



# COMMONWEALTH SPECTRUM MANAGEMENT FORUM 2016

2 - 4 NOVEMBER 2016, MONT FEBE HOTEL, YAOUNDE, CAMEROON



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COMMONWEALTH  
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## EVENT GUIDE

## THE 5G ECOSYSTEM

## TECHNOLOGICAL OPTIONS & IMPLICATIONS FOR SPECTRUM PLANNING

### KEY TOPICS

Implementing WRC-15 outcomes

Managing spectrum to maximise value

New services and demand on spectrum

Methods of spectrum assigning

Preparing for WRC-19

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# COMMONWEALTH SPECTRUM MANAGEMENT FORUM 2016

2 - 4 NOVEMBER 2016, YAOUNDE, CAMEROON

## WELCOME ADDRESSES



**Shola Taylor**

*Secretary-General  
Commonwealth  
Telecommunications  
Organisation*

Dear Delegates,

Welcome to the first annual Commonwealth Spectrum Management Forum, which is dedicated this year to the 5G ecosystem.

As many of you may know, the CTO is committed to assisting member countries in achieving universal broadband. Given the unparalleled achievements and yet the untapped and much bigger future potential of mobile data communications, I see this event as the beginning of a series of regular gatherings to help us focus on how to extend fast and decent access to the Internet to all.

Working during the past few months with our hosts, the Ministry of Posts & Telecommunications and the Telecommunications Regulatory Board of Cameroon to whom my colleagues and I are most grateful, we have put together this comprehensive programme which we hope will address most areas of interest to you. Above all, and as with most of our events, we have given this event a forum format to encourage participation by all of you, speakers, panellists, delegates and sponsors alike.

I wish you a fruitful Forum.

**Shola Taylor**

*Secretary-General  
Commonwealth Telecommunications Organisation*



**Honourable Minette Li  
Libom Likeng**

*Minister of Post and  
Telecommunications,  
Cameroon*

Dear Participants and Guests,

On behalf of the President of Cameroon, His Excellency Mr Paul Biya, and the entire Government, it is an immense pleasure to welcome you to the Commonwealth Spectrum Management Forum 2016 held this year under the theme of The 5G Ecosystem – Technological Options and Implications for Spectrum Planning. We are extremely grateful to all of you for your participation at the event, and also to Secretary-General Shola Taylor for choosing Cameroon for such an important event.

Indeed, the remarkable progress achieved in telecommunications and the introduction of more sophisticated mobile equipments continue to bring new opportunities for our citizens. But with these opportunities also comes the challenge of ever growing data usage which results in more demand for spectrum.

Over the next three days, we will explore the range of options which, collectively, should help our respective countries achieve a more efficient use of currently available spectrum, and also prepare for the use of spectrum in currently unallocated bands. But, as we explore these options, we should keep in mind that information and communication technologies are no longer a mere convenience, but an essential part of our national economic development efforts.

I wish you a fruitful forum and a pleasant stay in the city of seven hills.

**Honourable Minette Li Libom Likeng**

*Minister of Post and Telecommunications Cameroon*



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## WELCOME ADDRESSES



**Jean Louis Beh Mengue,**  
*General Manager,  
Telecommunications  
Regulatory Board (ART),  
Cameroon*

Dear Delegates,

It is a pleasure for me to welcome you to the **Commonwealth Spectrum Management Forum 2016**. I would like to welcome all of the international delegates who have taken time from their respective schedules to travel and contribute to the success of this event that will take place here in Yaoundé.

As spectrum is an important but limited resource in high demand, regulators, policymakers and stakeholders across the world are continuing to seek the most effective ways in which it can be managed. It is my wish that participants at this Forum will acquire additional knowledge on some of the central aspects of spectrum management.

As for Cameroon, I am confident that we will benefit from the expertise of the distinguished and experienced international panellists who will be leading the discussions during this event. I also believe that Cameroon will be able to use the conclusions and recommendations of this Forum to improve its approach to managing frequencies.

To our distinguished and eminent guests, I wish each of you a good stay in Cameroon.

**Jean Louis Beh Mengue**  
*General Manager*  
Telecommunications Regulatory Board (ART), Cameroon

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# COMMONWEALTH SPECTRUM MANAGEMENT FORUM 2016

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## DAY ONE 2 NOVEMBER 2016

08:30 **Registration opens**

### OPENING CEREMONY

09:00 - 10:00

09:00 **National anthem of Cameroon**

09:05 **Welcome address**

**Jean Louis Beh Mengue**, General Manager,  
Telecommunications Regulatory Board, Cameroon

09:15 **Goodwill message**

**Kezias Mwale**, Radiocommunications Coordinator, African  
Telecommunications Union on behalf of **Abdoulkarim  
Soumaila**, Secretary-General, African Telecommunications Union

09:25 **Goodwill message**

**Diana Tomimura**, Senior Policy Officer, Outreach and  
Publication Services Division, on behalf of **Francois Rancy**,  
Director, Radiocommunication Bureau, International  
Telecommunication Union (ITU)

09:35 **Welcome address**

**Shola Taylor**, Secretary-General, Commonwealth  
Telecommunications Organisation

09:45 **Official opening of the Commonwealth Spectrum  
Management Forum 2016**

**Honourable Minette Li Libom Likeng**, Minister of Posts and  
Telecommunications, Cameroon

10:00 **GROUP PHOTOGRAPH & MORNING REFRESHMENTS**

### PLANNING FOR 5G: GLOBAL AND REGIONAL PERSPECTIVES

10:40 - 12:25

Chair: **Shola Taylor**, Secretary-General, Commonwealth  
Telecommunications Organisation

10:40 **Spectrum management: The international perspective**

**Diana Tomimura**, Senior Policy Officer, Outreach and Publication  
Services Division, International Telecommunication Union

10:55 **Global perspective: 5G performance expectation, spectrum  
requirements and global harmonisation**

**Kamal Tamawa**, Spectrum Policy Manager, Sub-Saharan Africa, GSMA

11:10 **Planning for 5G: Challenges and opportunities for the African region**

**Kezias Mwale**, Radiocommunications Coordinator, African  
Telecommunications Union

11:25 **Discussion: Can the global and regional perspectives be harmonised?**

12:25 **NETWORKING LUNCH**

### WRC-15 OUTCOMES AND IMPLICATIONS FOR SPECTRUM SHARING

13:30 - 15:00

Chair: **Stephen A. Bello**, Principal Partner, Kayafas Konsult Ltd

13:30 **Key outcomes from WRC-15**

**Eddy Amana**, Chairman, Digiteam, Nigeria

13:45 **On-going work in ITU-R study groups**

**Diana Tomimura**, Senior Policy Officer, Outreach and Publication  
Services Division, International Telecommunication Union

14:00 **Adjacent L-Band protection**

**Bashir Patel**, Regional Director, CAMEA Policy & Development, Inmarsat

14:15 **Discussion: How can WRC-19 best build on the success of WRC-15?**

**Additional panellist:**

**Eric Sindeu**, Senior Telecommunications Engineer, Head of  
Numbering and Addressing Resources Management Service  
Unit, Telecommunications Regulatory Board, Cameroon

### MAXIMIZING SPECTRUM CAPACITY FOR BROADBAND DEVELOPMENT

15:00 - 16:15

Chair: **Dr Edmund Katiti**, Chief Executive Officer, FikiyaTech and  
Commonwealth Coordinator for WRC-15

15:00 **Spectrum in Africa: Unique challenge, unique opportunity**

**Bertus Ehmke**, Senior Technology Strategist, MTN Group

15:15 **The promise of 5G and its spectrum requirements**

**El Hadjar Abdouramane**, Director of Frequency Management,  
Telecommunications Regulatory Board, Cameroon

15:30 **Discussion: Are frequent changes in spectrum assignments  
harming developing countries?**

**Additional panellists:**

**Koffi Fabrice Djossou**, Senior Director, AB Satellite

**Jonathan Pinifolo**, Deputy Director, Spectrum Management,  
Malawi Communications Regulatory Authority

**Chris Woolford**, Director of International Spectrum Policy, Ofcom,  
United Kingdom

16:15 **AFTERNOON REFRESHMENTS**

### SPECTRUM BANDS AND TECHNOLOGIES

16:45 - 18:15

Chair: **Jonathan Pinifolo**, Deputy Director, Spectrum Management,  
Malawi Communications Regulatory Authority

16:45 **5G: Issues to be addressed and possible areas of compromise**

**Chris Woolford**, Director of International Spectrum Policy,  
Ofcom, United Kingdom

17:00 **5G/IMT-2020 - How to economically achieve 5G/IMT-2020  
service implementation**

**Kumar Singarajah**, Director, Regulatory Affairs & Business  
Development, Avanti Communications

17:15 **Spectrum re-farming: Framework and methodology**

**Dr Haim Mazar**, RF Spectrum and Engineering, ATDI, Vice-  
Chairman, ITU-R SG5 (terrestrial services)

17:30 **The Growth of Radio Local Area Networks (RLANs): A new  
Challenge to Spectrum Management**

**Batholomew Ga Akeku**, Sub-Director for Frequency  
Management, Ministry of Posts and Telecommunications,  
Cameroon

17:45 **Discussion: How should we meet 5G requirements in the short  
and medium term**

18:15 **CLOSE OF DAY ONE**

19:00 **FORUM DINNER: LA FALAISE HOTEL**

**EFFICIENT SPECTRUM UTILISATION FOR UNIVERSAL ACCESS**

09:00 - 10:45

Chair: **Shola Taylor**, Secretary-General, Commonwealth Telecommunications Organisation (CTO)

09:00 **Realistic options for spectrum sharing**

**Chris Woolford**, Director of International Spectrum Policy, Ofcom, United Kingdom

09:15 **Spectrum sharing & further use of sub-1GHz spectrum in Africa**

**H Nwana**, Founder and Director, Atlantic Telecoms & Media

09:30 **Harmonising the regulatory framework and satellite licensing**

**Bashir Patel**, Regional Director, CAMEA Policy and Development, Inmarsat

09:45 **Connecting underserved communities via solar aircraft**

**Kojo Boakye**, Africa Public Policy Manager (Connectivity and Access), Facebook

10:00 **Discussion: Managing interference in Wi-Fi networks**

**Additional panellists:**

**Stephen A. Bello**, Principal Partner, Kayafas Konsult Ltd

**Fabrice Djoumessi Dontsa**, Sub-Director of the Management of Technical Resources and Universal Service, Telecommunications Regulatory Board, Cameroon

10:45 **MORNING REFRESHMENTS**

**SPECTRUM PLANNING FOR THE FUTURE OF BROADCASTING**

11:15 - 12:30

Chair: **Eddy Amana**, Chairman, Digiteam, Nigeria

11:15 **Spectrum planning for the future of broadcasting in Africa**

**Andrew Kisaka**, Principal Broadcasting Engineer, Tanzania Communications Regulatory Authority

11:30 **Managing the digital dividend: challenges for broadcasters**

**Hilaire Mbega**, Radiocommunications Engineer, ITU-Zone Central Africa Consultant, Assistant Director Communications, CRTV-Cameroon

11:45 **Discussion: What are the possible compromises for services in C-band in the medium term?**

12:30 **NETWORKING LUNCH**

**DIGITAL SWITCHOVER: CURRENT STATE OF PLAY**

13:30 - 15:00

Chair: **El Hadjar Abdouramane**, Director of Frequency Management, Telecommunications Regulatory Board, Cameroon

13:30 **DSO: European developments**

**Diana Tomimura**, Senior Policy Officer, Outreach and Publication Services Division, International Telecommunication Union

13:45 **DSO: Africa switchover update**

**Kezias Mwale**, Radiocommunications Coordinator, African Telecommunications Union

14:00 **DSO: Cameroon switchover update**

**Timothée Mezom Melouta**, Deputy Coordinator, National Committee for Digital Switchover, Prime Minister's Office, Cameroon

14:15 **Discussion:**

**Additional panellists:**

**Yomi Bolarinwa**, Director of FikiyaTech and Former Director General, Nigeria Broadcasting Commission

**Mouhamadou Awallou**, Sub-Director of Studies Planning and Engineering Spectrum, Telecommunications Regulatory Board, Cameroon

15:00 **AFTERNOON REFRESHMENTS**

**SPECTRUM AUCTIONS**

15:30 - 16:45

Chair: **Jean Louis Beh Mengue**, General Manager, Telecommunications Regulatory Board, Cameroon

15:30 **Designing auctions for efficiency and revenue generation**

**Shola Taylor**, Secretary-General, Commonwealth Telecommunications Organisation

15:45 **Spectrum auction: Lessons learned**

**Chris Woolford**, Director of International Spectrum Policy, Ofcom, United Kingdom

16:00 **Discussion: Generating investment opportunities for spectrum utilisation**

**Additional panellist:**

**Jonathan Pinifolo**, Deputy Director, Spectrum Management, Malawi Communications Regulatory Authority

16:45 **CLOSE OF DAY TWO**

**UPCOMING COURSES 2016**

**Session Initiation Protocol**

*7 - 11 November 2016, Gaborone, Botswana\**

**Introduction to ICT Policy and Regulation**

*7 - 11 November 2016, Johannesburg, South Africa\**

**Diploma in Telecommunications Management Studies for Telecommunication Services of Trinidad and Tobago (TSTT)**

*2 November - 9 December 2016, Port of Spain, Trinidad & Tobago\**

*To register, or for more details visit [www.cto.int](http://www.cto.int)*

\*These programmes are delivered as part of the CTO's Programme for Development & Training, a programme which provides specialised ICT capacity development to ministries, regulatory agencies and operators around the world. Delivered in over thirty countries, the PDT provides bespoke professional training, consultancy and advisory services in policy and regulation, business development and management and technology.



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## DAY THREE 4 NOVEMBER 2016

### SPECTRUM MANAGEMENT: LOOKING AHEAD

09:00 - 10:30

Chair: **Shola Taylor**, Secretary-General, Commonwealth Telecommunications Organisation

09:00 **Discussion: Preparations for WRC-19: How can spectrum management expedite the introduction of new services?**

**Diana Tomimura**, Senior Policy Officer, Outreach and Publication Services Division, International Telecommunication Union

**Eddy Amana**, Chairman, Digiteam, Nigeria

**Bashir Patel**, Regional Director, CAMEA Policy & Development, Inmarsat

**Kojo Boakye**, Africa Public Policy Manager (Connectivity & Access), Facebook

**Jonathan Pinifolo**, Deputy Director, Spectrum Management, Malawi Communications Regulatory Authority

**Yomi Bolarinwa**, Director of FikiyaTech and Former Director General, Nigeria Broadcasting Commission

10:30

### MORNING REFRESHMENTS

### CLOSING CEREMONY

11:00 - 11:45

11:00 **Highlights from Forum Report**

**Dr Edmund Katiti**, Chief Executive Officer, FikiyaTech and Commonwealth Coordinator for WRC-15

11:20 **Closing remarks**

**Jean Louis Beh Mengue**, General Manager, Telecommunications Regulatory Board, Cameroon

11:25 **Closing address**

**Shola Taylor**, Secretary-General, Commonwealth Telecommunications Organisation

11:35 **Official closing of the Commonwealth Spectrum Management Forum 2016**

**Honourable Minette Li Libom Likeng**, Minister of Posts and Telecommunications, Cameroon

11:45

### NETWORKING LUNCH



***As an innovative Operator, MTN significantly contributes to the development of telecommunications which have become an essential driver for growth in Cameroon.***

Since February 2000, we have equipped the country with a state-of-the-art and an extended communication network, which democratizes telephony access and reinforces relations as well as opens up the remotest areas.

Our daily activity daily employs over 200 000 youths, and its impact each day confirms MTN Cameroon as a major stakeholder of the national economy which supports the growth of local SMEs and promotes local talent.

We equally work daily, through the MTN Foundation, for the welfare of communities by providing solutions which ease access by the greatest majority to potable water, health care and quality education.

*Welcome to the New World.*

Today, we are cited as a model of the privatisation policy led by the Cameroon government.

And because we believe in the emergence of Cameroon, we are determined to go even farther by decisively contributing towards aligning our country to the New Digital World.

And we shall succeed in this endeavour thanks to the tested experience and always increasing competence of the MTN Group, innovative telecommunications leader in Africa.



# COMMONWEALTH SPECTRUM MANAGEMENT FORUM 2016

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## SPONSOR PROFILES



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As the industry leader and pioneer of mobile satellite communications, Inmarsat has been powering global connectivity for more than three decades. Inmarsat offers an unrivalled portfolio of global satcom solutions and value-added services to keep clients connected at all times – whether travelling on land, at sea or in the air. No matter where the business is, Inmarsat can be relied on for all mission-critical communications.



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Incorporated in Cameroon since February 2000, MTN Cameroon is a subsidiary of the MTN Group, a leading emerging markets mobile operator represented in 22 countries in Africa, Asia and the Middle East. A strategic enabler of the growth of Cameroon's digital economy, MTN provides bespoke communication and payment solutions to millions of people daily on the fastest 4G LTE network.



### Bronze Sponsor

ATDI is a global leader in the development and implementation of automated spectrum management systems, whose expertise extends to software development, spectrum engineering and management. ATDI is evolving its product line to an open-source web architecture which is attracting a great deal of interest from the telecommunications industry. Their software tools are technology-agnostic, incorporate the latest propagation models and are ITU-compliant.



### Bronze Sponsor

AINMT is an international telecommunications company, focusing on wireless data communication services. The company is well established in Scandinavia - ice.net running the #3 mobile network in Norway and has newly established partnerships in Indonesia and the Philippines. AINMT's international business currently has license coverage to reach 360 million people.



### Lanyard Sponsor

Founded in 2004, Facebook's mission is to give people the power to share and make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what's going on in the world, and to share and express what matters to them.



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For more information, contact **Robert Hayman**  
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CONFERENCE & EXHIBITION

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How could ICTs assist better employee engagement

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Data: Analytics, security and privacy

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For more information, contact Robert Hayman  
on +44 20 8600 3805 or [r.hayman@cto.int](mailto:r.hayman@cto.int)

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