IoT SIG e-meeting – April 30 2020

Yuri Kargapolov

Okay. So our meeting is devoted to the topics related to the further organization of our work. The work of our SIG. Let me introduce our presentation. Just one moment

Internet Society
Internet of Things SIG

Date: **April 30, 2020**
Time: **2:00PM UTC**
Place: **Internet Space via Zoom**

Agenda of the e-Meeting:

1. Introduction and brief presentation from the Board.
2. Discussion - experience and case studies from members and local problems from different geo-regions.
3. SIG launch plan for the *questionnaire*. **Benjamin Akinmoee** report.
4. Formation of Task Forces taking into account SIG plans.
5. *AoB.*

Yuri Kargapolov

Opportunities, changes and challenges, for the IoT industry during the new reality, COVID-19 and the role of the IoT SIG as a global community is the topic of our electronic meeting, e-meeting. The agenda of our e-meeting includes five items. The first is introduction and representation from the board. The second one is discussion, experience and case studies from members, and the local problems for different geo regions. If you're dedicated to our, one was the result of our general meeting. It will be a report of Benjamin, represent out to us. We seek launch plan for the questionaire. Benjamin will say more detail about questionnaire. What is the questionnaire. What is it for? The fourth item is formation of Task Forces taking into account SIG plans. It will be a brief report of our secretary Natalia Filina, and AoB, it's our traditional point.

Mobilization and Consolidation Membership Plan

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- **Work on consolidation and improve of collaboration between IoT SIG members**

- **Initiation and leadership of cooperation with ISOC SIGs and other ISOC Structures**

- **Involving Youth Generation in IoT issues**

- **Project on promotion of events organized by the Chapter**
  - Production of education program (guidebook)
  - Creation of communication channels on IoT issues
  - Creation of platform for collaboration and discussions on the IoT issues
  - Initiation and support to IoT events
- **Project on Awards**
  - The best implementation IoT (Social Aspect)
  - The best of the IoT Educational Program
  - The best of the Agriculture IoT Project
  - The best of the Industrial IoT Project
  - The best of the IoT Climatic Project
- **Creation on the SIG web-resource the IoT International Knowledge Platform**

Yuri Kargapolov

Mobilization and consolidation membership plan. If you remember, it was last slide of our presentation of the board during general meeting in December. So, I will want to refresh the importance of our work. So work on consolidation and improve of collaboration between a IoT SIG members. It's very low on unfortunately, with a low level. Initiation and leadership of cooperation is ISOC SIGs and other ISOC structures, we are working on this. Involving youth generation in IoT issues. Not good, not good. Project on promotions of events organized by the chapter is production of educational program. I won't say that it will be a topic of our next meeting, I'd look for education program and curriculum. Creation of communication channels on the IoT issues. We're working on the creation of platform for collaboration and discussion on the IoT issues. Now, we will be realized at this point, initiation and support of IoT events. And project on Awards, it's a future plans. The creation of SIG web resources, the IOT international knowledge platform. It's connected with our next topic, I mean, next meeting (unintelligible).

New challenges and opportunities in the IoT industry at COVID-19 conditions

Internet Society
Internet of Things SIG

Format - open Microphone
filinafilka@gmail.com

- **Legislation**

- **Technologies**

- **Logistics organizational**

- **Emergency situation**

- **Trust**

How it has affected and will affect the IoT industry?

Can we say that the consequences of the COVID-19 in the economy were reflected in the IoT market and new challenges appeared for security, identity management, process management? If so, then how will this affect the development of software and hardware, training programs, and curricula?

What scenarios do we need to prepare for?

Yuri Kargapolov

New challenges and opportunities. The second point is new challenges and opportunities in the IoT industry at COVID-19 conditions. It's of the format, open microphone. All your suggestions and your proposition you can send to our secretary Natalia, email you can see, filinafilka@gmail.com. From our end we proposed for our flow, if you want, legislation, technologies, logistics organizational, emergency situation. and trust. How it has affected, and will affect the IoT industry. Can we say that the consensus of the COVID-19 in the economy were reflected in the IoT market? And new challenges appeared for security, Identity Management, Process Management? If so, yes. Then how will we affect the development of software and hardware, training programs and curriculum? What's scenarios do need to prepare for?

Yuri Kargapolov

Before we start our discussion, I want to introduce you to our guests. I want to announce that we have Craig Spiezle. Craig Spiezle is one of the fathers of the Online Trust Alliance. Now it's a part of ISOC, and Craig agreed to present this approach on our platform. And we have, as a guest, Wout de Natris. One of the leaders in the development process for building trust. Craig and Wout kindly agreed to present their vision of the process which are very close to us. So, the time limit for each speaker is seven minutes. I repeat that anyone who wants to reflect the (unintelligible) in the final minutes of our meeting, present your proposals to the Secretary of Special Interest Group to filinafilka@gmail.com. So, who wants to start? Craig, maybe you?

Craig Spiezle
Good morning. This is Craig Spiezle. Yuri, can you hear me?

Yuri Kargapolov
Yeah.

Craig Spiezle
Good morning, and thank you for the introduction. I'm really more of one here to listen and learn and better understand how the working group is is proceeding. I didn't have anything specific to share other than, getting back to your earlier slide with COVID-19, we're seeing a lot of new innovative approaches for connected devices, IoT devices (unintelligible) and to provide tracking and such (noise) privacy concerns.

Craig Spiezle
I'm sorry. Someone said something.?

Yuri Kargapolov
Yeah, yeah.

Craig Spiezle
So, in the other. So, again, not unlike what we've seen, and I know I see Steve's on the call here. Good morning, Steve. We have a lot of innovation that's occurring. But again, as you look at the intersection with healthcare, it is bringing a lot of concern globally on the privacy concerns, and the regulatory concerns. So, I expect that to continue. At the same time, the work that I've continued to do in the US on the Software Bill of Materials initiative, really is is also raising the concerns of the risks and vulnerabilities of these connected devices that are purporting to provide health care, related information. And all that combined really underscores the importance of adhering to baseline security principles, such as originally developed by OTA, but some of the work that's been done in the UK, and other areas, I think is moving in the right direction.

Craig Spiezle
Much of any questions on that .I just kind of went to pause.

Craig Spiezle
I should also note that since the original IoT framework was developed by OTA, that work stream has forked, and we've now separately from ISOC, greatly expanded the IoT framework. And I see Steve sent the old link from the work that transferred to ISOC. I'll send a link shortly to the framework that maps to several global initiatives, as well as provides a risk framework. And the purpose of a risk framework is, being realistic, developers have a finite amount of resources that they can allocate. And, ultimately, they need to make decisions based on different criteria that are more or less important to their business model. So, we've created this model, so to speak, and I'll send a link shortly here. It's what I shared with you earlier last week, Yuri. Again, it's a baseline to help companies better prioritize different principles to ultimately make their devices more trustworthy, secure, over their lifecycle. So, I'll send that to you in just a second here. Thank you.

Craig Spiezle
https://users.neo.registeredsite.com/9/3/6/20580639/assets/IoTDesignArchitecturev413993.pdf

Steve Olshansky
https://www.enisa.europa.eu/publications/baseline-security-recommendations-for-iot

Yuri Kargapolov
Thanks, Craig. It's very interesting. I see that Steve Olshansky published some ETSI standards based upon the United Kingdom (unintelligible) Code of Practice. Steve, maybe you say a few words about the standards.

Steve Olshansky
Sur. Hi, everybody. So the UK, a government department of Digital Culture, Media and Sport, developed a very good IoT Code of Practice, which was then taken to ETSI and standardized, and recognized. it's In the process, or maybe has already completed the process, of becoming a European norm, EN, for the EU member states to use, if they see fit. There's also a lot of good work going on within (unintelligible) in the IoT space, and I'll dig up a link in a minute, and put that out there. But there's a lot of good work out there in the world that is helpful to refer to.

Yuri Kargapolov
Mm hmm.

Craig Spiezle
Steve, thanks for bringing up the the UK. Actually at RSA we had a lengthy working meeting, at the RSA conference in San Francisco. I don't believe anyone from ISOC was there. But, as Steve said, that framework from the UK is really built on a lot of different work, a lot of organizations that have contributed, and such that are kind of building that. So, the good news is, like you said, it's moving forward. The bad news, I should say, is there's not a lot of companies that are focusing on what the UK is doing. My assessment again, it's a new case, not the center of development for IoT devices per se, but it is clearly a great effort of trying to unify the best of the practices from multiple different nations, for 30 different organizations they've looked at, some of which, from the original OTA work, some that Steve mentioned, as well as the work that our working group is doing as well.

Wout de Natris
This is Wout de Natris. There's a Dutch IoT roadmap, as they call it, that was published in 2018, I think, but I know the European Commission is working on an IoT, whatever they call it, legislation wise, but they are only in the process of making inventory of what is going on. As I understand there is no push to any form of legislation, or something like it, until 2023. So, I think four or five years term to to look at the topic, and see if they need to develop a position on it. Thank you.

Yuri Kargapolov
Thank you, gentlemen. Anybody who wants to continue discussion or something, add to another issue? Because we have four issues, and not only trust.

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Peter Waher

I can make a small comment. This is Peter Waher. Can you hear me?

Yuri Kargapolov

Yeah.

Peter Waher

Yeah, so my name is Peter Waher, and I work with the IEEE, standardization in the fields of IoT and edge computing, trust, smart cities. And, if there is interest in this Special Interest Group, I could make a presentation at the next meeting, or the following meeting, on these standardization efforts.

Yuri Kargapolov

Thanks.

Yuri Kargapolov

I think that we will have very interesting knowledge in legislation of Europe. I guess that shifts with connected with COVID-19 will be reflected in our economy, and some issues will be related with huge challenges. For example, we discuss it with Wout, we we have the separate trust issues and the identity management issues. But, if we will discuss such processes as authorization, authentification, it's only in combination of trusting and identity management, we will have real safety and security products.

Wout de Natris

Would you like me to start with the presentation Yuri, or?

Yuri Kargapolov

Yeah, yeah, yes. Yes, you can.

Wout de Natris

Okay. Thank you. Thank you for having me, everybody. My name is Wout de Natris. I am a consultant in the Netherlands. And, in the past year, I've worked within the Internet Governance Forum on a pilot project on the deployment of Internet Standards that were defined a bit wider than usual, as it included IoT security software, security, information security, etc. And we post two questions to the whole community. The first one was, what are the reasons behind slow adoption, deployment, of these standards? And the second, what would be solutions for speeding the deployment up? And we did that in the form of a worldwide questionnaire, we interviewed people, we had breakout sessions at the IGF, we have many talks after the IGF for different organizations. And that resulted in the report, which I sent a link to you all through the chat just now, and it's published on the IGF website in the beginning of March. The two questions we made, as I said, were basically all answered in a very decisive way. When we ask people what the reason is, most of them answered there's a lack of a business case. We look, try to find out, behind that reason, what actually is the reason that there is no business case. And what we found is, basically there's a lack of everything behind it. There's not only no demand, so no supply. But there's no regulatory forces, no pressure from the side of consumers, of consumer

organizations. There is a lack of understanding. There's a lack of understanding with politicians, a lot of policymakers, resulting in a collective action problem. So, nobody moves in any way basically, except for those volunteers that are now known to be front runners.

Wout de Natris

So, in other words, as we looked at solutions, there's, of course a need to create a business case. There are several examples for how to actually create that. But from there, what we tried to look at is, okay, the easiest way to do it, About 50% of the respondents said, you will need to regulate, otherwise they will never move. But at the same time nearly hundred percent said, and that is across all stakeholder communities, we don't want legislation. So, what we try to identify is other ways to get the people who, in the end, decide on whether to make IoT devices secure, or build secure, whether software is created more secure, whether Internet standards are being deployed or not. They are the ones that need to be the influence, and those are basically the top of businesses. But, at the same time, also the top at other organizations need to understand the importance of the issue, because they are the ones addressing these people. It will need a totally different narrative than we have been talking about in the past. So far, usually organizations like ISOC, or the IETF, and others, focus on the people they know, being technicians within companies, and they are being taught how to deploy. But they, obviously, are looking at the past 20 years, nothing much has changed. So it means that other people in organizations need to be pressured. So we identified about 25 pressure points in society, ranging from the media that could investigate topics in a different way. parliamentarians that, when they're lobbied, could ask different questions, consumer organizations could test products in different ways, but also the need to cooperate together in a more sensible way than we have been doing in the past. So, I won't go into all of these, also because of a lack of time. But you see, we try to look at the topic from a different angle than ever before. And that is assisted by all the people who participated in the interviews, in the workshops, etc. So, what we try to do in the near future, is to get some working groups going within the IGF. And that would be aimed at creating a business case. But also look at legislation and regulation, what do current laws already do? We look at privacy, or the duty of care and consumer law, or within the radio communication, telecommunications law, are there handles there that could perhaps lever the discussion? How can we make sure that participation grows, and come and also the organizations that are not usually present in these sorts of discussions actually enter the debate. And that there's a clear need for awareness raising, including in education, because education curricula don't exactly match safe software, or secure websites, etc. So, at the point, we are at this time, and basically I am in this time, is that the IGF steering committee needs convincing that the topic needs to continue. And that is a process which I am in at this point. My main question at this moment in time is that we, I, need to convince the steering committee to continue this so I can try and find the funding to do the work, but also the people that need to become involved. And my main question at this point in time is, are you willing to write some sort of support to the IGF on the importance of this topic, and once it is accepted, I have the idea that the work that you are doing could be part of what I am going to do in the IGF as, obviously, the topic you are on is one of the topics we are going to focus on. So, basically, this is the question, are you willing to contemplate a form of support letter to the chair of the IGF management, oh sorry, multi stakeholder advisory group, so that the the importance of this topic is stressed. So there's not personal support for me, but support for the topic. And that's basically my question to you this afternoon. And of course, I'm open to any sort of questions, and I'm exactly within seven minutes. I see.

Yuri Kargapolov

Sorry, Wout. But it's unexpected for me. How we will the flow of our meeting. So, thanks. Vahan?

Vahan Hovsepyan

Yes, thank you much Yuri, and just want to make some points, and also represent myself, I'm the Vice Chair of this Special Internet Group, also engaged with the RIPE NCC, an External Relations Officer there. So, Wout, your speech was really very interesting. And I saw your report, a very comprehensive report, and I'll go much into the details of that when I've read it. But I just wanted to ask the member participants of this meeting, do you have any questions for Wout? And I would just suggest to have, to organize something, some meeting to give Wout a bit more time to represent this work. if you don't mind guys, if somebody is interested.

Yuri Kargapolov

Can we move to the third item of our agenda? I mean, the report of Benjamin?

Vahan Hovsepyan

Yes, we can, I guess we can, but I just wanted to ask Wout, is it possible for them to organize, or to participate in the meeting, where he can represent all this research and position more in detail.

Yuri Kargapolov

I think that the issue of trust, and building of trust, is one of the most and one of the important, more important in our work. Because, without trust, not exist, nothing exists. Nothing multi-stakeholder is without trust, nothing authorization, real authorization, without trust. Trust is a basis, is a fundamental feature in the IoT, and not only IoT, in the electronic communication.

Vahan Hovsepyan

I do agree, Yuri. but the issue is, and I would like to agree with Wout here, that there is a problem of identification of this pressure point, or key points, in this cycle to speed up the Internet standard deployment. Because, in some countries, it can be for example, the legislative base, for some countries it can be technological development etc etc, for education itself, which is also very important. So, this identification process should be, I guess, institutionalized to understand what instruments we can use to identify these pressure points in each society, because it cannot be universal for all societies. Each society, as it stands, has its unique pressure points, and there is that issue of our understanding which one is, which pressure points there are.

Yuri Kargapolov

Mm hmm. I want to stress to stress it, once again. No identification without trust. Any indentification, management of identifiers, management of the identification processes without trust, not exist. It's real (unintelligible) without trust is really (unintelligible) fraud and phishing.

Yuri Kargapolov

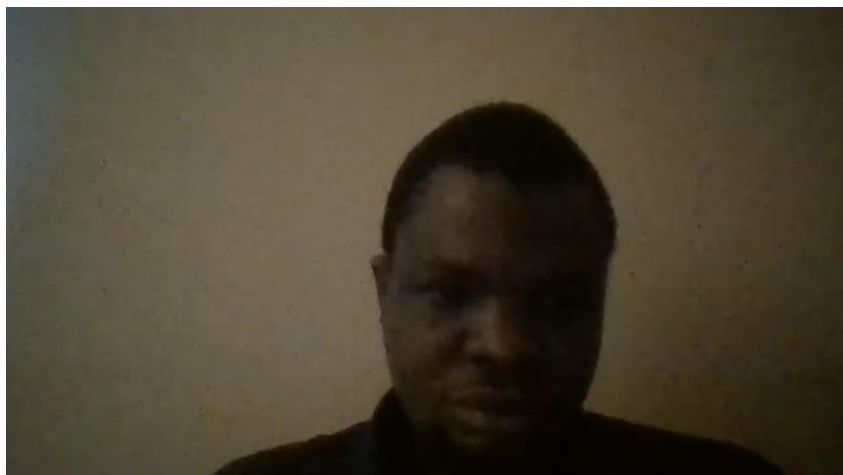Okay, Benjamin, are you ready?

Yuri Kargapolov
Benjamin?

Yuri Kargapolov
I already present us your approach

Vahan Hovsepyan
In chat he wrote that is ready. I guess we should put his presentation on.

Yuri Kargapolov
Okay, start please.

Natalia Filina
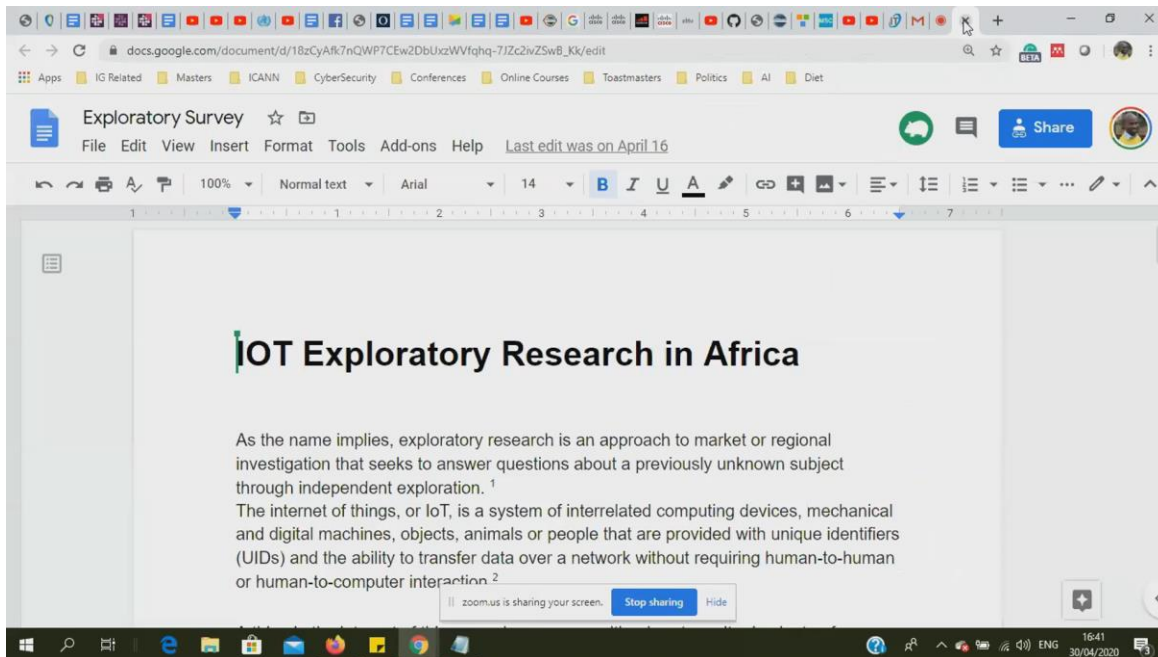Benjamin maybe your microphone is mute. Please check it

Benjamin Akinmoyej
Oh, sorry, my sorry. Can you hear me now?
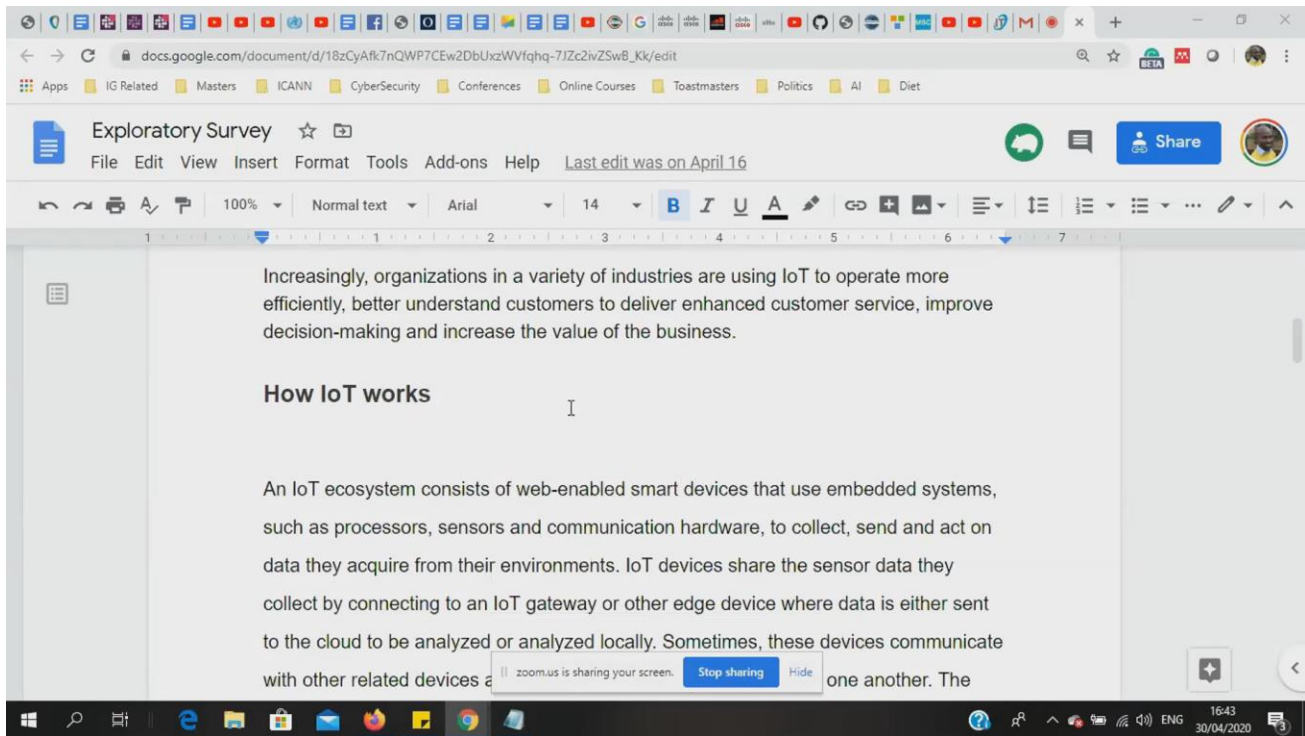
Vahan Hovsepyan
Yes.

(some technical adjustments)

Benjamin Akinmoyej

So, um, my, trying to do. (unintelligible) research here is to try and find out what is happening in terms of IoT implementation across the continent. The moment there are some efforts that we have seen that has happened. We know that GSMA, GSMA is global system Association of GSM operators, they have tried to do some, they have a report on that on their website. And, but more importantly, we feel we should go out and ask practitioners across the continent on what they have in terms of IoT out, which industries embracing IoT, and if there's any?
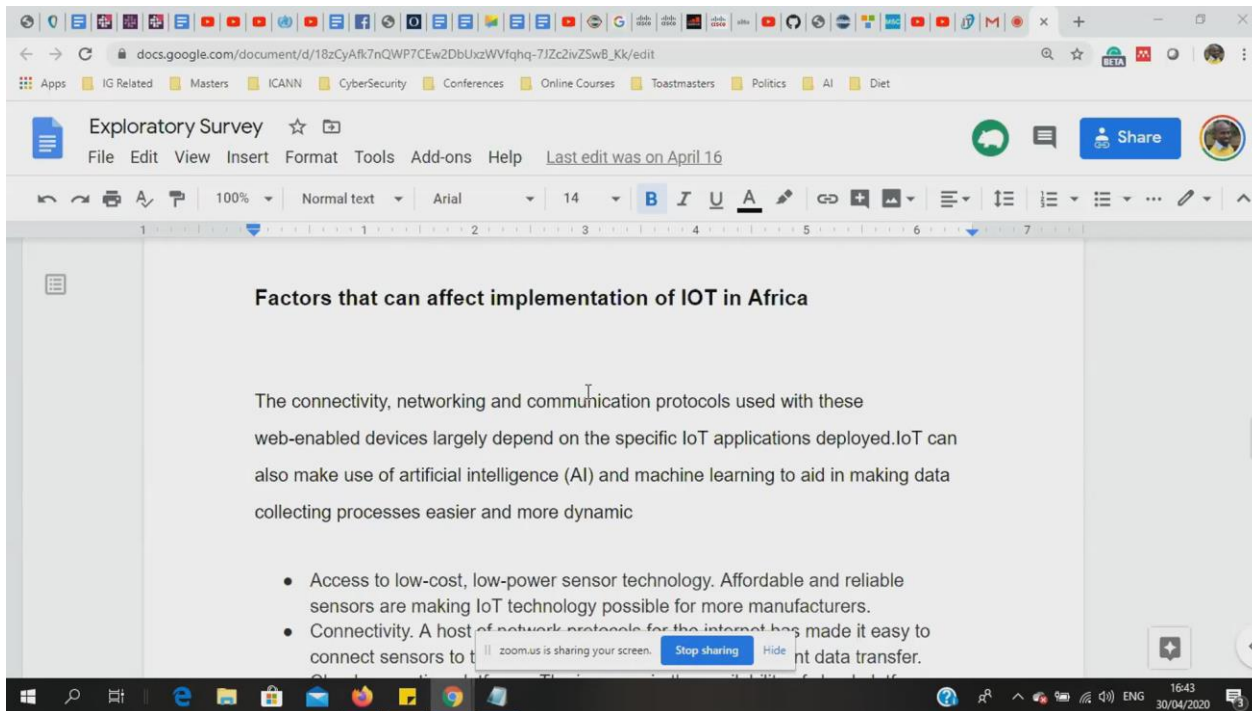
Benjamin Akinmoyej

So the report basically talks about what is IoT, how IoT works, and factors that we think is affecting implementation. In Africa, I used to still with me, please. It's important that I know that you're listening.
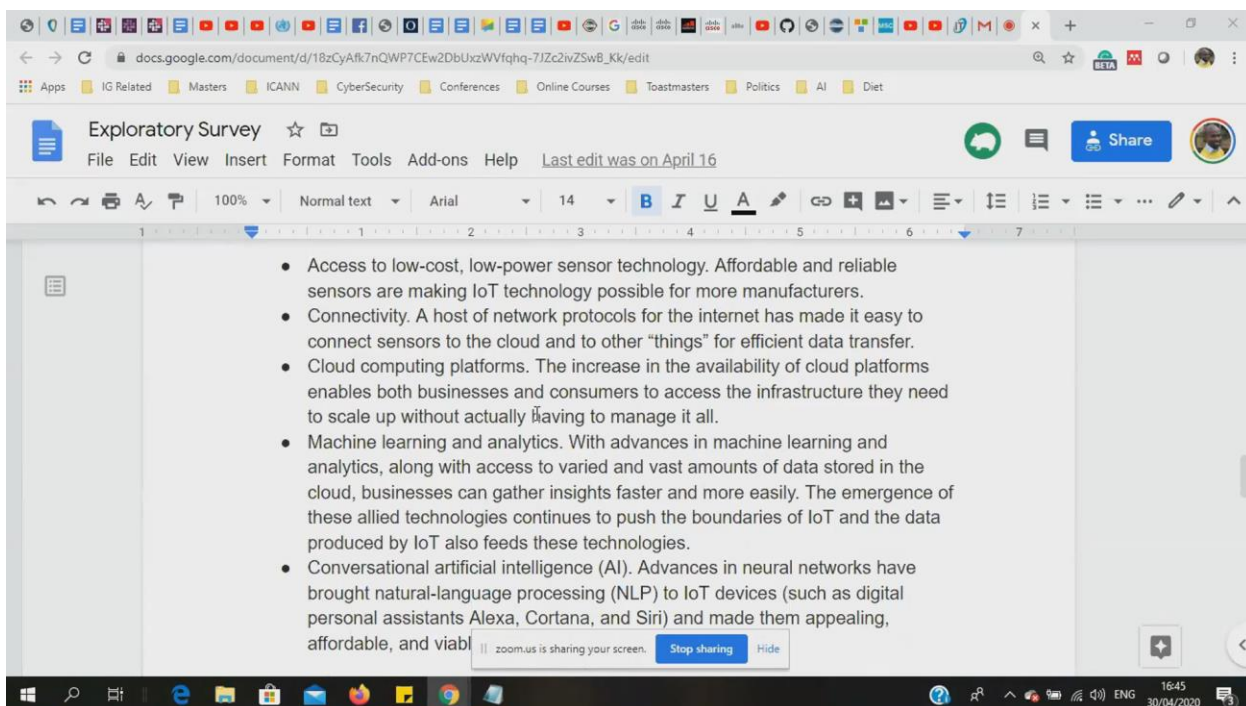
Vahan Hovsepyan

Yes we are listening to you. Yes.

Benjamin Akinmoyej

Okay. yeah. So, after explaining the preambles of IoT, how it works and everything, one of the things we have listed on this report is the factors that can affect implementation of IoT in Africa and the area we would like to is emphases. So first of all, is the the connectivity issue

Benjamin Akinmoyej

(audio breakup)

Benjamin Akinmoyej

(audio breakup) Power is not a challenge most times, but in Africa we will want to see the implementations of (unintelligible), also in the web. Currently, still, we were (unintelligible). It is access to low power sensor technology challenge as a part of (audio breakup) basis, as long as there's no Internet penetration everywhere. The use of IoT will be limited. If there's going to be good IoT implementation there has to be connectivity almost everywhere. Cloud computing platforms also play a significant role. And things like (unintelligible) would also influence the way it's going to happen. Another thing we saw, as far as I tried to gather information (audio breakup) also affect implementation. So some of the things we have seen (audio breakup) but just pilots in different areas. (audio breakup) So moving forward

Vahan Hovsepyan

I'm sorry, Benjamin, just a small interruption. If you have any Internet consuming applications, can you please close it because your voice is not so clear. Very sorry.

Benjamin Akinmoyej

We might find, might gather more information on what is currently happening across Africa. We could use that to guide (audio breakup) policy advocacy.

Vahan Hovsepyan

Benjamin we don't hear you.

Benjamin Akinmoyej

Yes. Hello.

Vahan Hovsepyan

If you can, yes, you can just click on the consuming application so you your internet connection will be improved maybe. Oh,

Benjamin Akinmoyej

yeah. Can you hear me?

Vahan Hovsepyan

Yes. Now we can hear you. If you can please also share the link to the document, or the document itself. We can also use that.

Benjamin Akinmoyej

Sorry, I'm so sorry. So I'm going to post the link of the document.

Benjamin Akinmoyej

https://docs.google.com/document/d/18zCyAfk7nQWP7CEw2DbUxzWVfqhq-7JZc2ivZSwB_Kk/edit

Transcribed by https://isoc.live

Benjamin Akinmoyej

Sorry please. Internet trouble Hello. The document is to me please just let me know when you hear nothing, so I could be necessary. I mean. This is crazy. Is there improvement? Can you hear me?

Vahan Hovsepyan

Yes, yes, Benjamin we hear you.
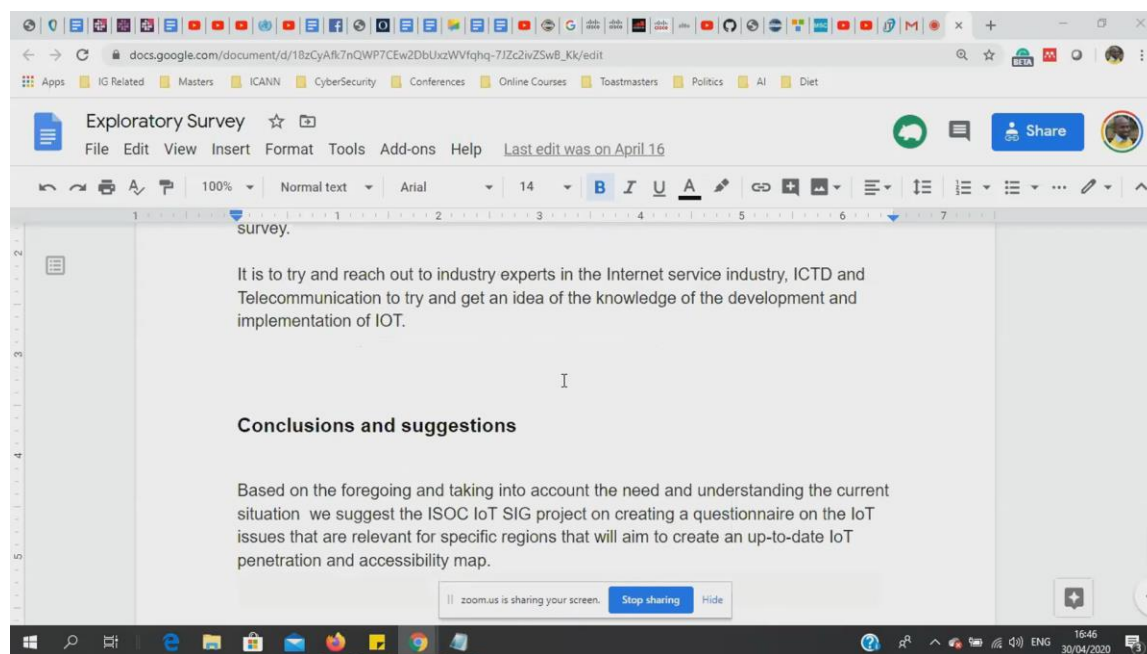
Benjamin Akinmoyej

Okay, so, I'm the document is very self explanatory. There's not much to it. But what was, moving forward is? How can we create testing questionnaires that we can share widely. I mean, I know that some guys were working actively in this area, (audio breakup) give us guidance on creating questionnaires that can help us extract very useful information. If we shared with everybody across the continent. Everybody, at least the major players, and was feedback or process to work. (audio breakup) give us a map of what's happening in terms of what we need to do in terms of implementation across Africa. Thank you.

Yuri Kargapolov

We just saw how Corona affected to the network, overload, and channels, and applications. So, Benjamin, thanks. In any case, we will post your document on our site, and open the call to create a questionnaire. Be ready to the leader in this program of our SIG. Thanks, Benjamin.

Benjamin Akinmoyej

Thanks for the opportunity. So sorry for the call. (audio breakup) give u

Yuri Kargapolov

Okay, and so, just a minute. One announce of our work. A return to presentation, sorry.

Opening 2020 season of Big and Small Grants

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- In light of COVID-19 events, ISOC extended the Beyond the Net programme deadlines. Additionally, the Foundation will accept applications proposing Internet-based solutions to address community needs arising from COVID-19.
- Call for participation
  - Small Grants: just opened and closes June 26. Decisions will be made on a rolling basis. These grants are available for up to USD $3,500.
  - Large Grants: opens April 13 and closes July 3. Decisions will be shared in two waves:
    - The week of 6 July 2020
    - The week of 3 August 2020
    - These grants are available for up to USD $30,000The
- To submit topics for grants, you must write an application and send it to the Board.
  - In the application reflect as first steps:
    - 1) topic title
    - 2) goals of work
    - 3) what resources can be used and what resources do you need
    - 4) justify the social need of your topic for community development
- The deadlines for submission within the SIG's frames, proceed from the above dates and one week to work together with the Board

Yuri Kargapolov
ISOC opening 2020 season of big and small grants. And announce the call for participation for small grants will be closed June 26. , and large grants opens April 13 and closes, July 3. See, to submit topics for grants, you must write an application and send it to the board. In the application, please reflect as a first step. First, topic title, goals of your work, what resources can be used? And what resources do you need? And fourth, justify the social need for your topic, for community development. And please notify that deadlines for submissions within the SIG's frames, appraise, calculate and proceeded from both dates June 26, and July 3, plus one week to work together with the board on your suggestions. The information about this information about bigger small grants will be found on our on our website.

Yuri Kargapolov
So now, Natalia.

Natalia Filina
Yuri. Thank you very much. Natalia Filina speaking. I'm the secretary of SIG IoT, as well as the Secretary of EURALO, At-Large ICANN. Here I just want to say thank you very match, and I welcome you once again, and thank you very much for finding the opportunity and time to join our call today. This is not easy time for all of us, and special thanks for the great presentations and expertise we have view from Craig, Benjamin, Wout. Thank you very much. So, maybe not everyone knows, but if we will say about our Special Interest Group for IoT, we can say that the number of participants of our group is very huge. It is 1350. There is all i SOC members, and people interested in the topic of IoT from around the world. With this we propose to move forward to promote our initiatives, to discuss our project, to gather working groups We need to, we decided with my colleagues from the Board of SIG IoT, we need to understand more regarding expertise of our members, and therefore we want to conduct a survey, and

update the knowledge of our members database as soon as possible. So, we would like to inform you later about which tool we will use for it. And, as well as joining the ranks of our Special Interest Group, giving the information about your knowledge and expertise will be volunteered too. And we will do this in compliance with the rules of personal data protection, of course. But I kindly ask you to take a positive attitude, to pay attention to this process, and participate in it actively. So, we look at our Special Interest Group as a global and great platform for collaboration, for the exchanging of opinions, expertise, experience, etc. And even if we cannot now have face to face meetings, and we will, we don't know. We haven't the right forecast for this year regarding face to face meetings and opportunity to meet each other somewhere. We invite you to offer the topics for online meetings that we can arrange for our members, and external interested members from IoT industry. I'd like to note too about the time of our conference call and future webinars or workshops. We understand it is a little bit difficult for connecting people from different parts of the world to join us, and in the future we will make two releases for each on an activity, so times will be more convenient for all of our members from different parts of the world to choose the right time and to join us. Thank you very much for your attention. We are waiting for your emails for your suggestions, and your presentations, and maybe links to interesting articles of which we can lend on our website. Thank you very much.

Yuri Kargapolov
Thank you, Natalia. I just saw Dangana ask us, would like to know if he can ask questions here. Yes, sure. Please, Dangana.

Dangana
Yeah. Good day everyone.

Yuri Kargapolov
Hello. Hello, how are you? Where are you?

Dangana
Yeah. Good day everyone. As I've already mentioned in the chat, I'm a new student here in the University of Glasgow, working on IoT with special interests on industrial IoT. So, due to this COVID-19 I've been working online, it's everything that we all know. But, the major thing I want to chip in here, and also ask a question afterward is, with my little preliminary, research that I've done on IoT, I have come across a kind of [unintelligible] challenge in terms of simulation. Right now, I'm using the NS3, that is network simulator to simulate IoT devices, with special interest in the narrowband, because we all know that the existing network operators who will help in implementing IoT using the narrow band frequencies. So, with the modification of the 3GPP technical reports that more defined the LTE aspect of the NS3 that enabled the implementation of narrowband IoT. So, my question now is, having gone through some of these preliminary studies, I'm coming to realize that there is a little challenge, or maybe in the future, there is a kind of comparison between enhanced machine type communication with IoT narrowband IoT. Because we realize that the implementation of IoT will go a long way, will be possible in a long way, by fusing it into the existing telecommunication infrastructures. So, that is where the NB, the narrowband IoT is coming in. So, I don't know if there is a kind of, it's this, how this challenge, how we'll be able to match up the implementation, or the use of knowledge? Now, I'm in IoT with this emerging technology called the enhanced machine type communication, because the major

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theme, the machine type, machine, enhance machine type communication is forging ahead of IoT, is that they are both competing with the same infrastructure, existing telecommunication network providers. But the operators are looking at, they realize rather that the EMTC can accommodate more devices as compared to IoT. And, since these telecommunication operators are more interested in profit making, I think you they are tending towards accepting this new technology that is becoming more kind of hopeful, or showing you some trend of implementation. So, for now, I don't know if there is any any way the association is looking at (unintelligible), or is there any way that with research are going on, on improving the implementation of NB IoT, or IoT in general? Thank you very much.

Yuri Kargapolov
Anybody have answer? response?

Otobong
Yes. Hello?

Yuri Kargapolov
Yes.

Otobong
Okay. I'm in relation to what he said, especially in a place like Nigeria where I am. The discussion will be centered more around like a broadband adoption does whether more of these devices. I mean, the IoT and telecommunication devices are able, you know, to communicate effectively on the same network. I think, as recently as November or December, the NCC, that's the Nigerian Communications Commission, in Nigeria released reports about them trying to upgrade, I think the broadband services, or so on. Building up the infrastructure that will operate within the narrow band frequency that Dangana referred to. So, so far, there has just been a reports released on the subjects, but as far as, for the implementation, I'm more certain about any recent information. He pointed out that there might be some discrepancies between the telecommunication companies focusing more on profits, and then the opposite side being the novelty of IoT devices. I'm biased to think that the issue, in a regional like Nigeria, I'm not certain about where you are, Dungana, but here in Nigeria the issue would probably be around a larger bandwidth. If there is more infrastructure able to, you know, support more devices more, you know, equipments, Internet related equipments, there'll be high adoption, you know, of both sides. More people remain, you know, with our telecom devices, and will still be able to take advantage of the IoT services, and there'll be a higher likelihood of a faster adoption of IoT devices by themselves. So, so far, that's all I can add, you know, in relation to what he said thank you.

Wout de Natris
This is Wout. A little response on the basis of my research last year, and early this year. Where all these sort of products are concerned, whether it's secure software, or it's IoT security, or information security. What I found is that, because there is no pressure on the manufacturers of these products, the trust, so sorry, the security thing is easy for them to neglect. So, if in the gas and oil industry they are considering moving towards more IoT devices within their industry, the demand for security has to come from themselves. So, if they think that they need security for certain products, then before they buy them, they have to make certain themselves that the security is of the level that they need. And,

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unfortunately, a lot of people do not understand that they have to ask these questions. And, what I personally have run into a lot of times in the past five, six years working in cyber security, is that people think that the products are secure, because it's only logical that has been taken care of, or they point to someone else. If they need to safe website, they said but that that's what my hosting provider does, because he is hosting me. And the answer is no, you have to ask your web developer. So in other words, if these questions don't get asked, there will never be a business case for secure products, because nobody asked for them. That means that nobody will pay for them, and nobody will develop them. So, that's where if you're looking in your research, that's a part where you can certainly take along, because it will change mind frames of thinking of people buying these products. Now, yes, they want to buy as cheap as possible, but that could be a very expensive decision, as quite in the recent years has been shown, where all these things can go wrong with hacking, and malware, and ransomware etc. So, thank you.

Dangana
Yeah. Um.

Yuri Kargapolov
Please, Dangana.

Dangana
Okay. All right, thank you very much. I thank all the contributors to my question. What I'm also trying to see again is, is it, this group, the ISOC IoT, right? Is there a way that it could be set up in adopting, a competing, like the one I just mentioned, a competing? Let me see, this device that I just mentioned, the EMTC, is there a way that this group who kind of be open minded in absorbing it, integrating it into this group, in the sense that, even though in case it comes up, the group can kind of merge it together and move on.

Aravind P Unnithan
I just want to make my few comment on that. Yes, of course, any kind of technical challenge which you're facing, we can easily help you out for sure. Because we are working (unintelligible) for kind of more than couple of years. And we did Global (unintelligible), whether it's hardware, or firmware, or software, we can help you out.

Yuri Kargapolov
Sorry, Aravind, sorry. Is it a question or are you adding to response to Dangana?

Aravind P Unnithan
I was trying to response to Dangana. actually,

Yuri Kargapolov
Response, yeah.

Aravind P Unnithan

So what I was trying to say that any kind of technology support, but if (unintelligible) from the hardware level, or the software level, or the framework level, I can definitely support you my best.

Dangana

Okay, thank you. Noted

Yuri Kargapolov

Okay. Okay, guys. Let me say to all our participants thanks. Special thanks to our guests.

Yuri Kargapolov

We hope that our SIG will pick best offers, Wout, and I see that Craig left us. We will try, in any case. Sorry for some technical difficulties and travails. And we will process the results of our meeting and mark them on on our site. Goodbye to all. Thanks for participation.