comparative measurement and analysis of broadband video services with the goal of making the Measuring Broadband America program's performance data more relevant to stakeholder consumers. He introduced the background of the current experiments explaining that the initial work started with testing of YouTube video because broadband measurement tests could be executed without any coordination with the host infrastructure. Experimental testing of Netflix services has also been performed with a webpage redirection to infrastructure that can serve synthetic video without authentication of user services.

Mr. Johnston explained that the goal of the expanded video testing effort is to make available common metrics and data for video measurement. He noted that selecting potential services would likely be based on general popularity much like the current approach for testing web page loading. He noted that there would be practical limitations on the number of broadband video services that could be supported, so the working group would likely explore what subset of services could be considered as representative of the general market and determine how best to measure the performance of these services.

Mr. Miller introduced Mr. Salter who presented details on the current experimental efforts and described a potential development path forward to "create a working group whose purpose is to develop a common methodology for measuring video streaming performance to allow for a comparative measurement and analysis of available services." He provided other background explaining that current development work was also supporting efforts underway in the European Commission and other jurisdictions internationally.

Mr. Johnston invited questions and comments in response to the presentation. Participants suggested establishing a measurement control in the data at known locations would be an important feature of a technology neutral testing methodology. Participants discussed what types of video services should be included in the study so as to be most useful for consumers. Participants also discussed the potential value of the tests as a proxy for the potential influence of interconnection quality on video performance. Mr. Johnston noted that a separate special study was underway with the Center for Applied Internet Data Analysis (CAIDA) that would be more focused on interconnection performance issues but that the video streaming study would focus more on service performance as opposed to gateway congestion issues.<sup>2</sup>

Participants discussed how a next level of testing might be created to differentiate or simulate client performance, noting that the selection of source files encoded for particular mobile devices might be an important feature of how video quality is managed by content providers. Participants inquired what class of devices the white box tests are modeled under. Sam Crawford, CTO Samknows, explained that device classes were irrelevant with the current testing methodology for Netflix and YouTube because the tests are implemented fetching synthetic content for Netflix testing and YouTube testing established the highest level of service

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<sup>2</sup> Center for Applied Internet Data Analysis, <http://www.caida.org>.

performance that can be supported on the link.

Mr. Johnston suggested that ISP collaborative members consider participating in one or both of two modes. He noted that first, the FCC would support shipping ‘white boxes’ to each ISP so that their technical staff could better evaluate the methodology. Second, he noted that each ISP either had their own streaming video service or were affiliated with content providers (e.g. networks such as Fox, CBS, etc.) that provide streaming video services in collaboration with the broadband provider. Mr. Johnston suggested that it would be interesting to include several of these types of services in the study as a baseline and proposed that the ISPs consider making proposals in this regard.

Participants discussed the history of the program’s Code of Conduct in establishing a baseline for collaborative activity and the need for participants in video testing efforts to be signatories to the current Code of Conduct. Mr. Salter noted that Netflix had signed the current Code of Conduct and that participants in collaborative activity are always encouraged to sign and that a Code of Conduct would be solicited whenever collaboration required coordination with a participant. He explained that YouTube had not been approached to sign as the current methodology does not require any explicit coordination to execute the test.

Mr. Miller suggested that a date and agenda be set for the next collaborative meeting to discuss further questions on the progress of other ongoing special studies and progress on video testing development. Participants agreed that a return to the recurring three-week schedule would be helpful. Mr. Miller thanked all the participants for their active participation in these meetings and encouraged participants to look for an invitation to an upcoming meeting via the collaborative distribution list in the coming weeks. Mr. Johnston thanked participants for their attendance and closed the meeting.

Sincerely,

/s/ James Miller

James Miller, Senior Attorney Advisor  
Electromagnetic Compatibility Division/OET  
Federal Communications Commission