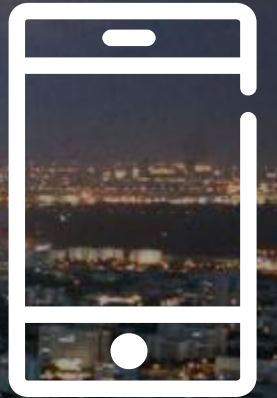


NEW OPPORTUNITIES FOR OPERATORS IN THE IP WORLD

Jesper Rhode
Ericsson Latam and Caribbean



A central green cloud contains the text 'WIFI CALLING' in white. Radiating from this central cloud are numerous thin, dashed blue lines that extend towards the edges of the frame. Scattered along these lines and throughout the background are several smaller, solid blue clouds of varying sizes. In the top right corner, the Ericsson logo is displayed, consisting of three slanted parallel bars above the word 'ERICSSON' in a bold, sans-serif font.

WIFI CALLING



WHY WI-FI CALLING NOW?



Source: Apple WWDC – June 2nd 2014



7:28 p.m.
Wi-Fi calling is a new feature for making high-quality calls when cell conditions are poor.
Source: www.apple.com/live/2014-sept-event



EE ANNOUNCING LIVE TRIALS OF PHONE CALLS OVER WIFI AND 4G AS PART OF £275MILLION INVESTMENT IN VOICE

- New capability to allow customers to make high quality calls in more places, when only connected by WiFi in homes and offices, set for launch in autumn 2014

Fotis Karonis, CTO at EE, said:

“Our WiFi calling capability will let customers make calls where they have access to WiFi but not to the mobile network. The customer experience is seamless because it's the same as making a network call and uses the normal call interface of the handset. This is a major part of our strategy to invest in giving customers the ability to make a call wherever they are, and we're confident that this service can make a big difference to people in homes and large offices across the country, especially in the most rural areas, that don't have mobile coverage.”

Source: Everything Everywhere



iPhone 6 now supports Voice over LTE.

It's wide-band audio for voice that sounds amazingly crisp and clear.

First market launch: T-Mobile USA

More launches expected in 2015



WHY NOW?

WI-FI CALLING – DEVICE SUPPORT



- › Wi-Fi calling is an operator controlled service based on IMS
 - Native dialer – no separate app in phone
 - Use your regular phone number (SIM)
- › Support in Q4 from major chipset vendors such as Qualcomm and Intel
 - IMS supports voice and video calling over Wi-Fi
 - Handover for VoLTE
- › Samsung (Android) can support Wi-Fi calling on operator request
 - › iOS8 Wi-Fi calling support on operator request
- › Apple iOS 8 now supports Wi-Fi calling
 - iPhone 5S/5C with more than 120 million units shipped and iPhone 6 starting to sell soon!
 - iPhones 6 supports Wi-Fi calling and handover from LTE to Wi-Fi in both directions

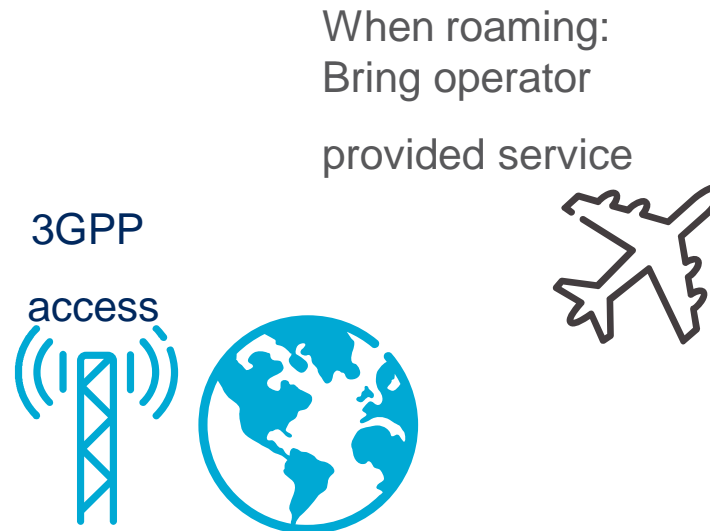


WHAT'S IN IT FOR THE
END-USER?

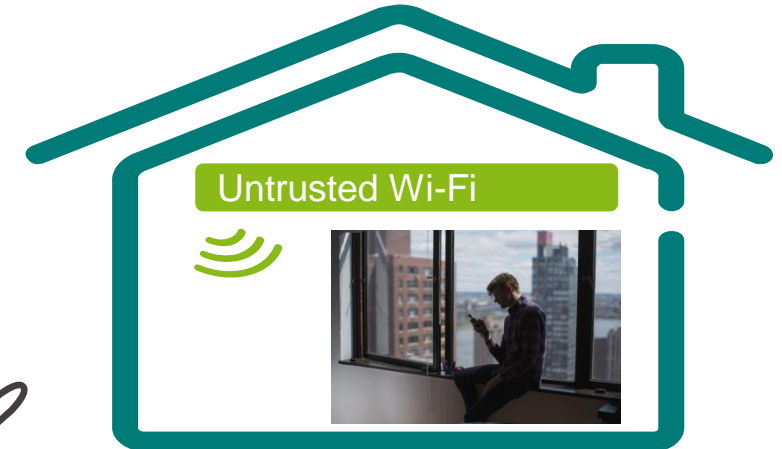
WI-FI CALLING USE CASE EXAMPLES



Homes with limited
3GPP coverage



Seamless handover of
voice and video calls
between LTE (VoLTE)
and untrusted Wi-Fi



Hotel abroad

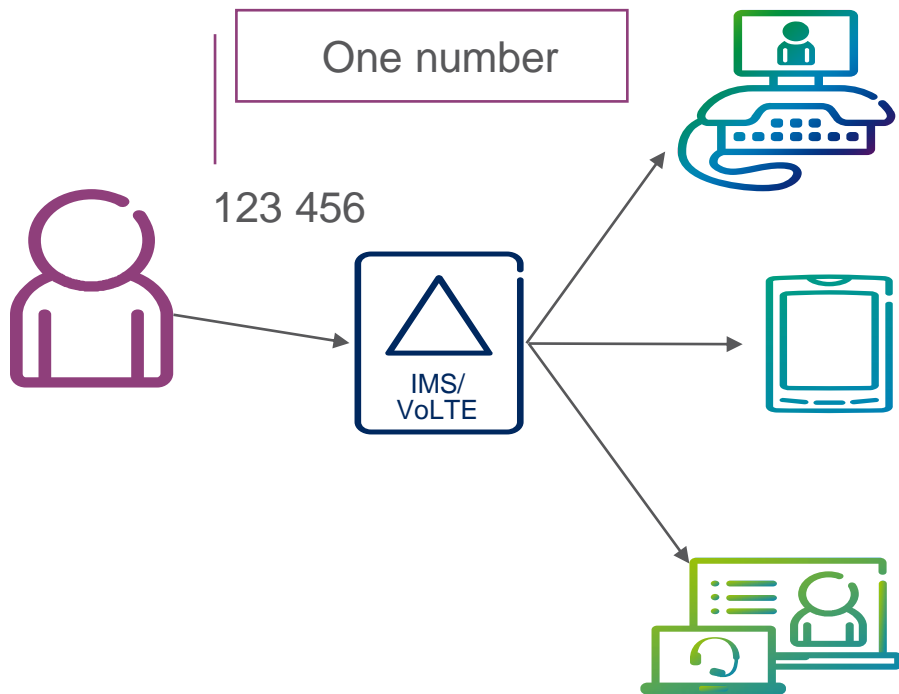


Small office/business
with limited 3GPP coverage

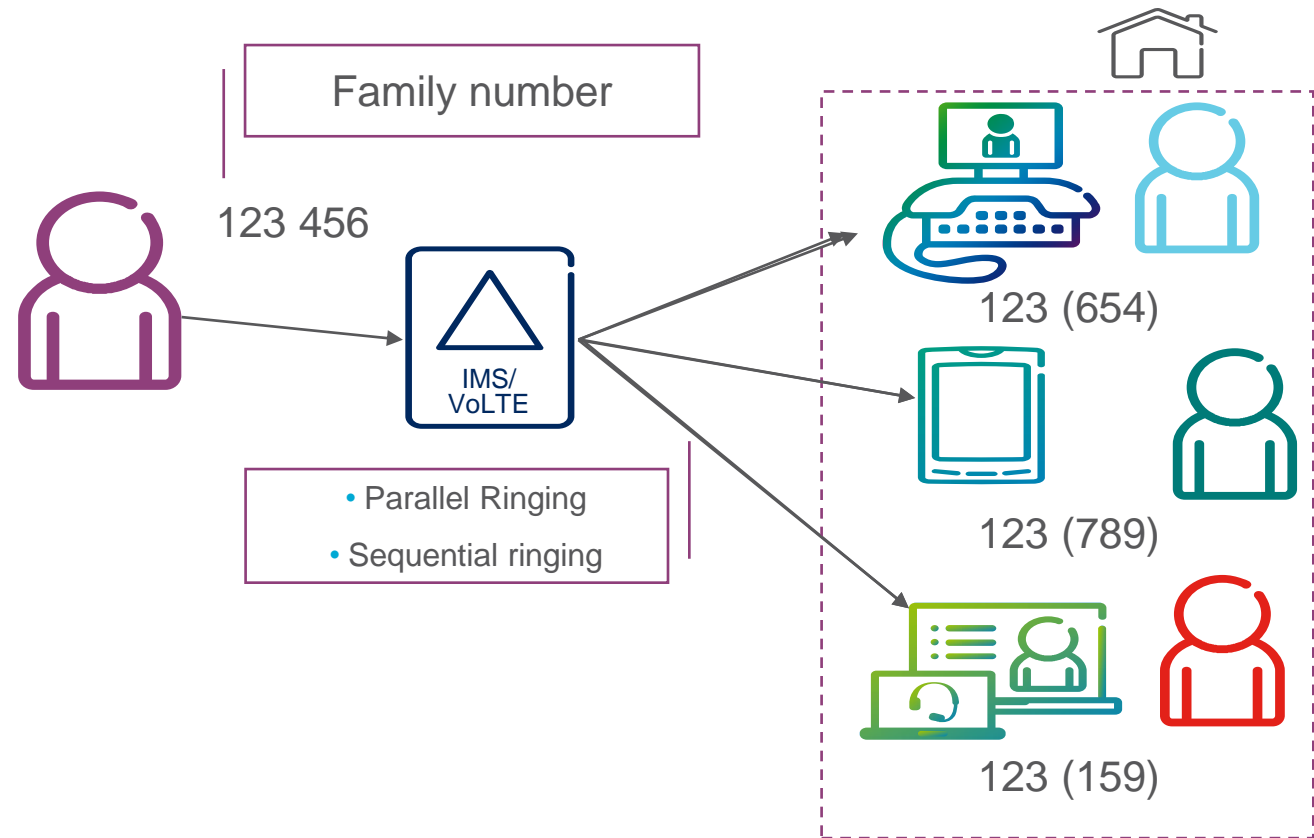
ONE NUMBER AND FAMILY CONCEPTS



[One number – multiple
devices]



[One number – multiple
persons]



WI-FI CALLING FOR HOME AND SMALL OFFICES



Start using a modern phone
experience at home



Upgrade to a modern phone
experience in the small office
with 10-15 users

All integrated using a converged
IMS core network



iOS8 and Android support

Use-cases:

- In poor cellular coverage – still get good voice and video calling experience
- Abroad at a hotel - avoid roaming fee



WHAT'S IN IT FOR YOU?

ADDRESS NEW REVENUE POTENTIAL

Provide attractive bundles for consumers and small enterprises

- Roaming bundles
- Create video calling behavior through Wi-Fi
- Strengthen VoLTE service offer



LTE - Wi-Fi – 2G/3G



Leverage new attractive devices

- Capture high-ARPU users
- Native service in smartphones, no special app
- Lock in the whole family / office

Secure customer ownership

- Regular phone number with SIM-based authentication
- Seamless voice handover between LTE and Wi-Fi

Offer high-quality converged services for any accesses and any devices

- Voice/HD voice and video calling
- One-number concept

Create position for the connected home

- Bundle with Alarm?
- Surveillance?

POSSIBLE BUSINESS MODELS



Converged offer
- part of cable TV
subscription

Include in
mobile bundle

Include in
family/office
bundle

Specific
roaming package



HOW WILL WIFI CALLING IMPACT VOLTE ROLLOUT?

LEVERAGE WI-FI CALLING FOR VOLTE DEPLOYMENT



Enables early VoLTE system deployment independent of LTE coverage maturity

Extends VoLTE services (voice and video calling) to residential Wi-Fi access

Seamless voice and video calling handover between LTE and Wi-Fi for best user experience



VOLTE DEVICES

GROWING ECOSYSTEM



Sony Xperia, Fujitsu, Sharp, Samsung



Samsung Galaxy Light



iPhone 6

Over 40 commercial VoLTE device models available from more than 7 vendors.



LG G Flex



Samsung GS4 Mini



Samsung GS5



Samsung G Note 3

Around 50 million shipped with VoLTE chipset inside. Can be SW upgraded over-the-air to support VoLTE if not already enabled.



ERICSSON

NETWORK EVOLUTION INSIGHTS



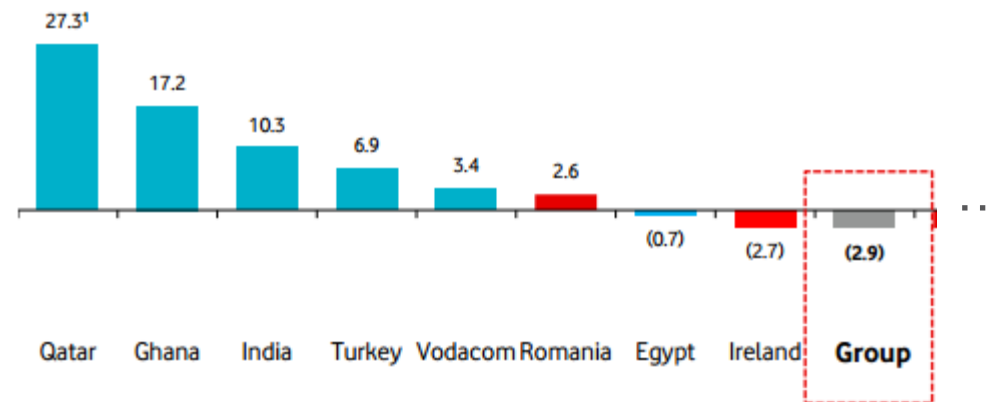
VODAFONE MONETIZES 3G DATA IN AMAP*



- › AMAP represents 31% of group service revenue
- › AMAP service revenue up 6.2%
 - Data users 102 M, up 31% YoY
- › Vodafone \$1B investment into India
 - 3G in every service area within 2 years

*Africa, Middle East and Asia Pacific region, comprising of the Group's interests in Australia, Egypt, Fiji, Ghana, Kenya (associate), India, New Zealand, Qatar and the Vodacom Group.

Q1 14/15 service revenue growth (excl. MTRs) (%)



“...Emerging markets have really been able to monetize the 3G rollout”

- Nick Read, VF Group CFO
Q2 '14 results presentation

Source: Vodafone Q2 '14 results

MONETIZING SMARTPHONES

VODAFONE Q2 14 RESULTS

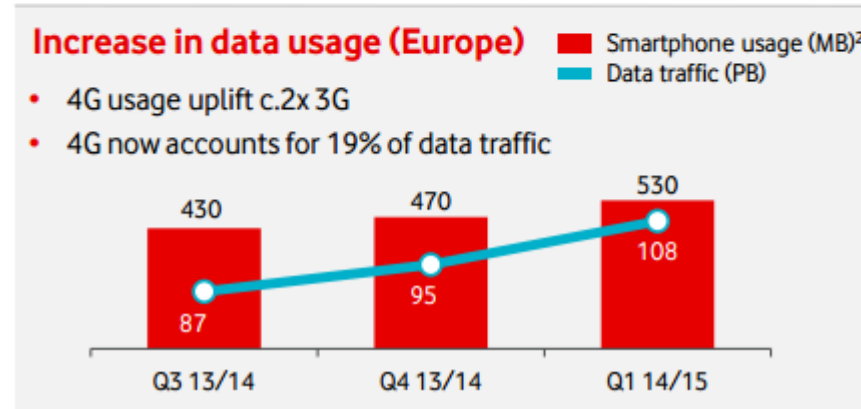
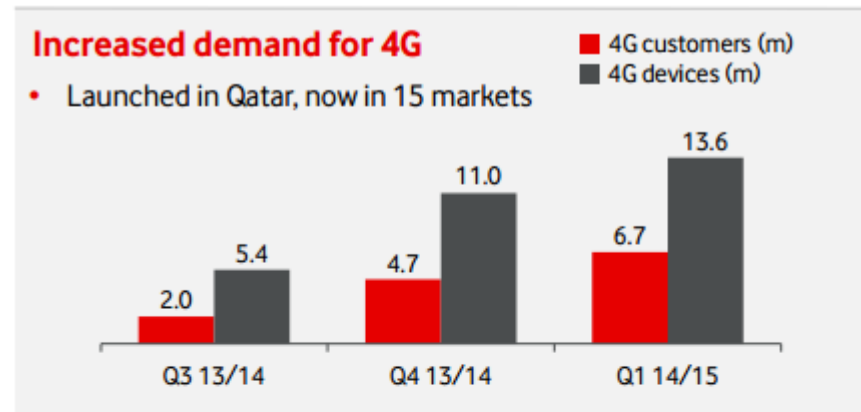


› Smartphones 47% of base in Europe

- 530MB usage per smartphone
- LTE double usage of 3G
- LTE 19% of data traffic

› Europe 3G to 4G ARPU upsell

- Net ARPU by more than £5 in UK
- Differentiated 4G tariff has +€10 potential upsell in Germany



Additional smartphone potential
Both usage & LTE drive ARPU



ERICSSON

MULTI BAND



CA LEADERSHIP

- › Ericsson demonstrates Worlds' first three Carrier Multi-carrier for HSPA
 - Turkcell, Ericsson & Qualcomm – Jul '14
- › DL speeds up to 63 Mbps
 - User experience improved across whole cell, for all load situations
 - 40% network capacity increase
- › Commercial availability Q4 2014

3 BANDS HSPA



“Data download using three carrier has been tested for the first time on a network globally. We are proud that Turkcell has successfully hosted the first global testing of this promising future technology”

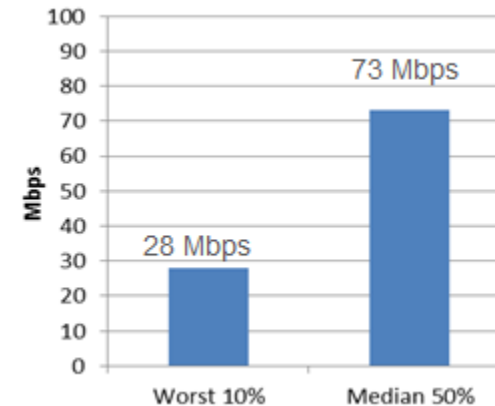
- Bulent Elonu, Chief Network Technology Officer, Turkcell



CA LEADERSHIP

- › SingTel, Ericsson & Samsung unveil world's fastest mobile service for smartphones – Aug 14
- › Vodafone Portugal first in Europe
 - Commercial from October 17th
- › DL speeds up to 300 Mbps
 - using 1800 & 2600 MHz FDD
 - 2 x 20 MHz

2 BANDS



Galaxy S5 4G+ in SingTel
source: Ericsson analysis,
data from Ookla



CA LEADERSHIP

- › Ericsson demonstrates ecosystem leadership with 3 band CA
 - DL speeds up to 300 Mbps
 - Three separate FDD bands of 10 MHz, 10 MHz and 20 MHz bandwidth
 - Commercial availability in handsets expected Q1 2015
- › Ericsson demonstrated 450 Mbps with Telstra during Q2 2014
 - Three bands of FDD 20MHz
 - Commercial hardware & software
 - Core + RAN + Cat 9 device

3 BANDS

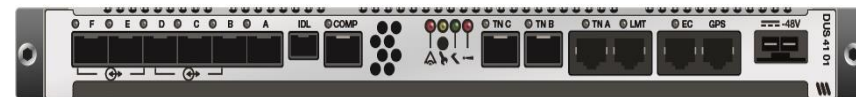


“ SK Telecom is pleased to successfully demonstrate Tri-Band Carrier Aggregation on its commercial network and thereby confirm the company's system readiness for commercialization of the technology. ”

- Park Jin-hyo, Senior Vice President and Head of Network R&D Center, SK Telecom



DUS41



CA LEADERSHIP

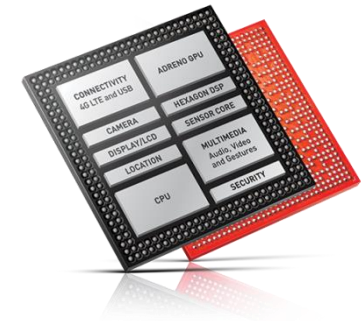
- › Ericsson demonstrates ecosystem leadership with TDD & FDD CA
 - World's 1st with commercial SW & HW tracks on both network and UE sides
- › FDD & TDD CA up to 260 Mbps
 - using 1800 & 2600 MHZ bands
- › Commercial availability in handsets expected Q2 2015

TDD & FDD



“By working closely with Qualcomm Technologies, Ericsson is moving FDD / TDD Carrier Aggregation from a trial concept towards a commercial solution that we can plan to further differentiate our performance advantage”

- Tay Yeow Lian, Managing Director for Networks, SingTel



Qualcomm 810 Snapdragon ©



ERICSSON

MULTI STANDARD

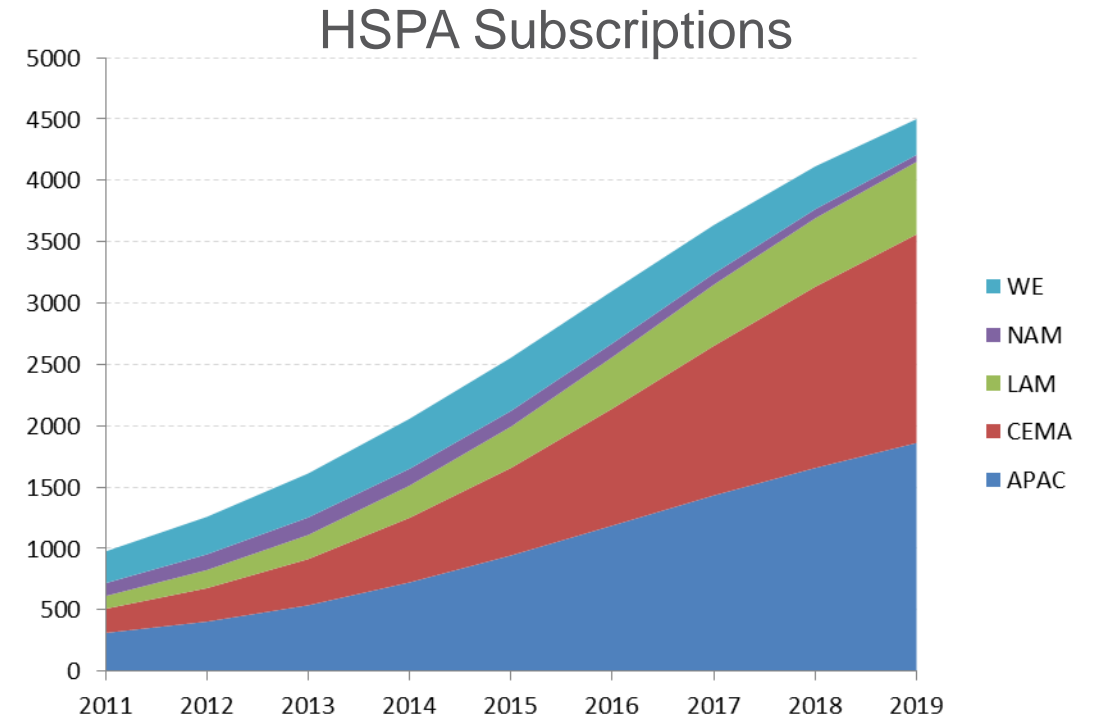
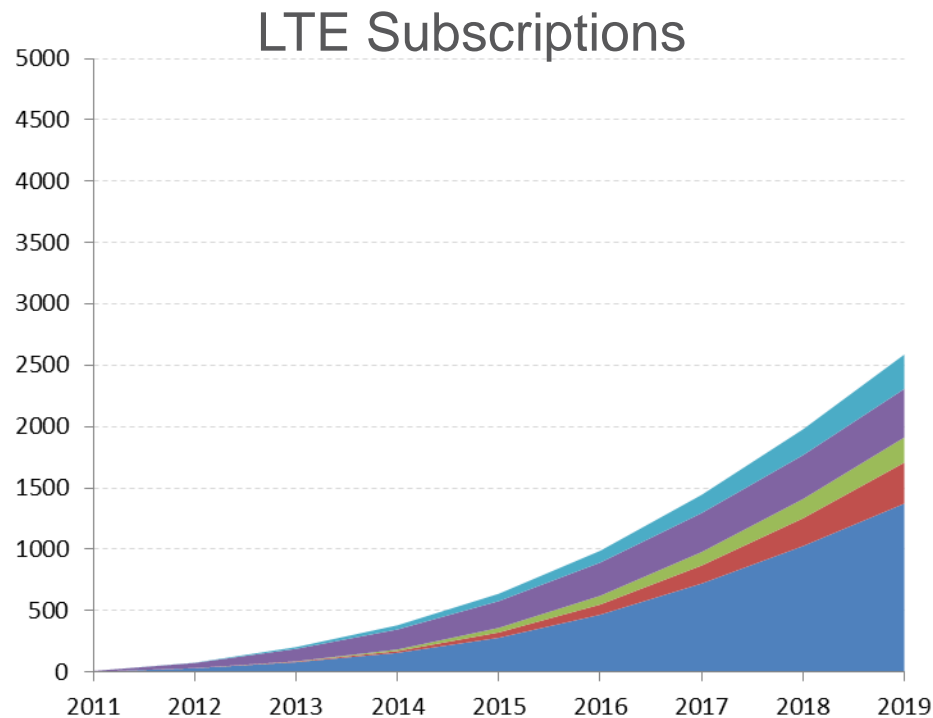


MBB SUBSCRIBER FORECASTS



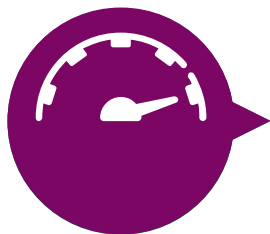
Subscriptions – All Device Types

Source: Ericsson Mobility Report Traffic Exploration Tool

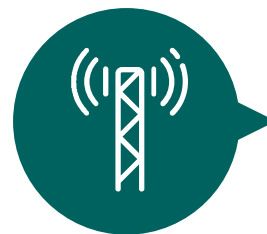


[LTE to have majority of subscriptions in some regions
HSPA in rest of the world]

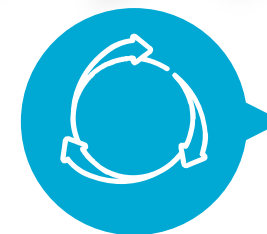
THIN LAYER GSM



GSM network
efficiency

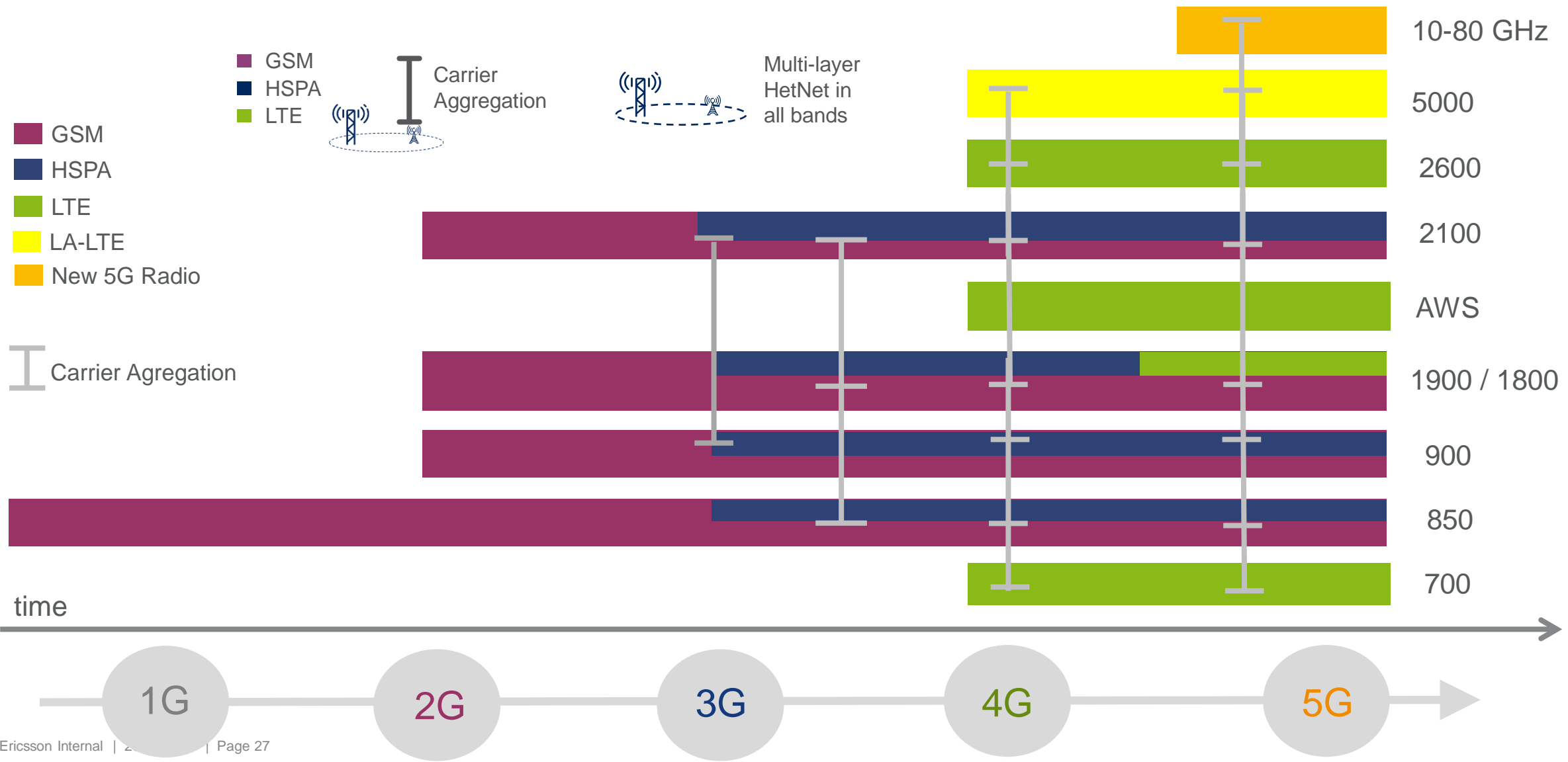


No GSM
unique HW



GSM
automation

CRECIENTE DEMANDA DE ESPECTRO ABRINDO O CAMINHO PARA 5G





ERICSSON

BEYOND 4G



EVOLUTION TOWARDS 2020





ERICSSON