



TOWARDS 5G

OPPORTUNITIES & CHALLENGES

Rinaldo Bausani, Director Network Product Pre-Sales – Region Mediterranean



ERICSSON AT A GLANCE



NETWORKS

Create one network for a million different needs

IT

Transform IT to accelerate business agility

MEDIA

Delight the TV consumer every day

INDUSTRIES

Connect industries to accelerate performance

39.000

Patents

24.000

R&D Employees

32,8 BSEK

In R&D

1 BILLION

Subscribers managed by us

2,5 BILLION

Subscribers supported by us

66.000

Services professionals

223 BSEK

Net Sales

180

Countries with customers

111,000

Employees

ERICSSON IN ITALY



1918

Founded

#4

Sales in
Ericsson Group

100

Patents in the last
2 years

4000

Employees 2016

26

EGO Program
Startups

3

R&D Centers

1978

R&D Established

2

Pride SPA and
Vodafone FLM
latest acquisitions

5G

5G for Italy

5G NETWORKED SOCIETY



Consumer Electronics

Process Industries

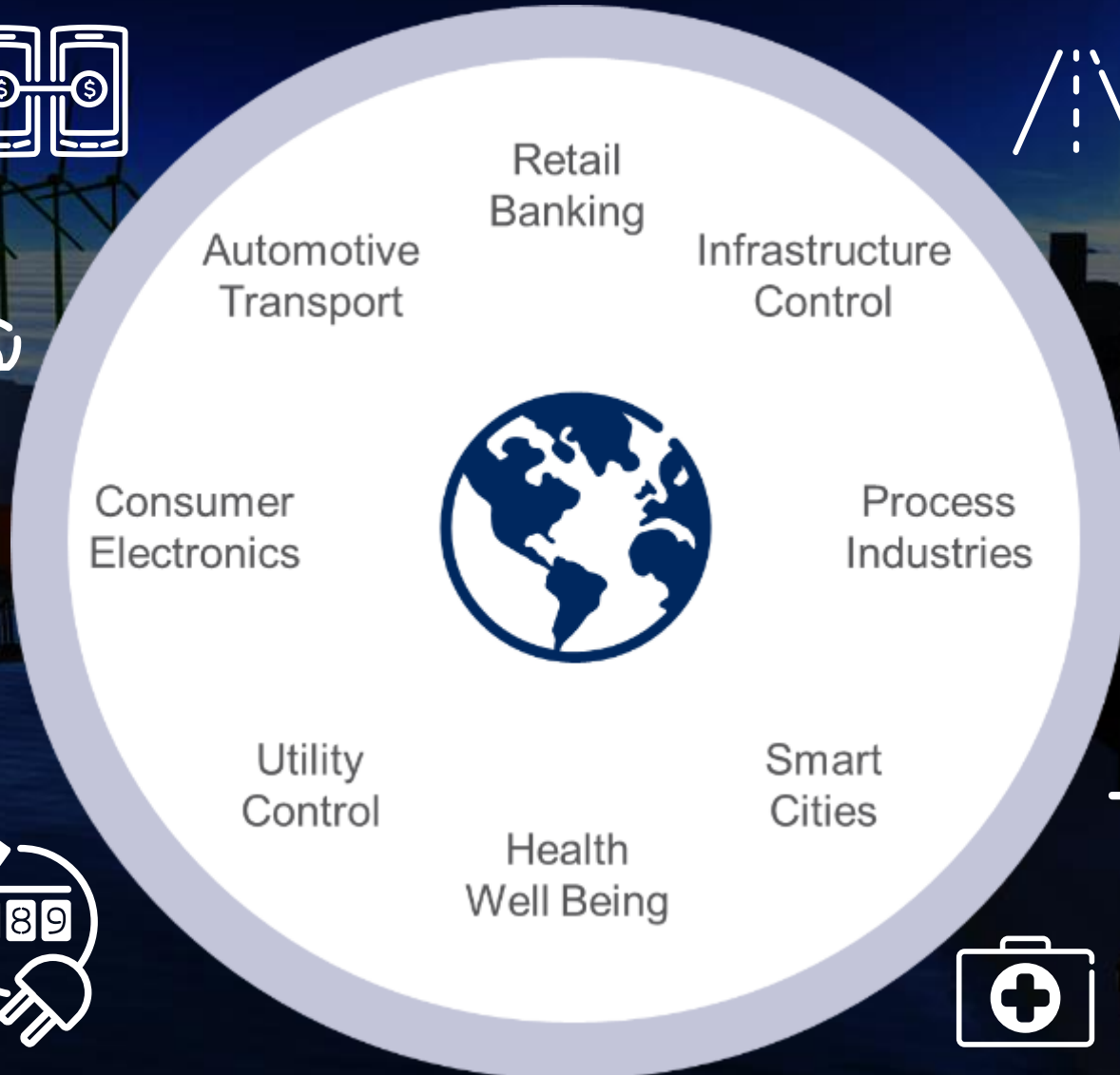


Utility Control

Smart Cities



Health Well Being



INDUSTRY TRANSFORMATION UNDERWAY



CONNECTED

COOPERATING

AUTOMATED





CONNECTED DEVICES IN 2022

29 BILLION

Ericsson Mobility Report, November 2016

7,3 BILLION IN 2016

8,6 BILLION

MOBILE PHONES

3 BILLION IN 2016

3 BILLION

PC/TABLET/LAPTOOP/FIXED PHONES

5.6 BILLION IN 2016

18.1 BILLION

IOT DEVICES



21% YEARLY GROWTH RATE FOR IOT DEVICES



1.5 BILLION CELLULAR IOT DEVICES IN 2022



BROADBAND AND MEDIA EVERYWHERE



SMART VEHICLES, TRANSPORT



CRITICAL SERVICES AND INFRASTRUCTURE CONTROL



CRITICAL CONTROL OF REMOTE DEVICES



HUMAN MACHINE INTERACTION



SENSOR NETWORKS

5G USE CASES

WIDE RANGE OF CHARACTERISTICS

10-100X
Connected Devices

10 years
Battery Life

1 ms
Low Latency

10-100X
End-user Data Rates

1000X
Mobile Data Volumes

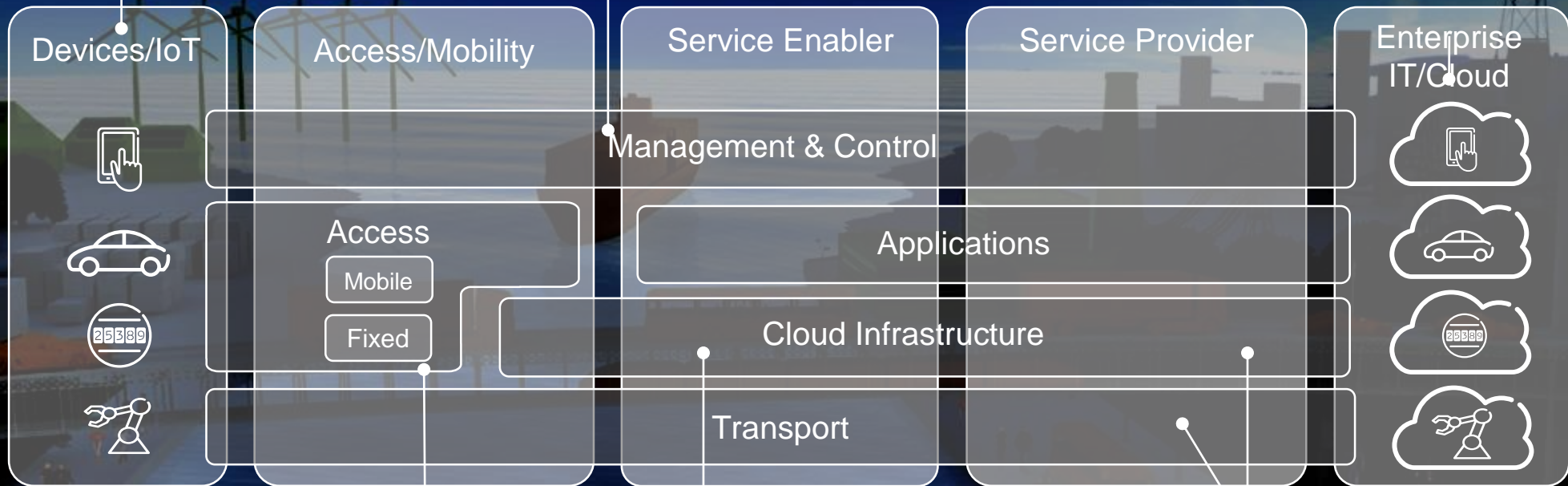
COMMON 5G PLATFORM



Many more devices, sensors & actuators, enhanced capabilities

More Automation, Analytics, Multi-Domain, Multi-Vendor

Clouds from all types of Industries



Multi-access:
Multi-band, Multi-standard,
Multi-layer Radio; Fixed access

Cloud and DC infrastructure
in both Telco & IT domains

Virtualization, E2E IP,
Software Defined NWs

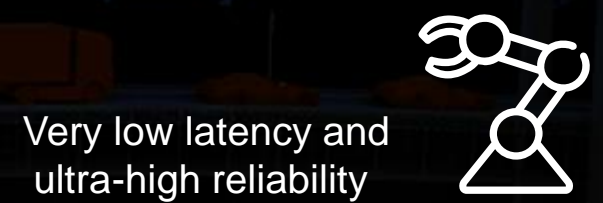
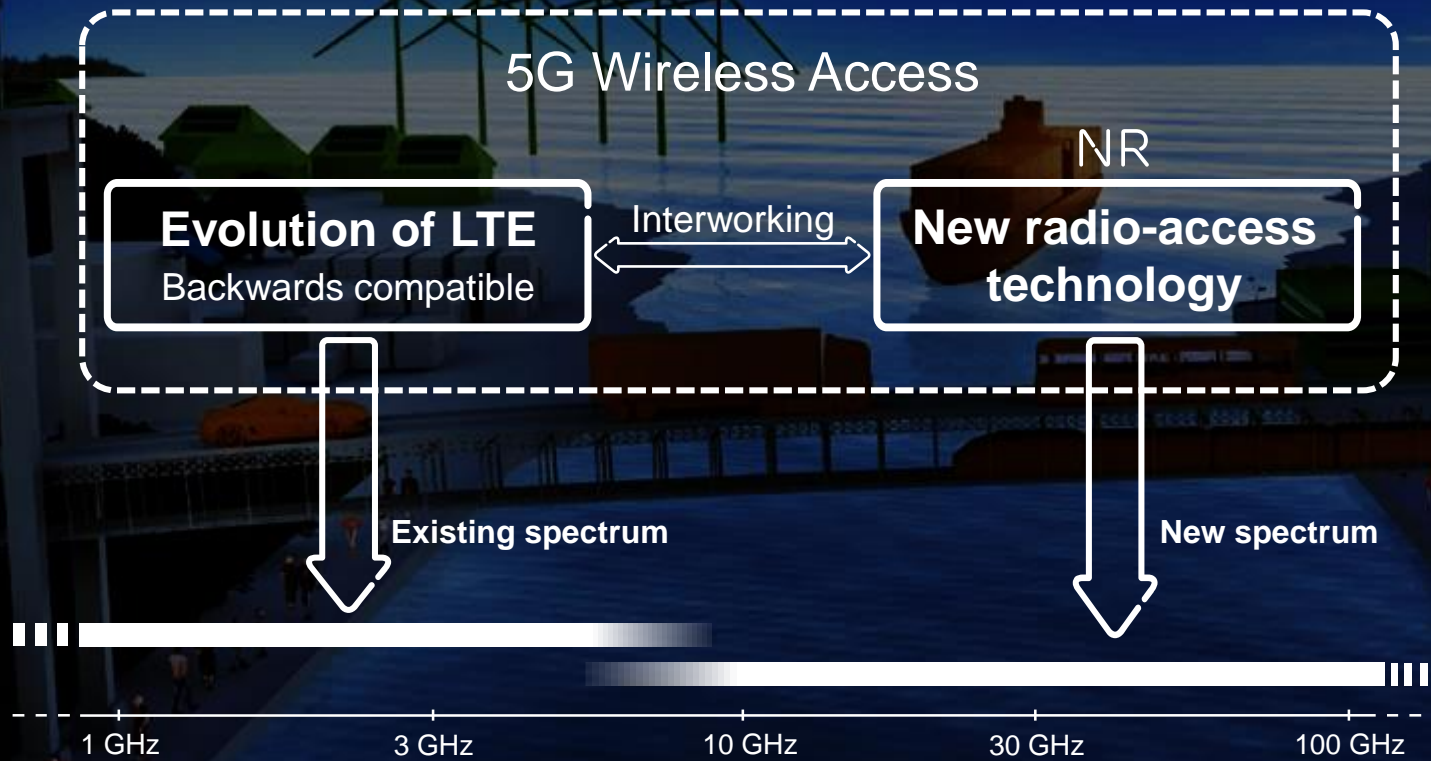


Energy efficient
Devices and Network

Embedded security, Identity
Management, Advanced Cryptography



5G RADIO ACCESS 2020



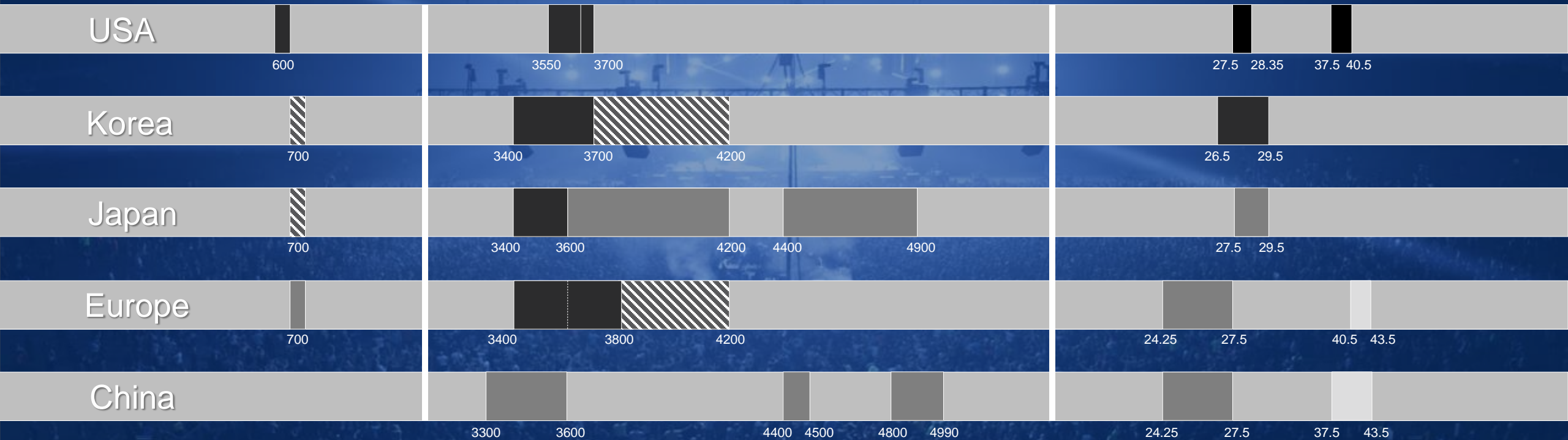
THE SPECTRUM CHALLENGE



lower bands (MHz)

mid bands (MHz)

higher bands (GHz)



NETWORKED SOCIETY SECURITY NEEDS



Technology Drivers



5G

IoT

Industrial innovation

Key Challenges



New trust models



New service delivery model



Evolved threat landscape



Increased privacy concerns

A multi-stakeholder approach is fundamental for 5G security baseline

Network slicing seen as way to provide isolated sub-networks

IoT authentication and transport layer security

5G ACCESS TIMEPLAN



Industrial Use Case Studies & Pilots

5G
Radio Testbed

Field Trials
5G Radio Prototypes

E2E Network and Pre-
commercial Trials

5G Commercial Launches

Network products

NR Devices

3GPP

5G Study Item

NR Phase 1

NR Phase 2

LTE evo

LTE evo

LTE evo

Rel-14

Rel-15

Rel-16

2015

2016

2017

2018

2019

2020

5G GLOBAL DEVELOPMENT



1st phase focus
on Industries

Europe

*METIS, Horizon2020,
5GPPP*

Industry 4.0

1st phase focus
across Industries/Consumer

China

MIT Trials

1st phase focus
on Consumer/MBB+

Japan & Korea

*NTT DoCoMo,
5GMS*

*Korean initiatives
Olympics 2018,
SKT, KT*

1st phase focus
on Fixed Wireless

US & LatAM

*Lead operators
eg. Verizon
4G Americas*

Global

NGMN, ITU-R, 3GPP

University Research

Operator Test beds/Trials

*Ericsson:
Academia collaboration
Industrial Pilots*

ENGAGEMENT WITH INDUSTRY & SOCIETY



5G for Sweden

- › 5G program with industry and academic partners
- › Apply ICT in industrial processes, products & services
- › Pilot for industrial mobile communication in mining

5G for Europe

- › Delivering research, innovation and industrial pilots enabled by 5G
- › Including transport and automotive, IoT, utilities, public safety, public infrastructure and retail
- › 7 countries and 10 institutions



ERICSSON

