Rich Communication Services

Rich Communication Services is a communication protocol between mobile-telephone carriers and between phone and carrier, aiming at replacing SMS messages with a text-message system that is richer, provide phonebook polling (for service discovery), and transmit in-call multimedia.

It is marketed under the names **RCS**, **Advanced Messaging**, **Advanced Communications**,[1] **joyn**,[2] and **Message+**.

Rich Communication Services	
Developer(s)	GSM Association
Initial release	2012
Development status	Active
Operating system	Android, Windows 10 Mobile
Available in	Multilingual
Type	Instant Messaging
License	Proprietary software
Website	www.gsma .com /futurenetworks /rcs/ (https://ww ww.gsma.com/f uturenetworks/ rcs/)

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History

The Rich Communication Suite (RCS) industry initiative[3] was formed by a group of industry promoters in 2007. In February 2008 the GSM Association officially became the project 'home' of RCS and an RCS steering committee was established by the organisation.

The scope of the steering committee's work was to entail the definition, testing, and integration of the services in the application suite known as RCS.[4][5][6] Three years later, the RCS project released a new specification – RCS-e (e = 'enhanced'), which included various iterations of the original RCS specifications. The GSMA program is now called Rich Communication Services.[7]

The GSMA published the Universal Profile in November 2016.[8] The Universal Profile is a globally agreed, single GSMA specification for advanced communications. Carriers that deploy the Universal Profile guarantee interconnection with other carriers. 47 mobile network operators, 11 manufacturers, and 2 OS providers (Google and Microsoft) have announced their support.[9] Google's Jibe Cloud platform is an implementation of the RCS Universal Profile, designed to help carriers launch RCS quickly and scale easily.[10] Google supports RCS on Android devices with the Android Messages app. The Jibe RCS cloud service partners with Sprint, Rogers, Telenor, and Vodafone; Orange, Deutsche Telekom, and Globe are committed to the service.[11]

On February 22, 2018, Google made an announcement that in collaboration with Sprint, it has enabled campaigns for a handful of global brands to send RCS enabled messages to consumers.[12] These brands include 1-800-Flowers.com, Booking.com, SnapTravel (https://www.getsnaptravel.com), and Subway.

RCS specifications

RCS combines different services defined by 3GPP and Open Mobile Alliance (OMA) with an enhanced phonebook. Another phone's capabilities and presence information can be discovered and displayed by a mobile phone. RCS reuses 3GPP specified IMS core system as the underlying service platform taking care of issues such as authentication, authorization, registration, charging and routing.

Universal Profile RCS has had one release, and currently has one scheduled:[13]

Release 1 (November 2016)
  Includes core features such as capability discovery which will be interoperable between regions, chat, group chat, file transfer, audio messaging, video share, multi-device, enriched calling, location share and live sketching.
Release 2 (July 2017)
  Includes Messaging as a Platform, APIs, plug-in integration and improved authentication and app security.

Prior to Universal Profile, five releases of the RCS specifications were made. Each release expanded the scope of its predecessor.

Release 1
  Offered the first definitions for the enrichment of voice and chat with content sharing, driven from an RCS enhanced address book.
Release 2
  Added broadband access to RCS features: enhancing the messaging and enabling sharing of files.
Release 3
  Focused on the broadband device as a primary device.
Release 4
  Included support for LTE.
Release 5
  Global interoperability is a key aspect of these specifications.

The following standardized services are a part of the specifications of RCS:[14]

- Standalone Messaging
- 1-to-1 Chat
- Group Chat
- File Transfer
- Content Sharing
- Social Presence Information
- IP Voice call
- Best Effort Video call
- Geolocation Exchange
- Audio Messaging
- Network based blacklist
- Capability Exchange based on Presence or SIP OPTIONS

The GSMA defined a series of specific implementations of the RCS specifications. The RCS specifications often define a number of options for implementing individual communications features, resulting in challenges in achieving interoperable services between carriers. The RCS specifications aim to define a more specific implementation that promote standardization and simplify interconnection between carriers.

At this time there are two major relevant releases:

- **joyn Hot Fixes** - based upon the RCS 1.2.2 specification (previously known as RCS-e), this includes 1:1 chat, group chat, MSRP file sharing and video sharing (during a circuit switched call). Services based upon this specification are live in Spain, France and Germany.
- **joyn Blackbird Drop 1** - based upon the RCS 5.1 specification, this extends the joyn Hot Fixes service to include HTTP file sharing, location sharing, group file sharing, and other capabilities such as group chat store and forward. joyn Blackbird Drop 1 is backward compatible with joyn Hot Fixes. Vodafone Spain's network is accredited for joyn Blackbird Drop 1, and Telefónica and Orange Spain have also been involved in interoperability testing with vendors of joyn Blackbird Drop 1 clients. A number of client vendors are accredited for joyn Blackbird Drop 1.

Two or more future releases are planned:

- **joyn Blackbird Drop 2** - also based upon the RCS 5.1 specification, this will primarily add IP voice and video calling. The test cases for joyn Blackbird Drop 2 have yet to be released by the GSMA.
- **joyn Crane** - Already available in GSMA web page.

Status

According to GSMA PR, Rich Communication Services (RCS) carriers from around the globe supporting the RCS standard include AT&T, Bell Mobility, Bharti Airtel, Deutsche Telekom, Jio, KPN, KT Corporation, LG U+), Orange, Orascom Telecom, Rogers Communications, SFR, SK Telecom, Telecom Italia, Telefónica, Telia Company, Telus, Verizon and Vodafone.[15]

Universal Profile is currently backed by 60 supporters:[16]

- 47 operators: Advanced Info Service, América Móvil, AT&T Mobility, Axiata, Beeline (brand), Bell Mobility, Bharti Airtel, China Mobile, China Telecom, China Unicom, Claro Americas#Brazil, Claro Colombia, Deutsche Telekom, Etisalat, Globe Telecom, Indosat Ooredoo, KPN, M1 Limited, MegaFon, Millicom, MTN Group, MTS (network provider), Optus, Orange S.A., Telecom Argentina, Telecom Argentina#Personal, Play (telecommunications), Jio, Rogers Communications, Singtel, Smart Communications, Sprint Corporation, StarHub, Telcel, Tele2, Telefónica, Telenor, Telia Company, Telkomsel, Telstra, Telus, TIM (brand), T-Mobile US, Turkcell, Verizon Communications, VEON, and Vodafone.
- 11 OEMs: Alcatel (mobile device brand), Asus, Huawei, General Mobile, HTC, Intex Technologies, Lava International, LG Electronics, Motorola, Samsung Electronics and ZTE.
- 2 mobile OS providers: Google and Microsoft.

RCS launches

Operator	Country	Launch date	Note
Vodafone	Spain	2012	[17] Launched the beta version of RCS at beginning of 2012, branded as *joyn*.
Movistar	Spain	June 2012	[17] Branded as *joyn*.
Vodafone	Germany	August 2012	[17][18] First Branded as *joyn*. Since November 2013 *Message+*.
Orange	Spain	November 2012	[17] Branded as *joyn*.
MetroPCS	United States	November 2012	[17] Branded as *joyn*.
KT	South Korea	December 2012	[17][19] Branded as *joyn*.
LG U+	South Korea	December 2012	[17][19] Branded as *joyn*.
SK Telecom	South Korea	December 2012	[17][19] Branded as *joyn*.
Deutsche Telekom	Germany	February 2013	[17] Branded as *Message+*[20]
Telcel	Mexico	February 2013	[17] Branded as *joyn*.
Claro	Argentina	May 2013	[17] Branded as *joyn*.
Claro	Colombia	May 2013	[17] Branded as *joyn*.
Claro	Peru	May 2013	[17] Branded as *joyn*.
Orange	France	June 2013	[17] Branded as *joyn*.
Claro	Brazil	August 2013	[17] Branded as *joyn*.
Claro	Ecuador	August 2013	[17] Branded as *joyn*.
Sprint	United States	October 2013	Launched as a separate application[17][21]
Vodafone	Albania	April 2014	[22] Branded as *Message+*.
Telekom	Romania	June 2014	[23][24] Branded as *joyn*.
Vodafone	Czech Republic	June 2014	[17] Branded as *Message+*.
Slovak Telekom	Slovakia	June 2014	[23][24] Branded as *joyn*.
Vodafone	UK	September 2014	[25][26] Branded as *Message+*.
Orange	Slovakia	March 2015	[23][24] Branded as *joyn*.
O₂	Germany	2015	[27] Branded as *Message+Call*.
T-Mobile US	United States	July 2015	[28] Branded as *Advanced Messaging*.
MTS	Russia	December 2015	[31] Branded as *MTS Connect*.
AT&T	United States	November 2015	Branded as *Advanced Messaging and Video Call*[29][30]
Vodafone	Portugal		[32] Branded as *Message+*.
Sprint	United States	November 2016	[33] Branded as *RCS*. Universal Profile.
Rogers Wireless	Canada	December 2016	Universal Profile.
Fido Solutions	Canada	December 2016	Universal Profile.
Telenor	Europe and Asia **List**	February 2017	Universal Profile.[34]
Vodafone	Multiple markets **List**	February 2017	[35] Universal Profile.[11]
Telstra	Australia	October 2017	Branded as *Telstra Messaging*.[36]
Telia Company	Sweden	December 2017	Branded as *SMS+*.[37]
NTT Docomo	Japan	May 2018	Branded as *+Message*.[38]
KDDI	Japan	May 2018	Branded as *+Message*.[38]
SoftBank Corp.	Japan	May 2018	Branded as *+Message*.[38]

GSMA RCS accreditation

The RCS Interop and Testing (IOT) accreditation process [39] was started by the GSMA in order to improve the quality of testing, increase transparency, drive scale, minimize complexity and accelerate time-to-market (TTM) of joyn services. Companies need to undertake the IOT process from the GSMA to apply for a license to use the service mark joyn.

"Accredited" means that the device, client or network has undertaken a series of test cases (150 to 300) in a specific set of conditions, provided test results and traces that have been analysed by the GSMA RCS IOT team and any IOT issues arising resolved with the submitter.[40]

"Accreditation Ready" is the designation awarded to a hosted RCS service that has undertaken the same series of test cases as mobile network operator operator, provided test results and traces that have been analysed by the GSMA RCS IOT team and any IOT issues arising resolved with the submitter.[40]

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External links

- GSMA RCS (http://www.gsma.com/rcs/)