

# Moving a step closer to next generation mobile services

Mats Nilsson, VP & head EU affairs

Ericsson

# Broadband to all and everywhere

Not only at home or work



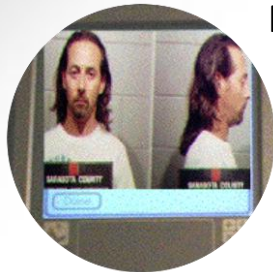
Field operations



Broadband on the move



Supporting Firefighting



Supporting the local police

**A flavor of Services & Applications**



Reporting traffic situation



Connecting the unconnected



Medical services



Anywhere Internet access & Entertainment

# Socioeconomic benefits of broadband

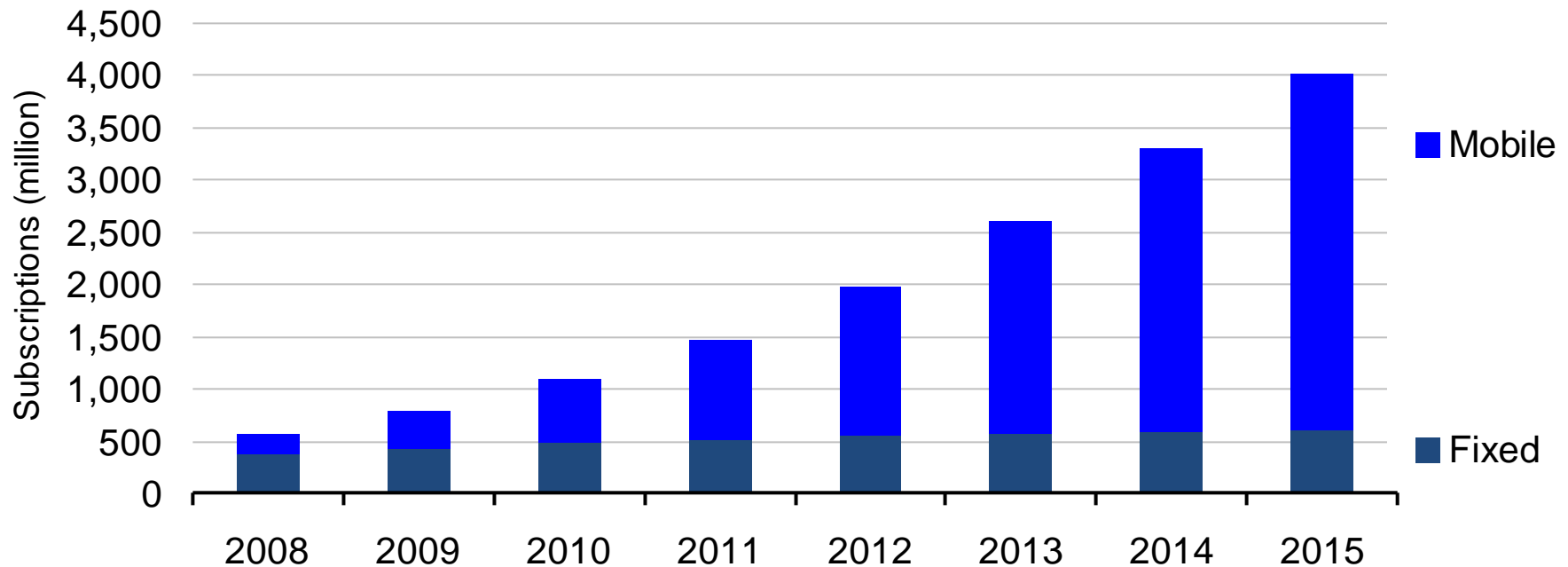
- 50% of productivity growth relates to ICT – Broadband penetration is a condition for this
- Reports (Micus, BCG, World Bank, McKinsey) show 10% increased broadband penetration leads to between 0.5-3% (median 1.3%) Additional GDP Growth – Effect most significant in developing regions/countries
- ICT key to resolve societal challenges e.g.
  - E-health
  - E-gov
  - Intelligent transport
  - Smart energy utilisation

# broadband subscriptions

## – Mobile redefines the market

M2M connections to be added on top

Fixed and mobile broadband subscriptions



Source: Internal Ericsson

Mobile Broadband includes: CDMA2000 EV-DO, HSPA, LTE, Mobile WiMAX & TDSCDMA.  
It includes handsets, USB dongles, embedded modules etc. The vast majority is handsets.

Please note that mobile broadband access could be used for fixed applications

Fixed broadband includes DSL, Cable and Fiber

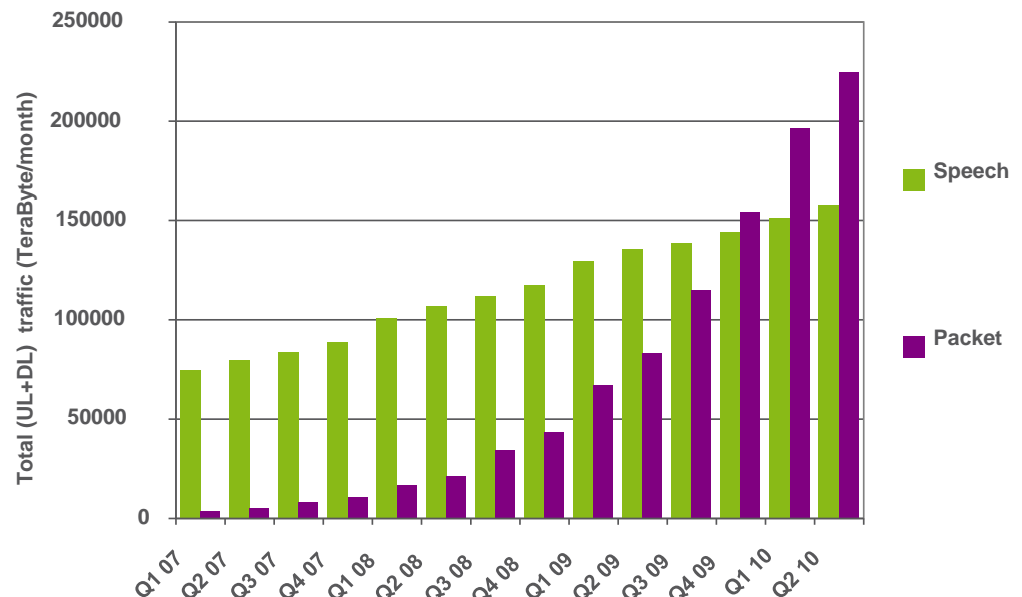
This slide contains forward looking statements

# Strong growth in mobile broadband

## Rapid subscriber uptake

- › **625 million** WCDMA/HSPA subscribers
- › 15 million new HSPA subscribers per month, 330 million in total
- › **2579 HSPA devices** are launched from 235 suppliers
- › HSPA is deployed in 315 networks in 133 countries/ territories
- › **57 HSPA+ networks** launched
- › **92%** of the traffic in WCDMA/ HSPA networks **is data**

## Exceptional traffic growth



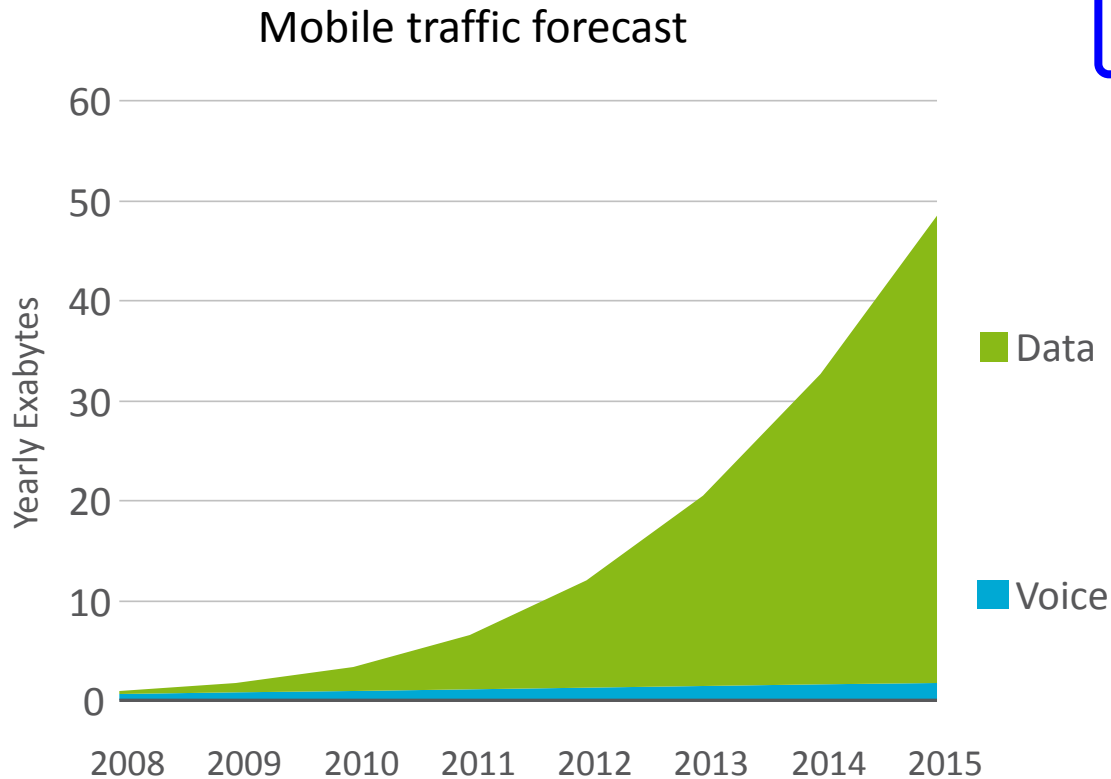
Source: UMTS, GSA and Ericsson NetQB, August-2010

LTE will accelerate this trend further – more spectrum needed!

# Traffic growth in mobile networks - Forecast

*This slide contains forward looking statements*

M2M traffic to be added on top



Source: Ericsson

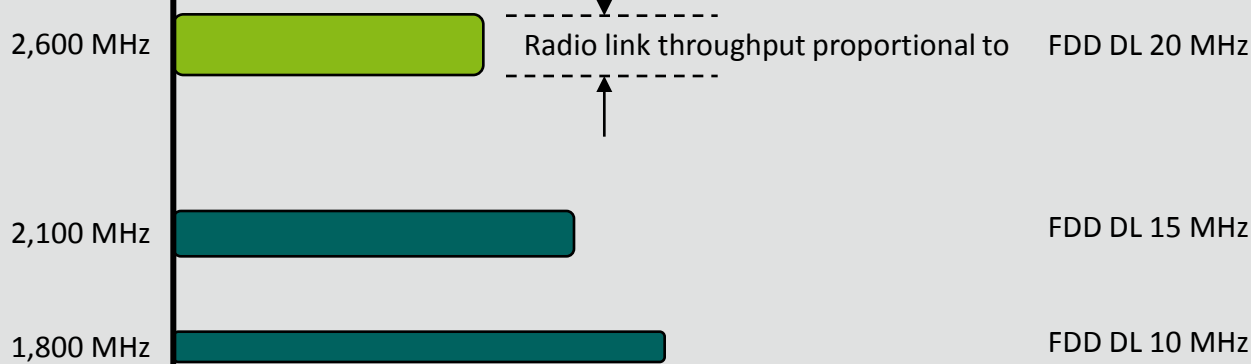
Behavior as in fixed – high Definition video streams – 50 b. devices 2020

# Broadband capacity & coverage

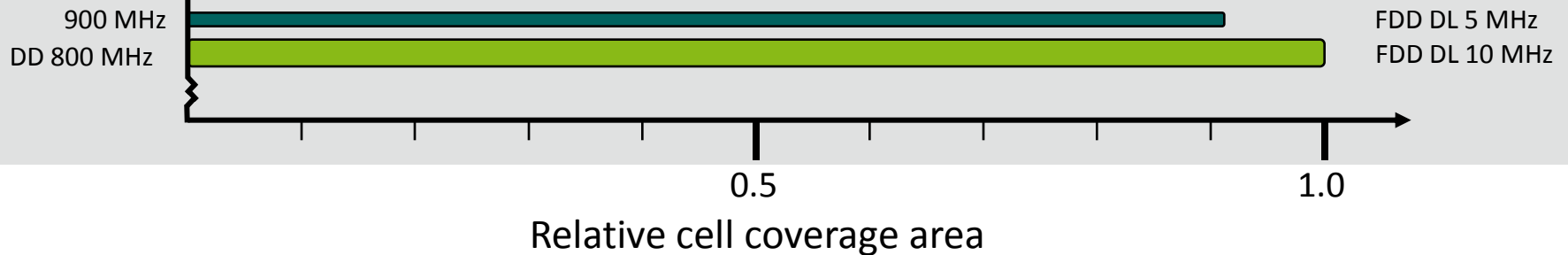
- typical deployment by a European operator

Assumptions: Propagation based. Suburban environment. Reference frequency is 800 MHz.  
5 dB higher antenna gain at 2,100 MHz and 6 dB higher antenna gain at 2,600 MHz.  
LTE and HSPA: re-use 1

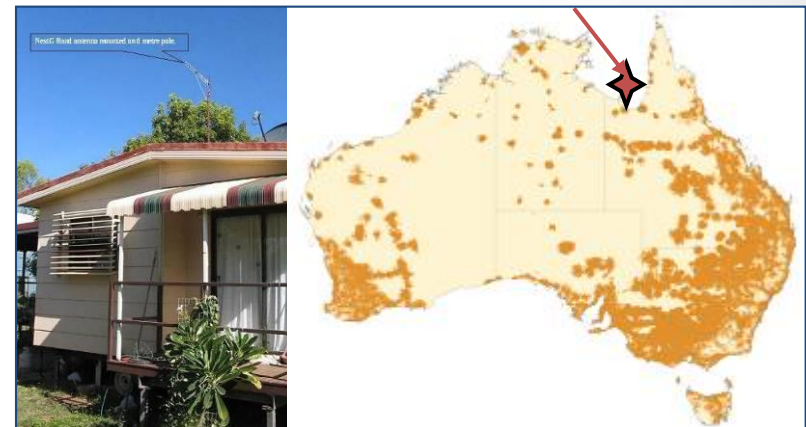
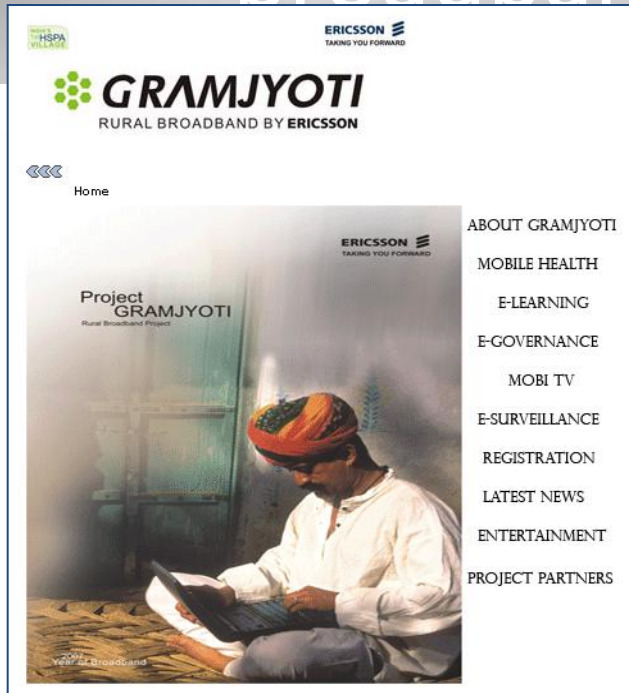
Capacity bands



Coverage bands



# HSPA enables cost effective broadband to all...



Telstra provided HSPA to 98% of pop in 10 months

**18 villages and 15 towns provided internet services using HSPA**

**Also rural areas like Morningson Island in Gulf of Carpentaria, Australia**

**over 120km from serving tower**

# The Telstra HSPA Network Ambition

- Mobile and Wireless broadband services
  - for all and everywhere
- Worlds' largest coverage area
  - 98.8% POP
  - 1.9 Million km<sup>2</sup>
  - Like for like coverage with old cdma 850 system



# The Extended Range Solution

- Oct 6th, 2006 Telstra launched nationwide HSPA network delivered by Ericsson
  - Achieved with ~5000 sites
  - Rolled out within in 10 months
  - 200km cell range verified in field

## *Measurement:*

- › 2.3 Mbps DL, 384 kbps UL at 200 km range
- › Voice call 258 km

## *Techniques:*

- › 850 MHz
- › High power amplifiers & High RBS receiver sensitivity
- › Terminal access allowed at very low signal strength
- › Extended range feature

Cost efficient Rural coverage solution



# “Main menu” - Coverage and capacity bands

- Coverage
  - 900 MHz
  - 850 or 800 MHz
  - 700 MHz
- Possible combinations
  - 900 and 800 MHz
  - 850 and 700 MHz
- Capacity
  - 1710–1755(1770) / 2110-2155(70) AWS(3GAmericas) or GSM1800
  - PCS1900 or IMT Core band (1920-1980 / 2110-2170)
  - 2.6 GHz (IMT Extension)
- Possible combinations
  - AWS(3G Americas) and PCS1900
  - GSM1800 and IMT Core Band
  - 2.6 GHz - Universally

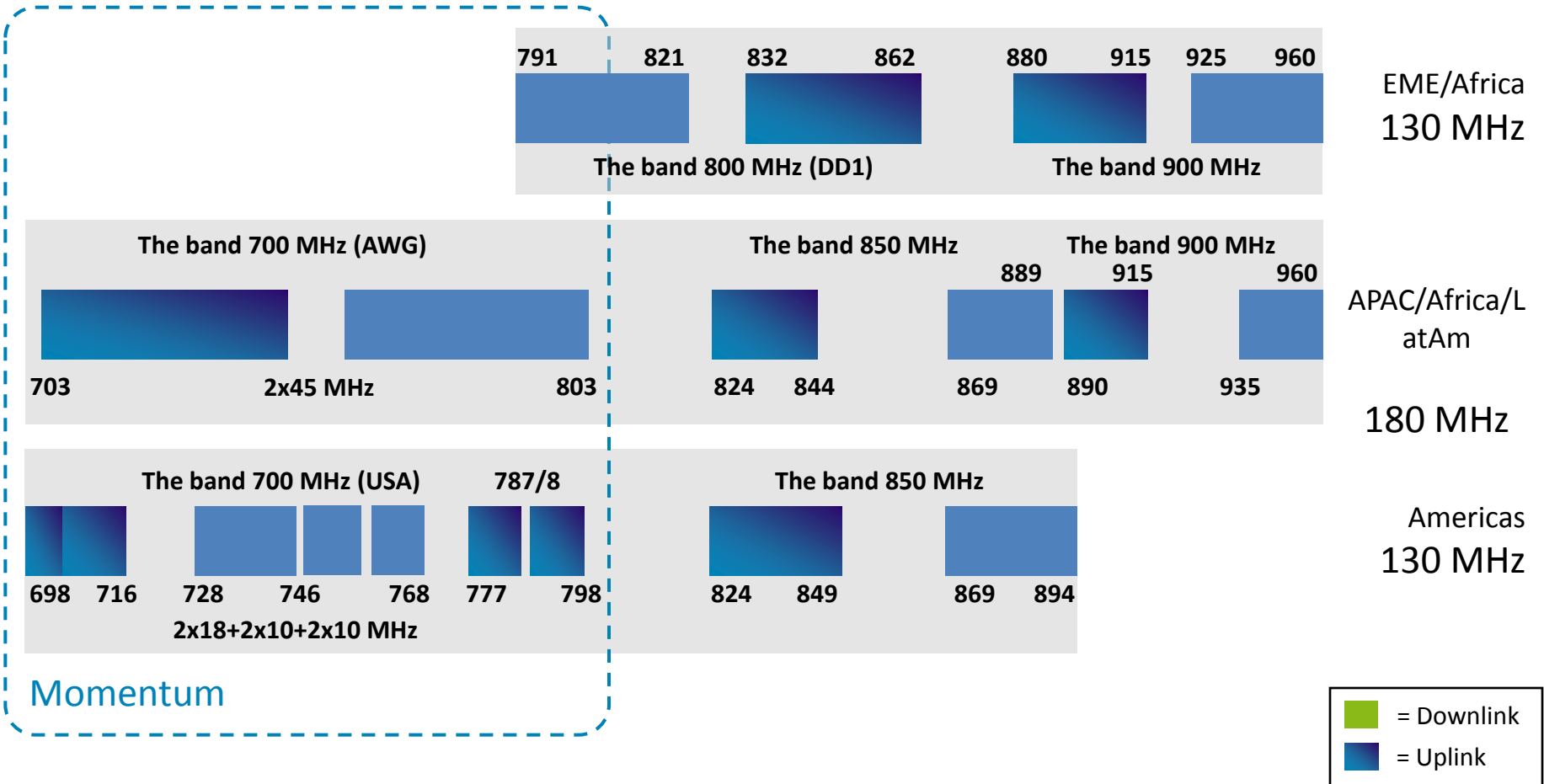
# Harmonized spectrum

## – Example in the “2.6 GHz band”



- Well specified frequencies for FDD Up/Downlink, TDD and guard band for interference free operation
- The 2.6 GHz arrangement is defined by CEPT for Europe and CITELE for Latin America with 2 x 70 MHz FDD and 50 MHz TDD
- 3GPP has specified the arrangement for the development of **standardized products**
- Global harmonization and maximum economies of scale benefits can be achieved by adherence to the CEPT/CITELE approach

# the UHF band for mobile broadband



opportunity to enable broadband for all

# Conclusions

- Broadband crucial for SocioEconomic development
- Mobile Broadband provides convenient coverage, also in rural areas (give access to sub GHz spectrum bands), in addition to mobility.
- In terms of performance (bitrate and latency properties) Mobile Broadband are approaching fixed.
- Near term focus on spectrum recommendations
  - LatAm – 700 (aligned with APAC/Australia) and 2600 MHz - LTE (in addition to existing 850, 1900 and 1700-2100 bands/technologies)
  - EU - 800 and 2600 MHz - LTE (in addition to existing 900, 1800 and 2100 bands/technologies)



**ERICSSON**