



July 17th, 2017

Federal Communications Commission

445 12th St., S.W. Washington, D.C. 20554

Subject: WC Docket No. 13-184

I would like to provide feedback on the Eligible Services List (ESL) for 2017-2018 and formally request that the inclusion of video components for the purpose of distance learning be added back to the ESL.

These components were removed from the ESL as a result of the 2014 E-Rate Modernization Order, however they are key components that align with the order's goal of "ensuring affordable access to high speed broadband sufficient to **support digital learning** in schools and robust connectivity for all libraries".

The order goes on to state "In particular, the E-rate program must evolve to focus on providing support for the high-speed broadband that schools need to take advantage of **bandwidth-intensive digital learning technologies...**".

Distance learning equipment, specifically the video conferencing endpoints and routing equipment that deliver and receive information, **help to reduce bandwidth requirements of digital learning technologies** and are important network components.

Video conferencing endpoints deliver and receive information in a compressed format that improves bandwidth efficiency on both the local network and the across the Internet.

Video conferencing routing equipment makes intelligent decisions on how to route traffic which again improves bandwidth efficiency on both the local network and the across the Internet.

When the FCC published the "Modernizing E-Rate" paper back in July of 2014 the intent was to "put computing power **directly in front of the student**":

In that paper FCC Chairman Tom Wheeler proclaimed "Eighteen years ago, the idea of a student-accessible computer in the school building was a revolutionary concept. Thanks to E-Rate that rarity became commonplace and computers moved into classrooms. Now with the next generation of E-Rate, **we are harnessing innovation to put that power directly in front of the student**".

As we are halfway through 2017 and looking at technology in 2018 and beyond we need to look more closely at those network components capable of making the same impact as the computers did in 1999. The video conferencing endpoint is a component that can have a significant impact in the classroom by eliminating geographical boundaries and connecting students across great divides, **all while meeting the order's objective of reducing required bandwidth.**

The program already allows devices that improve bandwidth efficiency on the ESL under Category Two, specifically "caching" devices. The purpose of a caching device is to reduce the impact on the network. Per the formal definition, "(3) Caching is defined as a method that stores recently accessed information. Caching stores information locally so that the information is accessible more quickly than if transmitted across a network from a distance. A caching service or equipment that provides caching, including servers necessary for the provision of caching, is eligible for funding."



This caching device supports the basic foundation of Category Two equipment – to improve network efficiency and reduce the overall need for bandwidth. The video conferencing endpoints and routers are no different in this regard.

A video codec improves bandwidth utilization to an even greater extent than a caching server. Without a video codec, which compresses audio/video signals so they can be delivered over a smaller network connection, the demand on both LAN (local) and WAN (wide area including Internet) networks would be exponentially higher. In fact, an uncompressed high-definition 1080 (1920x1080) audio/video feed consumes 1.5Gbps of bandwidth, a figure that makes transmission between locations impossible while a video codec reduces that to just 2Mbps and often at times even lower.

Without these devices the need for even more network bandwidth will grow and negatively impact the program by requiring even faster switches and network components with greater bandwidth capacity.

Video components were on the ESL from 1999 to 2014 and helped connect schools across the nation and around the world. The program has seen Category Two demand drop for the past 3 years and has had surpluses since 2015 - those surplus funds could be used towards re-funding these distance learning components.

As an expert in the distance learning community I have helped rural and disadvantaged schools to leverage Federal funds in a cost-effective manner and improve classroom communication for more than 15 years. I ask the commission to consider my suggestions and add video components back to the ESL.

Sincerely,

A handwritten signature in black ink, appearing to read "Pat Cassella", written over a horizontal line.

Pat Cassella, ETCVideo President

patc@etcvideo.com, 203-980-6928

US Distance Learning Association (USDLA) President-Elect