



Rich Communication Suite Release 2

Functional Description 1.1 February 25, 2010

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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 work 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.

This document details the functional description of service features that define RCS Release 2.

Please refer to the RCS Technical Realization [TECHREAL2] for detail regarding the technical realization of these service features.

1.2 Scope

The scope of the document includes only the RCS Release 2.

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 3.

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 Functional Description [FUNCDESC] and Technical Realization [TECHREAL] for detail regarding the definition of RCS Release 1, which serves as basis for RCS Release 2. For further detail regarding the technical realization of the service features described in this document, please refer to the RCS Release 2 Technical Realization [TECHREAL2].

1.3 Definition of Terms

Term	Description
BA	Broadband Access
EAB	Enhanced Address Book
NAB	Network Address Book
RCS	Rich Communication Suite

1.4 Document Cross-References

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

2 FUNCTIONAL DESCRIPTION OF RCS 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 (cf. [FUNCDESC], section 2.1): 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 hyper-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.
- Content Sharing (cf. [FUNCDESC], section 2.2): 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.
- File Transfer (cf. [FUNCDESC], section 2.3): allowing 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): 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, 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 Description of RCS Release 2 Service Features

The main purpose of the RCS Release 2 is to provide the user with an access to RCS service features from a wider range of devices, making it possible to use RCS from a PC, for instance.

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 in detail below.

2.2.1 Broadband Access to RCS features

2.2.1.1 Overview

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

The user may have one or several RCS clients simultaneously. The same service level shall be reached regardless of the client type (for example mobile or PC) or access method to the network (for example cellular or broadband). The rich communication shall be possible between mobile and broadband access devices, including communication between two or more BA devices. Clients from different service providers shall be able to communicate with each other, also when BA devices are used (Network-Network interworking is required). It should be possible for an RCS Release 1 user to communicate normally with a contact making use of an RCS Release 2 client (for example a client on a PC or other BA device).

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.

2.2.1.2 RCS features via Broadband Access

The user will be able to access the Enhanced Address Book also when a BA device is used. All the existing Social Presence features like free text, hyper-availability, 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.

The following communication services will be possible:

- A voice call between a BA device and a mobile or another BA device. Both parties shall be able to initiate the call.
- During a voice call between mobile and BA device or between BA devices a video or an image can be shared.
- Inside and outside a communication a file can be transferred with other RCS enabled contacts.
- Session based Chat can be set up with other RCS contacts, both 1-to-1 Chat and Group Chat.
- When having a BA device the user shall be able to send an SMS.

Anyway, video call is not supported over broadband access.

2.2.2 Multi-device environment

2.2.2.1 Overview

RCS Release 2 introduces the support for broadband access devices that allow users to use RCS services for example from a PC. 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. Also other combinations are possible in the future.

The Multi-device environment allows a user to:

- Be able to answer a call or respond to a message from a device/client that suits the purpose best
- Have a single buddy list shared between the devices/clients
- Be able to authorize invitations to share Social Presence Information from every device/client
- Have a single Social Presence Information that can be seen and maintained from every device/client that the user has

2.2.2.2 General communication behaviour

The general communication behaviour is that when the recipient has multiple devices/clients in use and a call is made or a message is sent every recipient's device will alert. The recipient may then respond to the call or to the message from any of his/her devices; whichever device is the best for the current situation. In addition when the recipient accepts or rejects a call from any of the devices, all the other devices will stop alerting.

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 to be the primary device while the client with the broadband access will be the secondary device.

The MSISDN of 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.

However as a fallback for legacy networks where the above is not feasible a call or session might be directed to a certain device.

2.2.2.3 Control of service delivery

A user should be given the possibility to control the flow of communication. In some cases a user may not be willing to for example answer calls from a secondary device (for example a PC). The difference between muting and control of service delivery is that the control of service delivery:

- Disables the service: the user no longer receives calls, messages or requests for the service
- When the service is disabled the user cannot use the service to make calls, send messages or requests

To provide a good user experience, the device/client must clearly show that the service/services are disabled in the device/client user interface.

As a default setting the secondary device will receive all the communication. What will happen when the user changes the settings, closes the device/client and starts it again is out of scope of this document; it is up to the device/client vendor to decide.

The control of service delivery is for secondary clients only and the list of services that the user may control is operator configurable.

2.2.2.4 Enhanced Address Book and Presence

Social Presence Information is shared between the user's devices/clients meaning that the user:

- Can see his/her current Social Presence Information from any of the devices/clients that he/she has
- Can alter his/her Social Presence Information from any of the devices/clients that he/she has.

Also the user's contacts with whom a Social Presence Relationship exist, see a single Social Presence Information from the user.

The service capabilities of the clients are combined in the network to a single set of service capability information comprising information of all the devices/clients that the user has. As an example, if a user has support for the Chat service in his/her PC client but not from his/her mobile, then the service capability information still shows the capability for the Chat service.

Also it should be noted that the control of service delivery on a secondary device will affect the service capabilities published by an RCS user. For instance, in the previous case the service capability information would not show the capability for the Chat service, if the user decides to disable that functionality in the secondary device. The capability would be shown again as soon as the service is enabled, being this the only example where the service capability indication can be seen as dynamic information.

When a user receives an invitation to share Social Presence Information, the invitation will be sent to all of the user's devices/clients. Regardless of how many devices a certain contact has, the user must have the possibility to get all the presence information by subscribing to the contact only once, and not to every device that he/she may have.

2.2.2.5 Content Sharing and File Transfer

The request for content sharing or file transfer is sent to all of recipients' devices/clients, and the recipient is able to select the device where the content sharing session is opened or to which the file is transferred by accepting on that device.

This allows for example the use case where the user is having a call with his/her mobile and receives content (related the call) on his/her PC.

2.2.2.6 Enhanced Messaging

In RCS Release 2 a broadband access client is only able to send SMS messages, but not to send MMS or receive SMS and MMS messages. Thus when a user has multiple devices/clients in use this means that the SMS and MMS are always sent to client with the cellular access, which is the primary device.

It should be noted that the messages sent from a broadband access client will not be part of the conversational view on primary devices.

Regarding the Chat service, in RCS Release 2 a user can start a Chat by selecting a contact or contacts from the Enhanced Address Book and sending a message to the selected party/parties. The contacts will not get an explicit request to start a Chat conversation. Rather, the message is received in all of the recipient's devices/clients, and displayed in their Chat view.

When the recipient replies to the message from any of his/her devices/clients, the Chat session continues between the initiating user's device/client that was used to send the first

message and the device/client from where the recipient responded to the message. The Chat session will be cancelled in the rest of the recipient's devices/clients.

The initial message or messages sent to the other devices/clients are stored in those devices/clients.

2.2.3 Network Address Book

2.2.3.1 Overview

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 his/her 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.

2.2.3.2 Management of the NAB

The NAB shall contain a list of the devices owned by the user which are subject to synchronize their contact information with the NAB.

When a change in the address book of a user's device occurs, the changes shall either be uploaded to the NAB immediately, or at a scheduled synchronization interval (for example every 24 hours), which may be specified by the end user. This information shall be configured in the user's device.

The NAB requires devices to be able to keep tracks of changes that have happened between synchronizations, that is, they are responsible for maintaining the change log information about the modifications associated with address book entries.

2.2.3.3 Management of contact information

Each contact in the address book shall include at least the following information: name, surname, birthday, notes, mobile phone number (general, home and work), fix phone number (general, home and work), fax (general, home and work), e-mail (home and work), business information (company name and job title), address (street, city, state, postal code, country), and web address (home and work).

The user can manage the contact information in the address book, being able to add, delete or replace any field from any contact in the EAB, as well as to add, delete or modify contacts in the address book.

- When a user adds new data to the EAB on any device, the NAB is synchronized with this new data. Only the new data is sent to the NAB, and not the entire address book.

- When a user deletes data from the EAB on any device, the corresponding data is deleted on the NAB. Two types of Delete shall be supported – Hard Delete and Soft Delete. In the case of Hard Delete, the data is permanently removed from the data store. In the case of Soft Delete, the data is deleted from the EAB on the device, but not from the NAB on the server. This way, if desired the end user shall be able to recover the deleted data back to the EAB.
- When a user replaces existing data in the EAB on any device, the corresponding data on the NAB is replaced. The replace procedure supports field level replace, which supports sending an update of the replaced field from the EAB to the NAB, without having to send the entire address book.

Updates to the contact information can be performed on any of the user's registered devices. In all cases, the latest update (based on the timestamp) will overwrite any previous update. As an example, if Contact A's information was updated at 11:00am on Device X, but uploaded to the NAB only at 11:30am; and Contact A's information was updated at 11:05am on Device Y, but uploaded to the NAB at 11:20am, the 11:05am update of Contact A's information on Device Y will stand since it was performed later than the one on Device X.

2.2.3.4 Synchronization of multiple devices

Synchronization of other devices owned by the user will be coordinated by the NAB. NAB attempts to synchronize other devices owned by the user which are on the synchronization list. For handling of devices that are off-line and other abnormal conditions during the synchronization procedure please refer to the Technical Realization document ([TECHREAL2]).

It is possible that an NAB update or multi-device synchronization procedure is interrupted as a result of user intervention, loss of network coverage, loss of IP connectivity, device malfunction, loss of power, and so on. It shall be possible to resume this paused procedure.

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. 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 misconfiguration of RCS services. However, there should still be the possibility of configuring certain settings (for example SIP, XDMS) which may be needed for accessing the service when for example changing from service provider.

If overtime, 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.
- 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.

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 EXAMPLE USE CASES OF RCS SERVICE FEATURES

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

3.1 Broadband Access scenario use cases

The RCS features via broadband access provide identical use cases as defined in RCS Release 1; the only difference is the access type and potential better user experience and higher performance (for instance, larger keyboard and screen with higher resolution). Most use cases are hence not described again in this section.

The use cases related to authentication and SMS service are described below, since they are new or have a different user experience from the one provided by RCS Release 1.

3.1.1 Authentication with xSIM

An RCS user has a broadband access device and xSIM. The RCS client is launched, which may happen automatically at start-up of the device, or be done manually by the end user. Since the authentication is done via xSIM, the user can/will be asked to enter a PIN code associated with the xSIM. Once the correct PIN code has been entered, the user is able to access the network and use RCS services.

3.1.2 Authentication without xSIM

An RCS user has a broadband access device. When the RCS client is launched, which may be done manually by the user, or automatically at start-up, the user will be asked to enter his username and password. If the information entered by the user is correct, access to the network will be granted and he/she will be able to use RCS services.

3.1.3 Send SMS from Broadband Access device

With the RCS client running on the BA device, the user decides to send an SMS to one of the contacts in the address book. By selecting the SMS service an SMS can be composed. The end-user will get the well known SMS user experience. For example, this includes the experience that longer text messages are split in separate messages. The user will be aware that receiving SMS on the BA device is not possible, so the conversational view defined in RCS Release 1 will be disturbed in this particular case, since a reply SMS to the message sent from the BA device will come to the primary device (for example, the mobile client).

3.2 Multi-device environment use cases

3.2.1 Controlling service delivery

User A has a mobile device and a broadband access device (RCS PC client). User B has a mobile device.

- User B calls user A, and both of user A's devices start to ring. For some reason user A does not have a possibility to talk through his/her PC so he/she decides to get the call to his/her mobile.
- After the call, user A decides to receive no longer calls to his/her PC. User A selects from the PC a settings screen, selects "no calls" and confirms.
- User A sees in the PC client's user interface that he/she is no longer able to receive voice calls, for instance because the client displays an icon or text stating that.
- In addition to this, the voice call icon is for example disabled in user A's PC client, forbidding user A to make any voice calls from that client.
- Later on user B decides to make another call to user A, and only user A's mobile device will ring.

3.2.2 General call and session handling

User A has a mobile device and a broadband access device (RCS PC client). User B has a mobile device.

- User B wants to send a file to user A.
- User B selects user A from the Enhanced Address Book from his/her device, and then the file transfer service.
- User B selects a file and clicks the send button.
- User A receives a request for sharing a file to both of his/her devices.
- User A is coming back to office from lunch and would like to receive the file to his/her PC.
- User A cancels the request from the mobile device and both of the devices stop alerting.
- User A sends a message to user B asking him/her to wait until user A is back in the office.
- In the office, user A sends a message to user B saying that now he/she is back in the office and can receive the file.

- User B selects user A from the Enhanced Address Book from his/her device, and then the file transfer service.
- User B selects a file and clicks the send button.
- User A receives a request for sharing a file to both of his/her devices.
- User A accepts the request from his/her PC.
- User A's mobile device stops alerting.
- The file is transferred from user B's device to user A's PC.

3.2.3 Invitation to share Social Presence Information

Both user A and user B have a mobile device and a broadband access device (RCS PC client).

- User A finds out through the mobile's Enhanced Address Book that a friend, user B, is using RCS too.
- User A sends an invitation to share Social Presence Information to user B.
- User B receives the invitation to both his/her mobile and PC.
- User B accepts the invitation from the mobile device.
- User A sees user B as a friend from both the mobile phone and the PC client, being able to see user B's Social Presence Information.
- User B sees user A as a friend from both the mobile phone and the PC, with user A's Social Presence Information.

3.2.4 Updating Social Presence Information

Both user A and user B have a mobile device and a broadband access device (RCS PC client).

- User A comes to work at morning and opens up his/her PC.
- User A changes his/her free text to read: *"Another Monday at office"*.
- When user B reads the text he/she sees the change in all of user B's devices.
- The change is also reflected in user A's mobile device.
- During lunch hour, user A takes his/her mobile and heads for a long lunch with a friend.
- User A takes a bus to the place and while in the bus opens the Enhanced Address Book.
- User A notes that the current free text is saying that he/she is in the office.
- User A decides to change the free text to read: *"In a long lunch with a friend"*.
- When user B now reads the text he/she sees the change in both of his/her devices.
- The change is also reflected in user A's other device (that is, the PC).

3.2.5 Chat

User A has a mobile device and a broadband access device (RCS PC client). User B has a mobile device.

- User B is organizing a party and wants to see beforehand whether the date is ok with his/her friends.
- User B selects user A from his/her Enhanced Address Book and sees that he/she is able to chat with user A, by for example the Enhanced Address Book showing a Chat icon.
- User B opens up the Chat application by pressing the Chat icon.
- User B writes down the message to the Chat application and sends the message by for example pressing a send button.
- User A receives the message in both of his/her devices.

- User A is visiting a store in the city centre and sees the message in his/her mobile.
- User A responds to the message by writing down a message and then sending the message to user B by for example pressing a send button.
 - If user A does not respond to the initial message, user B can send additional messages to user A, which are received as several initial messages.
 - User A may also decline the Chat request by for example selecting a leave option. This action would be transparent to user B.
- The alerting stops in user A's PC, but the message remains.
- User B receives the message to his/her device.
- When user B immediately responds back to user A, the message is sent only to user A's mobile.
- After user A and user B have sent several messages, and user B has got the confirmation that the date for the party suits user A, user B decides to leave the chat by for example selecting a leave option.
- User B's Chat application closes. This action is transparent to user A.

3.2.6 Content sharing

User A has a mobile device and a broadband access device (RCS PC client). User B has a mobile device.

- User B has travelled to Hong Kong and is visiting the Victoria's peak. The view from top of the peak is astonishing and he/she would like to share the experience with his/her friend user A.
- User B makes a call to user A and tells him/her about the view he/she is viewing. To prove his/her words user B decides to share a video with user A.
- User A answers on the mobile.
- User B sees from the call menu that he/she can share video with user A. User B sends the request to share video, for example, by clicking video share icon.
- The request is sent to both user A's mobile and PC; both mobile and PC will alert.
- As user A is sitting in front of his/her PC he/she decides to take the video to the PC for example, by clicking accept button on the PC client.
- User A's mobile will then stop alerting.
- User A will now see the beautiful scenery shared by user B in his/her PC while still having the voice call on the mobile.

3.3 Network Address Book

3.3.1 Update of contact information

- User updates an entry in the Enhanced Address Book of his RCS enabled device
- This change is transmitted to the Network Address Book (NAB)
- NAB updates the Address Book on all other RCS enabled devices associated with the user, including broadband access devices (for example PCs):
 - The user shall be able to configure/select the list of devices that are updated

3.3.2 Deleting a contact

- User deletes an entry in the Enhanced Address Book of his RCS enabled device
- This change is transmitted to the Network Address Book (NAB).
- NAB deletes this entry on all other RCS enabled devices associated with the user, including broadband access devices (for example PCs):
 - The user shall be able to configure/select the list of devices that are updated

- If a Soft Delete is performed, the contact information is not permanently removed from the NAB, so that the end user is able to recover the deleted data back to the EAB

3.3.3 Adding a new contact

- User adds a new contact in the EAB on his RCS enabled device
- This addition is transmitted to the Network Address Book (NAB)
- NAB adds this entry on all other RCS enabled devices associated with the user, including broadband access devices (for example PCs):
 - The user shall be able to configure/select the list of devices that are updated

3.3.4 Including an additional device for synchronization

- User had multiple devices. The EAB on all these devices is kept up to date and synchronized, using the NAB
- User buys a new device and is interested in synchronizing the EAB on this device with the NAB
- User adds this device to the list of devices to be updated
- User initiates a synchronization request to the NAB
- EAB on the new device is updated with the current version of the NAB

3.4 Automatic provisioning and configuration of RCS devices/clients

3.4.1 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, and so on. 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.

4 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] and [TECHREAL2]).

5 RELEASE 2 REQUIREMENTS LIST

- [2.1.1] RCS users shall be able to reach their services from a client connected via broadband access (for example from a PC or laptop)
- [2.1.2] RCS users with broadband access shall be able to authenticate via xSIM or username/password
- [2.1.3] RCS users with broadband access shall be able to set up or receive a voice call with a mobile or another broadband client
- [2.1.4] During a voice call the RCS user with broadband access shall be able to share a video or an image as defined in RCS Release 1 ([FUNCDESC])
- [2.1.5] An RCS user with broadband access shall be able to share a file inside and outside a communication with other RCS enabled contacts as defined in RCS Release 1 ([FUNCDESC])
- [2.1.6] An RCS user with broadband access shall be able to set up or participate in a session based chat with other RCS contacts, both 1-to-1 Chat and Group Chat as defined in RCS Release 1 ([FUNCDESC])
- [2.1.7] An RCS user with broadband access shall be able to send an SMS
- [2.1.8] An RCS user with broadband access shall be able to access the Enhanced Address Book, supporting all the social presence features as defined in RCS Release 1 ([FUNCDESC])
- [2.1.9] An RCS user with broadband access shall support Social Presence Authorization as defined in RCS Release 1 ([FUNCDESC])
- [2.2.1] It shall be possible to use more than one RCS enabled device at a time
- [2.2.2] There shall be only one primary device in use at a time
- [2.2.3] One single MSISDN shall be used for incoming and outgoing calls and sessions, even when using multiple devices. As a fallback for legacy networks where the above is not feasible a call or session may be directed to a certain device
- [2.2.4] When a call or a session is made every recipient's device shall alert
- [2.2.5] The recipient shall decide on which device he/she accepts the call or session
- [2.2.6] When a call or a session is accepted or rejected from one device it shall be cancelled on all other devices that the recipient has.
- [2.2.7] When a call or a session is cancelled by the calling device, it shall be cancelled in all devices that the recipient has.
- [2.2.8] The calling shall work according to what is defined in the requirements [2.2.3], [2.2.4], [2.2.5], [2.2.6] and [2.2.7]
- [2.2.9] In addition to muting, the user shall be able to control the service delivery for a secondary device
- [2.2.10] In relation to requirement [2.2.9], as a default, device shall be able to receive all the communication
- [2.2.11] The list of services that the user may control shall be operator configurable
- [2.2.12] The watcher shall receive all the presence information of the presentity with a single invitation

- [2.2.13]** The buddy list shall be shared between the watcher's devices
- [2.2.14]** The presentity's service capability information shall be a combination of capabilities from all of the presentity's devices
- [2.2.15]** Control of service delivery shall affect the service capabilities published by a device
- [2.2.16]** The presentity shall be able to edit the Social Presence Information from any of the devices he/she has and shall see the changes from every device he/she has
- [2.2.17]** Social Presence Information shall be handled in such a way that the latest update is presented to the watching user's client
- [2.2.18]** The invitation to share Social Presence Information shall be shown in all of the presentity's devices
- [2.2.19]** The presentity shall be able to authorize watchers from any of the devices he/she has
- [2.2.20]** The content sharing shall work according to what is defined in the requirements [2.2.3], [2.2.4], [2.2.5], [2.2.6] and [2.2.7]
- [2.2.21]** The file transfer shall work according to what is defined in the requirements [2.2.3], [2.2.4], [2.2.5], [2.2.6] and [2.2.7]
- [2.2.22]** SMS and MMS are always received on the primary device, that is, the device with the cellular access
- [2.2.23]** For 1-to-1 Chat, when the Chat is started the first message sent by the initiator shall be delivered to all of the recipient's devices according to what is defined in the requirements [2.2.3], [2.2.4] and [2.2.5]
- [2.2.24]** Initial Chat messages shall be displayed in an appropriate way depending on the type of device
- [2.2.25]** When the recipient replies for the first time to a Chat conversation from one of his/her devices, other devices shall work according to what is defined in the requirement [2.2.6]
- [2.2.26]** The UI flow provided to the end user to manage initial Chat messages as well as Chat sessions shall be of user friendly nature. For example, an acceptance to a Chat reply can be combined with the end user selecting "Reply"
- [2.2.27]** For Group Chat, when the Chat is started the first message sent by the sender to the recipients shall be delivered to all of the recipients' devices
- [2.2.28]** When a recipient replies for the first time to a Group Chat conversation from one of his/her devices, other devices shall work according to what is defined in the requirement [2.2.6]
- [2.3.1]** For each NAB user, the list of his/her RCS devices shall be updated in the NAB transparently to the end-user to ensure synchronization on all the end-user RCS devices
- [2.3.2]** Address Book updates can be transmitted to NAB immediately or at scheduled intervals
- [2.3.3]** Each contact information entry in the user's device shall include all the fields specified in Section [2.2.3.3]
- [2.3.4]** NAB shall support adding, deleting or replacing address book entries
- [2.3.5]** NAB shall support pausing and resuming a multi-device synchronization procedure
- [2.3.6]** RCS Release 2 NAB shall be able to manage an RCS Release 1 client
- [2.4.1]** It shall not be necessary for the end user to manually configure any settings in order to use RCS.
- [2.4.2]** 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
- [2.4.3]** The automatic provisioning of settings shall also be done for non-mobile devices, such as PC clients.

- [2.4.4]** Settings needed for RCS to function correctly shall be locked in the device and not accessible to the end user, unless otherwise stated.
- [2.4.5]** If a certain setting may limit the user experience provided to the end user, this information shall be clearly shown in the user interface, allowing 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).

6 DOCUMENT MANAGEMENT

Document History

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
0.1	24 Feb 09	Baseline RCS release 2	RCS Programme	Dirk Raeymaekers /NSN
0.2	7 Apr 09	Initial draft, which integrates the following versions of RCS R2 Functional CRs into a single document: <ul style="list-style-type: none"> — PC Broadband Access (2009_FN00002-PC Broadband Access v0.5) — Multi-device environment (Multi-device Environment 2009-FN0009 R01) — Network Address Book (RCS NAB CR_v3 17Mar09) — Provisioning (Provisioning-2009-FN0001 R06) 		Pablo Álvarez /Telefónica
0.21	30 Apr 09	Integration of the following versions of RCS R2 Functional CRs: <ul style="list-style-type: none"> — PC Broadband Access (2009_FN00002-PC Broadband Access v0 8) — Multi-device environment (Multi-device Environment 2009-FN0009 R03 v02) — Network Address Book (RCS NAB CR_v7) — Provisioning (Provisioning-2009-FN0001 R08) 		Pablo Álvarez /Telefónica
0.3	4 May 09	Introduction of a new section (2.1) with a short description of RCS Release 1 service features. Small format changes have been introduced in the PC Broadband and Multi-device environment sections. Further changes in the Network Address Book section are required. Introduction of new version of the Provisioning CR (R09).	Submitted for review by the RCS Service Description Group.	Pablo Álvarez /Telefónica
0.31	10 May 09	Editorial changes; clarification example of how service capability indication is affected by control of service delivery; inclusion of Network Address Book CR v9; changes in Provisioning section	Submitted for review by the RCS Service Description Group.	Pablo Álvarez /Telefónica

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
		addressing comments received from TG; new section including description of Use Cases; clarification of some functional requirements		
0.4	14 May 09	<p>Following versions of the RCS R2 Functional CRs are included:</p> <ul style="list-style-type: none"> — PC Broadband Access (2009_FN00002-PC Broadband Access v0.9) — Network Address Book (RCS NAB CR_v10) — Enhanced Messaging (RCS-CR Enhanced Messaging 2009-FN0003 Service Description Group v0.5) <p>Small wording changes as suggested in SDG12 conference call meeting in May 12, 2009</p>	Submitted for approval by the RCS Service Description Group.	Pablo Álvarez /Telefónica
0.5	2 Jun 09	Version addressing comments received by SDG delegates during the Functional Description document review period. Clarification added in section 2.2.4 regarding the locking of RCS settings in devices	Submitted for approval by the RCS Service Description Group.	Pablo Álvarez /Telefónica
0.6	15 Jun 09	Updated baseline document including CRs approved in the RCS#5 Plenary meeting in Berg, Germany. Includes latest version of the Provisioning CR (R10).	For approval by the RCS Plenary.	Pablo Álvarez /Telefónica
0.7	22 June 09	<p>Updates after R2 Consistency review</p> <p>Review report : SPEC DOC RCS SPEC R2_007</p> <p>https://infocentre.gsm.org/cgi-bin/docindex.cgi?33477</p> <p>Page 2 Added, needed for DAG Approval</p>		Dirk Raeymaekers/ NSN
0.8	25 June 09	Accept changes front pages & grammar/spelling check	RCS Programme	Dirk Raeymaekers /NSN
1.0	31 Aug 09	DAG & EMC approved and updated version to 1.0	DAG & EMC	Dirk Raeymaekers /NSN
1.0.1	1 Dec 09	Some editorial changes as defined in the CR: RCS2-BF0009	Submitted for approval by the RCS Service Description Group.	Fernando Rodríguez / Telefónica

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
1.0.2	11 Dec 09	Update 1.0.1 (Approved at Plenary 3/12/09) with front pages for DAG approval. No review comments received during consistency review See SPEC DOC RCS SPEC R2_017 in https://infocentre.gsm.org/cgi-bin/docindex.cgi?33477	RCS Programme	Dirk Raeymaekers /NSN
1.1	25Feb 2010	Approved by DAG/EMC, removal DAG review sheet	RCS Programme	Dirk Raeymaekers /NSN

Other Information

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