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INTERNATIONAL TELECOMMUNICATIONS UNION

WORKSHOP ON THE FUTURE OF TELEVISION FOR EUROPE

GENEVA, SWITZERLAND

JUNE 7, 2019

14:15 A.M.

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>> DAVID WOOD: I wonder if my colleagues could join the top table, if they would be kind enough, which I requested. Good afternoon, I wonder pilar could join the top table. I know they have very long lunch hours in Spain. Thank you.

And I hope they are coming in. We haven't seen Simao. Simao has gone for a Brazilian lunch with his friends.

>> They have a big lunch.

>> DAVID WOOD: They do. Ladies and gentlemen, please put this thing on. Good afternoon, everyone. My name is David Wood. And I'm chair of the group called IRG‑AVA which is nice and confusing, isn't it? It means in ITU ease ‑‑ I can give it to you in French. It's intersector reporter's group on audio visible accessible. And the group is supposed to try to look for common accessibility systems across different delivery platforms. That's to say, could we have a common subtitling, whatever, audio description, something else, system, which could be used for broadcasting, cable, IPTV and could you come up here, please, sir. He's just coming, right.

And IPTV and Internet. So the IRG‑AVA, we are trying to bring the people together to create a common system where that's beneficial. The hope is that in doing so, we would widen the use of accessibility systems, make them less expensive, and I'm sure you can imagine ‑‑ you can imagine that.

Today, we have a session which looks at the future of accessibility technology, what is it? And how can we get there? And who should do what to do that? So what we have done is to bring together the individuals who know essentially what's happening now, and ask them to tell you that, and then hopefully, they will go on and put their foresight cap on and look at the future.

So hopefully all of our speakers and panelists will be able to answer this question. What is our vision of the future of accessibility technology and how can we get there and who has to do what?

First of all, our first speaker is Andy Quested, an old friend. I think Malcolm Johnson said 1 million people work in broadcasting in Europe. It's actually 1,000,001 and the one is Andy Quested, sitting next to me here. He will take us through what is happening in Study Group 6. Study Group 6 is responsible for broadcasting work in the meeting associated with Study Group 9, which is cable and other things and there's Study Group 16, which is responsible for IPTV and Internet.

But first of all, Andy Quested will tell us about Study Group 6. Andy?

>> ANDY QUESTED: Yes thank you, David. One thing I should say is one of the things that is unique about Study Group 6 is the Working Party 6B, and Working Party 6C, which are dedicated to script, and ends at the transmission. I don't do the transmission. That was my working on 6A, plus 16, and everybody else that deals with distribution.

So we will take a little unique view of that. And just look internally at what we are doing and what I think we should be doing over the next study period.

So what I believe ‑‑ and I have done this ‑‑ I have been here for 41 years now. Actually yesterday was 41 years. So if I retire tomorrow, I have done ‑‑ I may know as much as David.

Access to media is a right. It's not an inconvenience. So many people see it as a burden on program making. It's why have I got to do this? Why can't someone else do it? Who will pay for it? What we really got to look at is why we need to do it, how the ITU can help us do it generally. Just having resolutions, there's a lot going on in the resolutions that is pointing in the right direction. It's helping us to come to terms with what we need to do, but it's still not strong enough. And these resolutions are up for review. Some of them are up for review and we will have ‑‑ and in Working Party 6B and C, we will have a point of view about strengthening the resolutions on the requirements, access to services, but also making it much clearer how access services should be achieved.

And how they are actually expanding.

And I was really in this one, and I know Nigel will challenge me on this one. So I won't do anything more about it and wait until he challenges me on this. He's given me some very good information. And see if we can expand some of these resolutions to be far more inclusive.

Hard facts. There are hard facts and there are a lot of people who benefit from accessible services. We are talking in the billions and not the millions. And what is even more interesting and this has happened to the BBC a couple of times and ITV, we have an old audience. Our audience is listening and watching programs made by younger people, who don't understand some of the issues. They will eventually, won't they, David? They will eventually get there. At the moment, they don't understand some of the issues. Music, they can't hear the title or the classic things that we all know and we gain from the experience. We have to keep reeducating people and we have to do it again and again and again.

So we just launched ‑‑ we are going through a program now, and being a program‑making person, I can't stand documents. I need to break them down into something I can understand graphically and as the chairman of the group apply to the people who will actually do this work. And to the administrations who are going to put in distributions to ‑‑ to help us achieve what we are going to need.

So I split my question into four key areas. I know everybody loves layers now. Everybody talks about layers. So I put it in layers. Fundamental layer, which is what we are currently doing. So it's subtitling. It's signing, closed signing, and it's audio description and described video. We although these. These are the classic access service, most broadcasters are regulated to do some or all of their content in at least one or two of these. Enhancement later. Now, this is where it comes down to understanding clear audio, better way of doing this. Personalization in the home environment. What technologies can help understanding. Some of what the Japanese are doing about slowing dialogue down.

We all know that ‑‑ that we have to help an aging audience, but also we have to help people with minor disability as well, because they don't enjoy the program. They may not be aware that they have a problem, until actually it gets to a medical issue, but they stopped enjoying programs. They blame the broadcaster. They blame the program maker.

Interactional layer. This is the new one. We are making more content. We just had discussions about 5G, the first thing that everybody says, is it's two‑way. If you have issues, certainly not two way. How do we incorporate ability and access into it, so access services are not just limited to what I call the classics. We have a new area where we are going to have to start thinking about accessibility.

And then finally, enablers. What's going to help us to do this? I guess from the BBC, we are now ‑‑ Nigel, you tell me if we are wrong. We are 100% for captions or subtitles.

>> NIGEL MEGITT: On broadcast programs, yes.

>> ANDY QUESTED: We call live subtitlers in for the remaining of the program. We can't risk using our percentage, just because of an outage. We have to put in place almost like redundant services for subtitling.

Technology to do subtitling arrived early on. Even with the simple C fact services and then came better technology to do audio description and we are able to send two audio channels. And there we are beginning to look at two decoders in TVs so that we can have closed signing. Each one of these steps has been enabled by developments in the technology, but each one of these steps is an exponential increase in price. Eventually we will be regulated as public service media organizations to 100% on all of them.

It may be a long time, but it will eventually get there. So we need to look at related technologies and ways of doing it. This is one of the first steps. This wasn't originally a report to deal with accessible services but it's to look at automation in some of other areas. I believe access services starts with the script. And not when you finish the program. It's worst place to do it. It starts with the script. It's easiest way to do it. A very small change to the script can make it easier to understand the program.

Also we have a lot of problems with count waves ‑‑ I put this in the translation, eliminating the unintended translation. This source is like crack. It's a joke you don't know, but it was a cookery translation, but there's a lot of work being done about text‑to‑speech, and speech‑to‑text getting it right and getting it accurate.

If anyone wants to go into Google and type in BBC subtitle bloopers. There are an incredible number of things that we said that are really wrong.

>> DAVID WOOD: What was it supposed to be?

>> ANDY QUESTED: I don't know. Nobody knows what it was supposed to be. An object C recognition is really important. Audio description if you can identify actors, characters, locations, it makes it so much easier for someone to plan out how to do it. There might be someone reading, but all of this has to be planned and go through the production process and that's trying to automate as much as we can so we can give the best possible quality to the end user.

Current work reports, I went through all the reports we got. There are an awful lot of reports coming out of Study Group 6. Only one of them is on accessibility, but we looked at all of them, and every single one of these is an enabler for some form of access service with the topic it's dealing with. It's realization of signing, which is an early one and that's been redone. And then there's of the ability ‑‑ accessibility to broadcast services for persons with disabilities. There's no real thought yet on how to do this. But there's many other things at the global platform, closed captioning, and scenarios that we can use to help accessibility.

And then the big ones, again, the recommendations, the latest one is the ADM renderer, which it should be published. I hope Wouter is in the room and it will be published in less than a month. But these are very important recommendations because these are what vendors and manufacturers follow in developing new technologies.

Working Party 6C, I discovered this yesterday in the AVA meeting. I believe all content should and must be accessible. The first thing that I will do is create an accessibility group, a subWorking Group, across all areas that we work in. Its role is to encourage contributions. So to actively encourage contributions, and actually, I have a bit of a go at an organization called the ITU. We have some of the technology that we developed for the public, but not all of it. Access to our meetings is quite difficult. And I want to improve that. I want to make it easy for people to attend plenaries, discussion groups.

I chair a group in the EBU. We had 21, 22 meetings this year and only one face‑to‑face. We got an awful lot done. A lot of us are now working a lot more online, because we can get more done. We have shorter gaps for the meetings. I have to congratulate David for putting all the work he does the rapporteur group meetings and one of my other chairs from like 20 online meetings between our meetings. We got to encourage it in our meetings as well.

I want to assess every single document we do. What's the access service we make in it. What is the sustainability of this technology? It should be the first question you ask.

Let me do that.

Obviously one of the main goals is to participate in the IRG‑AVA group, because I think it's really important that we have more input to that group as program makers. And finally, I think this is misunderstood occasionally and sometimes we have arguments based on cultural misunderstanding. There are contradifferences in language and contradifferences in access service. It's not about the technology. It's about how and what.

And finally, it's got one term of reference which is to fulfill the goal of the UN Convention On the Rights of Persons with Disabilities. That's obviously what we should be doing here.

Anyway, that's it. Thank you very much.

(Applause).

>> DAVID WOOD: Thank you. Are you saying that this is ‑‑ is this a pattern that you are suggesting would be repeated for Study Group 16 and Study Group 9, having this kind of group of honorable people who look across all systems and try to see where accessibility can be improved? Is that your suggestion? I'm writing the report now, of course.

>> ANDY QUESTED: I'm not sure, David. The reason I'm looking at it in Working Party 6C is where we sit in the production chain. We sit right at the beginning of the production chain. So we have a unique opportunity to look at everything that we do for that particular ‑‑ you know, it's an HDR program or a program that nobody can hear or see. It doesn't matter how you transmit it, if the original product is not good, the totally transparent transmission chain is not going to improve it.

You can't refocus an image.

>> DAVID WOOD: We will all look and see how it works out. We did mentioned earlier on getting people with disabilities to participate in the development. How can that be done. Do you have a personal opinion on that? I'm not asking for ITU, but do you have a personal opinion on how we can do that better than we do toed?

>> ANDY QUESTED: I think everything. The way you run meetings ‑‑ you know, one thing I don't like and I have been worried about it, like two weeks notice for a ‑‑ a remote access, remote participation in the meeting. If I go to my computer now I can hit one button in my room now and go to meeting. Why don't we go to the go to meeting.

If I go to EBU, it's just about getting close. You can pick up the laptop, plug it in and do the meeting and it connects to all the interfaces in the room. When you have a topic, when you need an expert, you can get them straightaway and it makes it easy for people who can't travel or actually need help. We should be looking at autoMatical subtitling, captioning in our meetings and potentially trying out the things we are going to try with the public like automated signing. So if we don't like it in meetings, how can we possibly give it to the public.

(Garbled audio).

>> DAVID WOOD: Let's move on. We want to move on to Nigel ‑‑

>> ANDY QUESTED: David, you did what I did at the beginning of my session. It's right not an inconvenience.

>> ANDY QUESTED: Anyway, the next is the stallwart of the W3C, and Nigel has been particularly associated with the vegment of ‑‑ am I allowed to call future generations of subtitling systems and perhaps audio descriptions to come? It's being done today, but anyway, let's pass the stick to Nigel and ask him to take us through what's happening in the W3C. Nigel?

>> NIGEL MEGITT: I have been around the W3C, for six or seven years but they have been around for 20 years. I call this the new accessibility system standards for television, slightly different than the billing because I think it's a convergence that's interesting here. So these slides, I put a little subtitle at the top of each one. Electric's a lot of text.

If you want to know the message I want to get across. Speed ‑‑ if I'm just blathering on, that's what's going on.

So I'm going to talk about the bit of context, a bit of how the web works and a very quick scan through what the W3C recommendations and guidelines relating to accessibility are and have a think about what the implications are and so next steps as well.

So the context that I think is really relevant here for us is convergence, where we see that web standards are getting everywhere. They have become a part of television standards, in particular. So they are in DVB standards and HPDV and HSC, and they are becoming endemic and that's because the web is connected and everybody expects their devices to be connected and people don't like doing the same thing twice if they can help it.

You don't quite see so much in terms of television standards becoming part of the web. Some of them do a little bit, but it tends to push the other way. And an example is the user interfaces on television systems, quite often they are web‑based. We do see that TV systems tend to implement only a subset of web standards and that can be a problem for accessibility and usually because of constraints about price and ‑‑ and the technical complexity of what they need to support because they do also have to be televisions as well. And that's quite complicated.

So, you know, I'm not unsympathetic. But consumers are expecting to be able to transition between different devices and just have the same content available and very easy path. So the ecosystem is not just the devices and the standards in there. It's all about the people involved in creating accessible content and consumer information as well. Everybody needs to know what accessible content actually is.

So just thinking about what the web is and how that works, and how ‑‑ what the web approach to accessibility is. If you realize that the web is a very layered architecture where each layer is its own specifications, it's incredibly complicated. If you go and look at the W3C list of all the specifications, it's just incredibly large, but when it comes to accessibility, one of the key Tenets is to separate semantic, and you see HTML says here is the content and CSS says here is how you make that visible. And that's an important separation. That starts to allow you to separate out different modes of access for different people.

So if you need to present the content to somebody who uses a screen reader, so they don't care what color it is, because they can't see that. Then you got the content. You got the structure in the data and allows that to happen. And it does also mean that you can allow users to customize the presentation for their needs. That's one side of things.

Another side is to actually specify what the presentation accessibility requirements are. So I have a slide coming up on that. And then there's delivery formats, interfaces, user agent behavior, and the key to all of these standards, they are IPR and they are all open standards. That doesn't mean that it's easy. It just means that you are allowed.

So I will do a quick dash through some of the W3C recommendations and guidelines. And this is the slide that I mentioned a moment ago. So one of the ‑‑ how to make content accessible, the ‑‑ you may have heard of WCAG web content accessible guidelines. That's about content. And it also ‑‑ there are lots of guideline documents, as well to meet those requirements.

And then in terms of the applications themselves, there's a specification there about how to make dynamic content and applications accessible and then there's the device that you use and the software that you are use, the user agent in W3C terms. The overall phase for how to make things accessible. And finally on this very quick summary list, these are the tools. How to help people make content accessible and how to make those tools accessible themselves. So this is going to your point Andy, and in a different domain but going to the point of how do you bring people in? You have to attack it at all layers at the stack and make sure that you are supporting all people involved.

And if you focus on media accessibility specifically, I think there are mixed levels of support here. There's a requirements document and major accessibility user requirements which is really about focusing on people with disabilities and the requirements they have with respect to audio an video on the web, but I don't know whether it's on the web count there ‑‑ if you are watching video or listening to audio, do you care what the connection was?

Then there's things like the HTML video element itself, which you can put text tracks in and you can say what kind they are, if they are subtitles or captions which is a terminology that has specific use, including W3C which may not match. There may be a difference between hard‑of‑hearing versus translation. There are audio descriptions and you can put metadata and chapter in there. And you can customize the controls and the user interface if you are a content provider.

Then when it comes to text track formats themselves, there are two standards that work in parallel, both in the group that I chair, one of them is called web DTT, we kind of ‑‑ we can have a private chat about that later if you want to. But for me, it's a bit of an issue that both few implementations support all the features in order to make subtitles and captions probably accessible, using web DTT and then there's IMSC, and that has even less support in browsers but more and growing support in other specifications in other places and so it's referenced in DVB and SMTE standards like IMF and there are a growing number of implications in that. So it's a slightly strange situation that we have there.

And then for audio description, you can put additional audio tracks in. That's a very simple approach that's taken. I think it's a bit too simple. I don't think it meets all the requirements. So there's more work to be done there.

So, for example, I don't think there are any implementations that support the presentation of audio descriptions in non‑audio forms. It's always descriptions of video are always in audio. And that's not an obvious thing.

So what's happening ‑‑ what's going on and what's new and what other future areas of work. There's other stuff to do, as there particularly is in this area. There's media and entertainment in W3C that's looking at improving requirements like synchronization of text tracks and other features. And there's a piece where unmuting is to try to create a standard for the exchange of audio description, including the time text script of it to deal with that issue that I mentioned pay moment ago.

So that's happening in a community group and being transferred to a Working Group for turning to a recommendation. My hope is that that's this year. And then there's live contribution. A lot of the standards are focused on prerecorded media that already exists and not the live contribution about how do you actually get it there. So that's something which I'm also contributing some work on based on work that originally happened in the EBU.

There's some work happening as well, which can also assist within ITEF, to assist with some of that, but it's not just W3C standards but they are dependent on thanks like ITF.

People are working on what to do with subtitles in 360 degrees or virtual reality domain which is an interesting set of problems. And when it comes to the mechanisms for subtitle presentation, I put this hopefully not too controversial statement in, and some people may get upset about it. I don't think it's great. Things like API support, the issues of customization, privacy, there are lots of different participants in the marketplace who have different and sometimes competing goals and we haven't really settled on something that works for everybody. So nobody is really willing now at the moment, but I think there is a recognition that something needs to happen. So if anybody wants more, I can talk more concretely about that. Maybe in the panel, if someone asks about it.

So what does it mean? For implementers, I think this complexity of web standards means, it's hard to implement. It's very important. What we tend to see, therefore, is a convergence on a small number of stacks of development, things like the ‑‑ that Google has done with Chrome, which you start to see all over the place, and so that's a reality. I would love to see more implementations. I would think it's would be good for the world if more people did it, but it's a really stuff job because of the number of layers and the complexity of all the layers. So the user accessibility guidelines. So put a screen reader on eTV that can work generically, that's amazingly absent these days.

Help content providers make their accessible content work and be present at and distribute to the standards work at all levels of the stack. You sometimes see manufacturers in one standard organization get upset that actually inherited from everybody else and they really ought to have been there in the first place. What is the need for content provider? If content is not accessible, you lose audience share. You make sure that not the media content, meet their standards.

Do provide subtitles and captions but think about the whole experience for the user. Don't just focus on just the text and the time and hope that everybody else is going to be fine because if that text is displayed over something important in the video, that you need to see to be able to understand the program, then you haven't made it accessible. You just made ‑‑ you obscured something. So that kind of stuff is really important.

And if you can, offer it on all devices because TV is on mobile phones, tablets, everything. And obviously as Andy says, provide audio description in sign language. In the future that the content providers need are not in web standards then people are not going to be able to use them pane most content providers these days are looking at a global market, rather than a specific small local one.

So another thing that helps is using common profiles like the MPEG CMAP profiles to create some content that will work across a broad range of devices.

And what does it mean for consumers? Well, consumers need to be vocal, I think. They need to say what they need and use what is available and be aware of it.

I was talking to a ‑‑ screen readers just push the down button to go to stuff, not realizing there are other navigation buttons. So it's important to explore and talk to providers and ‑‑ yeah. I think that's enough on that one.

And oh, what does it mean for regulators or ITU or EU or people like that?

Now this is where I'm coming to Andy's slide earlier, because I think the social model of disabilities is really, really important. There season acold case under the UNX, which makes sure that people who have disabilities can access media, but the economic case is much bigger, because the number of users of accessible technology and media is much bigger than the number of people who ‑‑ you know the sum of people who can't hear and see and have motion impairments. It's much, much bigger. We see that in the BBC, the stats of how many young people use subtitles. Much, much far in excess. Two, or three or four times the number of people who you think have hearing disabilities.

There's a lot of research that is needed, like how to make media for cognitive accessible and you mentioned the case of slowing down media. You mentioned Japan but it's being done in Italy, but that's one that we told and maybe there are others that are needed.

Support open source projects that help people to bring in the software they need into devices to make stuff accessible with minimal additional cost, it's really valuable and the thing to do. And obviously supporting advisors and being open about the economic benefits, the economic case that I was talking about is probably under ‑‑ not well enough understood, and if it doesn't work, you maybe can apply some pressure. Okay, I will accept some pressure there and obviously support consumers with testing and certification. So that was my very, very brief zoom through that stuff. If there's questions, I guess we will come to the panel later, if we have time.

>> DAVID WOOD: Well, just a couple of quick points. Good the W3C have any participants who have disabilities?

>> NIGEL MEGITT: Oh, yeah. It's a fascinating organization to go to. There's an annual meaning call the technical advisory committee on W3C that I go to and have been to for several years and it's very noticeable that there are people there with every kind of level of ability or disability. You know in terms of diversity, W3C has got it ‑‑ it wants to improve its diversity and inclusivity even more and it has particular targets for doing that. But if you go there, you think oh, this is not too bad compared to other organizations. It's really ‑‑ and they also really contribute. So one of the chairs of getting exactly the name of the group ‑‑ I think the name has changed. One is of the chairs is blind and she chairs a Working Group. That's fine.

>> DAVID WOOD: So it would be good if we could mirror that in other groups with disabilities.

>> NIGEL MEGITT: I think it would be a good idea.

>> DAVID WOOD: You mentioned the web VTT versus IMSC situation. Is that solvable? Could we come to a single solution this for subtitling in the future?

>> NIGEL MEGITT: I think it's a little ‑‑ I think it's a really difficult situation to solve. I think what we may need to do is support both, because they ‑‑ they have ‑‑ they have benefits for different sets of constituents. As a broadcaster, involved in lots of business‑to‑business transfers and subtitles and validation and this kind of stuff, I want to use HTML. It supports a lot of things that I can't do in my VTT and I understand how in IMSC, all the different requirements to make it accessible in a way that I know how to provide it.

With web VTT, I didn't think it really is very helpful for ‑‑ for business‑to‑business exchange, because it's ‑‑ because of the particular format that's used and the implementation side of it encourages people to believe that all subtitles can be in white text and the bottom and the middle of the screen and that's okay. As ‑‑ speaking as an individual maybe for the BBC, I strongly believe that doesn't make things accessible. I think encouraging that belief is a problem by itself and the parts of the web VTT that they support or don't support.

>> DAVID WOOD: Thank you, Nigel. Didn't you think Nigel of having five or six words in the top right‑hand corner that summarizes everything that follows? I think I'm going to suggest my boss does that, actually, when he speaks.

>> NIGEL MEGITT: I stole that from someone else.

>> DAVID WOOD: Yes, let's turn to a lady who is Pilar. Her name is Pilar Orero. She looks at new concepts for accessibility and she may be able to tell us what accessibility will look like in a few years' time. So Pila r, you have the floor.

>> PILAR ORERO: Making a workshop on the future of Europe television, and having a panel on accessibility, it just shows the attitude towards accessibility in ITU. So to me, that is a very, very important development. And I appreciate that, very very much.

Then I think my presentation is going to be very boring because most of the things I wanted to say have already been said. Like one of the big issues to me is that what is going to shape the future of television in Europe is the three pieces of legislation that have just been passed in Europe to comply with the UN ‑‑ the UN ‑‑ what is it called the convention for people with disabilities and there are three pieces.

The first piece is very, very important and Nigel, in account if a, was telling me why this is important is the web accessibility, which is heavily on WCAG 2.0. Why? Because broadcast ‑‑ well, Nigel told you. Nigel partly is based on ‑‑ on web accessibility.

Interesting issue is the broadcasters need to make the content accessible for the web itself, it doesn't have to be accessible.

This is a bit of a contribution, but that's what it was agreed and it was approved, but even though this is the case, we have a good case in broadcasters in Europe that even though they are not forced to have an accessible web, they have done a fantastic web. One is the BBC. You have the fantastic font, the color, the contrast, the color, and everything that you do is so good, that that interaction is fantastic.

So you have a very good example in the BBC, particularly the Iplayer. Fantastic example on how to follow the WCAG 2.0.

Another good example is the Slovenian television. They are not obliged to offer to be accessible, only the content but they have also done their web is accessible. So that's one. So the second one, this morning we had the ‑‑ the audio visual media service direct live explained to us in detail. The difference ‑‑ the difference with this new one is in the past, only linear broadcast had to be accessible. Now it's linear and nonlinear. So video on demand also has to be accessible.

In the previous one, only public broadcasters have to offer the content accessible. Now public and private broadcasters, they have to offer. So to me, these are the two big issues about this and that is going to shape very much the European ‑‑ the television of the future in Europe. And it ‑‑ why this one? It tells you what. So what is ‑‑ what should be accessible? It should be the web page. I'm sorry it should be the television, the ATM booths. It should be the ‑‑ the machines that you buy ‑‑ that tells you what has to be accessible. This one, the accessibility act, it was just approved this month ago. It tells you how it should be accessible, okay?

So to me, with these three pieces of legislation, that's going to shape very much the future of the European television in terms of the democratic participation, and in the sense of the social sharing, the social ‑‑ so that is going to be crucial.

And Nigel said, audiences have changed. In Europe, one of the things that we realized, as Nigel said, that's not only the disabled, it's like a niche audience, they ‑‑ television is broadening. For many reasons. Many reasons in Europe, we speak over 200 languages. So the issue of translating and translating everything, it's very important. But not only do we have over 200 languages we speak in Europe. We have three different ways to translate media. One is subtitle. The other one is dubbing, and the other one is voiceover. So we have these countries with voiceover, like phone for example. We have these countries with dubbing and that's the four big countries, Italy, France, Germany and Spain. And the subtitles is for the other countries and some countries are bilingual. That's very interesting, Belgian. Whatever you do, you have to have double line. So Europe is a fantastic test bed for accessibility. Language accessibility being one of the access services for us. So it's not beyond the disabled.

In Europe if you travel from one country to another country and you don't speak the language, you need accessibility, language accessibility. So we have that.

And a new group that has joined is the cognitive accessibility and that goes a very wide spectrum is from autistic people ‑‑ the autistic people, people are who are literate, or no language. So new commerce. So, again, the spectrum is widening up. The environment, as Nigel, people in public transport have subtitles. So subtitles is 85% at the moment is used at ‑‑ media is consumed with subtitles, 85% of those people, and they are not for the deaf and the hard‑of‑hearing.

So, again, the audience is broadening a lot. And because of that, we also have not only the typical ‑‑ the subtitling, audiodescription and the translation, we now have issues such as clean audio as Andy was saying. We also have ‑‑ that could be solved by different ways, technological ways like audio, but also easy to read. So now we have easy to read subtitles and there's so many new possible services that we have for the huge amount of ‑‑ or for the very large number of audiences that we have.

So normalization that Andy was saying is fantastic to make accessibility normalized panarama, scenario is also really good news. Trying to shift ‑‑ and that would be a nice horizon for the future of television in Europe is to try to shift the workflow, accessibility production to the ‑‑ to the very production of the content, and not to the broadcasters in the distribution.

That the cost will be, yes, expensive, David, but it's cheaper than what it is now, because you will have duplications. You will have really good original content on the web that you can translate, and you can do. So to me, while Andy was suggesting to shift, that first of all, it will take away quite a lot the load ‑‑ the cost load from broadcasters, and it will put it on the producer and produce a subtitle and it can cost more than $200.

For a movie, let's go crazy. 500 Euros. So in the production of a movie that is, I don't know how many millions, 500 is less than they refer this morning.

Okay. So what has Europe done. At the same time, it's offered some funding to find solutions for these laws, and what the laws are requiring. They are affording three different areas. One is for the innovation. That's the horizon 2020, and we have been doing lots of project. And in fact, we have a cluster the accessibility projects in the lobby and you can visit us.

The other one is training, because many, many experts create subjects if realtime by speaking or to creating subtitles, in velotyping or creating audio description and so the European Union paid to generate the professional profiles and the teaching for all of these new media professions.

And I don't know ‑‑ the content, it's to generate accessible content. And, again, Europe has paid to generate content and accessibility. So this has been going on for the last three years, very, very well.

These some are examples of all the projects that they have been funded, just to do with sign language, to generate not an Avatar, but a puppet. You protect yourself and then you generate a sign language. It's to do with anything with interaction with the television. And it cares about accessibility, and about quality, and End Mark is outside. I don't know if you saw with us our head‑mounted devices. We tried to design a player for 360 video and how subtitles and how audio description could behave in a 360 environment. And Umark cares for accessibility. We do have in the middle, you have media accessibility platform, where there's a map and you can find your countries, the legislation, events, whatever is going on in each country, related with accessibility governed there.

These are the projects that have been done for training. So we have one for the description, Act for act for life event, and Easy to Read and life subtitling and then something ‑‑ again, what Nigel was say, the audience is bringing up a lot, we are finding that accessibility is no longer a niche, a vertical niche in the industry and people with disabilities but now accessibility is going horizontal. So accessibility is now being granted as funding in projects like getting the refugees and integrating the refugees in Europe. And being refugees, they don't speak any of the languages they need to have this cultural and language integration.

And the other one has to do with social networking. And, again, it is considered everybody should be able to access social network and for that accessibility is one of the elements there. So it's quite interesting how ten years ago, accessibility was only for people with disabilities. Today it's not the case. Today accessibility is now horizontal. And that, to me, is fantastic, because it shows that we I don't know beyond this niche and generated an inclusive society.

And the last thing we are doing in Europe. Nobody will like, this I know, but why not. I'm telling you why. In Europe, we have three different writing systems. We have Cyrillic and Greek and Latin. And to have audio description with an AD and it's not an icon. It's a pain. It's not representative.

Also audio description is not called audio description in all languages in Europe. Okay? So we do need an icon. An AD is not an icon. Okay? CC, closed captioning, which is the Latin American word is not ‑‑ again, it would not be the same. In Portuguese, subtitles are not called CC captions. They are called subtitles and so the Portuguese would have an L.

So the same thing goes for all the European languages. So we don't have the services call the same thing. The Danish broadcasters came up with a set of icons. You can generate them with your keyboards, your QWERTY. They are free to use. Anybody can generate them. There is not copyright with your keyboards and your QWERTY. And here there. They are very easy. You may agree. Nobody likes them. Because they can't identify the services with what they are, but if you see once, we have to agree universally or not, that we all call the services with the same icons, otherwise, it would be impossible to exchange to ‑‑ so we should standardize accessibility icons. So that's, to me, a very important first step. So very, very basic is to have the same icons for all the accessibility services.

And with this, I shall stop. Thank you.

(Applause).

>> DAVID WOOD: Thank you. So we should have an ITU standard with those? Is that what you are ‑‑

>> PILAR ORERO: You are not going to be very popular, but, yes. Because nobody ‑‑ nobody likes them.

>> DAVID WOOD: Well, I like them.

>> PILAR ORERO: Thank you!

>> DAVID WOOD: What would you say is the most important thing that is being done in the European groups at the moment? Is there something that's really going to change the world of accessibility in the years ahead? What would be top of your list personally?

>> PILAR ORERO: I think that Europe has done very well, is to foresee what is going to happen. So many years ago, when Europe went from analog to digital, Europe had funded a project on this shift, and so when all the European television broadcasters went to go on digital, there were solutions because they were tested before. And they did accept this with HTV. Four or five years ago, Europe paid for a project called HPTV, and we provided accessibility and services in HPTVs by the time the countries go to it, it's done. IMAC. When anybody wants to start doing something, you a solution exists. You don't have to create a solution.

So the prevention ‑‑ the foresight, the European Union foresight of what was coming and have a solution ready by the time of implementation, to me, has been brilliant approach. A brilliant idea.

>> DAVID WOOD: Okay. Thank you very much. Well, let's turn to our fourth speaker, this morning, one of the great champions of accessibility, not just in Japan, but throughout the world is Masahito Kawamori, who has been dedicated to moving it forward for many years, and he's also the cochair of the IRG‑AVA, along with myself and chairman of the ITU Study Group 16, this is the one that deals with IPTV and Internet and so on which looks at accessibility systems. So we hope that he could give us some background on where he thinks Study Group 16 is in the studies and hope that he will make some suggestions about how he sees the future and how to move forward.

So Masahito, you have the floor.

>> MASAHITO KAWAMORI: Thank you very much. Thank you, Chairman.

So my name is massa hito Kawamori. It's a great pleasure to be here and present my thoughts on IPTV and IP‑based content delivery.

So IPTV in ITU‑T is defined as a multimedia service, such as television, video, audio, text, graphics, data, delivered on IP‑based network managed no provide, the QOS, and reliability. And so it pretty much covers everything. And ITU‑T, SG‑16, summarized H2.1. It could be used for OTT as well. I would like to explain a little bit about what it is and how accessibility is related to it.

And so examples of IPTV services that we discussed is channel services which is linear TV. I can't believe that we are also talking about ultra high deaf nations such as 4K and 8K content. And, of course, video on demand, which is very popular on the web. And this may also involve newer on demand or network DBR and catchup TV and so on.

And then one of the strong points of IPTV service is an interactive service, such as information seeking, multimedia service, such as buying tickets and things like that.

And also we have other services like digital signage, e‑commerce, e‑health and e‑education and so on. And since it's based on IP, we have some technical characteristics of IPTV and IPTV services. First of all, it has a rich set of IP‑based protocols for IP version 6, version 4, multicasting as well as unicasting. Diversified means of broadcast, we have wireless, wired, fiber optic, versus LTE and 5G in the future. And since it's IP, it could be local, as well as global. And there are many different codex such H.265. And there's HD or ultra high definition, such as 4K, 8K and since it's IP, we use also web technology as Nigel mentioned such as structured data like XML, HTML, JavaScript or ECMA script, and since it's IP, it's again, interactive.

And since we have many different devices now, we have smart watches and so on, and IPTV can be available on various devices such as these and also we are getting into this age of IoT and big data and AI and deep learning.

So IPTV can be delivered over SmartPhones or tablets such as these. Or game consoles, PCEs, laptops, Xbox and things like that.

So these are all actual implementations of IPTV. They are all available in the market. And now, I would like to go into accessibility. As David and Pilar also mentioned and all the ‑‑ the people here ‑‑ that the accessibility is known for the persons with disabilities. Accessibility is very much related to universal design. It's the process with the highest possibility. It's not just for persons with the disabilities. ‑‑ and also it's closely related to inclusive design, and it's a design environment that will allow access as many people as possible regardless of age, gender and disability. So as mentioned, by previous, accessibility is not just for persons with disabilities, but it's a general design principle.

Now IPTV and accessibility, in ITU‑T, we have a recommendation H.702, which is accessibility profiles for IPTV. It defines three profiles, main profile, enhanced and basic, for captioning, sign language and audio description as basic functions of accessibility ‑‑ accessibility. It's the world's first global standard for accessibility services for IPTV. And basic profile defines the accessibility services that can immediately be provided by IPTV terminals available already in the market.

So first feature is captioning. So it defines open, as well as closed captioning. As to be able to be changed so cording to its size, color, positioning, and also it has to provide multiple captions, and be able to provide, for example, Bengali and English, Mongolian and French or Chinese and Arabic. Or sometimes maybe we ‑‑ we need some simplified English for intellectually challenged people.

And sign language interpretation, it also needs to be closed as well as ‑‑ as well as open. And signing video could be multisized so that it can be broadened or made smaller and can be made into different places, sometimes on screen or outside of the main stream or outside of the content. And also it has to have audio description.

It defines basic requirements of audio description but currently we don't have any recommended technology or solution, and it can have many different ways of implementing this audio description. It can be either streamed as an independent channel or it can be retrieved as prerecorded audio. As Nigel mentioned, TTML is a web‑base standard for ‑‑ could be used ‑‑ that can be used as a good candidate for audio description.

And also, I have mentioned sign language and closed captioning and many people would think that TV sets are for people who can watch or see, but actually, blind people often rely on TV for getting information. And H.702 supports audio‑based navigation of electronic program guide, not necessarily with TTS, and it's very important that blind people can have access to content on the web, and which can be, you know, provided by way of such EPGs.

So IPTV can provide accessibility features for both blind and deaf, and with ICT and IP new interfaces with deaf/blind is already available, like text‑to‑braille. So this is such an implementation. You have a braille keyboard with tablet. And this one example of an implementation of H.702, which shows the Mongolian‑named program with captioning, closed captioning in Mongolian, with sign language interpretation, and interpreter on the right‑hand side.

And as I mentioned, there are many devices that already support closed captioning, as well as audio description, such as these SmartPhones and tablets. But usually we use remote controllers to control navigation.

And since IPTV is connected with the Internet can be connected to the Internet, it can be used to provide video relay service for Deaf people and hard‑of‑hearing people. Video relay service is a relay service that would allow Deaf people and hard‑of‑hearing to communicate with voice to hearing people. So we can do this ‑‑ this with IPTV terminal with camera, with microphone, with protocols such as web RTC or SIP or H.323, over HTTP. And the operator can provide voice to hearing person over voice over IP. So this is a simple implementation, an example of using IPTV for video relay service. This can be very useful monitoring, for example, older people or person with mobile disability. And also, IPTV can be connected with other devices in the Internet of Things way, and this one example of a system for e‑health monitoring with IPTV.

So these are devices according to a standard in ITU, which is continued health guideline and you have a server for monitoring, and device can collect information and data about a person's blood pressure, or pedometer or weight and then the IPTV display can display how the person is going, and this kind of information would be very useful to the person to monitor your own health and especially for people who cannot go outside so often or someone who needs to stay in bed.

And we are also working on guidelines on the use of AI for ICT accessibility. There's a big hype for AI for AI, in ICT, but in our group, we have many representatives from different organizations of from persons with disabilities. They have some issues about the pros and cons of about AIs, the use of AI. So we are trying to set up some parameters and criteria for using AI technologies especially for automatic speech recognition, because I think it is the most advanced stage in the development of artificial intelligence.

So that's ‑‑ that's the general overview of the IPTV service defined as in ITU‑T, as well as for accessibility.

And I believe that IPTV and IP content delivery can provide very good accessibility for persons with the disability, as well as other general public and it is not the time for accessibility services to be in place rather than under discussion. And IPTV can make accessibility a matter of course without any special intervention now.

Thank you very much.

(Applause).

>> DAVID WOOD: Thank you, H.702 is, in a sense your flagship. Is it thinkable that it could be applied to broadcasting or cable television as well as IPTV?

>> MASAHITO KAWAMORI: Yes, definitely, I believe so, since I think that the methods are converging very much, and the broadcasters are going into the IP delivery and others and also cable as well. So I think as far as accessibility features are concerned, I think it would be very interesting and good, if we can take this sandard recommendation as a sort of a straw man or whatever the first step and then we can work on it or maybe we can define different profiles depending on the way content is delivered.

Thank you.

>> DAVID WOOD: So do you ‑‑ is there a case for passing the H.702 to Andy's group in Study Group 6 and Stefano's group and so on and Pradipta's group in Study Group 9 what do you think is the next step?

>> MASAHITO KAWAMORI: I would like to ask my counselor, Simao, how we can officially do that, but I would be very happy to do so.

>> DAVID WOOD: Okay. Do you have any comments, Simao on this issue of possibly broadening the usage of H.702?

>> SIMAO CAMPOS: Yes thank you, David. I think this is, I mean, a technology issue. And as long as the specifications are applicable and the same parameters, it would be applicable to television. Because this accessibility features that is not for TV service itself, but the IPTV terminal. But the IPTV terminal should not be that different from the normal television that used by cable provider or from the broadcaster.

Of course the hardware might be different because we have a set top box and the TV reception may be embedded in the TV set itself. But several features that need to be made accessible are roughly the same. So I wouldn't see what the problem ‑‑ maybe there's some customization needed. But this is for ITU‑R6 and ITU‑R9 to look into and decide what is appropriate. And I will not comment on the procedural part of these things because ‑‑ because, I mean it does not ‑‑ let's just say that it's doable.

I mean, we don't need to get into the details of that. Thank you. But the most important part is to make the qualification on the technical side and the features and so on. Thank you.

>> DAVID WOOD: Okay. Andy, do you think to would be interesting for Study Group 6 to look at 702.

>> ANDY QUESTED: I'm just arranging for it to be sent to me.

>> DAVID WOOD: Oh.

>> ANDY QUESTED: I'm reading it now.

>> DAVID WOOD: I think Simao, Study Group 6 deals with signals that pass over the airwaves and this is what happens in the TV set. So there's some distinction yet.

>> ANDY QUESTED: And we deal with signals that pass between program makers and transmissions as well. So it's good to not to develop something totally alien, even if it's not practical to plug and play. It's good to use the symbols.

And I will expect an Inter alia about the rapporteur group.

>> DAVID WOOD: And Mr. Takeuchi with us yet? You have looked at the report in the IRG‑AVA meeting. Do you have a view on this issue of sharing information, 702 relevant to broadcasting and so on? You really looked into this and so we are really listening to what you have to say.

>> SHINIYA TAKEUCHI: Yes. But in the parlance, I will comment, the broadcaster is ‑‑ the broadcasting group, nobody, the functioning is for the receiver. It's not familiar to the concept of the profile. So we need to think about the gap of the the concept of the profile and the broadcasting.

But for the television, it's the H.702 is applicable, I think. Thank you.

>> DAVID WOOD: The predictor. It's a bit of an unfair. Do you think you could persuade study group 9, if there's areas of applicable to the networks?

>> PRADIPTA BISWAS: Yes, Stephan is also here. So we'll have an discussion on posing a new question to Study Group 9 about accessibility and, yeah, I mean I think we can ‑‑ we should initiate the process and I think we have a meeting on the Monday, the 10th of June where we can do this, and ensure the process.

>> DAVID WOOD: Also Simao, we have Stefano, the chair of Study Group 9 there. Gentlemen, does this strike you as an interesting thing to look into the application of 702 in the cable environment? What do you think, if I may ask?

>> Yes thank you, Mr. Chairman. Yes, in Study Group 9, we are trying to ‑‑ trying to update our cable TV architecture by equipping with the ‑‑ by a flexible platform, it's a very flexible terminal. So we are open to corroborate with the end work ‑‑ outside of SG9, and the issue being technically possible, I believe. Thank you very much.

>> DAVID WOOD: Okay. I have written it in the notes. If you don't mind, we will move on to our panel session. And first of all, we would have a short few slides and explanation from Roxanne Widmer‑Ilescu. Are you over there? You are there, aren't you? Anyway, what we are trying to do here ‑‑ (Garbled audio).

Give some thoughts on what kind of world we want to go to, what steps we need to take, who needs to do what, and this would be really helpful, but Roxanna, you have the floor.

>> ROXANNA WIDMER-ILESCU: Excellent. Thank you very much. My presentation is a little bit deeper than you saw up until now, because we are working ‑‑ I am working in DDT. DDT is the development sector of the ITU. And we are working in digital inclusion with regard to accessibility. The way that we are trying to work in ICT accessibility is from the perspective of empowerment of people through ICT. Regardless, of their gender, age, ability, location, or financial means, because we also believe that lack of financial means ‑‑ so affordability is actually a problem and a barrier.

So I'm not a technical person. I'm a lawyer. And in DDT, we are actually advisor our Member States in developing ICT accessibility policies and strategies for implementation of this ICT accessibility issues. So we first struggle a lot with all these terminologies, having a goal very clearly in mind. The goal is inclusiveness. We actually are here sharing the same goal, regardless that the language is quite different. The goal is to live behind an inclusive world, a digital society that is inclusive. To leave a better world behind us and so we talk about equal access. Equal access to information. We talk about ICT accessibility, accessibility ICT, assistive technologies and I challenge you, can anyone quickly in one minute tell me the difference about it? We managed to do it in DDT and I will share it with you.

So well, if we talk about access of ICTs, of the information, Nigel was mentioning that people with disabilities can access media and he was saying that access to media is a right, but if we talk, for instance, with our colleagues, access to ICT, what it is, infrastructure.

So I ‑‑ I do have my colleague here, and so of course at some of the ‑‑ some of us when we say accessing information, they actually are talking about making available.

If we talk with people in very ‑‑ very involved in ICT accessibility, then we are telling you that access, it's a whole process to access information, the information should be accessible.

For instance, the colleague from W3C was mentioning that the content should be ‑‑ the procedural, operable, understandable. And, actually, yes, indeed. In order to have this information available, you have to have the structure of the web already accessible and also the content of that in the web is accessible. So content is accessible. If you don't have an alternative text behind this photo, a person with visual disability cannot understand what it is behind the photo. All this to say that we are trying to make inclusiveness from the ‑‑ to merge inclusiveness in all areas of activities and to destroy barriers.

Sorry. Okay. We also tried to explain exactly what does it mean, destroy barriers when you have difficulties to speak, what ICT can do as an interface to facilitate all of this. So I use voice recognition technology. I have low vision. I change phone size and the caller and all of this. So for us disability is a barrier, and it can be attitudinal from the environment perspective also.

So therefore, we always have to keep in mind exactly as the previous speaking was saying that perhaps we have to think in ‑‑ I think it was Masahito who mentioned that accessibility is related to universal and inclusive design. Yes, in architecture, it's simple to understand. You have stairs. So accessibility is around, okay, simple. In technology, it's not so simple, but I ‑‑ we do believe that accessible ICTs are our ramp. And what does it mean, accessible ICTs? So for us, accessible ICTs are the equipment or the services that have varied design features and can be designed on all user bases on all of their own capabilities or ‑‑ (Garbled audio).

80% of media, yes is consumed. 80% with subtitle. Yes. Do we really all need subtitle? Yes, perhaps not ditush our neighbor or because we work in open spaces, or because we are refugees or because with all of this international environment and globalization, we all face, three or four or five languages. Perhaps daily. It's more on the case in the ITU. So, yes, a subtitle, it's important for all of us. And with regard to who applies this ICT accessibilities, based on our statistics, she's no longer that we have 1 billion people that live with disabilities and perhaps less of you are awear that we have over 1 billion youth with hearing loss, and my colleague Simao will talk perhaps a little bit more. And you also will have over 2 billion young people age 60 and above in the next 30 years.

That means if by 20 ‑‑ if my math is correct, by 2030, we are expected to reach more or less 9 billion. So 4.5 billion will need accessible ICTs. So to do so, and to achieve, let's say, our goal of supporting our member, we also try and ‑‑ I tried to put my slides exclusively in this area but I will speak a little bit more because we are doing behind‑the‑policy. We tried to support them in this accessibility policies. But most of the council is convinced, several instruments, but the ‑‑ the results are concrete and I only have some figures from Europe are not always the one that we would like.

So colleagues, we also have a Study Group in a specific question. We also have reports and the reports are more interesting about best practices in each of the area that our colleagues are, let's say, solving the issue from more technical perspective.

So we address the issue to the government, but also to the industry, to the private sector and academic member, and try to present them accessibility also as a business opportunities because for industry, for instance, or private sector, if you don't reach all of your audience, you lose clients. You lose clients and you lose money. So academic member, if you don't provide your content accessible, you do not provide the possibility to own the children access to education and so on.

So I will try to go briefly, but I definitely incentivize you all to also take a look in ‑‑ on the work that you are doing in Study Group question 7, because we in Study Group question 7 also share global best practices in each of the topics which can be policy TV, mobile, media, procurement, web accessibility, and so on.

Well, since this is a specific workshop from legal, I really try to modify my slides to not repeat information. I think everybody now it's aware of all the legal instruments and in particular, the directive ‑‑ the revised one ‑‑ the audio visual media services.

So it's very important for us in ITU‑D to support us in implementing all these requirements, because it's not any more, let's say on a voluntary basis. They are now obliged to do it as it is also for the web and they are all interlinked. So we have to support everyone to reach all of these standards and requirements.

Since the slides will be later available, I just prepared to ‑‑ to go on.

So in concrete, what national regulatory authorities should do, well, harmonize the rules, revise the existing one and try to adapt to those also considering their national environment, because as was mentioned by the previous speakers, Europe is challenged with several language, Pilar was saying 200.

>> PILAR ORERO: More than 200.

>> ROXANNA WIDMER-ILESCU: It's not the same like Latin America, where everyone is speaking English and Spanish. We have to provide a different device from the Europe part. So as the key issues, I would say if only we look from the perspective of the European, I would say the keyword and the new word is fundability. So the fact that the obligation actually can be turned into a mandatory requirement, and, of course, every single obligation that a service provider should keep in mind, the EPG, that was mentioned by my colleague, of course, the closed captioning, the audio description, how this will be represented no to be internationally recognized for everybody, this is, again, another challenge that is yet not solved, but in this very moment, the country already has to respond to all of these requirements.

So I would like, in particular, to go to the overall steps and the recommendation that we have to ‑‑ to do an adopt any kind of policies. So it is now we are talking about video, but we can also apply it for the web or for the other one. So, yes. The mandatory quotas this is not any more a question. When they are in place, country try to really make some ‑‑ some changing ‑‑ changes in the area. So this, for instance, is Europe very welcomed.

But what perhaps my previous speakers did not highlight enough is consult with the stakeholders and valid the end user, the person with disabilities, whatever, let's say, solution it is implemented.

Of course, promote awareness. It's also very important because from time to time you could have the accessibility features. Most of you, you do have accessibility features in your mobile, but perhaps only few of you are using it. And, then, of course the training from the customer service staff, I would say that if we continue to work from this inclusiveness perspective, this will come naturally. So everybody will understand that when we discuss with someone who do not necessarily have the possibility to see us, you cannot enhance them ‑‑ a paper to say, here is your invoice because he don't know what is in this paper. So a little bit of empathy will help us to be more universal design.

So what I would like to invite you all, we developed a series of resources, including a training and web accessibility actually last ‑‑ last week. We implemented national programming and web accessibility. And in this very moment, there is a public website from the structures perspective, but also from the learn how perspective. So my colleague Yaroslav, would is leading the services in Europe, follows the model in place that's in place over six years in the Americas. And we have a yearly event called Accessible Americas, ICT for all. And since last year we do have Accessible Europe ICT for all. And this is all about ICT accessibility and it's not for persons with disability. It's for all of us and how the accessibility actually can help us to build this inclusive digital societies, because digital is here. We all are in the Industrial Revolution. Like it or not. It's in all aspect of our lives and none of us are getting longer. So it will serve all of us and I take this opportunity to tell you that here we will facilitate the discussion. We also share all best practices from Europe but also globally and we will also try to leverage the capacity of ‑‑ of the audience in ICT accessibility topic, and incentive regional cooperation in ICT accessibility solutions.

So I invite you all to keep an eye in December. We will be in Malta from 4 to 6 December. So I think it will be an interesting forum if you are interested in the topic. And we wait for you there.

(Applause)

>> DAVID WOOD: Thank you very much. We are running rather short of time now, but do you think it would be interesting for Study Group 7‑1 to think about whether they might like no join the IRG along with Study Group 9, 6, and 16?

>> ROXANNA WIDMER-ILESCU: Absolutely. So we are already ‑‑ we have in mace a task force in ICT accessibility in ITU and we are trying to interchange opinion and results. What is very interesting for us is how to bring all of these subjects to the Member States because these groups of technical people who understand this ‑‑ the subject are very important to enable Member States to put this in place. Because it's like a standard. So we did develop, for instance, our colleague developed a standard in safe listening but in ITU‑D we developed a toolkit on how to implement. I think this type of collaboration are very useful in achieving the final goal of implementation.

>> DAVID WOOD: We will write this up do. There are some people that we want to hear from, we ask the question: Who should do what, when and how to make things better and they are Simao who is associated with Study Group 16 and the IRG, and Dusan Caf, who is starting a study on accessibility. Let's give them a few minutes each, if you don't mind. Simao, you would have some words of wisdom for us about the future and what we need to do when, and how? Thank you.

>> SIMAO CAMPOS: Thank you for the simple task.

(Laughter).

All right. So I will give four points that maybe I would like to mention. The first is that we have this thing mentioned here that we have a convergence of technologies. So that also needs to converge as a platform. So a lot of developments is happening in the mark place reflexes that. Users don't care anymore so much of how they ‑‑ their content is coming from, whether it's over the air, broadband or cable. So they want the content and that also reflects on the side of the content production. So more and more have companies that before only delivered the content like NetFlix. They are producing content. They are always producing conenter it.

So we have a lot of expansion in the let's say, making the marketplace more and more complex. So it could make very ‑‑ a lot of sense to ‑‑ as Andy was mentioning to shift the ‑‑ the focus on the accessibility and our requirements or the techniques that need to be done to shift to the production side, that we have normally focused in ITU. I think that's an important shift to recognize.

We also have the convergence in technology. And in the past, there are many jurisdictions that you have very, you now, you know, separated walls on revelation types of steps that are provided. So we just heard from a colleague, and saying that for television, for broadcast, for the requirements for accessibility, it's easier for doing IPTV then for broadcast. So I think that is also a reflection of ‑‑ of the regulatory environment and this convergence of technology needs to be taken into consideration, I think by the regulators to make it more future proof and going into the action that the market is requiring. So that's one thing taking care of this. The technology is being a number of paradigm shifts.

We also have the key point repeated many times today and I think it's very important to repeat again. It's not just for the persons with disabilities. The focus is for a lot of people who use and see the advantage of using those features, making their life easier and interesting. And I think that it has to be explored and has to be promoted and whatever you do in terms of our utilization work has to be taken into account. The people with the functional disabilities that says the language, the case that I was mentioning before, in Europe we have so many languages and that's an issue, and I think Nigel also mentioned that aspect. So that has to be taken into consideration as possibility.

The other aspect that we have to mention, I don't think we have spoken explicitly about that before, is that so far, we have focused a lot on two types of disabilities, hearing disabilities and visual disabilities. Technology has evolved a lot to the terminals and gives us possibilities to start addressing the needs of all the types of disabilities. We have mentioned the autism and other Easy to Read. No? Maybe instead of Easy to Read, easier to grasp. Sometimes people are not able to read, but going those directions, I think, in order to try to meet the needs of more types of disabilities, or difficulties, I think this is an important area that we need to focus on and so far, I think we have quite a lot of effort, and to be fair, in the pasts, things are much more difficult to implement. And so we should explore it take advantage of that to move forward. And that brings me to the fourth point, that new technology does bring new possibilities, but it's very easy to go on the wrong side of things and actually to start to increase exclusion. Technologies can be difficult. They can, no, let's say, so many options that used to just be a remote control thing. Now we have to configure all of those things. It can be very challenging for someone to make good use of it.

It can be other types of exclusions and making technology more complex too, but if people are not brought in from the beginning into the design phase to make the product a universal design, makes higher resign in that. And then we have the new report from Study Group 6 on the use of AI for the production. It just brings to me a concern that in the disability in the community expressed like with automated captioning and things like that.

So the use of AI in these and other areas ‑‑ and other areas might be a challenge and might include inclusion brings other techniques that bring biases together with that. So it can be different perspectives to, that but just if the right school of users is not used into the development of the AI‑based techniques that could bring more exclusion.

So these are the four points the convergence by the wider range. We should cover more disabilities and we should make sure that the new technologies include not exclude people. Thank you.

>> DAVID WOOD: Thank you. That was good as the caption line on the top of the slide, Simao.

Okay before we just go on, do we have Pradipta, are you with us? In your presentation this morning, I counted about five times you mentioned the importance of the driver of revenue, revenue is important. Revenue is king. I mean I did write them down. Does that mean that we will never get these accessibility services we want because they don't produce any revenue? What do you think, Pradipta?

>> PRADIPTA BISWAS: No, what I meant was in the context of the presentation, I made a distinction between businesses, just coming from a former media executive and the businesses are revenue driven and cost driven. In other words, revenue‑driven businesses are businesses where the Euro or dollar ever increasing revenue. He get more in terms of a profit and the cost side. That was the context.

And media business in general is a revenue‑driven business, because it's very simple, right? You have a certain base of assets and so if you have something popular, you can sell it to ‑‑ to many ‑‑ many people and for higher price. So that was it.

However, it's in the ‑‑ it's ‑‑ so I apologize if I didn't make that clear enough. But you could say, actually, this is a very, very important question. And, you know, my ‑‑ my take on this might be different from others, because I think that you said that, yes, it's true that if you don't serve all the audiences that need the additional level of ‑‑ of access, which is translated into costs, sometimes you ‑‑ you lose that revenue. It's a valid argument. It's a little bit simplistic argument in the sense that sometimes in businesses, you could serve customers and actually lose money on serving customers and you actually cut certain segments, you know from being served to cut losses. But many general, that's true about the service.

However, I would say that this is not the argument that I would base my ‑‑ it's not the argument that I would base my case for accessibility and I very much for including some familia reasons.

The thing is that we don't operate in a social vacuum, and the business ‑‑ and the broadcasting business and the media business doesn't operate in ‑‑ in, like, commercial vacuum. They all operate within the context of, you know, being able to amountallize on certain social groups, right? It was the classic broadcasting, that starts with broadcasting licenses and access to spectrum this is the ‑‑ this is a public good.

Education and so on. And so I think there was society and, again, this is my personal outtake on it. That we shouldn't be afraid either through regulation, like what is being said, or ‑‑ or commercial arguments or others demanding this, you know, asking for it, you know. And there's a whole issue of social responsibility of business and many ‑‑ in many different businesses, but I see no reason why we shouldn't be extended to the media business, and ‑‑ and broadcasting business and what have you.

So don't ‑‑ in conclusion, I think that yes, providing accessibility and additional level of that it's a good business, but sometimes it's not. And then when it's not, we shouldn't be shy and just demand it.

>> DAVID WOOD: So when it's not ‑‑ when there's no revenue, it needs regulation?

>> Can you look up and see the sprinklers. Can you tell me the investment of those sprinklers? Or the business case of those sprinkler? None. So ‑‑

>> PRADIPTA BISWAS: I can, actually. It's a part of a multibillion Eurodollar security industry. So it is. Yes.

>> PILAR ORERO: It's the same. Basically, you don't make any more money by putting sprinklers there.

>> DAVID WOOD: Okay. We can argue that over drinks this evening.

>> PRADIPTA BISWAS: That's a part of security industry.

>> DAVID WOOD: I just wanted to give our two last people the chance to ask them if they have a view at this stage on, you know, what should be done, and who should be doing what to move forward, predictor. I know we are only just starting in this game, but have you formed an opinion about who should be doing what?

>> Yes. Thank you Mr. Wood, and, yes, I think this is a good start and already we have started to combining multi Study Groups in the work. And I kind of see the difference in the opinions here because we are running an industry, you have to talk a lot about redundant investment.

But even when I am writing funding proposal, I have to show my funding agency, which is to show that what we get back from it and we talk about patents, licensing, et cetera.

And in this context, what I failed ‑‑ when we are talking about inclusive design, accessibility, we talk about 15%, 10% of the total population who are in the need. But, in fact, what we ‑‑ what we are doing, it has a far bigger implication, for example, I presently working with both aviation and automotive industries and there is a NASA study which shows it has been conducted for specialty program, but what it found that we have I believe, more than 1.2g, that reliability starts decreasing and they are our 85% population, who are not disabilities. They are in a state of automotive improvement and there is a guideline in terms of fund size, and color and contrast. And the civilian and military industries.

So, yeah, my opinion is that looking beyond that let's not always talk about the 15% people who are meeting some form of assistance, but also you take a look at the broader picture that 85%, there's plenty of applications for that and I think as Pilar pointed out, that IPTV, I also agree. I consider myself that I am not having any disability but I like the website because it's easy.

And just looking back to the history a little bit, that there were two earlier focus groups which we can look at appropriately, and so on the focus group, and they are starting already discussed about, that and in particular, since I am presently in the Study Group 9, the Study Group did have the focus on smart TV and the report is available online and I would like you to take a look at the report and maybe express your opinions because there is a chapter on user comments from cable TV and also a chapter on accessibility, which talks about developing a taxonomy which is similar to other work we did. And also talking about describing our common user profile format for various platforms, like as Nigel pointed out that now the difference between cable TV, broadband TV and offline media and software content, everything is blurring because you can do multiple things in multiple devices. So in that case, common user profiling may be useful things to have, when we have our common definition of user.

It's already made by ITU and European Union and ‑‑ well, I should say with not so promising result, but that shouldn't impede us on stopping on looking at and since now we are talking about multiple Study Groups. So that may be one way forward that having a common description of users and also to look at beyond this particular group of users who we term as disability or different range of abilities and looking beyond and sending those statements to the groups who are such not working with accessibility but we can show the relevance today, for their particular workloads.

Okay. With that, I will stop.

>> DAVID WOOD: Thank you. (Garbled audio).

We have heard about the advancement of the technology and the evolving market but I think the point mentioned by Pilar is very important. This is a view. So if you compare the audio visual market or media with the IT industry. If you take your mobile phone or phones are accessible, they have accessibility features and you don't need to be really disabled according to the medical standards to use some of the accessibility features, at least some of the times.

So accessibility is not something that is ‑‑ for those 15% of the population, but it is for all of us. Not all the time, but sometimes at least. So we have to change our minds. And if you go and look at the IT industry, we see that the global platforms of investing heavily into accessibility features. So all the web pages and applications, most of them are accessible and they are promoting heavily the accessibility features, but why? Because they are ‑‑ they see this as a business opportunity and they also see this as a business opportunity to enter the audio individual media markets. And I think the main difference is this audio visual media market is determined by the incumbents that have to adjust because this market has certainly about become disrupted in the near future. So we don't want to make the predictions, but the evolving market will face some disruptions.

When we come to the figures, we see that in Europe, accessibility of TV has been significant. I mean, the improvements, but there is still a long path ahead of us, and ITU and other organizations are doing a great job and these recommendations are very good, the cooperation among experts is great. But I work in the area of the southeastern Europe and eastern partnership countries. This is parent 20 countries. And I see that there's really a huge challenge in ‑‑ at the implementation level. So it's not about the understanding. I mean, people there understand ‑‑ the politicians understand. The experts understand. The associations of persons with disabilities understand but still there's no accessibility of IT websites or audio visual media services because that is a problem in this ‑‑ in this implementation phase. So it's CDIP, we are trying to promote the cooperation among the stakeholders and I think this is very important, because if we go to the main challenges, various presenters mentioned the challenges but I can summarize from our perspective first the legal environment. Some countries ‑‑ so all countries have ratified the convention. So ‑‑ and some countries even have better constitutions, the provisions that all services should be provided equal to all inhabitants, all citizens, it doesn't matter in practice because you can only achieve that if you go to courts. But, if you want to go to courts, what can you do? First of all, we have to unify the legal environment, and in some countries, there are thousands of laws governing accessibility and that doesn't work, because if you want to change something, you have to change several laws. And the market is very fragmented.

Some of the speakers mentioned that we have smaller countries, and several languages and that's a problem. If you go to these big IT companies, platforms, you see that they are developing languages for smaller ‑‑ services for smaller languages. But still, in the area that I mentioned before, there are countries that are not served yet, but they are going to be served. But for the accessibility of audio visual media services, we will need these new advancements like the artificial intelligence and other technologies, but that's going to be costly. So as more countries come to force to develop by themselves, this artificial intelligence algorithms and tools as company platforms invest hundreds of millions of dollars into the development of these technologies.

So I think that is important. The cooperation is very important among the stakeholders in the countries, but also among the countries and also at the EU level, I think we should stress and put more efforts to cooperation in the development of these technologies.

And at the end, I think that we have to slowly change the mind of these incumbents and they have to see the importance of accessibility and start providing accessible services from the beginning and to also include persons with disabilities in the whole process. This is also the lessons ‑‑ the lessons learned by the IT platforms. They try to engage persons with disabilities in the whole process. So in order to provide the services, you need to cooperate with persons with disabilities. But if you go, for example, in some more incumbent areas, we see that these companies try to avoid persons with disabilities and not to make any conversation or at least deep conversations.

So I think that the main ‑‑ the main messages ‑‑ there should be more cooperation between stakeholders and we have to move from recommendations to actions.

>> DAVID WOOD: Very good. Well, in the closing minutes of our ‑‑ I wondered if I could just ‑‑ for ‑‑ well, it's not quite for fun, but just ask all of the delegates a question and then you have to just give me a yes or no answer. That's all you have to do. Okay? And I can't accept a qualified advertisement with this TV program. So could I start on the end there with ‑‑ who was it? Roxanna, yeah, sorry. Wake up. Roxanna, just as a personal opinion, can we expect significant improvements on accessibility services in the coming years? Yes or no.

>> ROXANNA WIDMER-ILESCU: Accessibility services meaning what?

>> DAVID WOOD: Accessibility services for media. Press your button, please.

>> ROXANNA WIDMER-ILESCU: Yes, I'm quite positive. I don't think it's very, very soon. I'm answering yes.

>> DAVID WOOD: Okay, Masahito yes or no person here?

>> MASAHITO KAWAMORI: Yes. Definitely yes.

>> DAVID WOOD: Mr. Quested.

>> ANDY QUESTED: Yes, of course.

>> DAVID WOOD: That's three yeses. And Simao, what do you think? Are we heading for Utopia?

>> SIMAO CAMPOS: We are in that direction.

>> DAVID WOOD: We're on the right change. Pilar.

>> PILAR ORERO: Yes.

>> DAVID WOOD: Nigel.

>> NIGEL MEGITT: Yes.

>> DAVID WOOD: Oh, come on!

>> Yes.

>> Yes.

>> And yes.

>> DAVID WOOD: So we are on the right path. We have got some ideas for what we can do in terms of cooperation and coordination. I don't think anybody had a really, you know, precise answer, did they to what we can do next, where we have some general ideas and some general thoughts. So ladies and gentlemen, thank you very much for staying out these two hours and we will now give a round of applause for our panelists, please.

(Applause).

And now you have a coffee break. So please come back in absolutely no more than ‑‑ well, 25 minutes, something like that for an exciting session on frequency planning and other matters. Yeah.

(Break)

(A CART Captioner is present and standing by.)

>> ISTVAN BOZSOKI: So good. (Garbled audio).

So we can start now. This is the last session and I'm happy to chair it because this session is very interesting. It's kind of like an organizing session because we cover a lot of subjects but now we want to discuss something more that hasn't been done, spectrum issues and also standardization issues and the security, you know, for will content delivery.

So we have five speakers and two panelists. Sorry, I'm Istvan Bozsoki, and I'm from the ITU, from the development bureau. I lost myself. But at least I introduced myself now.

So we have the 15 minutes for each presentation and then we will have a little time for having some questions to panelists, plus also having some discussions from you, because then the most important part is coming and you have the reception of the wrapping up the meeting.

So the video, I will change the orders of the presentations, because Jens Johann has to rush to the airport after his presentation. So I wish to start with him immediately, Jens, the floor is yours.

>> JENS JOHANN: Now you should hear me, yeah. Thank you very much for the kind invitation, Istvan. Yes, I'm starting now for the first part of this all presentations as you called them. And it's a little bit of a special one I want to talk about. It's about sharing our ideas with you, for an ecosystem for content protection. I'm working for Deutsche Telekom, as Istvan just said. I simply want to share with you how such a future ecosystem could look like and here you see the agenda for the short presentation. It's, of course, an introduction as you can imagine. When I will talk about what we call the embedded common interest face, the ECI. I will talk a little bit about the architecture and the components, not in detail because we simply don't have the time for that.

Also, of course, with content protection goes along all the activities dealing with the trust environment, as you can imagine. And then, of course, we also need to talk a little bit about simulation activities and hopefully in 14 minutes we will conclude this presentation.

Yeah. Let's go to the introduction. My company not only a telecom provider but we are also offering TV services, IPTV. In earlier days you know it as Entertain TV, but it changed its name to magenta TV and we are starting with OTT offers. We have something like up to 100 channels from public and private broadcasters who are supporting different formats. Also access, of course to bring new content and emphasis where the protection comes in as you can imagine.

We access to TV and media libraries of several providers and the special interest channels this morning. NetFlix was already mentioned as one of our partners and part of our publishing, and the service control is happening via a TV app as we call it, which can be used in your home, WiFi or also in mobile networks.

I had a look at the numbers of customers who currently have end of year last year, this was, well, roughly 3 million customers and it's calling with the increase of advanced telecommunication lines in Germany.

We need a little bit of bandwidth for TV and HDTV, and it's coupled with the ranges that we have for the networks, for example yes, and we need more and more content protection schemes and the protection scheme, they must fulfill the requirements of the content provider. And they don't want to be bothered with technical details. And there's some thought about the content protection here. We would like to reach as many devices as possible. That's not a wonder. We will decrease the costs for the play out. And the downtown for the updates and the implementation of the extensions because during this time period, you simply cannot offer our services.

And we want to support different content protection schemes in the consumer device. And at the increase of interoperability that we need to take into account. We would like to support an open ecosystem for the market development, and also encourage the ANTR vendors to develop the competitive solutions which we can bring into our system, into our play out center afterwards.

What is also very important for us is to avoid any lock‑in situations for the platform operators and the customers, of course, because it's extremely expensive currently changing from one CA system to another one. And this is something we hopefully do not need any longer in the future, if people are ready to accept our proposals for such a system.

And, of course, we want to avoid the necessity for modules and so we could reduce costs by simply, yeah, letting them out of the old ecosystem.

If we have a view on the market, then we have, of course, the classical broadcast and the broadband networks with increasing numbers of devices there. The interrelated TV set top boxes, the sticks and the consoles and whatever else, and there are many solutions in the market for the linear TV, and via managed and unmanaged networks. There's a whole lot of combinations.

(Captioner change).

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