Digital Dividend Opportunities in the African Region

Bridging the Digital Divide by Broadband

Thabiso Thukani
Regulatory Affairs Manager
Ericsson Sub-Saharan Africa

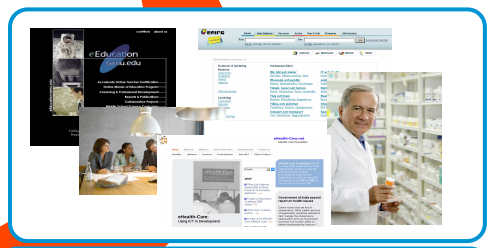
A lot of new services...

Beneficial for users, enterprises and society

Enterprise and personal efficiency, like emails, access to LANs, info

Telemetry, machine-to-machine, payment, location based services

User Generated Content, internet access



E-Health, Education, Information, mobile science

Entertainment, like gaming, TV, music

The problem

Area in square kilometres	
China	9,604,733
USA	9,370,705
India	3,290,251
Europe	4,940,999
Argentina	2,763,139
New Zealand	268,894
Total	30,244,721

Africa	30,343,551

Population	
China	1,321,851,999
USA	301,139,947
India	1,110,396,035
Europe	727,700,000
Argentina	40,301,927
New Zealand	4,115,771
Total	3,505,505,679

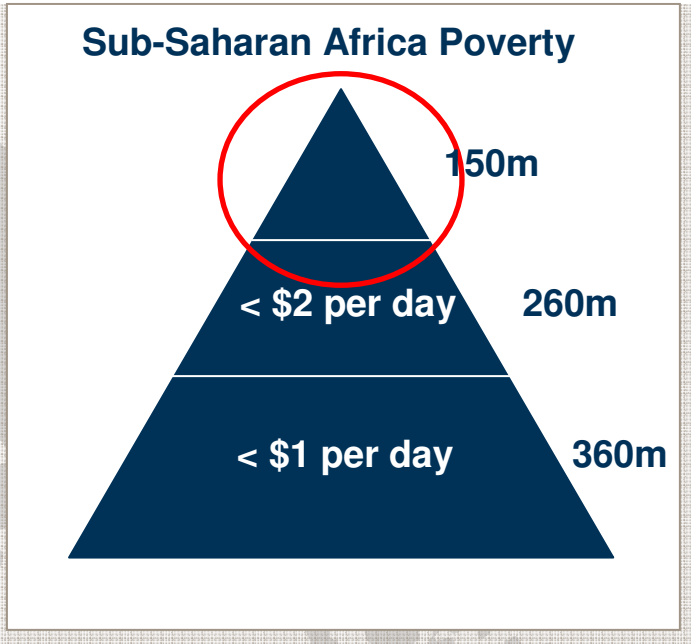
Africa	924,412,606

Sub-Saharan Africa
- Facts & Figures Dec 2008

- Countries: 43
- Area: 18.8 m sq km
- Longest distance : 7,500 km

- Population: 770 million
- Languages: > 400
- Below Poverty line: 51%
- HIV/AIDS: 8.6% (66.2 million people)

- GDP/Capita (PPP): 2,398 USD (600 to 50,200 USD)
- GDP growth rate: 5.6% (-4% to 19%)



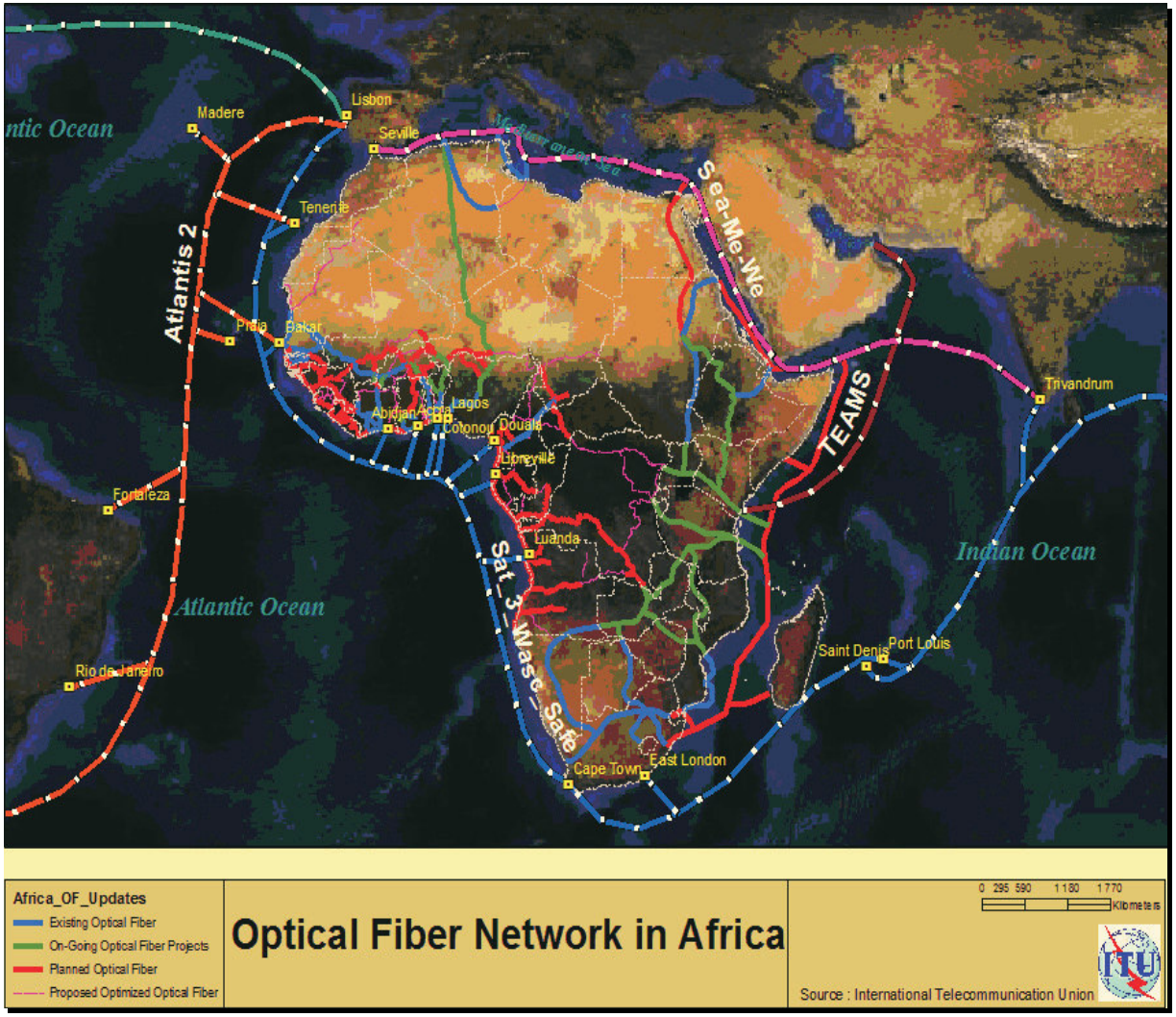
- Mobile subs: 234 m (30%)
- Forecast (2012): 480 m
- Fixed subs: 7.5 m (1%)

- Ericsson customers: >90

But there is a silver lining

- Economic activity in Africa has risen by around 5.5% per year since 2005
- Per capita income increased by 2 -3.5% in 30 countries between 2000 and 2005
- 41% of countries have national development strategies aligned with the Millennium Development Goals
- The next 3 billion subscribers of Mobile Comms will come from the rural areas of the emerging markets
- Linking Africa to the rest of the world
  - SAT-3, WASC, SAFE
  - AWCC, EASSY, UHURUNET
- Revolution or Evolution
  - GSM – WCDMA – HSPA – LTE

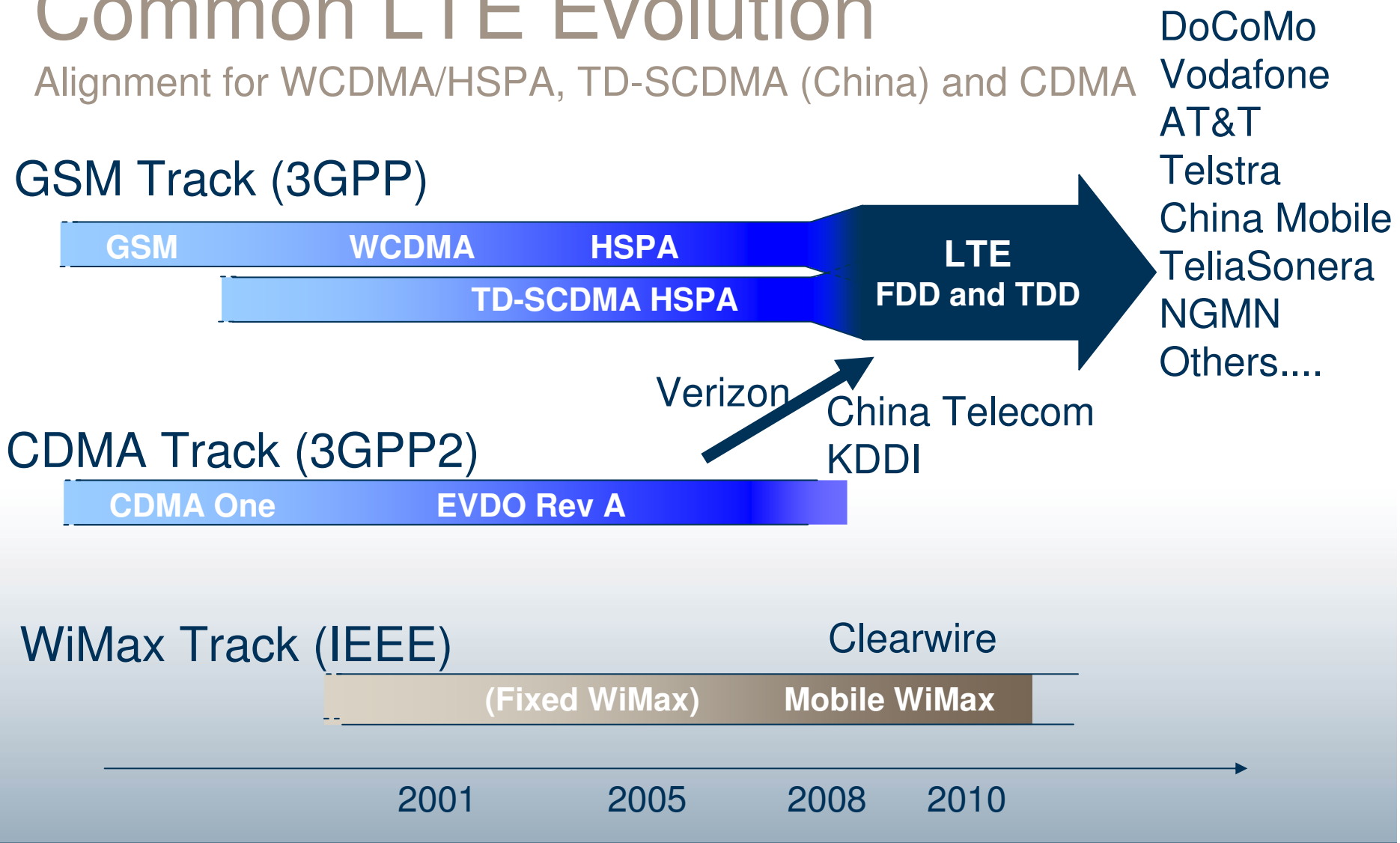
Fibre and transmission



- Fibre transmission is the hot development
- Fibre deployment has substantial significance for the future development of mobile
- Desire for terrestrial transmission links

Common LTE Evolution

Alignment for WCDMA/HSPA, TD-SCDMA (China) and CDMA



LTE the Global standard for Next Generation (4G)

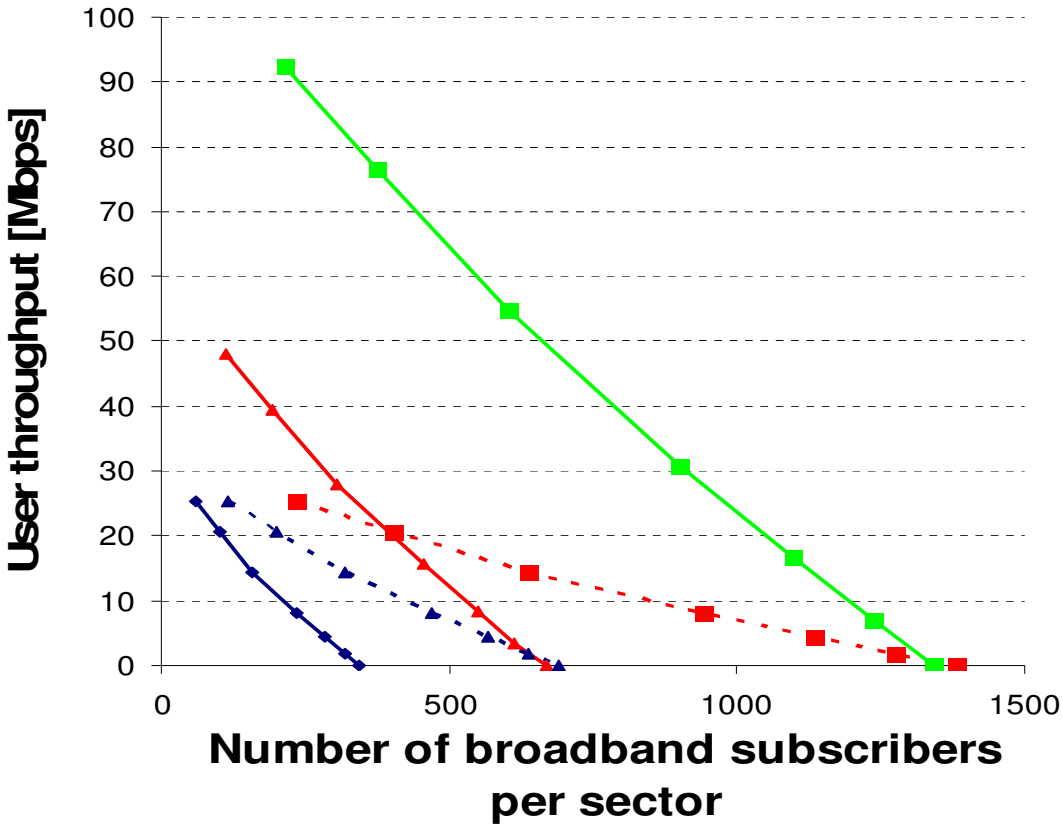
Mobile broadband speed evolution

						Target
Peak rate	**384 kbps**	**3.6 Mbps**	**7/14 Mbps**	**21/28/42 Mbps**	**~150 Mbps**	**1 Gbps**
	2002	***2005***	***2007***	***2008/2009***	***2009***	***2013***

Higher peak data rates enable a better user experience

LTE performance

Downlink

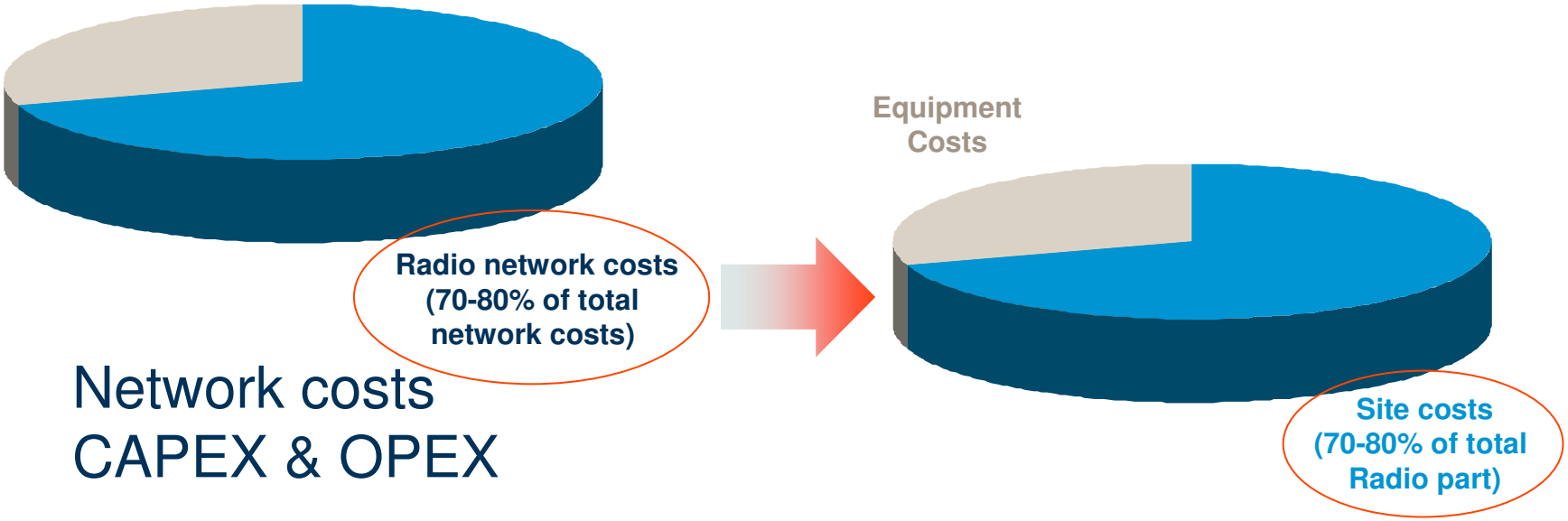


- Same spectrum usage
- Equal power, 20 W
- Site-to-site distance: 500m

Wider carrier bandwidth: higher bit rate and trunking gains

Number of sites main cost driver

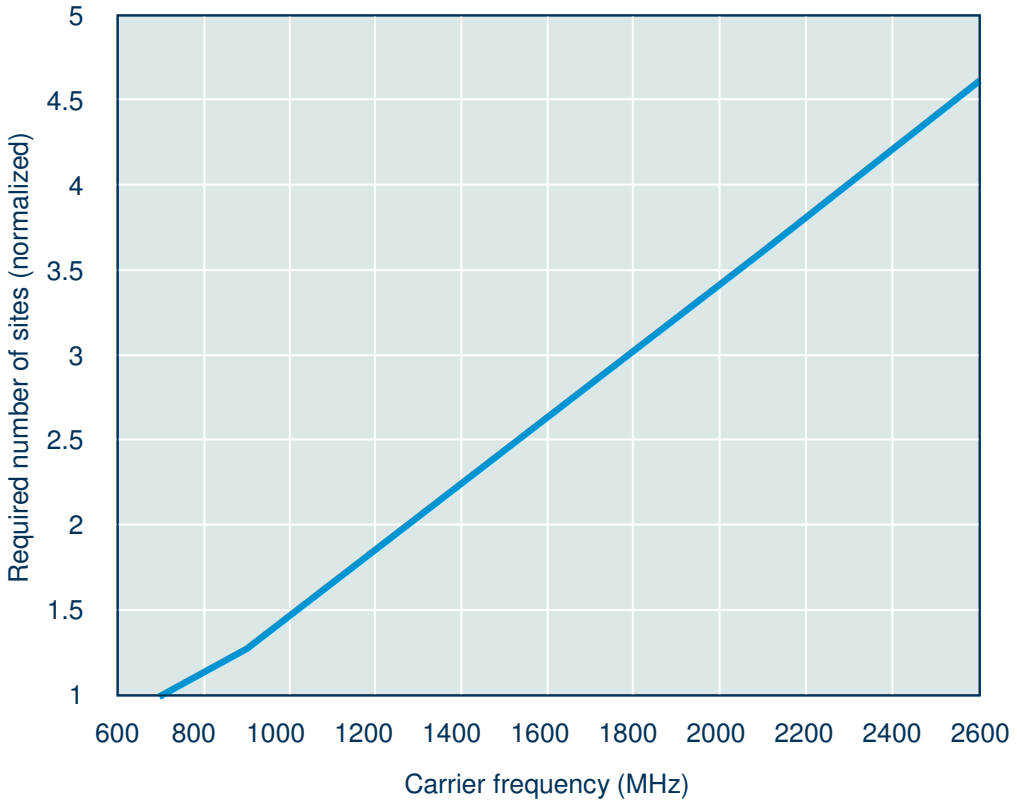
Fewer sites impacts direct site costs, energy consumption, HW investments,...



Reduced number of sites is essential to lower the costs

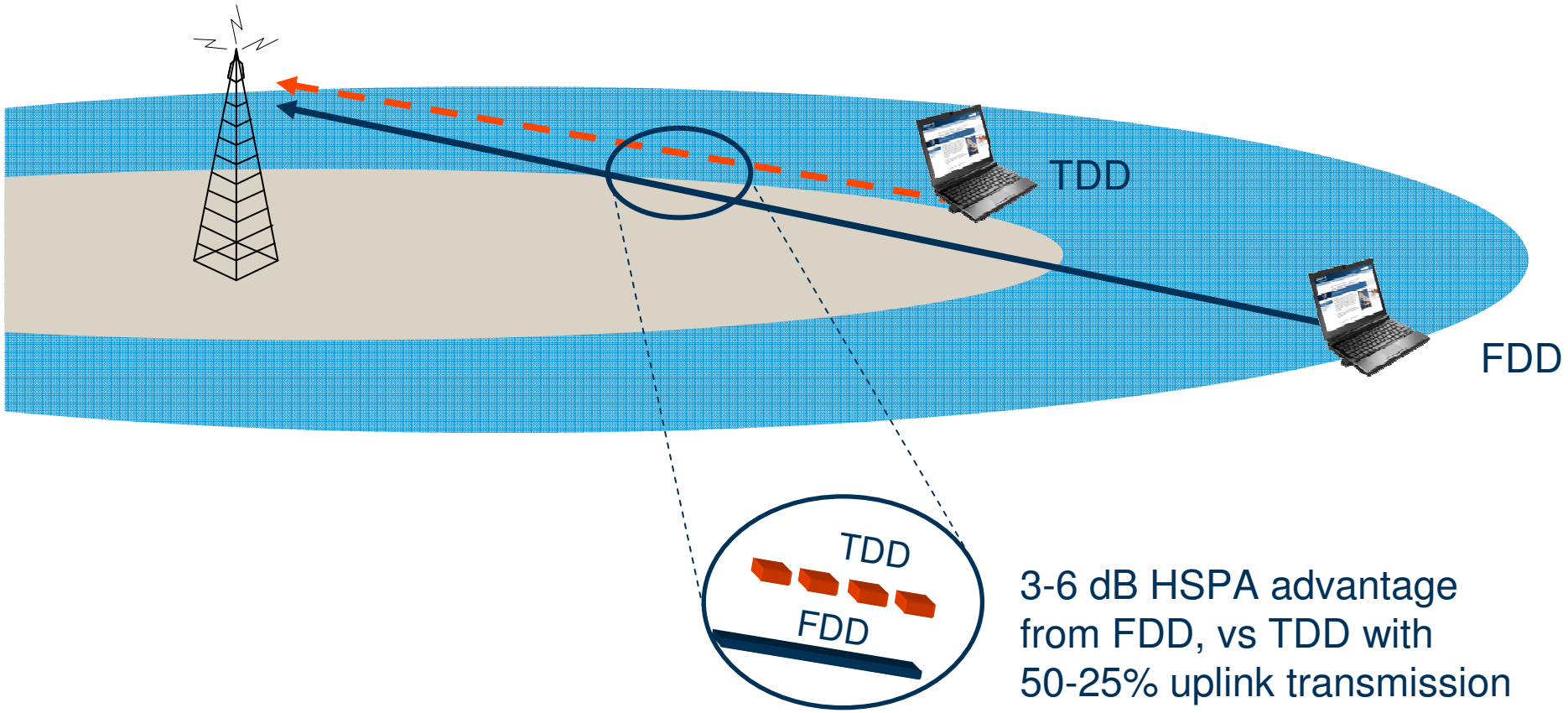
The 800 MHz band brings broadband everywhere

- Reference frequency is 700 MHz
- Suburban environment
- Assumptions:
  - 5 dB higher antenna gain at 2.1 GHz
  - 6 dB higher antenna gain at 2.6 GHz



The 800 MHz band is a “coverage band” and will do with a 3rd of the sites compared with “higher” bands

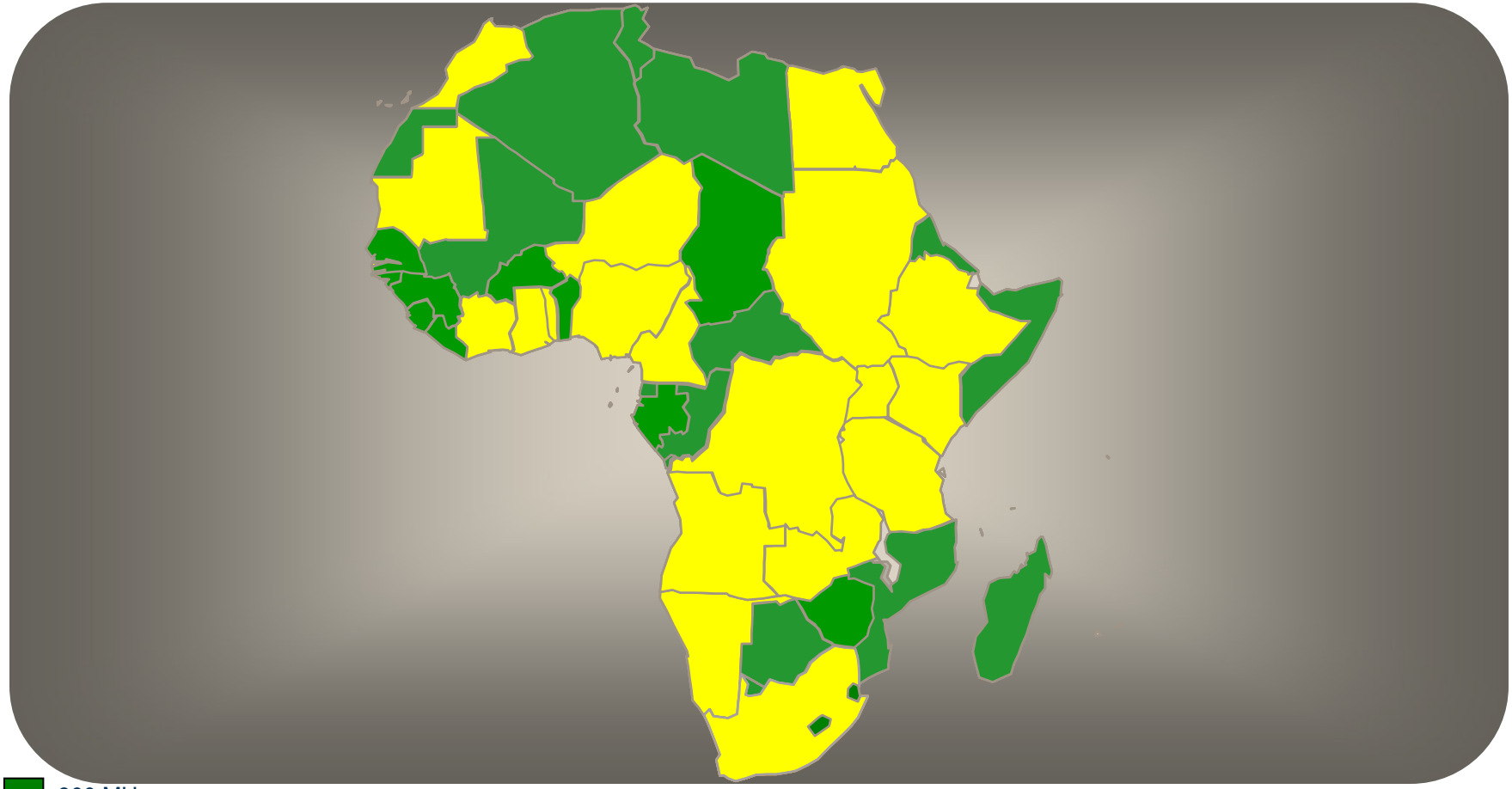
FDD versus TDD uplink coverage in UHF



3-6 dB HSPA advantage from FDD, vs TDD with 50-25% uplink transmission

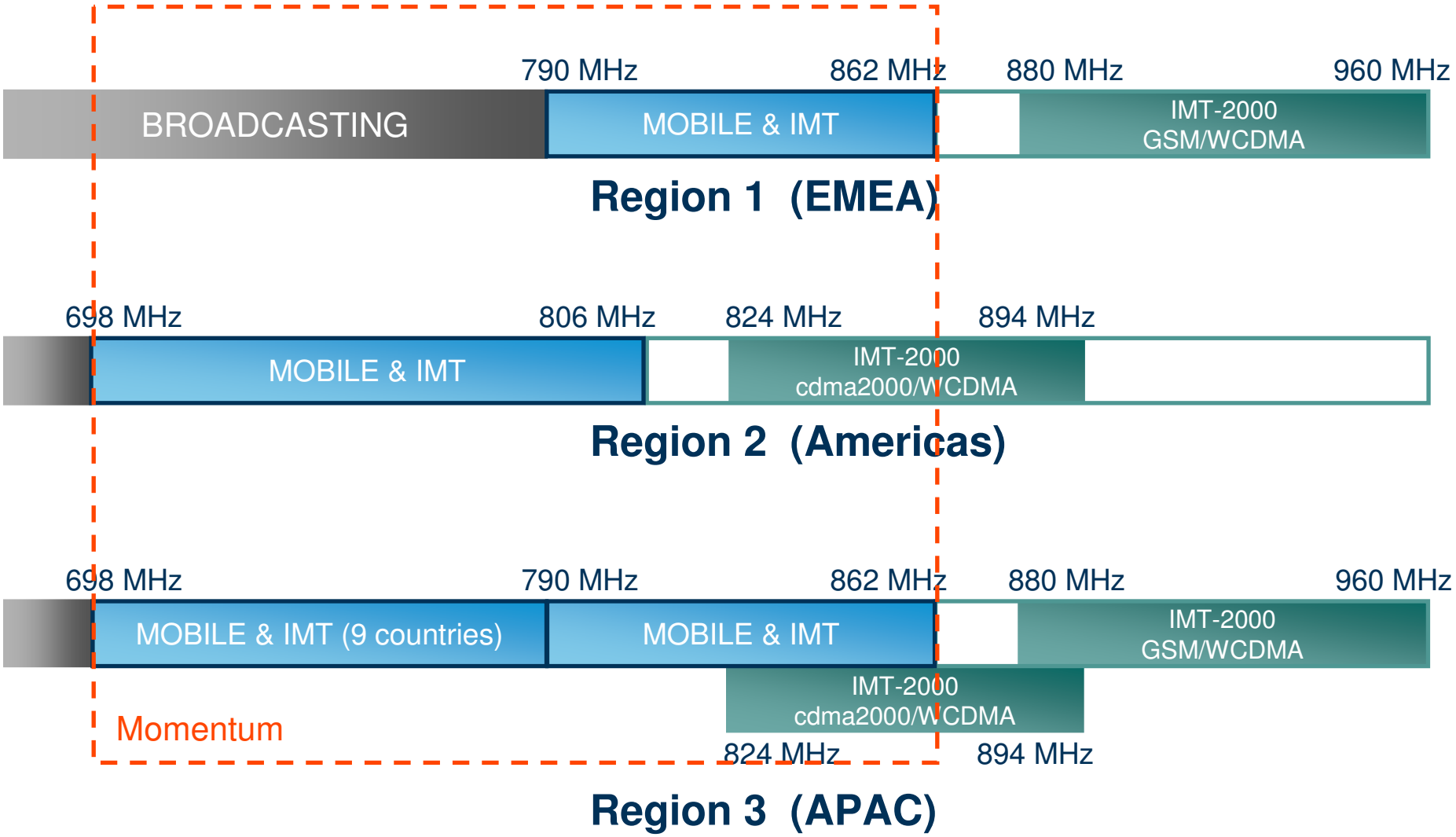
FDD offers better coverage characteristics in “lower” bands

License status of the 850 & 900 MHz bands - March 2009



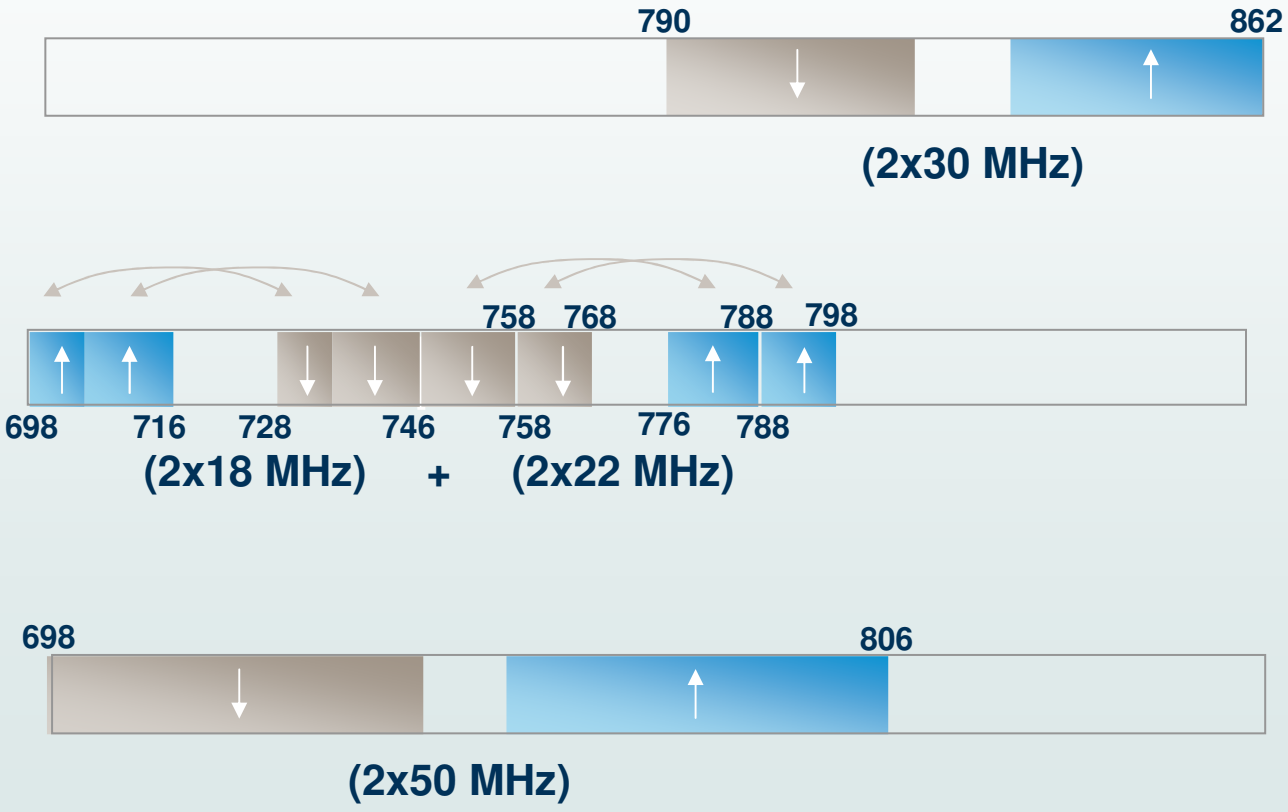
900 MHz
Both 900 MHz & 850 MHz
850 MHz
No info

The band 698-960 MHz in ITU



Mobile broadband in the UHF band

- considerations, suggestions and implemented arrangements



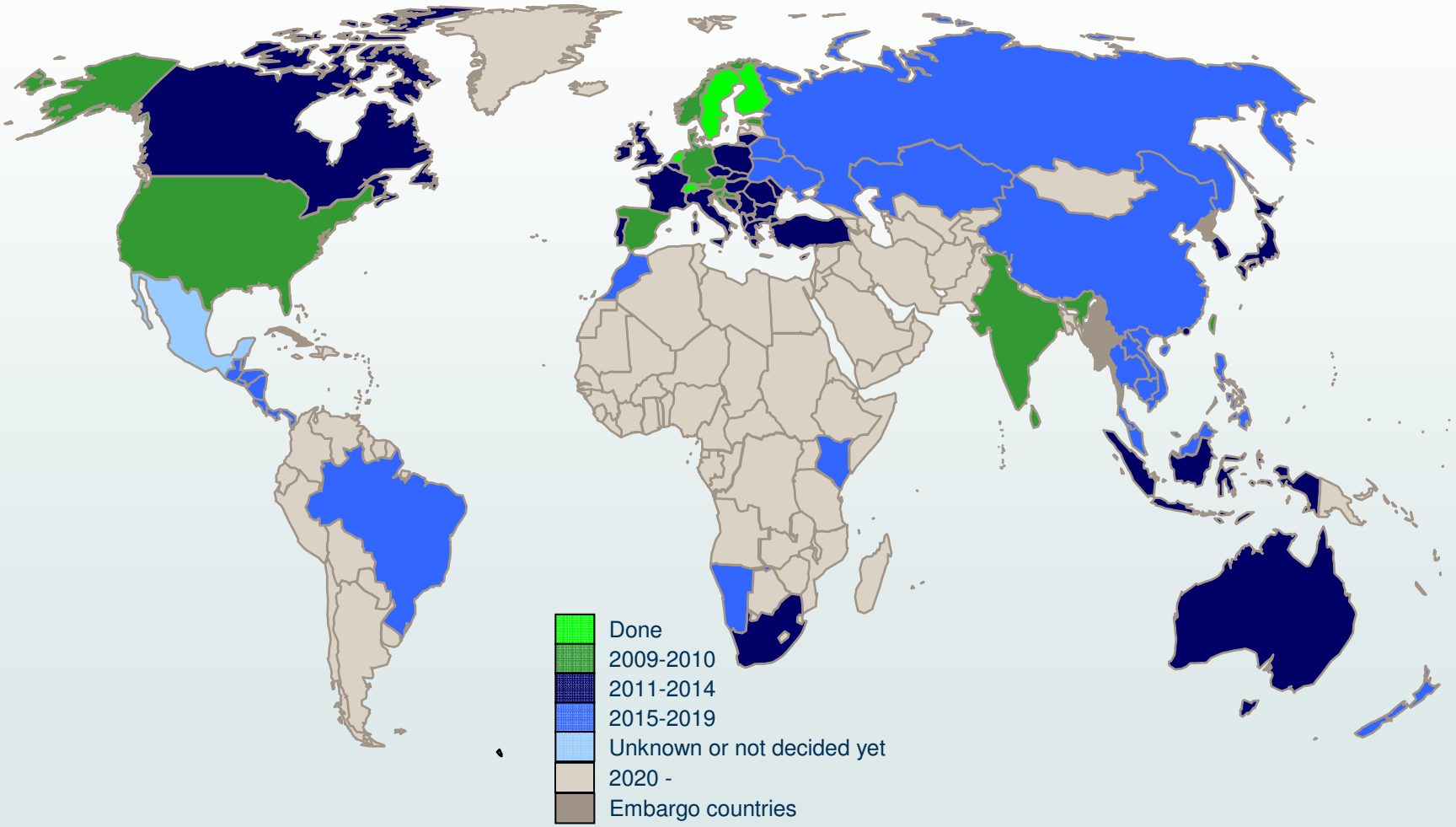
suggested EME/(Africa)
850 MHz not used

implemented in the USA,
option for the Americas

considered APAC/Africa

Time schedule for analogue switch-off

- Current assumption - March 2009



Source: Cullen-International, Wikipedia

Harmonization of spectrum

– For mobile broadband

International harmonization of spectrum gives:

- rich ecosystem providing interoperability
- easy cross border coordination
- international roaming
- availability of affordable products

…bridging the digital divide

Harmonized spectrum bridges the digital divide

Conclusions

Africa is getting connected fast

- Mobile has connected people for the first time
- What GSM has done for voice, HSPA and LTE will do for data

LTE is the global standard for the Next Generation (4G)

- LTE promises Africa the chance to catch up with the rest of the world
- In many cases there is no alternative for Africans

The “UHF band” providing mobile broadband coverage wherever needed

- Cost efficient operations and affordable services for all
- Harmonised digital dividend spectrum is critical

ERICSSON

TAKING YOU FORWARD