International Forum – Connecting the World from the Skies

8 – 10 November 2022 | Hybrid Forum - Riyadh & Virtual

Please note – all times are listed in GMT / UTC

(KSA = GMT+3; CET = GMT+1; ICT = GMT+7; EST = GMT- 5;)

Introduction

Evolution of wireless connectivity and networks is progressing as wireless infrastructure is being deployed beyond the Earth surface. Variants of satellites and pseudo-satellites including GEO or HEO satellites and MEO or LEO satellite constellations and mega-constellations, High Altitude Platforms (HAP), Low Altitude Platforms (LAP), and air-to-ground (A2G) networks are being either deployed or developed/tested to be deployed in the near future. Each segment of these networks has a role to play in addressing connectivity gaps through increased integration between these segments as well as with other terrestrial network components. These elements and components are evolving to become an integral part of the future wireless network topology. In order to connect the unconnected across the globe in a sustainable manner, open skies policy needs to be complemented by dark and quiet skies policies so that the impact of this technological evolution on the security, environment and scientific observation of the space and the atmosphere remains manageable.

ITU and Communication and Information Technology Commission (CITC) of Saudi Arabia are hosting this 3-days International Forum on **Connecting the World from the Skies**, in collaboration with UNOOSA and the Saudi Space Commission (SSC) of Saudi Arabia. This hybrid forum will take place from 8 – 10 November 2022, in Riyadh and Online, and will discuss extensively air-borne and space-borne networks, from technology, space and policy perspectives.

DAY 1

Opening Session

The leaderships of the organizers will open this Connected Globe Forum. The Director of the ITU Radiocommunication Bureau, the Governor of CITC, the CEO of SSC and the Director of UNOOSA will discuss this evolution of wireless connectivity from the atmosphere and outer space, and emphasize the need for sustainable connectivity to all those unconnected while protecting our environment.

07:30 – 07:45 **Opening presentation**
Mario Maniewicz, Director, Radiocommunication Bureau, ITU (confirmed)

07:45 – 08:00 **Opening presentation**
CITC / Saudi Space Commission (tbc)

08:00 – 08:15 **Opening presentation**
Niklas Hedman, Acting Director, UNOOSA (tbc)

08:15 – 09:00 **High-level ministerial and thought leadership roundtable**
Speakers and content to be confirmed shortly

09:00 – 09:20 **Break**

Session 1: Why does the world need connectivity from the Sky?
As more wireless towers are being tested or/and deployed into the different layers of the outer space and atmosphere, the session will discuss the importance of this connectivity evolution. The panel will provide insight on the need for open skies policy across the globe.

Moderator: **Christopher M. Hocking,** Executive Director and President, Wilson Center (tbc)

09:20 – 10:20 **Panel Discussion**
Catherine Kavvada, Director for Space Development & Innovation, DG DEFIS, European Commission (confirmed)
Roger Tong, CEO, AsiaSat; Vice-Chair, GSOA (confirmed)
Steve Collar, CEO, SES (tbc)
Philip Marnick, General Director, Telecommunications Regulatory Authority (TRA), Bahrain (confirmed)

Technology Demonstration I: Connectivity from the Stratosphere
This session will discuss HAPS technology capability and future. It will demonstrate recent trials of this promising technology, and how it fits within this new wave of wireless connectivity. Video and footage from real-life trials will be shown and discussed by industry experts who manage these experiments.

10:20 – 11:05 **Technology Demonstration**
Richard Deakin, CEO, Stratospheric Platforms
Kevin Bean, VP Technical, Stratospheric Platforms

11:05 - 12:00 **Break**

Session 2: Deployment of Air-borne Networks
The session will bring launching, aviation and air-borne networks experts to discuss the challenges, opportunities and alternatives of deployment of these network elements in the different layers of the atmosphere.

Moderator: Representative, RAND (tbc)

12:00 – 13:00 **Panel Discussion**
Thorsten Robrecht, CEO, SkyFive (tbc)
Representative, Arianespace (tbc)
Philippe Baptiste, President, CNES (tbc)
Mahesh Krishnaswamy, Director & Project Lead, Project Taara (tbc)

Technology Demonstration II: Connectivity from Air to the Ground
This session will discuss A2G technology capability and future. It will demonstrate recent trials of this technology, and how it brings real-broadband connectivity to airplanes. Video and footage from real-life trials will be shown and discussed by industry experts who manage these experiments.

13:00 – 13:45 **Technology Demonstration**
Dirk Lindemeier, Chief Commercial Officer, Skyfive

13:45 - 14:05 **Break**

Thoughtful Discussion X: Integrated Space-Air-Ground Networks for Global Connectivity
Prominent scientists and academics will lead a technical discussion on this new technology era of hybrid and integrated networks to bring seamless connectivity from air, space and ground. The session will deep dive on how different components of these networks will work together in a single topology.

14:05 - 15:20 **Thoughtful Discussion X**
Dr. Abdulah Aljohani, R&I Consultant, CITC (confirmed)
Prof. Lajos Hanzo, Head of Next Generation Wireless, University of Southampton (confirmed)
Prof. Moahedm-Slim Alounin, Head of Communication Theory Lab, KAUST (confirmed)
Dr. Morio Toyoshima, Director General, NICT (confirmed)
Dr. Michel Masselin, Vice President Sales, Stratobus - Thales (confirmed)

15:20 – 15:40 **Break**

Session 3: Deployment of Space-born Networks
The session will bring space launching and space connectivity networks experts to discuss the challenges, opportunities and alternatives of deployment of satellite into low earth orbits to bring connectivity.

Moderator: **William Webb**, Chief Technology Officer, Access Partners (tbc)

15:40 – 16:40 **Panel Discussion**
André-Hubert Roussel, CEO of Ariane Group; President, Eurospace (tbc)
Ram Viswanathan, President and CEO, Omnispace (tbc)
Evert Dudok, Executive Vice President of Connected Intelligence, Airbus Defence and Space (tbc)
Karen Feldstein, Associate Administrator for International and Interagency Relations, NASA (tbc)
Justin Moore, Head of Space and Spectrum Strategy, Ofcom (tbc)

16:40 - 17:00 **Keynote B: Towers in the Sky**
Ken Riordan, President, HAPS Alliance (tbc)

Tutorial (i): On the performance analysis of non-terrestrial networks: A stochastic geometry-based approach
Over the last decade, stochastic geometry (SG) has emerged as a powerful analytical tool to evaluate system-level performance of wireless networks and evaluate their tendency towards heterogeneity. This tutorial will discuss how the SG models and techniques can be developed to evaluate the performance of the non-terrestrial networks.

15:30 – 17:30 **Tutorial (i)**
Prof Moahedm-Slim, Head of Communication Theory Lab, KAUST (confirmed)
Dr. Mustafa Kishk, Maynooth University (confirmed)

DAY 2

09:00 - 09:20 **Keynote C: Dynamic Multi-layered Space Networks**
Rajeev Suri, Chairman, GSOA; CEO, Inmarsat (confirmed)

Session 4: Globalization of Service Providers beyond National borders
In order to connect the unconnected across the globe in a sustainable manner, ubiquitous integration of between global service providers will be required. This panel will discuss the challenges and opportunities of achieving the service providers' globalizations.

Moderator: **Melissa K. Griffith**, Senior Program Associate, Wilson Center (tbc)

09:20 – 10:20 **Panel Discussion**
Elodie Viau, Director of Telecommunications and Integrated Applications, ESA (confirmed)
Alhamedi Manahi Alenezi, CEO, Arabsat (tbc)
Dave Wajsgras, CEO, Intelsat (tbc)
Representative, CITC (tbc)
Tom Eskola, Vice President and General Manager, Panasonic Avionics (tbc)

Technology Demonstration III: Connectivity from the Low Atmosphere
This session will discuss LAPS technology capability and future. It will demonstrate recent trials of this promising technology, and how it fits within this new wave of wireless connectivity.

10:20 – 11:05 **Technology Demonstration**
Ram Viswanathan, CEO, Omnispace

11:05 – 12:00 **Break**

Session 5: Hybrid Connectivity: Ensuring Interoperability and Complementarity
This session will bring terrestrial and non-terrestrial networks experts to discuss how space, air, and land communication technologies can complement each other aiming to achieve seamless connectivity.

Moderator: **Thierry Lefort,** Director, Strategy& (confirmed)

12:00 – 13:00 **Panel Discussion**
Dan Goldberg, CEO, Telesat (confirmed)
Renato Goodfellow, Head of Network Services Satellite, BT Global Services (tbc)
Charles Miller, CEO, Lynk (confirmed)
Representative, Inmarsat (tbc)
Hervé Derrey, CEO, Thales Alenia Space (tbc)

Technology Demonstration IV: 5G Everywhere from Low Earth Orbit
This session will discuss the LEO current and future capabilities of delivering 5G services. It will demonstrate recent trials of this promising technology, and how it fits within this new wave of wireless connectivity. Video and footage from real-life trials will be shown and discussed by industry experts who manage these experiments

13:00 – 13:45 **Technology Demonstration IV**
Laith Hamad, VP, Government and Regulatory Engagement, OneWeb-COO and Board Member, OneWeb NEOM JV, OneWeb

13:45 - 14:05 **Break**

Thoughtful Discussion Y: The Road to 6G through the Sky
Sixth generation will exploit satellite, aerial, and terrestrial platforms jointly. Hence, a wide variety of network services with diverse requirements will pose great challenges to the service proliferations. In this panel, prominent scientists and academics will lead a technical discussion on the roadmap of delivering 6G services through the sky.

14:05 – 15:20 **Thoughtful Discussion Y**
Prof. Giovanni Giambene, Head of Satellite Systems and Mobile Networks for Telecommunications, University of Siena, Italy
Other Speakers TBC

15:20 - 15:40 **Break**

Session 6: New Disruptive Connectivity Competition
The panel will bring both space and mobile networks experts to discuss the recent disruptive connectivity technologies, and how those technologies can be utilized effectively to connect the unconnected.

Moderator: **Aarti Holla-Maini,** Secretary General, GSOA (confirmed)

15:40 - 16:40 **Panel Discussion**
Jennifer Manner, Senior Vice President, Regulatory Affairs, Echostar (confirmed)
Michal Brichta, Head, Slovak Space Office (confirmed)
Laith Hamad, VP Middle East and Africa, and Board Member, OneWeb NEOM JV. (confirmed)
Motoi Matsumoto, Deputy Director, Global Communication Division, Softbank Corp. (confirmed)
Representative, STC (tbc)

16:40 - 17:00 **Keynote D: Connecting the Unconnected**
Lacina Koné, Director General / CEO, Smart Africa Alliance (tbc)

Tutorial (ii): Topology of 6G Wireless Networks
Sixth generation will rely on satellite, aerial, and terrestrial platforms jointly. However, each platform has its own topology structure that serve its requirements. The tutorial will discuss the future 6G topology that will allow seamless hybrid connectivity

15:30 - 17:30 **Tutorial (ii)**
Prof. Rui Zheng, Provost's Chair Professor, National University of Singapore
Other Speakers to be confirmed

DAY 3

09:00 - 09:20 **Keynote E: The networks of 2030**
Greg Wyler, Founder & Chairman, e-Space (confirmed)

Session 7: Sustainable and Green NTN towers in the skies
This session will highlight the importance of the NTN as an environmentally friendly connectivity solution. Additionally, the session will discuss the necessity of adopting green ICT standards in future NTN.

Moderator: Richard Womersley, Managing Director, LS telcom UK (confirmed)

09:20 – 10:20 **Panel Discussion**
Gilles Bregant, CEO, ANFR (tbc)
Paul Bate, CEO, UK Space Agency (tbc)
Eva Berneke, CEO, Eutelsat (tbc)
Amy Mehlman, Vice-President, e-Space (confirmed)
Representative, ST Engineering iDirect (tbc)

Technology Demonstration V: Global Internet of Things from Low Earth Orbits
This session will discuss the use of LEO satellites to offer IoT connectivity. In the session, we will demonstrate recent trials of this technology, and how it brings IoT services and innovative use cases to the remote and unconnected areas. Video and footage from real-life trials will be shown and discussed by industry experts who manage these experiments.

10:20 – 11:05 **Technology Demonstration V**
Omar Qaise, CEO, OQ Technologies

11:05 – 12:00 **Break**

Session 8: Space race toward Space Debris
The rising population of space debris increases the potential danger to all space vehicles, this session will discuss potential solutions to tackle this problem.

Moderator: **Alexandre Vallet,** Chief, Space Services Department, ITU (tbc)

12:00 – 13:00 **Panel Discussion**
Mark Dankberg, Chairman of the Board and Executive Chairman, Viasat (tbc)
Hae-Dong Kim, Administrator, Inter-Agency Space Debris Coordination Committee (IADC) (tbc)
Nobu Okada, CEO, Astroscale (tbc)
Representative, Project Kuiper (tbc)
Pascal Wauthier, Executive Director, Space Data Association (tbc)

Technology Demonstration VI: Overseas Internet of Things from 36 thousands km above sea
This session will discuss the use of GEO satellites to offer IoT connectivity. In the session, we will demonstrate recent trials of this technology, and how it brings IoT connectivity to the earth. Video and footage from real-life trials will be shown and discussed by industry experts who manage these experiments.

13:00 – 13:45 **Technology Demonstration VI**
Speakers tbc, Inmarsat

13:45 – 14:05 **Break**

Thoughtful Discussion Z: The age of Wireless proliferation
Prominent scientists and academics will lead a technical discussion on the challenges in the age of wireless proliferation, including, for example, the potential spectrum crunch for connectivity from earth and beyond. The session will highlight the potential innovative spectrum access and sharing mechanisms.

14:05 – 15:20 **Thoughtful Discussion Z**
Speakers tbc, SpectrumX Team

15:20 - 15:40 **Break**

Session 9: Dark and Quiet Skies Policy
This keynote will discuss the importance of updating the dark and quit skies policy. Additionally, the challenges and opportunity of adopting open sky policies will highlighted.

15:40 – 16:40 **Panel Discussion**
Nathalie Ricard, Scientific Affairs Officer, UNOOSA (tbc)
Sara Lucatello, INAF - Astronomical Observatory of Padua (tbc)
Ruskin Hartley, Executive Director, International Dark-Sky Association (tbc)
John Janka, Chief Officer, Global Government Affairs & Regulatory, Viasat (tbc)
Representative, OneWeb (tbc)

16:40 - 17:00 **Keynote F: The Wireless World of the Future**
Sunil Bharti Mittal, Executive Chairman, OneWeb (tbc)

Tutorial (iii): Integrated Terrestrial and Non-Terrestrial Networks
The next-generation wireless will be a hybrid system of satellite, aerial, and terrestrial platforms all working jointly. This tutorial will analyze the technology of each platform and will deep dive to the requirements to achieve efficient integration among all platforms

15:30 - 17:30 **Tutorial (iii)**
Speakers tbc, SpectrumX Team