The Inaugural CIS Spectrum Management Conference; Yerevan, Armenia 12-14 Dec. 2017

Session 5, 13 Dec 17: Connecting the unconnected: Spectrum Policy to help bring affordable connectivity to all

Commonwealth of Independent States (CIS):
Azerbaijan, Armenia, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Uzbekistan and Ukraine

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Session 3: Panel Discussion

Questions to be discussed:

- What progress is being made in the objective of breaking down the digital divide and achieving universal coverage?
- What spectrum bands will be most important in finding a solution?
- What is the right technology mix to deliver this in both an affordable and efficient manner?

Next slides provide some ideas

THE CONNECTED COMMUNITY

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ITU-T workshop on EMF; 5 December 2017, Warsaw, Poland

Forum europe

Digital divide and achieving universal coverage

4G & 5G reduce digital divide by new services in developing countries, such as

1. Broadband (ITU-D Q 1/1)
2. Coverage (and capacity) at rural and remote areas (ITU-D Q 5/1)
3. Payments, M2M and IoT
4. Access to ICT by persons with disabilities and specific needs (Q 7/1)
5. Creating smart cities and society (ITU-D Q 1/2)
6. E-health (ITU-D Q 2/2)
7. Utilizing ICTs for disaster risk reduction and management (Q 5/2)

What spectrum bands in finding a solution?

1. SRDs may connect the unconnected; next slide depicts SRD RF bands
2. Provide more RF to WiFi, such as at 5 GHz, agenda item 1.16
3. Existing cellular RF 700, 800, 900, 1800, 2100, 2300, 2600, 3500 MHz
4. IMT Spectrum bands of **agenda item 1.13** bands between 24.25 GHz & 86 GHz: 24.25-27.5 GHz, 37-40.5 GHz, 42.5-43.5 GHz, 45.5-47 GHz, 47.2-50.2 GHz, 50.4-52.6 GHz, 66-76 GHz and 81-86 GHz, which have allocations to the mobile service on a primary basis; and 31.8-33.4 GHz, 40.5-42.5 GHz and 47-47.2 GHz

Frequency Bands for SRDs

Global
Only in Europe
Only in Americas

ISM bands

6,780 kHz; 13,560 kHz
27,120 kHz; 40.68 MHz
433.92 MHz
915 MHz
2,450 MHz; 5,800 MHz
24.125 GHz; 61.25 GHz
122.5 GHz; 245 GHz

non-ISM candidate bands for SRDs

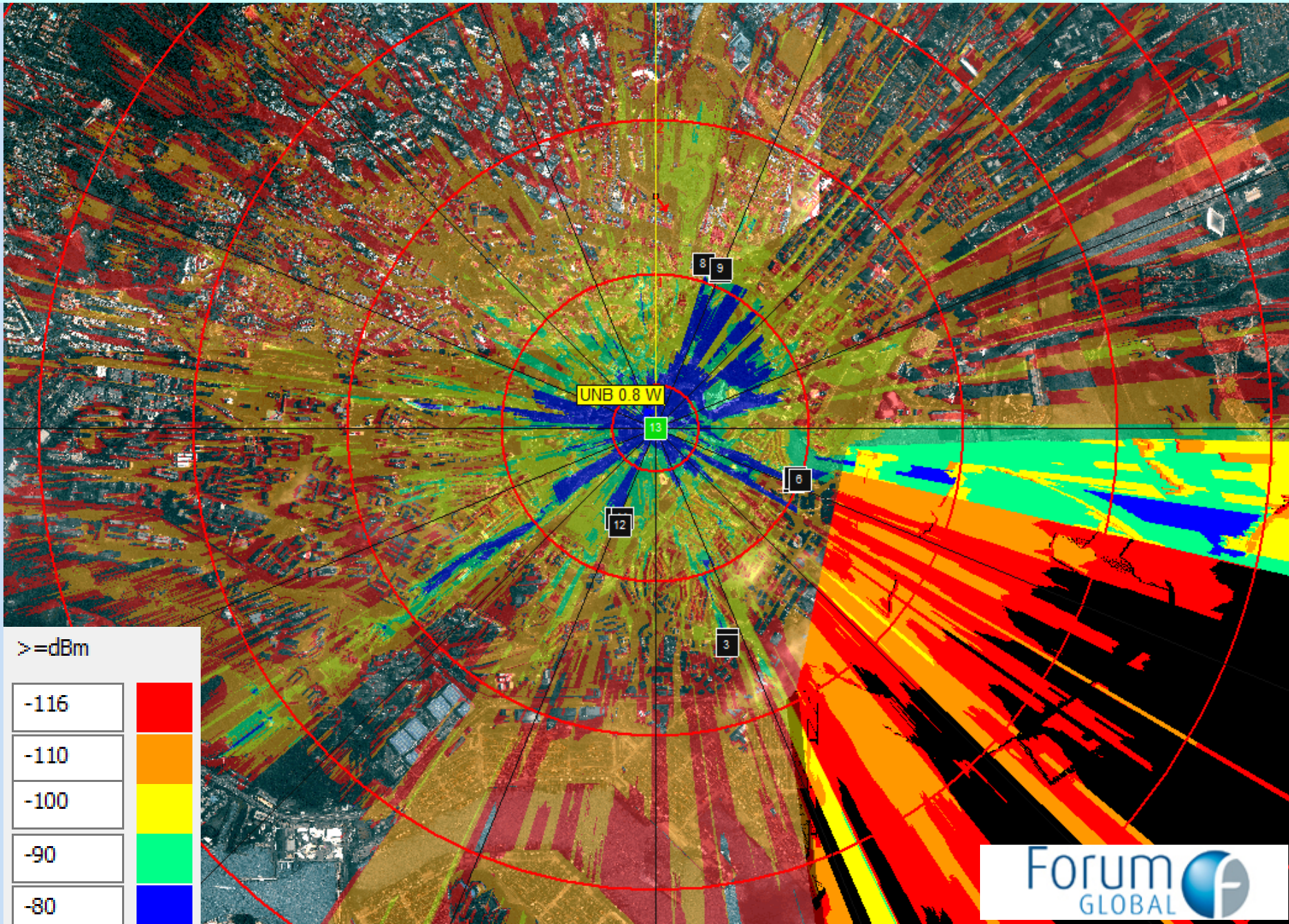
9-148.5 kHz; 3,155-3,400 kHz
9 kHz- 47 MHz (specific SRDs)
7,400-8,800 kHz
138.20-138.45 MHz
169.4-216 MHz
312-315MHz (non Europe)
402-405 MHz medical devices
470-489 MHz (normally individually licensed)
823-832 MHz and 1,785-1,805 MHz
862-875 MHz in some Asian counties
862-876MHz Non-Specific SRDs
915-921 MHz (in some countries)
5,150-5,350 & 5,470-5,725 MHz
57-64GHz, 76-77GHz, 77-81GHz

Fig 3.1; Mazar's Wiley book 2016

Technology mix to deliver the digital divide?

1. Cellular technology
2. Satellite communications
3. Cables and fibre optics
4. M2M and IoT, mix manner-provided by 4G/5G & also by SRD
5. Short range (IEEE 802.11ah, BTLE, IEEE 802.15.4, DECT, ZigBee, Z-wave …) connecting IoT
6. Long range (LoRaWAN, SigFox, Weightness, Ingenu …), see next slide for coverage

LoRaWAN™: Low Power Wide Area (LPWA) Network, ATDI coverage predictions

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The Global Spectrum Series