



Act now to implement RCS



Click to Start



Rich  
Communications

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Key Contacts

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## It's time to implement RCS!

### The Opportunity

Rich Communications Services (RCS) is a driving force which will ensure your service retains relevance for your consumers – keeping them connected with your business and at the forefront of their minds. But it's more than that – it opens up a platform for future innovation and is the key to generating new revenue streams.

### The Threat

The switch by consumers to using communication services from Internet service offerings applications is significant. Consumers who embrace Internet service offerings solutions quickly become part of a community that does not include your brand. You will lose them – and not get them back.

Other factors are impacting this drift away from using the conventional package of messaging services you offer. Smartphone penetration combined with the spread of Online service providers services pushes SMS usage into decline. Market data in Holland and Korea clearly shows the negative impact of Online Service Providers. And ultimately, the erosion of messaging revenues will spill into voice revenues, resulting in an inevitable decline of ARPUs.

Currently, the most popular rich communication applications are from Online Service Providers (OSPs). Collaborative action by operators is vital to build a single global Rich Communications platform – across networks and devices – that will leverage the unique operator proposition of universality, QoS, service discovery, privacy and security and wrest the benefits of RCS away from OSPs.

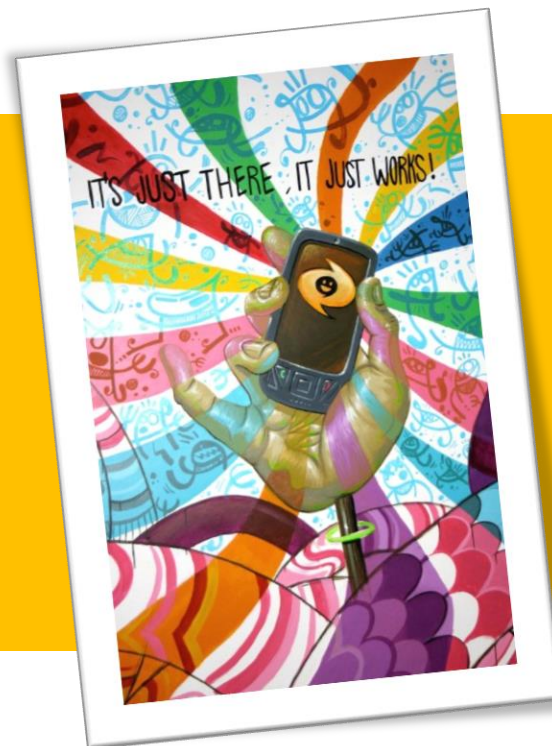
The GSMA has been working hard to establish an RCS ecosystem to facilitate this interoperability. Key to its development is the GSMA's Rich Communication Services (RCS) project, which comprises of experts in technical and commercial deployment, marketing, interoperability and specification evolution, all dedicated to ensuring the success of Rich Communications services based on RCS specifications.

This document sets out the resources that are on hand within the GSMA to help you with your RCS evaluation as well as a full contact list to enable you to take your discussions further.

## What is joyn?

**joyn** is the consumer-facing brand to identify and promote the RCS services. joyn makes everyday, mobile to mobile communications more engaging.

**joyn** brings you closer to the people in your mobile address book by combining all the ways you want to be in touch – Contacts, Chat, File share and Video share.



*joyn is a certification trade mark of GSMA*

<http://www.joynus.com>

***“It’s not about the services ... it’s about how we are bringing them to market”***

## It’s just there!



- **Natively integrated by mobile device manufacturers** in user interface communication flows
- **Maximum attainable service penetration** – like voice & SMS – including open market devices
- **Automatic service discovery** – customers discover new services in the right place, in the right context



## It just works!



- **Dynamic capability discovery** – only relevant & available services offered
- **Interworking** across operators and device boundaries
- “Just like voice and SMS”



## What is RCS?

The commercial specification for RCS was designed and specified by leading global operators based on clear market requirements and a deep understanding gathered from previous and service based trials about what works and doesn't work – in essence RCS is built by the industry for the industry. Native to the device – 'it's just there' – it gives users access to enriched services quickly and easily, simply by selecting from the multimedia capabilities in chat, file share or video share that are shown for each of their contacts – 'it just works'.

## What is joyn?

joyn is the consumer brand for the range of RCS IP communications services being offered by many mobile network operators to their customers. The joyn feature set expands as additional functionality is brought into the corresponding RCS specification.

The first release of joyn is based on RCS specification V1.2.2 and is complemented by the [joyn User Experience guidelines](#) and includes one to one chat (instant messaging), group chat, file sharing and video sharing services. The second release of joyn, ("Blackbird" release) is an evolution which incorporates a selection of the features in the RCS 5.1 v4.0 specification. The features and the user experience are defined in the [joyn Blackbird Product Definition Document](#) (PDD). The PDD includes guidance on user experience and technical implementation of RCS 5.1 v4.0 for:

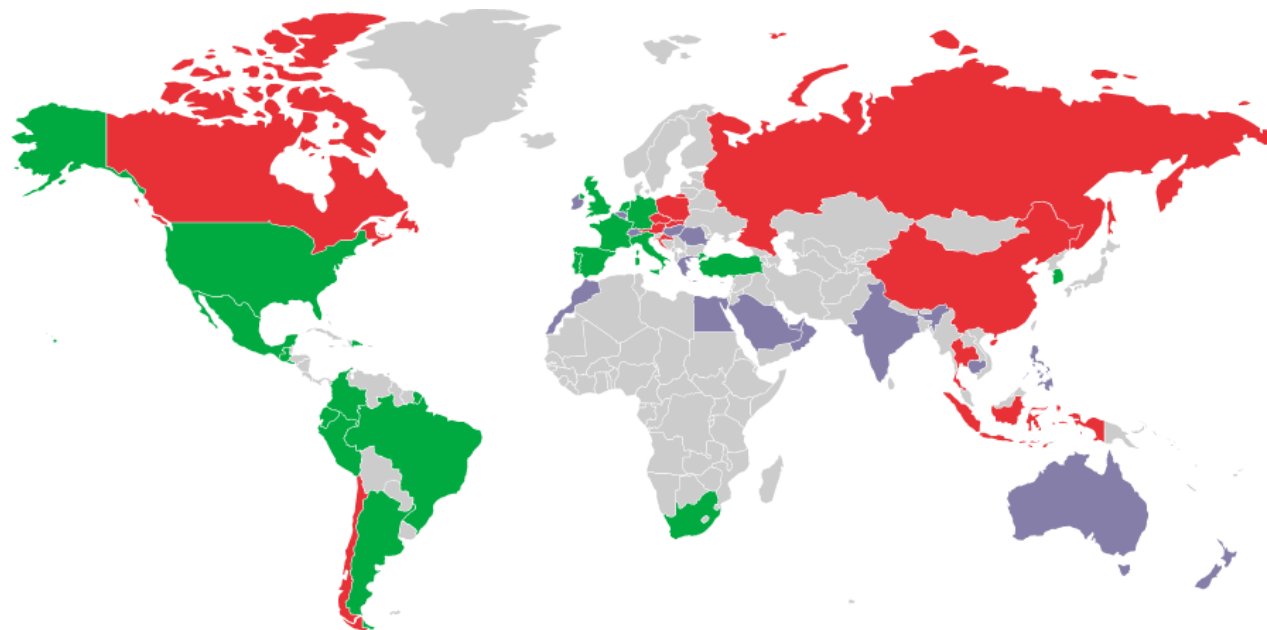
- |                            |                 |                        |                        |                     |
|----------------------------|-----------------|------------------------|------------------------|---------------------|
| ▪ Discovery and Activation | ▪ Group Chat    | ▪ Integrated Messaging | ▪ File Transfer        | ▪ Geo-location Push |
| ▪ 1-2-1 Chat               | ▪ IP Voice call | ▪ IP Video call        | ▪ Multi device support |                     |

The latest specification Release 5.1 V4.0 was published on 28th November 2013. This release provides small enhancements, bug fixes and clarifications to support deployments of RCS 5.1.

NB: The consumer brand is always 'joyn'. Release names such as 'Blackbird', 'Crane' etc. are industry names which are not presented to the customer.



## The GSMA's Rich Communication Services project is a global initiative



Markets committed and live

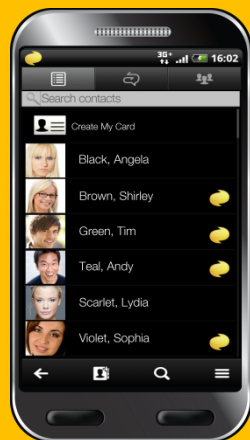


Hot prospects

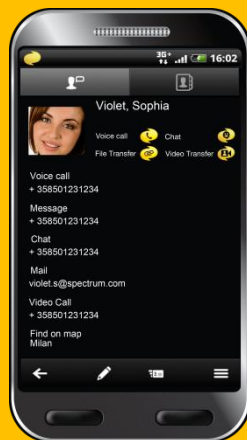


Early and Interested markets

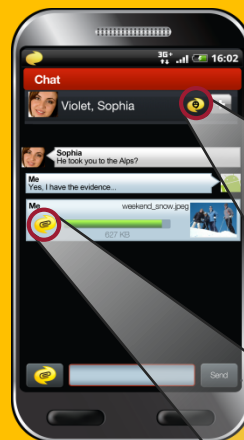
## Core RCS features (1 of 2): contacts, chat and file share



**Contacts who have joyn**



**My contact screen with joyn services available**



**Sharing files during chat is simple**

**joyn is mobile phone and network aware which means it automatically 'knows and shows' the ways you can share with any of your contacts – via chat, video, call or files – at any moment in time.**



**Here joyn knows and shows that Sofia Violet has all the joyn capabilities and this is shown on her contacts profile, where the icons are all present.**

See these features as YouTube videos at

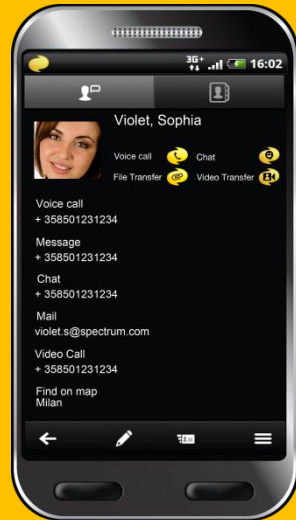
<http://www.joynus.com/contacts>

<http://www.joynus.com/features/chat/>

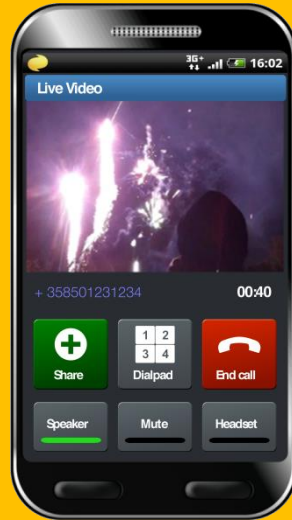
*joyn is a certification trade mark of GSMA*



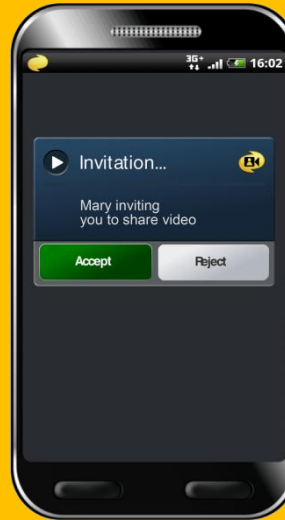
## Core RCS features (2 of 2): video share within a regular call



**I start a voice call  
with a joyn contact**



**...and decide to share a  
live video!**



**...my contact accepts**



**...and we see the same  
video**

**See these features as YouTube videos at**

**<http://www.joynus.com/features/video-share/>**

*joyn is a certification trade mark of GSMA*

## Devices and network integration

The majority of handset vendors are engaged with the project and have developed devices with RCS native capability. These devices have been made commercially available in some markets.

RCS joyn 'just works' because of verified interworking across operators and device boundaries. The RCS programme has developed an interoperability testing programme involving devices and networks.



Madrid, Spain July 2012; the first collaborative test event called Meta was organised by the GSMA with technical support from Orange, Telefonica and Vodafone. There were two main work streams: a technical stream to resolve issues that had been identified during interoperability testing and a product one to improve the user interface and user experience. The technical work stream confirmed a high level of interoperability between different RCS devices and clients, as well as to the three Spanish networks and also

confirmed a high level of convergence between the different RCS networks. At the same time, each participant of the event gained useful insights in to possible improvements in the quality of the RCS implementation either on the client or network side. In October 2012 the second Meta event was executed with focus on the hot fixes deemed essential for introduction prior to commercialisation of RCS devices and clients and networks. Verification of the User Experience was undertaken along with an additional Quality Check step which the RCS Operators introduced to assure the quality of client implementations. The GSMA team concluded the collaborative joyn Hot Fixes verification test event series in early Spring 2013 with a further set of participants, leading overall to accreditation of 16 joy Hot Fixes stacks.

July 2013; a distributed test event was executed, dedicated to verification of proper implementation of the video share service specifically with respect to correct image orientation for the receiver notwithstanding the sender-receiver combination, orientation and connectivity. This 'single feature' test event differed from META events which involve checking the complete set of features for a joyn release. Notwithstanding this, the event helped to reveal implementation issues and improve the RCS specification.

The Fifth GSMA RCS **Test Event (META#3)** concluded in Madrid in November 2013 proving the next release, **joyn Blackbird** (Drop 1). It involved collaborative testing with all 3 Spanish Operators and 10 Participants, both OEMs and Downloadable Client Providers. There are now OEMs, Client Providers and Operators' networks accredited to the very latest joyn release.

[Contact us](#) if your company would like to participate in future Test Fests.



Call



Chat



File Share



Video Share

*joyn is a certification trade mark of GSMA*



Rich  
Communications

## Demonstrated OEM Commitment

**9 of the Top 10 mobile device manufacturers**

**5 of the Top 5 infrastructure vendors**

**All of whom are ...**

- Committed to RCS
- Currently testing or preparing to test with mobile operators
- Have developed RCS native handsets



## Market Opportunity

### Differentiate your business

RCS enables operators to retain relevance amongst their customers, by offering them more flexible and innovative ways to communicate. It also provides the opportunity to re-invigorate and expand core product and service portfolios, creating potential new revenue streams. These new services will be built upon the core operator propositions of:

- Ubiquity
- Global interoperability
- QoS assurance
- Security and Privacy management

### Gateway to innovation

The key to driving future RCS innovation lies in exposing its API's to third party web and applications developers in order to exploit all these opportunities and others as yet unimagined.

Developers and ISPs interoperating with RCS will highlight the benefits of universality that operators can offer and the ensuing developments will quickly embed and extend the use of RCS in new user segments.

### Invest in the future

RCS is the future platform for operator-branded personal communication services in an "all-IP" world. Without the implementation of RCS, future interoperability will not be achievable.

Rich Communications is the service upgrade that will transition SMS and voice capabilities from Circuit Switched technology to an all-IP world, including VoLTE. Rich Communications and VoLTE share the same IMS investment because both are built using the same IMS technology, and leverage the same IMS capabilities.

For more detailed information on the business case for Rich Communications please see the "The Business Opportunity" section.

## Strategic Rationale

### The Threat

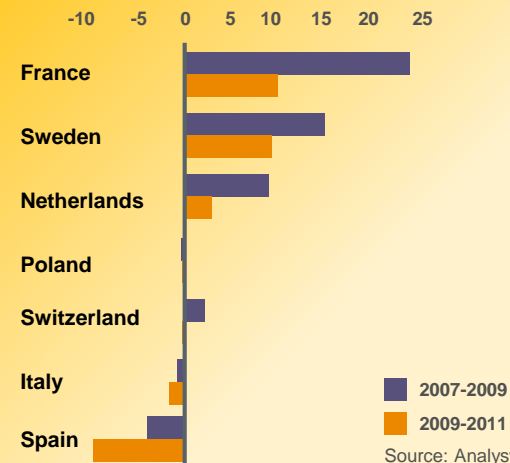
- Operators are already experiencing decline in SMS usage; without RCS, voice will follow
- Currently, the most popular Rich Communications applications are from Internet service offerings communication services
- Once your customers start using an Internet service offerings service it becomes, for them, the lead brand for communications services – not their operator

### RCS presents an **opportunity** for operators to

- Re-invigorate their core product and service portfolios
- Provide more choice and innovative offerings that “synch” with how customers are communicating today
- Retain relevance as the communication provider in the eyes of their customer
- Continue providing robust services underpinned by ubiquity, reliability and reach

**Taken together, these opportunities may help to reduce declines in revenue by increasing the value of their service offerings and setting up a strong alternative to narrower, community-based Internet service offerings solutions.**

**Average annual growth in phone companies' revenue from text messages (%)**



Source: Analysys  
Mason



- New communication services natively within the device
- **Maximum reach** – potential to reach anyone on any network and any device
- Intuitive use, seamless integration and easy discoverability – just like voice & SMS
- No need to install or set up:  
**it's just there – it just works**



- Strengthens the Operator core communication competency
- The initial feature set delivers substantial customer value
- Provides a **sustainable operator positioning in IP communication** as it will become a universal, interoperable service

## The power of 'It's just there'

Multi-step Internet service offerings process vs. RCS intuitive placement and automatic service discovery.

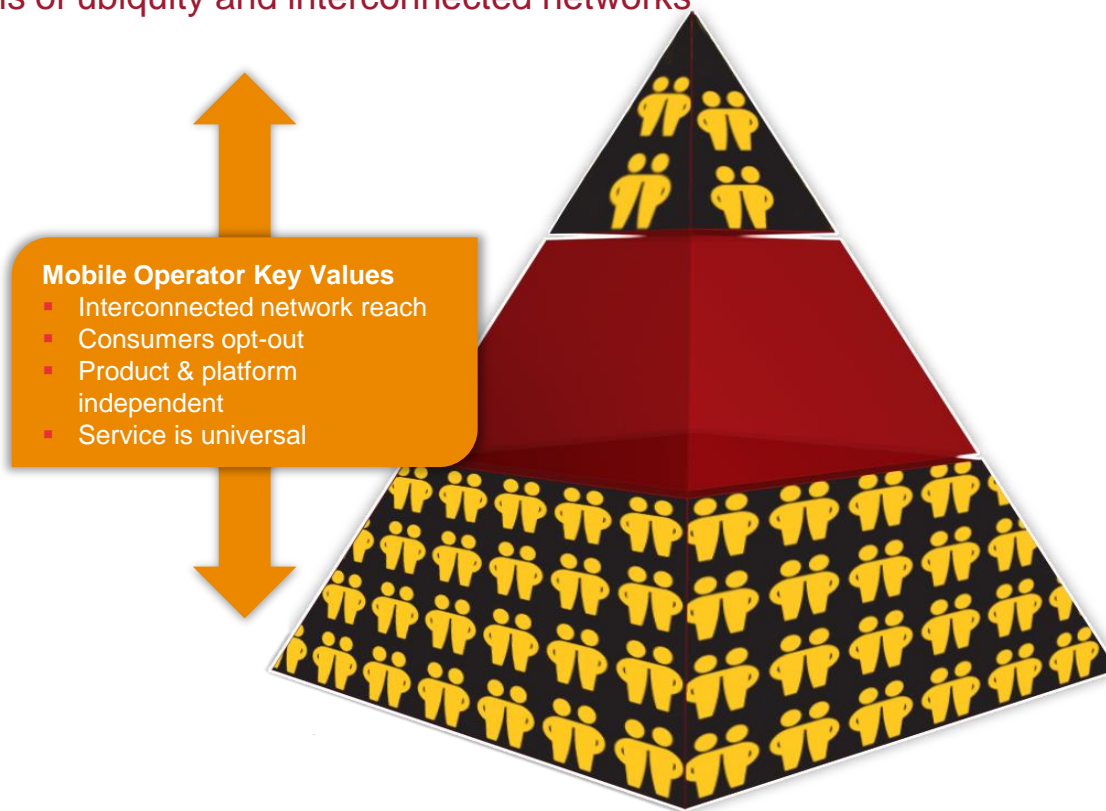
In contrast Internet service offering apps require installation, sometimes payment, account sign-in, and scanning of your address book.



## Here are your contacts for business case modelling advice

Name	Company	Email
Martin Soehn	Deutsche Telekom	<a href="mailto:martin.soehn@telekom.de">martin.soehn@telekom.de</a>
Alex Nourouzi	Orange	<a href="mailto:alex.nourouzi@orange-ftgroup.com">alex.nourouzi@orange-ftgroup.com</a>
Antonella Napolitano	Telecom Italia	<a href="mailto:antonina.napolitano@telecomitalia.it">antonina.napolitano@telecomitalia.it</a>
Javier Arenzana Arias	Telefonica	<a href="mailto:javier.arenzanaarias@telefonica.es">javier.arenzanaarias@telefonica.es</a>
Enrique Marti	Vodafone	<a href="mailto:enrique.marti@vodafone.com">enrique.marti@vodafone.com</a>

The opportunity for mobile operators is to penetrate both the high end and the mass market due to the unique strengths of ubiquity and interconnected networks



## A key area for successful RCS deployment is interconnect

A practical framework for RCS Interworking has been developed on the basis of existing principles as defined in GSMA Interconnect templates.

- Existing GSMA contract templates have been reused for RCS service components (File Share, IM, Group IM, Video/Image Share); but, advanced/adapted where necessary to achieve the overall objective
- Creation of practical guidelines (template contract, RCS Interworking requirements, practical recommendations) will enable easy implementation of RCS Interworking by all interested operators
- In May 2012 IWG approved two new PRDs
  - IN.25 "proposed national and international RCS Interworking requirements"
  - AA.69 "Interworking template agreement for RCS"

These documents will be maintained and evolved by the GSMA's Interconnect Solutions Working Group: IWG (SOLU) and are also available through the GSMA's Infocentre2.



## RCS can be deployed via one of three options

The cost elements of a business model will vary according to an operator's installed technology and levels of sensitivity over owning versus renting core network capabilities. A critical question is the cost of deploying an IMS; whilst this can only be fully answered by infrastructure vendors it is agreed that RCS can be deployed via one of three options:

- Sole ownership
- Shared ownership
- Third party hosting

Depending on the option, the profile of a programme can change from one of CAPEX return on investment to a lower risk market entry programme.

Please see the Technical Evaluation section for the various IMS implementation options.

## Devices & Clients

All RCS project team operators have received solid commitments for devices that will allow them to launch with devices from multiple OEMs. The following list shows individuals within the partnering OEMs who will be able to open discussions regarding device availability / timing / device types.

Company Name		Single Point of Contact	Email
Blackberry		Mr. Calum Tsang	<a href="mailto:catsang@blackberry.com">catsang@blackberry.com</a>
HTC		Mr. Wasif Iqbal	<a href="mailto:wasif_iqbal@htc.com">wasif_iqbal@htc.com</a>
Huawei		Mr. Milan Patel	<a href="mailto:milan.patel@huawei.com">milan.patel@huawei.com</a>
LGE		Mr. Sean Chie	<a href="mailto:sean.chie@lge.com">sean.chie@lge.com</a>
Motorola		Mr. Gary Holmes	<a href="mailto:kptc64@motorola.com">kptc64@motorola.com</a>
Nokia		Mr. Santtu Ahonen	<a href="mailto:Santtu.Ahonen@nokia.com">Santtu.Ahonen@nokia.com</a>
Samsung		Mr. Yeo-jeong Yoon / Mr. Kyong Keun Lee	<a href="mailto:yeojeong.yoon@samsung.com">yeojeong.yoon@samsung.com</a> / <a href="mailto:kyungkeun.lee@samsung.com">kyungkeun.lee@samsung.com</a>
Sony Mobile Communications		Mr. Madhavi Subramanian	<a href="mailto:Madhavi1.Subramanian@sonymobile.com">Madhavi1.Subramanian@sonymobile.com</a>
ZTE		Mr. She Kun	<a href="mailto:she.kun@zte.com.cn">she.kun@zte.com.cn</a>



There are many network, device and apps vendors exhibiting their products and solutions on the [RCS Virtual Exhibition](#)



For more details [click here](#)

## Unlock and exploit new revenue streams

RCS is the starting point for an evolving suite of communication services.

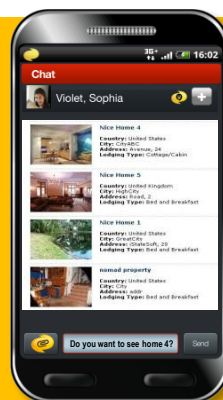
### For consumers:

- P2P communication
- Gaming
- Social Media
- TV communication
- Geo-location
- Real-time info services

### For business:

- Interactive IVR
- Self-service CRM
- Conference calls
- Advertising
- Enterprise solutions
- Service re-selling

Add chat capabilities to apps without having to maintain a communication service backend



Group collaboration



Add video to customer care calls



RCS enabled multiplayer gaming



Operators will be able to evolve services to exploit and differentiate their offering to reach more sophisticated segments via easy to use apps from 3rd party developers.

The RCS specification is continually evolving and developing as new opportunities and capabilities surface.

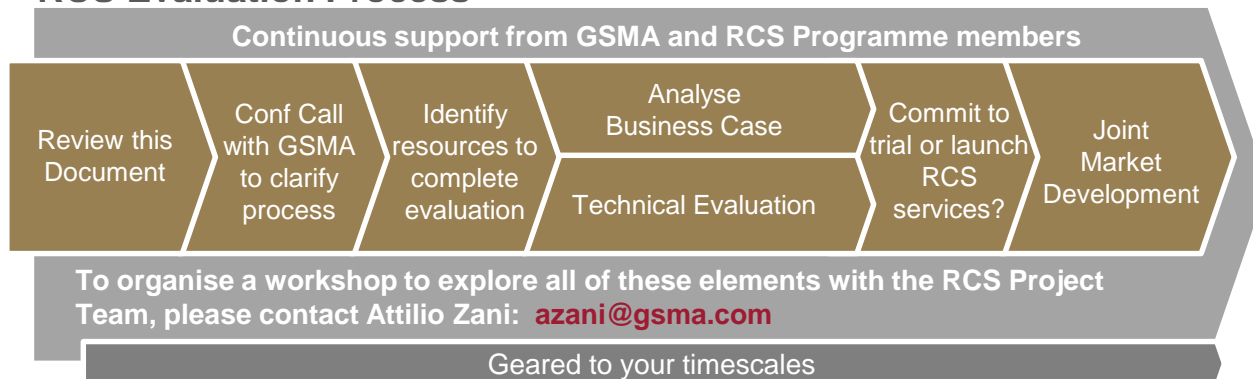
[Click here](#) to read more about the latest specification

## How can the GSMA help your organisation?

The GSMA represents the interests of mobile operators worldwide. Spanning more than 220 countries, the GSMA unites nearly 800 of the world's mobile operators with more than 230 companies in the broader mobile ecosystem, including handset makers, software companies, equipment providers and Internet companies, as well as organisations in industry sectors such as financial services, healthcare, media, transport and utilities. It provides comprehensive resources and a wealth of expertise for operators to draw upon when considering the business opportunity and the technical implementation options for RCS.

As the host of the RCS community, GSMA has a leadership team and working groups comprising key players from operators across the industry. These teams offer considerable expertise – expertise in what it takes to deploy inter-operator services like RCS either nationally or internationally and from both commercial and technical perspectives. This expertise is accessible to you today with a rigorous evaluation process outlined below.

### RCS Evaluation Process



## GSMA Board

GSMA Board Strategy Committee

## RCS/VoLTE Leadership Team

Project Chair  
Deutsche Telekom  
Kobus Smit

Telefonica  
Javier Arenzana Arias  
Juan Jose Lozano

Vodafone  
Enrique Marti  
Phil Carter

Deutsche Telekom  
Martin Soehn

Orange  
Alex Nourouzi  
Thibaud Mienville

Telecom Italia  
Antonella Napolitano

SK Telecom  
Wooyong Choi

AT&T  
Matt Bailey

Verizon  
Richard Phipps

GSMA  
Graham Trickey

## Groups

Strategic Engagement  
Attilio Zani,  
GSMA

Implementation Support  
Oscar Gallego  
Vodafone

Global Specification  
Oscar Gallego, Vodafone  
Jerry Shih, AT&T

Marketing  
Bob Lovett,  
GSMA

Product  
Pablo Casso, Telefonica

## Programme Management Team

Business Lead  
Graham Trickey

Programme  
Tessa Allum

Programme Admin.  
Henry Bowes

## The Project Structure

The Rich Communication Services project is set up by the industry with appropriate governance and structure to bring maximum power to bear in ensuring the success of RCS. It is part of the GSMA's Network 2020 Programme

## Groups

Groups	These groups play a central role in the RCS strategy. Each group has Subject Matter Experts from participating mobile operators and a GSMA representative. The GSMA provides management and facilitation of the flow of information. The Implementation Support and Global Specification Group are open to appropriately qualified GSMA operator companies.	
	Mission and Output	Subject Matter Expert
Strategic Engagement	Strategic Engagement consists of GSMA resources who provide outreach to operators, working with them to support the launch of interoperable RCS services. The team supports mobile operators in their individual and collective decisions by means of strategic rationale and advice on regulatory, legal and business case issues. Once operators have made the decision to deploy RCS, the Strategic Engagement team will support implementation projects and help to drive interoperable market launches. They share best practice of RCS / VoLTE market deployments throughout the lifecycle help, and help to drive scales of RCS by encouraging the development of Enterprise and other applications, and developing monetisable commercial models with partners.	Attilio Zani (GSMA) <a href="mailto:azani@gsma.com">azani@gsma.com</a>
Global Feature Requirements	The Global Feature Requirements (GFR) group consists of operator representatives and is managed by a Project Manager from GSMA. The role of the GFR Group is to create implement and maintain the feature roadmap, and ensuring the best possible user experience of those features. GFR works to ensure the availability of embedded Rich Communications clients across the whole range of devices available from operators and the open market, and oversees the RCS App project which introduced a common joyn™ client for all operators. It is also responsible for leveraging Rich Communications as a platform for innovative services based on APIs.	Thomas Welzel <a href="mailto:thomas.welzel@telekom.de">thomas.welzel@telekom.de</a>
Marketing	The Marketing Group operates across all the projects with the Network 2020 programme. The Marketing Team is responsible for energising communications and making all marketing related activities for RCS actually happen. They work actively within the Operator member community to raise awareness of RCS news and channel it through to all relevant audiences.	Bob Lovett (GSMA) <a href="mailto:blovett@gsma.com">blovett@gsma.com</a>
Global Specification	The role of the Global Specification Group is to define the technology roadmap and agree the global technical specifications for services in partnership with the GSMA Working Groups: RCS and VoLTE. The Group makes appropriate change requests to the global Standards Development organisations (SDOs) as needed to support Network 2020, represents the technical function of RCS in other industry and standardization bodies and provides technical support to the Product and Implementation Support Group.	Oscar Gallego (Vodafone) <a href="mailto:oscar.gallego@vodafone.com">oscar.gallego@vodafone.com</a> Jerry Shih (AT&T) <a href="mailto:js9053@att.com">js9053@att.com</a>
Implementation Support	The Implementation Support Group consists of operator representatives and is managed by a Project Manager from GSMA. The Group's role is to provide the joyn™ self-accreditation framework and collaboration for the GCF Certification Programme; delivering technical support to operators, device manufacturers, client providers, hosted solution providers and other members of the RCS ecosystem; managing test fest events and supporting operator implementations.	Oscar Gallego (Vodafone) <a href="mailto:oscar.gallego@vodafone.com">oscar.gallego@vodafone.com</a>

## Strategic Engagement strategy

The GSMA provides comprehensive resources and a wealth of expertise for operators to draw upon when considering the business opportunity and the technical implementation options for Rich Communications. As the host of the RCS community, GSMA has set up expert teams and working parties comprising key players from operators across the industry. These experts will apply their considerable knowledge and insight to help you evaluate the case for RCS for your organisation, and highlight potential pitfalls.

From our collaborative working with international operators and device manufacturers we know that many perceive certain barriers to adoption that either don't exist or are already being addressed. The GSMA is keen to work with operators in each national market to launch RCS, at the same time ensuring a strong focus on interoperability in order to deliver the best experience to end-users.

To help achieve this we will ensure there are:

- Legal frameworks in place e.g. commercial interworking agreements for wholesale interconnect billing and roaming
- Technical interoperable solutions for each feature
- Joint marketing communications (where appropriate)

For further information on the RCS Strategic Engagement strategy, or if you would like the GSMA to facilitate inter-operator discussions in your market, please contact:

**Attilio Zani**  
**Strategic Engagement Director**  
[azani@gsma.com](mailto:azani@gsma.com)





The GSMA's RCS Strategic Engagement team has established a process designed to facilitate national and international operability.

After preliminary calls or meetings have established sufficient interest between multiple operators meeting together, the GSMA arranges in-country roundtables:

#### **Interoperable Launch Agreement Roundtable #1**

Introductory meeting to combine understanding and share agreement of the value to launch Rich Communications.

Desired outcome is to have all operators in the meeting fully understand the overall business and strategic rationale for Rich Communications and agree that interoperability is the key to its success.

#### **Interoperable Launch Agreement Roundtable #2**

Following in-company discussions participants are to feed back to the group current perspectives on RCS and attempt to cover any outstanding questions. Country specific limitations or constraints will be identified here.

Desired outcome is to agree timetable to launch Rich Communications.

#### **Interoperable Launch Alignment meetings**

There will be multiple alignment meetings starting with a planning session in which a local country plan is put together for continued engagement through to launch.

Desired outcome includes technical / marketing / business / legal sessions to enable interoperability.

# The GSMA's Strategic Engagement process for RCS

## Stage 1: Contact

Initiate contact with each national operator

Market research  
↓  
Identify appropriate contact(s)  
↓  
Intro email and invitation to conf call  
↓  
Provide access to technical and commercial documentation and experience sharing

GSMA  
responsibility

## Stage 2: Promote

Promote RCS proposition and organise Roundtable

Conf calls and/or F2F meetings with each MNO  
↓  
If feedback is positive arrange Roundtable  
↓  
Further detailed market research in preparation for Roundtable  
↓  
MNOs begin technical and market evaluation

Local MNO  
responsibility

## Stage 3: Roundtables

Conduct Roundtables, build consensus and commitment

Facilitate "Launch Agreement" Roundtable(s)  
↓  
Facilitate "Launch Alignment" meeting(s)  
↓  
MNOs set-up working groups  
↓  
GSM and MNOs Address technical, commercial or legal issues raised by working groups

## Stage 4: Planning

Operators plan trials and/or commercial service launch

MNOs negotiate and sign Lol  
↓  
MNOs conduct internal reviews of product proposition  
↓  
MNOs consider implementation options and evaluate/select vendors  
↓  
MNOs agree implementation plan  
↓  
Monitor progress via Steering Group

## Stage 5: Launch

Operators launch trials/commercial services

MNOs conduct interworking tests  
↓  
MNOs negotiate and sign interconnect agreements  
↓  
MNOs launch interoperable services  
↓  
Monitor progress via Steering Group  
↓  
Collect user/usage data and share with rest of industry

RCS/VoLTE Leadership Team	Role, Organisation	Email
Kobus Smit	Project Chair, Deutsche Telekom	<a href="mailto:kobus.smit@telekom.de">kobus.smit@telekom.de</a>
Martin Soehn	Deutsche Telekom	<a href="mailto:martin.soehn@telekom.de">martin.soehn@telekom.de</a>
Alex Nourouzi	Orange	<a href="mailto:alex.nourouzi@orange-ftgroup.com">alex.nourouzi@orange-ftgroup.com</a>
Thibaud Mienville	Orange	<a href="mailto:thibaud.mienville@orange-ftgroup.com">thibaud.mienville@orange-ftgroup.com</a>
Antonella Napolitano	Telecom Italia	<a href="mailto:antonina.napolitano@telecomitalia.it">antonina.napolitano@telecomitalia.it</a>
Javier Arenzana Arias	Telefonica	<a href="mailto:javier.arenzanaarias@telefonica.es">javier.arenzanaarias@telefonica.es</a>
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Contact with these key RCS experts during your own evaluation process is actively encouraged. Discover how they have championed the commercial and technical arguments for the deployment of Rich Communications within their own organisations. Why not take advantage of their experience, which they are keen to share with you.



# RCS Specification

The RCS specification has been developed by the founding operators of the RCS project who have committed to launching the service, working together with leading infrastructure and device vendors.

## V1.2.2

**V1.2.2** specification was published as a maintenance release of Version 1.2 of the RCS specification, and includes only bug fixes/lessons-learnt based on recent V1.2.1 IOT efforts in preparation for commercial launches. The specification is supplemented by the [RCS Implementation Guidelines](#). Click [here](#) to download V1.2.2

## 5.1 V1.0

**5.1** V1.0 is completely backward compatible with the V1.2 specifications and 5.0 and introduces additional new features such as Group Chat Store & Forward, File Transfer in Group Chat, File Transfer Store & Forward, and Best Effort Voice Call, as well as lessons-learnt and bug fixes from the V1.2 interoperability testing efforts. Global interoperability is a key aspect of these specifications, and 5.1 supports both OMA CPM and OMA SIMPLE IM.

▪ Standalone Messaging	▪ Content Sharing	▪ Geo-location Exchange
▪ 1-2-1 Chat	▪ Network based blacklist	▪ Social Presence Information
▪ Group Chat	▪ IP Voice call	▪ Capability Exchange based on Presence or SIP options
▪ File Transfer	▪ Best Effort Video call	

## 5.1 V2.0

**5.1** V2.0 introduced a number of incremental improvements and bug fixes to RCS 5.1 V1.0 that improve the user experience and resolve issues that were noticed in deployed RCS networks.

## 5.1 V3.0

**5.1** V3.0 is aligned to the latest version of the referenced industry standards (OMA CPM 2.0 and SIMPLE IM 2.0), and includes bug fixes and clarifications to support deployment.

## 5.1 V4.0

**5.1** V4.0 provides small enhancements, bug fixes and clarifications to support deployments of RCS 5.1.

## Interoperability

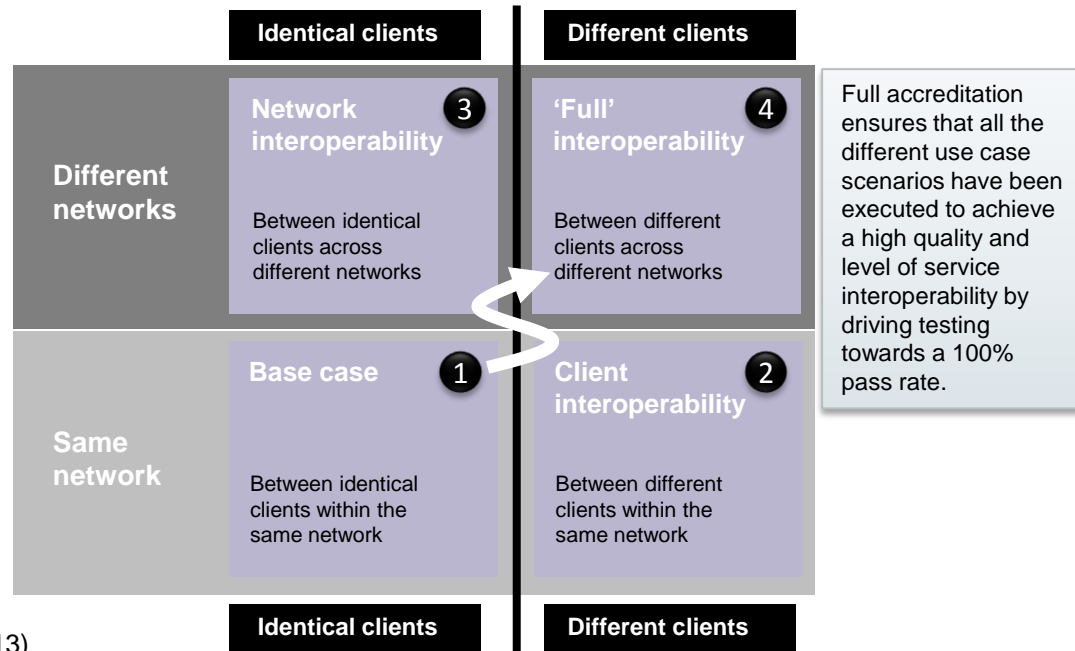
The goal of interoperability testing is to ensure that devices or clients and networks interoperate seamlessly, providing a high quality, wide-ranging and trouble free rich communications service embodying the “it’s just there, it just works” proposition. Simply put, the group’s vision is that a user can insert a SIM into any “joyn” trade marked RCS device and it will just work.

The IOT Group ensures seamless interoperability by mandating the testing of clients and networks within a test harness in different configurations. In order to award “joyn” accreditation, test results must be to a very high standard.

**Pre-accreditation testing and test fest**

GSMA and GCF align accreditations of RCS devices (Nov 1<sup>st</sup> 2013)  
Full details of the changes and the submission process are available on the GSMA and GCF websites

[www.gsma.com/rcs](http://www.gsma.com/rcs)  
[www.globalcertificationforum.org](http://www.globalcertificationforum.org)



## Interoperability

The heart of the IOT accreditation framework is the test harness.

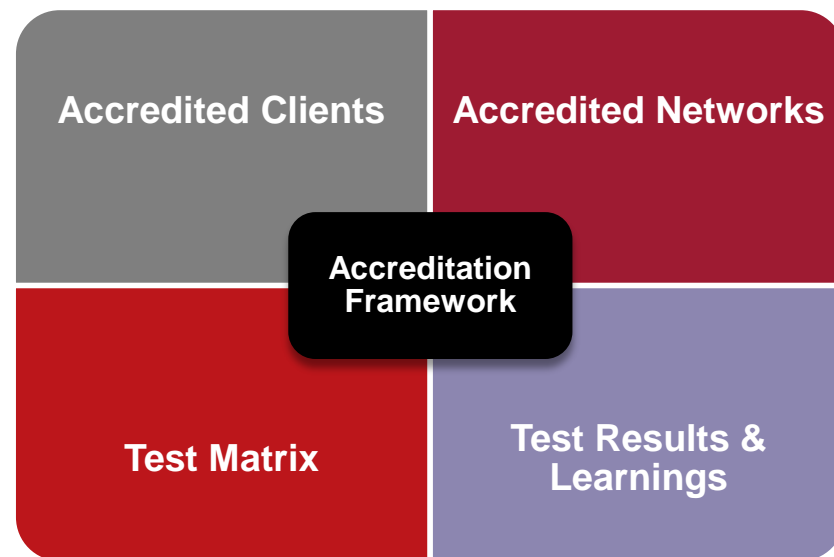
The over-riding test concept is one of self-certification. Each RCS client, device and operator must establish their own self-accreditation and testing process in accordance with the approved test harness, the tool that defines both the IOT criteria and promotes an efficient way of verifying interoperability.

The Test Matrix is a configurable matrix of end-to-end (E2E) test cases which generates the set of tests required to be passed dependent upon the operator or test environment setup. Each test case has its own status: Mandatory, Recommended or Optional.

GSMA and GCF align accreditations of RCS devices (Nov 1<sup>st</sup> 2013)  
Full details of the changes and the submission process are available on the GSMA and GCF websites

[www.gsma.com/rcs](http://www.gsma.com/rcs)

[www.globalcertificationforum.org](http://www.globalcertificationforum.org)





## Interoperability

The IOT strategy was created in three phases towards the ultimate goal of achieving an effective test harness and transferring IOT responsibilities to a sustainable industry set up. We are presently transitioning from Phase 1 to Phase 2.



*joyn is a certification trade mark of GSMA*

## Implementation Options

A number of implementation options exist for RCS including entry-level and variable cost options. The following slides describe the different options and provide examples of vendors who support each option.

Some definitions are necessary to explain the differences between ‘functional’ and ‘physical’ architectures:

- **‘functional’ architectures** – this means they define functional elements and the reference points that exist between them. However, in some implementations, some of these functional elements can be clustered together into a single box (or physical element) and the interfaces between those functions are realised internally.
- **‘physical’ architectures** – the actual physical elements and the interfaces between those elements that are implemented in a network build.
- **For IMS**, it is widely acknowledged that the Functional architecture defined by 3GPP (3GPP TS 23.228) can be simplified in various ways when building a physical implementation.

## IMS functional architecture - basics

### Home Subscription Server (HSS)

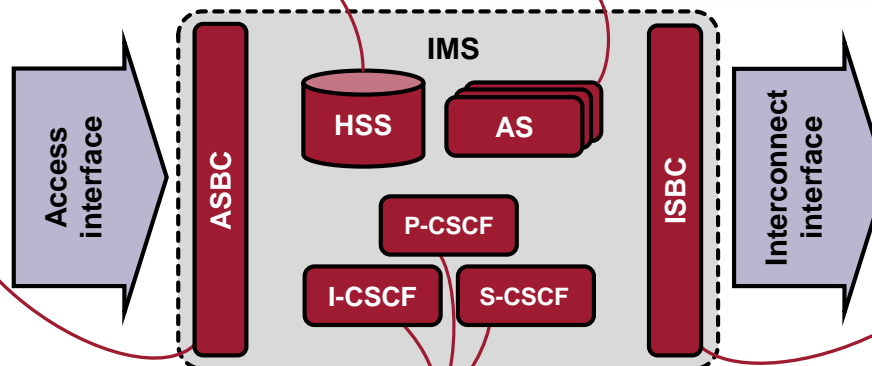
- Database storing subscription profiles for customers. Profiles are download to S-CSCF after Authentication.

### Application Servers (AS) – Application functionality associated with RCS specific applications

- IM-AS: Provides chat & file transfer intelligence and advanced billing
  - Options-AS: Enables multi-device
  - Handset notifications AS: Enables the handset asynchronous notification
- Other AS's may also be included in the IMS domain e.g. VoLTE, Video Telephony.

### Access Session Border Controller (ASBC)

- Controls the edge of the IMS network.



### Interconnect Session Border Controller (ISBC)

- Manages in-coming and out-going traffic from and to the IMS domain, and protects IMS from external attack.

### Call Session Control Functions (CSCF) – SIP servers responsible for the enforcement of subscription profiles and authentication of customers.

- Proxy CSCF – performs access control
- Interrogating CSCF – top level authentication of the customer
- Serving CSCF – service control and integration

## Implementation Options - Cost Reduction

There are two approaches to cost reduction (not mutually exclusive!)

- **Geographic centralisation** – the sharing of some or all of the IMS functions between more than one operation. Options include:
  - AS centralisation
  - Multi-operation hub and spoke
  - Third party hosted IMS
- **Physical consolidation** – clustering together functional elements into different physical implemented boxes. Options include:
  - ‘RCS in a box’
  - ‘IMS in a box’
  - Edge-controlled IMS

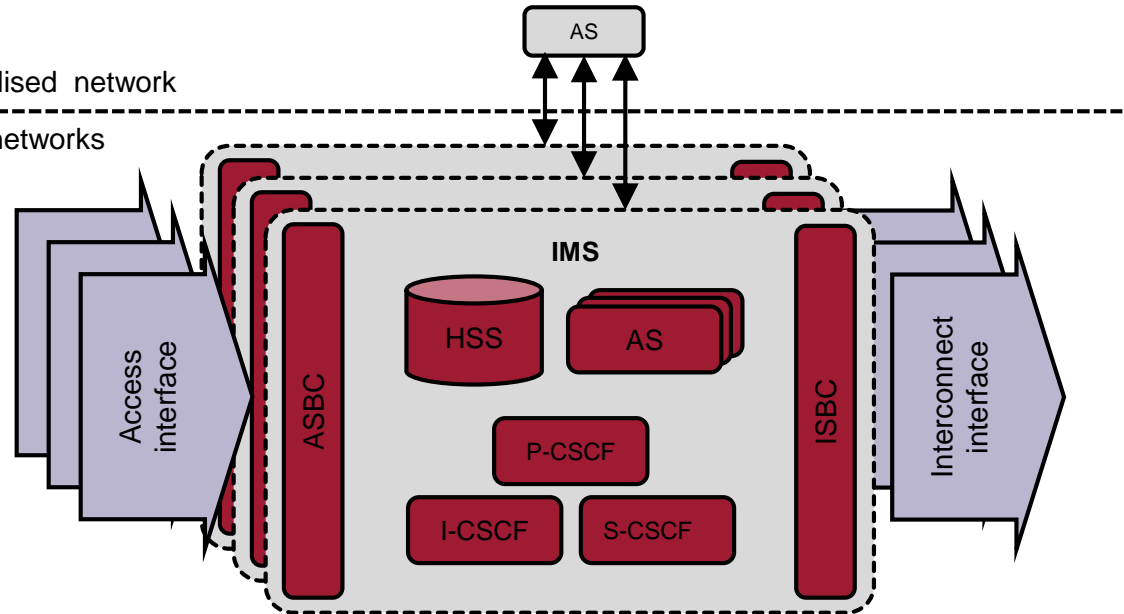
## Application Services Centralisation

Geographic centralisation options (deployment options)

**Application Services** are consolidated into a centralised location and accessed by each local IMS domain to deliver service. Offers greater economy of scale on AS and greater commonality in service implementation.

Centralised network

Local networks



## Hub and Spoke / 3rd party hosted

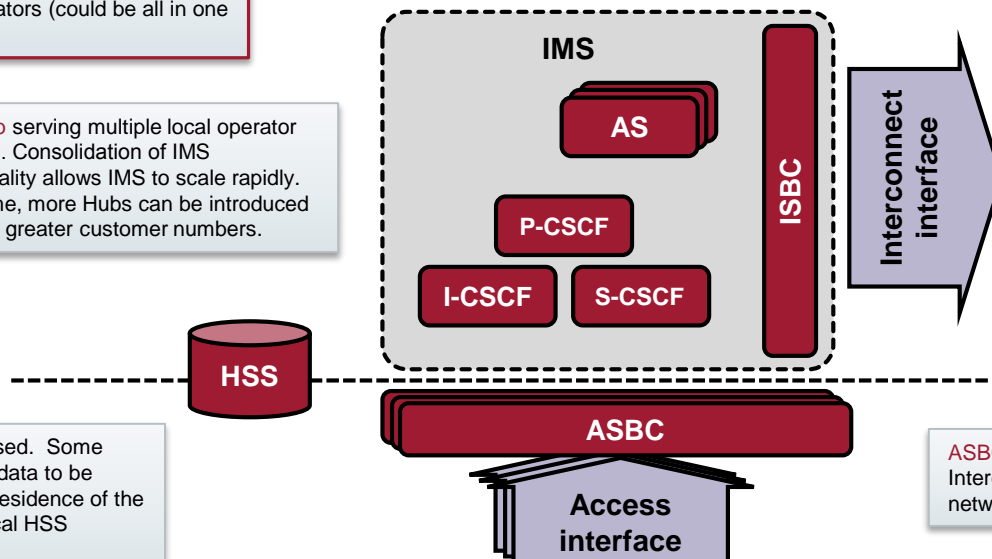
**Hub and Spoke** – all elements owned by one 'Group' Operator, Local Networks being national operations of the Group.

**3rd Party Hosted** – 3rd Party owns and operates centralised Hub; Local networks from different operators (could be all in one country or internationally diverse).

### Geographic centralisation options (deployment options)

**IMS Hub** serving multiple local operator 'spokes'. Consolidation of IMS functionality allows IMS to scale rapidly. Over time, more Hubs can be introduced to serve greater customer numbers.

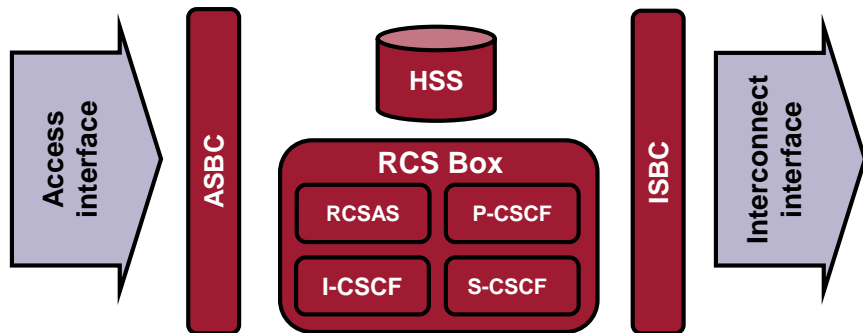
**HSS** can be local or centralised. Some regulators require customer data to be stored within the country of residence of the customer which implies a local HSS deployment.



**Common interconnect** ensures consistent NNI. May have to route locally for regulatory reasons.

**ASBC** deployed locally to enable Lawful Intercept requirements to be met – local network required to be SIP

## 'RCS in a box'



### Example suppliers of 'RCS in a box' solutions

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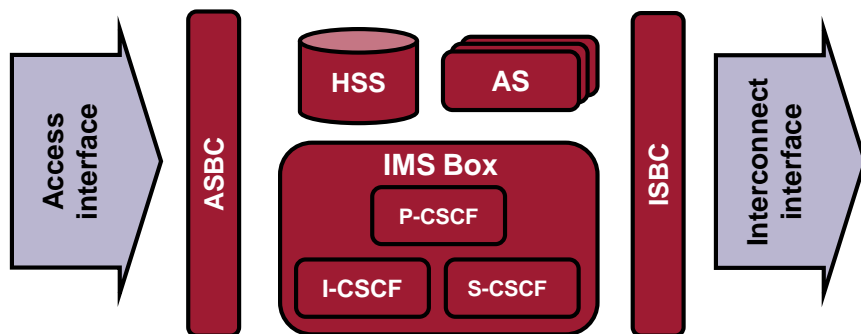
### Physical consolidation options (solution options)

- RCS box contains P-, I-, and S-CSCF functions and the AS function for RCS
- Some vendors sell this as 'IMS-less' RCS, but reality is they have at least P- and I-CSCF functions included
- Can be fragmented into component parts if integrated into a full IMS implementation at a later date

If you wish to appear featured in the example of suppliers upon the next update or wish to exhibit on the Rich Communications Virtual Exhibition please contact [rcs@gsma.com](mailto:rcs@gsma.com). For the latest news on our [Operator and Partner Ecosystem](#)



## 'IMS in a box'



### Physical consolidation options (solution options)

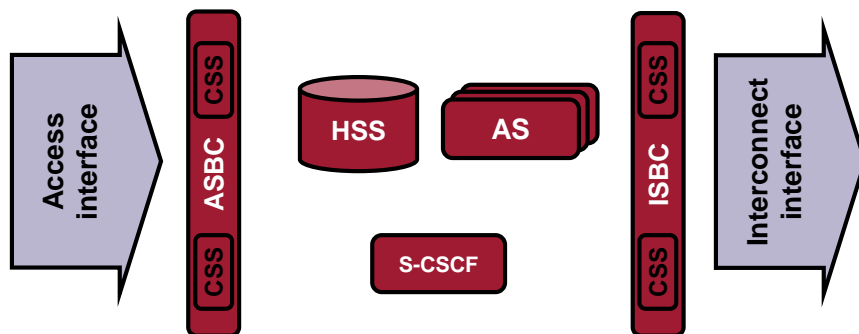
- IMS box contains P-, I-, and S-CSCF functions
- AS's separated – may be from other vendors or to offer diversification in service combinations to customers
- P-, I- and S-CSCF tend to be software-based but on common hardware, hence elements can scale independently and be fragmented as customer base grows
- Typical vendors – entry level offering from Tier 1 vendors (Alcatel-Lucent, Ericsson, Huawei, Nokia Siemens Networks...)

### Example suppliers of 'IMS in a box' solutions

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If you wish to appear featured in the example of suppliers upon the next update or wish to exhibit on the Rich Communications Virtual Exhibition please contact [rcs@gsma.com](mailto:rcs@gsma.com). [Click here](#) for the latest news on our Partner Ecosystem

## Edge controlled IMS



### Example suppliers of Edge controlled IMS solutions

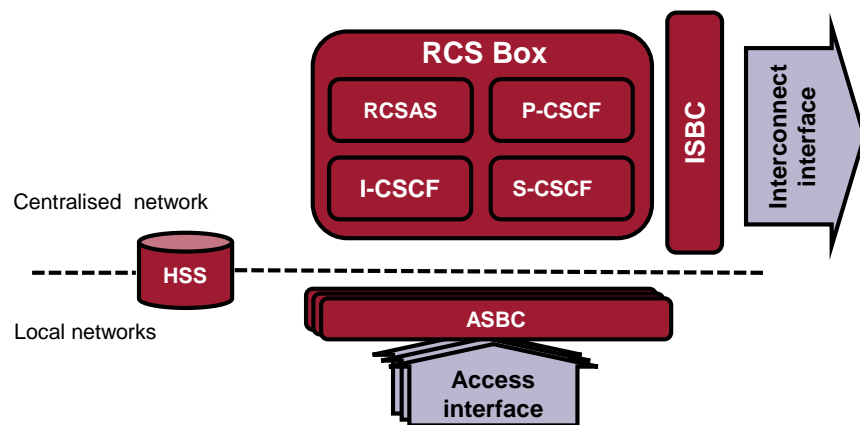
Supplier Name	Contact	Email
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Nable Communications	Kang Seong Heon	<a href="mailto:sales@nablecomm.com">sales@nablecomm.com</a>

### Physical consolidation options (solution options)

- P- and I-CSCF functions reside in SBCs
  - SBC might also contain other IMS elements – Policy Control Enforcement, Media Resource Function, Media Gateway.
  - SBC vendors would argue they reside there anyway!
- S-CSCF is simply managing authentication credentials and Service brokering.
- Provides a 'shell' around any other vendor's core IMS elements

If you wish to appear featured in the example of suppliers upon the next update or wish to exhibit on the Rich Communications Virtual Exhibition please contact [rca@gsma.com](mailto:rca@gsma.com). For the latest news on our [Operator and Partner Ecosystem](#)

## Rapid RCS starter – 3rd party hosted RCS in a box



### Physical consolidation options (solution options)

- Requires 3rd Party to host RCS box; operators to acquire ASBCs
- ISBC vendors may be able to implement 'RCS Box' function on same hardware as ISBC.
- Guaranteed Interop if this is only option in market as starting point of service.

### Example suppliers of 3<sup>rd</sup> party hosted RCS in a box solutions

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If you wish to appear featured in the example of suppliers upon the next update or wish to exhibit on the Rich Communications Virtual Exhibition please contact [rcs@gsma.com](mailto:rcs@gsma.com). For the latest news on [Hosted Solutions](#)

## RCS specification IOT & implementation contacts

To discuss the RCS specifications, interoperability and the architecture and implementation options speak to any of the following members of the RCS Programme Team\* or the GSMA can arrange a workshop to explore these issues further.

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\* Other operators also form part of the RCS Project Team

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## Example Lists of Supplier Contacts

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