



Rich Communications Suite Release 3 Functional Description

Version 2.0

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1 Introduction

1.1 Overview

The Rich Communication Suite (RCS) Initiative is an effort of a group of industry players for the rapid adoption of mobile applications and services providing an interoperable, convergent, rich communication experience. The RCS Initiative includes network operators, network and device vendors.

The RCS initiative is using an iterative, agile methodology to deliver a consistent feature set, implementation guidelines, example use cases as well as demonstrations and trials around interoperable reference implementations based on profiling of existing standards and specifications.

The RCS Initiative is divided into a sequence of phased efforts, published as releases. The RCS Release 2 effort focuses on a core service set which enhances the previous release, mainly enabling access to rich communication services from a wider range of devices.

The RCS Release 3 effort focuses on consolidating the Release 2 features and adds some enhancements such as the IP Multimedia Subsystem (IMS) Primary Device feature, which allows customers to use the broadband access (BA) as the primary device in the case where there are not mobile devices.

This document details the functional description of service features that define RCS Release 3.

Please refer to the RCS Technical Realization [TECHREAL3] for detail regarding the technical realization of these service features.

1.2 Scope

The scope of the document includes only RCS Release 3.

The functional description of RCS service features is provided in section 2 of this document.

Associated high-level technical description and referenced standards specification is provided in section 4.

A non-exhaustive list of potential service features for future RCS releases and an overview of some key device based recommendations serving best RCS User Experience are provided as informative appendixes.

Please refer to the RCS Release 1 and 2 Functional Description [FUNCDESC] and [FUNCDESC2] respectively and Technical Realization [TECHREAL] for detail regarding the definition of RCS Release 1 and Release 2, which serves as basis for RCS Release 3. For further detail regarding the technical realization of the service features described in this document, please refer to the RCS Release 3 Technical Realization [TECHREAL3].

1.3 Definition of Terms

Term	Description
AS	Application Server
Basic Social Presence information	The Social Presence information that is offered in RCS Release 1 and Release 2: A free text, a status-icon, a link, the Availability status and the service capabilities.
Broadband Access (BA) Client	Non-CS capable client utilizing IP based broadband access (BA) network for RCS services. For example, but not limited to, a PC using WLAN
CS	Circuit Switched (for example "CS Voice" used in the access network such as GSM or UMTS natively supporting the circuit switched voice service)
EAB	Enhanced Address Book
GW	Gateway
IMS	IP Multimedia Subsystem
MGW	Media Gateway, used for performing the conversion between CS and PS voice
MMS-C	Multimedia Messaging Service Centre. The common realisation of the 3GPP defined logical node MMS Relay/Server and OMA defined MMS Proxy-Relay and MMS Server
MMTel	IMS Multimedia Telephony Service, used as the solution for offering the PS Voice service in RCS
Mobile Client	CS capable client utilizing cellular access network for RCS services. For example 2G/3G mobile phone
NAB	Network Address Book
NNI	Network-to-Network Interface, used for inter-operator connectivity
PS	Packet Switched (for example "PS Voice" used in the IP based access networks such as ADSL, WLAN or LTE)
RCS	Rich Communication Suite (provides a feature-rich portfolio of services to unleash the communities hidden in a user's phone book)
Served RCS Presentity	The RCS User on whose behalf the RCS Client acts as Presence Source
SMS-C	Short Message Service Centre. The common realisation of the 3GPP defined logical nodes SM-GMSC, SM-IW MSC and SM-SC.
UNI	User-to-Network Interface, used for access network connectivity
xSIM	General abbreviation for SIM, ISIM and USIM cards

1.4 Document Cross-References

Document	Name
[FUNCDESC]	RCS Release 1 Functional Description
[FUNCDESC2]	RCS Release 2 Functional Description
[TECHREAL]	RCS Release 1 Technical Realization
[TECHREAL2]	RCS Release 2 Technical Realization
[TECHREAL3]	RCS Release 3 Technical Realization

CR Document Name	Version
2009-FN0015 – IMS Primary Device	SDG29-007
2009-FN0013 – CSE	SDG31-004
2009-FN0016 – NVAS	SDG31-005
2009-FN0010 – Geolocation	SDG33-004
2009-FN0011 – Personalized invitation	SDG33-005
2009-FN0012 – URL Label	SDG33-006

CR Document Name	Version
2009-FN0018 – Who can I Invite	SDG31-007
2009-FN0023 – Deferred Content Sharing	SDG32-004Rev1
2009-FN0022 – Legacy messaging on BA device	SDG29-008
2009-FN0014 – Enhanced messaging – Recipients list in group communications	SDG33-007
2009-FN0024 – Provisioning	SDG31-009Rev1
2009-FN0028 – Uploading Content to the Content Server for later use	SDG34-005
2009-FN0029 – Additional SPI clarifications for Release 3	SDG35-006
2009-FN0027 – Additional RCS Release 3 Content Sharing use case	SDG34-004
2009-FN0030 – NVAS consistency between FDD and TR	SDG35-007
2009-FN0025 – CR NVAS	SDG33-010
2009-FN0031 – Alignment with TR and improvement of requirement list for NVAS	SDG36-004
2009-FN0032 – Editorial clarifications for geolocation	SDG36-005

2 Functional Description of Previous RCS Releases Service Features

2.1 Introduction to RCS Release 1 Service Features

Following is a short description of the features defined in RCS Release 1:

Enhanced Address Book, (EAB) (cf. [FUNCDESC], section 2.1 Enhanced Address Book): the EAB is an evolution of the usual address book, providing enriched information to existing contacts. The EAB allows the user to exchange Social Presence Information with authorized contacts. This information includes availability status, portrait icon, free text, favourite link and timestamp. From the EAB, the user has access to information regarding which communication capabilities are available at a given point in time to interact with a contact, being able to initiate communications and to access the communication history with a contact. It is also possible to perform a backup/synchronization of contact information with the Network Address Book, (NAB).

Content Sharing (cf. [FUNCDESC], section 2.2 Content Sharing): this feature allows users to exchange different types of content (for example video or still images) while on a session, typically a voice call, but not exclusively. An active session in progress is a requirement to support the functionality of content sharing in release 1.

File Transfer (cf. [FUNCDESC], section 2.3 File Transfer): allows users to exchange different types of content (files) during an ongoing session or without having an ongoing session.

Enhanced Messaging (cf. [FUNCDESC], section 2.4 Enhanced Messaging): RCS Release 1 offers two distinct messaging services. On the one hand, the traditional messaging user experience is enhanced with the introduction of a unified composer for SMS/MMS, as well as conversations, a threaded view of SMS/MMS messages. On the other hand, a Chat

service is introduced, allowing RCS enabled users to exchange instant messages, initiate Group Chat sessions, see whether the other contact is typing/composing a message, or transfer files during a messaging conversation.

2.2 Introduction of RCS Release 2 Service Features

Following is a short description of the features defined in RCS Release 2:

The main purpose of the RCS Release 2 was to provide the user with access to RCS service features from a wider range of devices, making it possible to use RCS from a PC, for instance via broadband wire-line access.

This section is subdivided in relation to the following service features, which are part of this RCS Release:

1. Broadband Access to RCS features
2. Multi-device environment
3. Network Address Book
4. Provisioning and configuration of RCS devices/clients

These areas are described further below.

2.2.1 Broadband Access to RCS Features

RCS users shall be able to reach their rich communication services from devices connected via BA to the network, for instance a PC or a laptop.

The user will be able to access the EAB when a BA device is used. All the existing Social Presence features like free text, availability status, favourite link and portrait icon will be part of the RCS BA device. The Social Presence Authorization must be realized as defined in RCS Release 1 ([FUNCDESC]). From the EAB in the RCS BA device, the service capabilities of fixed and mobile RCS enabled contacts shall be visible. The RCS enabled BA device will share his own capabilities with his RCS enabled fixed and mobile contacts.

An RCS client can be for example installed in a PC, having suitable configuration to reach the operator's network. The client can access the service with a username and password combination, or by using an xSIM card. With xSIM card there is no need to remember username and password combinations, but a simple PIN input is enough. Access to the network is gained using identity and authentication capabilities of the xSIM.

2.2.2 Multi-Device Environment

RCS Release 2 introduced the support for broadband access devices that allow users to use RCS services for example from a PC wire-line network. The usual combination for using the RCS services could be that the user has a mobile phone and in addition a BA device in use. In addition, other combinations are possible in the future.

In RCS Release 2, a user will have one primary device/client and in addition one or more secondary devices/clients. The client using the cellular access is considered the primary device while the client with the broadband access will be the secondary device. This restriction has implications on messaging delivery to which RCS device, for detail please consult (TECHREAL2)

The MSISDN, the primary device is used as the identity for all of the user's devices; it is shown in the outgoing call and to make a call that breaks to all of user's devices/clients.

2.2.3 Network Address Book

The goal of the proposed Network Address Book (NAB) is to provide a centralized and uniform mechanism for users to manage contact information in an RCS enabled network. At the heart of the NAB feature is a network based contact repository, which is referred to as a Network Address Book. This repository is deployed in the operator's network, and is administered and maintained by the operator.

From the Enhanced Address Book (EAB), users can create contact information on their RCS enabled mobile devices, and upload the data to the NAB. Each user's contact information is owned and managed by the user. Only the owner can delete or modify their contact information. Once the contact information is uploaded to the NAB, the user can synchronize other RCS Release 2 enabled devices, such as a PC or other broadband access devices.

2.2.4 Provisioning and Configuration of RCS Devices/Clients

The end user is not expected to manually configure any settings in an RCS device, in order to be able to use RCS services. As soon as the device is switched-on, it will be registered to the network and all RCS services and functionalities will be available, without the user having to take any action (dependency on OMA Device Management Server (OMA DM)). This requirement applies to both mobile and fixed RCS devices, including those with broadband access. It also applies to RCS Release 1 as well as RCS Release 2 functionalities.

This shall aid transparency for customer configurations related to IMS, access points, maximum size allowed for a file transfer, etc. In fact, these parameters shall be operator configurable and generally locked from the end user altering them, in order to prevent undesired configuration errors of RCS services. However, they still shall be able to configure certain settings (for example SIP, XDMS) which may be needed for accessing the service when, for example, changing from service provider.

3 Description of RCS Release 3 Service Features

The main purpose of the RCS Release 3 is to consolidate the Release 2 features and some enhancements.

This section is subdivided in relation to the following functions, which are part of this RCS Release:

- Broadband Access Enhancement
- Multidevice Enhancement
- Content Sharing Enhancement
- Social Presence Information Enhancement
- Messaging Enhancement
- Geolocation Enhancement
- Network Value Added Service
- Provisioning and configuration of RCS devices/clients

3.1 Broadband Access Enhancement

3.1.1 Broadband Access Device as Primary Device

In RCS Release 3, the client with the broadband access may be the primary device in the case where there are no clients with cellular access.

When the BA device is a primary device, the BA device can both send and receive SMS and MMS messages.

The reply to a message sent from the BA device will be returned to the BA device so the conversational view will be supported.

The SMS/MMS functionality on BA device is further described in the Messaging sub-clauses.

3.1.1.1 Legal and Regulatory Issues

The precondition is that basic BA based Telco services are already available in the local market. For these services, the local regulations are already fulfilled. Since RCS is introduced on top of the basic Telco services, RCS does not have to focus on the legal and regulatory issues.

3.1.1.2 Backward Compatibility

A user having both RCS R3 BA device and RCS R2 Mobile device shall be supported by the RCS R3 network. R2 Mobile device is primary device, R3 BA is secondary device.

RCS R3 BA device shall be supported by the RCS R2 network as RCS R2 BA secondary device.

3.1.1.3 Charging Considerations

Different charging may be considered for RCS services delivery to Broadband Access primary device subject to operator policy.

3.2 Content Sharing Enhancement

3.2.1 Content Sharing Without a Voice Call

This feature deals with the ability to share content without an accompanying circuit switch and packet switched voice call between two RCS Release 3 Clients. Content Sharing refers to Video Sharing, as far as this feature is concerned. Originating and terminating parties are RCS Release 3 enabled devices (Mobile Device, PC).

The originator shall specify the terminating party when a content sharing session is initiated. Content Sharing is uni-directional. During a single content sharing session, the originator of the content sharing session can share content with the terminating party, but the terminating party cannot share content with the originator.

A content sharing session can be established and terminated independent of a circuit switched and packet switched voice call. The decision to initiate and/or terminate a content sharing session can be made at any point. Either the Terminating Party or the Originating Party can terminate the content sharing session.

RCS Release 3 shall support the capability to augment the streamed video with audio over the packet network during a content sharing session. Packet audio capability allows both audio and video to be transmitted over the packet network using real-time transport protocol RTP protocol. However, unlike a circuit-switched (CS) call in which the audio is bidirectional; packet audio in content sharing is unidirectional. Audio is streamed along with the video from the originating party to the terminating party during a content sharing session.

3.2.1.1 Backward Compatibility

In case that terminating user device is an RCS Release 1 or RCS Release 2 client:

An RCS Release 3 enabled user device must establish a voice call with the terminating party before content session initiation with the terminating party. In other words, content sharing session without a voice call shall not be supported in this case.

An RCS Release 3 enabled user device shall not share audio over the packet network to an RCS Release 1 or RCS Release 2 user device.

3.2.1.2 Charging Considerations

Charging principle is the same as the following paragraph described in BA.27 372 section 19.3.

"Video share shall be charged on a per invocation basis and where invoked from within a communication service Video Share shall be charged separately from this communication service. In particular an underlying circuit switched voice call shall be charged separately."

3.2.1.3 User Experience Considerations

- The end user shall be able to share content to another party.
- It shall be able to share a content outside of a voice call and any other services (for example chat)
- It shall be able to share a content within a voice call and any other services (for example chat)
- Content sharing without a voice call shall be subject to an acceptance procedure before actual content sharing is initiated. The acceptance procedure shall include an indication to the receiving user concerning content size and type.
- Content sharing without a voice call shall be subject to an acknowledgement of receipt procedure.

3.2.2 Deferred Content Share to Legacy Terminals

Deferred Content Sharing only addresses sharing of video.

Mainly, the two features covered by this are:

- For legacy users , for receiving party only
- Network content sharing: the sharer user access to a remote content for sharing

Legacy refers to a terminal that is not RCS capable or is not able to access RCS services, for example due to coverage issues.

A functional description of these two features is detailed below.

3.2.2.1 Video Sharing Towards Legacy User

In Release 3, a RCS user can share a video content along with a voice call towards a legacy user, as detailed below.

The RCS user can initiate a video content sharing session towards a legacy user he/she is already in voice call with. After sending video content sharing invitation to the Content Sharing Application Server (AS), the peer RCS user will receive a positive answer from the

Content Sharing AS and the video content sharing session will be successfully established. Then, the originating RCS user will send the video content to be shared towards the RCS Infrastructure network elements.

The RCS Infrastructure network elements shall be able to send to the originating RCS user a notification indicating that he/she is doing video share towards a Legacy contact.

The network will be in charge of delivering the video content to the legacy user. This can be achieved in various ways, according to service provider policies and legacy user's handset capabilities (that is, support for SMS, MMS, web portal and so on). Video content can be delivered in real time or in a deferred manner.

- In the case of the real time scenario:
 - The legacy user will connect to the streaming video stream (as defined in IR.84) when he/she clicks on the URL.
- In the case of the deferred scenario:
 - The video content will be accessible by the legacy user's terminal using HTTP mechanism.
- Legacy users would appreciate getting the SMS notification with information necessary to retrieve the video content, before the end of the video sending by the originating RCS user. Therefore, the legacy user can reach and watch the video content with a short-delayed broadcast, very similar to the regular RCS customer experience.

The legacy user may retrieve the video recipient after the Voice Call.

It has to be noted that this deferred content sharing feature is also applicable when RCS user is out of 3G coverage when the video content sharing session establishment is attempted.

Video sharing towards a legacy user can apply to various types of video content to be shared, such as device pre-recorded video and live video.

3.2.2.2 Video Content Sharing Invoking Content Already Stored Into the Network

In Release 3, an RCS R3 user can share a video content along with a voice call towards another RCS R3 user, using content already stored into the network.

In this use case, the originating user communicates to the Content Sharing AS the URL of the file to be shared. The Content Sharing AS retrieves the file from the Content Server and streams the multimedia file to both the originating and terminating RCS R3 user's terminals.

As part of the capability supported by this use case, it shall be possible for an RCS R3 user to store video on a network based Content Server. The stored video can be shared with others, as described in the previous paragraphs. To stream/upload a video to the Content Server, the RCS R3 user selects the Content Server as the terminating endpoint, and initiates a normal video sharing session. The Content Server has a unique identifier, and this can be pre-defined in the Contact List/Address Book. The streamed video is stored in a temporary file in the network, and later uploaded to the Content Server.

The RCS terminal manages locally the history of the uploaded content and allows the end-user to select the content to be shared.

3.3 Social Presence Information Enhancements

3.3.1 Personalized Invitation

Currently, in RCS Release 1, when User A sends an invitation to user B:

- If User A is already in User B Address Book, the display name is displayed to User B, which is acceptable
- If User A isn't in User B Address Book, then only the MSISDN is displayed, which is not acceptable and presents a risk to the user (spam).

In RCS Release 3, to improve RCS invitation experience with a personalized invitation and to ease identification of invitations coming from contacts not yet registered in the user's address book, a Nickname feature is added:

- For each invitation to share, the presence can fill a "nickname" with limited size (recommendation: 20 characters, this size can be set as a provisioning parameter) when sending the invitation to share presence. The maximum number of characters a watcher can view is 200 (this limitation is proposed to ensure interoperability for watchers, regardless of the number of characters implemented by the service provider).
- The Watcher, if he hasn't the presentity in his address book, can now see both MSISDN and the nickname of the presentity.
- The nickname can be stored permanently to be used for every invitation. Users have the ability to change it every time they send an invitation.
- The nickname does not replace the registered name of a contact already present in the recipient's phonebook.

Security: it is noted that using the nickname, it is possible to "impersonate" someone. However, that "impersonation" is limited in scope since the inviting user remains identified by his MSISDN.

3.3.1.1 Backward Compatibility

R2 users are not supposed to be able to view the nickname if they receive invitations from a R3 user who has a nickname. There must be no compatibility issue between R3 and R2 users because of this feature.

3.3.1.2 Charging Considerations

This feature follows the general principles for presence and invitations.

3.3.2 URL Label

In RCS Release 3, it's possible to display a "user friendly" label instead of the initial URL.

Instead of displaying the URL address, the RCS user can display a personal label. The maximum size of character recommended is 20 (this can be set by operators as a provisioning parameter). It shall be no bigger than 200 characters.

3.3.2.1 Backward Compatibility

R2 users will keep on viewing the URL even if an R3 authorized contact has specified a label. There must be no compatibility issue between R3 and R2 users because of this feature.

R3 users will view the URL when no label is specified. For example, an R2 authorized contact will never send a label. There must be no compatibility issue between R2 and R3 users because of this feature.

3.3.2.2 Charging Considerations

No impact on presence charging principles.

3.3.3 Whom Can I Invite?

By default, service capability indication shall be made available for every contact in the address book, without the need of establishing a Social Presence Relationship. For example, a certain contact in the address book may not be one of my buddies, but if he/she has an RCS device, this fact shall be made known to me so that richer communications with that contact can be established.

This information shall also be used to let users know which contacts can be invited to share Social Presence Information, that is, which contacts are also RCS users.

The user shall be able to control whether capabilities are published or not from an RCS management client setting, in order to address regulatory constraints and service provider policy. In such a scenario, the user would only select share capability information with contacts with users that a Social Presence Relationship has been established.

3.3.3.1 Backward Compatibility

Backwards compatibility: R2 users will keep their users contact list unchanged even if their contacts have an R3 client. There must be no compatibility issue between R3 and R2 users because of this feature.

3.3.3.2 Charging Considerations

None

3.3.4 Geolocation Enhancement

Two users should be able to see where they are located and share this information with each other and they shall keep the control over this information:

- No specific invitation process for location.
- When and if a user chooses (by opt-in) to update his/her location for the first time, by default, users share their location information with all their contacts authorized for social presence
- Users have the ability to manually choose contacts with whom they wish to stop sharing location information.
- Even if a user has stopped sharing location information with one of his authorized contacts, that does not prevent him from viewing that contact's location information

Geolocation information is a combination of declarative text always manually edited/updated by the user; and/or coordinates information (x, y) that are displayed on a map.

The maximum character size of declarative location text information the end-user can enter can be set by operator as a provisioning parameter. It shall not exceed 200 characters. The

text information on the receiving part cannot exceed 200 characters and is not limited by any provisioning parameter.

In a manual mode, user manually picks a position (x, y) on a map or user requests for an update of his position (x, y) information. Then, geolocation information is given by RCS client towards authorized enriched contacts as soon as it has been made available on the RCS client by the user.

In automatic mode, update of location coordinate information (x, y) is automatically made and given to the authorized enriched contacts on a regular basis.

Manual mode and automatic mode are further detailed below.

Once User A has accepted User B as a RCS authorized contact (defined in RCS R1), he will be able to see the Geopositioning information of User B (displayed with a text or a map, or both of them),. User B will be able to see Geopositioning information of User A, should the users choose to update their location information.

When a given RCS user (User A) is willing to share Social Presence Relationship with another user, User A shall be able to control in the invitation process for sharing Social Presence Relationship whether sharing of his/her location information with this other user is authorized or not.

The user must be able to delete his location information (empty text field, no position on map)

3.3.4.1 Display Modes

Two displays modes are possible: Text, Map or both:

- Text: a user is located and the result is given to his authorized enriched contacts under a declarative text format (Paris, La Défense). The declarative text is always manually edited by the user.
- Map: a user is located and the result is given as coordinate information (x, y) to his authorized enriched contacts and displayed under a map format. When the user is displayed as a dot on a map, his location information can also be displayed as text in other screens. For example, if a user has updated his location to a position in the centre of London on a map, some screens without a map may display his location using the declarative text edited by the user (for example, "London, UK").

3.3.4.2 Interoperability

Location information must be interoperable between RCS clients no matter how users choose to update their information. For example, if User A has updated his location on a map (with x, y coordinates) and User B (authorized contact) is using RCS clients without a map feature (and only supporting declarative text), he must still be able to view User A's location as an intelligible text, using the declarative text information (if available), not as raw x, y information.

3.3.4.3 Update Information

Declarative location text information is always manually edited/updated by the user.

The Geolocation information update regarding coordinate information (x, y) can be either:

Manual

- User can select his location manually on a map, by either entering a text that is then processed to provide location (as coordinate information (x,y)) on a map (for example Google Maps) or, for example, by dragging and dropping a “pin” on a map to the desired location. This user-chosen location can be different from the user’s actual location.
- Triggering his actual current location (based, for example, on a GPS signal from the handset or a mobile network-based location). For example, he/she clicks on the location update button, and coordinate information (x,y) is automatically filled)

Automatic

- (User A decides that he wants his authorized contacts to be informed regarding his coordinate position (x,y) on a regular basis). Location coordinate information (x, y), and any update is automatically made and given to authorized enriched contacts on regular basis.

To avoid excessive traffic on the network due to very frequent location updates, it is recommended that a provisioning parameter can be set in the network to remotely set a minimum duration between updates sent from the client/device.

All update modes are optional, however the location information exchanged must be interoperable regardless of the way the client updates his location.

Expiration date

A provisioning parameter can be set in the network by operators to stop providing the published location information after a given time (for example, one month).

Time Zone can be shared as part of geolocation information, allowing users to view what the local time is at their friend’s location.

Other recommendations for implementation from the end user’s perspective (these are only meant as examples and not actual specifications):

- For Fully Automatic update, the user shall be able to choose the level of accuracy for his location
 1. Country
 2. City
 3. Street (most accurate location)
- In addition to having a map displayed per contact inside the address book (at -1 or -2 navigation levels), possibility to have a consolidated map with all contact location information (within the scope defined : Country, city or street). The starting position of the map is the user’s current position, if available.
- The geolocation feature can be provided on non-GPS enabled devices

3.3.4.4 Backward Compatibility

RCS R2 users cannot view geolocation information. They can, however, be added or removed from the “geolocation authorized contact list” by R3 users

3.3.4.5 Charging Considerations

Geolocation updates and notifications follow the general principles of presence charging

3.4 Messaging Enhancement

3.4.1 Legacy Messaging On Broadband Access Device

In RCS Release 3 a broadband access client being a primary device is able to both send and receive SMS and MMS messages.

A BA device being a primary device can also be able to request and receive notifications about message status for sent SMS and MMS messages.

A SMS or MMS is regarded as delivered when it has been successfully received by any of the recipient's devices.

3.4.1.1 Multi-Device Handling

When the RCS user has multiple devices/clients in use, SMS and MMS messages are delivered to the primary device only. In RCS Release 3 this is the mobile device, as in RCS Release 2.

SMS and MMS message status notifications (SMS status reports, MMS delivery and read notifications) are delivered to the devices under the same conditions as normal SMS/MMS messages. Status notifications received for messages unknown to that device (the message may have been sent from another of the user's devices) are ignored on that device.

Note 1: Messages sent from a broadband access client will not be part of the conversational view on mobile access devices (and vice versa). Delivered Messages may be part of the conversational view on either device subject to the delivery conditions.

Note 2: Delivery of SMS and MMS messages to multiple devices at the same time are out of scope of RCS.

3.4.1.2 Backward Compatibility

An RCS R2 BA client in a RCS R3 network will be able to send SMS, but will not receive SMS as it only works as a secondary device and in addition does not have the capability to receive SMS.

An RCS R3 BA client in a RCS R2 network will be able to send SMS, but will not receive SMS as it only works as a secondary device.

3.4.1.3 Charging Considerations

Charging events for sent SMS and MMS messages may be generated either on successful submission or successful delivery. Also charging events for successfully received SMS and MMS messages may be generated.

3.4.2 List of Invitees in Group Communication

All GSMA RCS R3 Invitees in any Group Communication attempt will be provided with a List of Invited Participants/Receivers. In RCS R3 Group Communication includes Group Chat only.

GSMA RCS R1 and R2 devices will silently discard this type of list if received.

Backward compatibility:

- GSMA RCS R1 and R2 devices will silently discard this type of list if received.
- A RCS R3 client operating in a RCS R2 network will not receive a recipient list

Charging considerations:

- No impact to existing charging methods.

3.5 Network Value Added Service (Nvas)

3.5.1 Introduction

In RCS Release 3, common NVAS general requirements and media processing related NVAS general requirements are defined. The requirements need to realize the following use cases:

- Content Sharing Enriched by Media Processing
- Chat Enriched by Media Processing

3.5.1.1 Content Sharing Enriched By Media Processing;

In Content Sharing defined in release 1, 2 and 3, an originating user can share content with a terminating user when a voice call is established.

In Content Sharing Enriched by Media Processing defined in release 3, an originating user can share content enriched by media processing in the network with a terminating user when a voice call is established.

In release 3, the supported content type is only image. In the future releases, live video and video will be supported.

3.5.1.2 Chat Enriched By Media Processing.

In Chat defined in release 1 and 2, an originating user can send and receive messages with a terminating user. However, there is no compatibility between release 1 and release 2. In Chat Enriched by Media Processing, an originating user can send and receive messages enriched by media processing in the network.

3.5.2 Common Functional Requirements for NVAS

3.5.2.1 General Description

If the session originating client and network support NVAS capability, the originating user can invoke NVAS irrespective of the NVAS capability of the session terminating client and network.

For example, if the originating client and network support Content Sharing Enriched by Media Processing, the originating user can share the content enriched by media processing, even if the terminating client and network do not support Content Sharing Enriched by Media Processing capability.

3.5.2.2 NVAS Menu, NVAS Invocation by Using NVAS Menu

3.5.2.2.1 NVAS Menu

NVAS menu is an available list of NVAS services and values that the network provides for each user. Each NVAS operator can provide users with NVAS menus, which include their own NVAS services. Additionally, NVAS menu can be described in any language that the operator wants. Definition of NVAS service and values are described in below.

- NVAS Service = A kind of service
 - This shows a base RCS service to which the value is added. For example, enriched chat, enriched content sharing, and enriched file transfer.
 - Which kind of NVAS service that an operator provides depends on each operator
- Added value = the value added service itself.
 - For example, translating Japanese to English, translating Japanese to Chinese, watercolour effect, sepia effect, and converting bit rate.
 - Which kind of added values an operator provides depends on each operator.
- A pair of NVAS Service and added value indicates a concrete service.

NVAS menu is stored in the network.
The client automatically gets the NVAS menu, when the client is registered to the network.
The client stores a NVAS menu, which is received as described above.

The way of displaying NVAS menu is outside the scope of RCS. However, the NVAS menu format shall support the following examples of displaying the NVAS menu.

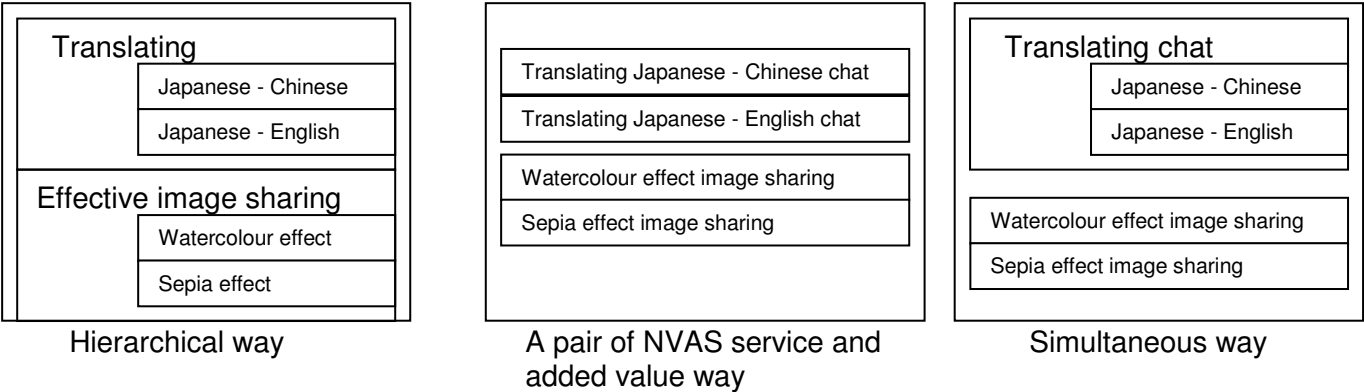


Figure 1: Displaying NVAS menu examples

The following format might be needed for realization of the hierarchical way.

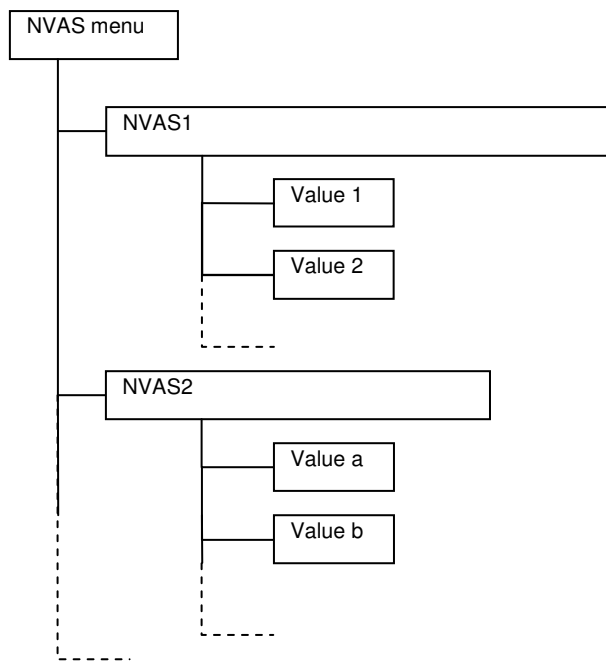


Figure 2: NVAS menu format example exam

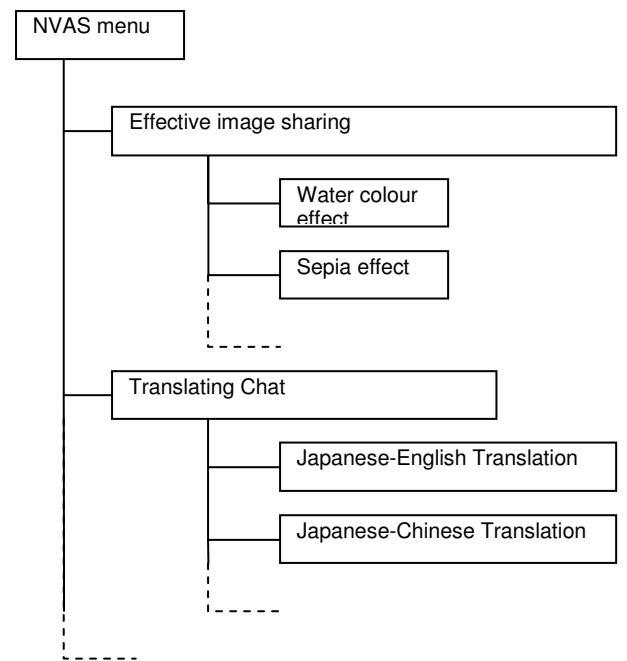


Figure 3: NVAS menu typical example for a certain operator

The following format might be needed for realization of a pair of NVAS service and added value way.

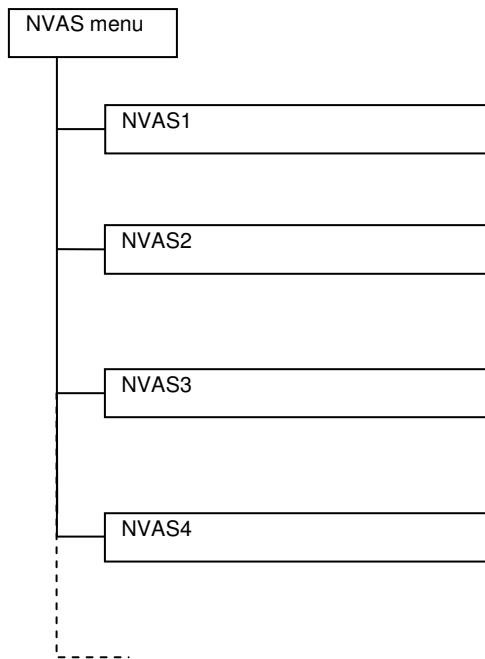


Figure 4 : NVAS menu format example exam

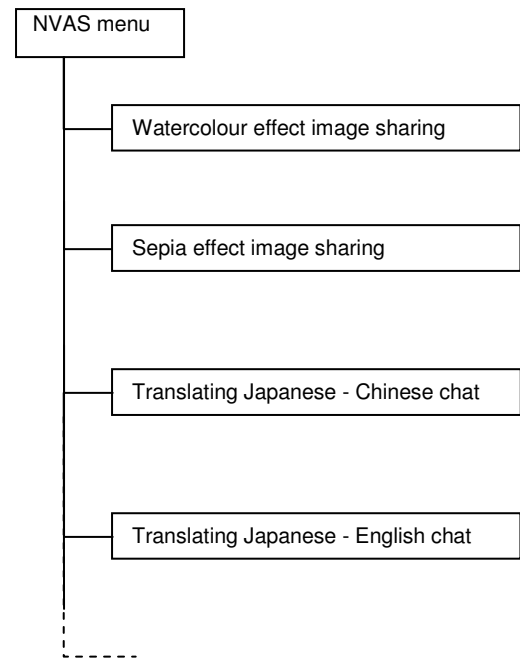


Figure 5: NVAS menu typical example for a certain operator

NVAS activation and Invocation

In release 3, the user selects a NVAS service and an added value from the NVAS menu, and then the user initiates the network value added session. The client requests the originating network to activate and invoke the NVAS at the session initiation.

3.5.2.3 Media Processing Related NVAS Requirement

3.5.2.3.1 Uni-Direction and Bi-Direction

The user selects a NVAS service and an added value from the NVAS menu, and then the user invokes the network value added session.

In the case where the session is uni-directional, the session originating user only sends the content/message and the session originating network adds the value to the content/message sent. The processed content/message is then received by the intended recipient.

In the case where the session is bi-directional, the session originating user sends the content/message and the network adds the value to the content/message sent. The processed content/message is then received by the intended recipient. Additionally, the session originating user receives value added content/message sent from the session terminating user after the session originating network has added the value to the content/message.

3.5.2.4 Relation between Functional Requirements and Use Cases

3.5.2.4.1 Content Sharing Enriched By Media Processing

Content Sharing enriched by Media Processing is realized as follows:

The RCS Content Sharing (IR.79) in RCS Release 1, Release 2 and Release 3. However, Content Sharing enriched by Media Processing supports only image in release 3.

The NVAS function as defined in chapter 3.5.2 of this document.

3.5.2.4.1.1 Backward Compatibility

If the session terminating client is a RCS Release 1, Release 2 or Release 3 client, the session originating user can initiate the value added session after the voice call is established. When the voice call is released, the value added session is automatically released.

From the session terminating user point of view, the session terminating user is invited to a normal content sharing session.

3.5.2.4.2 Chat Enriched By Media Processing

Chat enriched by Media Processing is realized by using the followings.

The RCS Chat Function defined in RCS Release 2 and Release 3

The NVAS function as defined in chapter 3.5.2 of this document.

3.5.2.5 Backward Compatibility

The session originating user can initiate the value added session even if the session terminating client is Release 2.

From the session terminating user point of view, the session terminating user is invited to the normal chat.

3.5.2.6 Charging Considerations

When the content sharing enriched by media processing is used, the same charging principles as the content sharing is applied. When the chat enriched by media processing is used, the same charging principles as the chat is applied.

3.5.2.7 User Experience Considerations

NVAS (media processing) is the value added RCS services, which are defined in release 1, release 2 and release 3. Therefore, most of user experience of NVAS is the same as user experience of other RCS services apart from NVAS.

Most of user experience for enriched content sharing is the same as user experience for content sharing.

Most of user experience for enriched chat is the same as user experience for chat.

User shall be able to choose the RCS service or the network value added RCS service. Additionally, user shall be able to choose the added value when user chooses the network value added service.

3.6 Provisioning and Configuration of RCS Devices/Clients

The end user is not expected to manually configure any settings in an RCS device in order to be able to use RCS services. As soon as the device is switched-on, it will be registered to the network and all RCS services and functionalities will be available, without the user having to take any action. This requirement applies to both mobile and fixed RCS devices, including those with broadband access. It also applies to RCS Release 1 as well as RCS Release 2 functionalities.

This shall make transparent for the customer configurations related to IMS, access points, maximum size allowed for a file transfer, etc. In fact, these parameters shall be operator configurable and generally locked from the end user altering them, in order to prevent undesired mis-configuration of RCS services. However, they still shall be able to configure certain settings (for example, SIP, XDMS) which may be needed for accessing the service when, for example, changing from service provider.

Backwards compatibility

R2 users will keep their provisioning parameters, so, this release only adds new parameters and does not change nor remove any previous provisioning parameter.

For the different enabler servers, it is very important to use URIs instead of absolute IPs to let the operators change their networks addressing or use load balancers without the need to reconfigure all the users' handsets.

If, over time, a certain parameter is changed in the network, mechanisms shall exist for this parameter to be changed in the client without the end user taking any manual action, ensuring that RCS services always function correctly on RCS compatible devices.

In order to enable RCS functionalities transparently to the end user, the following settings must be configured in the device (non-exhaustive):

- IMS Core/SIP settings, for registration in the network and basic IMS communication.
- XDMS settings.
- Presence settings.
- Network Address Book (NAB) server settings, for backup, restore and synchronization of contacts in the address book.
- IM settings, for RCS Chat messaging service.
- File transfer settings.
- Content sharing: Use the same network file storage platform and settings.
- Device Management server access settings.
- RCS specific parameters, for example, maximum size allowed for a File transfer.
- BA device scenario specific parameters, for example, the MSISDN of the user.
- Geolocalization: Set the minimum periodic update. It's recommendable to use the same period as presence synchronism mechanism.
- Personalized invitation: Set the maximum text size (no more than 200).
- URL Label: Set the network recommended label size (no more than 200).
- Geolocation declarative text: Set the maximum text size (no more than 200).
- IMS as primary device: Operators can decide which will be the primary device.
- Expiration and minimum duration between location information updates.

Some of the settings listed above have a direct influence in the user experience provided to the end user. For instance, RCS specific parameters include the maximum number of characters the free text in the Social Presence Information may include. This way, the end user will always be informed of this limit while typing the content of the free text, avoiding the text to be truncated when being delivered to another contact. Other examples are the maximum size allowed for the portrait icon in the Social Presence Information or for a file to be transferred. The user interface shall include information regarding this limit, making the user aware that not any multimedia content can be used in these contexts.

The end user's identity (username and password) may be provisioned in the BA device scenario, being accessible to the end user for modification. Other information that is accessible to the end user in the BA device scenario is the control of service delivery. The user interface will clearly show whether a service has been disabled by the end user in a secondary device, allowing him/her to enable the service back again at any moment.

3.7 Terminal Combination for One Given RCS R3 End-Users

Possible terminal combinations for RCS R3 end-users are defined in RCS R3 TR.

4 Example Use Cases of RCS Release 3 Service Features

This section includes some important use cases introduced in this RCS Release, describing the required user experience in each case. It shall be noted that the list of use cases described is not exhaustive, and that additional use cases may be possible.

4.1 Messaging Use Cases

4.1.1 Legacy Messaging; SMS Reception on BA Device

User A: RCS user

User B: RCS user with a RCS BA client

- User A decides to send a text message to user B.
- By selecting the SMS service an SMS can be composed. The end-user will have the familiar SMS user experience, for example, this includes the experience that longer text messages are split in to separate messages.
- User A sends the message.
- The message is received on User B's BA device.
- If user A requested a delivery notification when sending the SMS, he/she will now receive a notification that the SMS was successfully delivered.

4.1.2 Legacy Messaging; SMS Reception, Multi-Device

User A: RCS user

User B: RCS multi-device user with a RCS mobile and a RCS BA client

- User A decides to send a text message to user B.
- By selecting the SMS service an SMS can be composed. The end-user will have the familiar SMS user experience, for example, this includes the experience that longer text messages are split in to separate messages.
- User A sends the message.
- The message is received on User B's mobile only.
- If user A requested a delivery notification when sending the SMS, he/she will now receive a notification that the SMS was successfully delivered.

4.1.3 Chat: Invited Users Receive a List of Invited Participants in a Group Chat

- User A is the initiator of the group chat.
- User B and C are invitees.
- User B has an RCS R3 client supporting this feature
- User C has an RCS R2 client not supporting this feature
- User A initiates the chat by inviting Users B and C to the chat and writes the first message.
The selection of invited parties can be done before or after writing the message.
- User A presses the "send" button

- User B receives the chat invitation together with the initial message and the list of invited parties (User B and User C)
- User C receives the chat invitation together with the initial message but without the list of invited parties.
- User C accepts the invitation as it's coming from his buddy User A
- User B chooses to decline the group chat invitation, even though it comes from his/her friend User A, as he/she sees that User C was invited, with whom User B does not wish to chat.
- The continued chat message exchange is between User A and User C.

4.2 Content Sharing Use Cases

4.2.1 Video Sharing Without Voice Call

User A and User B have RCS R3 mobile broadband access devices (RCS R3 PC Client).

- User A and User B are engaged in a chat session.
- User A wants to share a video clip with User B and chat about it.
- User A sets up a video sharing session with User B selects a video clip that he has on his device and starts streaming it.
- While the video is being streamed, User A and User B chat about the video.

4.2.2 Video Sharing During a Chat

- User A has already started chat with User B.
- User A knows that User B client has the capability for content sharing without a circuit switched and packet switched voice call.
- User A starts to share the video with User B.
- User A and User B exchanges their views about the video using chat.

4.2.3 Video Including Audio Portion Sharing

- User A has already started chat with User B.
- User A knows that User B client has the capability for content sharing without a circuit switched and packet switched voice call.
- User A starts to share the video with User B.
- User A and User B exchanges their views about the video using chat.
- User A starts to share the video including audio portion without a circuit switched and packet switched voice call.

4.2.4 Content Sharing With Legacy User

User A is a RCS user. User B is not a RCS user.

- User A is in voice call with User B
- User A initiates a video content sharing session towards User B.
- After sending the video content sharing invitation, User A receives positive answer from the network and the video content sharing session is successfully established.
- User A sends the video content to be shared towards the network.
- The network is in charge of delivering the video content to the legacy user.
- For instance, a SMS containing a URL how to access the video content with associated credentials can be sent by the network towards the legacy user in order to allow the legacy user to retrieve the content. The SMS contains a short text and a clickable URL link, prompting the legacy user to access the right video content.
- Legacy users would appreciate getting the SMS notification with information necessary to retrieve the video content, before the end of the video sending by the RCS user. Therefore, the legacy user can reach and watch the video

content with a short-delayed broadcast, very similar to the regular RCS customer experience.

- Another option can be sending the video content over MMS by the network towards legacy user.

4.2.5 Video Sharing Live To Legacy User

User A has an RCS R3 mobile device. User B does not have an RCS R3 mobile device.

- User A lives with his family in London. He is currently on a business trip to Lisbon and wants to share some sights of Lisbon with his family while talking on the phone.
- User A calls his wife (User B) using his RCS R3 mobile device.
- User A initiates a video sharing session with his wife and points his camera at different sights on the street. Since his wife does not have an RCS R3 device, User A streams the video to the web portal.
- His wife logs in to the web portal and views the live-streamed video from Lisbon, while talking to User A on the phone.

4.2.6 Video Content Sharing Invoking Content Already Stored Into the Network

User A has stored content into the network

- User A is in voice call with user B
- User A initiates a video content sharing session towards User B.
- User A shares with User B video content stored into the network (instead of using content locally stored in User A's device).
- User B receives the video content on his/her device along with the voice call.

4.3 Network Value Added Services Use Cases

4.3.1 Enriched Content Sharing

User A initiates the enriched content sharing

User B is invited to the normal content sharing

- User A client receives the NVAS menu from the network.
- User A has an image and wants to share it with user B after the value is added to it.
- User A establishes the voice call with the user B.
- User A selects the enriched content sharing and an added value from the NVAS menu, and then the user initiates the enriched content sharing session.
- User B is invited to the normal content sharing and accepts it. User B cannot recognize that User A initiates the enriched content sharing.
- User A sends the image and the network adds the value to it.
- User B receives the value added image.

Call flow:

1. User A selects user B from a phone book and invokes a voice call.
2. User B responds the call and starts the voice call.
If user B client is release 3, voice call establishment before starting the enriched content sharing is not a prerequisite.
3. User A invites user B to the enriched content sharing service and starts the enriched content sharing by choosing the enriched content sharing and the value (for example, sepia conversion) from the NVAS menu
4. User A starts to send the image to the network.

5. The network adds the chosen value to the image sent from user A.
6. The network sends the value added image to user B.
7. The value added image can be shown on the user B's client screen.

4.3.2 Translation Chat

User A is Japanese and speaks in Japanese and English.

User B is Chinese and speaks in Chinese and English.

Both User A and User B want to speak in their respective mother language.

User A knows that User B can speak in Chinese and English and User B prefers to speak in Chinese.

- User A selects the enriched chat and Japanese – Chinese translation from the NVAS menu, and then the user initiates the chat with User B.
- User B is invited to the chat session and user B accepts it. User B cannot recognize that user A initiates the translation chat.
- User A sends the Japanese message and the User A's network translates it into Chinese. User B receives the Chinese message. User B sends the Chinese message. The User A's network translates it into Japanese. User A receives the Japanese message.

Call flow:

1. User A invites user B to the translation chat service and starts the chat by choosing the translation chat and the translation languages from the NVAS menu.
2. User A starts to send the message to the network.
3. The network translates it to the selected language.
4. The network sends the translated message to user B.
5. The translated message can be shown on the user B's client screen.
6. User B sends the message to the network.
7. The network translates the message into the selected language and sends the translated message to User A.
8. The translated message can be shown on the user A's client screen.

4.4 Social Presence Information Use Cases

4.4.1 Who Can I Invite?

New user wants to invite his/her friends to share social presence.

- User A goes to his/her RCS enhanced address book
- User A traverses through the list of contacts and sees that User B is also an RCS user
- User A decides to send an invitation to share Social Presence Information to User B.

4.4.1.1 Controlling Privacy

- User A starts using RCS
- The user decides not to share information about he/she being an RCS user by for example explicitly setting a tick mark to a check box in the "*share that you are RCS user*" settings
- User B goes to his/her Enhanced Address Book and selects User A's contact card and sees that User A is not an RCS user

- Later on User A decides to change his/her privacy settings by for example clearing the tick mark from the check box in the “*share that you are RCS user*” settings
- User B decides to visit again User A’s contact card and now sees that User A is an RCS user.

4.4.2 Personalized Invitation with a Nickname

4.4.2.1 A Invites B and Fills Out His Nickname. A Is Present in B’s Address Book

- When B receives the invitation, it is the contact name entered in A’s v-card that is used, not the nickname.
- For example, B can read “<A v-card name> <MSISDN> wants to share presence information with you.”

4.4.2.2 A Invites B and Fills Out His Nickname. B Has Not Created A Contact Card for A in Is Address Book.

- When B receives the invitation, the nickname is used to present the invitation to B
- For example, B can read “<A nickname > <MSISDN> wants to share presence information with you.”
- If B accepts the invitation, a contact card is created. A’s nickname can be used to reference the contact card in B’s address book.

4.4.3 URL Label

User A wants to promote his blog to his friends. He fills in the URL with “www.userA_blog.com”, and fills in the label with “New photos of party”.

4.4.4 Geolocation

4.4.4.1 Manual Free Text

- User A set his location manually (for example, I am in Paris)
- User B sees that User A is in Paris.

4.4.4.2 Manual Position on a Map

- User A decides to update his location. He drags and drops a pin on a map and then confirms the position. Even though user A is located in Paris, France, he selects New York as a location on the map.
- User B receives a notification.
- User B sees that User A is in New York.

4.4.4.3 Semi-Automatic Filling

User A decides to edit his location status. He clicks on the location update button, and his location is automatically filled in the dedicated field decides to edit his location status.

4.4.4.4 Fully Automatic Opt-In Mode

User A decides that he wants his authorized contacts to be informed regarding his position on a regular basis (period to be defined), he clicks on the “authorize my contacts to view my location” button (opt in). If he decides to end this broadcast he always has the ability to opt out through the same button.

In all cases, user B (authorized contact in User A's address book) is notified as he would be notified of other presence information, such as status text.

4.4.4.5 Blocking an Authorized Contact from Viewing Location

- User A and B are authorized RCS contacts who have updated their location information
- User A decides to hide his location from user B, while still sharing it with his other authorized contacts
- User A goes to his location settings currently set to "Share my location with all my authorized contacts" to "Prevent some authorized contacts from viewing my location"
- User A adds User B in the list of contacts blocked from viewing his location
- User B does not see User A's location information anymore
- User A still sees User B's location

4.5 Automatic Provisioning and Configuration of RCS Devices/Clients

4.5.1 Using an RCS Device/Client

User A buys an RCS device, and starts it for the first time. The device/client is registered to the network, and RCS services and functionalities are available, without the end user having to configure any settings for SIP, XDM, Presence, etc. These settings shall in fact be locked.

After a certain parameter is changed in the network, all RCS services and functionalities continue being available, without the user having to configure any new settings. Later on, the user purchases a mobile phone or decides to add a cellular RCS client, which by default becomes the primary RCS client now.

The provisioning mechanism must handle all combinations of RCS clients and normal add/delete actions involving RCS clients.

5 High Level Technical Description and Referenced Standards Specifications

For technical description and referenced standards specification regarding service features part of this RCS Release, please refer to the RCS Technical Realization documents ([TECHREAL], [TECHREAL2] and [TECHREAL3]).

6 Release 3 Requirements List

- [3.1.1] BA device shall be able to send SMS messages.
- [3.1.2] BA device being primary device shall be able receive SMS messages.
- [3.1.3] An BA device being primary device shall be able to request and receive notifications about message status for sent SMS messages
- [3.1.4] SMS messages shall be delivered to the primary device only.
- [3.1.5] SMS message status notifications (SMS status reports) shall be delivered to the devices under the same conditions as normal SMS messages.
- [3.1.6] BA device shall be able to send MMS messages.
- [3.1.7] BA device being primary device shall be able to receive MMS messages.
- [3.1.8] An BA device being primary device shall be able to request and receive notifications about message status for sent MMS messages
- [3.1.9] MMS messages shall be delivered to the primary device only.
- [3.1.10] A SMS or MMS shall be regarded as delivered when it has been successfully received by any of the recipient's devices.
- [3.1.11] MMS message status notifications (delivery and read notifications) shall be delivered to the devices under the same conditions as normal MMS messages.
- [3.1.12] Status notifications received for messages unknown to that device (the message may have been sent from another of the user's device) shall be ignored on that device.
- [3.1.13] Messages sent from a broadband access client are not expected to be part of the conversational view on mobile access devices, and vice versa.
- [3.1.14] Delivered Messages may be part of the conversational view on either device subject to the delivery conditions.
- [3.1.15] It shall be possible to generate charging events for sent SMS and MMS messages either on successful submission or successful delivery.
- [3.1.16] It may be possible to generate charging for successfully received SMS and MMS messages
- [3.2.1] Content Sharing shall be uni-directional. During a single content sharing session, the originator of the content sharing session can share content with the terminating party, but the terminating party cannot share content with the originator.
- [3.2.2] It shall be possible to establish a Content Sharing Session without an accompanying circuit switch and packet switched voice call.
- [3.2.3] Support for Video Sharing is mandatory.
- [3.2.4] It shall be possible for a terminating party or an originating party to terminate the Content Sharing session.
- [3.2.5] It shall be possible to stream audio, along with video, during a Content Sharing session without a CS and PS voice call.
- [3.2.6] Content Sharing without an accompanying CS and PS voice call share comply with IR.84
- [3.2.7] There is no requirement to support Content Sharing without an accompanying CS and PS voice call with a RCS 1 or RCS 2 device.
- [3.2.8] NVAS menu shall automatically get at registration

- [3.2.9]** NVAS shall be activated/invoked at session establishment
- [3.2.10]** NVAS Invoking at sending side shall be without comparison between VA content and original content
- [3.2.11]** NVAS invoking side is same as session originating side shall be without comparison between VA content and original content
- [3.2.12]** NVAS invoking at the sending side and the receiving side at the same time without comparison between VA content and original content
- [3.2.13]** NVAS Invoking side is same as session originating side without comparison between VA content and original content
- [3.3.1]** If the session originating client and network support NVAS capability, the originating user can invoke NVAS (for example, enriched content sharing, enriched chat) irrespective of the NVAS capability of the session terminating client and network.
- [3.3.2]** Each NVAS operators can provide users with NVAS menu, which include their own NVAS services. The client automatically gets the NVAS menu, when the client is registered to the network, and then the client stores the NVAS menu.
- [3.3.3]** The user selects a NVAS service and an added value from the NVAS menu, and then the user originates the network value added session. The client requests the originating network to activate and invoke the NVAS at the session initiation.
- [3.3.4]** In the case where the session is uni-directional, the session originating user only sends the content/message and the session originating network adds the value to the content/message sent. The processed content/message is then received by the intended recipient
- [3.3.5]** In the case where the session is bi-directional, the session originating user sends the content/message and the network adds the value to the content/message sent. The processed content/message is then received by the intended recipient. Additionally, the session originating user receive value added content/message sent form the session terminating user after the session originating network have added the value to the content/message.
- [3.3.6]** It shall not be necessary for the end user to manually configure any settings in order to use RCS.
- [3.3.7]** If overtime, a certain parameter changes in the network, mechanisms shall exist for this parameter to be changed without the end user taking any manual action
- [3.3.8]** The automatic provisioning of settings shall also be done for non-mobile devices, such as PC clients.
- [3.3.9]** Settings needed for RCS to function correctly shall be locked in the device and not accessible to the end user, unless otherwise stated.
- [3.3.10]** If a certain setting may limit the user experience provided to the end user, this information should be clearly shown in the user interface. In addition this allows the user to be aware of this limit while interacting with the service (for example, maximum number of characters to be included in the free text of the Social Presence Information, or maximum size of a file to be transferred).
- [3.3.11]** A RCS user SHALL be able to share a video content along with a voice call towards a legacy user
- [3.3.12]** RCS user SHALL be able to share a video content along with a voice call towards a RCS user, using content already stored into the network
- [3.4.1]** The user shall be able to see which of his/her contacts are also RCS users
- [3.4.2]** The user shall be able to see the capabilities of his/her contacts in order to establish RCS-type of communications only with RCS-enabled contacts
- [3.4.3]** The user shall be able to control his/her privacy by setting whether this information should be shared or not
- [3.7.1]** The User shall be able to share location information as social presence information with his/her authorized contacts
- [3.7.2]** The User shall be able to define a list of contacts blocked from viewing his/her location information, within his list of authorized contacts for presence

- [3.7.3]** The User shall be able to specify their location through manual or automatic modes, as free text or as coordinates on a map
- [3.7.4]** The User shall be able to de-activate automatic updates or delete their location information at any time, to protect their privacy
- [3.7.5]** The User shall be able to share location information even if he/she is using a non-GPS device
- [3.7.6]** The Service Provider shall be able to limit the frequency of automatic updates to avoid network overload
- [3.7.7]** The Service Provider shall be able to set an expiration date for location information
- [3.8.1]** The User shall be able to define a nickname transmitted to his contacts when sending invitations, in addition to the MSISDN
- [3.8.2]** The User shall be able to change that nickname at anytime, especially before sending invitations
- [3.8.3]** The Service Provide shall be able to specify the maximum length of the nickname
- [3.8.4]** The Nickname shall never automatically replace the existing registered name of a contact in the invitation recipient's phonebook
- [3.9.1]** The User shall be able to specify a text label displayed in lieu of the personal URL
- [3.9.2]** The User shall be able to change the URL label at any time
- [3.9.3]** The Service Provider shall be able to specify the maximum size of the URL label
- [3.10.1]** The RCS Release 3 IM Server shall for a group chat include the list of invited participants in the group chat invitation sent to the invited parties.
- [3.10.2]** The RCS Release 3 client of an invitee to a Group Chat shall display to the user the list of Invited Participants, if provided

Document Management

Document History

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
0.1	13 Oct 09	Baseline RCS release 3		Fernando Rodríguez / Telefónica
0.2	19 Oct 09	General modifications and corrections		Daren Furness / Telecom NZ
0.3	26 Oct 09	Accepted some corrections and comments from Daren		Fernando Rodríguez / Telefónica
0.4	26 Oct 09	Added new CRs Added document references		Fernando Rodríguez / Telefónica
0.5	2 Nov 09	Updated with the final CRs releases		Fernando Rodríguez / Telefónica
0.6	3 Nov 09	Spellchecking and changed should with shall be able ...		Fernando Rodríguez / Telefónica
0.7	5 Nov 09	Updated with the approved CRs on 4 th November Conference Call		Fernando Rodríguez / Telefónica
0.8	5 Nov 09	Replace the term the references “RCS x.0” by “RCS Rx” (section 2.X.1)		Fernando Rodríguez / Telefónica
0.9	5 Nov 09	Replace the wording “cellular device” by “mobile device” to align with previous FDDs and with TR		Fernando Rodríguez / Telefónica
0.10	5 Nov 09	Editorial revisions with regards to the “IMS Primary Device” sections in the RCS R3 FDD		Fernando Rodríguez / Telefónica
0.11	5 Nov 09	Updated Requirements list section. Relation between CRs and Req. Numeration: <ul style="list-style-type: none"> • Legacy messaging: 3.1.x • CSE: 3.2.x • NVAS: 3.3.x • Who can I invite: 3.4.x • Provisioning: 3.5.x • Deferred Content Sharing: 3.6.x 		Fernando Rodríguez / Telefónica
0.12	13 Nov 09	Replaced the title of section 3.2.3 from “Call Scenarios utilizing AMR-WB VoIP Codec Protocol” to “Call Scenarios utilizing PS voice protocols” Moved inline Daren’s comments to Word comments.		Fernando Rodríguez / Telefónica
0.13	13 Nov 09	Updated with the approved CRs on 10 th November: Geolocation, Personalized invitation, URL Label, Enhanced messaging.		Fernando Rodríguez / Telefónica

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		Req. Numeration: <ul style="list-style-type: none"> • Geolocation: 3.7.x • P. Invitation: 3.8.x • URL Label: 3.9.x • E. Messaging: 3.10.x 		
0.14	15 Nov 09	Format changes Removed R2 use cases Added Use cases: <ul style="list-style-type: none"> • Legacy messaging (3.1.1) • CSE (3.1.2, 3.1.3) • NVAS (3.1.4, 3.1.5) • Who can I invite? (3.2.1) • Provisioning (3.4.1) • DCS (3.1.6, 3.1.7) • Geolocation (3.3.x) • Personalized invitation (3.2.2.x) • URL Label (3.2.3) • Enhanced Messaging (3.1.8) 		Fernando Rodríguez / Telefónica
0.15	18 Nov 09	Included new approved CRs on 17 th November 2009 Added additional use cases for CSE <ul style="list-style-type: none"> • 3.1.9 & 3.1.10 Added Uploading Content to the Content Server for later use CR		Fernando Rodríguez / Telefónica
0.16	18 Nov 09	Work out the structure of the document by grouping all requirements under the same functionality, for example, the multi-device related requirements should be treated under each functionality section without the need for one dedicated section covering all the functionalities. (New chapter 3) Note: CR 2009-FN0028 is now in 3.3.1.2		Fernando Rodríguez / Telefónica
0.17	19 Nov 09	<ul style="list-style-type: none"> • I removed some text that came from the old R2 FDD. As the Re FDD is a "delta" FDD, there should not be any need for repeating the R2 text in the R3 FDD. Chapters 3.1.1 "Broadband access to RCS features", 3.1.2 "Send SMS from BA device" and 3.2 "Multidevice Enhancements" were removed • I moved all new Messaging features under one new chapter (3.4), including CRs "list of invitees in group chat" and "Legacy messaging on BA device" (which text actually was missing in this version of the FDD) • I moved all new SPI (presence) 		Mats Persson / Ericsson

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		<p>features under one chapter (3.3), including geolocation.</p> <ul style="list-style-type: none"> • I added a similar sub-heading structure to each feature (3.x.y) chapter, including separate sub-chapters for "backwards compatibility" and "charging considerations" • I restructured the use-case section (4) using similar structure as in chapter 3 • Lastly I made some editorial corrections to the text from the CRs in several places. I haven't put that much effort in this though, as some chapters need to be updated with the text from the latest CRs (for example, NVAS CR 0016 v1.2). 		
0.18	24 Nov 09	Added CR: 2009-FN0029 – Additional SPI clarifications for Release 3		Fernando Rodríguez / Telefónica
0.19	25 Nov 09	New section "3.7 Terminal Combination for one given RCS R3 end-users".		Fernando Rodríguez / Telefónica
0.20	26 Nov 09	Added new provisioning parameters: expiration and minimum duration between location information updates.		Fernando Rodríguez / Telefónica
0.21	26 Nov 09	Added in the document references the CR 2009-FN0027 - Additional RCS Release 3 Content Sharing use case		Fernando Rodríguez / Telefónica
0.22	27 Nov 09	Included CR 2009-FN0030 - NVAS consistency between FDD and TR		Fernando Rodríguez / Telefónica
0.23	27 Nov 09	Included CR 2009-FN0025 – CR NVAS		Fernando Rodríguez / Telefónica
0.24	1 Dec 09	Included CR 2009-FN0031 and CR 2009-FN0032		Fernando Rodríguez / Telefónica
0.25	1 Dec 09	<p>Added some clarifications about the maximum length of the Geolocalization text on the "Geolocation Enhancement" chapter.</p> <p>Also, added a new provisioning parameter with the geolocation declarative text maximum length</p>		<p>Fernando Rodríguez / Telefónica</p> <p>and</p> <p>Thibaud Mienville / Orange</p>
0.26	11 Dec 09	Update 0.25 (Approved at Plenary 3/12/09) with front pages for DAG approval. See SPEC DOC RCS SPEC R3_006 in https://infocentre.gsm.org/cgi-bin/docindex.cgi?34307	RCS Programme	Dirk Raeymaekers/ NSN
0.27	14 Dec 09	Comments removed	RCS Programme	Dirk Raeymaekers/ NSN

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1.0	25 Feb 2010	Approved by DAG/EMC, removal DAG review sheet	RCS Programme	Dirk Raeymaekers /NSN
1.1	01 Dec 2010	Inclusion of RCSR3-FDDJUNE10-BF002 Availability Status	RCS Programme	Jean-Francois Labal – Alcatel Lucent
2.0	14 Feb 2011	Submitted to DAG and EMC for approval	EMC	Jean-Francois Labal – Alcatel Lucent

Other Information

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