



# Seminar 2: Future Networks, LTE and VoLTE

## GSMA LA Plenary Quito, 24Nov12

Jose A. Aranda, Technology Director Latin America

Strictly for information purposes only for GSMA Members

Restricted - Confidential Information

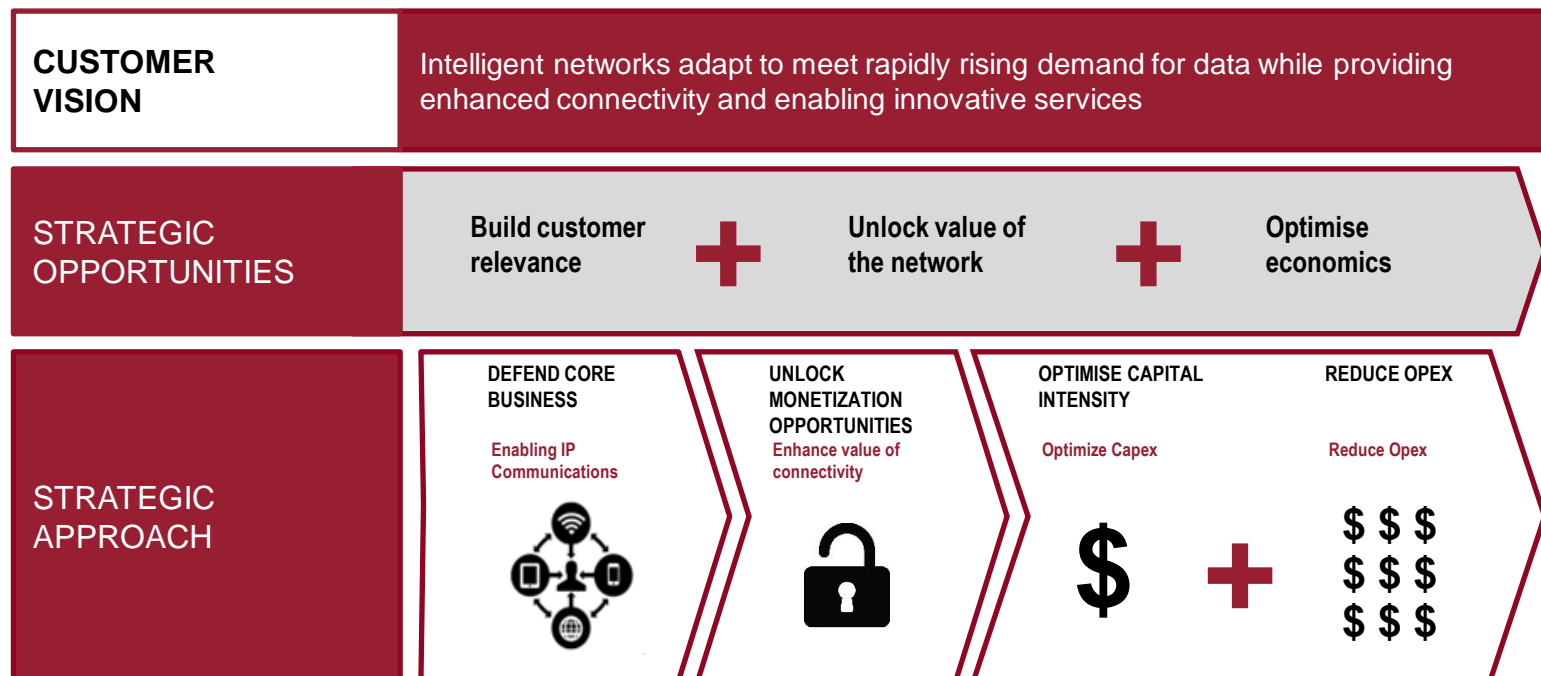
© GSM Association 2014

All GSMA meetings are conducted in full compliance with the GSMA's anti-trust compliance policy

# GSMA's Network 2020 programme



- Designed to help operators make IP Communications work as a native service behind the 'Green Button Promise'
  - to address and navigate the complexities of progression to an All-IP communications network



# 12 operators are leading Network 2020



With a further 8 operators participating providing resources to define the requirements and operating guidelines

## LEADING operators



## Participating operators



# IP Communications is the industry initiative extending the native operator services into advanced communications



Functional evolution of core communications natively available from any device by the Device Manufacturer

Technical evolution from Circuit Switch to IP...

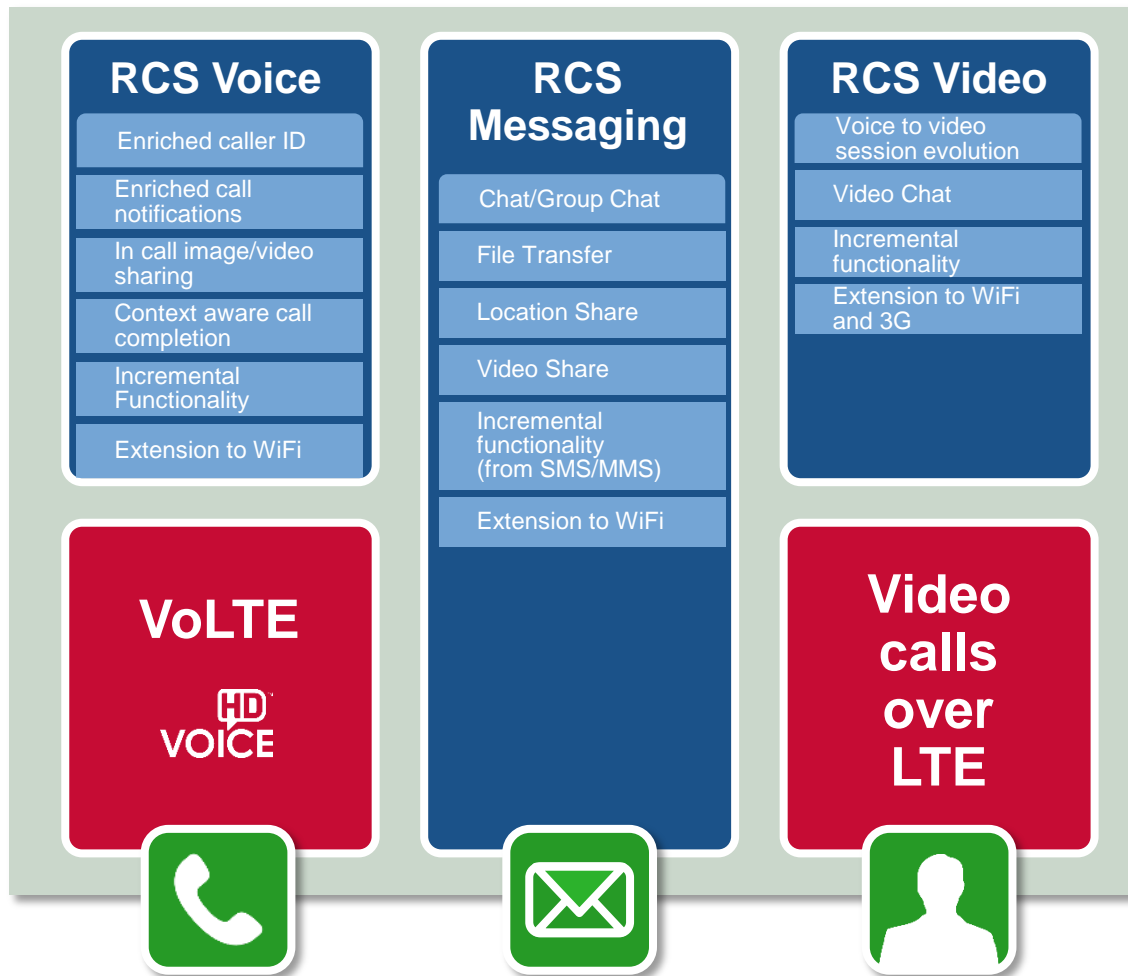
... over F-M convergent IMS networks



- ✓ Simple discovery and adoption - "It's just there"
- ✓ Transparent evolution for the customer
- ✓ Optimized experience in the UI
- ✓ Optimized performance
- ✓ Multi-access use: mobile & fix / WiFi
- ✓ Multi-device and webclient



# Scope of Operator IP Communications Services



**‘Green Button Promise’  
communication services**





# Practical steps towards IP Communications Services



- Multiyear roadmap for IP Communications features, comprising:
  - Future Services roadmap beyond 2015
  - Service Descriptions for common RCS services for 2014-15
  - Technical Specifications for
    - RCS services (RCS5.x)
    - Incorporating IR.92 & IR.94 for VoLTE
- IMS Implementations guides, lessons learned and issues registry
- Requirements for devices supporting VoLTE and RCS
- Working Groups enabling interconnect, roaming, settlement and device testing
  - IR.34 – Guidelines for IPX Provider networks
  - IR.39 –IMS Profile for HDVC
  - IR.58 – IMS Profile for Voice over HSPA
  - IR.64 – Service Continuity Guidelines
  - IR.65 Roaming and Interworking Guidelines
  - IR.67 – IPX Provider Guidelines
  - IR.88 – LTE Roaming Guidelines
  - + BARG,IWG and TSG reference documents, guidelines, test cases

**Rate of change of RCS specifications reduces as basic communications suite is delivered and innovation is enabled by APIs**



# Status of global implementations: RCS / VoLTE



## Rich Communications

 **40**  
OPERATORS

 **LAUNCHED IN**  
**32 COUNTRIES**

**87** OPERATORS COMMITTED  
TO LAUNCH IN 2015

 **320+ DEVELOPERS**  
registered on the  
Innovation Accelerator

 **36+ COMMERCIALLY**  
**AVAILABLE**  
RCS native devices

## Voice & Video calls over LTE

 **331**

COMMERCIALY LAUNCHED  
**LTE NETWORKS**  
IN 112 COUNTRIES

**65** LTE networks  
have launched  
so far this year



 **81** VoLTE enabled  
devices

## HD Voice

**116** **HD**<sup>TM</sup>

HD Voice  
Mobile Networks  
in 75 countries

**24 OPERATORS**

 have launched HD Voice  
so far in 2014

Sources: GSA and GSMA, 21 November 2014

# Operator IP Communications services are available in 35 countries – Sept 2014



## Europe (16)

- Albania
- Czech Rep
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Malta
- Netherlands
- Portugal
- Romania
- Slovakia
- Spain
- Turkey
- UK



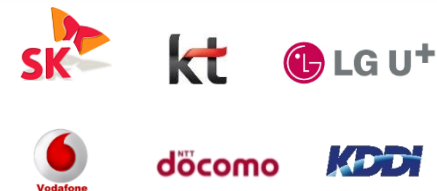
## Americas (13)

- Argentina
- Brazil
- Colombia
- Costa Rica
- Dom. Rep.
- Ecuador
- El Salvador
- Guatemala
- Honduras
- Mexico
- Nicaragua
- Peru
- United States



## RoW (6)

- Japan
- Hong Kong
- New Zealand
- Singapore
- South Africa
- South Korea



35 countries = RCS and VoLTE



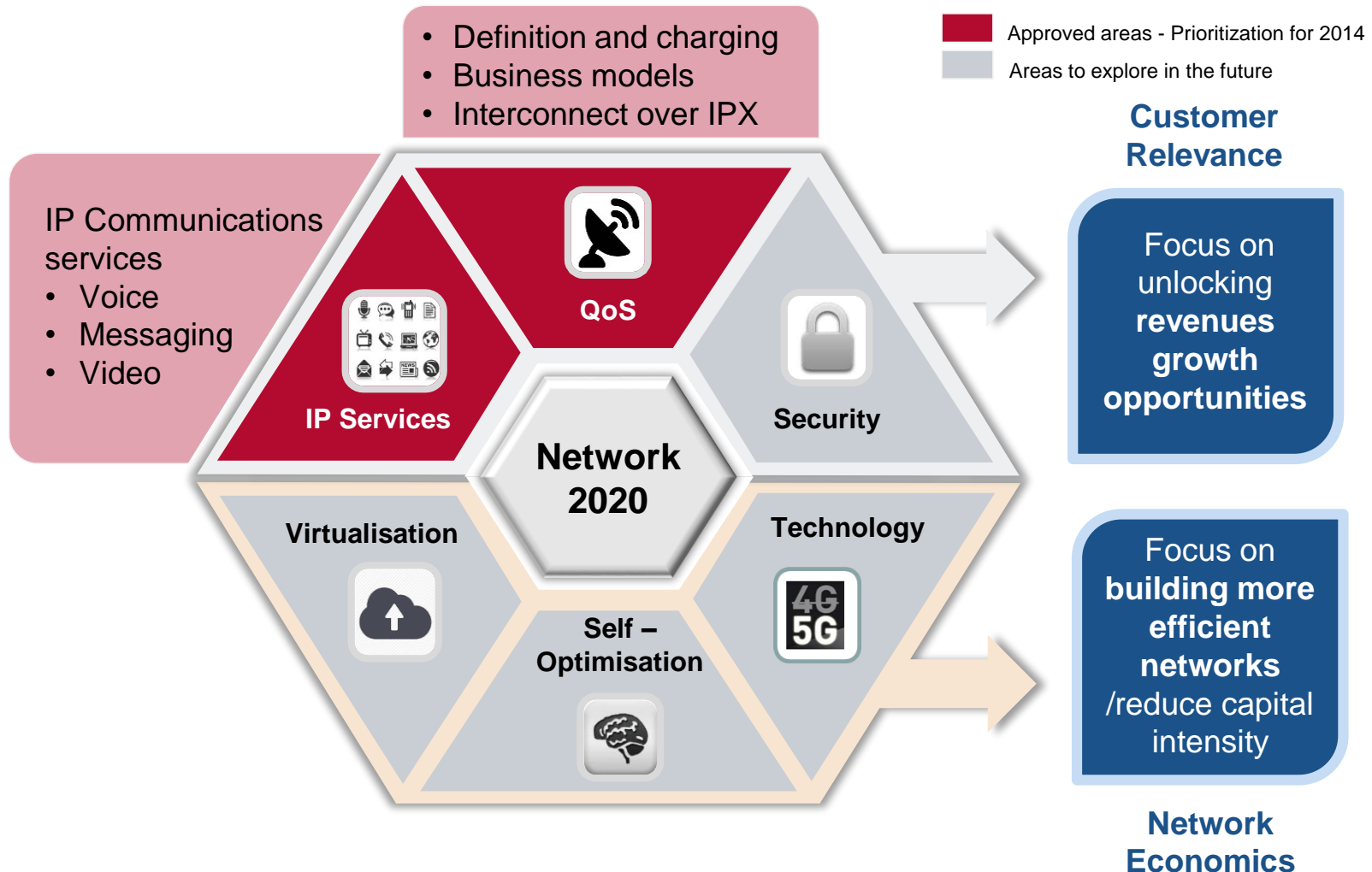
---

Annex – some additional slides  
for builds, RCS and VoLTE  
devices and updated in same  
look and feel

# GSMA Network 2020 programme – Building the network of the future



## BUILDING BLOCKS OF THE NETWORK OF THE FUTURE

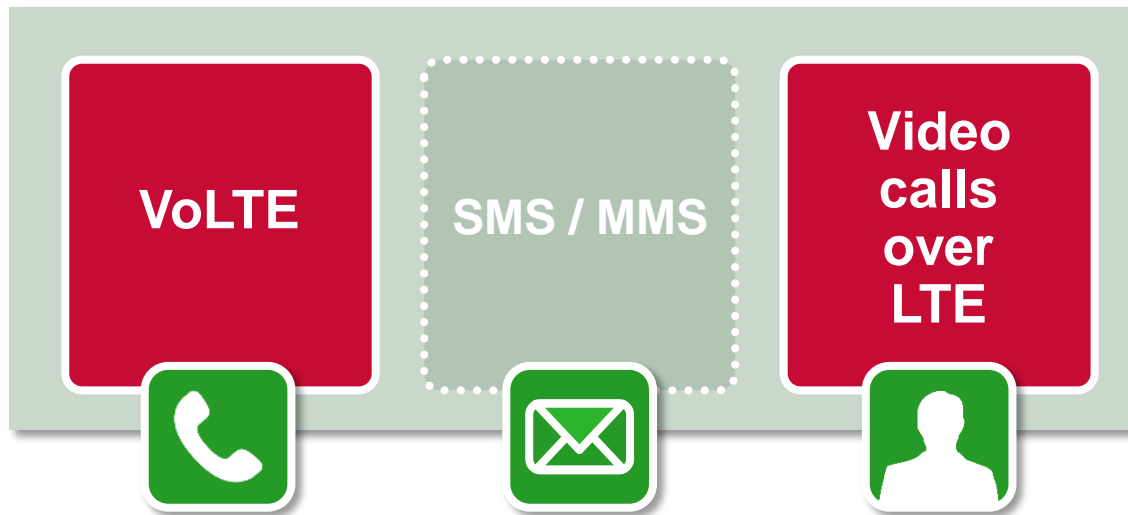


## Operator's traditional 'Green Button Promise' communication services



## Evolution of current voice and video to IP protocols

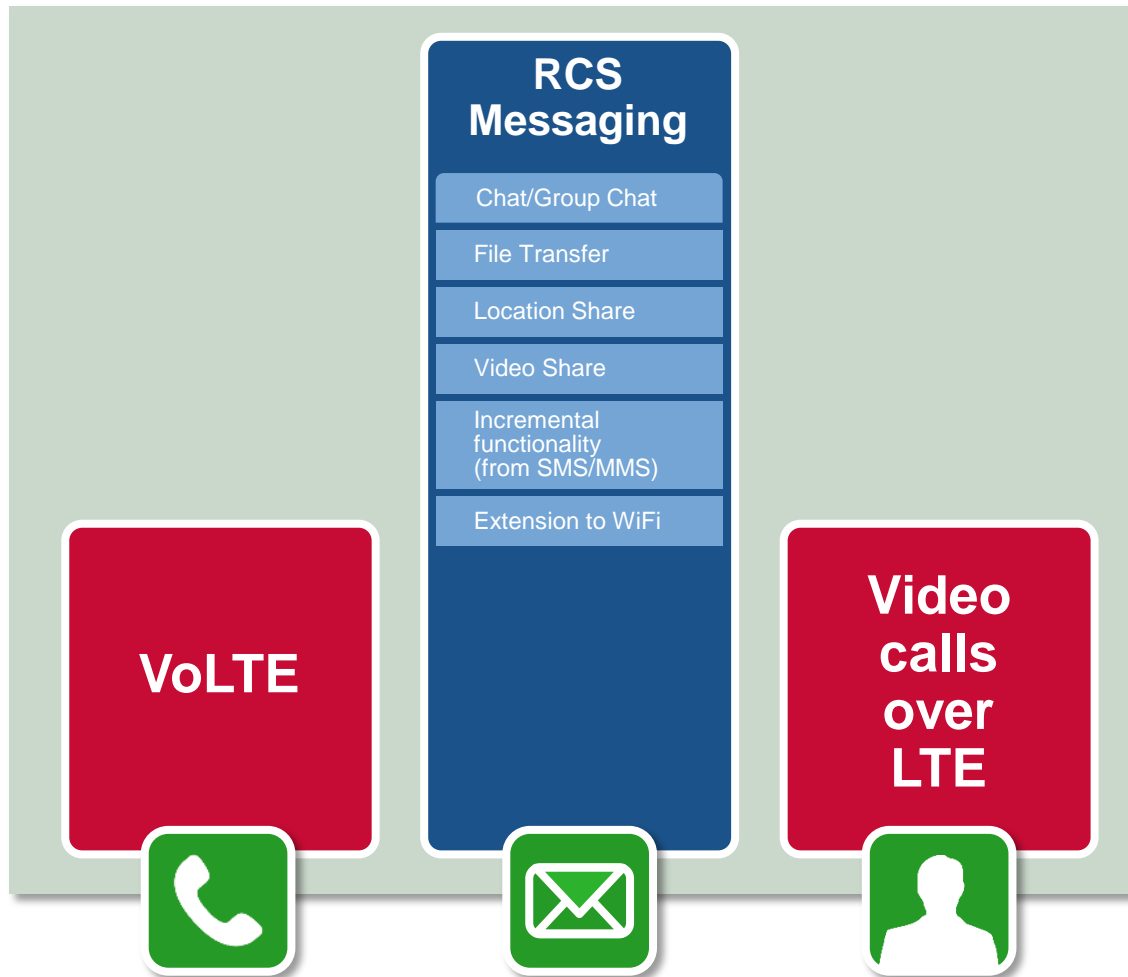
(interworking with legacy services)



**‘Green Button Promise’  
communication services**



# Scope of Operator IP Communications Services



**‘Green Button Promise’  
communication services**





# Commercially launched RCS native devices (1 of 2)



HF



HF



HF



HF



HF



HF



HF



HF



BB

**HTC  
One S**

**HTC  
One X+**

**HTC  
One X**

**HTC  
Desire X**

**HTC  
Desire 500**

**HTC  
One SV**

**HTC  
One**

**HTC  
One Mini**

**HTC  
One M7**



BB



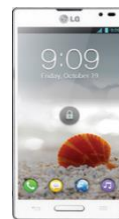
HF



HF



HF



HF



HF



HF



HF



HF

**LG  
L70**

**LG  
G2**

**LG  
U2**

**LG  
L3 II**

**LG  
Optimus  
L9**

**LG  
Optimus  
L9 II**

**LG  
Optimus  
L5 II**

**LG  
Optimus  
L2**

**Nokia  
Lumia 520**

# Commercially launched RCS native devices (2 of 2)



HF

**Nokia  
Lumia 620**



HF

**Nokia  
Lumia 720**



HF

**Nokia  
Lumia 820**



HF

**Nokia  
Lumia 920**



HF

**Nokia  
Lumia 925**



HF

**Nokia  
Lumia 1020**



HF

**Samsung  
Galaxy S3**



HF

**Samsung  
Galaxy S4**



BB

**Samsung  
Galaxy S4**



HF

**Samsung  
Galaxy  
S4 LTE**



HF

**Samsung  
Galaxy  
S4 Mini**



BB

**Samsung  
Galaxy S5**



HF

**Sony  
Xperia E**



HF

**Sony  
Xperia L**



HF

**Sony  
Xperia SP**



HF

**Sony  
Xperia Z**



HF

**Sony  
Xperia Z1**



BB

**Sony  
Xperia Z1**

# Commercially launched VoLTE devices



Apple  
iPhone 6



Apple  
iPhone 6+



LG  
Optimus G



LG Optimus  
Vu2



LG Optimus  
G Pro



LG Optimus  
LTE 3



LG G2



LG Vu3



LG G Flex



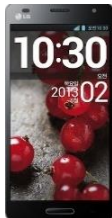
LG G Pro2



LG Optimus G



LG Optimus  
Vu II



LG Optimus  
GK



LG Optimus  
G Pro



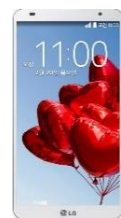
LG Optimus  
Vu 3



LG Optimus  
G2



LG Optimus  
G Flex



LG Optimus  
G Pro2

# Commercially launched VoLTE devices



**Pantech  
Vega R3**



**Pantech  
Vega No6**



**Pantech  
Vega IRON**



**Pantech  
Vega LTE-A**



**Pantech  
Vega  
Secret Note**



**Pantech  
Vega  
Secret Up**



**Pantech  
Vega R3**



**Pantech  
Vega No 6**



**Pantech  
Vega IRON**



**Pantech  
Vega  
Secret Note**



**Pantech  
Vega Secret  
UP**



**Samsung  
Galaxy S3  
SHV-E210S**



**Samsung  
Galaxy  
Note 2  
SHV-E250S**



**Samsung  
Galaxy Grand  
SHV-E270S**



**Samsung  
Galaxy Note 10.1  
LTE  
SHV-E230S**



**Samsung  
Galaxy  
POP**



**Samsung  
Galaxy S4  
SHV-E300S**



**Samsung  
Galaxy  
S4 LTE-A  
SHV-E330S**

# Commercially launched VoLTE devices



**Samsung  
Galaxy Mega**



**Samsung  
Galaxy Golden  
SHV-E400S**



**Samsung  
Galaxy Note 3  
SM-N900S**



**Samsung  
Galaxy  
Round**



**Samsung  
Galaxy S4  
Zoom  
SM-C105S**



**Samsung  
Galaxy  
Note 10.1  
SM-P605S**



**Samsung  
Galaxy Win**



**Samsung  
Galaxy S4  
Active**



**Samsung  
Galaxy Note 3  
Neo  
SM-N75S**



**Samsung  
Galaxy Grand 2  
SM-G710S**



**Samsung  
Galaxy S5  
SM-G900S**



**Samsung  
Galaxy S3  
E210K**



**Samsung  
Galaxy S3  
E210KB**



**Samsung  
Galaxy S3  
E210KP**



**Samsung  
Galaxy S3  
E210KW**



**Samsung  
Galaxy Note 2  
E250K**



**Samsung  
Galaxy Note 2  
E250KG**



**Samsung  
Galaxy S4  
E330K**



# Commercially launched VoLTE devices



**Samsung  
Galaxy Note 2  
E250KG**



**Samsung  
Galaxy S3  
SHV-E210K**



**Samsung  
Galaxy S3  
SHV-E210KP**



**Samsung  
Galaxy S3  
E210KW**



**Samsung  
Galaxy  
Note 10.1  
SHV-E230K**



**Samsung  
Galaxy Note II  
SHV-E250K**



**Samsung  
Galaxy Note II  
S3SHV-E250KB**



**Samsung  
Galaxy Note II  
SHV-E250KG**



**Samsung  
Galaxy Note II  
SHV-E250KP**



**Samsung  
Galaxy Note II  
SHV-E250KR**



**Samsung  
Galaxy Grand  
SHV-E270K**



**Samsung  
Galaxy  
Grand 2  
SHV-E275K**



**Samsung  
Galaxy S4  
SHV-E300K**



**Samsung  
Galaxy S4  
SHV-E300KW**



**Samsung  
Galaxy  
Mega 6.3  
SHV-E310K**



**Samsung  
Galaxy S4  
LTE-A  
SHV-E330K**



**Samsung  
Galaxy S4  
SHV-E330KW**



**Samsung  
Galaxy S4  
Mini  
SHV-E370K**

# Commercially launched VoLTE devices



**Samsung  
Galaxy Golden  
SHV-E400K**



**Samsung  
Galaxy S4  
Zoom  
SM-C105K**



**Samsung  
Galaxy  
Grand 2 LTE-A  
SM-G710K**



**Samsung  
Galaxy S5  
SM-G900K**



**Samsung  
Galaxy S5  
SM-G900KW**



**Samsung  
Galaxy  
Note 3 Neo  
SM-N750K**



**Samsung  
Galaxy  
Note 3  
SM-N900K**

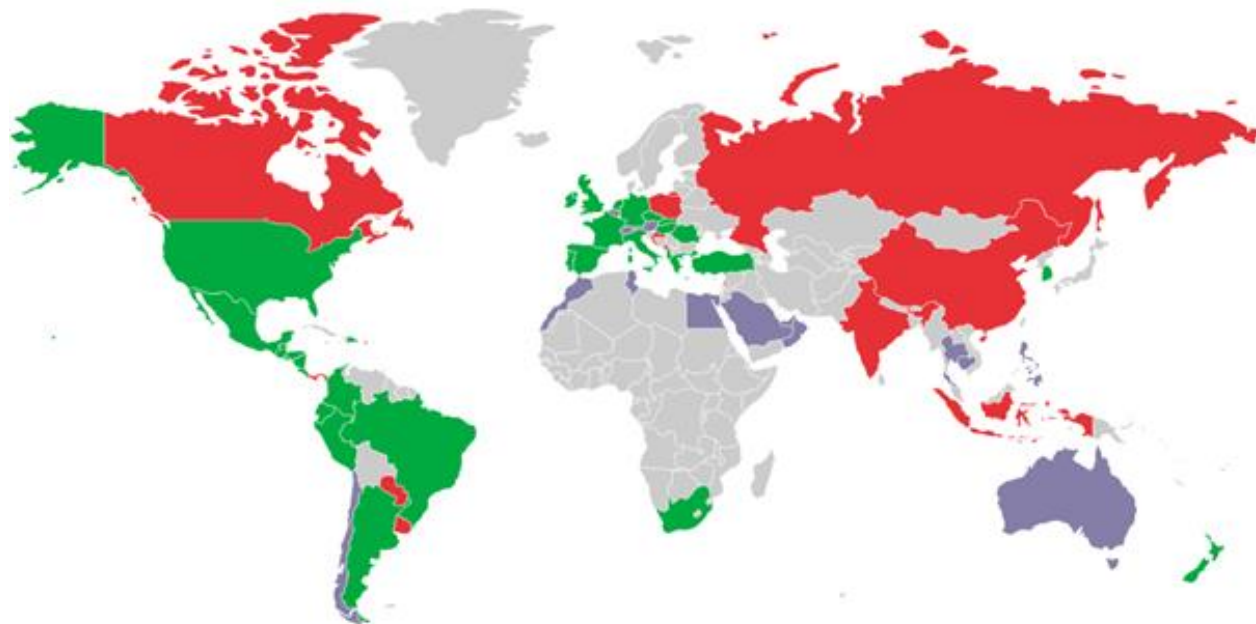


**Samsung  
Galaxy  
Note 3  
SM-N900KW**



**Samsung  
Galaxy  
Note 10.1  
SM-P605K**

# RCS launches Market Status



## RCS Launches



Markets committed and live



Hot Prospects



Early and interested markets

### 2012-2013

Country	Operator
Germany	T-Mobile
Germany	Vodafone
South Korea	KT
South Korea	LG Uplus
South Korea	SK Telecom
Spain	Orange
Spain	Telefonica
Spain	Vodafone
USA	MetroPCS/T-Mobile

### 2013-2014

Country	Operator
Argentina	América Móvil
Brazil	América Móvil
Columbia	América Móvil
Costa Rica	América Móvil
Dom. Rep.	América Móvil
Ecuador	América Móvil
El Salvador	América Móvil
France	Orange
Guatemala	América Móvil
Honduras	América Móvil
Mexico	América Móvil

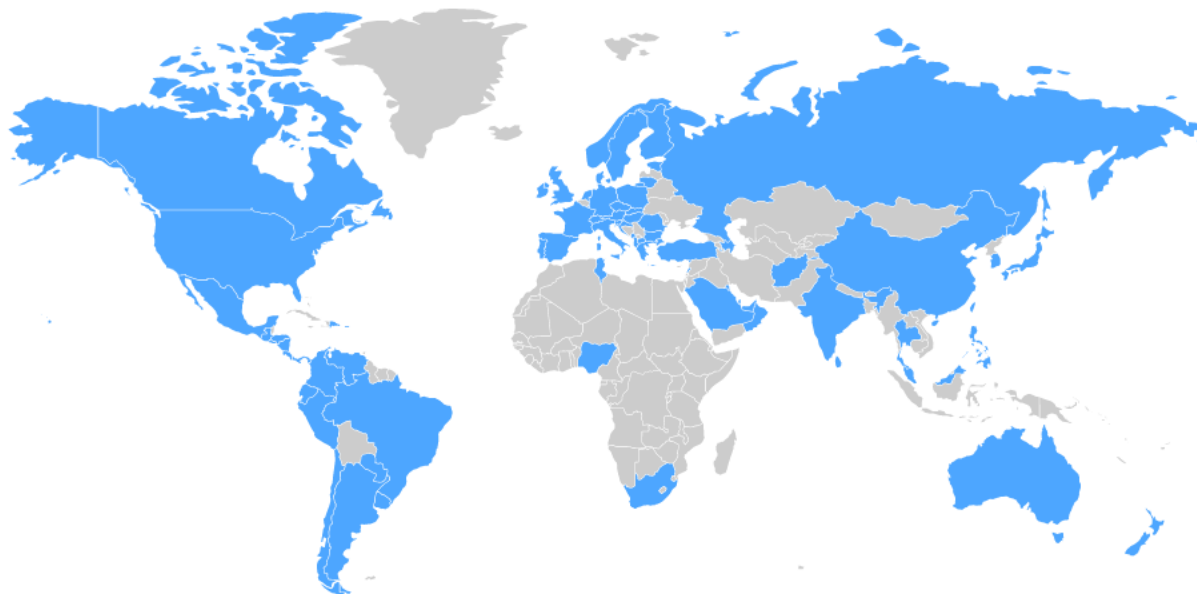
### 2013-2014

Country	Operator
Italy	Vodafone
Malta	Vodafone
Netherlands	Vodafone
Nicaragua	América Móvil
Peru	América Móvil
Portugal	Vodafone
S. Africa	Vodafone
Turkey	Vodafone
UK	Vodafone
USA	Sprint

### 2014-2015

Country	Operator
Albania	Vodafone
Czech Rep	Vodafone
France	SFR
Greece	Vodafone
Hungary	Vodafone
Ireland	Vodafone
New Zealand	Vodafone
Romania	T-Mobile
Romania	Vodafone
Slovakia	T-Mobile

# VoLTE launches Market Status



Country	VoLTE Status	Country	VoLTE Status	Country	VoLTE Status	Country	VoLTE Status	Country	VoLTE Status
Afghanistan	Early & Interested Markets	Croatia	Early & Interested Markets	Italy	Hot Prospects	Oman	Early & Interested Markets	Slovenia	Evaluating
Argentina	Early & Interested Markets	Denmark	Evaluating	Japan	Committed and Live	Panama	Early & Interested Markets	South Africa	Early & Interested Markets
Australia	Hot Prospects	Ecuador	Early & Interested Markets	Korea, South	Committed and Live	Paraguay	Early & Interested Markets	Spain	Hot Prospects
Austria	Evaluating	El Salvador	Early & Interested Markets	Kuwait	Evaluating	Peru	Early & Interested Markets	Sri Lanka	Evaluating
Azerbaijan	Hot Prospects	Estonia	Evaluating	Lebanon	Early & Interested Markets	Philippines	Evaluating	Sweden	Hot Prospects
Brazil	Evaluating	Finland	Evaluating	Lithuania	Evaluating	Poland	Evaluating	Switzerland	Evaluating
Bulgaria	Evaluating	France	Hot Prospects	Malaysia	Evaluating	Puerto Rico	Early & Interested Markets	Taiwan	Evaluating
Canada	Hot Prospects	Germany	Hot Prospects	Mexico	Hot Prospects	Qatar	Early & Interested Markets	Turkey	Early & Interested Markets
Chile	Early & Interested Markets	Guatemala	Early & Interested Markets	Netherlands	Evaluating	Romania	Committed and Live	UAE	Hot Prospects
China	Hot Prospect	Honduras	Early & Interested Markets	Nicaragua	Early & Interested Markets	Russian Federation	Evaluating	UK	Hot Prospects
Columbia	Early & Interested Markets	Hong Kong	Committed and Live	Nigeria	Early & Interested Markets	Saudi Arabia	Evaluating	USA	Committed and Live
Costa Rica	Early & Interested Markets	India	Hot Prospects	Norway	Hot Prospects	Singapore	Committed and Live	Uruguay	Early & Interested Markets
						Slovakia	Early & Interested Markets	Venezuela	Early & Interested Markets