

October 26, 2015

VIA ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Re: Notice of Oral Ex Parte Presentation
ET Docket No. 15-170 (*Amendment of Part 0, 1, 2, 15 and 18 of the Commission's Rules regarding Authorization of Radio frequency Equipment*)
RM-11673 (*Request for the Allowance of Optional Electronic Labeling for Wireless Devices*)

Dear Ms. Dortch:

On Thursday, October 22, 2015, David Farber of Carnegie Mellon University, Nick Feamster of Princeton University, Sascha Meinrath of Penn State University, Vishal Misra of Columbia University and David Reed met via phone with Gigi Sohn and Edward Smith of Chairman Wheeler's office, Julius Knapp of the Office of Engineering and Technology, Chief Technologist Scott Jordan, and Eric Feigenbaum and Charles Meisch of the Office of Media Relations regarding the above referenced proceedings.

The participants reiterated a number of the points they raised in a recent filing¹ concerning the modification and security of WiFi routers. Specifically:

Mr. Meinrath expressed concern that, in the past, some manufacturers of WiFi routers have used the existence of FCC rules as a pretext to lock-down their devices' firmware, and that some of the language in the Commission's NPRM may compound this problem. Mr. Meinrath acknowledged that a real solution to the problem of vulnerable routers would likely be neither easy nor inexpensive to implement, but argued the costs of such a solution would be outweighed by the benefits, including an increase in security. Mr. Meinrath believes it is imperative that the owners of hardware have ultimate control over that hardware, and be able to fix or upgrade it (within the bounds of operation for which the device was approved).

Mr. Reed also expressed concern about the current state of router firmware particularly with regard to security and interoperability. He believes it is important to view this proceeding within the larger regulatory context that includes questions of how radio regulation should be evolving along with technological advances. Mr. Reed thinks this is an opportunity for the Office of Engineering and Technology to work with external engineers to solve the overarching problem of how to best share the airwaves. He was dubious about the Commission's ability to certify software in a manner similar to the way it currently certifies hardware.

Additionally, Mr. Reed raised the question as to why Part 15 devices intended to be used indoors should be treated by FCC rules the same as outdoor devices at the certification level, since that

¹ See Comments of David Täht, Vint Cerf, et al., ET Docket No. 15-170, RM-11673 (filed October 9, 2015)

is an area of high innovation rate and a portion of the industry that is evolving quickly. He expressed concerns about security and safety of owners of the devices as well as interoperability and device unit cost, which are particularly heavy burdens for indoor devices, given the variety and rate of field updates in that industry.

Mr. Feamster was primarily concerned, not with the plain text of the NPRM, but that some manufacturers of routers may premise a decision to lock-down their devices' firmware upon it, even if that wasn't the Bureau's intention.

Mr. Misra noted that, increasingly, Wifi routers are combined with modems and other devices into "all-in-one" devices. Thus, a decision to lock-down router firmware may have the effect of locking-down the firmware of other device types as well.

Mr. Farber urged the Commission to consider the narrowest possible regulations tailored at solving the actual problem at hand – modified radios causing interference by operating outside their approved parameters.

This notice is being filed in the above-referenced dockets for inclusion in the public record. Please feel free to contact me with any questions.

Sincerely,

/s/ Sascha Meinrath

cc: Via electronic mail

Julius Knapp

Scott Jordan

Gigi Sohn

Edward Smith

Eric Feigenbaum

Charles Meisch