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ICTs FOR DISASTER AND EMERGENCY PREPAREDNESS
FOR PERSONS WITH DISABILITIES

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>> ANDREA SAKS: Is this on? We are just getting the technical things sorted out. We are going to have a slightly later start. So please just bear with us. We will start in three minutes. We have one more technical bug to sort. Thank you.

Please come in. We are having a little late start because of some technical difficulties. But we will start in about two minutes. I would like to welcome you to our workshop on inclusive ICTs for disaster and emergency preparedness for Persons with Disabilities and those with specific needs. We have a total of five presenters, two of them are remote. Our first one is Ms. Nirmita Narasimhan, who is a policy director for the Center of Internet and society, CIS in India. We have Hiroshi Kawamura who is a board member of the Daisy Consortium and has been working on disability inclusion with specific focus on automatization of communities, capacities for disaster reduction. We have Mr. Hiroshi Ota for transport, access and home. And we have Mr. or Professor Masahito Kawamori who is the Rapporteur for Question 26 and the

Professor at the project at Keio University in Japan. And we have Marcie Roth who is the President and CEO of Inclusive Emergency Management Strategies and the former director of the Office of Disability, Integration and Coordination for the U.S. Department of Homeland Security.

Now my name is Andrea Saks and I am the Chairman of the Joint Coordination Activity on accessibility and human factors for the ITU which is basically situated in the standardization sector, but it is my job to run across the entire ITU and find out what everyone is doing.

So I'm going to start with the person who is remote is Nirmita and Nirmita Narasimhan, she has been a policy director at CIS and heads the accessibility inclusion program. And she specializes in policy research, advocacy related to technology access for Persons with Disabilities and has authored several reports on accessibility policymakers worldwide. And she was awarded the national award for empowerment of Persons with Disabilities by the President of India in December of 2010. And I have had the pleasure of meeting Nirmita. And I would like -- let's see if we can get her presentation up. Nirmita, can you hear me?

>> NIRMITA NARASIMHAN: Yes, I can. Hi Andrea. Good morning.

>> ANDREA SAKS: Would you like to start your presentation? And the title of her presentation is -- is it up? Is No Person Left Behind. Please go ahead, Nirmita.

>> NIRMITA NARASIMHAN: Thank you, Andrea. Good morning, everyone. It is a pleasure to be here and participate in WSIS. And I thank you for the opportunity to participate remotely. I'm going to focus my presentation on a report which is jointly done by ITU ICT and the Centre for Internet & Society on how to leverage ICTs in an accessible manner to ensure that we are including Persons with Disabilities and other vulnerable groups when we are planning and responding to disasters and situations of emergency.

So let me begin with by acknowledging a very well-known fact, that the world is diverse and it is made up of many, many different kinds of people with different trends and capabilities and needs and requirements in terms of information access. Even though mainstream information is required for everyone, it is not possible at the moment for everyone to access them because of different reasons. So there are many groups like that -- whom data mining is vulnerable groups and these include Persons with Disabilities, women, children, elderly people, migrant communities in the case of emergencies and socially and economically

disadvantaged, minorities and so on. And they comprise a huge percentage of the world population. If we take Persons with Disabilities there are approximately 10 to 15% of the world's population which is over 1.3 billion. There are a lot of people who are currently left out of resources of information society and we need to see how we can make it more inclusive for them.

This particular report has focused a little on the Asia-Pacific Region which is most prone to disasters. So it is four times more prone than Africa and 25 times more prone to disasters than North America. So between 1970 and 2011 over three fourths of disasters took place in this region, and in 2011 over 80% of the monitors from disasters occurred in this region.

There is a great need for inclusion and accessibility in this domain. And the report looks at this. So what are the situations when we need to do -- make these -- which are the situations which we need to look at? So hazards be a -- multi-hazard. They can be situations of natural disasters which create lots of tsunamis and so on or technology situations such as oil spills or man-made disasters such as terrorist attacks and a situation where it could be person like a medical emergency or accident, a little more on a larger scale such as fire, or stampede (inaudible).

There are varied kinds of situations where we need to respond and we need to respond appropriately and immediately to all the people concerned. Hence it is important that we look at inclusive disaster management. What is the international discussion around this? So the framework 2005-2015 for the first time called for looking at vulnerable groups. So -- it specifically called for three things, consideration of age, diversity and vulnerable groups and activities. B, to look at specifically training women and giving them education for coping with disasters, and C to regularly review policies and strategies related to disaster management and ensure that they are inclusive.

The Convention on the Rights of Persons with Disabilities, of course, clearly articulates this, Article 11 talks about the basic rights for Persons with Disabilities to have protection and safety during times of risk and humanitarian emergencies. Article 9 ensures the basic right to information, information and communication technologies, Internet, content, new media and so on. Articles relating to education and employment are key ingredients of being prepared for disasters. And Article 26 talks about habilitation and rehabilitation which is relevant when one talks about what

stage of reconstruction post disaster.

Article 31 talks about statistics, data collection and critical to ensuring that we are able to service Persons with Disabilities and other vulnerable groups during times of disaster. So what happens when a disaster -- there are other international influences as well, such as the declaration on disaster preparedness of Persons with Disabilities, the declaration on Disaster Risk Reduction and millennium framework and so on. And the WTDC Doha Declaration 2006 is a role played by ICT and Resolution, importance of early warning preparedness and mitigation.

So what happens when a disaster occurs? There is dire consequences, displacement, disablement. People get separated from the family members and they will lose the property, lose their livelihood, lots of things happen. But women with disabilities and other vulnerable groups have similar challenges. For example, they are not aware when a disaster occurs. In an office building there is an alarm or audio system which is intimidating about a fire. A person who is deaf and not able to hear it, may not know when a disaster occurs or they may be separated from the family or caregivers or assistant technology. There are so many different kinds of challenges which are faced by persons with different disabilities. And this -- all these need to be assessed and addressed. Women are one of the other vulnerable groups who are the primary caregivers for the family and are often left out of the education because they are overloaded by formal or informal load or chores. And they are not able to attend camps. But they are far more likely to make sure that adequate information is given to family members during the disability during times of a disaster.

Children again are often left out of education and training but if we see recently, I think 2016, last year given the Syrian bombing, 7-year-old girl with mom was posting images on Twitter of bombing going on around them. Children have a huge role to play for themselves or by themselves. They need to be targeted. There have been some efforts which are not worthy. For example, the Sesame Street cereal came up with cereal educating, what to do. Sesame Street goes for sound or let's get ready. These kind of efforts need to be replicated a lot.

So other groups are also -- are facing problems, like socially disadvantaged or economically disadvantaged. People who are living in more special areas. Or people who are living in -- will be less likely to have access to information, where to go for aid than other people. So we need to make -- assess the needs of the different kinds of

populations and see how we can address them through different stages through different technologies. The disaster management is a cyclical process and multi-phased. And to broadly make the job easier for us we look at four kinds of things. The first one is early warning planning and preparedness. And as you can see on the slide it has a definite set of activities in creating awareness, education material, training material, creating maps, setting up accessible infrastructure, both physically, shelters as well as technology infrastructure, disaster management systems, collecting data. So this is a critical phase which -- and this is the stage at which we can ensure a good chunk of the accessibility component that gets inside and inclusion happens.

The second thing is the alerts and response phase of intimating when a disaster is happening and where to go for help and where is relief, where to go for medical aid and how to find your family members.

The third stage is recovery, what happens after the disaster. So where do you find temporary housing, claims, et cetera, et cetera. And the last is mitigation which leads on back to planning and preparedness to ensure that when a similar thing happens again, how do we ensure that we are prepared and how do we ensure that we are able to reach everyone on time.

Now let's go in to the technology bit, of course, in the regional and communication technologies and they have a wide fundamental role to play in all activities that we do and their role for making the world inclusive is no longer a question. So let us try to understand the role of ICTs across DC. Really good thing about ICTs is that you have a lot of options. You have a lot of modes of communication. And in each mode if you are able to ensure that you can communicate through multiple channels and multiple means. For example, if you take up television you are ensuring that you have a big role but you are ensuring that it is accompanied by sign language and captioning. And you are fairly certain of reaching most of the people who have some form of, you know, disability or the other.

The other thing about technology especially in disaster situations is that even when one form of technology fails it is possible that the other provides. So if it -- if telephony is not working during disasters, social media definitely up and working and people are able to communicate through Twitter and all the other platforms. So, for example, during the Mumbai attack people were communicating and sharing photos

through Twitter and Flickr images and able to assess going on around them. So there are enough examples of this happening even in the recent London bombing which just happened in -- and we heard a lot about people using Twitter to connect to victims of the bombing and telling them that the cab people, here are people offering their houses for shelter, et cetera, et cetera. This has become a very common and effective mode of communication, crowdsourcing and all these things.

So let's go in to the different phases. Planning, again data collection, ICT can play a huge role and has enough to collect data and to aggregate, analyze and assist them to enable us to come up with good plans. Data collection we can do interactively by going online and soliciting information through surveys and data collection, could be by just looking at all the data which is already available over platforms, et cetera, and has been using them kind of through Big Data analysis or, you know, have disaster management systems and other things. Then also creating training modules and using traditional media, of course, television and radio in an accessible manner. Online platforms where you have, for example, the -- has disaster resource network which is an online platform that has information to store during times of disaster and resources available. There is -- so you have -- you have to use traditional media during planning and preparedness. And ICTs, early warning plays a crucial role.

>> ANDREA SAKS: Can you hear me?

>> NIRMITA NARASIMHAN: Yes.

>> ANDREA SAKS: Can you wind it up in about 30 seconds?

>> NIRMITA NARASIMHAN: Okay. So it has a similar role to play itself giving response, mass e-mails, et cetera. So there are -- all these traditional and specific technologies can be used across the disaster management process. They need to be done in an inclusive manner. And you need to adhere to accessibility standards. And you need to ensure that Persons with Disabilities are brought to the table when we are laying out disaster management plans and processes.

And I think I would like to conclude and say that there are multiple stakeholders in this disaster management process, Government, UN agencies, et cetera, and there are specific things for everyone to do. And I would recommend that everyone read this report as a starting point. Thank you.

>> ANDREA SAKS: Thank you very much. I'm sorry I had to ask you to cut it short. Thank you very much. We are going to take questions at the end. Can you hang on even though you are in India at the moment and we will take questions for

everyone at the end? That would be fabulous.

I'm going to move right along because we did have technical difficulties in starting. So we started late. So I'm going to be a terrible task master on timing. Our next speaker is Mr. Hiroshi Kawamura. And Mr. Hiroshi Kawamura has been working for -- since I have known you forever on the inclusion of Persons with Disabilities and is focusing now on the mobilization of community capacity for Disaster Risk Reduction and his onsite collaborative research and development on accessibility and easy ways to understand information, knowledge and skills for the survival at the extreme tsunami incident was proved to be effective in Japan. So with that gigantic tsunami that attacked Northeastern Japan he has experienced. Please take the floor.

>> HIROSHI KAWAMURA: Thank you, Andrea, for the kind introduction. And I would like to share with you some of the very recent experience of mine and also some projects which are going to be included in the near future.

The title is, of course, making the most of the current accessible ICT and also the potential of build back better collaboration in Ecuador, Philippines and Japan. Building back better is in short BBB. It is very important from UN Third World Conference held in Sendai in 2015 to identify how to include stakeholders including people with disabilities. And I would like to focus on building back better principles for the rest of my presentation, accessible ICT standards we have most currently web content accessibility guidelines 2.0 set out by the World Wide Web Consortium and right now it has become one of the ISO standards. And most recently there is accessibility 1.0 which is just approved by the IDPF. And at the same time IDPF has merged with the W3C.

So then ePUB accessibility 1.0 is going to be integrated with the few web content accessibility guidelines. Here we are at the ITU. ITU-T, ITU-T IPTV accessibility guidelines H.702 is emerging accessibility standards for the IPTV but not only for IPTV but also the broadcasting accessibility is going to be very much influenced by the new concept of IPTV accessibility.

The community requires accessible community information, in particular for disaster preparedness, disaster response, and recovery from the disastership. We have an experience of a very important role of a community FM radio after the gigantic tsunami hit Northeast Japan. The integration of setting up FM radio stations were very effective to organize the recovery process which may include people in the community, including with disabilities in the right direction. But right now we

have IPTV accessibility standards which I believe that the community IPTV will become available in an affordable manner. That will be a new stage for the accessibility of the TV broadcasting.

And one of the important points of the IPTV accessibility guidelines is to allow remote support for the inclusion of accessibility features. Those who are working on caption, sign language interpretation, and audio description are not necessarily working in the studio of the 3D broadcasting station. But they can be outside of the studio somewhere on the Internet.

>> ANDREA SAKS: We have a little background feedback here. You are fine. You keep going. We will try again.

>> HIROSHI KAWAMURA: Okay. So that opens up a wonderful opportunity. That will open up a wonderful opportunity for -- okay. It is okay?

>> ANDREA SAKS: I think it is okay.

>> HIROSHI KAWAMURA: Okay. So the new opportunity of local IPTV which may be affordable for the community for the sustainable local TV broadcasting through IPTV with perfect accessibility, including caption in multi languages and also the sign language interpretation and audio description. Because those working people can be located somewhere on the Internet, and then the user may select one of those channels for accessibility, which is required for each individual. So this is a new opportunity with affordable cost available to the community resilience and inclusive community development that I'm looking at.

The infrastructure for this community IPTV is getting ready as the digital TV system is prevailing around the world. And the question is accessible and affordable content development, how can we develop the content which is required in the community every day in an accessible format? And also in the manner that the community will strive their activities if for the direction of inclusive development.

So affordable -- okay. Affordable content production will be relying on some of the features of the standards. In particular sustainability, creation of revenue stream, and above all easy to produce. And I hope to have a demonstration of Daisy and ePub contents at this place. But the technical barriers prevented me to do so. But I like to stress that on the Daisy ePub could be very low cost, affordable, content production for accessible video, video contents in local community.

Potential pilot project which I am going to be involved is Japan International Cooperation Agency feasibility survey in

Ecuador in support of the reconstruction of the earthquake hit areas. There is -- there was an earthquake -- severe earthquake hit last year, which we lost several hundred lives by one strike of the earthquake. And there is an ongoing project of recovery. So BBB will be most importantly applied to that area because the Government of Ecuador estimates at least 1500 people who are affected by the earthquake are either visually -- with visual impairments or hearing impairments. Those people need to be involved in the recovery process.

And the second thing in the Philippines I have been collaborating with the local library and lost their library entirely. But they are determined to archive survivor's stories to share their experience around the world. So this will also be very good application of the BBB process to include stories of survivors of people who are with higher risks.

And, of course, Northeast Japan and Komodo earthquake, Northeast Japan earthquake and tsunami and Komodo earthquake are most important disaster recovery process currently being conducted in Japan. And, of course, BBB should be applied for that.

In conclusion, the H.702 is -- has a tremendous impact on if the broadcasting company and the community would like to collaborate to support the inclusive and resilient community development, because so far when it comes to the standard development, it is a true story in Mongolia. When I was in Mongolia two, three days ago, they have been discussing on the size, location of caption to be sign language interpretation on the existing screen of broadcasting.

But when I introduced the concept of H.702 they said oh, their issue has been solved by this standard because it can be on and off and also very flexible to have the location which is the best for each scenario of TV contents. But I do believe that the dissemination and implementation of H.702 will be of highest impact on the next standardization of accessible local TV and communications. And thus it will give us the best opportunity for development as a community towards inclusive and resilient development.

Thank you very much for your attention.

>> ANDREA SAKS: Thank you very much, Kawamurasan. Everyone is doing pretty good on time. We are going to take questions at the end. So I'm going to move right along to the next person, and that is Mr. Hiroshi Ota who works for the ITU Study Group 15, which is networks, technologies and infrastructure for transport, access and the home. And the

title of his presentation is ITU-T's Activities on Inclusive Disaster Relief and Emergency Communications. Hiroshi, would you like to start, please?

>> HIROSHI OTA: Thank you, Madam Moderator. Good morning, everyone. I would like to introduce what ITU-T is doing on inclusive disasters and I'd like to cover the general activities related to emergency communications.

And as mentioned several times a huge number of people are affected on the disaster. And several years ago ITU as a whole thought what we could do for the disaster relief or recovery process to make a big difference. And we -- there was already activities related to emergency communications but several years ago we conducted several related activities in several Study Groups. And ITU-T Study Group 2 is a lead Study Group on telecommunication for disaster relief, early warning, network resilience and recovery.

And we identified that several items were missing which were disaster relief for individuals, disaster risk guidance and network resilience and recovery.

To cope with that a Focus Group was created to tackle these missing and critical issues. It was already five years ago. But in the Focus Group on disaster relief systems, network resilience and recovery were set up. And it had several meetings within one and a half years. And in June 2014 it concluded with eight technical reports. And it is listed here starting from overview and it listed up several requirements and also showed some case studies on promising technologies on use cases. And these are available in the ITU Web page and it is free of charge and accessible by anyone.

So I would like to invite everyone to have a quick look on these reports. And during these activities the Focus Groups mentioned it, it is mentioned in their report about accessibility that systems must be helpful for people with disabilities. And in the Japan earthquake in March 2011 it was identified display for people with disabilities was twice for those without. It is important to cover and systems must be accessible for foreigners, who have difficulty understanding local languages and language issues is another issue. Accessibility in general studied by many in Study Group 16 on this Study Group on telecommunications, ICT accessibility for Persons with Disabilities, Mr. Masahito Kawamori is the Rapporteur for that question. And after that I would like to introduce several recently approved recommendations based on the results from that Focus Group and also other activities. And also I'd like to do some proposals, also activities ongoing.

The first one is the disaster message board service. This picture shows pictures. Communication by telephone or mobile phone can be very difficult due to the heavy congestion. And still many people want to contact their family or friends or colleagues to indicate their current status. So instead of using a telephone there can be a message board service which uses IP networks and towards storing and distributing using text information. And it was already approved by ITU-T E.108 in January 2016 by Study Group 2 and this recommendation lists up requirements to realize this service.

The next service is voice message service. Instead of text as in the previous service, this service can use voice and the voice can be stored for -- it doesn't need to be realtime. And it makes the probability to get through the voice to the destination much higher due to the nonrealtime nature. And this is also -- the requirement for this service is also approved by E.108, same recommendation as in the previous one. And this is available on the Web page, accessible by everyone free of charge.

The third one is requirements for safety confirmation and broadcast message and this is not a focus on the personnel working for the public service, such as hospital or police or telecommunication providers and so on who needs to work even under disaster to help people. And this picture shows the concept of the service but it uses the cloud network, networking technologies to collect information.

And the first automatically collect the information and finally collect the information from each personnel. And then broadcasts the status to the people who needs information. And the requirements for setting up this service was described in ITU-T recommendation E.119 and it was approved by -- approved in April 2017, just two months ago, by ITU-T Study Group 2.

And another proposal came from the Study Group, Focus Group, was the system to let persons with hearing or -- hearing or speaking disability to make emergency quote using Smartphones and also relay services. And there are two things. One is to let Persons with Disabilities indicate what is -- what happened and what is necessary. And the second element is to connect that information to the right person or right department. And it was proposed by the Focus Group on disaster relief, and these two elements were studied by Study Group 16. And it is ongoing. The first element to let Persons with Disabilities indicate what happened and what is necessary. And this -- this figure shows how this can be realized. And this service uses a Smartphone. And the

application shows several buttons which can be touched. And to indicate, for example, first the figure in the center shows what is necessary. For example, fire or ambulance or relay service.

And on the right-hand side the figure shows the situation in case -- this example shows in case of ambulance. And with a sickness or injury. And also the bottom part enables to indicate which part of the body is affected and also they are bleeding or not.

Another element is a relay service. And it sends a communication assistant. Connects the Persons with Disabilities and their destination. And the action taken by the CA, the communication assistant, depends on the disability -- nature of the disability that a person has. And if voice, if the Persons with Disabilities cannot speak, then a text message can be used. And if the person cannot listen, then a text message is also used to impact the reply. But in case of he or she can speak or listen, then voice, a voice message can also be used. But between communication assistant and the destination, normally voice is used to communicate. And I'd like to also emphasize that this service is not only focused on disaster situation, but it is intended to be used in a usual situation as well. But, of course, it can be used on the disaster. But probably it may be more needed under disaster.

Okay. Another service proposed by the Focus Group is disaster relief by guidance. Under this service, use evacuation map of the people affected under disaster using mobile phones or Smartphones. Unfortunately, this service is not working at this moment, but hopefully this will be standardized by probably Study Group 2.

And the final element, final thing I would like to mention is the resident network architecture based on the moveable and deplorable resource in it. It is called MDRU. This is standardized and approved by Study Group 15 in April 2016. This technique is kind of a portable telephone office. And to recover the telecommunication service as soon as possible this unit can be moved to the affected area and works as a temporary telephone office.

So that damaged area can communicate very quickly. And this can be kind of a truck container size, like in the picture to function fully. But can be a bit smaller like one type or even risk type. It is a tradeoff. If it is bigger the capacity is much bigger but it may be difficult to carry or move by itself. And if it is smaller, then the capacity can also be small. But it is a tradeoff. But there are some

various prototypes that are already developed like this.

Finally, I would like to mention some other works within ITU-T. In Study Group 2 which is a new Study Group it has a work item on requirements for disaster risk systems in general. And Study Group 5 is working on guidance on ways to improve resilience of network in case of disaster situations.

And Study Group 11 works on international emergency preference scheme which is a -- not quite a new service but it is studied quite a long time to give the priority to a certain important or key people under disaster. And it started with the telephone private service. Study Group 13 works on emergency telecommunication NGN. And Study Group 15 which works on network infrastructure, works on network resilience and recovery in general.

Study Group 16 is a lead Study Group on accessibility, works on support of emergency by IPTV and digital signage. And finally Study Group 17 works on common alerting protocol which is a common language between machines to exchange information related to disaster situation. Thank you very much.

>> ANDREA SAKS: Thank you very much, Hiroshisan. I even learned something because I didn't know that list was so accurate. That's wonderful. I'm not making many comments right now. I'm going to move straight over to our next speaker, who is Professor Masahito Kawamori. And he is a Professor at Keio University. He is also the Rapporteur for Question 26, Study Group 16 which is the lead Study Group on accessibility and also Question 26 is accessibility to multimedia. And his presentation is need for standards for inclusive Disaster Risk Reduction for Persons with Disabilities. Would you like to go ahead, Masahito?

>> MASAHIITO KAWAMORI: Okay. Thank you very much, Madam Chair for your kind introduction. My name is Masahito Kawamori. I'm the Rapporteur of Question 26, of Study Group 16 for accessibility to multimedia systems and services. And today I would like to talk about the need for standards for inclusive Disaster Risk Reduction for Persons with Disabilities and some of my presentation -- I mean slides would have a lot to do with Mr. Hiroshi's previous presentation as well as Dr. Hiroshi Kawamura's presentation before me.

Okay? Without much further ado I would like to move on to my next slide. This is a partial list of some of the recent major disasters since 2005. As you can see almost every year we have big natural disasters starting from Hurricane Katrina which was incapacitating in the United States. And also we had a big earthquake in Italy. In 2011 Japan had a historical

Great East Japan earthquake disaster which was associated with a nuclear powerpoint plant.

In 2013 the Philippines experienced typhoon Haiyan which was one of the biggest typhoons that was experienced. In 2015 Nepal had a series of big earthquakes which incapacitated the country for several weeks and months. And then last year in Ecuador we had also another big earthquake. And even this year in California which has been experiencing historical drought, all of a sudden experienced a series of floods that cost billions of U.S. dollars to the United States. As you can see from the list disasters can happen anywhere any time to anybody. It doesn't matter whether it is Developing Countries or an advanced country, it can happen anywhere and any time.

And emergency situations are not limited to just natural disasters. It could be well unfortunate to say like terrorism and other things. And it is notable that Persons with Disabilities and older people are at the risk of having more casualties than others during disaster situations. For example, as Mr. Ota mentioned the death rate of Persons with Disabilities in older people in the East Japan Great disaster was twice that of general population in that area.

And also during the Nepal earthquakes aftermath or big earthquakes needs of Persons with Disabilities and older people were not addressed adequately in many cases. It was reported by actually a person with disabilities in Nepal at the United Nations Economic and Social Committee for Asia and Pacific. And they also made a report from the National Disaster Risk Reduction Center of Nepal which indicated that the Persons with Disabilities and older people were not -- were inadequately addressed in Humanitarian Aids, most oftentimes they were forgotten even though there were many Humanitarian aids. You can see on the -- on this slide.

So accessibility is important in emergency situations, especially in natural disaster things. And accessible inclusive Disaster Risk Reduction is of immediate need. It is not something for tomorrow to be prepared but it is something for now. We cannot wait because it may happen any time any minute now. And we have to provide it as soon as possible.

And accessibility implies inoperability. It is from -- especially from the standardization point of view inoperability is of utmost importance because emergency preparedness is hindered by noninoperable systems. If you have one system which is not inoperable and very same situation it will be very confusing to the people that would be in a dire situation and which will be in immediate need.

So for that purpose standards are necessary to ensure interoperability. Interoperable standard based solutions for accessible Disaster Risk Reduction is therefore of immediate need.

And why is standardization accessibility important besides the point I just mentioned? Improved interoperability will be improved. They can be used in the same way with the same standard. And especially important, this is especially important in times of emergency because there is no time for deep consideration. You have to react very fast. So in that case you have to -- they have the standard protocol and as well as products. And also it is good for lowered cost of operation and purchase because standardized products will enhance more competition, and that will make prices go down. And that means the products will be more affordable to the user. And standards will lower barriers to development and entry to the market. So that means standardization -- a standardized product will be available in a wider market which will make people to be more able to purchase those products which means more availability of those products.

And in this regard international telecommunication especially within the area of ICTs is very important. It is a United Nations agency for information and communication technologies including broadcasting. It was founded in 1865 the -- it is the oldest international organization. And it is one of the -- one of the works is standardization from -- since its inception. And currently we have 193 Member States with over 800 private sector entities and as well as academia, like Universities, like my Institute and other organizations. It is, of course, headquartered here in Geneva and we are actually in the headquarters right now.

And it is most relevant for ITU to take the lead in this regard because, for example, the international Morse code signal, SOS was formally identified by ITU in 1906 and ITU took a more prominent role of Intergovernmental coordination after the big Titanic disaster. These events made people aware of the fact that there should be a standard among nations.

And some of the well-known ITU standards include, for example, international telephone country code, which you used to call other countries or public key and certificate which is an important tool for security on the website and also the Internet. And also a video compression tool called H.264 which is used also in Youtube and other famous websites which is also from ITU. And ITU also received an award for this H.264 video compression. This is Mr. Malcolm Johnson then

director of ITU-T receiving the Emmy award.

So ITU has been working in standardization and there are very successful standards being used in the actual market. And Question 26 which -- of which I'm the Rapporteur of is -- the group's specifically designed to deal with accessibility to multimedia systems such as video and broadcasting and services to Persons with Disabilities.

We are responsible for developing or assisting the development of multimedia technical standards addressing accessibility needs of Persons with Disabilities and reviews features in telecom standards, such as SG2 and we are cooperating with the Persons with Disabilities organizations such as the World Federation of the Deaf, International Federation of the Hard-of-hearing, the World Blind Union, as well as with other UN agencies such as the World Health Organization as well as UNESCAP which I just mentioned.

And these are some of the relevant standards for ITU-T as well as the standards that were mentioned by Mr. Ota. I am concentrating on the standards produced by Question 26. The first one is H.702, accessibility and profiles for IPTV systems which was introduced by Dr. Kawamura in his presentation. And I have an implementation here in the form of a set top box. And F.921 is an audio-based network navigation system for persons with vision impairment. H.MD-DiDRR is a profile metadata for persons with specific needs as part of the disability inclusive Disaster Risk Reduction. So people can define a person with respect to their needs or diseases or gender or age, for example.

H.ACC-RDE, this is one of the recommendations that Mr. Ota has mentioned which uses certain applications, especially on the Smartphones to help people with disabilities, especially with hearing and speaking difficulties. And lastly but not least FSTP. It is a technical paper for -- for use cases for assisting Persons with Disabilities using mobile applications. Again this is for blind people especially to use Smartphones in the situations, not only in emergency situations but in everyday situations.

Just I'll briefly explain them. The first one H.702 accessibility profiles for IPTV system, why do we need IPTV? Mr. Kawamura mentioned many features. But there are very simple reasons. First of all, it is ease of use and simplicity. As I mentioned something for emergency situation has to be very accessible to anyone. That means it shouldn't have any requirement for usage or training. TV sets have been around for many, many years and people know how to use it. So it is a very good tool because it requires little training for

use and maintenance and technology has been accepted for many years. That means lower barrier to accept for all ages. And which is also again very important for emergency because it is already in -- within the daily routine. You can just watch a program and you can see what's happening, especially when a typhoon is coming or the big storm is coming will be very easy for anyone to watch a TV program.

And another important thing which differentiates IPTV from other broadcasting as Mr. Kawamura also mentioned it is regional as well as global. It can be used as a community broadcast or IPTV or cable or just like FM radio. So critical information about a specific region can be precisely and readily provided which cannot be done by broadcasting because it is usually national or very provincial. It is a large area and regional information can instantly transmit it globally thanks to Internet protocol. So it is not only regional but also global at the same time which cannot be provided by cable or satellite.

How can IPTV help Persons with Disabilities for Disaster Risk Reduction? There are three stages. One is predisaster preparedness, can be used for education which also Dr. Kawamura mentioned. We can use every day mention and every day setup to educate people about the preparedness and which integrates everyday activity and preparation. So it doesn't have to have any special training. And, for example, evacuation information, where to evacuate, where to run and what to do in the case of earthquake and things like that. Confirmation, identification, connection with relatives who are living or not, can be combined with as I said this is again it is regional as well as global.

So with the help of a tool such as MDRU that Mr. Ota mentioned using a vehicle and satellite connection and IPTV one can provide their relevant information right after the disaster. And then post disaster response after 78 hours, 72 hours when the immediate aftermath, aftermath of a disaster IPTV can be used to support victims, survivors and their families. And then we can use the same setup for support, support of the long-term recovery and reconstruction, especially the local community through, for example, dialogues and narrations and storytelling about the incident and experiences of those big disasters. These are the ways we can use IPTV for Disaster Risk Reduction.

And it has been implemented as Mr. Kawamura has been mentioning and this is one example where in the Philippines Ateneo De Manila University has been conducting an IPTV test bed for Disaster Risk Reduction. Together with satellite and

also online course and Twitter and things like that to help preparedness as well as post disaster events. And that's IPTV.

And then I would like to go on to audio-based network navigation system for persons with visual impairment. It is called Wayfindr. This is one of the series of recommendations for navigating persons with visual impairment. Based on the open specification called Wayfindr by Royal London Society for Blind People. This specification itself has been implemented and being tested in several cities like London and Sydney, especially in underground situation. It provides guidelines and guidance on the way that the Smartphone app for navigation is made for blind people. And this is also essential for inclusive DiDRR for persons with visual impairment.

Yes, I just want to show you a little video. It is only one minute. Can you make it bigger? Yes. Thank you. Full screen. And maybe CC, close caption. No audio. Okay. So using Wayfindr for spoken instructions people can navigate. So here is how it works. So you get, for example, you go to underground in London. You get an I.D. collected by a beacon which is installed in the metro station. And a blind person can walk with the instruction which is audially given to her. And so she knows where she needs to go, and yeah, so this is the information. You are approaching the barrier. And this is the information that's actually voiced to that person. And so she knows where she should be going, whether she should stop, where she should turn right or turn left and which direction she can go. And this kind of information is provided by the station itself. And she can just navigate herself to her next station or train.

Okay. Thank you. Can you go back to the presentation? So as you can see this is very, very helpful for persons with visual impairment. And it has been implemented and we are expanding the recommendations so that we can make more applications compliant with this recommendation. And this is the Wayfindr or F.921. It is an audio-based navigation firm which is a very new recommendation from ITU-T SG16.

The last one that I would like to mention is H.MD-DiDRR, profile metadata for persons with specific needs. This recommendation, draft recommendation follows the recommendation from the Sendai Framework for Disaster Risk Reduction for 2015 to 2030 in which they say to promote the collection, analysis, management and use of relevant data and practical information and to ensure its dissemination, taking in to account the needs of different categories of users as appropriate. This is the -- this actually came from the

lessons we learned from the Big East Japan earthquake. Because sometimes we didn't have any information particular information about the Persons with Disabilities or older people or persons with diabetes, for example.

So many people actually died even though they survived the big disaster because they couldn't get enough support afterwards. So it is very important to have this kind of specific information about not only Persons with Disabilities but with specific needs. So this is exactly what profile metadata is expected to achieve. This recommendation is designed to define a profile of a person, for example, what age she has, what sort of disabilities she has, what sort of specific needs she has, for example, like diabetes. She might be diabetic. So she has to have certain medication. Or a specific disease such as Denga, for example, or any other information.

And this kind of information can be shared by relevant organizations like municipalities or police stations, fire station, so that in preparation for emergency and in the case of a big earthquake or a disaster situation those organizations should know immediately where they should be looking for people with specific needs. So this is a recommendation that we are working on to -- so that we can have this kind of information standardized so that anywhere in the world the Government or municipalities, local Government, local police stations can have this kind of information shared.

So in conclusion an emergency can happen any time to anyone. Persons with Disabilities are the ones affected most. So accessible Disaster Risk Reduction is of need need, not for tomorrow but for now. And inoperability is essential and standards are mandatory and ITU-T has defined many standards for emergency preparedness. And they can provide inoperability to many in disaster situations in emergency preparation. That's all. Thank you very much.

>> ANDREA SAKS: Thank you very much, Dr. Masahito Kawamori. I always learn stuff. I didn't know half of that. That's wonderful. The next -- as I say keep moving down so that we get everyone in because we started late. We have a quick sound test on Marcie, is that correct, Jan? And Marcie Roth, I will do the -- shall we do that before we introduce her?

>> We can do that now.

>> ANDREA SAKS: Let's do that now.

>> MARCIE ROTH: Thank you. This is Marcie Roth. This is Marcie Roth.

>> ANDREA SAKS: We are going to hang on a second. We are going to get you louder and then I will introduce you.

>> MARCIE ROTH: Okay. Very good. Thank you.

>> ANDREA SAKS: One second.

>> Please try fine.

>> ANDREA SAKS: Would you speak now, Marcie?

>> MARCIE ROTH: Sure. Good morning, everyone. How is that?

>> ANDREA SAKS: That's good. This is Ms. Marcie Roth who is the President and CEO of Inclusive Emergency Management Strategies and the former director of the Office of Disability Integration and Coordination for the U.S. Department of Homeland Security and FEMA, which is the emergency services. So Marcie, I am going to let you run -- your title is whole community ICT accessibility before, during and after disasters. Go ahead, please.

>> MARCIE ROTH: Hello everyone. And I just want to begin by saying I had a personal disaster this morning. I dumped a full cup of coffee in to my laptop. So we are -- in my ever deepened commitment to redundancy we are using iPad and iPhone because my laptop may or may not ever work again.

So it raises a very important point and that is that redundancy is really key in emergencies and disasters. So I'm going to ask someone else to advance my slides. And I have no ability to do that. So we will go to the first slide which is Inclusive Disaster Risk Reduction. And very simply I want to make the important point that the Sendai Framework which has previously been well discussed by my colleagues has explicitly pointed out that Persons with Disabilities among the whole community needs to be engaged and fully inclusive in the design of and implementation of policies, plans and standards.

Next slide. And as we talked about earlier over a billion people, 1.3, in fact, have disabilities. And it is important that we always remember that what happens to these individuals has a direct impact not only on them, but on everyone. And so there is an imperative for inclusion in order to optimize very limited resources before, during and after disasters.

Next slide. And again the Sendai Framework speaks very specifically to the imperative for engaging the knowledge and leadership skills that people with disabilities can bring to all aspects of Disaster Risk Reduction as well as throughout response recovery mitigation, et cetera.

Next slide, please. And there are a number of gaps, some of which, many of which have already been addressed. And I want to make the point that these gaps are, in fact, impacting not only people with disabilities but as well the whole community.

And it is especially important that we recognize that the disproportionate impacts on people with disabilities when we fail to provide effective communication access are resulting in two to four times the loss of life and the acquisition of additional disability because of that failure. And that this is true among older adults, families with children, people who are very poor, people who have limited language proficiency and many other groups.

Next slide, please. Effective communication access in a disaster is going to take a number of forms. And again we need to be redundant and we need to be mindful of the variety of communication access needs that people have in order to access key information. Information has to be accessible to be actionable. And if we expect people to be able to take personal protection, family protection, community protection actions, the information has to be accessible.

Next slide, please. And I'm sharing an example of a recently published announcement for reporters and journalists who are pretty excited about this directive out of the state of Virginia. The state Government of Virginia is reminding reporters and photo journalists that they must make sign language interpreters visible at all times and give them very specific instructions on what and how they need to do it and very importantly that the Virginia Department of Emergency Management will be monitoring to ensure that the interpreter's face, body, arms and hands are visible on a television screen. Those folks who are going to be receiving their information through television or Internet, this is a very exciting new outcome.

Next slide, please. And so we need to be especially focused on universal design and universal accessibility. And so the opportunity to bake this in before we need it is an example of the previous two slides.

Next slide, please. And when we plan for the whole community, not simply individuals with disabilities, not simply individuals who have access and functional needs, but in fact, whole community inclusion we are going to -- next slide, please -- we are going to address not only those folks who in some places may have some legal or Civil Rights or Human Rights protections but we are going to plan universally so that we can engage many groups who are going to be disproportionately impacted if our communication accessibility is not inclusive of them.

Next slide, please. And so in the United States we do, in fact, have a working definition of access and functional needs. The Department of Homeland Security published this

definition in 2015. And very simply circumstances that are met for providing physical, programmatic and effective communication access to the whole community by accommodating individual requirements through universal accessibility and/or specific actions or modifications.

Next slide, please. But as I discussed earlier is that we must be planning with people with disabilities not simply for us and we have a saying "Nothing about us without us." And as an individual with a disability myself it is my responsibility to come to the table, be actively involved throughout planning preparedness, response, recovery, mitigation, building back better, et cetera. It is also the responsibility of my community to engage me as an active participant.

Next slide, please. So promising and good practices that we need to be invested in and committed to, universal accessibility is baked in to all aspects of our work, not an afterthought, not an annex. That people with disabilities need to be at the table and that we have a real and not tokenized role. And that we are given the opportunity to serve not simply by being at the table but serve in leadership roles. Next slide, please. And I want to point out the imperative that we use language that influences the behavior that we are looking for, which is why we no longer use the term special needs. Special needs, in fact, identifies something extra or something that is not a part of the universal accessibility. The 1.3 billion people across the globe, older adults, women, children, people who are very poor, et cetera, are not special populations. We are part of the whole community in every community. We are not vulnerable or at risk populations. We are, in fact, a part of the whole community. And we experience a disproportionate impact as a result of the failure to provide equal access and full inclusion. We are no more vulnerable or at risk than anyone else in emergencies and disasters. We are individuals and we wish very much to have planning be with us and not for us.

And finally we really appreciate that in the global effort not to use acronyms, that we don't slip in to the habit of using acronyms to describe people when we readily agree amongst us that using acronyms to describe things is no longer acceptable. Let's be sure we are not using acronyms such as PwD, AFN, DD, for example.

And finally I do have a two-minute video. I don't know that it is possible for you all to view it. But I'm happy to provide the links if, in fact, it is not possible to play it. And that's my presentation. So I welcome the opportunity to answer questions.

>> ANDREA SAKS: Thank you, Marcie. We have been given an extra five minutes because of the technical difficulty that we had before and you were very concise. So we do have a little bit of time. Before I do that, I want to thank all of our panelists for providing such a wide variety and interlinked series of presentations which certainly I found extremely useful. I would just like to thank personally Mr. Hiroshi Kawamura, Mr. Masahito Kawamori, Hiroshi Ota, Nirmita Narasimhan. Nirmita I don't have your name in front of me. Nirmita of CIS in India and Marcie Roth. I would like to give these people a round of applause before we carry on.
(Applause.)

>> ANDREA SAKS: Thank you. Now I think the most important thing is not to hear from me, but I want to just make one announcement, there is going to be a report made of all these presentations which we are going to post on the web and we will make it known. And also will be on the WSIS web and the JCA web. If you would like to ask our panelists some questions, if you know which person you wish to direct it to, if you could do that then we will direct it to them. We have two remote, one in India and one in the United States. Are there any comments or questions -- we have a young lady. When you get the floor you are to give your name before you do anything else and then ask your question. Please push your mic.

>> Thank you very much. I am very flattered that you say I am a young woman. I have a question -- my name is Vanessa Gray and I am the head of the BDT division in a range of Least Developed Countries and emergency telecommunications. This is a very important topic to us, to our work. I have a question to Mr. Masahito Kawamori. You mentioned the profile metadata for persons with specific needs and with disabilities. And I was just wondering whether there were any specific recommendations or how you were dealing with the issue of privacy because, of course, as soon as you collect data on specific disabilities and profiles this is very sensitive data because, for example, in the hands of insurance companies and so on and I know this issue has been debated in other fora, but I think what's really important and this is why the emergency communities are very -- have a very important role to play because there is a lot of debate going on in privacy and security, but on the other hand what happens if we don't use the data that we can actually gather. And so I think it is very important to make the point of how important it is and how do we balance the risk on the one hand, the privacy issues and the usefulness and actually the obligation, the ethical

obligation to use this data that can in the end save lives. Thank you very much.

>> MASAHITO KAWAMORI: Okay. Thank you. May I? Yes, you have a very good point. And I do agree that privacy is very important. But at the same time, for example, do you know EHR, electronic health record which is shared by among doctors, for example. It is the same -- I think it is the situation is rather similar. So EHR is a sort of metadata about health record. And we also have PHR which is personal health record. And one important thing is personal, I mean consent, who will give the consent. And also we have to have the ability to have permission levels. For example, people might not be so how shall I say? Scared about give giving the information about one's age. But maybe they are reluctant to give information about their diseases. So depending on the type of information one or the organization or the standard has to be able to provide proper level, appropriate level of permission. And also security. This is very important. And any error of data exchange I think. So that should be also recorded in this recommendation and with the help of proper organizations like WHO and others we can -- I hope we can set up some standards for that. Thank you.

>> ANDREA SAKS: Thank you, Masahito.

>> Thank you very much. My name is Pascal. I am working with the Prime Minister's office of Bangladesh as a national consultant. I heard the voice of Mr. Hiroshi Kawamura and I would like to congratulate you. We are expecting a word tomorrow for your Daisy which you have started in Bangladesh in 2005. So you should feel great, great.

So my questions on behalf of existing information from the Prime Minister's office of Bangladesh. We are making the digital Bangladesh inclusive and it is disaster management is one of the important things for us. And we have a law and legal mandate to do that. We are expecting the international collaboration and expertise and people like you who are here and we will be very glad to get your knowledge. How are you thinking, like Daisy can play a role to make the information accessible for all? Thank you.

>> HIROSHI KAWAMURA: Okay. Thank you very much. Yeah, Daisy and the most current ePub accessibility 1.0 standard will contribute a lot, in particular for the contents development which is affordable and be accessible at the same time. I cannot say the details but I'm sure in our feasibility survey in Ecuador and probably in the Philippines we will prove it and share the evidence with the world. So that's my answer to you.

>> ANDREA SAKS: Thank you. I believe we have a remote participant who wishes to make a comment. Jan, could you please express that?

>> REMOTE MODERATOR: Yes, thank you very much. I have comments and remarks for the -- regarding the first presentation from Deidre Williams and she had a question. What provisions there are in the plan to ensure access to electricity during and after the disaster? And I have another comment from Ms. Williams regarding the second presentation which is the inclusion of survivors such as to learn from is a very useful idea.

And also I have a comment from Mr. Christopher Jones. And also Gunela Astbrink.

>> ANDREA SAKS: Because of the time constraint we will take the comments.

>> REMOTE MODERATOR: I believe it will be encouraging for PwD to use community IPTV. We need to encourage this to happen everywhere because of its broad accessibility to as many different PwDs. I think for the UK this would have been very valuable in the recent terror attacks. Three of them within a short period of time. And another question from Mr. Jones. Can community IPTV work with Smartphones? Is the screen size an issue? And Gunela Astbrink raised her hand.

>> ANDREA SAKS: One second. Anybody want to take the answer to that? I know that IPTV can be used on a Smartphone, correct? There is no problem there. Deidre, I don't know the answer to an added electricity in a disaster. I think that would depend on where and what. There is no one answer for that, but it is a good question and they have taken it onboard. I am taking the liberty to do that. Gunela, do you want to speak?

>> GUNELA ASTBRINK: Yes. Thank you very much, Andrea.

>> ANDREA SAKS: Go ahead.

>> GUNELA ASTBRINK: Yes. Hello. And I hope you can hear me, Andrea and everyone.

>> ANDREA SAKS: Yes, we can. You will have to be very brief. Just go for it.

>> GUNELA ASTBRINK: Thank you. Yes. I have a number of comments and a question in regard to using IPTV in regard to remote Developing Countries like in the Pacific where the people do not have TV. They mainly rely on radio. They don't have Smartphones. They might have simple phones. So I just want to emphasize that there are some places where this can be difficult. Also in the Pacific, the main advocacy, the Disability Forum has done some work in the aftermath of a very major cyclone in Fiji and collected a lot of data with people

with disabilities and how they coped and didn't get information and follow-up. And this has been used as recommendations with the Government. And I wanted to share that because that might be useful for others as well.

And finally I wanted to mention the common alerting protocol which we use in Australia and in Sri Lanka and other countries. We heard a lot about a lot of different recommendations, standards, and I'm interested in how some of these can work interoperably and how some are prioritized against others. Thank you very much.

>> ANDREA SAKS: Thank you Gunela for that. I'm just going to check on one thing. I don't think we have any more time. I wanted to say thank you again to our presenters for their very informative and wonderful presentations. And thank you for the questions. And unfortunately we could go on forever but there is another session in ten minutes and they need to check their technical stuff. So thank you all for attending. And we will do a report. There will be a subsequent workshop done later in October, perhaps it will be done in Tokyo. We will give you information on that. Check the JCA-AHF website for details on that. And also the Study Group 16 website for details on that.

So thank you very much for coming. And I want to thank personally everyone who contributed, especially Marcie who got up in the middle of the night. And Nirmita in India. Thank you. And this session is closed.

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