

The Network Matters - non-radio aspects of 5G

Martin Adolph, Programme Coordinator, ITU
Telecommunication Standardization Bureau

Who we are?



ITU is the United Nations
**specialized agency for
information and communication
technologies (ICTs)**



Promoting global
collaboration for
a **connected
world**

193

MEMBER
STATES



700+

PRIVATE-SECTOR
ORGANIZATIONS



100+

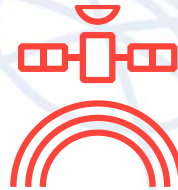
ACADEMIA
MEMBERS



What we do?



**‘Committed to
Connecting the
World’**



Allocation of global
radio spectrum and
satellite orbits



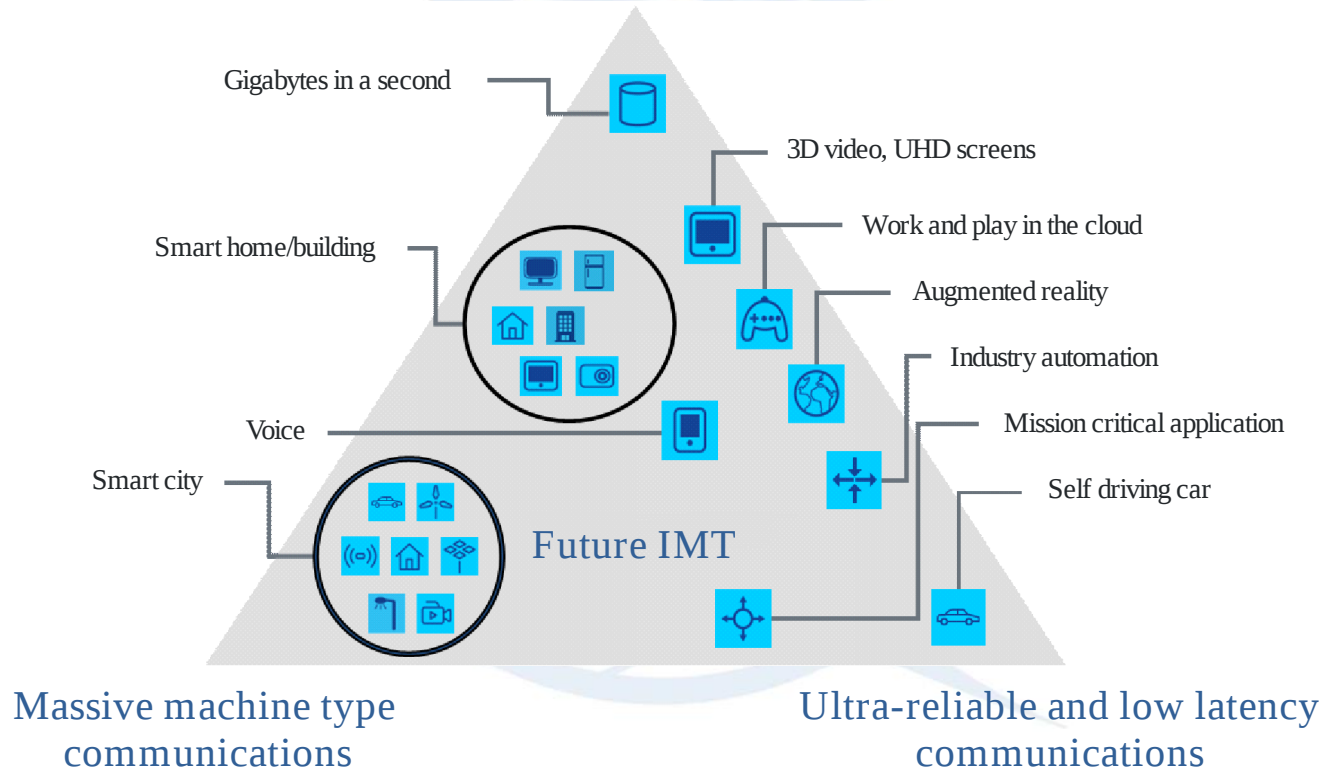
Bridging the digital
divide



Establishing international
standards

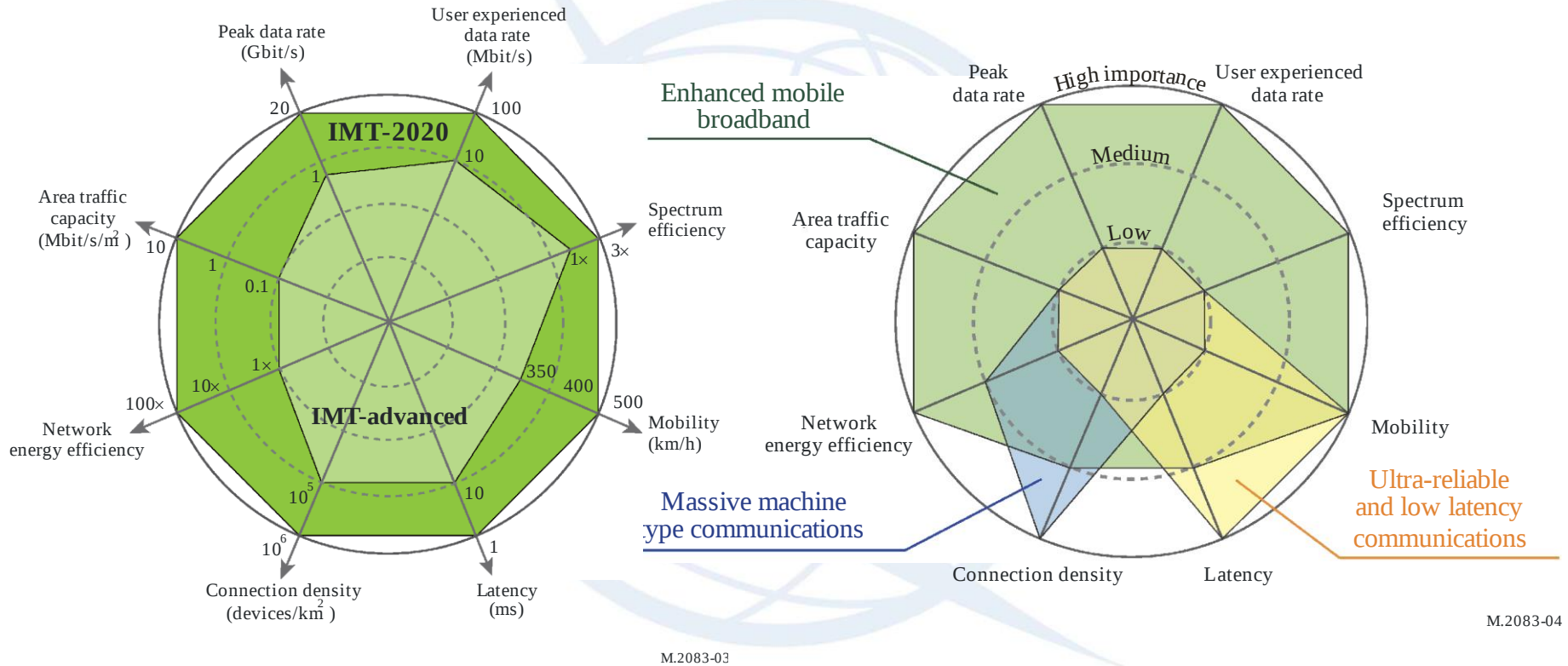
ITU 5G Vision (i)

Enhanced mobile broadband



M.2083-02

ITU 5G Vision (ii)



M.2083-03

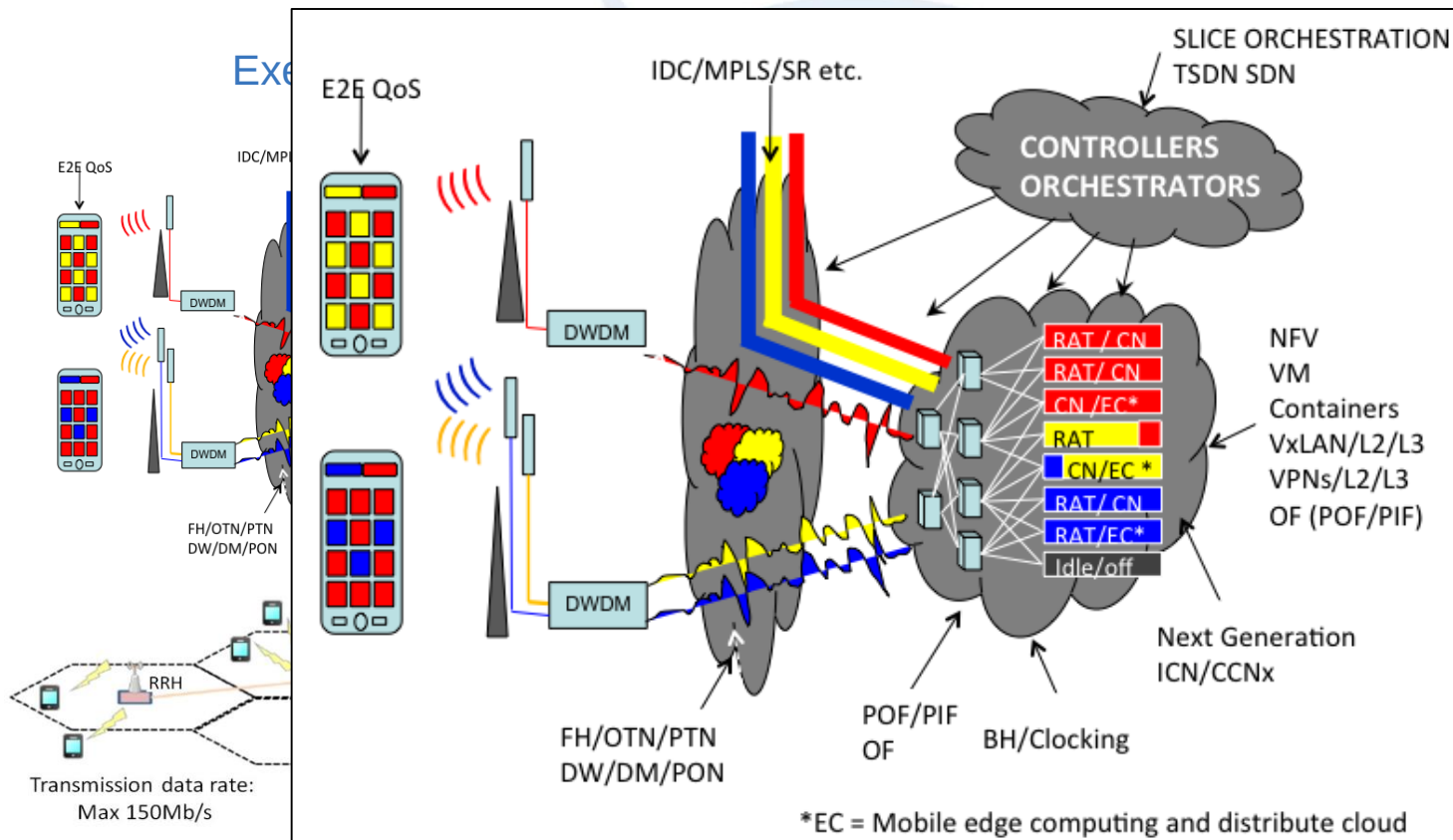
M.2083-04

"To achieve ultra-low latency, the data and control planes may both require significant enhancements and new technical solutions addressing both the radio interface and network architecture aspects."

ITU-T Focus Group IMT-2020

- Studying the requirements and standardization needs of the wireline in support of 5G (explicitly non-radio/Rf based)
- Chair: Huawei; Vice-Chairs: CMCC (China), NTT (Japan), TI (Italy), ETRI (Korea)
- Using ITU-R M.2083 and other 5G whitepapers as starting point, extrapolate what a 5G wireline network would look like
- Led production of report with 85 identified gaps, <http://itu.int/en/ITU-T/focusgroups/imt-2020>

2015: Identifying the non-radio gaps



round

	Priority: High
of IMT networks such as the d for fault management and e commonly used across the	
environment	Priority: High
at network domains make it rk domains. A unified end-to- tibility and flexibility for the	
	Priority: High
at distributed network, which traffic explosion and latency studied aligning with those	

Network
Architecture

E2E QoS

Network
Softwarization

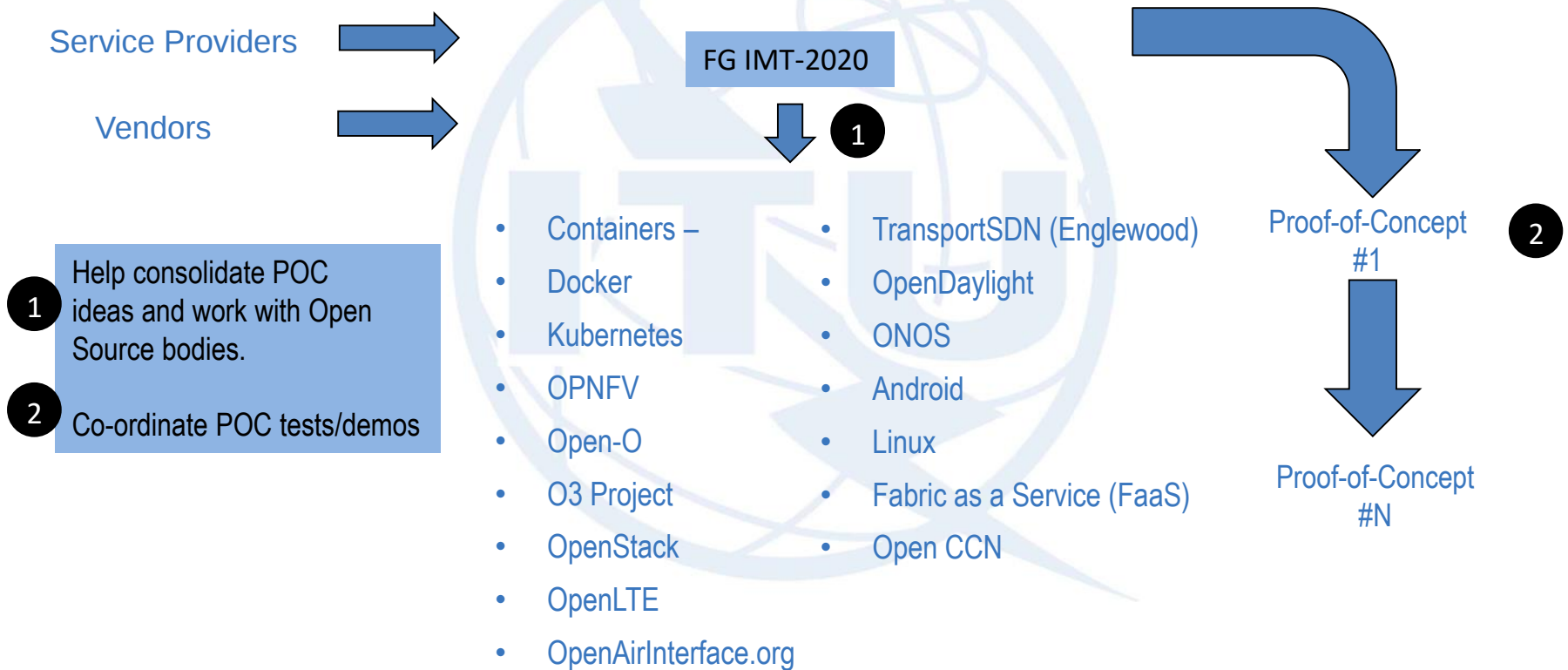
Information centric
networking

Fronthaul/
Backhaul

2016: Standards and PoCs

- Tackling the gaps through:
 1. Draft international standards:
 - Network softwarization, incl. slicing for front haul/back haul;
 - Information centric networking;
 - Network architecture refinement and fixed mobile convergence;
 - New traffic models and associated QoS and OAM aspects applicable to 5G architecture.
 2. Demonstrations and prototyping:
 - Candidate: E2E network slicing

2016: Collaboration with Open Source initiatives



Moving forward

- 8-11 March 2016, Seoul, Korea (hosted by KT): Initiated work on draft standards, saw demos and discussion of PoCs.
- **17-20 May 2016, Beijing, China** (hosted by China Mobile, Datang): Progress reports/draft standards; narrow down, agree on scope of PoCs and demos.
- **TBC: 6-9 September 2016, Palo Alto, United States** (hosted by PARC): Progress reports/draft standards; progress the development of PoCs and demos.
- **TBC: 8-11 November 2016, Geneva, Switzerland** (ITU HQ): Finalize and adopt reports/draft standards; presentation of PoCs and demos.
- **25 May 2016, San Diego, United States:** ITU/NGMN Workshop on Open Source and Standards in 5G.



CCITT / ITU-T