

MEETING REPORT



AFRICA INTERNET SUMMIT'18

DAKAR SENEGAL

29 APRIL - 11 MAY
2018



www.internetsummit.africa

We would like to extend our heartfelt thanks to the sponsors, local hosts and partner for the most valuable support.

ORGANISED BY



LOCAL HOSTS



Ministère de la Communication,
des Télécommunications,
des Postes et de
l'Economie Numérique



Autorité de Régulation des
Télécommunications et des Postes

PARTNER



DIAMOND



PLATINUM



NetworkTheWorld.org

GOLD



SILVER



BRONZE



CONNECTIVITY

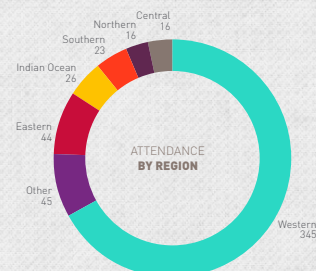
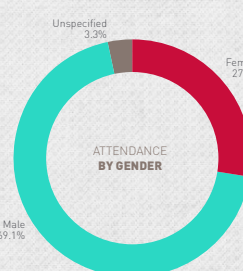
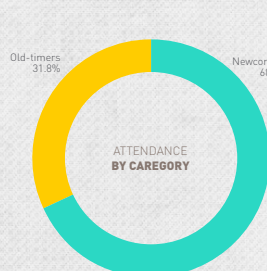
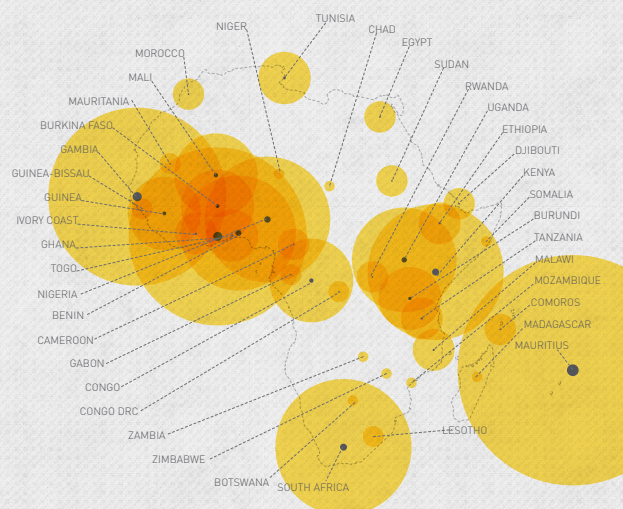


Executive Summary

AIS'18 took place in Dakar Senegal, from 29 April to 11 May 2018. The meeting was organised by AFRINIC and AfNOG and generously hosted by the Ministry of Communication, Telecommunications, Posts and Digital Economy of Senegal and the Autorité de Régulation des Télécommunications et des Postes (ARTP).

Over 500 people from 60 countries took part in training sessions, policy development discussions, plenary sessions, and networking events. Some key highlights of the event included discussions on policies guiding Internet number resource distribution in Africa, IPv6, Peering and Interconnection, Internet measurement, Net Neutrality, Digital Rights and Privacy, DNS and related services and AFRINIC governance.

The AIS'18 agenda can be found [here](#).



OPENING CEREMONY



H.E Mohammed Dionne the Prime Minister of Senegal (centre) speaking at the AIS'18 Opening Ceremony.

Message from Mr Abdou Karim Sall the Director General of ARTP

In his opening remarks, the Director General of ARTP Senegal welcomed delegates to the country of Téranga. Mr Sall spoke about the Internet being a tool for development and job creation highlighting that ARTP Senegal has set up an observatory for the telecommunications market. Moreover Mr Sall shared statistics on Senegal's international Internet bandwidth for submarine cable and for satellite connections. Senegal has access to international submarine cables for an overall broadband of 50 gb per second and 100 mb per second through satellite based connection. For a population of 15.2 million, Senegal has 9,606,817 internet users connecting with mobile technology with a penetration rate of 62.9% and a quarterly growth rate of

2.7% for Internet usage. Mr Sall highlighted that Internet access will be democratized in Senegal. There is also a universal telecommunications service fund that contributes to digital spatial planning in Senegal and universities in Senegal benefit from free Internet bandwidth. ARTP Senegal also encourages the use of IPv6 and connected objects and looking forward to collaborate with AFRINIC in this area.

Mr Sall also highlighted the importance of capacity building with over 70 national Senegalese receiving training during AIS'18.

Mr Sall ended his intervention with the famous quote "To go fast, you have to go alone and to go far, you have to go together".



Message from Dr Nii Quaynor the Convenor of AfNOG

AfNOG Convenor Dr. Nii Quaynor introduced the AfNOG community and highlighted important community values that include contribution, sharing, volunteering, mutual respect, and working together.

Dr Quaynor thanked the partners of the event for their support including ICANN and ISOC.



Message from Mr Abibu Ntahigiye AFRINIC Board Chair

The Chairman of the AFRINIC Board Mr Ntahigiye thanked the Senegalese authorities and the sponsors of the event. AFRINIC actively participated in over 20 meetings globally where key discussions on Internet governance, expansion and access were key.

Business and macroeconomic governance reforms are taking root in Africa with the continent making commendable progress in governance. This conducive environment has given AFRINIC more impetus to forge ahead with its quest for connecting all corners of the continent with efficient and affordable Internet. AFRINIC's continued engagements with key stakeholders such as governments, ISPs, Telecoms and others were focused on addressing pertinent issues such as security, content, infrastructure and affordability.

The Chair highlighted that AFRINIC continues to conduct capacity building and outreach activities across the continent to champion IPv6 deployment and preparedness.

Working towards the goals of African Union (AU) Agenda 2063, AFRINIC has also been an active participant of the AU Specialized Technical Committee on Communication and ICT.

Keynote Message from HEM Mahammed Dionne the Prime Minister of Senegal

The Prime Minister of Senegal thanked the actors of the Internet ecosystem of Africa. The Prime Minister stated that AIS is a flagship event that brings together the networks and communities that deal with Internet governance and coordination in Africa. According to the framework document of the 2063 agenda of the African Union, disparities exist between countries in terms of Internet use. In light of this diagnosis, Senegal's strategy is innovative and also gives the public and private sector an important role in financing the digital sector in order to contribute 10% of Senegal's GNP by 2025. The Summit comes at the right time to help build the capacity of digital economy actors. The Senegalese government is deploying optical fibre throughout the country. Mr Dionne encouraged the adoption of the principle of infrastructure sharing between different digital operators and for digital players to play their part to reduce the cost of digital access. The Minister also testified the contribution of the father of the internet in Senegal, Mr Alex Corentin, before declaring open the activities of the 2018 edition of the AIS.

The session recordings and transcripts are available [here](#)

NEWCOMERS SESSION



Mr Arthur Cardinal from AFRINIC presenting AFRINIC's ecosystem of the Internet to newcomers

Mr Cardinal, Head of Member Services at AFRINIC explained the ecosystem of the Internet in which AFRINIC operates and AFRINIC's role in distributing Internet addresses, resources and capacity building in Africa.

AFRINIC's bottom-up approach and policy development process were explained to first timers. Additionally AFRINIC's FIRE Program which supports ICT initiatives for Research and Education was highlighted. This session was concluded with AFRINIC CEO and AFRINIC's Chairman addressing the audience and encouraging all the AFRINIC fellows present to become AFRINIC ambassadors in their respective countries.

SESSION 1

AFNOG DAY Opening Ceremony

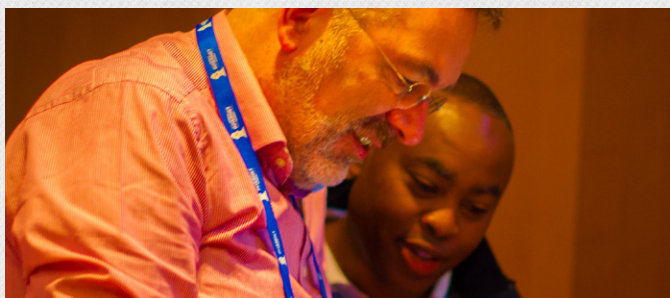
The AfNOG opening ceremony was chaired by Mr Badru Ntege. Dr Nii Quaynor welcomed everyone and stressed on the need for nurturing community spirit and experience sharing at AIS'18.



Yaovi Atohoun from ICANN highlighted ICANN's commitment to capacity building as part of its Africa Strategy and expressed support of AfNOG's work.



Barry Boubakar representing AfREN who sponsored this AIS event for the first time explained AfREN's role in capacity building in Africa. Mr Boubakar said that Africa should not miss out on developing capacity on important topics such as blockchain, IoT and more.



Next was Olaf Kolkman Chief Technical Officer at ISOC. Mr Kolkman spoke about the importance of human networking, at AIS events. Mr Olaf said that collaboration is characteristic of the NoGs and is key for shaping the future of the Internet in Africa.



Mr Dawit Bekele from the ISOC Regional Bureau spoke about ISOC operations with 133 chapters worldwide and 34 chapters in Africa. The Senegal Chapter is one of the oldest and most active one stated Dawit Bekele.

Mr Bekele highlighted ISOC's growing concern over security and privacy on the Internet with the emergence of IoT in our lives. ISOC as a result is working in collaboration with the African Union to ensure that the Internet infrastructure is secure through the implementation of the AU cybersecurity and personal data protection convention which is called the MALABO convention.



AfNOG Report

Mr Noah Maina from AfNOG gave the 19 years report on AfNOG operations.

[See the slides.](#)

Presentation: Transnational Anti-Abuse Working Group (AAWG) Development



Mr Severin Walker from Comcast gave an insight into the works of the Messaging Malware Mobile Anti-Abuse Working Group. Some of the outreach activities of the Group were highlighted in this presentation including partnership with organisations such as AFRINIC, AFIX, AfricaCERT, ISOC, Cybergreen, ICANN and more.

[See the slides.](#)

The session recordings and transcripts are available [here](#).

SESSION 2

Peering and Interconnection

Mr Remko Van Mook from RIPE NCC explained the concept of Lightweight IXP or the “\$1000 IX” model which is easy to establish, can reach to more markets and provide a better and more predictable platform for all sizes of networks to interconnect in an optimal way. In this presentation, Mr Van Mook showed how the “\$1000 IX” model can become a sustainable, global business.

[See the slides.](#)

Mr Arnold Nipper from Peering DB gave an overview on PeeringDB, both from organisation as well as from a technical point of view and highlighted the latest developments.

[See the slides.](#)



Mr Jasper Van Hertog from RIPE NCC made the next presentation on IXP Country Jedi end-to-end user connections. The presentation highlighted the concept of IXP Country Jedi - a project that shows if the Internet traffic paths stay within the country, and whether the paths between two networks within the country go through an Internet exchange Point (IXP).

Mr Van Hertog highlighted the methodology used for measurements, benefits of the project and shared some statistics globally including African Jedi on traceroute paths and the sketches of their peer-to-peer fabrics.

[See the slides.](#)

Dr Nii Quaynor AfNOG Convenor concluded the session with a presentation on the Stamp.Africa project that aims to address the payment challenges using a utility token suitable for payment of small amounts from registrants to resellers to registrars and to registries.

The solution combined the ‘trust’ infrastructure of DNS with DNSSEC, and the ‘trust less trust’ technology of blockchain to address issues of small payments, low fees, cross jurisdiction, efficiency and with no need for locked up deposits at registries.

The stamp.africa solution seeks to build more trust in DNS ecosystem in Africa.

[Slides.](#)

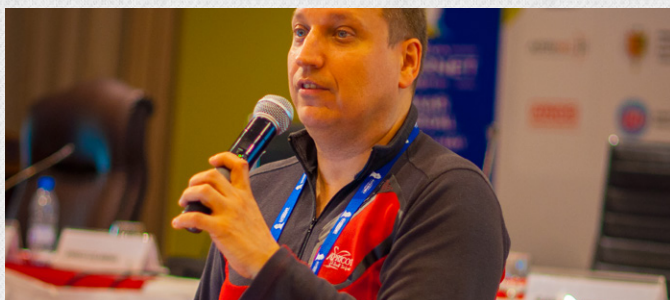
The session recordings and transcripts are available [here](#).

SESSION 3

IPv6

Mr Ted Willy Manga from the Agence universitaire de la Francophonie (AUF) shared his experience on deploying IPv6 at the AUF in Cameroon, an academic institution. Mr Manga explained the steps for deployment and some of the challenges encountered. Mr Manga said they are satisfied with the result of their deployment.

The slides are available [here](#).



Mr Jordi Platlet Martinez from The IPv6 Company was next to speak on the best operational practices for IPv6 deployment and explained through the RIPE BCOP document that the presenter co-authored. The slides are available [here](#). The session recordings and transcripts are available [here](#).

SESSION 4

Latency, throughput and content hosting



Josiah Chavula from AFRINIC intervening in the panel on Latency, throughput and content hosting

This panel was composed of Enrico Calandro from Research ICT Africa, Josiah Chavula from AFRINIC, Sarah Kinden from Research ICT Africa, Martin Levy from Cloudflare and Michuki Mwangi from ISOC.

The panel presented a series of papers and Internet measurement results that look at the issue of Internet performance from a throughput, latency, and content perspective. The discussions focused on the different factors affecting the performance of the Internet across the continent, including throughput, latency, and content hosting. The panel also showed the presence of latency clusters, where some countries have built up low delay interconnectivity among themselves, dispelling the myth that intra-continental communications in Africa are universally poor. The panel also showed how in some cases, it is faster to reach European or North American networks than those in other regions of Africa. The panel discussed how most African countries heavily rely on foreign services, both to host, to access, and to distribute local content in Africa, and how latencies to such remotely hosted local content are significantly higher. The slides are available [here](#). The session recordings and transcripts are available [here](#).

SESSION 5

POLICY DAY

Madhvi Gokool Registration Services Manager gave an update on the policies currently under discussion in the APNIC, RIPE NCC and LACNIC regions. [Slides](#).

Leslie Nobile provided an update on the policies under discussion in the ARIN region.

Elections

PDWG CO-Chairs election

Sami Salih was re-elected as co-chair of the PDWG for a period of six months.

Policy Development Appeal Committee Election

The Policy Development Appeal Committee election elected Wafa Dahmani, Jean-Robert Hountomey and Luc Missidimbazi.

Policy Discussions

There were seven policy proposals discussed during AFRINIC-28. You can find the outcome of these discussions in the below table.

Proposal	Outcome	Slides
IPv6 Policy & References Update AFPUB-2018-V6-001-DRAFT01	Last Call	Slides
Internet Number Resources Review by AFRINIC AFPUB-2016-GEN-001-DRAFT06	More discussion needed	Slides
IPv4 Soft Landing - bis AFPUB-2016-V4-001-DRAFT07	More discussion needed	
Policy Development Process – bis AFPUB-2017-GEN-002-DRAFT03	More discussion needed	
Clarification on IPv6 sub-assignments AFPUB-2018-V6-002-DRAFT01	More discussion needed	
IPv6 PI Update AFPUB-2018-V6-004-DRAFT01	Last Call	Slides
IPv6 Initial Allocation Update AFPUB-2018-V6-003-DRAFT01	Last Call	Slides

The session recordings and transcripts are available [here](#)

SESSION 6

Net Neutrality, Digital Rights and Privacy

Dr Cherif Diallo from the Ministry of Communication, Telecommunications, Posts and Digital Economy of Senegal presented on Net Neutrality and Public Policies. Dr Diallo explained the concept of net neutrality and proposed several recommendations on policies derived from the principles of net neutrality with the purview to guarantee an effective access to the Internet.

[Slides](#)



Ms Aida Ndiaye from Facebook highlighted that Net Neutrality is a question of human rights. Facebook's mission is to create a community uniting the world. The issue of connectivity in Africa is of concern to Facebook and Net Neutrality is intrinsically linked to the notion of access and openness of the Net. Ms Ndiaye also highlighted that tools must be put in place to protect users from abuse and online harassment.



Mr Thiam from ARTP Senegal focused on Internet access and development in Senegal. According to Thiam, there are six submarine cables landing in Senegal. The Internet is used to provide access to education including a virtual university. There are also several online media sites in Senegal and e-commerce platforms for online shopping and professional services in the cloud. A Senegal Digital Strategy 2025 consisting of about sixty projects and about twenty reforms are under way. Senegal is positioning itself for the establishment of a regulation on the Internet of Things. Global actions in the digital sector have a positive impact on development in Senegal. However there are some private interests that are taking precedence over public interests and Thiam highlighted that work is being done to limit the impact of this action.

[Slides](#)

Mr Jasper Mangwana from the Zimbabwe Technology Innovation and Research Village provided an insight into his study on the socio-technological analysis of Computer Crime and Cybercrime in Zimbabwe.

Various aspects of cybercrime in Zimbabwe were highlighted in the study from Internet statistics in Zimbabwe to drivers in Internet use, bank transactions, major cases of computer crimes and cybercrimes, analysis of Internet freedom, proposed bills on privacy and surveillances and related concerns. Mr Mangwana weighed some of the benefits and limitations of the bill and also did a comparative with such bill in other countries.

[Slides](#)

The session recordings and transcripts are available [here](#).

SESSION 7

AFRINIC UPDATES

AFRINIC staff presented on AFRINIC related activities and projects.



Mr Alan Barrett spoke on GDPR and its relevance to the Mauritius Data Protection Act 2017 (DPA2017) which is aligned with EU General Data Protection Regulation (GDPR).

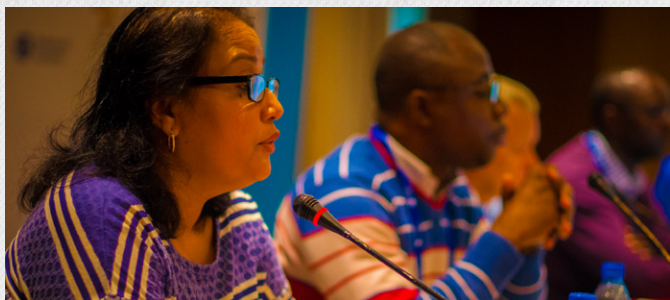
[Slides](#)



Mr Mukom Tamon AFRINIC's Head of Capacity Building gave a status update on AFRINIC's IPv6 Program 2.0 and spoke about the deployment challenges for engineers and managers and explained the IPv6 for Managers Reboot program.

Mr Tamon shared his experience of a IPv6 deploy-a-thon and a helpdesk for any related issues at <http://bit.ly/help6EN> and <http://bit.ly/help6FR>.

[Slides](#)



Ms Madhvi Gokool from the Registration Services Team at AFRINIC gave an update on resources management at AFRINIC. Six million IPv4 addresses have been allocated since AFRINIC has hit phase 1 of its IPv4 exhaustion phase. Currently there are 8 million IPv4 addresses left until phase 2 which is expected to happen by May 2018. Ms Gokool explained other services offered by AFRINIC among which the Internet Routing Registry and encouraged its adoption by members. Several enhancements on registration services have also been highlighted.

[Slides](#).



Mr Josiah Chavula next presented on WIDER - World Internet Data Explorer Project that helps present Internet statistics in a more user friendly manner because there are lots of stats about different countries and Internet penetration and performance access and resources. Mr Chavula explained that this makes it difficult for people to access such information so the project looks at something that could pull the important pieces into one place so we can have quick and easy reference to such information.

The main purpose of the presentation was to introduce this project and get feedback in terms of what the community feels is useful information to add to this website.

[Slides](#).

Mr Arthur Cardinal provided an update on membership statistics, members satisfaction survey 2017, statistics on the accuracy of AFRINIC members contact information, and highlighted the concept for the 2018 AFRINIC Stakeholder Survey that will involve the participation of the Internet Community. 64 % of our member according to the 2017 survey stated that they are very satisfied with services provided by AFRINIC and 80% of our members contact is accurate.

[Slides](#).

SESSION 8

AFRINIC GOVERNANCE

The next session was on AFRINIC governance and started with a presentation by Wafa Dahmani on the governance committee and then moved on to open discussion on AFRINIC Governance. Mr Barrett also explained some of the issues that require to be addressed according to the findings.

The session recordings and transcripts are available [here](#).

SESSION 9

AFRINIC ANNUAL GENERAL MEMBERS MEETING

The session kicked off with the Chairman's presentation Abibu Ntihigaye on the Board activity updates.

[Slides](#)

AFRINIC CEO Alan Barrett was next to present the AFRINIC activities report.

[Slides](#)

Dr Christian Bope Chair of the Audit committee presented the 2017

AFRINIC Financial Update.

[Slides](#)

AFRINIC Audit Report

[Slides](#)

The presentation of the 2018 budget and the review of the fees structure were presented by Chair of the AFRINIC Finance and Fees Committee respectively.

[Slides](#) : Budget Presentation 2018

[Slides](#) : Fees Review Structure



Elections for Board and Governance Committee seats took place.

The results of the Board election can be read [here](#).

The session recordings and transcripts are available [here](#).

SESSION 10

GLOBAL UPDATE

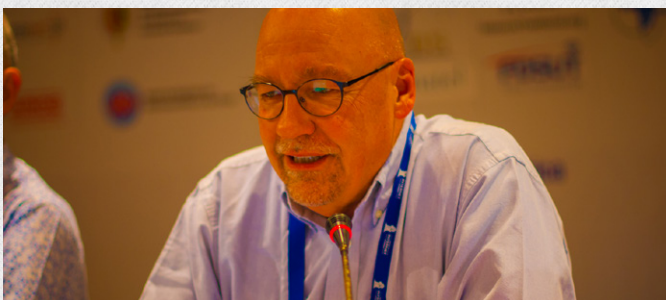


Paul Wilson, APNIC's Director highlighted the main activities carried out at APNIC, highlighting statistics for resources allocation. Mr Wilson highlighted that APNIC is projecting around 300 transfers per year.

APNIC currently has membership of over 14,000 and has conducted IPv6 training in 16 economies with 528 participants attending and 20 online training with 92 participants. Emphasis is being laid on distance learning for getting started with IPv6.

At the regional level, APNIC collaborates with the NOGs of the Asia Pacific region. One of the security activities undertaken by APNIC has been supporting the development of CERTS. The APNIC Foundation was established to raise funds to support the development of the Internet.

[Slides](#)



Axel Pawlik, RIPE NCC's Executive Director gave the NCC's report showing membership growth of over 18,000. Mr Pawlik stated that NCC is expecting its IPv4 pool to last for 2-3 years. There have been over 21 million addresses transferred in 2017. There are currently 13,369 members with IPv6 as compared to 5507 members without IPv6. The NCC region is currently discussing on five policy proposals.

[Slides](#)

Paul Wilson presented the NRO report. Mr Wilson explained the role and structure of the NRO, provided an update on finances, IANA Review Committee, ICANN Empowered Community, ASO Review and NRO projects.

[Slides](#)



Anne Rachel Inne, ARIN's Executive Director of Government's Affairs gave ARIN's report on activities. ARIN has served over 38,000 organisations and its current membership is 5750. 57% of ARIN membership has IPv6 and there are 5 draft policies that are pending Advisory Council Review.

[Slides](#)



Fiona Asonga provided an update on the ASO AC / NRO NC and highlighted the role, composition and tasks of the council. Ms Asonga expressed her thanks to the NRO for funding and to APNIC for providing secretarial support.

[Slides](#)

Selina Harrington from IANA presented the IANA Report. Ms Harrington highlighted the results of the Satisfaction Survey conducted by IANA which shows 100 % customer satisfaction and over the past four years the average was 99%.

The SLA performance results also showed 100% for requests acknowledged, responded and implemented accurately on time.

IANA expects to make the last allocation from the IPv4 recovered pool in March 2019, if it does not receive any additional returned addresses.

[Slides](#)

Mr Alan Barrett made the final presentation on the ASO Review. The purpose of the ASO's periodic review is to ensure that ASO is accountable to the community and to determine whether the ASO has a continuing purpose in the ICANN structure, whether any change in structure or operations of the ASO is desirable to improve its effectiveness in the ICANN structure.

The report contains 18 recommendations. The NRO have accepted the recommendations and are working on their implementation and evaluation. There needs to be discussions about how to clarify the procedures. The relationship is complex between the 15 ASO-CA members in charge of global policies and the NROs. It is useful to ask questions about the changes to make. We must see the strategies to put in place to make readjustments.

[Slides](#)

During the question and answers session, the audience queried about whether AFRINIC is planning to have its own Foundation to support community initiatives, metric with the financial crisis in an RIR context,

SESSION 11

DNS AND RELATED SERVICES



Mr Martin Levy from Cloudflare making a presentation on 1.1.1.1

Mr Martin Levy from Cloudflare spoke on Cloudflare's work in helping build a better Internet. Cloudflare is using 1.1.1.1 as DNS resolver provided to Cloudflare by APNIC for research. Martin Levy highlighted the effectiveness of this service which focuses on privacy and speed.

[Slides](#)

Mr Yaovi Atohou from ICANN explained the concept of Universal Acceptance. Mr Atohou stated that there is a working group that is currently working on the universal acceptance of TLDs and encouraged all Africans to join this group. There is a process in place for the universal acceptance of non-ascii TLDs.

[Slides](#)

Mr Yazid Akhano on behalf of the DNS Forum in Benin gave the report of a study he conducted on QoS of DNS Services in Benin. Mr Akhano presented the context, methodology, and results of the study.

[Slides](#)

SESSION 12

CLOSING CEREMONY



Ms Maimouna Ndoeye Seck, Minister of Air Transport and Development of Airport Infrastructures speaking during the AIS'18 Closing Ceremony

Ms Maimouna Ndoeye Seck, Minister of Air Transport and Development of Airport Infrastructures was the chief guest of the closing ceremony. Ms Seck in her speech congratulated the organisers for the success of the 2018 edition. The organization of this event was relevant for Senegal in the context of the digital strategy 2025 for Senegal. According to the Minister, this flagship event was an opportunity for exchange, for capacity building, for experience sharing and sharing of good practices in among the various stakeholders of ICT in Africa.

Ms Seck highlighted that the presentations discussed on issues and experiences shared and drawn to ensure growth of Africa in the digital sector. Ms Seck stressed on the importance of the training week from with 145 participants from 20 African countries.

Mr Alan Barrett AFRINIC CEO and Dr Nii Quaynor AfNOG Convenor also gave speeches during the closing ceremony. The session recordings and transcripts are available [here](#).

NEXT AIS'19 IN UGANDA



— AFRICA —
INTERNET
— SUMMIT'19 —
KAMPALA - UGANDA
9 - 21 JUNE 2019

The next AIS will take place in Uganda. During the closing ceremony the local host NFT Consult made a presentation on Uganda.



www.afrinic.net



AFRINIC | 11th Floor Standard Chartered Tower | 19 Cybercity, Ebene | Mauritius
t: +2304035100 | f: +2304666758 | e: contact@afarinic.net

Published on : 12/June/18