



Federal Communications Commission  
Washington, D.C. 20554

October 15, 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 October 14, 2015, representatives of broadband providers, public interest groups, companies, and other organizations met via conference call with Commission staff to discuss ongoing analysis of data collection anomalies discussed at the September 2, 16 and 30, 2015 fixed Measuring Broadband America (MBA) collaborative meetings.<sup>1</sup>

Mr. Walter Johnston, Chief Electromagnetic Compatibility Division (EMCD) welcomed collaborative members and introduced Alex Salter, SamKnows and Colin Anderson, M-Lab, to discuss ongoing analysis of measurement anomalies associated with certain off-net Measurement Lab (M-Lab) servers.

Mr. Collin Anderson discussed that M-Lab, working closely with SamKnows, had isolated the

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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.

cause of the drop in throughput at high data rates to be the result of traffic fairness rules embedded in M-Labs' multi-server switch configurations. M-Lab observed that the problem disappeared when only a single server was used at each site. On Friday, October 9, M-Lab changed its switch configuration at all US sites used by the MBA project so as to permit only a single server per switch. The new configuration was tested extensively over the weekend and the results obtained by SamKnows mirrored the results of M-Lab, i.e. use of a single server per switch resulted in proper throughput performance. On Monday, Oct. 12, SamKnows implemented a change to the scheduling configuration for whiteboxes to execute tests against the single servers available at M-Lab sites. After the change to test configurations for the whiteboxes, the results of tests against all M-Lab sites show no signs of throughput degradation even at high data rates. SamKnows and FCC will continue to monitor the measurements to confirm whether the use of a single dedicated server at each M-Lab site for the MBA measurements is a solution to the problem of the observed anomalies. In addition, M-Lab will examine more permanent solutions to the problem.

After the provided update, Mr. Johnston opened the floor to questions. Participants asked whether the observed anomalies occurred at data rates lower than 100 Mbps. Samknows (Jamie Mason) responded that the problem is predominantly observed at high data rates and that no discernable throughput degradation is observed below 50 Mbps. In reply to a question whether the observed problem was the result of using any specific hardware, Mr. Anderson stated that M-Lab was using both HP and Cisco switches and that both showed similar results. When asked whether there could be any potential disadvantages using a single server, Mr. Anderson replied that provided the server is made robust there should be no real drawbacks in the short term, but that he hoped to return eventually to a more standard configuration. To a question about whether there was any white paper to explain the anomaly and analysis of the impact of the multi-server switch configuration that could be circulated with collaborative participants, Mr. Anderson noted that M-Lab themselves had difficulty finding any information on the issue and would explore independently drafting a white paper explaining in detail the full mechanism causing the anomaly. M-Lab expressed their commitment to writing such a white-paper and invited any interested collaborative participants to help with the effort. M-Lab was also asked if it could provide more detail on their configuration setup, including such details as the model numbers for

the switches and the set of traffic policies and traffic shaping rules that were used. Mr. Anderson mentioned that he did not envision any problems in making these details public.

A question was also raised about how this observed throughput degradation had affected the participants using the SamKnows white boxes. Mr. Salter admitted that SamKnows had not yet looked into this but promised to do so and would provide an update for the next meeting.

Mr. Johnston reiterated that the FCC was closely monitoring these results and had not yet made any decision on what, if any, changes need to be made to the MBA test measurement architecture. Mr. Johnston was also happy to indicate that the 2015 MBA reported drafting had been completed and would be submitted to the Chairman's office for final review. Mr. Johnston concluded by thanking all the attendees for their active participation and noted that the next meeting would be held in about two weeks.

Sincerely,

/s/ Rajender Razdan

Rajender Razdan, Electronics Engineer,  
Electromagnetic Compatibility Division/OET  
Federal Communications Commission