The Section 1201 Roundtable met in the Mumford Room, James Madison Building, 101 Independence Avenue, SE, Washington, District of Columbia, at 9:00 a.m., Regan Smith, Deputy General Counsel of the U.S. Copyright Office, presiding.

PRESENT
REGAN SMITH, Deputy General Counsel of the U.S. Copyright Office
KEVIN AMER, U.S. Copyright Office
ANNA CHAUVET, U.S. Copyright Office
STACY CHENEY, National Telecommunications and Information Administration
JOHN RILEY, U.S. Copyright Office
JULIE SALTMAN, U.S. Copyright Office
JASON SLOAN, U.S. Copyright Office

ALSO PRESENT
KENDRA ALBERT, Software Preservation Network
JONATHAN BAND, Library Copyright Alliance
BRANDON BUTLER, University of Virginia Library
SHANNON COWLING, Association of Transcribers & Speech-to-text Providers and Kent State University
DERRICK DODSON, American Sign Language interpreter
JAY FREEMAN, SaurikIT
SOPHIA GALLEHER, Samuelson-Glushko Technology Law and Policy Clinic
DAVID HUGHES, Recording Industry Association of America
HENRY LOWOOD
LAURA MERRILL, American Sign Language interpreter
LYNDSEY JANE MOULDS, Rhizome at the New Museum
JESSICA MEYERSON, Software Preservation Network
CHRISt MOHR, Software & Information Industry Association
BLAKE REID, Samuelson-Glushko Technology Law and Policy Clinic
JOHN SCHOPPERT, Samuelson-Glushko Technology Law and Policy Clinic
MITCHELL STOLTZ, Electronic Frontier Foundation
DAVID J. TAYLOR, DVD CCA, AACS LA
CHRISTIAN TRONCOSO, BSA | The Software Alliance
J. MATTHEW WILLIAMS, Joint Creators II
JONATHAN ZUCK, ACT | The App Association
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MS. SMITH: Okay, everyone ready? Great. So, good morning everyone, welcome. This is the next hearing for the section 1201 anti-circumvention rulemaking. This is Class 2, which concerns audiovisual works and accessibility.

We are trying, as with every hearing, to just sort of build out the record and ask probative questions. And for those who are new to participating in the panel, I will say a couple rules of the road.

First is, use the microphone when you are speaking. If you would like to speak, just tip your placard up and we'll call on you.

And we have a court reporter as well as an interpreter so if either of them need any more information or would like us to do something different, we will follow their lead.

So, I think to start out, we will go around and just introduce all of ourselves and then we'll start with the video. So, my name is Regan Smith, I'm Deputy General Counsel of the Copyright Office. And maybe start with Julie.
MS. SALTMAN: I'm Julie Saltman, Assistant General Counsel at the Copyright Office.

MR. AMER: Kevin Amer, Senior Counsel in the Office of Policy and International Affairs at the Copyright Office.

MS. CHAUVET: Anna Chauvet, Assistant General Counsel at the Copyright Office.

MR. SLOAN: Jason Sloan, Attorney-Advisor in the General Counsel's Office at the Copyright Office.

MR. CHENEY: Stacy Cheney, Senior Attorney-Advisor at NTIA, National Telecommunications and Information Administration.

MS. SMITH: If you could like to start, Mr. Schoppert.

MR. SCHOPPERT: Yes. My name is John Schoppert, I am a student attorney at the Colorado Law TLPC. And I represent the Association of Transcribers & Speech-to-text Providers.

MR. REID: Blake Reid at the TLPC. And I can ask for 30 seconds of the Office's indulgences? I just wanted to, in my capacity on the e-book accessibility exemption, I wanted to acknowledge and thank the Office for its conditional
recommendation to renew that, but also for the work
that you did to do the streamline process that
avoided us having to rebuild the record from
scratch. That was a major reduction in burden on
some organizations that needed it.

We wanted to acknowledge and appreciate
that, as well as the provision of the live stream
with captions. Thank you.

MS. SMITH: Great, that's good to hear.

MS. COWLING: Good morning. I'm
Shannon Cowling and past president, current board
member of the Association of Transcribers &
Speech-to-text Providers.

MS. GALLEHER: Sophia Galleher and I am
also with the Colorado Technology Law and Policy
Clinic, also representing the Association of
Transcribers & Speech-to-text Providers.

MR. BAND: I'm Jonathan Band for the
Library Copyright Alliance.

MS. SMITH: All right, thanks. So two
issues I forgot to remember to say is, if you can
keep a phone away from the microphone it will prevent
issues which we were having yesterday.

And also, if you were called upon to
speak, if you can just repeat your name, I think
that is helpful to the court reporter.

So I think now we will start with a demonstrative video which we have labeled Exhibit 2-A.

(Whereupon, the above-referred to document was marked as Exhibit No. 2-A for identification.)

(Video played.)

MS. COWLING: This tutorial will provide a quick overall on creating and adding captions to a video. There are a variety of programs used in caption videos but for the purposes of this demonstration I'm going to go ahead and use MovieCaptioner.

So you need to load your MP4 file video into the container. And MovieCaptioner doesn't like that there is a space in my title so I'll remove that space, save it to the desktop.

And over here you can see that the commercial has been loaded. Down here you can change some of the elements.

I'm going to change the font size of the captions to be 15. Then here it tells you that when you start to type into the program you can listen to it, type. And then the video will repeat in about
a four-second interval.

Since I'm a TypeWell Transcriber, I went ahead and created a verbatim transcript ahead of time. I like to do that and then import the transcript.

So here you can see that the captions will appear below the video. Some of these sentences are too long. They don't meet standards. So I am going to break them up a bit here.

Do the same with this line. And do that here. I think the rest of these will be okay. I'll fix this one. Okay, looks good.

Now we're ready to do the synchronization of the time text, align to the audio and video portion. And we'll do that by setting time codes.

So, when I hear the last word of the sentence, I'm going to hit the return key on the Mac so it will start to sync.

MALE VOICE: We're going to use an ordinary garden variety peach with its short close fuzz and tender skin and a regular regimental hairbrush with its rough, tough bristles to prove to you that the man-sized Remington electric shaver will give you a close comfortable shave, no matter
how tender your skin, no matter how tough your beard.

Look at this amazing demonstration, the Remington is so gentle that it can shave the short close fuzz off a peach without harming its tender skin. And, the Remington is so powerful that it can shave the bristles off a brush. Bristles tougher than any beard.

Remember the amazing demonstration of the peach and brush for the close, comfortable shave you've always wanted, reach for the --

MS. COWLING: Okay, you can preview the video to make sure that that worked.

MALE VOICE: We're going to use an ordinary garden variety peach with its short close fuzz and tender skin and a regular regimental hairbrush with its rough, tough bristles --

MS. COWLING: So that looks good. Now we're going to export the time text file, the captioning file. And you can see that there are so many different types of files you can use, depending on what player you're going to house the captioning video in.

So, I usually work in SRT files. So I'm going to export that to my desktop in the same format that I used for the video, save that and open up
my VLC player.

MALE VOICE: We're going to use an ordinary --

MS. COWLING: And expand this here so you can see it. So here's my VLC player. You go over here to subtitles. I'm going to add the subtitle file. So now you can see the subtitle file has been added.

So when I play the video --

MALE VOICE: We're going to use an ordinary garden variety peach with its short --

MS. COWLING: So you can see the subtitles are added. Now, this is a very quick and concise demonstration of adding captions to a video.

You can imagine the time it takes to create a transcript to go through, set the time codes and then preview the video. And this was just a minute long.

This tutorial will provide a quick overall on creating and adding captions to a video.

(Video stopped.)

MS. CHAUVET: Okay, great. I think one thing I'll quickly preface is to say just how, raise how we're going to be trying to build out the record today. Just as with other panels, asking questions
kind of in buckets, by different topics.

But because of this demonstration video, I think we have a few questions about just the mechanics of how that works. So my first question is, I guess, presumably circumvention was done before or how, I guess, does circumvention -- like what part of the process are we seeing in this video?

MR. REID: I'm pleased to tell you that we selected a public domain video. Not under copyright, not encumbered with any digital rights management or technological protection measures.

So this is a simulation of what it would look like to add captions once digital rights management would be removed from a video.

Everything that you saw in this video would not be possible with a video that was encumbered with digital rights management. It would have broken at the, the process would have basically broken at the first step, if that makes sense.

MS. CHAUVE: Got it. So, for purposes of the exemption, you would, if we were to go ahead and grant the exemption, circumvent and then use that MP3 file, or whatever it would be, to be loaded
in to use this software?

Mr. Reid: That's correct.

Ms. Chauvet: Okay. So, the text files that we saw, were those like hand typed, are those generated by the software, like how are those created?

Ms. Cowling: So these are hand typed by humans. The program will allow you to type into the program while you are listening to the audio and it will loop so that you are able to capture the verbatim.

Because I'm a transcriber, I choose to do a transcript prior because the work flow is just more efficient for me.

Ms. Chauvet: And are there any software available on the market that could help with, transcription services that you could use in conjunction with the software like this so, I guess? I don't know if this software is indicative of all software that you would use, if it requires actually manually typing things out before using software such as this.

Ms. Cowling: In most circumstances yes, someone has to create the transcript, type the words, listen to the audio.
MS. CHAUVET: And I think YouTube has like captioning services, is that something that, I just, if it can be used in some way to develop a transcript like this?

MR. REID: So, YouTube has captioning services that can be invoked by the owner of a video that is posted on YouTube. They include the ability, and you can actually use this program to create transcripts for a YouTube video.

The rub is that, in general, the owner has to approve the captions being included in the file.

So the trick is, there's a lot of different ways to input and create the file that you saw, the trick is that there has to be player that allows you to drop that file in and synchronize it with a video. So in YouTube, that's generally speaking, not possible without the owner's permission.

On a streaming service, like take Netflix of Hulu, you've obviously, Netflix doesn't have an upload captions button, there is no way to make that work. With a DVD or a Blu-ray disc, there is, again, no way to get that file into the player.

So the process here is, you circumvent
the video and get an un-digital rights management encumbered version of it and then you can synchronize a new time text file with the player.

And there is a few other methods of doing that, but that's the basic idea.

MS. CHAUVET: And then just like when we were talking about synchronization, so you're setting the time codes and that's something that, again, always has to be done manually or is that just with this particular software?

MS. COWLING: I would say manually. You have to set the time codes. With whatever captioning program that you're using, you have to go through the video again to set the time codes.

MR. REID: And it's worth acknowledging, there are some experimental technologies out there and I'm not sure if YouTube is added to their latest version -- that look for silences and gaps in the dialogue and try to sort of intelligently assign time codes.

I think those services are in the process of improving. But, in general, the most accurate way is to have someone sit there and synchronize the time codes.

MS. CHAUVET: Have you used like
Apple's, I guess it has Final Cut Pro X, which is a professional video editing software which you can use to add captioning. Is that something that you have used before?

MS. COWLING: I have not. I'm familiar with the program but there is still, you still need to have the container and then you need to have a captioning file that you attach.

MS. SMITH: Can you remind me, what was the name of the, this program on the demonstration?

MS. COWLING: Sure. This was MovieCaptioner.

MS. SMITH: Okay. So when you use --

MR. REID: I apologize, can I speak quickly --

MS. SMITH: Sure.

MR. REID: -- to the Final Cut Pro issue? So, Apple just released an update last week, as I'm aware, that added a captioning workflow. It's actually fairly similar to this, it's just the preview of the video, the captioning workflow that you saw in MovieCaptioner.

Final Cut Pro would be an alternative to what you saw here. It doesn't bear on the question on circumvention or anything, but it would
potentially be, and again, it was just released last week so I don't think anyone has had the chance to really kick the tires on it, but it could potentially be used for this sort of thing.

MS. SMITH: So after using MovieCaptioner, when you are exporting the file to whatever format you're going to play it in, does it go, can you remove the captioning to basically get a version as if you had not done the captioning or is it layered together?

MR. REID: I will look to Shannon to correct me if I'm wrong here but I think the idea is that in most cases other than -- there are a couple methods where -- so, an MP4 file is actually a container that contains a video stream and an audio stream. There are one or two methods out there where you can actually insert the captions into that container.

But in general, the usual methodology, at least as we understand it, is what you saw here. Which is that the video file and the captioning file are separate files that are then combined in the player.

So when, say a student tees up the player, the player knows that the caption file and
the video file are there and have a relationship
to each other, and basically, multiplexes them on
screen, if that makes sense.

MS. SMITH: Okay, so would it be fair to
say if you take a non-accessible advertisement or
a motion picture, you add the captioning features
when it goes to the player, through the output, what
you will have is simple the accessible version, I
guess?

MR. REID: That's right.

MS. SMITH: Okay.

MS. CHAUVET: And when you basically
have the end product, which is the accessible
format, are any technological protection measures
added to prevent someone else from kind of using
it for maybe non-infringing purposes?

MR. REID: So, that's up to the user to
do that. I'll defer to Shannon, you can speak to
some examples of how this might be used.

Different stories and different
universities as to how this works out are different
libraries as to how that works out. But in general,
the idea is to use a private distribution channel
that is locked down so only the student who needs
to have access to the video can see it.
Usually password protected, that sort of thing. So this isn't generally a situation, the video doesn't go back on YouTube with captions, that kind of thing.

MS. SMITH: Right. It would go into Kaltura or Canopy. Are those the types of private distribution networks you're talking about?

MS. COWLING: Sure. So at Kent State University we use Kaltura, K-A-L-T-U-R-A. And that program will allow you to add a time text to captioning file.

So you have the video player in Kaltura and then you add that captioning file. And then we import into the courses via Blackboard Learn. So everything is password protected, including Kaltura.

MS. SMITH: While we're sticking on the technology, I don't know, Ms. Cowling, if you're the one who would know, but how does this process differ from the audio description process, are you using the same programs, are there similar programs, what programs are you using if they're different?

MR. REID: The process overall is similar and the difference is that rather than sitting there and creating a transcription, you're
sitting there and creating basically an audio file that is then, as I understand it, added into the container. So you actually would add a separate audio file into the MP4 container and then the user and the player can basically select, in the same way if you use it on your television, the Spanish language button or if you see the SAP button, you see a secondary audio channel or in various digital formats it might have the English soundtrack or the French soundtrack or whatever -- there's going to be another soundtrack that's going to pop up that is the audio described soundtrack, and it will overlay the audio description over the top.

But the process of generating it is relatively similar with the obvious differences that you have to sit there and create a script and describe what's happening on the screen. So you're not sitting there in verbatim transcribing what's happening.

A picture is worth a thousand words, you got to make some more choices. But the process is more or less similar.

MS. SMITH: Okay, thanks. And then going back to my question earlier, if for the captioning version you go from basically a
non-accessible to an accessible version, that the player is going to automatically meld the files together and play it, and it sounds like in audio description you can choose accessible or non-accessible or you can choose Spanish or so forth, in terms of the output?

MS. COWLING: Correct. And then also with a program like Kaltura, you can turn the captions on and off, similar that you can do when you're at home watching TV.

MR. REID: And we should also add, there are FCC regulations that require all of these players to have the capability of both turning the captions on and off, turning the audio description on and off, as well as being able to adjust the size, the font, the color, the opacity, and various other features of the captions.

There are some situations when it makes sense, as we did on the video today, to enable open captions where everyone sees the captions that are essentially burned into the video. So that's the demonstration that you guys have today.

We actually created captions for that and burned them onto the video.

But in general, we want to include a text
file with the video so that folks who are deaf, blind or have some sort of vision impairment or color blindness or something along those lines, can adjust how the captions are presented. So most of the players will have a little kind of Microsoft Word-style interface where you can change the font, change the color, change all the stuff.

MS. CHAUVET: So, just a quick follow-up question about Kaltura, because you said you can turn the captioning off.

So hypothetically, if a student, obviously you say it has to have the password to be able to access the video, but hypothetically someone could access it with a password, turn the captioning off and then you're really just showing the original film in its original medium, I guess, right?

MS. COWLING: That's correct. So, what we're doing is essentially going in and providing the accessible time text captioning file for those that need it.

MR. REID: And just to underscore, I think -- it's probably the legal premise for that question. These are generally an educational context where we are making the assumption that a
professor, for example, showing a video in class has the legal ability to demonstrate that video.

So there is actually probably a whole bunch of other students in the class who are watching the video. Perhaps on Kaltura, perhaps on another source. Let's say the video is originally on Netflix, originally on a DVD, whatever the case may be.

Other students in the class are going to be watching the video without the accessibility features necessarily enabled. But we are operating under the presumption that these are situations where that's going to be a non-infringing use, either because of the fair use or subject to the provisions of section 110 or whatever the case may be.

And I think the opponents raised some concern in their comment about, well, what if the professor is infringing in their distribution of the video. And that's, I think, we can discuss that scenario, but we are primarily concerned with scenarios where there is an otherwise non-infringing educational or related to something that's happening in a library use.

So, if that is helpful.
MS. CHAUVET: Okay, thanks, that's actually very helpful. So just to clarify, so the end user, presumably, could be the student?

You're making it available to the student or would you also make it available to a faculty member so that if the class is all watching a movie together that the, say someone who is hard of hearing can still watch along with the other members of the class?

MS. COWLING: That's correct.

MS. CHAUVET: And then one, we're going to talk a lot more about dissemination, but just since you talked about how basically Kaltura is used for people to access it, so I guess my question is, is it essentially like a library being created within Kaltura so if one, if you go to the trouble of creating captioning for one motion picture, is that kind of stored in case some other student in the future needs that same film?

Like, maybe we can get a little bit more into that later, but I think it would just be good to hear a little bit about it now.

MS. COWLING: That's a great question, and that's actually what disability specialists are grappling with. We have this captioning content
and there's research out there that captions benefit everyone, even our ESL learners.

So it's really a discussion to be had on who stores that, who owns that. Currently at Kent State University, the caption versions are in my Kaltura account. But these are the things that we grapple with.

MS. SMITH: Would you say that's done on an institution-by-institution basis, they have their own guidelines, is it typical to have, for -- in guidelines as to distribution or storage of these versions?

MS. COWLING: Yes.

MR. REID: And I just add there, this is a conversation that disability services folks are having with general counsel and assessing the fair use questions around. It would make sense if there is a curriculum that's being deployed at multiple schools and there is videos associated with it.

It would make a lot of sense when you're thinking about the edicts of the ADA, which are to provide accessibility but being mindful of the cost of doing that, that it doesn't really serve anybody's interest to recreate the caption file or redo the description.
It would be nice to make those portable and accessible. But that's a decision that is a university-by-university sort of decision.

MS. SMITH: Would you say that -- sort of beyond the request for this exemption -- in that I saw, like Joint Creators suggested, they said this is going to be a publicly accessible database, and in terms of whether or not there's a database of the titles that are made accessible where this, to be granted?

I think a separate question -- you're not seeking to sort of put all of this publicly available, it would be sort of cabined by the disability services through fulfilling their legal duties?

I don't know if that is sort of a vague question but maybe you can speak to what would happen after.

MR. REID: So I think the answer to that, at this point is, that that public database certainly doesn't exist. I think it's not going to exist tomorrow.

Disability services folks, again, that's a conversation that folks are talking about. It would be nice to head in that direction.
I'm not sure that this proceeding is the right context in which to flush all of those issues out. It would be nice --

MS. SMITH: Well, what I am trying to flush out --

MR. REID: Sorry.

MS. SMITH: -- as you've said, if this were granted, the accessible version would be sort of conveyed along a private distribution network and that seems at tension with a public database. I'm not sure what we're meaning when we're saying public database, that's just what I'm trying to understand.

MR. REID: So let me try and draw some contours. The one thing that absolutely nobody is going to be doing is distributing the video itself, right?

So, I imagine there's a concern that one university gets a video and then distributes the video across the country to every other university that wants to use it in a class. That's certainly not what's being contemplated.

The question is about whether the time text file for captions is an audio description file for audio descriptions that might be separately
distributed.

I don't think we have the record to say that technology is in the pipe end ready to go and but for this exemption we are ready to roll that out.

On the other hand, it would be nice if the Office were inclined to grant some breathing space in an exemption by not imposing super strict dictates on the dissemination of the caption file or the audio description file, that might allow disability services offices to experiment with what that would look like.

And we can talk about what the limitations you might put on that are, that sort of thing.

So, I think it's something that folks are interested in exploring, but I, you know -- obviously just the basic issue of being able to circumvent, disseminate to students within the context of a single university, a single library, that's where we're at now, that's where the problem is now. So that's obviously the first priority and kind of what brought us in the door today.

MS. CHAUVET: So, a quick question about that. Because the comments do reference litigation
involving universities like Harvard, MIT. Those cases involved information being given to the general public, not just necessarily to students.

So just for clarification purposes, would it be reasonable for this exemption to really be focused on providing educational services for the students enrolled in a university, not necessarily anything to the public that the university might otherwise make available?

MR. REID: So, let me try and tease that one apart a little bit because there is a few pieces. One, I want to make sure you give an opening for Mr. Band to talk about this in the context of libraries.

Two, I think we've talked about faculty members, other employees of the universities. So there are other internal context, a university in which the disability service office might be leveraged to make content accessible.

In terms of the public facing materials that are on the universities website, which are often the subject of these lawsuits so that might be live streams of conferences, along the lines of what we're doing today. It might be promotional videos, that kind of thing.
It's, to the best of my understanding, most of those videos are the university's intellectual property or a faculty member's intellectual property. So it's a fairly uncommon circumstance that the university is putting videos up on its site that are someone else's intellectual property, there are some, obviously some other just sort of baseline 106 issues around that.

I suppose we can talk about massively open online courses and that sort of situation. That might be where these things intersect.

But in general, the internal to the university situation is the primary context we're worried about. Now, again, might go a little bit broader than students. It might be faculty members, it might be employees.

And I think libraries are perhaps a different situation. But I think internal to the university is the primary concern.

MS. CHAUVET: Yes, Mr. Band.

MR. BAND: So, I what I just wanted to add is that we have to remember that the kind of content that we're typically talking about here is not, you know, Wonder Woman or Black Panther.

I mean, a lot, you know, new content that
is being released typically has the closed captions and all that kind of stuff. What we're talking about is the stuff that doesn't have that, okay.

And so that's not the current releases of studio, we're talking about older, older films, foreign films, some of these independent films. It's a very different universe so that the -- or documentaries, again, or older documentaries that are specialized and are not sort of current releases that have all of these features built into them.

Because as you can see, it's a lot of work. I mean, our, from a library perspective, and I'm sure from a disabilities services perspective, if it's available out there, if someone else has done it, that's, especially the producer, that's what you want. I mean, you don't want to have to go to that effort.

MS. SMITH: So, that raises a question I think we had, and I could see that the answer may have different perspectives depending upon whether you're representing a library interest or an educational interest, but would it be reasonable to have some sort of a requirement to do a market check to see whether an accessible version is available before engaging in circumvention?
That's similar to 108(c), so maybe starting from, Mr. Band, if you had thoughts on that?

MR. BAND: I would image -- I'm not sure it's necessary to build that into the statute, or into the exemption, because, again, as a practical matter you're going to be doing what is most efficient. But sometimes the market searches, if we're talking about just going on Amazon that's one thing, but if we're talking about something more --

MS. SMITH: Well, I think I'm envisioning it similar to 108(c) as it already exists. I mean, it's a concept that has the advantage of already being a statutory concept for libraries.

MR. BAND: This is where, as a practical matter, will probably be not that burdensome, but it's more of a philosophical matter. And it's also the matter, you know, and it's a cost issue.

Meaning, if we already have a video that's one thing, and then this would be requiring us to buy it again. Now, again, if it's at the right price, that's fine.

Because it would be so much cheaper to buy it if it's available than to have to do this
whole process. On the other hand, it could be that
the price that's being charged is a high price and
so forth.

So that's why the preference would be
not to start putting more burdens into the exemption
and sort of trust us to do what makes the most sense
because we're not going to be running hog wild.

MS. CHAUVET: So, just to follow-up on
your concern about it being like too expensive if
you go out into the marketplace to actually find
an accessible version. So, section 108 already has
-- it has to be a fair price. The burden is not to
go find it at any cost.

So, would it be reasonable then to have
some type -- if libraries are already under the
obligation to at least make a reasonable effort to
find an alternative useable version at a fair price
-- why would it not be reasonable to have that same
expectation in this context?

MR. BAND: Well --

MS. GALLEHER: I think that we need to
keep in mind, especially in Disability Service
Offices in the educational context, their capacity
and their staff is already pretty limited. And I
think to impose an additional obligation on those
offices to essentially become experts in sourcing is not necessarily granting them the discretion or really within their scope of work that they should be doing.

As the video demonstrated, this is already a very time-consuming process and to put that additional burden is an unnecessary extra cost.

Disability service offices, in general, and I think this is to follow-up what Jonathan Band was saying, they're going to be making the most economic decision. They'll be doing the decision that's the most cost effective.

And if that is captioning, then it will be captioning. If it's finding a video that's easy on the market to find, then that's what they're do.

But one thing to put into perspective is that in university libraries, in just a few my co-counsel and I went into just the CU Library, and within like 30 minutes we could pull off like 40 videos that were not accessible. And that cost to go and resource those could be potentially tremendous.

MR. BAND: And just one other point to quickly add. There's also a timing issue, which is that sometimes you need it the next day and --
MS. SMITH: Well, that was part of --

MR. BAND: -- and would you be able to --

MS. SMITH: -- of why I wonder if the library need is different from the educational need based off --

MR. BAND: No, no. But I think the education need, I mean, the student might come in and say, or the faculty member might say, we need this, I'm showing this tomorrow and we need to, you know, and so depending, you might be able, in theory, to get it from somewhere on the market but it might take, that's why just added burdens, added hoops to jump through, as a practical matter, could just put unnecessary burdens.

We're going to always be doing what makes the most sense under the circumstances, and often that will be to buy, to go out and buy it on the market. But sometimes, for whatever reason, that might not be a viable alternative in the short.

And so that's why our preference would be not to have additional regulatory burdens but I --

MS. SMITH: I guess before, Mr. Reid, I wonder if you could comment on that, but perhaps
in your answer if you could think about how the case law has also treated the fair use provisions?

I think the House Report talks about the lack of an established market for accessible versions. In talking about this, HathiTrust relies on that a bit in its decision. And I think that's why we're probing around that, plus with 108, whether the non-infringing basis is affected by the available of the fair and readily-accessible version.

MR. REID: So, I would if it's okay, sorry, this is Blake Reid. I'd like to comment at this point but we'd love to spend some time on the fair use point. And I know Mr. Schoppert has got something to add here as well.

I think for both the library and educational context we need to step back a second and think about the record of what we're talking about.

The scenario is there is an accessible version of a work and an inaccessible version of that same work. And the institution has the inaccessible one.

As a practical matter, that first cut is going to filter out almost every video in the
market. Either there's going to be an accessible version or it isn't.

The scenario is where something is created without captions or especially without descriptions, in the first instance, and then later, for some reason, somebody has the legal mandate to come in and add captions or add descriptions to it. The number of works on the market that qualify for that are minuscule.

So that's, I think it's important to understand that we're talking about a very, very hypothetical scenario.

Then within that very hypothetical scenario we are talking about a situation where the library or the professor comes to the disability services, or whatever the scenario is, has the inaccessible version and not the accessible version.

So we're talking about a very tiny little fraction of situations where this is actually going to apply.

So I think you have to think about that burden of saving, okay, in the hypothetical situation, and I don't think there is anything in opponents' comments that suggest a particular
example where this is the case.

The hypothetical scenario where this might occur, we are going to force an under-resourced disability services office or an under resourced library, to go through and do a market search for something that is, in all likelihood, not going to be there. That's the kind of burden that we're worried about.

It's not just that going and doing that search is burdensome, but it's almost always going to fail. There is almost always not going to be anything out here.

Here's another important wrinkle for you to think about. Getting back to the question of dissemination, which is -- so now when we think about the market search, what about situations where another university has captioned the video, does that need to become part of the ambit of the search? Are universities then allowed to disseminate the video?

So, I think you have to think about where you might have other universities captioning an old video, does that suddenly need to become part of the ambit of the search. And then I think you need to think about how that factors into limitations
that you place on dissemination.

So in other words, does Ms. Cowling have
to go to other universities and say, hey, has anybody
else captioned this already, do you have an
accessible version of this?

So, you might drive this exemption in
a way that would actually require her to go get it
from them. I'm not sure that is what you want to
come up with.

So, I think the hypothetical scenarios
are way pretty strongly in favor of not including
any kind of commercial availability search in this
context. And I think Mr. Schoppert has one more
thing to add on that.

MR. SCHOPPERT: Yes. In addition to my
colleague's concerns about costs, I think it's
important to kind of practically think about how
these would play out in the classroom.

If you put yourself in a position of
somebody who is deaf or hard of hearing, it's going
to take longer for the disability services offices
to go and get an accessible version.

This could be days or weeks of them not
being able to participate in class, whereas under
this exemption, disability services professionals
would be able to timely circumvent and make that
version accessible. Which is really what we're
concerned with.

MR. REID: And I guess I, please
interrupt if this isn't where you want us to go,
but I'm happy to tee into the market issues, if
that's helpful?

MS. SMITH: Sure, go ahead.

MR. REID: So, obviously HathiTrust
created sort of a new branch of the first factor
analysis, and that's worth talking about as well.
But the keystone of the analysis, and also of the
legislative history of the '76 Act, and as
referenced in Sony, focuses on the market harm.

And in this accessibility context, and
actually commend your attention to the legislative
history, the '96 Telecom Act, and other places where
Congress has explicitly acknowledged there is a
market failure in the provision of accessible
services.

So, that's an important backdrop to all
of this. And this is an exemption unlike some of
the others that you have heard this week, where we
would love to see a market for this stuff.

And I think I said to the panel last time
around, when we did the e-book accessibility exemption, we would love to not come back in three years because it turns out that all of this stuff is being provided with captions and description.

Ms. Cowling and her colleagues are very busy and have lots of other challenges to deal with, and if that is obviated by the copyright holders and providers of these videos inherently, that's a win. That is a copyright exemption and the ability to circumvent are not necessarily the only way to solve this problem.

We are here because that is the least worst solution to deal with the way things are now. And this is not a hypothetical problem. So I think we'd reference in our comments, there are disability services providers with dozens or hundreds of requests a semester in this regard. And so, whatever the market should be doing, ought to be doing, the reality is that it's not.

And on a regular basis, a video shows up in a disability services office and somebody has to deal with captioning it to make sure that a student with a disability is afforded their equal rights to it.

So I think this is an area where there
is just not any real dispute that the market is serving that function.

   And again, I think to the point about commercial availability, if a commercially available work is out there, the likelihood is that the professor finds it, the library finds it and already has that and it never shows up in the disability services office in the first place.

   MS. CHAUVET: Yeah, I think we're just still trying to balance, because as Mr. Band said, you're really going after the ones that are inaccessible format, there is no accessible format available.

   But I think we're also mindful, just what we were talking about, HathiTrust was dealing with a situation where there was not a market.

   But it sounds like, at least for captioning, and to some extent audio description, there is a little bit of a market. Maybe not the huge market that you want.

   And, how do we balance where there are, for television, the FCC has certain rules, like any television program, most of the time has to be captioned. There are some exceptions. It's usually like English and Spanish you know. If it's
in Korean, maybe it's not.

But, so when you have rules like that or you see Netflix was sued, is now providing captioning, it now provides audio description, maybe not for all of its offerings but for a lot. And perhaps Hulu will after we'll see how the case settles out with Hulu.

So what are we to do in a situation where, to kind of carve out here, well maybe it's not imposing on a burden to go look in the marketplace but then how do we balance that with the content providers where they have made a market of providing accessible formats, but those are not being used for the purposes that you seek here?

MR. REID: So I dispute the characterization of the captions and descriptions that are created for compliance with the FCC's rules as a market. That is a -- I understand a market to be economic activity that occurs absent government intervention.

And it's well-documented. There is a great book about this by a woman named Karen Strauss, that does a historical documentation of captioning up until the 1990s when Congress started to intervene. And it's basically non-existent.
And this is all technology that is not that complicated and has been around in principle since the 1930s and 1940s.

MS. CHAUVET: Well, what about, would the FCC authorize if it was captioned on television in the initial broadcast, but if it's re-streamed like on the internet that it also has to include the captioning?

So when we're seeing like reruns of shows, so like isn't there a market for internet streaming services for that --

MR. REID: Sure.

MS. CHAUVET: -- aside from when it was initially broadcast?

MR. REID: Yes. I mean, trying to cut to the chase here which is, we tried to focus this exemption, and in our initial comments, and I'm happy to elaborate here, on areas where the FCC's rules don't cover.

So if the FCC's rules lead to a program being captioned, and they do in a lot of cases, that's not the kind of thing that we're talking about within the ambit of this exemption.

So if it's helpful to note that in the exemption, for example, that it doesn't cover
situations where the program is already captioned
or the program is already described, nobody in a
Disability Services Office is particularly
interested in re-captioning or re-describing a
program. That's never a scenario for someone --

MS. CHAUVET: Sure. But we've also
had, you know, I've heard it said today that we don't
want to have -- or I should say you have mentioned,
not wanting to have some type of obligation to go
look in the marketplace to see if it's accessible
or not.

So I'm trying to understand where we can
kind of draw the line where if you, I don't know,
if you know that it's captioned, do you have to go
and look --

MR. REID: Well --

MS. CHAUVET: -- how do we balance that?

MR. REID: So what I'm trying to get
across is you're envisioning a scenario where there
is a video that's sitting in a library or somehow
gets in the door at a Disability Services Office
and it doesn't have captions, and there's another
version out on the marketplace that does have
captions. And there is very little reason for that
ever to happen.

The scenarios where that happen are entirely hypothetical and frankly kind of hard to envision and not documented anywhere in the record.

And, again, the point is what do you want people to go look for? If a video comes in on DVD, where do they have to go scour to look for the captions, do they have to scour all of the streaming services?

The likelihood if it's not captioned on DVD that it's going to be captioned on some streaming service, pretty low. It's not going to be there. Yeah.

MS. SMITH: I have a slightly related question to that. So in the example you gave, some inaccessible version comes in the door to the disability services organization and the current e-books accessibility version requires that a copy is lawfully obtained by --

MR. REID: Sure.

MS. SMITH: -- the circumventing activity, is that a requirement that you think would be appropriate to build into this exemption?

So maybe you obtained the inaccessible version, this is why you need to circumvent it --
MR. REID: So I’m guessing Mr. Band would like to get in on this point as well. Again, to the point I raised at the beginning, we are presuming this is a scenario where a professor or a faculty member, employee of the university, someone has lawful access to this work. Now, they may not have lawfully obtained a copy, they may have access through a streaming service or something like that, but the point is there is a scenario where a university employee or a student at the university has a lawful opportunity to be showing this video for a lawful purpose.

So I’m a little anxious about the idea --

MS. SMITH: Sure.

MR. REID: -- of lawfully obtaining a copy but --

MS. SMITH: You don’t stream an e-book so that may be part of why the language is different in that exemption.

MR. REID: But in principle I think a limitation that says, the intake and the output from the disability services office all has to be non-infringing, has to be lawful.

I don’t think we’re envisioning any
scenarios where this is, well, in fact, I can promise you we are not envisioning any scenarios where this is a back door for piracy or whatever else the opponents might be concerned about. If there is anything we can do to ameliorate that concern I'm happy to do it.

MS. CHAUVET: No, I think that's what Ms. Smith was referring to is just wanting to make sure we're not talking about a university getting a bootlegged version and then doing it. So I think with, when we're talking about putting the lawfully acquired language, it would speak to situations to prevent that from specific scenario.

MR. REID: And the only other thing I'd add is, the educational fair use context and the intake of videos from professors, students, et cetera, is fairly complicated, right, and there are some fairly complicated questions. I'd urge the Office to avoid importing that entire mess of law into this exemption.

The situation when a disability services office gets a request is they might need to put this together in very short order, like tomorrow or the next day, to make sure that a student can get access for it.
So I wouldn't want to put the burden on a Disability Services Office to do a lengthy upstream inquiry about the acquisition of the video. I think --

MS. SMITH: No, I think we're just saying you've got the copy that's -- in the same way, in a non-accessible version, you've gotten the copy through authorization or streamed it with permission, it comes in legitimate the same way it would come in in a non-accessible way, legitimate.

MR. REID: And this is not an effort to expand the scope of permissible uses or permissible --

MS. SMITH: Right.

MR. REID: -- circumvention of folks upstream from a Disability Services Office. That's obviously a different discussion that you guys had yesterday.

MS. SMITH: Mr. Band.

MR. BAND: Yes. I just wanted to add that in the existing, the chapeau as it were, of the existing regulation for exemptions, it basically says, shall not apply, you know, the prohibition shall not apply to people who engage in non-infringing uses of the following classes of
work. So that's always there.

That's always there as a backstop. And even in the context of the market and the possibility of a market, well, the truth is, is that if somehow one of these uses is harming the market for a work, again, in that highly unlikely hypothetical situation, well, it might not be a fair use, right?

In that case, if I do decide that I am going to close caption Wonder Woman, I don't know why, but if I decide to and that somehow harms the market, well, then it's not a fair use and, you know, I'm an infringer.

But all of this goes to what we were talking about yesterday. Our goal is to sort of keep the exemption as simple as possible, as streamlined as possible so that people out in the field can say, yes, okay, I can use this, and not have 14 steps and they say, well, do I meet this one, do I meet this one, do I meet this one. That's the point, is to really make sure that the students who need the help get it.

MR. REID: And I know we don't want to belabor the market point, but I just wanted to throw in one more point. Universities are actively engaged in trying to encourage a market for these
works.

So for example, the University of Colorado, where I'm on the faculty, is in a settlement with the Department of Justice about inaccessible versions of its video materials, among other things, and has a working group across campus that tries to promote the acquisition of accessible materials and highlight publishers that make, for example, textbooks available accessibly.

So this is an effort for universities because it's consistent with their educational mission, it's consistent with their efforts to lower tuition, to make the process streamlined for everyone.

So where the market can step in, we are all about that, and we are excited about that. We are here because we're not there, if that makes any sense.

MR. CHENEY: If I can ask a question, if I might. Just to follow up a little bit on what we're talking about.

If a student were to come into the disability rights office and they said, I have a video for this, I would like you to make it accessible, is that something that you would do?
That seems to be a lawfully acquired copy, would you do it just for personal use for a student?

MS. COWLינג: So the way that our office works, that if we have met with the student and we determine their accommodations using an interactive case-by-case process and we discover that they are eligible for the closed captioning, if it's a content that they need for their course, then we would go ahead and caption that.

MR. REID: But to more pointedly answer your question, if a student says I bought this video and I want to go watch it this weekend with my buddies, that's not something a disability services office is ever going to do. This is in an educational context.

MR. CHENEY: So that's one of the caveats here. And to follow up, the same with the professor.

If the professor comes in and said, I would like to review this, I may or may not use it in a course, is that one of the things you would ask as well, if you intend to use it in a course.

That limits what we're going to do if you're going to use it for personal use, then you
wouldn't allow it, is that correct?

MS. COWLING: That's correct.

MR. REID: And I think moreover, someone that works at a state university, if we were faculty members who are showing up disability services office asking for the service, we would get a lot of questions about abuse of public funding and that sort of thing.

So I think the punch line is, is if the Office is so inclined to put some limitation in the exemption that scopes it to educational purposes or purposes related to the functioning of a library in a way that's brought enough as to not generate a lot of ambiguities, I don't think we would have a problem with that.

MS. SMITH: Here's another question related to that. So the language you've suggested is, and I think then we want to go into the types of institutions that might be able to make use of an exemption, but you've listed, you know, x types of institutions who have legal and ethical obligations to make works accessible.

Would another way of sort of closing that loop just say, the circumvention is allowed in fulfillment of those legal and ethical obligations?
MR. REID: Yes. And just on having not thought hard about that formulation, I think that makes sense.

And I don't think we're contemplating scenarios where, well, here is, I think the one rub with that is, if a university is choosing to go above and beyond its obligations under the ADA, that might be a scenario where we would still want to be able to circumvent. And I think the case law is developing in the ADA context, so we wouldn't want to foreclose that line of inquiry.

So I think talking about, for accessibility purposes in an educational or library context, probably a safer formulation from our perspective, but I'm having a little bit of trouble identifying an example of the difference between that and what you just suggested, so.

MS. SMITH: Okay. I appreciate that because I listened to Mr. Band, and I'm not trying to create a 14 point checklist but just thinking if that's what you've tied it to originally maybe that just sort of says, for the purposes of why you've gotten in the door in the first place.

MR. CHENEY: And if I could probe a little bit --
MS. SMITH: And if educational uses you think, or library uses would do the same, that would be good to understand, too.

MR. REID: I mean, one other thing I might throw in for your consideration is that universities have, there are some universities that have raised the presence of copyright law as a barrier to their compliance with ADA, so we probably would like to avoid a circularity where we say, is the university obliged, well, that depends on copyright law. Copyright law asked whether the university is obliged and then we don't have a way to break that circularity.

We're obviously of the position that universities ought to be doing this and that it ought to be consistent with copyright law. So I might ponder that circularity a little bit.

MR. CHENEY: If I could probe a little bit more. Some of the universities now are expanding their reach. Not just on campus use or students that are local but are remote or online classes.

Can you speak a little bit about how this exemption might work there for students that might come to the disability rights office and ask for
accessibility of videos that might be included in a remote or online course?

MS. COWLING: Sure, that's a great question and something else that we're grappling with for online course development.

So we have a -- Kent State University implemented an EIT policy that asks that we have --

MS. CHAUVET: What's EIT?

MS. COWLING: I'm sorry, electronic information technology. So we are trying to do proactive accessibility more in a universal design approach so that when a student registers in August for courses and is taking an online course, the course is ready to go and it is captioned.

MR. CHENEY: And in those cases, would it often include some of the content that we're talking about today, either in clips or in full, larger versions of the video or other type content? Is that included in those online videos?

MS. COWLING: Lawfully obtained videos.

MR. CHENEY: And the online content that you're offering in courses?

MS. COWLING: Correct. So not all of the -- currently, just the example again at Kent
State University -- not all video content is being captioned, but there is a push to be ready to have that proactive accessible content ready to go. Should someone needing that accommodation sign up for online courses, it would accessible.

MR. REID: And if I could just, again, encourage punting the contours of the complexities of distance education and MOOCs and all of that sort of stuff to the other context where this Office and courts have been considering those issues and not importing that into making a disability services office make a determination about whether the subsequent use of the video itself or the intake of the video is lawful.

Again, we understand that there are limitations on what's acceptable in that context, but we don't want the disability services folks to have to be in the business of redoing that analysis, if that makes any sense.

MS. CHAUVET: I think that that's all really helpful. I think we're going to turn a little bit to kind of just defining the class of users.

So the examples that are in the record are typically examples of students at universities...
seeking accessible formats, so when you list out the different kinds of potential users you have disability services offices, organizations that support people with disabilities, libraries and other units at educational institutions.

So are we really just talking about entities within a university? So we're not talking about like libraries outside of universities I guess is what -- I kind of want to focus on what we're really trying to do here.

MR. BAND: But I'm looking to Carrie Russell from ALA to, if I could -- if we could -- let me consult with her and then we can, if we can come back to that?

MS. CHAUVET: Okay.

MR. REID: If you want to do that, I can respond to one piece of that question, which is within the university the reason we try to draw that formulation in a fairly broad way is because different universities have different configurations of where the locus of disability services is.

So, for example, there are some universities with a fairly elaborate quote unquote disability services office, and other
universities, like the University of Colorado, we've got a disabilities services office that is responsible with coordinating with the main campus's information technology department and some academic units for the rendering of disability services.

So we wanted to make sure that we didn't draw the exemption in a way where some university has to look at it and say are we a quote unquote disability services office or do we have some configuration that's not permitted.

MS. CHAUVET: Okay, understood, just the upshot though is that ultimately what you hope to get out of this exemption is that students at universities are able to, regardless of where they get it within the university, wherever they get the accessible format, but they are really the ultimate, I don't want to say end-user, but they are the ultimate beneficiary of this exemption.

MR. REID: I think that's right, and it is also worth emphasizing we drew the exemption, or at least the proposed language, in a broad enough way that it might encompass K-12 institutions.

We obviously didn't have significant support on the record for that. We are hearing
rumblings that that is of interest, that the need
to caption videos in K-12 institutions is
additionally coming up, so I might throw that out
there as well.

But to your formulation about the
university I think from our perspective that is
correct, but Mr. Band may have more to say.

MR. BAND: Right. So I just clarified,
and thanks for indulging me, so, you know, obviously
in a perfect world, you know, the exemption would
apply to libraries making it for any library user
who needs it.

But as a practical matter the real need
is in the educational context, but not only in higher
ed, also K-12. So the K-12 libraries need to
support students who have hearing disabilities so
they have that need as well.

Now, again, it's a smaller universe, you
don't have the diversity of content and so forth,
but it does happen in the K-12 context too, but,
again, it really is all about education at this
point. That is the highest priority and, you know,
a good place to start.

MS. SMITH: So it would be fair to say
units at non-profit educational institutions? I
sort of added the word non-profit which is in the Chafee Amendment as a good analogy, but just to understand based on what you have submitted that we understand where --

MR. BAND: Now that Trump University is closed, I suppose, yes, we could do that.

MR. REID: I will let that one lie. We might mention that limitation, the limitation of the Chafee Amendment is not necessarily a limitation of federal accessibility law.

So for-profit colleges, for example, that take federal funding are going to be subject to these same obligations under the Rehab Act, so I might be a little anxious about adding that non-profit qualifier. There may be context in which a for-profit college needs to do it.

One other very minor clarification since we are talking about entities and scope, just to make sure, there are some scenarios where a disability services office is going to be doing the captioning in-house. There are other situations where they are going to be working with a captioning vendor and contractual privity and basically saying, here, you caption this video and bring it back.
So there are going to be strong contractual ties between the disability services office and the vendor, but we just wanted to make sure that that's part of the record here that that's also a scenario that unfolds.

And just to assuage any concerns that might come up about that, these are the same captioning vendors that the movie studios and television broadcasters and everybody else hires, and they have very strict confidentiality agreements, and they don't disseminate videos and all of that sort of stuff, but that's a pretty regular part of this universe, and I think the same goes true for the description part of the world as well.

MS. CHAUVET: So the language Ms. Smith was talking about, either like a non-profit organization or a government agency, that is taken from section 121 of the Copyright Act which has been incorporated into the existing temporary exemption for assistive technologies and e-books.

So if we are not going to use that because you don't feel comfortable that it would include for-profit universities, so rather than kind of listing out -- I just don't know if listing out,
I mean especially when you say other units at educational institutions, that might -- I think -- or the opponents thought that was a little bit too broad.

So do you have perhaps a better way of maybe more broadly collapsing these different kind of units or different entities within an organization, or within in a university?

MR. REID:  Am I to take from the question that units within an educational institution is an overly broad construction from the Office's perspective?

MS. CHAUVET:  I mean that could include the cafeteria.  I mean I don't know what a unit at a university means, and maybe that's something we can talk about more in like post-hearing discussions because that's going more towards regulatory language, but just because the opponents are not here today, one of their concerns was that they felt that the list of proposed users was overly broad.

So I just wanted to address that concern to see if you had thought of a different way or a narrower way to define those users.

MS. SMITH:  And maybe another way is, it started off saying disability services offices and
then started to be maybe a catch-all in case something does not technically qualify, but if that might be a way the Office could clarify in guidance that it is something like a disability services office.

MR. REID: I mean I think you might, maybe you could qualify it by the activity or purpose of the unit, so disability services office or other unit engaged in the provision of accessibility services within the university, or something like that, and I think we would be happy to stipulate that in most cases a cafeteria is not included in that list.

MS. GALLEHER: I think one of the things that we were grappling with during our research is in talking to several universities and disability services offices at universities around the country, every university has a very specific and individual chain of distribution on how they handle these things.

So we have been very reluctant to narrow this exemption in a way that where some universities can't benefit, and I think this goes back to our initial conversation we were having about market and sourcing and legally acquired, we want to
minimize the burden on disability services offices.

Really we want them to be able to do their job in the most efficient and effective way possible and to try and make them consider are we, like where do we fit, do we fit under this exemption, is something that we want to avoid.

MS. CHAUVE: No, understood. And I just wanted to turn back to something Mr. Band had acknowledged -- K-12 this could be, obviously, making accessible formats doesn't apply just to universities, but then Mr. Reid also acknowledged that at least for the record for the purposes of this rulemaking that the examples are limited basically to the university context.

So because we have to rely on concrete examples in evaluating whether or not an exemption should be recommended, would it be reasonable then to just look at the university context since that is the record at hand?

MR. REID: So I mean we've urged the Office in the past, and this may be a losing battle so I won't belabor it, we think section 1201 doesn't ask the Office to set up proponents and opponents.

It delegates to you the obligation to do a rulemaking into which you ought to do some sua
spontaneous investigation of that question. So in other words, I don't like the idea that the Office says we haven't had anyone show up to ask for this in very specific terms so, therefore, there is no adverse effect.

We would encourage you to investigate that question, but the scope of resources that we had to dedicate to this was primarily focused on universities, and that's what we were able to come up with.

MS. SMITH: And we also encourage you to support the Copyright Office having adequate resources to serve this rulemaking as well as its other functions.

I mean we are dependent upon participants in the rulemaking in large part to provide us with information as well as a matter of sort of fairness so that everyone can understand the issues to be aired for that.

MR. BAND: But I would just amplify Blake's point about, you know, what is, and I know this is, you know, we have had this conversation about what is it, you know, what is the nature of this proceeding, is it a -- but it is a rulemaking, it's not an adjudication.
MS. SMITH: Correct.

MR. BAND: Right. It doesn't -- and, you know, there is nowhere in here, in the statute it doesn't talk about evidence, but, you know, obviously a rulemaking has to be based on a record, and, you know, there is certainly the concrete examples have been given in the higher ed context, but there are the same issues existing in the K-12 context and, you know, I am presenting right now evidence to that effect.

I can't give you specific titles, but it is clear that the K-12 institutions have an obligation under the ADA to make this stuff available and that is, you know, obviously part of the record, too.

And so, you know, it certainly seems to me that it is well within your, the scope of your authority to say that the exemption can apply to educational institutions at any level that need to provide access to their students.

MR. CHENEY: If I can ask a question there just to probe a little bit on this, and I know you probably didn't ask, but do K-12 schools frequently come for this sort of service either to a university for assistance or to one of these
captioning companies to ask for the captioning services for titles that they may have, do you know of any that have had done that?

MS. COWLING: So the university wouldn't be equipped to caption videos for a K-12 setting. There are times where I am called upon to consult with to ask what business we use, we outsource a lot of our video because in the video that I showed today, it was just one minute long, so the rate out there for an hour video it takes roughly seven hours of labor, so we do a lot of outsourcing.

So I am consulted with in public schools. I have also worked for public schools before as a sign language interpreter where there are videos shown, and we would expect that the deaf and hard-of-hearing students are attending K-12 before they even are able to see us at the university setting, so long as teachers are using video it would need to be captioned.

MR. SLOAN: So in the K-12 setting though, how would teachers accomplish that without the resources that exist at the university that have this separate office to deal with these things?

MS. COWLING: So the K-12 setting would
need to abide by the IDEA and their students are also on IEPs, so they would use their resources similar to the universities use our resources in order to provide accommodations, including the captioning content.

MR. REID: And I think it's probably worth underscoring, too, here saying why have we not surfaced these issues before. We are seeing convergence of a few things.

One is the increased use of video content in classrooms. I don't know if folks saw the Apple education event a couple of weeks ago, I think it was a fairly good demonstration of the expectation that a modern student, even in a K-12 context, is going to be engaging with multimedia content in a way that even ten years ago wasn't the case.

I think you are also seeing an increased amount of litigation in the disability rights side of things to actually vindicate these rights that have been sitting in the IDEA and the ADA and the Rehab Act.

So the question is do all K-12 schools have the resources to support that? The answer is not yet, but it's a big question in disability policy not -- the answer is not like, well, too bad, the
students in those situations are out of luck.

Folks are increasingly trying to think about how do we get around that, how do we find the resources to support that, and what we are trying to get at here is we don't want for the next three years the DMCA to be lurking out there as a like, oh, we got to wait another three years to fix this if we figure out a way to bend the cost curves and make it right, and that would be a shame to make that a barrier for K-12 schools.

MS. CHAUVET: Just in the interest -- or, Ms. Cowling, do you have anything specific to add to that or --

MS. COWLING: I just would like to add that in the K-12 setting you are dealing with deaf education teachers and also special ed teachers, so they are the stop gap.

They are able to look for and provide accessible content, but in the higher ed setting, the faculty, their expertise is not necessarily in disability. It is our responsibility to be able to provide that accommodation.

MR. CHENEY: Just to follow up on that just a touch if I might, in a school system, might be not in a school, is there not pooling of
resources?

In other words, in the school system within a district, don't they often have a pool of individuals that can help with those sorts of plans for individuals that have specific learning plans in the schools and then to bring in somebody to assist with the disability learning? Is that, do you know if that's --

MR. BAND: Absolutely. I mean so in Montgomery County here in Maryland you would, you know, as Ms. Cowling said, I mean you would certainly -- first in the school you would have specialists, and that sort of is different from the higher ed context, but then you also have, you know, a district-wide office, a disability services office, and that you do have the pooling of resources, and I imagine to the extent that there needs to be a video captioned that it would sort of go through the people in that office.

It probably wouldn't be done on the individual elementary school level, but it would be done on a county-wide basis because they would typically have a county-wide curriculum, but there would be that kind of pooling of resources.

MS. CHAUVET: Thank you, that is very
helpful. Just in the interest of time I wanted to move just a little bit, in the proposed regulatory language there is the term people with disabilities, would it be reasonable to use the Department of Education's regulations implementing the IDEA as a guide to define that term?

MR. REID: I believe IDEA is K-12 so that might not be the ideal --

MS. CHAUVET: Okay. So like is there maybe like a specific -- just like, for example, you have the e-books exemption with assistive services, it really goes back to section 121, but that only covers people with relating to -- it doesn't include people with hearing impairments, which, obviously, you would want to be included.

So I think -- and, again, if you don't have it now, but just thinking how should we -- what should we use as a guide to define that term.

MR. REID: I think the ADA is probably the right place to pull that term, but we would welcome the opportunity to follow up with some specific briefing on this point if it's of interest to the Office just to make sure we cite you the right chapter and verse of the right law.

I think there is probably a construction
in either the Department of Justice's regulations or the ADA itself that is the broader version of what you are looking for from the Chafee Amendment, but I don't have that right at hand and I don't want to tell you the wrong thing, so we would welcome the opportunity to follow up on that.

MS. CHAUVET: Okay. So we've talked a little bit about like circumvention methods so when you are out, because you also talk about obviously we have a demonstration, if you are doing it yourselves, but if you outsource it and you have a third party, so I guess vendors do both audio description and captioning?

MR. REID: Correct.

MS. CHAUVET: Okay. And then what format is it typically received in from the vendor?

MS. COWLING: Yes, so that would be the same format in the demonstration, so typically MP4 format or audio MP3.

MS. CHAUVET: Okay. And does the vendor place any TPMs on the accessible version before it's sent to you?

MR. REID: No, I don't think that's generally the case. So, again, as I mentioned the contractual arrangements with vendors are usually,
again, because they work with copyright holders and
studios and other, you know, television studios on
this kind of work, they are generally contractually
prohibited from doing anything that would use their
possession of a video as piracy, and you can imagine
they do TV shows that are coming out live, they do
movies that are going to be in theaters and all of
that kind of stuff, so these guys are pros at that.

MS. CHAUVE: And then when you are
using outsource, when you are outsourcing to outside
vendors are you typically going to like DVDs and
Blu-ray and circumventing that and then sending them
the MP3 files for those types of -- or are we also
talking about going to like an internet streaming
service and having them -- I guess I am just trying
to understand when are they used versus what you
guys do yourselves?

MR. REID: Let me make clear that this
is prospective in nature, but ideally I think what
would happen under the proposed exemption would be
that the disability services office would be able
to do the circumvention, so I don't think we need
to get down the rabbit hole of can the third party
do the circumvention?

I think the idea is the disability
services office would be doing that. Is that fair?

MS. SMITH: Thank you, that's helpful.

MS. CHAUVET: So just a little bit more about the dissemination of the work, so we talked a little about that. In the reply comments it states so once the media is captioned or audio described, disability services professionals then deliver the newly accessible media to the requesting student in the same way that content is distributed to non-disabled students. So what specifically does that mean?

MS. COWLING: Sure. So this speaks to if the course is online and the video content is already being housed in, for this example, Blackboard Learn. So the video that is in Kaltura, now the time text file, the captioning file was added in Kaltura and that link or embed code is in Blackboard.

MS. CHAUVET: That's very helpful. So what if a DVD is used in the class? So we're kind of out of the Kaltura context, so would a student who needs an accessible format would they be given a DVD containing the accessible format if that's what is used in the classroom?

MS. COWLING: We would like that the
students with that accommodation are able to view in the same way that a student without an accommodation.

So if the class is watching the DVD in the classroom and it's using a projector with whatever DVD or MP4 file, as we showed today, we were able to download MP4, that the student would watch it in the same manner at the same time to have that equal access.

MR. REID: So just to clarify, I think the Kaltura and Blackboard situation is a situation where it might be homework assigned for a student to watch as a, you know, thinking about a flipped classroom situation where students kind of watch a video.

Obviously in a classroom situation there might not be a need to distribute it, and it might be burned onto a DVD or something along those lines.

MS. CHAUVET: But if the DVD is maybe not being shown in class, if it's you just go out and watch this, like is the -- I guess I just, I am clarifying to know is the accessible version, would that be given to the student on a DVD or is it pretty much controlled like only from the university?
MS. COWLING: Sure. So we -- I can't think in all of my years of working in higher ed that I have distributed a DVD to a student. It would be password protected within Kaltura streamed.

MS. SMITH: So I think one related issue is thinking about this in a parallel to the current e-books exemption which says the use will be I guess in accordance or pursuant to 121 which has restrictions on the further distribution of copies and also thinking about, there has been a bill introduced to implement the Marrakesh Treaty which would have a number of practices the authorizing entity or the circumventing entity by way of parallel, would it be reasonable to have them follow a series of practices to prevent further reproduction or distribution beyond the scope of the use that is intended?

MR. REID: I mean I think Mr. Band probably has something to say on this front as well. I think in this context you have got the backdrop of we've got to have non-infringing uses, and there is nothing concrete on the record to suggest that there are any serious concerns about redistribution.

I think we've tried to reassure you in
our comments and today that that is not the purpose of this exemption, and the copyright holders, if someone were to try to leverage this exemption in some untoward way, have got numerous sorts of backdrops, not limited to all of their section 106 rights that are potentially being infringed.

So I think the expectation, again, is that this exemption is not being used in the situation that is contemplated in Marrakesh in 121, in particular because the -- and Marrakesh in 121 there is a new copy being created of the work that is going, potentially going with the person, right.

It might be a large format book, it might be a Braille version of a book, and something, you know, there is something to sort of grapple with there that is not, is I don't think the case in this situation.

MR. BAND: I'll just add that in the Marrakesh context certainly with the proposed 121(a) we're talking about international distribution, and that's why you have the additional safeguards.

I mean this is not what we are talking about here. And, also, and even in terms of the exemptions you have granted in the past, the MOOC
exemption, again, is contemplating broad, much broader dissemination than what we are talking about.

We are talking about, sort of, students within the campus. We're not talking about reaching across the country, or again, with MOOCs around the world, that's not what we are looking for.

And so because of that, again, additional restrictions and requirements, you know, maybe it will be Items 9 through 14 on the checklist, I mean just not, it's not necessary, and it just would deter use of the exemption, and that's, again, the goal was to help the students as much as possible and to make it as easy as possible to do that.

MS. CHAUVET: Just to follow up on your reference to international versus domestic dissemination, so you do have section 110(2), which granted, it is for distance education which may or may or not apply to the circumstances of this exemption, but it definitely deals with domestic distribution.

It's like talking about any kind of dissemination, and Congress wanted that to
basically reduce the likelihood of downstream piracy, so there is some evidence at least in the educational context for Congress wanting to put some type of safeguard in.

So I think our question is would that be reasonable to do that here if it's done in other educational contexts?

MR. BAND: Well, again, a lot of it -- I guess it all depends on, and I know this is an issue that is ongoing, you know, what is distance ed, when is something 110(1) or 110(2), and I think certainly my understanding is that many universities sort of in their minds, I mean distance ed is when it's entirely a distance ed class whereas you now have more and more blended classes or where it's basically an in -- you know, face-to-face instruction but that you have certain aspects of it that do occur online, and much of it is streaming of material or it could be chats and so forth.

That is seen typically as all 110(1) as opposed to 110(1) and 110(2). I mean that's, I think as a practical matter, how people are treating it.

MS. CHAUVET: Sure. I think it was more just the acknowledgment that Congress has shown some
inclination to add safeguards in a domestic context for further dissemination.

So I guess would it be reasonable so that the reproduction or distribution under the proposed exemption would be exclusively for use by a person with disabilities if we are not going to maybe put all this in kind of the safeguards of like, for example, section 110(2) protections, would it at least be reasonable to cap it with like this has to be for, you know, exclusive use for people with disabilities?

MR. BAND: Right. Well, the only problem I could see with that, and I imagine the people who really know it would add to that is that I can imagine a situation where the professor might say, okay, we're going to add the closed captioning for, you know, one student but, you know, and we're going to show the clip in the classroom, it's going to be seen by all students.

I mean the caption is there really for one, but it's, you know, it's not like they are going to have two split screens, right, where, you know, everyone is looking in this direction but the hard-of-hearing student is looking in that direction.
MS. CHAUVET: Sure. Well I guess --

MR. BAND: It's not going to work that way.

MS. CHAUVET: Understood and appreciated. I think but the circumvention would be done exclusively for the purposes of people with a --

MR. BAND: Right, the circumvention is done --

MS. CHAUVET: Right, so --

MR. BAND: -- but the -- it will be conceivably made available --

MS. CHAUVET: Because you're talking about the performance, like the performance is not just for --

MR. BAND: Yes, the performance, right.

MS. CHAUVET: -- individuals with disabilities, but I guess would it be reasonable to limit the circumvention for purposes of providing access for people with disabilities, somehow kind of clean that --

MR. BAND: Right, but I think it would just need to be worded carefully so that it doesn't inadvertently end up in a situation where, you know, a professor cannot show it to the entire class and
thereby, you know, basically, again, make the
students feel excluded, and the whole idea here is
to make everyone be included.

MR. REID: And I'd just add the comment
that I added I think in the two earlier hearings
this week which was keeping these exemptions simple
and avoiding using this exemption process as a means
to impose a complicated regulatory regime on the
use of circumvented video.

Obviously, Congress saw fit to do that
in section 110 with the benefit of a lot further
deliberation. This is not something that is
present in the record.

So, again, if the Office is inclined to
go down this road in a very steep way we would welcome
the opportunity to comment further. Just to
preserve that.

MR. CHENEY: If I could follow up a
little bit, too. It seems that we have another
category here. We've talked about libraries,
libraries tend to serve individuals that come in.

We've been talking about sort of
university libraries, but are we including public
libraries in that category, and they seem to have
a different clientele, right.
I can imagine, I haven't seen it, but a section of the library wall that includes DVDs to be checked out that would be a distribution problem in some ways if somebody were to take that DVD home and then, you know, further distribute it from their home.

Is that an issue in this particular process as well?

MR. BAND: Well as I mentioned before, at this point, I mean maybe next time, but at this point we are not looking for an exemption for public libraries to, you know, to make accessible copies for, you know, the hearing disabled people who are just coming in to, you know, want to check something out for their own pleasure.

I mean that at this point we're, it's entirely looking at the educational context. But let me just add that I know we've been talking about just education, I imagine it probably, you know, should maybe, you know, we should think about making it research and education because I would imagine conceivably you might have to have, I mean it just occurred to me but there might be a hard-of-hearing professor who is doing research and would want that, but I'm not --
MR. REID: And I think the way to deal with that is we talked earlier about scoping the entities that are involved in that, and that's why we are talking about within the context of an educational institution as being kind of the right locus.

MS. SMITH: All right. Well thank you very much. We appreciate all of your comments, and we are going to look at them carefully. I don't think that we have any more questions, so we will do something unique and wrap up a little bit early and come back at 11:30 to discuss jailbreaking. Thank you.

(Whereupon, the above-entitled matter went off the record at 10:34 a.m. and resumed at 11:33 a.m.)

MS. SMITH: All right, everyone, I think we're about to get started. This is the section 1201 rulemaking; we're having a hearing on class 6 which is computer program/jailbreaking. In this discussion the Register of Copyrights has already determined that she may tentatively recommended renewal of the existing exemptions for jailbreaking, and so we're really focusing on the legal and evidentiary basis for whether or not to
expand this exemption to voice assistant devices.

I think I see some repeat players and some new participants. So, to explain our process, if you want to speak, just tip your placard up, the microphone if you can turn it off after you're done speaking to prevent feedback, and also remove your phone from being too close to the microphones to reduce feedback. And we have a couple of exhibits -- I'm aware of at least two, and so if you're intending to refer to demonstrative or other materials, just sort of say that in your speech so when we read along in the transcript later, we'll understand how to tie that together.

So we'll start with introductions. My name is Regan Smith. I'm Deputy General Counsel of the Copyright Office.

MS. SALTMAN: Julie Saltman, Assistant General Counsel of the Copyright Office.

MR. AMER: Kevin Amer, Senior Counsel in the Office of Policy and International Affairs of the Copyright Office.

MS. CHAUUVET: Anna Chauvet, Assistant General Counsel at the Copyright Office.

MR. RILEY: John Riley,
Attorney-Advisor at the Copyright Office.

MR. CHENEY: Stacy Cheney, Senior Attorney-Advisor at NTIA, National Telecommunications and Information Administration.

MS. SMITH: And if the participants wanted to state their name and any institution or organization they're affiliated with, starting with Mr. Freeman.

MR. FREEMAN: Jay Freeman, SaurikIT, developer of Cydia, an alternative to App Store for jailbroken iPhones, member of Exploiteers, a group which jailbroke the Amazon Tap, although I did not personally work on that project.

MR. STOLTZ: Mitch Stoltz, I'm a senior staff attorney with the Electronic Frontier Foundation.

MR. WILLIAMS: I'm Matt Williams from Mitchell Silberberg and Knupp; I'm here for AAP, ESA, MPAA and RIAA.

MR. HUGHES: I'm David Hughes, I'm the Chief Technology Officer of the Recording Industry Association.

MR. ZUCK: Jonathan Zuck from the
Innovators Network Foundation speaking on behalf of ACT, the App Association, because every time I think I'm out, they pull me back in.

MS. SMITH: Thank you all for being here.

MR. AMER: So I think to get started, it would be helpful for us to hear first from the proponents about -- essentially to elaborate on some of the evidence that you provided in your submission. Just by way of background, as I think we indicated, there is an existing exemption for jailbreaking which applies to smartphones and portable mobile computing devices. The request here is to expand the exemption to encompass voice assistant devices.

And so I think to start, Mr. Stoltz and Mr. Freeman, it would be helpful for us just if you could kind of elaborate on the evidence that you submitted. I know you submitted two statements from people indicating the need that they have -- for jailbreaking voice assistant devices in particular -- the types of activities that they would like to engage in, if you could talk a little bit about that, that would be helpful.
MR. STOLTZ: Thank you. Yes, by and large many of the reasons why people are looking to jailbreak voice assistant devices are the same reasons that they would do so for smartphones, tablets and other mobile devices. There is an additional element when we're talking about voice assistant devices in terms of fine-grain control over privacy, which is really a major impact with these devices, simply because they are fundamentally always on microphone in the home. And because they're used to control other devices in the home, thermostats, home security, appliances, light; they're potentially connected to those things. And the stock voice assistant device will have certain functions and capabilities with respect to those devices.

For the most part it's collecting -- everything adheres and storing it, everything at least temporarily, and then when requests are made sending -- and potentially at other times sending -- voice information from the home back to the manufacturer's servers, which is both powerful and a bit scary, the ability to jailbreak creates the ability to be more selective.
For example, limiting the range of the microphone to a smaller radius near the device, limiting it to certain hours of the day, limiting the time and scope of control over other appliances, and auditing what gets communicated to the server on an ongoing basis; those are all reasons that people would need a jailbreak voice assistant device.

MS. SMITH: Can you elaborate on that in terms of the current exemption for jailbreaking which is to jailbreak a certain category of devices for purposes of either adding -- making software that is interoperable with the smartphone, for example, or removing software when you're talking about these privacy concerns. I'm wondering from like a software perspective or an application perspective, what is actually happening when you're jailbreaking this voice assistant device for that purpose?

MR. STOLTZ: That would likely be something like a network firewall or an application that overlays the applications already installed on the device, and limits their use selectively.

MR. AMER: So -- and just sort of picking
up on that -- so, is the process of jailbreaking a voice assistant device different somehow than the process of jailbreaking the device that's covered by the existing exemption? Is it fundamentally sort of the same thing or is the process somehow different with respect to voice assistant devices?

MR. STOLTZ: So, the hardware is a bit different, although there's some similarities. The Apple HomePod, I understand, is an iOS device very much like an iPad or so on as far as its architecture. The Google/Amazon devices are similar in certain respects, but the -- and the overall process is similar which is to say you need to take advantage of some security vulnerability on the device to cause it to give super user or root privileges to the owner, which would normally be withheld. You know, in that sense, it's the same. It's going to involve usually either installing some external software on the device or making small modification to the software on the device that will then cause the user to get root privileges. Actually, Mr. Freeman has actually done -- been through that process and probably can talk about it in more detail.
MS. SMITH: Maybe, Mr. Freeman, when you talk about it, you can consider in your answer focusing on what are the actual acts of circumvention; perhaps this is circumventing some user restriction to be a super user, as Mr. Stoltz said, but explaining it from a technological perspective with that in mind. Thank you.

MR. FREEMAN: So the general process on these devices, both the ones we have existing exemptions for and for these smart speakers, is that there's a secure boot process which is designed to verify that the operating system and the software often that is installed with that operating system has come from the original device manufacturer. And in order to -- and nothing has been added, nothing has been removed -- and in order to make such modifications, by adding, disabling, removing, overlaying, et cetera, requires finding a vulnerability or some kind of bypass to that signature verification scheme.

In some cases this is a matter of finding a bug, so there might be in the certificate, the things checking the certificates, a mistake in how it is reading the certificates, that you can take
advantage of by putting in a slightly malformed certificate, or in some cases it requires making even a hardware modification momentarily. So in the case of the -- and that is actually one place where I think there's a little bit of, almost more extreme work that is done with the smart speakers, is that some of them don't have any USB ports. And so often times it requires soldering something to the board or a custom, makeshift cable for a port that wasn't really a port.

MS. SMITH: Is that circumvention of a technological protection measure?

MR. FREEMAN: So, yes. So actually, if I continue this -- so on Amazon Tap, the way that the exploit worked is you have the secure boot process, as I was just describing, and then it loads into its memory area all the information about those certificates. If you essentially short out the device at the moment that it is loading all those variables, you can cause it to not load those variables correctly. And so there's this technological measure which is that signature verification process, and then there's a bypass of it that we're performing by doing this hardware
manipulation, that then allows us to get into the
system, which then also further will require you
having a way of communicating with it, which then
requires us to have a cable plugged into it in order
to do this. So.

MR. AMER: Now, one thing that's new
about this request in addition to extending the
exemption to voice assistant devices is the language
that would allow people to circumvent for purposes
to enable or disable hardware features of the
smartphone or device. Could you talk a bit about
the rationale for that? Does that -- and I know in
one of your papers you indicated that your
understanding is that's sort of implied in the term
jailbreak generally. So was this primarily just
for sort of clarification to make that explicit, or is there a particular, additional reason may be
related to the privacy issue you talked about before
that would warrant this expansion?

MR. STOLTZ: You're correct, that is --
we put that in not to expand the exemption but to
clarify it. The ability to install software of
one's choice, install or remove software of one's
choice from a device necessarily implies the ability
to enable or disable hardware features. The reason we added that was to emphasize that, for example, the examples I mentioned just now, things like limiting the range of the speaker or turning it off at certain hours, or causing it to potentially only respond to certain voices, or to turn off particular wireless interfaces; all of those things are important and should be sort of made clear that those are encompassed in the exemption.

MR. AMER: Now, to the extent that, you know, your concern is disabling the data collection and transmission feature, I mean, is that -- would that aspect be covered by 1201(i), the current personally identifiable information? I understand that what you're seeking is to do more that; you want to install apps and so forth, but I just wonder if you've considered the extent to which 1201(i) might be relevant to the privacy issue?

MR. STOLTZ: It might in some circumstances, but not in all the circumstances we've discussed in our paper.

MS. SMITH: So I appreciate that you're raising privacy controls as a reason why someone may want to jailbreak these types of devices. I'm
wondering would your petition also allow for jailbreaking to install applications for increased surveillance? And if so, how -- what would -- do you think the legal basis for that exemption is non-infringing and justifications for that would be the same or different?

MR. STOLTZ: So by the term increased surveillance -- I'm not quite sure what you mean?

MS. SMITH: Well, I agree that it's broad, but I think you can sort of guess that, right? If you have Amazon Echo or something right now, the relationship is between the user and perhaps Amazon. Could you install a device that would go to a third party or to another app? I mean, just if you think no categorically, maybe explain why. And trying to restrict the scope of the device to minimize the impact on privacy, it also implies you might loosen up restrictions.

MR. STOLTZ: So we're talking here about a device that a person owns and modifies for their own use, and you could imagine a scenario where you want, for example, wanted to turn a voice assistant device into an audio security device or perhaps a baby monitor, in -- with features that are not
available from the manufacturer. Those would be, in a sense, modifying it for increased surveillance, but, you know, with the -- you know, on the initiative of the owner of the device. I'm not clear on why that would change the infringement analysis. I also think it's important to point out that those same concerns would apply to a smartphone and they have not been raised in this proceeding or previous proceedings.

MR. AMER: Thank you. So I wanted to ask the opponents specifically about the request to add this new language about allowing circumvention to enable or disable hardware features of the smartphone or device, I just would like your views on that specifically. We'll get to other objections you may have to other parts of the request, but do you have an objection specifically related to the addition of that language?

MR. WILLIAMS: I think, like you, I'm not entirely clear on everything that it covers, which makes me nervous. I don't think in and of itself that we're objecting to that, but we are objecting generally to the expansion to additional devices.
MR. AMER: Mr. Zuck?

MR. ZUCK: Thanks. And I apologize in advance for not being a copyright attorney, and so I don't know always what's relevant and not relevant. But I guess my concern about this expansion to hardware features is related to something we raised in our testimony about alternatives that exist to create alternative hardware to get to these services, and so at some point I'll be talking about that. But I guess I wanted to create a placeholder here, that the more that you're trying to modify the functioning of the device, the more it suggests the creation of a competitive device with similar underlying features that is a better alternative than creating all the attack vectors and things like that, that jailbreaking these devices would encourage, whether it's copyright infringement or not.

MR. AMER: Well, that leads us into -- oh, I'm sorry, Mr. Hughes?

MR. HUGHES: Thank you, Mr. Amer. Yes, and I'd like to come back to my point a little bit later as well, but Mr. Stoltz made the comment that one reason to jailbreak these voice assistant
devices is to turn off hardware features, and I just want to stress that those hardware features in some cases are an integral part of the security that is provided by the device on behalf -- I suppose if you think of it in terms of contractual relationship -- on behalf of the service, that is distributing the music of other companies.

MS. SMITH: Could you provide more specifics, if you know the specific hardware features, or also discuss whether this may be of particular concern in the context of voice assistant devices?

MR. HUGHES: Yes, so as the gentlemen have mentioned, each one of these devices is built differently, they're built on slightly different platforms and so on. But let's focus on the Amazon Echo device, it's the one I'm most familiar with, it is also the most dedicated device. And, you know, it's a $50 device. It is not a multi-functional general purpose computing platform that can do all kinds of things.

I'll give you one example and then come back to your question. When you're on a personal computer, for example, and you introduce secure
media, let's say, in my personal experience at Sony Music, we worked on DVD audio and Blu-Ray audio, things like that. There's a combination of the hardware and software that, for example, turns off the unsecure digital outputs that protects our music.

In these devices, it sounds to me that if one of their purposes is to start to turn off hardware features, then my concern would be that there's going to be some unintended consequence whereby suddenly music that was licensed for an end-to-end secure distribution is no longer secure. And I can come back in more detail later if you choose.

MR. AMER: Let me -- I have one follow-up to that. So this is getting us into the sort of -- MR. HUGHES: That's why I wanted to put a placeholder with this.

MR. AMER: Yes, the kind of heart of the matter, I suppose, which goes to the piracy risk. I guess just one follow-up, Mr. Hughes, to your point; I mean, is that concern something that exists in a more significant way with respect to voice assistant devices than it does with respect to other
types of devices which are already covered by the exemption?

MR. HUGHES: I think it does, and the example I give is that the manufacturers of these devices are trying to minimize their cost; they're trying to sell, in the case of the Amazon Dot here, a $50 device. They're not incorporating the kind of hardware and software complexity that was in a personal computer, for example. So the options for security are quite limited, and once you take away that basic security, that was the assumption that my companies had when they did a deal with a digital service provider who did a deal with these services. There's not a lot to fall back on, and that is our concern that there will be un--I guess, just unintended consequences.

MR. AMER: So the cost of the device is--?

MR. HUGHES: The simplicity of the device might be a better way than focusing on cost.

MR. AMER: Okay. I'm going to let Mr. Zuck make his point and then give Mr. Stoltz and Mr. Freeman a chance to respond. We may be getting into the piracy issue, which is fine.
MR. ZUCK: It may be that as well, but Dave's point sort of reminded me of another point which had to do with analog versus digital, and that the absence of ports in these devices makes it difficult to make high fidelity copies of content, et cetera, that are coming off the machine, but the insertion of additional hardware and creating a hardware connection to the device in the form of a port, which the purpose of which is to add things to the device, could also be used as a way to digitally remove things from the device or copy things from the device in much higher fidelity than would be possible in getting something off of a speaker.

MR. AMER: Thank you. Now, Mr. Hughes, I do want to follow up on a point that you made about the contractual relationships because I think that's important here because we're talking about, you know, who the owner is of the TPM. I mean, our job is to consider whether circumvention of that TPM is going to have an adverse impact, and the use of the copyrighted work that that is protecting, is non-infringing. As I understand it, I mean, you're saying that you have contractual
relationships with service providers, Spotify, Pandora, et cetera, and I can understand in sort of forming those contractual relationships it would be important for you as the content owner to ensure that those services have adequate access controls preventing unauthorized access to your work.

But this is then going a step further, and I don't understand -- I haven't seen any indication that as part of your negotiations -- you can correct me if I'm wrong -- that you then dictate or you expect the services to provide requirements as to the types of access controls that the device has with respect to its firmware. It seems a little bit attenuated from the sort of normal process that we consider.

MR. HUGHES: So the deals historically that I was involved with when I was previously with Sony Music, for example, we did a lot of due diligence and we specified very precisely what kind of security measures we intended to have in place for sometimes called end-to-end or link, or whatever term you want to use, to protect the music.

And those are articulated, and I cannot get into the details of the contracts between the
member companies and the services, but it is reasonable to assume that those are in all of those contracts. And that if those services then do a deal, for example, to enable access to Spotify from a voice assistant device, then Spotify understands that they have an obligation based on their relationship.

So I understand that it is not a direct relationship, but it is the basis of a business negotiation and the business of the business offering. There's an assumption that the music will be kept secure. That if it's not a subscription service, the viability of the business service is threatened, is it not, if people can get access to Spotify for free, for example.

MR. AMER: But in EFF's papers they made the point that Spotify does -- you don't prevent Spotify from streaming to personal computers, for example, which at least according to -- and you can correct me if I'm wrong -- but according to EFF's experts typically don't prevent users from having root privileges, so there isn't the same type of restriction that would prevent the installation of apps.
MR. HUGHES: I'll give one example, and experts can correct me if I'm wrong. Even if I have root privileges, for example, on a personal computer, it does not mean that I can then get a clear high resolution digital output of the secure media that I put into my Blu-Ray disc, for example.

MS. SMITH: And your concern is that case of the Amazon Echo, for example, having root privileges would enable that access on that device as compared to --?

MR. HUGHES: I think it is reasonable to assume that the level of complexity of the hardware/software combination is not there to provide the kind of security you'd find on a general purpose computing device. For example, the ability to extract the music data from the buffer and offload it to a hard drive, for example. I can imagine -- I have no personal experience researching this in detail, but I can imagine that on a device that that would not be particularly difficult to do. Now, please feel free to ask these experts as well.

MR. AMER: Well, thank you. So Mr. Stoltz and Mr. Freeman were next and then I'll come back to you, Mr. Williams. Mr. Stoltz?
MR. STOLTZ: Thank you. So, responding to a couple of things here. On the point about whether voice assistants are general purpose computing devices, I'm reading here from the printed booklet that came with an Amazon Echo Dot device and it lists -- it's got five panels. Let's say Alexa --

MS. SMITH: Is this something you'll be able to share with us after so we have a record of it?

MR. STOLTZ: I'd be happy to. I apologize, I only made one copy, but I'd be happy to submit this by email or make photocopies.

MS. SMITH: If it's possible after the hearing if you can leave that copy with us, we'll mark it as Exhibit 6C, I guess, if you're comfortable. I think that would be useful so we know what we have is exactly what you're reading.

(Whereupon, the above-referred to document was marked as Exhibit 6C for identification.)

MR. STOLTZ: Absolutely.

MS. SMITH: Okay, thank you.

MR. STOLTZ: Yes. It has various
panels that describe what it does; it says Alexa Skills, Voice Shopping, Fun and Games, and Music Unlimited, that's the last panel on there. The point being, music is one of many functions of this device, with skills in particular, there are thousands of them. Although, for reasons I can get into, they -- what can be done with skills, there are limits imposed on what can be done with skills, absent jailbreaking. But these -- all of these devices run some variation of Linux or iOS, or potentially Android, variations on the same operating system that runs a smartphone or tablet. They have varying degrees of memory and storage on them, and I think this is a very important point; they are designed, marketed, advertised, primarily used -- like I said, there's a quote in our first-round comments about the reasons why people use voice assistants, and it is for all of those purposes -- it's for communication, it's for simply accessing information on the internet of all sorts, it's for again, home control. So I guess I take issue with this idea that because the device is cheaper and perhaps smaller, that it's not a general purpose device. Again, that's how it's designed,
that's how it's marketed, and that's how it's used.

MR. AMER: Well, so could you respond to Mr. Hughes' argument, as I understand it, that it is -- and correct me if I'm mischaracterizing what you said -- but that it's easier to capture without authorization a high-quality copy of a work from a streaming service that is streamed to a jailbroken voice assistant device than it would be streamed to a personal computer, for example.

MR. STOLTZ: So no, I think it's no easier. The point that I think that we may be kind of missing is soldering a new port onto the main board of a device may or may not be a circumvention, probably in many circumstances it will not be. It could be in some circumstances, but that's something you can do on any sort of device. As for whether that's sort of physically easier or not on a voice assistant versus, say, a smartphone, again for example, the Apple HomePod is, as I understand it, essentially the same hardware as a phone or tablet as far as its computing capability; both run the iOS operating system. With other devices, you know, we are into the realm of pure speculation here which is not a basis for --
MS. SMITH: Right. But, I mean, but you're asking for the exemption and we would prefer it to not be in the realm of pure speculation. If there's a way to understand what technology is at issue, I think I appreciate you making a functional argument and how these devices may be used, but in the past the Copyright Office has looked at this from a technology and what TPMs are in place when considering whether or not to extend an exemption to video game consoles, which was denied in part because, I think, out of a similar scenario to what Mr. Hughes is saying.

And on the other hand, there is the smart television exemption which is coded separately in the CFR, and the record for that the last cycle determined, I guess, that there were separate TPMs that were protecting the entertainment content, so that it would be appropriate to grant an exemption to the smart television circumstance.

So I think that's why we're trying to understand whether Mr. Hughes' concern has -- whether the basis weighs out in how the technologies work.

MR. STOLTZ: Sure. There's -- there
are TPMs that apply specifically to entertainment content and they are -- while I don't know which devices use which ones, they are available to voice assistant devices; they certainly have the computing power and the technical ability to use the same sorts of TPMs that protect streaming to other devices.

And there are additional TPMs -- I should add, those TPMs are not covered by our exemption. They may be covered by others. And there are also TPMs that exist on the server side. Most of the sort of speculative, sort of doomsday scenarios in the opposition comments, for example, accessing music streaming service on multiple devices when one is not authorized to, that's instantly detectable on the service side, which is out of reach of both the customer and this exemption.

MR. AMER: Mr. Freeman?

MR. FREEMAN: Yes, I mean, personally on this topic I'll bring up a statement that on desktop computers that having root access is not sufficient in order to be able to get access to the digital information that is being transferred. And generally with a general purpose computer like that,
the information is being decoded and then being sent to the display output. It is going through regions of the computer that are accessible either to the root user or are truly replaceable by the person who is owning the computer.

But then as Mitch is saying, there are cases where on an embedded device you can add essentially an additional level of technological protection measure which is typically very separate from the general purpose computer parts of the system, the type of sections that might be running the voice assistant software. And as Mitch is saying, that you can essentially have a circumvention that circumvents those general purpose computer mechanisms that don't circumvent that extra level of media protection. But that is not really the case on general purpose computers as far as I've seen myself.

I also wanted to comment on this, kind of follow up a little bit on this idea of these devices being used almost entirely for music. I mean, I know many people who have them and they don't seem to be using them for music; they actually are using them for, what I've actually always myself
thought one of their primary features which was
these voice assistant softwares, the ability to ask
questions and get interesting answers. My friends
have controlled their entire apartment using one
of these voice assistants, and so they essentially
just, okay, Google. Turn on my lights, rather than
having to bother going and getting up and actually
moving the switches.

As far as hardware features disabled,
we have some concrete examples that might be a little
bit -- that you can conceptualize. On the Google
home device there is a touchpad which can be used
in order to enable the voice recognition components
and start sending information to Google. When that
device was shipped to users, that touchpad was
actually faulty and there was no good way for Google
to fix the touchpad. And so what was happening is
that it was activating even when no one was talking
to it, even when no one was touching it, and it took
a while for Google to be able to release software
updates that would disable all of that. But that's the kind of thing where users who have that device
would like to be able to disable faulty mechanisms
on the device.
MS. SMITH: Do you think that would be covered by 1201(i)?

MR. FREEMAN: No, actually I do not believe it would be covered by 1201(i) because the modification -- so the definition of 1201(i) -- I'm trying to -- here we go -- specifically states that the act of circumvention has the sole effect of identifying and disabling the capabilities described in sub-paragraph a and has no other effect on the ability of any person to gain access to any work, while the mechanism that you have to modify in this case would be the protections on the general purpose parts of the computer, which often times will be used for copyrighted works. While there is the possibility that a device can have an additional mechanism to protect certain kinds of classes of work, that -- it's almost essentially never going to be the case that all classes of work are going to go through that system, and many devices won't have that extra separation anyway.

And the final thing I wanted to kind of re-emphasize was something that was brought up by Mr. Stoltz, which is that Amazon Echo, is -- it's a device, as he states, has -- it's built in the
manner of a general purpose computing device, but it has 256 megabytes of memory, 4 gigabytes of flash storage; it's a little smaller than the smallest iPod as far as the amount of storage and memory it has, but it's not a magnitude smaller or anything, it is in the same realm as an iPod. And in fact, the system on a chip that is used on these devices is the same system on a chip that is typically used for smaller tablet computers.

This is a device that's running a general purpose operating system, it is a device that's using general purpose hardware to run that general purpose operating system. It has simply been configured into a form factor that happens to not have a port on it, and it's configured with a lock-down software mechanism similar to the signature-based verification that is used on these other devices that we have succeeded in getting exemptions for.

MR. AMER: Thank you. Mr. Williams?

MR. WILLIAMS: Thank you. I have a few points, since a lot has been said. I've got kind of a legal point, a factual point, and then point about how the record's been characterized. So, we
had a similar conversation a couple days ago on Class 7 about who owns the TPMs, and I just think that's the wrong question to be asking. I don't think there's anything in section 1201 that instructs you to be looking at who owns the TPMs.

There's a number of reasons why I say that. So, number one, under section 1203, it's not the owner of the TPM exclusively who can bring a civil action. The copyright owner who is protected in this case from what we've been talking about, the record labels, could bring an action, regardless of who owns the TPM if they're harmed. Another thing is if you look at the factors that you're instructed to apply in 1201, it talks about looking at the availability of works for use, and it talks about harm to the copyright owners of works generally, not just of the owner of the TPM, not just the owner of the software that is accessed without authorization, but any downstream harms are also supposed to be considered.

And I don't think, at least from the copyright owner's point of view who are represented here today, that access control on the firmware is just something incidental. I think it's wrong to
assume that they don't take it into account when they're entering licensing agreements, and I think we have testimony that says they do. That gets me to the point about the record. Mr. Shultz --

MR. AMER: Mr. Williams, can I interrupt you?

MR. WILLIAMS: Sure.

MR. AMER: That's helpful. I went back and I was looking at the legislative history. I mean, there's a line in the Senate Report, Judiciary Committee Report, page 28, it's talking about section 1201(a); it says, section 1201(a) applies when a person has not obtained authorized access to a copy or phonorecord of a work that is protected under the Copyright Act, and for which the copyright owner has put in place a technological measure that effectively controls access to his or her work. I mean, doesn't that suggest that what we're talking about here is the effect on the possible infringement of a work for which the copyright owner itself has put in place an access control?

MR. WILLIAMS: I'd have to look back at the context of that. I do have the legislative history with me, but I won't be able to pull it up
quickly enough. I don't think that that's accurate -- and I'm sorry, and which version of the report did you say it was in?

MR. AMER: This is the Senate Report, Senate Judiciary Committee Report.

MR. WILLIAMS: Okay, so I'd also have to look back at, of course the language changed over time going through the conference. And so I'm not sure -- again, I'd have to look at the context. But I think if you just look at the statute, it's clear the copyright owner can bring an action regardless of whose TPM is at issue. And even the language you read, I think there's going to be very few circumstances where it's only the copyright owner alone that's involved in placing a TPM onto a work.

I mean, if you think about it, a songwriter who owns the rights to a musical composition that's distributed through a streaming service isn't going to be involved in the technical process of putting it on there. What they might be involved in doing is negotiating for protections through the distribution system as best they can, given the leverage that they have in any given negotiation. And so I think to say that because of
device manufacturer or a service provider whose license is the one who technically implements the measure that the copyright owner has no recourse or isn't the intended person whose being protected is just -- I think that's completely wrong when you look at the statute.

MR. AMER: Okay, but I interrupted you.

So you have another --

MR. WILLIAMS: No, thanks for that and I'll try to take a look at the legislative history when I have a chance, and I'm happy to follow up in a letter as well.

Mr. Stoltz had said that it's just pure speculation in the record, but we've got two technologists, we've got the statement from Chris Bell, we've got Mr. Hughes here today; they're testifying as to their best understanding of how these technologies work and the risks that are presented by the circumvention. So to call that pure speculation I think is just incorrect.

When you talk about the record last time and smart TV expansion -- and I'll take the blame for this -- we didn't have that kind of direct testimony from technologists in the record. I
think we did have a lot of evidence of the harm that could be caused by jailbreaking smart TVs, but it was determined that it wasn't enough, and so that was granted. But we did not have the types of witnesses we've had providing testimony this time.

That brings me to one of the arguments that EFF made in its reply and that I've heard again today, which is that, "well, we have to show some harm caused by the existing exemptions or else you should assume that no harm will be caused by expansion." And I think that's wrong on multiple points. First, procedurally, this is a new issue and they have a burden to meet. But more importantly, we have shown harm, I think, in every single cycle from the jailbreaking exemptions that exist. The Office has concluded that it wasn't enough to stop issuance of the exemptions. But we opposed it in the beginning, we opposed it for multiple cycles. The Office decided to grant the exemption ultimately to expand it and we did not fight renewal this time because we respect your decision-making processes, but that doesn't mean that we don't see harm in the market.

And the exhibit that we submitted today
shows you extensive harm that's being caused by jailbreaking, especially through the Cydia platform that Mr. Freeman has made available to everyone. There's -- in the exhibits, documents showing things like Spotify Plus that basically enable you, without paying, to get all the features of the premium Spotify account, similar apps available through Cydia for Pandora, for YouTube Red, for installing Popcorn Time which we were talked about when we were talking about smart TVs in a manner that you wouldn't otherwise be able to install it to get access to unlawful copies of movies.

If you just Google around a little bit about Cydia, you will see extensive evidence of harm to my clients. And so the fact that we haven't fought renewal this time is not an admission at all that there's no harm being caused, and the fact that that harm has already been caused and that to some degree those exemptions are water under the bridge is not a good reason to make the same mistake twice. We're here to put evidence in that shows that there should not be an expansion to this new model of dissemination.
MR. AMER: Thank you. So you -- but are you saying that the harm is greater in the context of voice assistant devices than it is with respect to other devices? And I take your point about not wanting to sort of re-litigate these issues, but you didn't oppose the renewal of the existing exemption, you're opposing the expansion. So, you know, I think we'd be interested in knowing if the harm that you're talking about is greater than the context of voice assistant devices.

MR. WILLIAMS: Sure, and just two things on that; I mean, one, we tried to be as cooperative as we could during the study process that resulted in the more streamlined renewals, and we accepted the definition of meaningful opposition, and that required us to either show a change in the law or a change in the facts. We feel like we put evidence in before about the facts that piracy was being enabled, and we at that time did not see a change in the law. Had the Oracle decision, which I hope we discussed at some point today, come down before renewals had to be opposed, we might have made a different decision on that, because I think the law is clarified by that decision at the very least.
But getting to your question, I think Mr. Hughes can speak to it, and he did a little bit already. The concern is that this is a really important platform going forward for my clients; people are going to be using these types of devices in the home around the clock to enjoy entertainment content. And as Mr. Hughes was saying, to some extent they're simpler devices, cheaper devices than a personal computer. There's not as many ways to protect the content, and so removing any one piece of what he described as the end-to-end system of protection on these exposes the works, we believe, to more threat than perhaps on some of these other devices.

But that said, there is threat on the other devices as well, and I don't think we have a burden to show that the harm here is going to be greater than the harm on these other devices. I think they have the burden to show that the availability for use of works and the value of copyrighted works will not be harmed by the expansion, and I think we've got enough in the record to show that those two factors favor our side.

MS. SMITH: So, just to make sure I
understand, Cydia, which is your Exhibit 6A, this can be installed on both the all-purpose devices, things for which there is an exemption as well as voice assistant devices?

MR. WILLIAMS: So -- and Mr. Hughes may have something to say about this, and I'm sure Mr. Freeman can speak to it -- I don't understand all of the technical aspects of Cydia, but my kind of layman's understanding of it is, when you jailbreak your mobile device, you install Cydia's so that you can essentially get access to a huge variety of applications, many of which are of the sort that you have there in the exhibits and that enable unauthorized access to works.

MS. SMITH: Mr. Freeman, do you want to answer that question, too?

MR. FREEMAN: So to describe maybe a little bit more simply as far as what -- so Cydia is kind of like the Apple app store, it's a project where you can scroll through and see things that you can install on your phone. As described, it is typically installed with a jailbreaking application on something that's designed to bypass the restrictions on the phone's ability to have
added or removed software, but it is not itself a circumvention mechanism, it is something that can be installed by a user on that device.

MS. SMITH: So if I want to use Cydia --

MR. FREEMAN: Yes.

MS. SMITH: -- and you've helped make Cydia, right, you install something to do the jailbreaking, then you install Cydia which is like an app store, and once you get on to Cydia, Mr. Williams has suggested it offers a variety of unlicensed --?

MR. FREEMAN: Yes, so -- sorry.

MS. SMITH: Okay.

MR. FREEMAN: So Cydia then itself works in some ways I would similarly to a web browser. It does not -- Cydia is not a centralized managed store. So I am not in charge of determining what is or is not available via Cydia, in the same way that the people at Mozilla are not in charge of what is available via Firefox on the internet. Some of this commentary here about how if you just Google around you'll find extensive evidence of people being able to do things with Cydia, it's like you just Google around and you'll see people talking
about all sorts of things you can do with the internet.

I then think it's actually worthwhile pointing out this pile of paper, this very first thing here where it says Cydia iOS7, if you go a few pages in, it actually states, "Disclaimer: cydiaios7.com is not owned by, is not licensed by, nor is a subsidiary of Apple, Inc. and SaurikIT." Cydia is owned by Saurik; iOS7 is a trademark of Apple, Inc. And this is actually -- this is not Cydia; this has got a bootleg, slash like, modified icon that's designed to look like Cydia. This is a third-party website service that is providing some similar looking functionality to Cydia. And some of these services actually don't even require jailbroken phones.

And so from that point I will then bring up this functionality that's being described. For example, Spotify++ and the ability to essentially have modified versions of these applications, that's something that's available to people who do not have a jailbroken phone. What -- on these devices, you have the ability as the developer to install software yourself, and what these services
are now doing is they're simply taking the Spotify application, adding those functions -- mixing in those modifications to add these services, and are then offering them via app stores.

It's sadly, to me -- use my brand, and I often times am trying to figure out ways of suing them to stop them from doing this and confusing it with the jailbreak issue, but this is actually something that's available to non-tampered, non-circumvented, non-jailbroken devices. And I kind of think that in many ways and a lot of this information is irrelevant to our discussion today.

MR. AMER: Could I just jump back in? And Mr. Zuck, you've been really patient, so I'm going to get to you, but I just want to raise this to sort of, I think try to focus the issue. So Mr. Williams, you mentioned that we have sort of competing experts here; we have your expert, Mr. Bell, so I wanted to give you all a chance to respond to Mr. Shone's statement that was attached in the EFF reply. He seems to be suggesting that there are a couple of layers of TPMs that would be relevant here. I don't know if -- I'd be interested in your perspective on that. If you look at paragraph 6,
I mean, he talks about how industry has arranged for these devices to access media, but then he says, "the device owner's root privileges typically are not sufficient to give the owner unrestricted access to those media, because the application software used to decrypt and view those media, enforces other restrictions or contains other technical measures that do not depend on controls in the operating system." So he seems to be saying that, as I understand it, if you jailbreak a voice assistant device, there is another layer of TPMs that typically exist in the device that prevent you from gaining access to media. And then he says, "in addition to that, streaming media services can also use a variety of measures on the server side," which is kind of what Mr. Freeman alluded to, to enforce policies about unauthorized access to media.

We have no way of knowing whether that's true or what your views are on it, but they seem to be saying -- to jailbreak the device does not necessarily -- that there is an additional layer of TPMs within the device in addition to any TPMs that exist on the streaming service side. Mr. Zuck?

MR. ZUCK: Thanks. Sometimes it's --
you get all revved up to give a comment, and then you ask a more specific question, and then you have to reformulate.

MR. AMER: Sorry about that. You've been waiting a long time.

MR. ZUCK: No, no. The truth of the matter is, is that it isn't about services like Cydia or a copy of Cydia taking responsibility for this; it's about the fact that what you're doing in this context with a jailbroken device is providing an alternate vector to get software onto a device, right, and that can be a good thing. There might be availability of some software that wouldn't otherwise be available, but it can also be a bad thing because while imperfect, these stores provide some curation and some protection, take-downs, you can escalate something if there's a problem. So if counterfeit software appears on the store, I can get it taken down more easily than I can on a browser-like service that's been described. So for example, things like the Zisser Emrat virus that has affected so many Android and iOS devices, is -- comes in a lot more through jailbroken phones than it does through regulars. That doesn't mean
that unjailbroken devices are perfect; they're not, right. But the jailbroken devices create a much more welcoming vector for these kinds of malware that come in the form of counterfeit software, then do things like monitoring and things like that, that -- keystroke logging and things. And because somebody thinks they're installing a piece of software that they would otherwise have to pay for on the iTunes store but this version is free, why not use the free version. And so then now that creates a reputational damage to the software developer of the real piece of software, et cetera.

So as Matthew said, these things are happening now today on devices that are a part of the exemption, and I guess I would suggest that similar to the points raised by the proponents at EFF and elsewhere about the types of devices, I would say the stakes are risen for counterfeit software as well. In other words, the fact that I'm giving these devices control of my thermostat and other security measures in my home, et cetera, suggests that the introduction of malware is even a more serious threat in the context of these devices than it is in a smartphone. So that might be a little
bit convoluted and only touch a little bit on what you were trying to say -- you were trying to get at via the specific argument, but there is a vector that's in place, it has been used to introduce counterfeit software that then has malware attached to it. And I just wanted to make that point, thanks.

MR. AMER: Thank you. Mr. Hughes?

MR. HUGHES: Yes, so I wanted to come back to your point, that Mr. Shone had addressed. So yes, while it's true that there are certain things you can do from the server to secure the distribution -- in this case music -- to the device, when it gets to the device, the device itself has control over what happens at that point. And to quote Mr. Stoltz, one of the reasons to jailbreak is to turn off hardware features. Well, to me I don't know exactly what that means, but if you're turning off hardware features, then things like preventing somebody from sucking all the music off the buffer and filling up a hard drive with thousands of hours of music could happen. And I just -- you know, my reason for appearing today is just to have everybody consider the unintended consequences, and as I think Mr. Williams pointed out, in the past the unintended
consequences, well perhaps not 100 percent well-articulated in advance, we're seeing them now in the marketplace. Streaming of music is now two-thirds of our business and growing, and the voice access to these services is the fastest growing part of that service. So we see this as a part of -- an important part of the future of our business and we take any negative impact on that business very seriously and we would like you too as well.

MS. SMITH: So how would the streaming market, what do you think would be the likely, you know, bad case scenario for you -- and we talked about exceeding subscriptions on the one hand, but that goes back to something that is maybe happening -- I don't know if that's the example with once it's already on your device, you can't control it. How exactly would the risk to the streaming market work with this exemption?

MR. HUGHES: Well, I don't want to contradict the EFF folks too much, but I suspect that it is possible if you have jailbroken a device that you could spoof IP addresses potentially, and if this device were in dormitories, in colleges
across the country, that single accounts could be providing music to multiple listeners and so on. And of course on the service side there are ways to detect this as well, but there's -- what is happening is that the business model was created based on certain assumptions of what security would be in place, and if those are taken away, the business will then have to respond. And that will either mean the services on the service side and/or in collaboration with the device manufacturers are going to have to, you know, reinvent the security that's being taken away, and that's not a good thing either. Does that address a little bit of what you --

MS. SMITH: Yes, I think that's helpful. Yes, thank you.

MR. AMER: Let's go to Mr. Williams because I'd be interested in whatever information you may have about my question about the nature of the TPMs to the extent you have it.

MR. WILLIAMS: Sure, and David's the technologist here, I'm just the lawyer, so I'll do my best to address it. But I think that the heart of your question as a legal issue is if there's any
possible way that everyone involved in the dissemination ecosystem could redesign how the TPM scheme works that would enable jailbreaking while still protecting the content securely, then it's on us to redesign it that way, and I just don't think that that's a fair way to read the statute. I think could it all be redesigned, I'm not so sure that it could in a way that would completely protect the content and allow for jailbreaking, but yes I think there are things that the services already do on the server side to try to prevent some of this. Mr. Stoltz was referring to if someone does what Mr. Bell's statements says they can do and spoofs the device, then the server will automatically recognize that. From talking to Mr. Bell, that's not my understanding. Yes, it's true that if you try to geographically distribute that all over the country, yes I think the server would pick up on that, but if you were doing it, say, in a college dorm in a number of different rooms in the same location, that my understanding is maybe that wouldn't be so easy to recognize. Again, I'm not a technologist, but that's my understanding. And so I do think that the record has identified some
threats that just removing the firmware would enable. With respect to the redesign, my understanding is also that to the extent you increase the number of device side TPMs that are necessary, the cost of the devices would likely have to increase over time, that a general purpose laptop, as Mr. Hughes was saying, has more capabilities than a $49 voice assistant device. And so I think there's a number of different things to consider.

I did want to mention, while I have a chance, that I wasn't trying to say that Mr. Freeman himself is directly the one who's developing all of these apps that enable unauthorized access, but if you go through the exhibits, I think you'll see that in almost every instance as they're providing the instructions they say; number one, jailbreak your phone; number two, install Cydia; number three, here's how to get our app and here's how to start getting all the benefits of a premium service without paying for them. There's one in there -- Mr. Freeman was saying while some of these you might not actually have to jailbreak the phone, and I've seen some things online that says that's the case,
but there's one in the set of exhibits that says, well, don't believe anyone who tells you you don't need to jailbreak your phone, because if you don't, then every week or so Apple's going to cause these apps to stop working. And so as a technical matter, can I say whether you have to engage in circumvention to install all of these apps or not, I can't, but I know from looking at the description from the people who are encouraging everyone to install them, that they almost always say you need to jailbreak in order to do this.

The other thing is, if I understand the process that Mr. Freeman is referring to, there's an app or platform that I believe he was involved in disseminating, that I think is called Cydia Impactor and that this somehow allows you to what they call sideload some of these apps onto an iPhone even if you haven't technically jailbroken the iPhone. Now, it seems to me that that involves an intentional effort to get around some measure that is otherwise preventing the installation of these apps, and so whether that's circumvention or not at a technical level, I couldn't speak to, but it sounds a lot like circumvention to me. And so
whether you call it jailbreaking or you just call it circumvention, I think that's still something that you'd have to look at very carefully to decide that it's actually lawful.

MR. AMER: Okay, I'm going to give you, Mr. Freeman, a chance to respond to that. But I -- in addition -- this is for you, too, Mr. Stoltz -- I mean, in your answers if you could address Mr. Hughes' point that these contracts between content owners and service providers are negotiated against this back-drop of expectations about the level of TPMs that exist throughout the ecosystem, and to remove one of those legs is going to be detrimental. That would be helpful for us.

MR. FREEMAN: All right, I have an answer for that, too, so I'm excited. All right, so first of all, it was mentioned as you go through here there's a lot of mentions of jailbreaking; there's also a lot of old information that's in there. So the mechanisms that were provided for allowing arbitrary apps installation on a non-jailbroken device are, in the grand scheme of things is relatively recent. So information from
2012, information from 2000 and even 2014 or 2015 sometimes is not relevant in that way. The fact currently is that you can install without having to pay Apple any extra money, any application that you would like onto your device for -- and this is key to respond to the comment that made it sound like Apple was shutting these things down -- you can install it for up to one week. And that's not that Apple is figuring it out and shutting it down or whatever, it's just that you can install anything you want, it runs for a week, and then you can install it again and it runs for a week; it can be a little bit inconvenient that every week you have to reinstall it, but it tends to not be a very -- and you plug it back into your computer and there are tools that will automatically reinstall all the things you had. You just have to have access to a computer for 30 seconds once a week.

The software that often is used to do these sorts of installations was mentioned, something called Cydia Impactor, that allows you to sideload these things. This is absolutely not a circumvention mechanism; this is an officially published mechanism from Apple, I just built
software that made it a little bit easier to use. But you can download software directly from Apple that does the same functionality as the Impactor, just requires many more steps. And specifically if you were to download their XCode Development Environment, you can install anything you like by having XCode install it. So now there's question of how these licenses and other forms of contracts are negotiated, and one thing that I think is worthwhile pointing out, is that all of these services are available on all devices -- I mean, you're seeing, for example, Spotify we referenced here on the iPhone, it's also available on Android. You can take these services and run them in emulators and copy off all the information, and part of the reason why is that contrary to what has been, from my standpoint weirdly stated over and over again, general purpose desktop systems have much less ability to protect content than even the most general purpose small device. And the reason why typically is that the people who make things like the iPhone, Amazon Echo Dot, they're building the hardware and the software together and they are building it with some of these ideas of what they're
trying -- of what they might want to do in mind, and so they can for example have an encrypted audio buffer, trivially, it's very cheap for them to do that; whereas on a computer if you were to try to have these specific business model enabling functionality with upgrades from operating system vendor that often times is not the same company, even Apple trying to maintain over the course of a seven-year lifespan of major functionality modifications, they're relying on having much cleaner interface separation between all these different layers.

So I mean, we definitely have seen much more interesting and much more cheaply built and much more effective technological protective mechanisms on the smaller classes of device than on these general purpose computers. And yet the services like Spotify, the services that are doing music streaming are available on all of these devices, and yet despite the fact that it is so easy for people to, for example, install something like an Android emulator on their desktop computer and then run Spotify and copy off the exact digital information of all the music that is going through,
Spotify has not stopped, has decided they're only going to provide their service to companies that are making TPM-protected devices that are actually relatively more affected than the other ones. I find this idea that the services are only available because of these TPMs to be very confusing since these services are clearly available on devices that do not have regular TPMs.

MS. SMITH: So all these designed TPMs on the visual assistant devices, are you looking to circumvent all of them or can you divide it up between just somehow the firmware, the enhanced audio buffer or the other ones you're talking about?

MR. FREEMAN: We were talking about today specifically the ability to make modifications to general purpose computing elements on these devices to the extent to which there is a specific TPM that is designed for protecting the digital music content or other media content that is flowing through the device, that is not what we're specifically asking about today.

MS. SMITH: Do you know would that be implicated, though, if you were allowed to do what you're seeking to do?
MR. FREEMAN: As far as I know, no. If you were to have these separate TPM systems, for example, what you would do very simply is you would have encrypted information come from the service and then you would pass that to the encrypted audio buffer -- sorry, the audio buffer decrypter -- very weird term there -- but essentially it's a very, very small circuit, very cheap circuit that would just be doing hardware decryption on the device as it goes from the device accessible memory to the actual audio unit. And that would be essentially an entirely separate TPM that is not the same as this general purpose computing parts.

MR. AMER: Mr. Stoltz, and then we'll go to Mr. Hughes.

MR. STOLTZ: Thank you. There's a number of points I'd like to respond to, including Mr. Amer's question. I think it's important to look at a bit of history here because we now have almost a decade of experience with jailbreaking smartphones, lawfully jailbreaking smartphones. And it goes without saying that over that period the proliferation of smartphones, the proliferation of smartphone operating systems and
the proliferation of apps and of music video and other entertainment content on smartphones have all skyrocketed. That is the history against which we're sort of discussing today.

So this argument that jailbreaking makes infringement or unauthorized access somewhat easier is an argument that Apple and Mr. Williams' clients raised in 2009. Mr. Williams' clients raised it again in 2012. I believe it was BSA raised it in 2015 and again in the renewal phase of this rulemaking, so that's four rulemaking cycles in nine years. And they've never presented evidence, including in this cycle, that shows a significant impact on the markets for any of those types of creative works. They've shown -- they've presented evidence, they have presented evidence that essentially, look, here's how one might engage in piracy, or here's how one might engage in unauthorized access. We can -- and we can sit here and spin scenarios about how the ability to get root privileges on voice assistant makes it in some circumstances marginally easier to exfiltrate music or other content from that device. But what we need to do is weigh that against this history,
which shows that while yes there may be a marginal impact, while you may not be able to, in Mr. Williams' words, completely protect the content, there remains enough protection from the TPMs that exist that are not part of the access controls on the -- that involve installing software or installing and removing software, that that impact should not be considered sufficient to deny an exemption; it wasn't for smartphones which are still in much larger market worldwide than voice assistants.

Against that, so -- and against that, they really provided very little evidence that voice assistants are significantly different, while Mr. Williams' clients might -- while they're free to say we'll accept the jailbreaking smartphones but we are drawing the line at voice assistants, what they haven't shown is a significant factual difference, particularly weighed against this ten-year history, that could be a basis for a decision by the Office, you know, on a basis other than the preferences of these companies.

So on this question of whether voice assistants are different from smartphones and
tablets, I think the key point was really already made by Mr. Freeman and I won't belabor it, but in terms of hardware and software architecture they're -- they are quite similar. And against that, I simply note that Mr. Bell in his declaration said that he was not familiar with a specific TPM in use on those devices. And the opponents have not responded to this question of there being similar architecture.

Finally, just to answer Mr. Amer's question about contracts; I think it's important to note that the customer, the person who is the owner of the hardware is not a party to contracts between the record labels and music streaming services. And again, we don't know what's in those contracts. We could conceive of a contract that says, you must, you know, build the highest wall you can possibly build on this device and oppose any attempt to breach it. But that, in itself, does not show a diminishment of the availability of copyrighted works for use. It merely shows a preference created in a private agreement between two companies. And frankly, if that were enough to defeat an exemption, if there were language in those
contracts that would defeat an exemption, then we should probably just all go home because they will use that language in those contracts.

The people who --

MR. AMER: Just quickly --

MR. STOLTZ: I'll wrap this up quickly, I promise. The key data is, as Mr. Freeman said, all of these forms of copyrighted content continue to be available on platforms with very many different degrees of locked-downness, if you will, and they continue to exist on smartphones and tablets to a vast degree. That has not changed and that should be powerful evidence here.

MR. AMER: Thank you. Mr. Hughes?

MR. HUGHES: So I guess two wrongs don't make a right, might be one of my comments here -- but I wanted to go back just very quickly to Mr. Freeman's software of the Cydia Impactor; I'm not sure he characterized it quite accurately, in that Cydia Impactor, while it does do what the XCode which is what Apple provides for developers, it takes advantage of that and what it does it says if you pretend to be a developer, you can then use Cydia apps to download free music. To me that is
description of -- that wasn't quite accurate.

   MS. SMITH: Is that something you wanted
to submit as an exhibit, what you just held up?

   MR. HUGHES: I'll be happy to send a copy
of this.

   MS. SMITH: Yes, I think if you're
asking us to consider something, it'd be helpful
to have it and to let them see it also.

   MR. WILLIAMS: Maybe what I gave you.

   MR. HUGHES: I'm not sure that one is,
but the other comment I wanted to make, going back
to I believe Mr. Amer's comment, was that while the
end consumer does not have any contractual
relationship with the label, they do have it in terms
of service in a sense. They have a contract with
Spotify, for example, and part of that Terms of
Service, I believe, says I'm not going to steal the
music if you give me a subscription. So that might
be considered as part of the overall legal framework
that's constructed for the distribution to
introduce it to the end consumer.

   MR. STOLTZ: And the remedy for breach
of that would be terminating the service and
potentially breach of contract suit.
MR. AMER: Mr. Williams?

MR. WILLIAMS: Thank you. So I just wanted to speak about a couple of things. Mr. Stoltz said there's a lot of focus on what kind of evidence can we present of harm from jailbreaking, and as with a lot of these exemptions, it's very difficult, if not impossible to collect one-to-one evidence showing that this individual person jailbroke their phone, installed this app and then downloaded our music. We did submit an IFPI music report as one of the exhibits referenced in our initial comments that shows that globally 40 percent of consumers have been found through surveys to have unauthorized access to music; a significant portion of that, I suspect, is through jailbroken phones. Can I tell you the exact percentage, no. And can I tell you the number of dollars exactly each of the record companies and motion picture studios lost as a result of jailbreaking, I can't. But I think it's safe to say that there were dollars lost and that as a result there were fewer dollars invested in the creation of new content. One of the things you're supposed to look at is the overall impact of the 1201 system on spurring creative activity,
and when you can see that jailbreaking is leading to a lot of unauthorized access, I do think that in itself is evidence that there's harm being done to creative expression and its output in dissemination.

Mr. Stoltz was emphasizing --

MS. CHAUVET: Can I just ask one quick question, please, about the surveys? So when you say 40 percent were found to have unauthorized music, do you know how they reached that conclusion? Like, is it just I'm going to tell you I have -- or anonymously that I have this -- or how did they actually reach that conclusion? And I apologize for interrupting, but I figured you could answer that and then move onto your other points.

MR. WILLIAMS: Sure. So this is -- and I'll give you the full title so you can take a look at it -- it is one of the things we linked to in our comments -- it's the IFPI Connecting with Music Consumer Insight Report from September 2017 -- and I can't tell you that I know all of the ins and outs of the research project that they did in order to reach these numbers, but if you look at page 19 of that report, it details that their conclusion was
that 40 percent of consumer's access unlicensed music, and it talks about a variety of ways that they do that. So I may be able to get you more information about the actual methodologies that they used if you wanted to send me a follow-up request for that. It's not technically a RIAA report, it's a global music industry report, but the notion to me that music is still available on mobile devices and therefore you should just keep expanding these jailbreaking exemptions because music will still be available, I just don't see that as a very credible argument, because the fact that all the record companies and streaming services haven't taken their marbles and gone home doesn't mean that they aren't being harmed and that they aren't losing money as a result of unauthorized access.

And so if that's the standard that well, we haven't shown that there's no more music available on mobile devices and therefore you should be able to jailbreak anything you want, we're never going to be able to meet that standard. But I do think that you can infer from all of these types of apps that we submitted evidence of and there's
many, many more of them, that harm is occurring and the underlying economic theory of copyright is that you need to recoup your investment and then you make a profit and then you reinvest that back into the system and that leads to more output. And so, I think if we believe in that economic model that we've got plenty of evidence that there's been harm done.

MR. AMER: Okay, thank you. We are bumping up against the hour, and not just any hour, the lunch hour. So I'm going to quickly -- I believe you had a question on a different topic and I'm going to invite my colleagues to, you know, consider if they have any questions, too. I have one question myself, so we're going to try to fit this all in quickly.

MS. SMITH: Okay, so we'll keep our questions snappy and if we can keep the responses snappy too. We appreciate this productive discussion.

So this I guess a question for both sides because I -- listening to Mr. Stoltz talk about the past ten years and with jailbreaking, one thing I will say is that for smartphones there seem to be a good record of not infringing or licensed or
otherwise permissible uses, specifically in terms of software programs that could not be installed or used on a smartphone; that was also something we looked at seriously and carefully with the smart televisions. There were a lot of other programs and I'm wondering on the one hand do we have a similar record of programs that you can download onto the voice assistant devices that are non-infringing or licensed or otherwise, you know, I guess would be facilitated by granting this exemption. And on the flip side we have got this packet of information of programs you can actually download via Cydia, can you use the many which seem to be sort of facilitating unauthorized access to copyrighted works? Are those equally available in the voice assistant device context?

MR. STOLTZ: So voice assistants are fairly new category of devices. There's not going to be as large of a catalog of sort of prominent applications, if you will, or lawful -- applications with lawful uses. Now, jailbreaking --

MS. SMITH: Is there --?

MR. STOLTZ: Now, if I may -- I'm sorry, please.
MS. SMITH: Well, I'm just wondering what specifically you can point to in the record, for example, of what applications have been made or maybe made that we can look at to say, okay this is what someone wants to do if an exemption were granted for voice assistant devices.

MR. STOLTZ: Essentially they are expansions on Amazon Skills, so there are tens of thousands of Amazon Skills which are comparable to apps. The problem -- the limitation on those is that they run in silos created by the APIs that Amazon exposes. And we had a couple of examples in the statements attached to our initial comments that describe some of those limitations. So for example, a skill that provides a meditation app or inspirational quotes who couldn't slow down the speed at which the Alexa voice reads them which was pretty key to that application. That was an example of that. But more broadly, jailbreaks are both, at this point, more difficult on those devices because they are new and there's no exemption for it, so we're absolutely not going to see as many prominent examples, but examples do exist.

MS. SMITH: Okay, Mr. Freeman?
MR. FREEMAN: Yes, I mean, one thing that happened, of course, with the iPhone before the smartphone exemption was put into place was we simply were bold and went ahead. And so that was where it was very easy for us to demonstrate all sorts of interesting jailbreak-specific functionality back even in 2009 for the smartphone exemption; whereas in this case, due to the complexity of these jailbreaks sometimes requiring hardware access as I mentioned earlier, it's very difficult to show demonstrations of people who are doing things on the jailbroken device already. But there are examples of -- because there are some of the similar kinds of software that is available on these devices, and I mentioned things like e-book readers that read aloud e-book software, that we can see the same kinds of modifications that you would want to have elsewhere now existing on these devices.

The -- a quick comment to just mention, the Cydia Impactor as far as developers, in claiming to be developer, if you're allowed to download the software and compile it, I don't think that that's -- you're not really necessarily pretending to be
anything, that's just part of the functionality of the service. We mentioned downloading applications and tools -- you just mentioned that again -- once again, re-emphasize that essentially all this functionality is available on non-jailbroken iPhones, as well as on desktop computers. I mean, I just quickly --

MS. SMITH: Again, I'm concerned about the availability for a voice assistance device.

MR. FREEMAN: Yes, from that perspective none of this software is certainly available on voice assistance because it's all designed for either running on an iPhone or running on a desktop computer. Similar software could be constructed by someone I'm sure, but then again, I will actually say that similar software could be constructed as an Amazon Skill if you simply were to just take the existing SDK as a developer and then just build something that said hey, I would like you to go download something from Spotify, you would be able to download that because Spotify's available on all platforms.

MS. SMITH: I guess the theory is that Amazon would curate it, is what Mr. Zuck said in
a more careful manner.

MR. FREEMAN: So that was the theory; however, you can develop for these devices as any user. And so in the same way on an iPhone that you can install as a user whatever software you'd like on the device, that's the same thing -- I speak at Hackathons constantly, these 36-hour college events where students come and get together in groups of three, and by the end of the weekend they've put together software that runs on their Amazon Alexa. Amazon didn't curate that. They can then publish that software for other people to utilize. Amazon's isn't curating that.

MS. SMITH: Will that curate the publication of it?

MR. FREEMAN: Well, so if you were just publishing it on GitHub, you're publishing it on your website, if you would like to have access to it from the Amazon store, if you'd like to have access to it, you essentially ask Alexa to install it for you, then that's an opportunity for Amazon to curate it. But the existence of that software and the ability for people to download it with their computers, the ability for people to reference it
on their devices, that's not something that's up for Amazon to be able to curate.

MS. SMITH: Okay, got it. Mr. Zuck, if you had a demonstration you wanted to show us, now is probably a good time to do so.

MR. ZUCK: Yes, so I was looking for the opportunity. There was a discussion we raised in our initial testimony about an alternative whereby you create your own device rather than hacking an existing device in order to get the functionality that you want, and we raised the technology called Raspberry Pi, which is this open-source board. And EFF responded saying that that's like saying you have an engine and that's the equivalent of having a car. And so what I brought in these pictures is just some examples of kits that are available. The most commonly used VR headset right now is made of cardboard and they're originally shipped -- Google Cardboard -- they came in the New York Times, and so similar kits are available to create an Amazon Alexa-type device or a Google Voice-type device. So as long as I'm talking about breaking open a piece of hardware and soldering a new port to it or something like that, I'm more than able to get one
of these devices for cheaper than I'm going to get something from Amazon, and make use of the Amazon API to go on and replicate that functionality or add any functionality that I want to create.

So my understanding is that while it's not the copyright owner's burden to show harm but instead to show -- it's the burden of the proponents to show that they have the means to allow for non-infringing uses, there are means to do so, and people are very creative in providing easy-to-use jumpstarts into creating devices that would allow for additional functionality while providing, preserving some of the existing functionality the devices have. So that's what these are is, you can just sort of see, it's a pretty simple process to put these things together, it's no more difficult than what they're suggesting in terms of hacking an existing device. I'd be happy to answer questions about this, but I know time is limited.

MS. SMITH: Maybe we can just, in the interest of time, we'll get to everyone again, but go to Mr. Williams next. You had something you mentioned about Oracle, maybe you can say that now too.
MR. WILLIAMS: Okay, sure. There's a lot in the opinion and I think we're going to Class 7 again when we're in Los Angeles and it's relevant to both, so we can talk about it some there. But I just quickly want to say first that I think the ability to develop Amazon skills is an alternative, Google has a similar process with constructions on how to do it on the Web. The record is pretty small with respect to the types of things that people are not able to do within those environments. I mean, to me there wasn't much there compared to potential threats involved, so I do think you're right to point out that there was a more robust record previously when different devices were covered by the exemption.

With respect to Oracle, the Federal Circuit was applying 9th Circuit law, the basis for these exemptions has been historically that the Office read some 9th Circuit cases quite broadly in the interoperability area, and by reading them broadly decided that an exemption was justified. What the Federal Circuit does is go back to Connectix and those older cases in the video game space and say, well, look; the 9th Circuit took a look at what
they were doing there and said this is only modestly transformative. And the reason that it ended up being transformative at all was that what was being done was they were opening up the software just to look at how it worked, and then they were developing entirely new products that didn't use any of the expressive elements of that software and putting them into the marketplace. That's not what is done when a device is jailbroken; the firmware, at least based on what the proponents have described, is essentially just copied after it's hacked with a very minor adaptation and then re-used to do what it is that they want to do, and so that copying --

MS. SMITH: Well, it's jailbroken for the purposes, I guess, of enabling interoperability, and I think maybe also considered 1201(f) and the purposes behind that. I'm not sure how -- I'm not quite following how that reverses the Office's previous interpretation.

MR. WILLIAMS: So in the Sega case what was at issue was developing a competing platform on which to play independent games or to play the Sega games, and that's not what the issue here is; it's just taking the same copyrighted software and
using it to basically achieve the same purpose with slightly different objectives. And so that copying under the Oracle decision, I think it's a stretch to say that it's a fair use, and that's been the basis for the reasoning, and it has not been section 117 because there's all kinds of other questions that have to be answered there. And the other thing about Oracle is it really disposes of the notion that just because software has a lot of functionality that it needs to be treated differently than other types of works. And I'm not saying that it's never treated somewhat differently, but I mean if you look at the opinion, they're citing other cases in all kinds of other areas of copyright that aren't just about functional software, and so I really think the opinion speaks to the fact that software is not a second-class citizen, that it gets the full protection of the Copyright Act. And I do think it impacts some of the prior reasoning, but I submit that to you to decide.

The only other thing I would mention is I think you were right to raise 1201(i); I think the fact that it may not fit perfectly what the
proponents want to do doesn't mean that it's irrelevant, it just means Congress decided to do this differently, and one thing that Congress didn't want to happen was that other types of infringement or unauthorized access results from the fix of this privacy issue.

MS. SMITH: Do you think 1201(f) already enables them to do what they would like to do?

MR. WILLIAMS: I don't. 1201(f), I think, is based on these cases I was discussing which is involving just getting at the copyrighted work so you can analyze it and then you go and create your own work that achieves a similar purpose or that interoperates with it. So you don't take the work that you're analyzing and copy it, and you don't take the work that you're analyzing and create derivative work from it. That's not what was at issue in those cases, and I think that's why 1201(f) is written the way it's written, because it basically says you're allowed to circumvent to get access to the software, study the software, but you're not allowed to get access to it for the purpose of creative a derivative work to do what you want to do.
MS. SMITH: Mr. Shultz?

MR. SHULTZ: Yes, so a few points and I will try to be quick because I know we're all hungry. First of all, going -- responding to Mr. Zuck's points about, I guess, malware; jailbreaking is for power users. It -- in general, it renders -- is a somewhat more risky activity than using a device precisely in the ways that the manufacturer intended. It is no less important, and it is widespread; there are millions of those power users. So the owner of a device might choose to make themselves more vulnerable to malware, they will, A, probably be more sophisticated and able to avoid malware, but also they are taking that risk voluntarily in return for expanding the functionality of the hardware that they own.

Let's see -- this -- responding to Mr. Zuck's demonstratives -- there is no device that you can build from parts that replaces the functionality of an Amazon Echo or Google Home. At best they can do a few things, perhaps turn on a light with voice control. They certainly won't be able to access Amazon Alexa, for example, and expand the capabilities of Amazon Alexa. So building
one's own device from parts is not a real alternative here; moreover, it's not an alternative for devices that are already existing and already in people's homes. Part of the value of jailbreaking is the ability to keep a device working after the manufacturer cuts off support to install security fixes before the manufacturer does. Building your own is not a fix for the device that you already own.

And then to respond to a couple of Mr. Williams' points about Oracle. Oracle was wrongly decided in many different ways and completely misread the 9th Circuit precedent; it is not binding on the 9th Circuit or on any court in this country, except under the odd circumstances at which it reached the Federal Circuit. And I think that Mr. Williams mischaracterized the Sega and Sony cases out of the 9th Circuit somewhat. And this distinction is important; copies were made in those cases, the defendants made copies of software but they did not proliferate copies. The Copyright Office and the register's recommendations from the last four cycles has always said they don't find jailbreaking to be transformative because it's
using the firmware for essentially the same purpose. We don't entirely agree with that, but be that as it may, the Office has always said it's nonetheless a fair use; and that fair use is actually very close to the facts of the Sony and Sega cases. One of those, I believe it was Sony, involved copying to enable writing new games for an existing platform; the other one was copying to enable writing a new platform for existing games. Both of those contribute to the creation of new work and so does jailbreaking. That logic has been -- and the Copyright Office has maintained that over the last four cycles -- the Oracle decision as wrong as it is, doesn't change any of that and doesn't really apply here.

MR. AMER: Thank you. We'll go to Mr. Freeman and then --

MR. ZUCK: I'm sorry; I just wanted to clarify that both of these devices, these kits that we're talking about, are specifically designed to talk to published APIs at Google and Amazon; they're not just devices that you would create for your own purpose; they are specifically designed to be alternative hardware for the services provided by
Google and Amazon.

MR. AMER: Okay, thank you.

MR. STOLTZ: I hope we can see that and get details on that.

MR. FREEMAN: I can actually respond to that point; so in the past I've actually worked on building a voice assistance system. One of the things that's really complicated is to be able to in a room talk to the device and it can actually hear you. It's the kind of thing where you start to try to find like wall-mounted microphones, you try to find -- if you just take a typical microphone like this one, it's not going to hear somebody on the other side of the room, certainly not the kind of microphones that are available even like the one that's on my iPhone is not really designed for somebody across the room, and it's got a lot of advanced hardware. These voice assistants are designed with six, seven, eight microphone arrays that are carefully calibrated against each other in order to do noise cancellation. There's advanced firmware that's on these devices in order to figure out the echoing that's within a room. Building a voice assistant from a Raspberry Pi to
me honestly just seems a little bit absurd. It just
would not function anywhere near, but really would
not even provide even a partial bit of the
functionality you would get on these devices, even
if you can talk the same APIs.

To respond to the comment earlier about
the continual -- but just on the malware; malware
on a lot of these devices is due to the devices being
jailbreakable, not due to the device being
jailbroken. So the fact that the device has a
vulnerability in it that can be exploited and that
there is a mistake in it allows people to, for
example, download apps from all sorts of different
places, and then it can take control of your phone.
The ability for people to send you a text message
that then has you go to a Web page that takes control
of your phone, that's because your phone is
jailbreakable, not because the user -- it was
jailbroken. This is a very slippery, confusing
thing that often times ends up occurring where
people blame the jailbreaks and they blame the
circumvention mechanisms, as opposed to blaming the
bugs in the original software that was being -- that
was allowing the circumvention. Even if people
were not allowed to do the circumvention -- well, certainly people weren't allowed to hack into your phone either, and they're doing that anyway.

As far as skills being an alternative, skills are definitely an alternative to infringement, but they're not an alternative to the work that we want to be able to do. Skills are not something that allow you to disable the touchpad on a device that's accidentally uploading your information. Skills are not something that you can use in order to determine and disable software that's running in the background in order to determine -- in order to essentially be providing more information to Amazon and Google. What the skills are able to do is they're able to demonstrate that the circumvention has nothing to do with the infringement. You can build a skill that just is able to use that same speaker in order to play music that was incorrectly, improperly, illegally downloaded from these various services.

And finally --

MR. AMER: If you could just wrap up quickly.

MR. FREEMAN: Yes, one last point and
then I'll be done. To mention on the Oracle thing, the Oracle result was about actual copying, and I just want to provide from the 2010 Federal Register, a Notice of the Library of Congress Final Ruling; the amount of the copyrighted work modified in a typical jailbreaking scenario is fewer than 50 bytes of code out of more than 8 million bytes, or approximately 1/160 thousandth of the copyrighted work as a whole, where the alleged infringement consists of the making of an unauthorized derivative work and the only modifications are de minimis, the fact that iPhone users are using almost the entire iPhone firmware for the purpose for which it was provided to them by Apple undermines the significance of this factor, and again there was no copy.

MS. SMITH: So iPhone, do you think the same thing, the same logic would apply to the voice assistant?

MR. FREEMAN: The exact same logic applies to voice assistance. We are not copying the firmware, we're not modifying, distributing the firmware; we're instead running the firmware on the device, we are making modifications in memory
momentarily of, as we're seeing here, fewer than 50 bytes out of, you know, 8 million bytes. This is a de minimis modification in memory, and the previous cases that had determined the case law, and for example on Nintendo vs. Galoob and things related to the Game Genie, apply in this case.

MR. AMER: Thank you all very much.

MS. SMITH: I think that's it. We'll be back in a few.

(Whereupon, the above-entitled matter went off the record at 1:20 p.m. and resumed at 2:03 p.m.)

MS. SMITH: All right, thank you, everyone. This is our next panel for the section 1201 rulemaking. This is Class 9 software programs, software preservation, our computer program software preservation, and I think again I see a lot of people who have participated in the past.

If you would like to speak to a question, tip your placard up and we'll call on you. Try to keep your remarks snappy because we have been having an issue of running a little bit longer.

It's helpful to try to foment discussion
that builds upon the written comments as opposed to reiterating them, and to the extent you can, you know, kind of engage with what each other are saying, I know it's a little bit difficult on this panel format, but we have found that to be the most useful.

So my name is Regan Smith. I'm Deputy General Counsel at the Copyright Office and I think we'll introduce ourselves on this side and then you can on that side, and then we'll just dive right in. Thank you.

MS. SALTMAN: Julie Saltman, Assistant General Counsel at the Copyright Office.

MR. AMER: Kevin Amer, Senior Counsel in the Office of Policy and International Affairs, Copyright Office.

MS. CHAUVET: Anna Chauvet, Assistant General Counsel at the Copyright Office.

MR. RILEY: John Riley, Attorney-Advisor, Copyright Office.

MR. CHENEY: Stacy Cheney, Senior Attorney-Advisor at NTIA, National Telecommunications and Information Administration.

MS. SMITH: Mr. Lowood, if you would
like to introduce yourself and any affiliation you may have?

MR. LOWOOD: My name is Henry Lowood. I'm the Curator for History of Science and Technology Collections and Film and Media Collections at Stanford University in California.

MR. FREEMAN: Jay Freeman, SaurikIT.

MS. MEYERSON: Jessica Meyerson, Educopia Institute and Software Preservation Network.

MX. ALBERT: Kendra Albert, I'm a Clinical Instructional Fellow at the Cyberlaw Clinic at Harvard and I'm here representing the Software Preservation Network.

MR. BAND: Jonathan Band for the Library Copyright Alliance.

MR. ZUCK: Jonathan Zuck with the Innovators Network Foundation, speaking on behalf of ACT The App Association.

MS. MOULDS: My name is Lyndsey Moulds and I am the Software Curator at Rhizome.

MR. WILLIAMS: Matt Williams, for Mitchell Silberberg & Knupp. I'm here for AAP, ESA, MPAA, and RIAA.
MR. MOHR: Chris Mohr, Software & Information Industry Association.

MR. TRONCOSO: Christian Troncoso with BSA, The Software Alliance.

MR. TAYLOR: David Taylor, Counsel to DVD CCA and AACS LA.

MS. SMITH: Okay.

MR. AMER: Good afternoon, again. So I think to start things off, we -- I'd like to ask the proponents in particular if you can provide some sort of high level overview of, you know, touching on the various types of circumvention and preservation activities you would like to engage in.

You've provided obviously a lot of examples in your papers, but I think it would be helpful for us just to get sort of a high level overview of some of the need for circumvention and the types of activities that you're prevented from doing as a result of access controls. Ms. Meyerson?

MS. MEYERSON: Yes, hi, so as representative of the Software Preservation Network, I can sort of provide a more general comment on scale.
So we have about 81 institutions represented within the Software Preservation Network. These are all libraries, archives, museums, or institutions of sort of -- that are focused on cultural heritage preservation.

And within that group that began back in 2016, there was a survey that we completed as part of a grant project which led to a forum on open call, and that resulted in a community road map and the sort of, like, legal barriers surrounding software preservation which is closely coupled -- preservation and access being closely coupled -- that all of those institutions agree that that's one of the leading barriers, that the technical barriers for doing some of this work are less of an issue, but this is still a major challenge that we all face in order to fulfill our professional mission of preservation and access to the cultural record.

MR. AMER: Thank you, and Mr. Lowood, I would just ask, so specifically as I understand it, you know, we're primarily talking about software that is no longer commercially available, correct, and if you could talk about sort of the types of
TPMs that are involved.

I understood from your papers that in many cases they involve hardware checks, you know, where something was on an obsolete format, but it might not be limited to that in all cases, so if you could elaborate?

MR. LOWOOD: Well, the two, I guess, main categories of work that we find are blocked by TPM are our efforts to migrate software from older media to more robust forms of media that we feel will work in a preservation environment.

That's one thing, and then of course another is research access to those disk images that we might create and that often require the researcher then to -- will then involve the researcher encountering some form of TPM when they try to access those disk images that we've saved.

Now, the kinds of things that we'll encounter in situations like that, the hardware blocks are one sort of thing. Copy protection mechanisms would be another.

There were also certain platforms like the omega that had specific mechanisms that could be used in different ways by software publishers
that would affect our ability then to remove data
from the data formats that we have in our collection.
Those are just a few examples of the kinds of things
that we encounter.

MR. AMER: Mx. Albert?

MX. ALBERT: Sure, so I think I just want
to expand upon what Mr. Lowood said and just note,
you know, I don't want to repeat our papers, but,
you know, we do lay out a number of specific
technological protection mechanisms, and one thing
that's become clear, you know, often when you're
preserving a collection of software, it doesn't get
sorted by TPM when it comes in.

Often, any or all of the different

technological protection mechanisms laid out in the
original papers can apply to specific forms of
software, so anything from product keys to, you
know, bad sector copy protection or other sort of,
like, physical ways of reading a disk, to hardware
checks, all of those are potential options for
different sort of software produced in different
periods.

MS. SMITH: So you think that we're in
agreement that if the format -- if the operating
system or the hardware is obsolete, that that itself is not a TPM? That's what the Office said in 2006, and I want to make sure that we sort of have a base layer of that not being in contention now.

MX. ALBERT: I'm sorry, I'm a little confused, which in 2006?

MS. SMITH: So in 2006, we said that formats that require obsolete operating systems or obsolete hardware as a condition of access, that exemption was not -- that part of that exemption in 2006 was not recommended because the Copyright Office concluded there were no access controls implicated, and therefore no exemption was needed, so it was, you know, go at it for preservation purposes, but there was no circumvention and so 1201 is not implicated.

MX. ALBERT: I wasn't aware. I don't know if you want to -- Mr. Band, I don't know if you want to chime in?

MS. SMITH: I guess -- actually, Ms. Moulds has been waiting for a while, so, but if you don't want to speak to that, that's okay, but -

MS. MOULDS: I didn't want to speak to that specific point that you just brought up, but
I did want to just introduce what Rhizome and what a lot of other cultural institutions and particularly museums struggle with at this point is that when we have digital art pieces or other interactive media that is given to us, you know, on indefinite loan or we have the full rights from an artist to display it, a lot of times we find that there is sort of obsolete support media that's needed, or there are software dependencies that are no longer commercially available, or that we have licenses to, but can no longer legally activate based on TPM, and so that's sort of the specific problem that we face as institutions who are working with digital artifacts is that even if we have the base software itself, we have these dependencies where we can't circumvent the DRM in order to support the software.

MS. SMITH: Right, Mr. Troncoso, do you want to answer that question? I think what Ms. Moulds, you listed three things, and the first one, I wasn't actually sure if a technological protection measure was implicated. I think that's part of what I'm trying to sort out in terms of what -- the ground we're trying to cover here in this potential
exemption.

MR. TRONCOSO: So I think that you've put your finger on something that I think I realized earlier today as I was looking back at the docket and the submissions so far.

I want to start out by saying that with software preservation networks, you know, narrowing of the class to works that are no longer commercially available, we're completely comfortable with the activity that they're seeking to engage in, and so I think from our perspective, I can't speak for the other witnesses, we would be comfortable with an exemption that covers that.

However, I do wonder whether what's at issue has more to do with obsolete TPMs than sort of how this has been framed so far, and that gets to your question about whether an outdated operating system itself can be -- is a TPM, but I think that's where I think the issue is.

What we -- I guess what I don't understand fully is why an exemption that allows for circumvention of obsolete TPMs on computer programs, whether that would get the proponents all the way to sort of what they need in order to cover
the activity that they're interested in doing.

MS. SMITH: This seems somewhat definitional of what is an obsolete TPM or what is a TPM that might itself be working. It's not like a broken dongle or something like that, but the format --

MR. TRONCOSO: Yeah, so the question is if they have a lawfully acquired copy of software, unless the TPM is no longer working, it's also a bit unclear to me what is preventing them -- prevents the preservation activity. I feel like I'm losing you on that.

MS. SMITH: Maybe you have that right.

MR. TRONCOSO: What's that?

MS. SMITH: Yeah, can you --

MR. TRONCOSO: So if they have a lawfully acquired copy of software and the TPM is functioning as usual, the only thing that could really be a hindrance to the preservation activity is I think if the operating system is outdated or if the sort of computer programs that they're seeking to access in a new sort of -- that they're porting over from either old media or if it was --

I guess I'm struggling to understand what exactly
the activity is that they need the specific exemption for.

MS. SMITH: Well, I think they've given some examples, right, where there's like a date and the date is in the past, and so it is hard to access something, or maybe the server check doesn't work anymore, so.

MR. TRONCOSO: Wouldn't that be an example then of an obsolete technological protection measure? It's no longer functioning as --

MS. SMITH: I don't know if a date-based TPM would be no longer functioning. It's just the problem is we're now in the future as it were, right?

MR. TRONCOSO: Okay.

MS. SMITH: I mean, I don't know.

MR. TRONCOSO: Again, like I said, all of the activity that they're seeking to engage in on works that are no longer -- computer programs that are no longer commercially available, we're pretty comfortable with it, and from my perspective, it's about just rightsizing the rules so that it's, you know, contained to that activity.

MR. AMER: So here's how I understood it
from your papers, and obviously you can - I'm probably wildly oversimplifying it, but I mean, as I understood it, you have cases where, you know, you have a program on a floppy disk for example.

You need to -- for preservation purposes, you need to migrate it over to a modern system, but in order to open the program, there might be a hardware check that requires the original floppy disk which you don't -- is not being used anymore because you've migrated it over, or is that -- or you might have a server check after, you know, in which the server authentication has been discontinued. Are there other kind of, you know, paradigm examples of the types of things you're trying to do?

MR. BAND: Well, I'm not a technologist, so I can't speak to paradigms, and hopefully other people here can, but I think one way to look at it is to some extent, you know, the software industry is a history of failures, right? You have so many companies that have been trying to do different things over the past 30 or 40 years.

Some of them are successful and they end up becoming members of BSA, but the vast majority
aren't, and they have -- and the number of companies, it's just a vast ocean of software with all kinds of technological protection measures.

Some of them may have been developed by that company for itself. Some of it might have been standard at the time, but are no longer available. Some of it might be something that is some kind of technological protection that is still available from someone, but again, not, but it's, you know, not available to the library that's trying to preserve it, and so that's why it's important to try to come up with an exemption that is as broad as possible to address all of these circumstances.

I certainly agree that simply by virtue of the fact that the operating system is obsolete and not commercially available, I mean, that by itself is not a TPM, but that's not what we're worried about. We're worried about sort of, you know, all of these myriad possibilities that people do encounter.

And, you know, again, you know, so much, there's so much software out there for companies that are long out of business, but have all kinds of important value, that it's, you know, that it's
important for people to be able to access and learn from, and sort of avoid, you know, reinventing the wheel over and over again, as well as all kinds of other works that are dependent on that, you know, whether it's, you know, architectural, you know, blueprints, or artistic works, or so forth.

And so, you know, we just need to make sure that that isn't getting lost, and, you know, the longer we wait, the more will get lost because more is getting created, and so again, the plea is to have the exemption as broad as possible, as user-friendly as possible because again, you know, the goal is to get to this, you know, the non-commercially available material in a way that, you know, certainly won't hurt any of the existing companies that are succeeding in the marketplace now.

MR. AMER: Thank you. So if you all could provide any additional detail about Mr. Troncoso's question and sort of the process and then I'm going to come back to the opponents to ask.

Because you, Mr. Troncoso, indicated that there is some, you know, there is some level of agreement here, I think, but I want to make sure
that there isn't - at least with respect to the
notion that we're not talking about currently
commercially available software, but I want to make
sure that we highlight any points of difference in
terms of how that's defined. I think Mr. Freeman
was next.

MR. FREEMAN: So I think there is some
subtlety involved with that question about
operating systems and outdated, and the computers
and operating systems.

So when a museum is trying to preserve
a work, it essentially is going to have to preserve
the entire apparatus of the work in a way. It's not
sufficient to just know that the information is
theoretically there. It has to be something that
you can see, you can execute.

I have a friend who does interactive
digital art who one of his pieces was recently
acquired by the San Francisco Museum of Modern Art,
and it's something that was designed to run on an
iPad.

And the scenario there is that if you
upgrade the software on that iPad to a newer version
of the operating system, it is going to break the
software that he gave to the San Francisco museum, and so part of the process is to disable the automatic update checks, and to try to figure out how they could essentially keep these older iPads running moving forward.

This is a TPM check that is not in my friend's software. These are checks that are in the software that is on the operating system software with the iPad. If any damage occurs to that iPad, they might be able to get a replacement iPad, but it will be running a new version of the operating system, and in order to install that old version, it requires circumventing that TPM.

MS. SMITH: Okay.

MR. FREEMAN: And so --

MS. SMITH: I think the question was whether there is a TPM at all, and in the case where there is no TPM, the operating itself would not constitute a TPM, so I think we're all on the same page about that.

MR. FREEMAN: Okay, in this case, there is no TPM in the - I just want to be clear. There is no TPM in the software that was arguably being preserved, but you have to preserve the iPad and
the operating systems that it is running on to get at the point that was brought up earlier by Mx. Albert about dependencies that you have to track.

    MS. SMITH: Right, so to preserve that though, you'd be circumventing a TPM on a computer program, right?

    MR. FREEMAN: I'm sorry, can you please repeat that?

    MS. SMITH: You would be circumventing a TPM on a computer program?

    MR. FREEMAN: On a computer program, but not on the -- yeah.

    MS. SMITH: It would cover within the scope of the exemption.

    MR. FREEMAN: Okay, great.

    MS. SMITH: Okay, Mx. Albert?

    MX. ALBERT: I just wanted to chime in to respond to your question about the 2006 exemption. So I think that the 2006 exemption it sounds like focused specifically on sort of like what wasn't meant -- it was never meant to be a TPM, but the software was meant to run on particular hardware.

    That was, you know, it sounded like they
were not granting was that, and I think we’re talking about, as Mr. Freeman said and as Mr. Lowood had said, something pretty different, and as Ms. Moulds said, something pretty different where we’re actually talking about literal TPMs that are intended to function as TPMs, but are now, you know, protecting, you know, protecting works that are no longer commercially available.

MS. SMITH: Okay, so that, so in 2006, there were three exemptions or three parts of it, two granted and then just one that we’re talking about which the Office concluded was unnecessary.

So it also would be helpful to understand what the difference, expansion, contraction, you know, things that were not -- different from the request now from 2003 or 2006. I don’t necessarily mean to put you on the spotlight to answer that, but if someone else wanted to, that would be appreciated.

MX. ALBERT: So, I mean, we would be happy to get back to you about that. I admit I have not, you know, memorized the 2006 exemptions -- which is perhaps my bad -- but I’m happy to sort of come up with a more conclusive answer about how
our exemption fits into that framework.

MS. SMITH: Maybe Mr. Williams might have memory or?

MR. WILLIAMS: Yes, I recall what you're referring to where an operating system by itself is the reason that someone can't get to the work, that that's not the fault of an access control.

There were a few other points I wanted to touch on based on what's been said and Mr. Amer's question about, you know, kind of how the various opponents are feeling about the narrowing that's been done.

We really appreciate that the proponents here actually did make some significant efforts to redesign the proposal, and to try to make it narrower and keep it a little bit closer to the statute and also what's been done in the past.

We still have a number of concerns with it, even despite those attempts to narrow it, but we do appreciate that they really did make some real effort to narrow it.

One of our primary concerns is that although they say that their intent is not to circumvent to access what they refer to as
"dependent materials," I don't think the drafting that they put in their reply comments achieves that, and I don't think that there's any reason to actually refer to dependent materials at all in any exemption if what you're trying to circumvent to gain access to is only a piece of software that then gives you lawful access to another type of work without circumvention of any additional TPM.

So that's one of our primary concerns, and then a piece of that which is very, very important is that we do not believe that video games should be treated as part of the same class as what's being proposed here.

We think that you should deal with those issues by considering the record that's being built on Class 8, and there's a number of reasons for that.

MS. SMITH: Can we just put a pin in the video games because I think we will get to that?

MR. WILLIAMS: Sure.

MS. SMITH: That's sort of moving onto the next topic, and I wonder if we can stick with the first point you raised --

MR. WILLIAMS: So -

MS. SMITH: -- now and get some
responses perhaps?

MR. AMER: Well, I would, so, and I'm going to talk about the program dependent materials issue. I think that's really important. First, I did want to ask your views about the narrowing with respect to the obsolescence, for lack of a better word --

MR. WILLIAMS: Yes.

MR. AMER: -- issue. So as you know, the original proposal was not limited to obsolete software. You raised objections. The proponents came back with a definition that defines - it doesn't use the word "obsolete," but it's limited to computer programs which are no longer reasonably available in the commercial marketplace.

So this is broader than 108(c) for example which is talking about formats that are no longer available. So I would be interested in your view as to whether this current proposal is acceptable to you?

MR. WILLIAMS: Sure, so you put it exactly right. It is different than what's in the statute. It is an improvement over what was in the initial request. I'm still not content with the
narrowing for a couple of reasons.

One is we generally think that at a very high level, there's a number of ongoing processes related to defining what is lawful preservation, including section 108 reform.

We think this is a premature proposal, and trying to change what's in section 108 now in an exemption kind of jumps the gun and could have a strange impact on that process in a way that I don't think would be helpful, so we do think sticking to what's in 108 is -- makes a lot more sense.

The other issue is this question of what's commercially available, and I think they define it to mean that the publisher has to be actively marketing new copies in the marketplace, whereas the statute refers to if you can get new copies secondhand, that that should be sufficient.

MS. SMITH: Are you looking at 108 for that?

MR. WILLIAMS: Excuse me?

MS. SMITH: You were pointing to 108?

MR. WILLIAMS: Yes, 108 and the Office's prior decisions.

MR. AMER: Thank you. Mr. Zuck, can I
go to you because I believe your organization was initially -- was opposed to the initial proposal, but now you are -- am I correct about that, but now you're supporting the current language?

MR. ZUCK: Yeah, we are -- I think we still find the language of obsolescence appealing in some respects, and the reason is that in the software industry, TPMs are only going to be used by multiple software packages, and so unfortunately this is about the creation of tools for circumvention.

And so if a particular piece of software is taken off the market and that's used, you know, and it's one of 20 applications that are produced by a particular vendor, and that tool is then used for circumvention of the other 19 pieces of software, it seems like there's a substantial method for infringing use of the tool that gets created for circumvention just because one piece of software is no longer available on the market.

So, I mean, I think the language of obsolescence is something that we still find more appealing than just no longer sold.

MS. SMITH: I think the obsolescence is
tied to no longer commercially available or no
longer manufactured. Is that what you're picking
up on from 108?

MR. ZUCK: That's right, but I guess
it's things like the floppy disk example more so
than simply that I'm no longer commercially able
to buy new copies of a particular piece of software
simply because TPMs are used across multiple
programs, multiple pieces of software.

MR. AMER: So --

MR. ZUCK: I mean, we generally support
it. I want to be supportive of the intention here,
right, but I guess creating tools for circumvention
based on the obsolescence of a particular piece of
software could still be the creation of tools for
infringing activities on the remaining software
that comes from the same vendor or uses the same
commercially available TPM.

MS. SMITH: How is that necessarily
different from any other regulatory exemption,
where you might be able to circumvent software for
a particular purpose such as cell phone unlocking
or jailbreaking, and as long as it's for that
purpose, you can do it and you can use your tool
for that, and otherwise you cannot?

MR. ZUCK: I'm not a lawyer, so I may misstep here, but I guess it has to do with the substantial use, right? In other words, if it's the principal use for that tool is for a non-infringing purpose, it's different than if I use the hook of a particular software package going off the market to create a tool that then becomes available for people to use to unlock multiple other packages. It then becomes not -- the substantial use of that tool becomes infringing rather than non-infringing.

MR. AMER: So just to sort of drill down on this, so, I mean, the difference as I understand between your current proposal and 108(c) is that, so for example, if you have something on a CD which is not an obsolete format, CD-ROM or a DVD, but it's no longer produced anymore, it's not commercially available, you wouldn't be able to copy it under 108(c) for purposes of replacement, but under your proposal, you would.

So I guess the question is, you know, what is the need for that sort of expansion, and I think related to that, you know, would we be sort
of breaking new legal ground by sort of ruling that that type of activity is going to be categorically fair use?

MR. BAND: Well, let me -- I'm sure Mr. Lo will be able to go into some of the more technical details about what it is that, you know, a library is going to be specifically be needing to do, but let me just respond to that and also to Mr. Zuck.

I mean, certainly with respect to the tools, I completely agree with Ms. Smith. I mean, you know, that in theory is a problem with almost any exemption that, you know, the person creates the tool for purpose A and conceivably could use it for purpose B, but if they were to do that, then they would be violating the anti-trafficking provision and they would -- if they were engaging in infringing activity, they would engage in infringement.

And so, you know, and again, we're given that this is an exemption that's aimed at sort of these cultural heritage institutions, I mean, the likelihood of -- yes, there's always a possibility of someone misusing the tool, but I think the likelihood is very small.
And then going to the issue of, the specific issue that Mr. Amer is asking about, the software deteriorates, and so even if the format, it's not an obsolete format, it's still -- the problem is that the, you know, the software is deteriorating, and software deteriorates, it turns out, far more quickly than we thought it was.

I mean, these digital materials, you know, you sort of have this image that somehow it's preserved forever, but that's not how it works, and so that's why even if it's on a CD or if it's on some other medium, the medium might not be obsolete, but you still need to engage in the preservation activity.

MR. AMER: But, yeah, and so -- but it's not deteriorating for purposes of 108(c) necessarily, is it? I mean, because then you'd have to kind of say, "Well, everything deteriorates."

MR. BAND: Well, right, no, but that -- and that to some extent is the problem with 108(c), that it is too narrow, but I think, you know --

MS. SMITH: I think he's looking for you to articulate the non-infringing basis then otherwise.
MR. BAND: Well, then if it's not within 108(c), it would have to be fair use.

MR. AMER: So is there any -- so that's the question. So can you kind of help us in terms of, you know, do you have a best case for kind of why this would be fair use?

MR. BAND: Well, I would suggest that certainly, you know, looking at the HathiTrust case and the Authors Guild v. Google case, that sort of the notion of creating, you know, this digital, a database that you, that no one sees the contents of, but then the act of sort of preserving it for other purposes is viewed as a fair use in those cases, and so much so that even like in the TVEyes case, Fox didn't even challenge the District Court's holding that the creation of the database was non-infringing.

I mean, they brought their challenge to the Second Circuit, and the reversal at the Second Circuit was all about the fact that, you know, you could access 10 minutes of it in a commercial context.

And so it seems that if you look at that body of case law and sort of what's going on, you
know, happening in the field and so forth is that the basic notion of making the preservation copy is fair use.

The real question or the problem is: what kind of access do you have after the fact, but the sort of like behind the scenes copying and whether it's, you know, Sega v. Accolade or Kelly v. -- all of these cases, the basic notion is like the act of the copying or the doing -- the preserving, that's fair use, and then where the rubber meets the road from a fair use perspective is what kind of access is provided to that content.

MS. SMITH: And is that what you're seeking in this exemption which is almost like, to me, it sounds like 108(b), except it doesn't need to be unpublished? You can get access to make a preservation copy regardless of publication as what you said for HathiTrust. No one sees it behind, but not necessarily to go further and use it as the replacement copy concept in 108(c).

MR. BAND: I would certainly envision it that way. I mean, and then to the extent that then what's being done with it after the fact once it's preserved, I mean, then that becomes, you know, if
what's being done is beyond the scope of what would be fair use, then that's an infringement, but the basic notion of the preservation should be permissible.

MR. AMER: Thank you. Mx. Albert?

MX. ALBERT: Yeah, so I think I might, like, disagree a little bit with my colleague, Mr. Band, or just, like, have a different take on it which is to say that I think that, you know, it's important not to just think of it as, like, oh, we're making a copy to replace the one that, you know, might someday no longer be readable on a floppy disk, but also that the way software is preserved is by making it runnable for people who need to access it for scholarly use and for, you know, other purposes, and I think that's a core part of what SPN does and what's important to the Stanford Library. So I apologize to Mr. Lowood for jumping on the point he was about to make.

I'll also say with regards to specifically the fair use question, I think, you know, in Authors Guild v. Google, they suggested that making copies of out of print books to save them is of significant public benefit, and I think,
like, in that, you know, especially if we consider the factor four of the effect on the market, one of the reasons we believe that once the software is no longer commercially available, it's fair use, is because once the software is no longer being marketed, making it available, a copy, preserving a copy and potentially making it available for library use, like, is no longer affecting the market for that software.

MS. SMITH: But I do think you might be obscuring the difference between -- under -- you have the right as a copyright owner to pull something out of market, sit on it, and then maybe reintroduce it, right?

So a preservation copy might be one piece, which we're happy to discuss too, but to go to the next step and say just because it's not commercially available, where do you impose the limits, as Mr. Band said, where the rubber meets the road?

MX. ALBERT: So I'll also let Mr. Lowood address this a little bit, but I think one important part that I've seen in SPN's work and additionally in the work of other preservationists is that even
if a work is, a software work is later reissued or, like, another copy goes on the market, that preserving and allowing access to the original copy actually provides really significant cultural benefits because that's how we study software is by looking at multiple copies, right?

So just because Word, you know, 2016 is still on the market, you know, the availability of accessing Word 2003 is incredibly important to cultural work, but I feel like I'm stepping on Mr. Lowood's potential options.

MR. AMER: Mr. Lowood?

MR. LOWOOD: Okay, just a few just practical points, not legal points, first, just very quickly, the idea about the tools being used for one title and then being possibly applied to other titles where it might be infringing, we manage intellectual property issues for all kinds of materials.

We would not use a tool in that way ever. We would consider if a use of a tool would be infringing, we wouldn't, we just wouldn't do it, at least a library, I think most libraries would operate in that fashion.
Secondly, about access and preservation, it doesn't really work to consider preservation in isolation. Preservation is part of a whole work flow beginning with the decision to acquire, you know, describe what's there, process what's there, develop the technology and the infrastructure for the long-term storage of the data, and then of course the thing that drives all of this, the mission of an institution like a library or museum is to provide research access at the end of that.

So as I mentioned earlier, in some cases, that research access will itself involve some sort of circumvention of a technological prevention measure because our disk image has not changed the presence of that in the software, so that's one thing we have to consider.

But another thing just to keep in mind is that all of the resources that have to be expended to do those other activities that I described are depending on a result that is we will be able to provide research access to those materials.

And so we just won't make the investment in doing all of those other things if the research
access is not going to be part of what we can assure at the end of this.

The last thing I'll mention is about the original version versus, you know, subsequent versions that might be reworked for sale and so on.

For research use, the original version is just a different thing from a subsequent version that might be upgraded in various ways as is typically done, you know, high-definition graphics and things like that that are changes to the original in many ways.

So I think we shouldn't really think of it as something like a reprint of a book or something that is an exact, perhaps an exact replica of the words that were in that book. It's actually a rather different thing from a historical perspective.

There's less - no researcher would consider the current version of some game, or piece of software, or whatever it is to be the equivalent of a historical version of that software.

They're just completely different things, so there isn't really any confusion between those two versions that would be caused by
preserving the original.

MR. AMER: Thank you. So I'd like to go to Ms. Moulds and then just in the interest of time, I'd like to go to the opponents to get their view on the first, on the fair use question.

MS. MOULDS: Okay, yeah, I'm sort of working backwards, so apologies for skipping around a little bit.

Just to speak to what Mr. Lowood said also regarding the sort of old and updated versions, in the case of Rhizome and many other, like, cultural heritage institutions that work specifically with digital files and their dependencies, it's not just sort of like different from a research perspective. It's very different functionally.

So it may be that an artist comes to us with something that's a Flash piece, something that ends in a .flv file extension, and Adobe currently owns the rights to Flash software, but it sort of used to be Macromedia and there were sort of three different versions of this sort of director authoring programs that were made.

So even though they subsequently released these different versions, it may be that
this modern file we have, even though the rights have been transferred many times and there still may be a functional equivalent of this that's legally, like, and commercially available is not going to be equivalent to what we actually need to open the file because of backwards compatibility reasons.

So there are ways in which it's difficult to even see it as anything equivalent for functional reasons too because it simply wouldn't even open these dependent files.

And then the other thing I wanted to bring up was the idea of introducing sort of something that would limit it to - or sort of saying, "Okay, well, you could go online and buy a new copy from, you know, secondhand, as long as it's a new copy if that's available, even if it's not commercially available from the original vendor," and I think that would also be really tricky for us because that also brings into question difficulties specifically because of TPM.

So definitely there is a question of if you're buying something not from the original vendor, even if it's commercially available,
there's a possibility that if you were to, say, go on eBay and buy something that is supposedly new software, that the CD key that comes with it or something like that might not actually function, and therefore for preservation purposes, it wouldn't be an appropriate copy for you.

So it seems to really matter that it's available from the original vendor in this case because secondhand copies might be inaccessible because of TPM.

Oh, and the other thing was that we were discussing the 108(c) exemption which museums are not currently covered under at all. So working at Rhizome, even if we were considered an extension of the New Museum legally such that I could say, "Okay, we're operating as a museum entity," that wouldn't actually cover us for a lot of this.

MR. AMER: Thank you. Mr. Williams, so, you know, what about the fair use argument and particularly, you know, the fourth factor? You know, is there really a substantial harm to the marketplace if, you know, we can agree that the software is no longer being made commercially available?
MR. WILLIAMS: Sure, thanks. So your question was would you be breaking new ground on fair use to grant what's being requested and I think the answer is yes.

The previous recommendations have said that there is no legal basis to assert that systematic archival activity of libraries and archives that is outside the scope of section 108 would necessarily be covered by the fair use doctrine.

And they've also emphasized that fair use involves a case by case analysis that requires the application of the four mandatory factors to the particular facts of each particular use.

MR. AMER: I mean, do you think the - sorry to interrupt. I mean, do you think, you know, is there an argument that the ground has sort of shifted since 2003, 2006 in light of Google Books, HathiTrust?

MR. WILLIAMS: I mean, clearly those cases didn't exist at that time. However, if you were to read them as broadly as Mr. Band reads them, then the entire section 108 reform process to create expansions to section 108 would be completely
pointless.

I don't think those cases go as far as they're reading them, and I think that until section 108 reform is resolved, we shouldn't be assuming that all of this other activity, which is largely undefined what preservation means in the record, that it's all fair use.

And you asked a specific question about market harm, and I think the point — and I know you don't want me to talk about video games specifically yet, but the point that was raised previously about the copyright owners' right to withdraw from the market is important because with video games especially, there's an incentive to preserve them because they are often rereleased, and so there can be market harm as is discussed in the Class 8 filings.

MS. SMITH: What do you think about the phrase Mr. Lowood was using with research access?

MR. WILLIAMS: Right, so that was another point I wanted to raise is that one thing that Jonathan said about the Google case is, well, the piece of it where it's preserved or copied, but no one sees it, that, under those cases, is lawful
in his read of them, but that's not, as I understand it, what's being proposed. There is going to be access provided, and so it's not that no one sees it.

In the TVEyes's case, the fact that Fox didn't want to have to argue two separate issues when there was one clearly in its favor in terms of providing access that was determined not to be fair use, the fact that they didn't argue the initial copying issue doesn't mean that they conceded that it's fair use or that it is a fair use. It's just there was an easier way to win the case.

And so the research access, I would need to see, I guess, in order to weigh in on it, very specific language that defined exactly how stuff was going to be used after all of the copying is done.

MS. SMITH: Okay, but it's conceivable research access is different from now I'm going to resell something on Amazon, that maybe, you know, research access could be smaller than widespread access?

MR. WILLIAMS: I would stipulate that research access is a narrower subset of activities
than certainly redistributing things on Amazon, which should not be anything considered here at all.

What research access means, can the thing be copied and circulated around to other places? Is coming into a place and just playing video games all day research access? All of those are questions that are unanswered in the current record, and so I'm hesitant to endorse that concept.

MS. SMITH: What if access were limited to, like, on premises, which I think is the existing video game preservation exemption?

MR. WILLIAMS: Well, I think that they have said that they would limit it to on premises access in the reply comments. I did have a question about whether that meant that still additional copies could be made and provided to other libraries that would also provide on premises access.

Also, if you look at the record in Class 8, there is some real concerns about on premises access still basically meaning that people can show up and play games all day, and that, to us, is an unauthorized public performance of the game and, you know, sometimes money is even changing hands, and so there are real market concerns and concerns
about whether that would be lawful.

MR. AMER: Thank you. Mr. Mohr?

MR. MOHR: Just to, I guess, echo a couple of those points, so I think I'm going to be fairly brief. First of all, to the extent you're looking for a consensus, I think I share the views of many of my colleagues over here, in that, one, the concept of obsolescence is okay. We don't have a problem with that. I think what we're fighting about is the definition and as it's applied to access controls.

Two, I think, in terms of the fair use argument, I think there may be -- I would certainly look at the cases differently, the kind at Google Books, differently and analyze it differently if it was making a whole slew of digital preservation copies, without the added functionality and benefits versus what actually happened in that case.

I think if you had just a large scale digital copying and no new so-called transformative functionality you might get a different analysis. That would be new law, one way or the other.

And the final thing I kind of wanted to get to is just -- and this echoes what -- I'm sure you've had this discussion in many other panels, including during the security discussion.
But, you know, there's a causation requirement here in terms of that the prohibition has to be the cause of the issues, right?

And so, I mean, I am sympathetic to the things that -- some of the specific examples that were mentioned. So for example, if there's a server jack in a specific access control and the server's not -- that's an access control and the server's no longer there and the software's been acquired and it's subject to reasonable restrictions that -- that's not the sort of thing we have a problem with.

MR. AMER: So then would you -- I mean, would you limit the class of eligible works to works that were originally -- I mean, would you limit it to something similar to 108(c), which is, you know, works that were originally distributed on physical media? And if so, you know, the other side has the argument, well, you know, what if we have something on a CD which is not obsolete anymore, or we have something that was originally downloaded, but there's not server support anymore and so we can't access the program? You know, where do you come down on that?

MR. MOHR: Well, if they already -- so this is about preservation, if it's something you
already have a copy of you can copy indefinitely, whatever that problem is, that's not -- I don't know that that's necessarily a preservation problem.

All right, so let's take those examples one at a time, I guess, is the easiest way, right? So in the front, let's start with the download example, because with my short-term memory, the way it is that's the easiest one to start with.

In that case, you don't really have a preservation problem because you can continue to use -- you can continue to back up a downloaded work folder, almost, you know, for quite some time, right? But you do have an obsolescence problem because the means of the way you get into the program, again, in that context it's obsolete. That's how I look at it.

In a context of a CD, I mean, you potentially have two kinds of problems. One is, all right, the media is deteriorating, can you make a preservation copy? I know that, most licenses for those media -- a lot of licenses for that kind of media will permit you to do that, so that's not a bar.

So the next question is, all right, in terms of can you then get access to what's on there, if you image it, et cetera -- and again, I think,
the question comes back to obsolescence and not so much the question of preserving it. Does that make sense?

MR. AMER: Thank you. Let's go to Mx. Albert.

MX. ALBERT: Yeah, so I just think that -- I want to echo what Mr. Lowood said earlier that it doesn't make -- I think the distinction that the opponents are drawing between, like, preservation and, like, access is not one that we actually see from practitioners in the field.

The ensuring access to works is the purpose of preservation; keeping a copy that no one can access and indefinitely, you know, transferring it across formats is not consistent with the best practices in this field, at all.

So I think that, you know, the problems that we suggested, the problems with section 108's obsolescence requirements are the problems that keep software from being preserved and keeps software from being accessible, even in cases where folks own a copy.

And I want to sort of, you know, just note that I think lots of -- especially in the context of this proceeding -- lots of folks have recognized that there are lots of difficulties with
section 108.

And I worry that we're going to -- I would strongly encourage the Office to sort of cast the -- allow all non-infringing use under the exemption and not just limited to sort of the uses conceptualized under 108. Because, as we saw, in the cases we've already cited that have happened since 2006, there's a wide variety of uses that are considered non-infringing that hadn't been conceptualized when these exemptions were previously considered.

And that, you know, I think as we talk about in our reply, the leeway that, you know, fair use allows for copies that might be made slightly outside of, you know, the very narrow constraints of things like 108(c) is incredibly important to the sort of actual practices of preservation. And I think that that's a key part of, you know, what's important to us and what's important to sort of preservationists more generally.

MR. AMER: Thank you. So I'm going to go to Mr. Band and then Ms. Moulds. And then we're going to move to the question of program-dependent materials. So this will be the last two comments on this topic, unless my colleagues have questions.

MR. BAND: So, first, to some extent in
response to Mr. Williams' suggestion that we wait until the 108 process is done: well, we might be waiting 20 or 30 years. And, in which case, you know, another generations of software and software-dependent material will not get preserved properly. So, waiting for 108 is, I don't think, the best approach.

MS. SMITH: I think at the Copyright Office we are eager to continue discussing documents, so.

(Laughter.)

MR. BAND: So, that's number one. Number two, just to make clear my point with respect to, you know, preservation versus access: obviously, the goal is access, but there are different kinds of access. And so, you know, certainly, your suggestion of research access seems to me to be highly likely to be comfortably within the zone of fair use.

Other kinds of access, maybe not. Such as, you know, just putting it out on the open internet for anyone to access. I mean, maybe under certain circumstances that could be fair use, but, you know, that's less likely to be -- but it also depends on what the software is.

Restricting it to on the premises, as
in 108, I think is, perhaps, too limiting. And, you know, maybe that was -- it was certainly beyond the scope, I think, of what a court now would consider to be fair use. I would certainly think that, in the case of Stanford, you would want it not just at the university, at the library, but, you know, probably for authorized users on campus, and conceivably authorized users off-campus.

MR. AMER: But that's not what you're asking. Sorry to interrupt. You're not asking for that here, right? I mean, I thought your proposal's limited to, provided that the computer program is not distributed or made available to the public outside of the premises of the eligible institution.

MR. BAND: Well, and in that point, it could be that the libraries disagree with the Software Preservation Network on that specific point. I mean, that we think that it should be that conceivably off-premises in appropriate circumstances would be appropriate. And that's why, again, you know, we would think something that doesn't have the on-the-premises limitation is reasonable.

But I think the basic point is that it should be simple, flexible, and, you know, again, especially if it's limited to research uses, then,
you know, I don't think that you need to necessarily limit it to on the premises.

    MR. AMER: Ms. Moulds.

    MS. MOULDS: Yeah, I just wanted to speak quickly to the first example of sort of downloaded software not necessarily having a preservation problem.

    I would argue that sort of somewhere in between what Mr. Lowood says about that and sort of my stance on it, like -- I don't know, it's a little bit difficult to articulate. But there are cases where I want to know that the software that I have downloaded is intact. And one of the places where that sort of falls apart is proprietary compression software.

    So like the ZIP format, which, thankfully, right now, there are lots of functional options for opening ZIP-formatted software, if you've compressed something into a ZIP.

    But when you run into older stuff, like the stuff, that Expander kind of file compression and these sort of obsolete file compression algorithms that you may need a proprietary piece of software to open, but maybe these proprietary pieces of software to ZIP and unZIP this software have fallen out of commercial usage.
That's a case where, if I have something that's in that format, that's been compressed in that format, and I look at that in that browser download, I don't really know whether the file that's inside that compressed format is intact. And so it's difficult for me to say, as a preservationist, yes, I definitely have a preserved copy of this file, when I can't even open it in terms of being able to uncompress it.

MR. AMER: Thank you. So, I'd like to turn now, just in the interest of time, to the issue that was raised about program-dependent materials. So, the proposal would allow circumvention for the purpose of preserving a computer program and/or a computer program-dependent material. And that is defined as -- computer program-dependent material refers to a digital file where accessibility requires a computer program.

So I think the first question that I think was raised by Mr. Williams is, you know, why do we need to include that in this definition? I mean, as I understand it, you're not talking about circumventing TPMs on computer program-dependent materials. This is a situation, where, you know, if you have an old word processing
program you're also interested in preserving digital files, literary works, other types of works that were written on that format.

But why do we need to include that? I mean, that can either be infringing or not. Why do we need to go that far in this exemption, Mx. Albert?

MX. ALBERT: Sure. So, the reason we included that is to make sure that this exemption covers use cases involving, like, program-dependent materials, which is actually a significant percentage of the use cases that are important to software preservationists, right?

You know, there may be situations in which preserving the software is sort of, like, the activity that one is engaged in. But, as we talked about, I think, in the reply brief with those sort of examples regarding AutoCAD, right, often there are actual software, you know, files that require a particular version of software.

And so the reason it's in here is to make clear to folks who might use the exemption that this exemption covers that activity. You know, as we have talked about, there is significant, really significant chilling effects from 1201, but also sort of a conservative bent to many practitioners of software preservation, especially in large
institutions.

And our goal here was to make very clear that if you are circumventing the TPM for the purposes of preserving the computer-dependent material, not just the computer program, that's still a thing covered by the exemption.

MR. AMER: Thank you. But, so, as it's currently defined, it's pretty broad. I mean, and the computer program-dependent material is not limited to, you know, obsolete formats or program-dependent materials that are no longer commercially-available.

It sounds like that's kind of the thrust of what you're trying to preserve. I mean, would it be acceptable to you to have a limitation where, you know, if we were to include program-dependent materials, that we had language to the effect of, you know, where those materials are accessible only by inter-operating with the program that you've gotten access to as a result of the exemption.

MX. ALBERT: So, just regarding narrowing that, I appreciate that there's some circularity, also, to the definition. You know, we actually thought about that particular issue of whether we thought narrowing it was possible.

And I think one of the reasons we leaned
against, sort of, requiring, like, oh, you can only circumvent a TPM on software in order to access that computer-dependent material if it requires that particular piece of software is because often the actual process of determining that would be incredibly difficult, right, to determine whether there were alternative pieces of software that might access those kinds of files.

And because the reality of software preservation is nobody circumvents things they don't have to, that, like, the process of circumvention, even under the exemption, is sufficiently complicated and, to put it mildly, not fun.

So that, you know, the reality is that if there's a commercially-available alternative piece of software that reads those files in the way they were originally intended to be read that's going to be the alternative that the library archive, the cultural heritage institution would pick.

MR. CHENEY: Would that also be if the newer versions of that software were backward-compatible or they could read some of that? And where do you run into problems with that?

For example, with AutoCAD, you have many
versions that have come out. You may have made a design in AutoCAD in '95 or whatever, and then the 2004 version only reads parts of it, so you have to go back until you find a version that would read. Does that make sense? And is that something that you do as part of that analysis to figure out which one will open it?

MX. ALBERT: Yes, exactly. Part of the reason we wrote that in is because of exactly that problem, which is that even software that is theoretically backwards-compatible doesn't necessarily produce all of the same information as software that -- as the original version of the software that the file was written in.

And so the goal is that, if you wanted to access that AutoCAD '95 file, you know, you may, in order to view the file in the way that it was originally intended to be viewed, need to access it in AutoCAD '95. And I see that Ms. Moulds has her placard up, so she can probably tell you more about it than I can.

MR. AMER: Please.

MS. MOULDS: One example, I can give of this is the GIF standard, like the animated GIF. That is one thing where you can have a GIF that was made in 1999 and a modern browser will still open
that GIF, but the way that browsers interpret those
GIFs is completely different from browser to
browser.

And especially around 1999 or 2000,
there was a lot of sort of variation in the way that
that format was interpreted, because the sort of
World Wide Web Consortium standards weren't
completely solidified around the file format.

So we have cases where we have artists
who bring us works that have GIFs in them, and we
really end up needing to display them in, you know,
some particular browser, because otherwise it'll
be like cycling through something super-fast, or
it will be way slower than it was intended because
they had made it for this particular browser and
made it to appear in a particular browser in certain
way.

So, even though, if you, you know, were
to go to something like the PRONOM file type
database, it would tell you, yes, absolutely, you
can open a GIF in Chrome 60, your current version
of Chrome on your computer.

Yes, that's true, but it might not
interpret it in the way that the artist intended.
And to us, as a cultural heritage institution,
that's really important.
MR. AMER: Thank you. Mr. Williams.

MR. WILLIAMS: Thank you. Yes. We were very relieved to see in the reply that the end goal is, apparently, not to circumvent any access control on what's being referred to as dependent materials.

We don't support the adoption of the class of works, but that was clearly a significant improvement. But, as you were saying, and I was saying earlier, I do think that essentially means that, if you were inclined to do anything in this area, there's no reason to reference the dependent materials in accessing them.

If you were able to define a category of activities that could be described as preservation that you were confident were all non-infringing, and if you were to say that circumventing an access control for the purpose of gaining access solely to a piece of software for the purpose of preservation, those defined activities, there's no reason to reference the dependent materials if there's no circumvention required to get at those materials.

So that would be, I think, our position on that.

If I could just respond quickly to one
thing that was said about 108 reform, if you'll indulge me.

You know, Jonathan said, well, if you're going to wait for that to get completed, it could be 20 or 30 years. Well, part of the reason for that might be that Jonathan's clients are expressing opposition to it passing.

So, to me, it would be a little perverse to say you should give us an exemption because we're holding up the very process that might get us some relief that is balanced in a way that government can get onboard with.

I can't speak on behalf of each of my separate association clients as to their individual positions on every aspect of what's in the discussion document, but they do publically support preservation efforts of a legitimate nature. And I think, for them, it's more about defining what those things are. So I just found that to be a little bit of a misleading argument.

MR. AMER: Some cards were up but they've gone down. Let's go to Ms. Meyerson.

MS. MEYERSON: I just wanted to follow up with Mx. Albert's comment earlier about the need to clarify for cultural heritage practitioners that this is, if it were granted, an exemption that they
could use to preserve software-dependent works. I think this is crucial in representing the organizations that we do.

I just want to point to a Mellon-funded report that was written in 2015 by David Rosenthal, who's no longer at Stanford University, but worked for LOCKSS, which is a distributed digital preservation dark archive network, a consortial entity, that it's clear that institutions will not build collections of preserved system images and software at the scale needed to preserve cultural heritage unless the legal basis for doing so is clarified.

MR. AMER: Thank you. I wanted to follow up, and, Mr. Band, you can maybe incorporate this into your answer. I mean, I guess one concern is, if we don't limit the program-dependent materials to commercially-unavailable works, you know, would that sort of, you know, suggest that the Copyright Office is kind of making a determination about whether, you know, preserving, copying for preservation purposes, works that are still commercially available in some cases, would be a fair use.

I mean, that certainly is far beyond 108, you know, so I think that would be a concern for
us, to the extent that it is necessary to address program-dependent materials.

    MR. BAND: Well, let me first address the necessity to address the program-dependent materials, and then I'll get to your specific question.

    So it seems that you need to include program-dependent materials, because the reason you're circumventing is not to get access to the software. And so, in every other case, or in every exemption, you're saying you're allowed to -- you have to define a class of works for which you're allowed to circumvent. And if the class of works, you know, were circumventing the production on software, but not for the purpose of getting to that software.

    So I think it would need to be clarified. And, otherwise, people -- unless it's clear that, you know, it's worded in such a way to make it clear that it's not restricted to just -- you're not trying to just preserve the software -- you're able to get to the Adobe file itself, but then, you know, there will be confusion.

    So maybe there is some way to draft it. And maybe this is really a drafting issue, but the key is to make sure that -- and whatever you do,
that it is unambiguous that, you know, it's the Adobe file, you know, if you're trying to preserve the Adobe file, that you should have a way of doing that even though, you know, you're not interested in preserving the Acrobat, you know, the --

MS. SMITH: So are you agreeing with Mr. Amer that there needs to be a reason to preserve the Adobe file?

MR. BAND: So, well, first of all, I mean, I think you need to -- it needs to be clear that there's a -- that the software-dependent material, you know, that it's not limited to preserving software, but as well as the stuff that runs on that software, the files that are dependent on that software. And, again, maybe, it's a drafting issue, but --

MS. SMITH: Get all files that run on the software? Or files that are no longer commercially/reasonably available or in need of preservation?

MR. BAND: Well, I guess, part of the problem is like you don't -- I mean, there's -- I would think that -- then there's so many different kinds of files. So, and it would seem -- I think it would -- you would want to be able to, at least for preservation purposes, you know, do sort of like
any preservation that would likely to be a fair use.

And so it could very well be that, if it's -- you -- it would -- you would be making a determination of fair use, maybe broader than you want, if you start saying, okay, well, we can do it for this and not for that, and just say, okay, you're able to -- you're -- all we're saying is you're able to do the circumvention and then what you do with that circumvention, if you cross the line and do-- or, again, you know, it -- I imagine no one's going to sue you if -- with the preservation, but if you somehow preserve and then provide access to some file that is somehow, somewhere on the market and in a way that that person feels is not, you know, goes beyond fair use, you know, that the institution will get sued and it'll be litigated -- there'll be -- but you -- but that goes beyond what you need to define here.

Here, you just need to say, you can engage in the circumvention, and then it's up to, you know, caveat emptor, or whatever the Latin equivalent would be. I mean, you know, if the institution goes beyond what's prudent, then, you know, it's up -- you know, they get sued.

MR. AMER: So, you're saying, you know, you need clarity -- you need to include
program-dependent materials because you need clarity where your ultimate goal is to preserve, you know, those dependent materials that need the underlying program in order to run.

So if we were to do that, you know, we're sort of -- in order to do that, I think we need to sort of, I think, make a determination that, well, that activity itself, that preservation of the dependent materials is going to be non-infringing.

I mean, we can't, you know, sort of -- I don't think there's any way for us to say, well, you can do it for purposes of preserving, you know, program-dependent materials if we're not fairly confident that that activity is going to be non-infringing.

But how can we have that confidence if the class of those materials includes things that are still commercially-available, in some cases? Or that don't require, maybe, the old, you know, Commodore 64 software to run. Maybe you can run -- I mean, I don't know how far-fetched that example is, but, I mean, if the need is based on the idea that you have to run this underlying operating system in order to run the files, then why can't the class of dependent materials be limited to those kinds of files?
MR. BAND: I guess the short answer is I don't know enough about the technology to say, you know, whether it's possible that those files could only run on that format, and whether by wording it that way you could cause some unintended consequences and unreasonably limit the access that you might otherwise have.

I mean, part of it is, it could be that this is -- I mean, this is the file that's in your possession, right? I mean, you know, someone donates some files to the museum, that's what they have, they don't have something else.

I mean, so -- and that's -- I mean, so, they have to work with what they have. The fact that someone else somewhere might have some other file, or that file in another format, doesn't really help them.

But I guess -- and then I'll yield the floor to Mx. Albert. You know, the other point is, again, the framework of the exemption says that, you know, all of these -- you can only make any of these uses to the extent that they're not -- that the ultimate use is non-infringing, right?

That's always there. And so to the extent that what you're doing, ultimately, is not -- if it's infringing, then you're infringing.
And so you don't -- you are not making a determination by virtue of giving an exemption that allows steps one -- you're not deciding, you know, that step three is necessarily infringing or non-infringing.

I mean, it could be what someone ultimately does with it could be infringing, or it could be non-infringing, and if it's infringing then they get sued.

MR. AMER: Thank you. Mx. Albert.

MX. ALBERT: Yeah, so I want to push back pretty strongly on the idea of focusing on commercial availability for these files. Because I think that maybe it stems from sort of a -- you know, I do think the category is broad, but the ways in which this kind of things usually comes up is these files, the kinds of files we're talking about, are already present in library collections.

This is, like, you know, the things like we mentioned in our reply have to do with, like, AutoCAD files that are being used to, like, access historical information about architecture, or, like, data sets that researchers need to replicate.

Like, this is not the sort of thing where commercial -- like, I don't -- you know, if we think that we have problems determining commercial
availability for the software, that's an entirely separate -- like, I can't imagine even how we would think about it from the program-dependent materials.

And in terms of the sort of fair use analysis, I think what I would say is that, you know, my understanding is that, you know, that has to do with the work that the TPM is on. And that, you know, you're looking at that as determining whether the circumvention is appropriate, I think that, you know, like, the ultimate potential purposes that, you know, it might be used for down the line, I don't think that, necessarily, requires the Copyright Office to make a determination about the use of those works.

MR. AMER: Thank you. Mr. Troncoso.

MR. TRONCOSO: So it seems that, really, what we're talking about for the software-dependent materials is we're talking about materials that are on obsolete formats. I realize that that's a term of art from 108(c) and that in 108(c) it's sort of talking about physical formats.

But I think, if you look back to the 2003 Copyright Office recommendations, they interpret it as also including any system necessary to render perceptible a work stored in that format.
And so I think if we look at this through that frame, and if you make clear in your recommendation this time that this type of activity should be encompassed by the rule, I think using 108(c) as the template for how we look at these things can work. And I think it can alleviate, probably, a lot of the concerns on the proponent side, as well. Or, I'm sorry, the opponent side.

But I want to throw that out there, like, almost as a discussion point for the group. And you may have questions, too, but --

MR. AMER: Oh, yes, Mr. Lowood.

MR. LOWOOD: Yeah, this is just an echo of what Mx. Albert just said, from a library perspective. I understand that this discussion is about the red flag being a commercially available dependent materials that circumventing TPM on obsolete software would somehow open up access to. That is a complete non-issue from a library perspective.

I don't know of any collection that we have that that would apply to. The reverse is much more likely: that currently available commercial software that renders obsolete software, that happens a lot.

But that something would be unlocked,
some dependent software would be unlocked that is commercially available by circumventing for the obsolete platform, that's just -- I would just love to hear an example of any kind of collection like that. I just don't know of any.

MR. AMER: So I'm going to go to Mr. Williams and then we're going to move on to video games.

MR. WILLIAMS: Okay. That was actually going to be my question, is, I see them more as a dependent material than as similar to the other types of software that is being discussed. So I was going to ask, should I talk about video games as the dependent material? So I'll just lead in from there.

As I was just saying, you know, really what seems to be at issue is pieces of software that are not entirely functional, but essentially provide the function of getting access to other works, and then getting that access doesn't require some additional act of circumvention.

Video games, as software, are also audiovisual works. They're also expressive works and they are more similar to these other dependent materials than they are to those more functional pieces of software that you might need to get to
in order to access the dependent materials.

So they're distinct, and as we discussed before, they're often rereleased. In terms of research purposes, they're distinct from, you know, an old piece of operating system software because you're not going to get a line around the block to come look at how, you know, an old browser worked. That's likely to be something only scholars are interested in.

But if you've got access to a bunch of video games, you could have a pretty high level of demand for that. They're just a distinct set of works.

And the other concerns that are raised by them are that sometimes the piece of software that maybe would get you to the video game is the type of firmware on a console that you have repeatedly concluded hacking can cause all kinds of harm.

And, as is at issue in Class 8, there's stuff stored on remote servers that might have to be hacked in order to get to it that could cause all kinds of problems and result in infringement of unpublished works.

So I just want to emphasize strongly that we feel like video games should not be a part
of this class. That's a huge piece of our overall opposition to it. And so if you have any questions about that, I'd be happy to answer them.

MR. AMER: Thank you. So, just to clarify, so, would video games be included in the class, or are those just program-dependent materials?

MX. ALBERT: It's our position that video games would be included in the class.

MR. AMER: Even though, as Mr. Williams said, I mean, they're not just computer programs, they're also audiovisual works, so that expands the --

MX. ALBERT: I mean, like, all computer programs? Like, I think Mr. Williams seems to think that there's a much clearer line between, like, the types of audiovisual works that video games are and, like, you know, computer programs that otherwise contain, you know, parts, like interface items that might be expressive, right?

Like, I think that -- I don't think that line is as clear as Mr. Williams seems to suggest it is. And I think that, you know, as we said in our reply, all of the same arguments we meet in our original petition cover video games.

And I think that the -- I admit, I find
it really surprising to consider them in the realm of sort of program-dependent materials. And I saw Mr. Lowood's card go up, so I can let him address that.

MR. LOWOOD: The first thing I want to say is I would love to have lines of people waiting to get into the library to use something. We've provided access to games in our media center, probably for at least 15 years now. And the use has been entirely either research use or instructional use, you know, for courses. Nobody's ever come to the library, as far as I know, for any kind of recreational use.

Also, I'll mention, because performance was mentioned earlier, performance rights are a whole different thing and we know all about that and nothing about performance rights is suggested by any of this.

Games is a class of software, I might mention that I'm also an historian and mostly what I've been writing about the last 15 or 20 years has been the history of video game technology. It's something that I've worked on quite a bit.

Just to echo, again, what Mx. Albert said, all forms of software do have audiovisual components to them. There's nothing particularly
unique about the fact that games render graphics and music.

For example, let's look at educational software as another category, the same sort of thing, e-books, many classes of multimedia software that are not game software render imagery and include audio on them, they're multimedia works.

That's very typical for software to be able to do that. One of the great things about software is that it can do so many things. And games do, indeed, take advantage of many of the capabilities of software. One of the reasons they're so -- that games are so difficult to preserve is that they involve all of these different components.

You know, the performative aspect of games, the fact that, you know, somebody is operating the game could also be compared to reading a book or listening to music, you know, those are activities that, in our context of the library, are conducted as research activities.

People do play games or listen to music or read books for recreation, but they also do it for research. It's something that, you know, certain areas of scholarship or instruction require.
So I don't think -- it's very difficult for me to think of any clean distinction between games and software that would hold water that would be a useful distinction that could be clearly applied in this case.

MR. AMER: Now, the opponents argue that, you know, video games are already covered by Class 8. And I understand your response to be that Class 8 is limited to server-based games.

Could you elaborate sort of on the need -- you know, why -- you know, is it problematic to have sort of overlapping preservation video game exceptions?

MX. ALBERT: Sure. So I'm pretty familiar with Class 8. And what I'll say about it is that I think it covers a very narrow slice of the types of TPMs that apply to video games.

It covers, like, server-based authentication mechanisms where an outside server is necessary. You know, I think that the record in Class 8, you know, was originally developed in response to that particular sort of prompt and that particular sub-category.

And that, you know, a lot of the concerns that the Entertainment Software Association has expressed regarding that category have to do with
a very particular aspects of, you know, server authentication, local play, multiplayer play, you know, and now, MMOs.

You know, the types of works that we talk about -- that we're talking about in the context of this exemption, you know, we're literally talking about, like, video games that were distributed on floppy discs for, like, the Iomega or the Commodore 64, and those sort of mechanisms of copy protection, are akin to all other software.

So what we've suggested is that be, you know -- we understand that the Copyright Office has a very particular record and has, like, you know, spent a lot of time determining what the exact contours of an exception that applied to server authentication should be. We think if it's a server-based TPM on a video game, then I think that that exemption should apply.

And, in other cases, I would I think that the clearer, you know, overlap that Mr. Lowood was talking about between video games and software generally suggests that, you know, the kinds of preservation uses we're talking about, and the considerations here, would apply.

And, you know, we specifically mentioned, I believe, Battle Droids and Dark Side
in the reply, but those are the kinds of works that we're looking at, ones that are no longer commercially available, not dependent on a server authentication mechanism.

MR. AMER: Thank you. I'm going to go to Mr. Freeman and then Ms. Moulds. And then we'll give Mr. Williams and the opponents a chance to respond about video games.

MR. FREEMAN: So another hat that I wear is that I co-facilitate art courses at the University of California, Santa Barbara. And many of our students do, essentially, a lot of conceptual or performance-based art.

And sometimes the boundary between something that is a game and something that is an art piece is something that is actually difficult to even draw even -- I mean, it's not just a matter, like, you know, as Mr. Lowood was saying, you know, how can you separate a computer program from a video game, but it's how can you separate a multimedia work from a game, sometimes? How can you separate -- actually, the example that I brought up earlier of my friend's work that got put into the San Francisco Museum of Modern Art catalogue, that's something where he, himself, does not think it's a game, but many of the people who have
interacted with it do feel that it is a game. It is one of these performative interactive artworks.

And then I would also point out that there's a museum -- I mean, it was mentioned by Mr. Lowood in his collection, but there's a museum, a living computers museum, which, to react to some of the earlier comments, actually, they really are about just letting you understand and experience what computers were like back 20, 30 years ago.

And so sometimes, I mean, I don't know if you're going to see lines around the block looking for what a web browser used to be like, but you are going to see people who are just interested in what a word processor was like 30 years ago.

And right now they have an exhibit on what video game arcade machines were like in the '80s. So it's kind of an experience that people can no longer have, these are cabinets and games that are no longer commercially available.

And that's the kind of thing where, if you were to do that with machines that are available today in another 30 years from now, they would be protected by some kind of TPM that would make being able to repair and maintain them in a museum setting impossible.

MS. SMITH: Thank you. Ms. Moulds.
MS. MOULDS: Yeah, I just wanted to start by echoing the sentiment that determining legally what constitutes a video game --

MS. SMITH: I understand. We're not going to solve that ontological question today.

MS. MOULDS: Okay.

MS. SMITH: We're taking on a lot, so let's just, you know, move on to what we can do --

(Laughter.)

(Simultaneous speaking.)

MS. MOULDS: Another thing I wanted to say was the --

MR. AMER: It's been a long week.

(Laughter.)

MS. MOULDS: I would consider, in some cases, video games to be dependent software, because we have, even at Rhizome, specifically seen cases where artistic works are game modifications, they're mods.

So we had one work called Velvet-Strike. And part of that work was a performative act where there are videos of people playing Counter-Strike in a very particular manner.

And then there are other parts of that work that are mods that people were encouraged to download and install themselves into their own
copies of Counter-Strike.

And so, in this case, I think that, potentially, those mods could still function with commercially available copies of Counter-Strike, and I'm not able to think of a better example of this that, where the software's already obsolete.

But, in the near future, that software could become obsolete if Valve were to pull it from Steam, or whatever it is. And I think very much there were pieces of art that are dependent on video games, in terms of access.

MR. AMER: So, Mr. Williams, I mean, what about, you know, Mr. Lowood's point about, you know, it being sort of far-fetched that people are going to be lined up around the block to go to a library to play a video game?

MR. WILLIAMS: Yeah, I mean, you know, lined up around the block was kind of casual language for a concept that I think still holds true, that there's higher level demand for classic video games than there is for most pieces of classic functional software. And I think the evidence that ESA put in on Class 8 is demonstrative of that.

I wanted to clarify something. Because, you know, I'm here representing specific organizations, one of which is ESA, so our interest
is focused on video games.

I tried to say earlier -- and I'll maybe say it more clearly now -- I'm not saying that there's no other types of software that are expressive and that everything else should be inbounds of an exemption.

That's not at all what I'm saying, and I don't think the record's been built to establish that. It's just that the gentlemen to my left are far more appropriate to speak to those issues because of the interests they represent.

I'm focused on video games because ESA is one of my clients, and I think that the record on this class with respect to video games is very, very, very, very sparse.

There's a couple of examples that are discussed, and I think what is said is that they believe that they would have to circumvent copy protection measures in order to engage in the conduct at issue.

A copy control, of course, is not an access control, necessarily. And there's really nothing done to beef up the record and establish, even in those two examples, that access controls had to be circumvented.

And with respect to video games, there
have been previous records where far more evidence
was put into the record, very careful thinking was
done. The exemptions were denied, or a specific
exemption that we're now re-litigating with Class
8, to some degree, was granted.

That's the kind of record I think you
have to build to justify an exemption. And the fact
that their proposal is so broad that it's difficult
for them to put evidence in the record on every
single piece of what they're trying to get at is
not a justification for granting the class.

If, ultimately, you decide that you can
define a set of activity that you believe to be
sufficiently non-infringing and that applies to
other types of software that aren't video games,
then that's not what I'm here to debate.

I think that that would be, based on this
record, not the right decision. But I'm here to
speak on behalf of the video game industry. And if
other pieces of the software sector that also create
expressive software don't have as big a problem with
it, then, you know, I can't address their, their
market issues. But I do think, for video games,
there's just not a record here to justify it.

MR. AMER: Thank you. Mx. Albert.

MX. ALBERT: So, I just want to respond
to that, briefly. I think, so, just -- I'll start with a very more specific point, which is about the copy controls section.

   So, as we said in our reply, you know -- and as Mr. Lowood, actually, I believe said earlier -- that, like, the use of the term copy control can be colloquial, is often colloquial, but, like, they often basically function as access controls. So I just think that that's maybe not the correct characterization.

   And, I mean, I think, just with regards to the sort of burden, you know, we think that video games are like other forms of software, that's why we chose to write the class the way we did, you know, and to include video game examples, you know, and we did, you know, provide more detail on those video game examples in our reply.

   And I think that that meets the burden of showing that there are adverse effects of the prohibition on that particular part of the class. So, you know, I understand that the ESA has strong feelings about video games, as do I, but I think that, given -- they provided -- I actually -- no evidence why this exemption -- you know, they sort of refer to the Class 8 exemption, which, you know, the types of evidence that are coming up there are,
frankly, entirely different than the kinds of uses
that we're talking about here.

MR. AMER: Thank you, Mr. Lowood, let's
go to you, and then we'll move to the next topic.

MR. LOWOOD: Okay, I'll make it quick.
I just wanted to say about the popularity of games
and such, in the cases where there are older versions
of games, and that's what we're talking about here,
versus newer versions that have been changed in some
way, there's actually a fair amount of research
already, both in the museum world and in the
preservation world, that contemporary players
today, kids today, basically much prefer to play
the more recent versions of games. They're not
confused, at all. Their interest is, actually
quite low in the older historical versions.

I could refer you to, like, the Seeing
Double exhibit that was at the Guggenheim some years
ago that was one example where that was shown. And
so that, really, again, there isn't that much
confusion between these older versions on obsolete
platforms that we're talking about from a
preservation point of view, and the sort of
contemporary play interests of people today.

MR. AMER: Thank you. Moving to a new
topic. I wanted to ask about the term, "other
cultural heritage institutions," which was a source of some debate.

So the class of institutions eligible for this proposed exemption would include -- I may have lost my -- oh, library, archive, museum, or other cultural heritage institution.

The concern that was raised by the opponents is that "other cultural heritage institution" is sort of an ambiguous, amorphous term.

And to sort of drill down on this, I mean, I wonder, you know, if you had considered, again, plugging the 108 discussion document from our Office, which, in its proposed changes to section 108, would include some additional criteria.

It would extend the eligibility for 108 to include museums, but it had, in addition to the current eligibility requirements, for additional requirements, public service mission, trained staff, lawfully acquired materials, and reasonable digital security measures. I wonder if you had considered including those criteria.

Mx. Albert?

MX. ALBERT: Sure. I believe we cite the 108 discussion document in our reply saying that we believe the other cultural heritage institutions
should share those conditions.

And, you know, Ms. Moulds can speak, like, with particularity, why we think that that's important, but I think it has to do with the specifics of how software preservation works, so I think we would be comfortable with those conditions.

MR. AMER: Ms. Moulds.

MS. MOULDS: Yes, I think that's, generally, accurate. And Rhizome was originally founded as sort of an artist group of artists, sort of discussing, like, a collective, and sort of the idea of preservation and starting an archive came up out of a desire to preserve the works that were being created in this community, specifically.

And so we are affiliated with the New Museum, but we haven't always been. We're, you know, independent in a lot of ways, legally, and as an institution, from the New Museum, and so I think, technically, you know, I'm not 100 percent clear, whether adding a museum to the language of 108 would actually include us.

And I'm also hesitant, because, in my mind, I feel like, even before we were technically part of the New Museum, or affiliated with the New Museum, as a cultural heritage institution that was
a collective artist, interested in preserving their own work, as they were threatened with obsolescence that should be something that should be considered within the bounds of this exemption.

MS. SMITH: So before you were affiliated with the New Museum, did you fit the other criteria in the 108 discussion document?

MS. MOULDS: I can't say, because I didn't work at Rhizome, but I suspect that we would have.

MR. AMER: So the first criteria in the 108 discussion document talks about public service mission, so would it be acceptable to you to limit this to exclude for-profit institutions?

Yes, Mx. Albert.

MX. ALBERT: So, I mean, I think that I -- I mean, maybe this is me over-layering this, but I would read public service mission as not necessarily totally aligned with, like, the for-profit/non-profit distinction.

And I think that there are some for-profit, some organizations that offer, operate, technically, as for-profits that I believe have a public service mission. So I'd be comfortable with the public service mission language, but I think I wouldn't necessarily want
to rest the distinction on, like, you know, how they
incorporate it or whether they got tax status
through the IRS.

MR. AMER: Ms. Moulds.

MS. MOULDS: Yes, similarly, I think, when Rhizome did form, as an artist collective, it
first incorporated and then, later, had different
Articles of Incorporation, as a non-profit.

And, I think that, generally, another
case that might come into concern here is the idea
of galleries, some of which operate for-profits,
some of which operate non-for-profit.

And, also, even just like smaller
collections, or individual collections, we have
this issue where, if someone wanted to acquire a
work that had a dependency on obsolete
software -- so, if a non-profit gallery was showing
this artist's work, and then an individual said,
"I want to acquire this software," or, "I want to
acquire this art, and it has this dependency."

And then maybe they acquire that
software and the motherboard on the computer dies,
or something happens where the obsolete dependency
needs to have its CD key re-whatever, reentered,
like, are they then -- are their hands tied because
they're not -- because this piece has been purchased
by an individual collector and it's no longer part
of a cultural heritage institution?

Are they then unable to circumvent the
TPM on this obsolete software format, because it's entered the collection of a private collector, who's not associated with one of these cultural heritage institutions anymore?

That's a question that I have. And I think that's something that effects being able to sell, or see these digital works as commercially viable at all.

Because, even if all of the software is currently commercially available, it's difficult to convince a collector that all of these dependencies will exist in the future, even if they have access to the artist's files indefinitely.

MR. AMER: Mx. Albert.

MX. ALBERT: Yes, Ms. Meyerson suggested I add, which I think is relevant. So, often there are -- so, organizations, like, design firms, or architectural firms that have archives that may meet some of, most of these criteria, but don't necessarily -- aren't necessarily operating as non-profits.

MS. SMITH: Do you have examples of that, in the record, where they need to circumvent and
they don't own the copyrighted work?

MX. ALBERT: I don't have examples of that, off the top of my head. But, Ms. Meyerson.

MS. MEYERSON: Ms. Smith, can you clarify that question? I don't think I heard what you said.

MS. SMITH: I'm trying to figure out where you've demonstrated the need for that, of design firms, or architectural firms, where they need to circumvent something, to access a work that maybe they don't, and when there's an issue that they would not have had the permissions to engage in the circumvention.

MS. MEYERSON: Oh. I can actually answer that question. On Page 4 of the reply, we cite Aliza Leventhal, who's a librarian and archivist at a design firm, who talked about that specific issues related to AutoCAD and file preservation.

MR. AMER: Thank you.

MS. SMITH: Yeah, so she works at a private design firm, is that right? Like, I mean, how is that a cultural heritage institution, a library, or museum, if there's nothing open to the public? That just seems like a private institution.

MS. MEYERSON: That's true, their
archives are not open to the public. But these members of our community do participate in all of the same digital curation/preservation activities, which is why I raised that. So, in terms of accessing their own internal work -- but, yes, you're right, it does not meet that criteria.

MR. AMER: So would you be comfortable incorporating that criteria, those criteria into the exemption language?

MS. MEYERSON: Yes.

MR. AMER: I just would like to invite the opponents, you know, to address this issue, you know, because you had raised concerns about this other cultural heritage institutions language, would the incorporation of the 108 study factors do anything to allay your concerns?

MR. TRONCOSO: Yes, definitely, we'd be comfortable.

MR. MOHR: Yes, that would improve things.

MR. AMER: Okay. Thank you.

MS. SMITH: Is your placard up? Okay. All right, I think we are on a roll and we're going to end this session also 13 minutes early. So we had scheduled it to 4:30 p.m., audience participation.
And if it's something that you may be interested in, then if you could please come up, we may actually be able to, I think, begin that a little bit earlier than 4:30 p.m. so we can all get out of here a little bit earlier, too. But, thank you very much.

MR. AMER: Thank you.

(Whereupon, the above-entitled matter went off the record at 3:47 p.m. and resumed at 4:11 p.m.)

MS. SMITH: All right, hello. So this is what we've termed the audience participation segment.

MR. AMER: All right.

MS. SMITH: We're happy to have you and we're going to have another short session tomorrow. And the goal is, really, for the members of the audience, or people, who wanted to participate and weren't able to participate in a panel that's being held on an opposite coast, just say a brief word as far as, you know, again, about what's already in the record, what was on the panel, so if you would, if you could, please, start by just, you know, stating your name and your affiliation.

MR. BUTLER: Of course. I'm Brandon Butler and I'm the Director of Information Policy
at the University of Virginia Library.

MS. SMITH: Okay. And I understand you are here to talk, the comments you wanted to offer are in connection with Class 9, the panelists just concluded about software preservation.

MR. BUTLER: Yes, that's right. And so, in particular, from my sort of context as a lawyer who works in a library, I just wanted to make sure that it was clear, a couple of things about the way libraries use 108 and fair use together.

So one thing I wanted to point out was just, I -- so, Mr. Williams mentioned, you know, we shouldn't go beyond the realm, or, or we shouldn't, we shouldn't amend 108, or go beyond 108, you know, there's this obsolete formats requirement and that should be enough.

And I just wanted to make sure, and I know you all, you know, you print, you print the authoritative version of this stuff, so you have access to the text, but, you know, in 108(c), there are multiple triggering conditions that permit libraries to do preservation, and obsolete formats is one of those.

But we have damaged, deteriorated, lost, and stolen, and there is, in, in library world, you know, one of the difficulties with 108 is
figuring out, you know, how do you handle the fact that you're not allowed to make a preservation copy until something is stolen, right? I mean, that sort of seems absurd. It's gone, how can I copy it?

Or it's deteriorating, and in a digital context that's particularly disastrous, if you were to wait for your digital copy to deteriorate, especially with digital media, it may not be readable at all. You'll put the disc in and it'll just sort of make a nasty buzzing sound and come back out.

So I think it's the general feeling, in the library world, among the folks that I talk to, is that we read this provision to permit us to take action with an especially-unique and rare copies that, that we don't have to wait for something to become so damaged and deteriorated, you know, we can foresee that a format is of the kind that it's fragile, for example, even if that format isn't obsolete.

So the Library of Congress has done studies on optical media, for example, that show, you know, that media is much more fragile than we thought, so CDs may not be, you know, may not be obsolete, yet, but they're quite more fragile than we thought, when we first adopted that format in
wide distribution. So --

MS. SMITH: So it sounds like you are saying for the relevance to the section 1201 exemption at issue that 108(c) may prove useful in examining, whether there's non-infringing bases?

MR. BUTLER: Exactly right.

MS. SMITH: Okay.

MR. BUTLER: So, other than obsolescence, there are other things in 108(c) that will be useful to you, as you consider, whether there's a non-infringing activity here that you should permit under the rulemaking.

And then, relatedly, I wanted to just mention one case and one bit of legislative history. So the case is *Sundeman v. Seajays*, and that's a fair use case where there was a unique copy of a manuscript that was in the custody of the Seajays Society and a scholar came and wanted to consult that manuscript.

And also, a buyer came, or a collector, the University of Florida, wanted to also consult the manuscript. And Seajays made copies for each of those people to look at, for those, for that scholarly purpose and for that, sort of, you know, library collection building, you know, decision making purpose.
And the court said both of those were fair use, because the original copy was so rare and fragile, right, you can't give that over to someone and let them walk off with it, they might, you know, it might be harmed and, once it's harmed, it's gone.

And again that, that fair use logic, I think, is a big part of what, so I've been working for the last year and change with the software preservation community to help them think through all kinds of things, and I think a lot of them are doing these format migrations, because they are in, precisely that same position of worrying that, we have one copy.

We don't know how many other copies there are and we need to get this off of this, you know, media. The media may not be obsolete, the media may not be broken, yet, may not be deteriorated yet, but we need to get it off of there, or, if it's gone, it's gone.

And I think that's something that the court blessed. The legislative history of section 107, also includes a reference to nitrate film and preservation as, you know, if anything is fair use, this is fair use.

And so Mr. Williams mentioned that, we don't know, whether preservation is fair use and,
I think, there's actually a much deeper pedigree for preservation, as fair use than, perhaps, many other things. And that's all, I wanted to make sure that was in the record.

MS. SMITH: Okay. Thank you. Would you say that case that you're discussing, it almost sounded like you did, if not fitting strictly within the contours of 108 and maybe you too will be excited to continue discussing the discussion document, but --

MR. BUTLER: Always excited.

MS. SMITH: Always.

(Laughter.)

MS. SMITH: Because I think we can get it done, you know, much faster than 20, or 30 years. But the concept of preservation, plus replacement copy, you know, or you use a lending copy versus preservation copy, it seems like that is, sort of, fitting in how you described that case, would you agree?


MS. SMITH: Great.

MS. SLOAN: And, do you know with that particular case, what the third-parties had to do with their respective copies, like, after they
decided, whether or not to purchase it, or did they have to destroy it, was that part of the analysis that the court considered?

MR. BUTLER: So I'm not sure what the University of Florida did. I think the scholar might have kept her copy and I don't -- and then, also, part of the case, the scholar created a presentation and a piece of scholarship and both of those included excerpts and the court said all of that was, was fair use. That's right.

MS. SLOAN: All right.

MR. BUTLER: All right.

MS. SMITH: Well, thank you. We really appreciate your perspective and contribution and staying until the end of the day, to offer it, so thanks, very much.

MR. BUTLER: Thank you, all, and you all for staying.

(Whereupon, the above-entitled matter went off the record at 4:17 p.m.)