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May 11, 2016

**VIA ELECTRONIC FILING**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, D.C. 20554

Re: *Commercial Availability of Navigation Devices*, MB Docket No. 16-42, CS  
Docket No. 97-80

Dear Ms. Dortch:

On May 9, 2016, Kathy Zachem, Mark Hess, Mark Vickers, Frank Buono, the undersigned of Comcast Corporation (“Comcast”), and Jonathan Friedman of Willkie Farr & Gallagher LLP met with Scott Jordan, Chief Technologist, and Michelle Carey, Mary Beth Murphy, Martha Heller, Brendan Murray, Lyle Elder, Jonathan Mayer, and Antonio Sweet of the Commission staff to discuss the above-referenced dockets.

We discussed that Comcast’s set-top boxes and Xfinity TV apps (like other MVPD apps) include software code that manages requests for programing and communications between the box/app and where the programming is cached on the network to ensure the programming is delivered, and done so efficiently. In addition, this network code minimizes the risks of degradation to the service due to bandwidth shortages and congestion, and also enables Comcast to support rapidly evolving entertainment technologies, such as accessibility features and advanced video technologies.<sup>1</sup> In response to questions from Commission staff, we explained that running our network code directly on third-party devices without our application was not feasible for a variety of reasons, including, among other things, that MVPDs deploy very different network infrastructures so that the code that one MVPD develops for interacting with its network differs from the code that other MVPDs would develop; MVPD network code is regularly updated to accommodate network and service changes, and corresponding changes would be required in the third-party device (or app); and that programmers and content owners require a trusted execution environment as a key element of a strong content security and content presentation regimen.

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<sup>1</sup> See Comcast Comments, MB Dkt. No. 16-42, CS Dkt. No. 97-80, at 64-65.

We were also asked about how the Commission's proposal would affect network bandwidth. We explained that Comcast delivers IP cable service to its apps today as an integrated, unified service on a cloud-to-ground, unicast basis, and that, as noted above, MVPD network code running as part of the app helps ensure efficient delivery of video. We noted that these types of network management tools would be lost under the Commission's proposal. We underscored that the apps-based model raises none of these issues.

We also responded to questions regarding the Commission's proposal to standardize MVPD entitlements. Entitlements reflect marketing and business models, which vary among providers and change rapidly in retail video offerings. We explained that Comcast and other MVPDs do not deliver entitlements in a standardized way, so the Commission's proposal would require significant changes to entitlement servers and other parts of MVPD networks.<sup>2</sup> We also discussed why the current approach is preferable, for both MVPDs and programmers, to a standardization model, including that the current approach provides flexibility to accommodate experimentation and innovative changes in business models, usage patterns, and delivery methods; accommodates differences in how content is distributed over different MVPD networks; and enables industry stakeholders to respond rapidly to emerging security and piracy threats. In contrast, mandated standardization would have the effect of "freezing" business models and delaying consumers' ability to access content in new ways until standards could be updated or new standards developed.

Finally, in response to questions about HTML5 with premium media extensions, we noted that Comcast's Xfinity TV Partner Program is leveraging this open standard, which has been widely adopted across the industry, as a common framework to expand the range of retail devices its customers can use to access their Xfinity TV service without the need for a leased set-top box.<sup>3</sup> HTML5 with premium media extensions was designed to enable service providers to present an interface to their services that includes interactive graphics and video, and this is the manner in which OVDs like Netflix and MVPDs like Comcast are using the standard today. Comcast's HTML5-based app will appear in the umbrella user interface of device partners, alongside other apps, and once the consumer opens the Xfinity TV app, the Xfinity TV service is presented using the Xfinity user interface. We also discussed details of how the Encrypted Media Extensions interface works.

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<sup>2</sup> See *id.* at 63.

<sup>3</sup> See *id.* at 28-29.

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Please direct any questions to the undersigned.

Sincerely,

/s/ Jordan B. Goldstein

Vice President, Regulatory Affairs  
Comcast Corporation

cc: Scott Jordan  
Michelle Carey  
Mary Beth Murphy  
Martha Heller  
Brendan Murray  
Lyle Elder  
Jonathan Mayer  
Antonio Sweet