

# Dynamic Spectrum Alliance Global Summit

Mario Maniewicz

Deputy Director, ITU Radiocommunication Bureau



Cape Town, South Africa; 9-11 May 2017

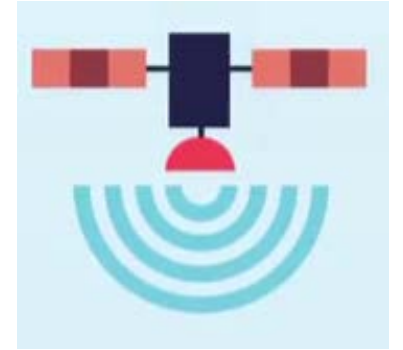
# ITU is committed to connecting the world

Our mission is to promote, facilitate and foster affordable and universal access to telecommunication, information and communication technology networks, services and applications and their use for social, economic and environmentally sustainable growth and development.



# ITU-R Objectives

Meet in a rational, equitable, efficient, economical and timely way, all countries requirements for radio-frequency spectrum and satellite-orbit resources, while avoiding harmful interference.



Worldwide connectivity and interoperability, improved performance, quality, affordability and timeliness of service and overall system economy in radiocommunications, through the development of international standards and best practices.



# Radio Regulations Framework

- Stable and predictable global framework of the Radio Regulations
- Basis for a sustainable ecosystem
- Regular updates made by ITU World Radiocommunication Conferences
- Long-term protection of the investments of a multi-trillion dollar industry



# Spectrum Management Models

- Licensed model

- Large and long-term investments
- Wide geographic areas, with quality obligations
- **Security of tenure**
- E.g. Fixed, mobile and satellite services



- Unlicensed model

- Small, short-term investments
- Short range services, with no guaranteed quality
- Do not require security of tenure
- Very last meters of the connection, **heavily rely on the existing networks**
- E.g. Wi-Fi



# Spectrum Sharing

- Licensed Shared Access (LSA)
  - GSM/3G networks vs military services
  - European Union - 2.3 GHz
- Coexistence of Licensed & Unlicensed
  - WiFi – RLAN in 5GHz
  - Use of filters, max. EIRP and antenna height
  - Use of database, geographic separation
- Combination of both sharing models
  - FCC Three-tier approach - 3.5 GHz



Strict sharing  
conditions &  
enforcement to  
avoid interference



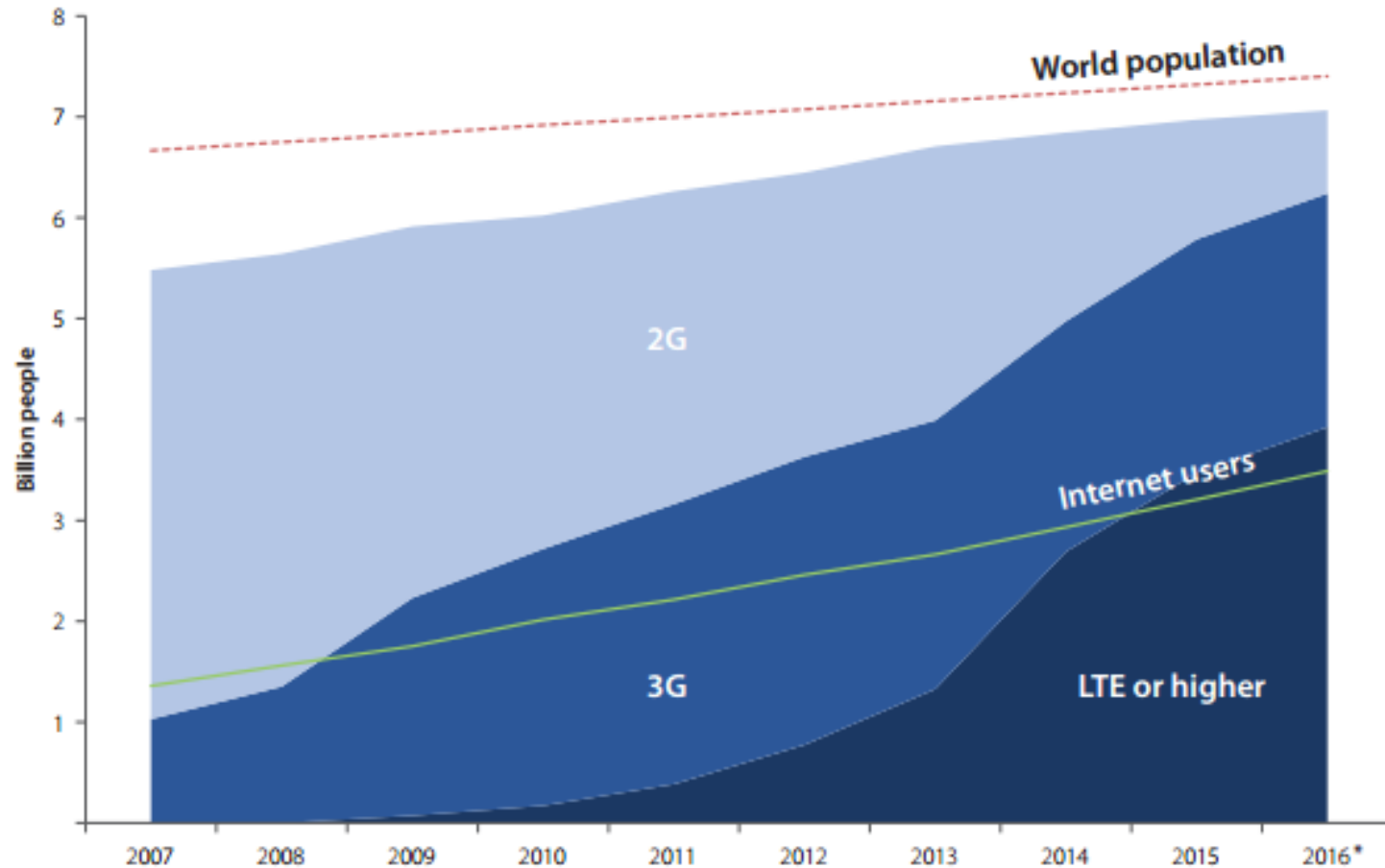
# Spectrum Sharing - Challenges



1. Conformity & Enforcement
  - Disruptions of meteorological radars in the 5GHz band
  - Non-compliant unlicensed devices: ~50% of devices in the EU
2. Lower bands (lower UHF band)
  - Range advantage of lower frequencies is limited to avoid interference
3. Operation in accordance with the Radio Regulations
  - Sharing studies & cross-border interference
4. Long-term sustainability
  - «License-exempt» applications are usually seen as irreversible
  - WRC-12 and WRC-15 allocated part of the band to IMT



# Mobile network coverage



95% of the global population are covered by a mobile-cellular network

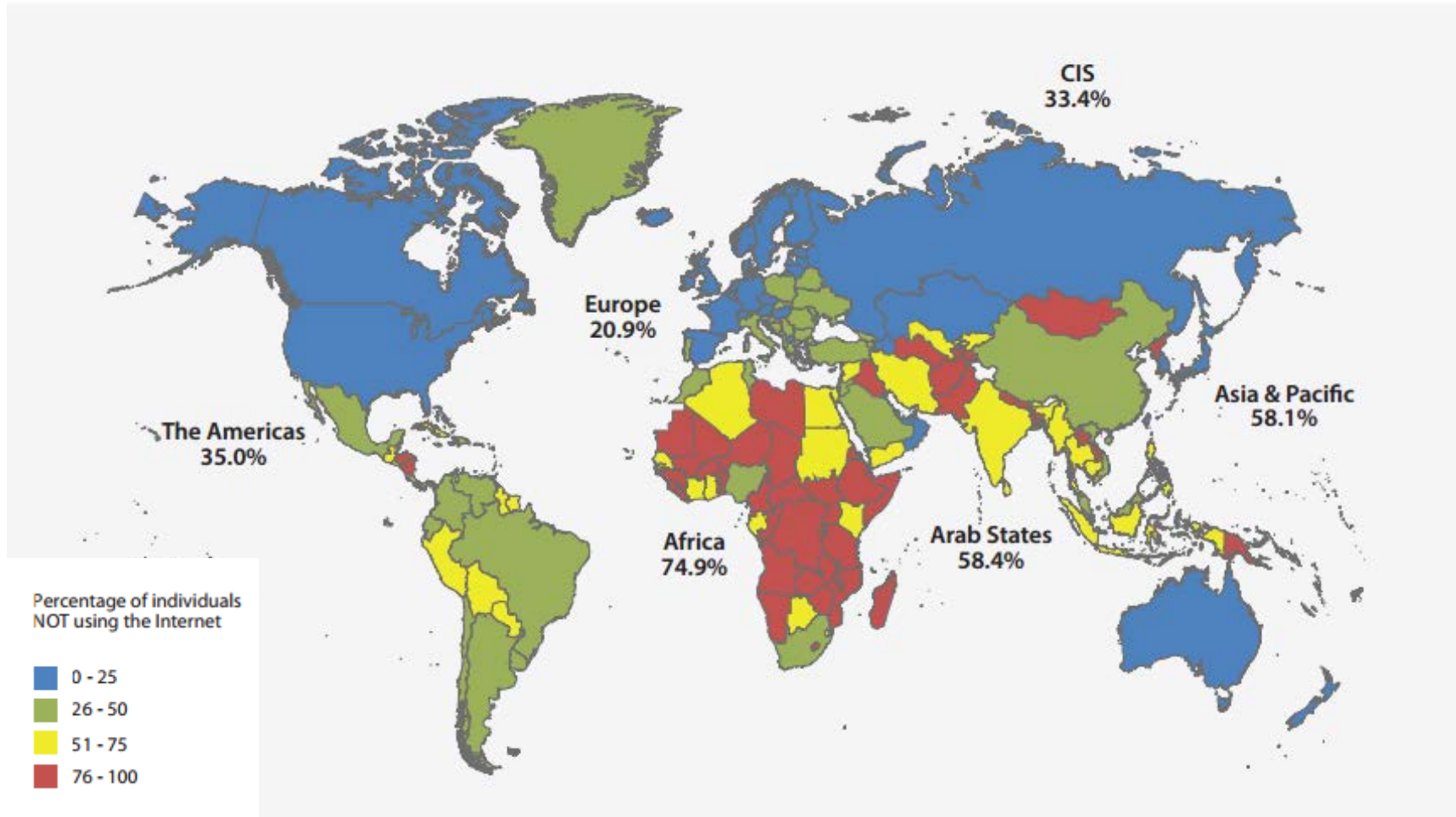
Mobile-broadband networks (3G or above) reach 84% of the global population

53% of the global population have LTE





# Population not using the Internet



53% of the world's population is **not** using the Internet.

Challenges:

- Affordability
- Digital Literacy
- Lack of awareness



# Join the ITU-R

- ITU-R Study Groups (SG 1 and SG 5) gather experts from manufacturers, operators, regulators, OTTs, governments
- It is the forum to conduct studies, discuss and harmonize regulations and standards which, once adopted, will be followed universally
- Join the ITU-R and bring your ideas to help bridge this gap and connect the world.



# Thank you for your attention

Mario Maniewicz

Deputy Director, ITU Radiocommunication Bureau

