RCS-e open source stack

Roadmap

Edition 19.0

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History…

- 2007 / First RCS stack for J2ME platform.

- 2008-2009 / RCS 1.0 stack:
    - GSMA IOT: Helsinki (2008) / First participation.
    - GSMA IOT: Paris (2009).
    - GSMA IOT: Munich (2009).

- Jan. 2010 / First RCS stack for Android platform.

- 2010 / RCS 2.0 stack:
    - GSMA IOT: Paris (2010).
    - GSMA IOT: Beijing (2010).
    - GSMA IOT: Madrid (2010).

- Jan. 2011 / RCS 2.0 stack:
    - GSMA IOT: Helsinki (2011).
    - OrangeLabs stack is taken as Reference Implementation by GSMA.

- Feb. 2011 / Integrate the same SIP stack as Google Android 2.3.

- March 2011 / RCS-e stack implementation based on 2.0 stack started.

- April 2011 / First RCS-e 1.1 release available.

- Mai 2011: RCS-e stack published to open source community.

- End of 2011: native integration by several device manufacturers.

Open source project

■ Open source published at:

http://code.google.com/p/android-rcs-ims-stack/
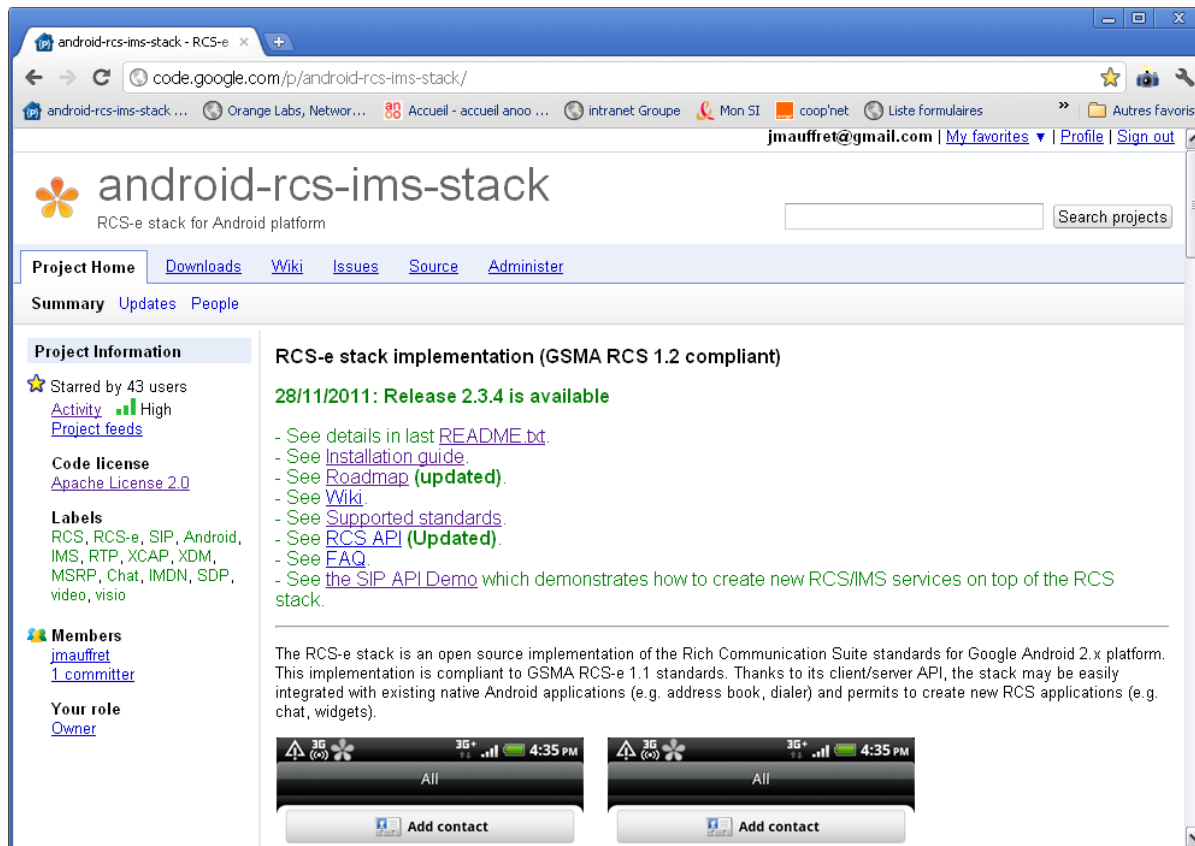
Roadmaps

Roadmap 2011

- **April 18: Sprint 0**
    - First RCS-e release.

- **May 02: Sprint 1**
    - Update capabilities in case of error, end of session.
    - Adapt capabilities thanks to network coverage.
    - Registration management in case of failure.
    - H264 software codec (from Android opencore package).
    - Visio share from 2 individual video share sessions.

- **May 15: Sprint 2**
    - IMDN and message delivery report ("delivered", "displayed").
    - Add 1/N participants.
    - Close a chat session after an inactivity timeout.
    - OTA provisioning with WAP PUSH event and direct HTTP download of XML config.

- **May 30: Sprint 3**
    - RTCP event management.
    - H264 packetizer.
    - Store & Forward procedure management via WAP PUSH event.

Roadmap 2011

- **June 15: Sprint 4**
    - Session refresh management (RFC 4028).
    - Spam folder for message received from blocked contacts.
    - Use an alias (i.e. display name) to initiate sessions.
    - RCS API permission checking.
    - Dynamic discovery of RCS extensions.
    - SIP keep alive if a NAT is auto detected.

- **June 30: Sprint 5**
    - Capabilities discovery enhancement to support large address book.
    - SIPS (SIP over TLS).
    - Refactoring of the contacts database provider (use of batch procedures).
    - Android makefile and RCS API jar file.

- **July 30: Sprint 6**
    - NAT traversal support (RFC6135, draft-ietf-simple-msrp-sessmatch-11).
    - GRUU for multidevice support.
    - Block FT if contact is blocked.
    - New methods in chat API.
    - RCS widget.

Roadmap 2011

- **August 15: Sprint 7**
  - RCS API minor updates.
  - New call flow to add a participant in a 1-1 chat (move from a 1-1 session to a 1-N session).
  - Generic SIP API to open the stack for new IMS services implementation.

- **August 31: Sprint 8**
  - Registration retry mechanism.
  - Bug corrections.

- **September 15: Sprint 9**
  - Bug corrections.
  - RCS API evolutions.

- **October 03: Sprint 10**
  - Integrate CR (Change Request) from GSMA.
  - Bug corrections.

- **October 20: Sprint 11**
  - Bug corrections.
  - Store & Forward tests.
  - Integrate CR (Change Request) from GSMA.

Roadmap 2011

- **November 21: Sprint 12**
  - Bug corrections.

- **December 20: Sprint 13**
  - Bug corrections.
  - Findbugs report.

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Roadmap 2012

- **January 16: Sprint 14**
  - IOT tests.
  - HTTPS provisioning module.
  - Findbugs report.

- **January 30: Sprint 15**
  - IOT tests.
  - HTTPS provisioning version management.
  - DNS management (NAPTR & SRV).
  - End user confirmation request API to accept terms of use.

- **February 10: Sprint 16**
  - IOT tests.

- **February 22: Sprint 17**
  - Bug fix after IOT tests.

- **March 5: Sprint 18**
  - IOT tests.
  - IPv6 tests (depends of platform availability).

Features not yet planned

- Secured media (MSRP, RTP).
- Specific APN in roaming.
- OMA-DM provisioning.
- LTE support.

Main features list

Capability discovery

- Capability discovery via SIP OPTIONS.
- Capability discovery via Anonymous fetch.
- Periodic polling.
- First time discovery.
- Address book monitoring.
- Integration into native address book.
- Supported capabilities: CS video, IM, FT, Image share, Video share, Presence discovery, Social presence, RCS extensions.
- Update capabilities in case of error, end of session.
- Adapt capabilities thanks to network coverage.

Chat 1/2

- Chat 1-1.
- Chat group.
- File transfer.
- Chat and file transfer history.
- Multi-session management.
- Is-composing.
- List of participants in the session.
- Add 1 participant.
- Add N participants.
- Conference event subscription.
- Support of plain text UTF-8 format.
- Support of message/CPIM format.
- IMDN and message delivery report ("delivered", "displayed").

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Chat 2/2

- Block/unblock contacts (black list).
- Spam folder for message received from blocked contacts.
- Store & Forward.
- Use an alias to initiate a chat session.
- Close a chat session after an inactivity timeout.

Richcall

- Image sharing.

- Live video & pre-recorded video sharing.

- Capability exchange during call.

- Call monitoring.

- H263 file parser.

- H263+ software codec (from Android opencore package).

- H.264 packetizer.

- H264 software codec (from Android opencore package).

- RTCP event management.

- Visio share from 2 individual video share sessions.

- Stop sharing if call hold or if a multiparty call (see new API methods).

Social presence

- Resource lists management (granted/blocked/revoked).
- Profile sharing management (status, photo-icon, freetext, favorite link, geoloc).
- Notifications management.
- Permanent and partial profile

Misc.1/2

- Address book integration via ContactContract API.
- Event log history (one content provider which aggregates Call/SMS/MMS/Chat & FT per contact).
- RCS account based on SyncAdapter API.
- Presence is now an optional package which may be activated by configuration.
- RTP stack is now part of the media player to avoid AIDL exchange between UI and stack.
- New SIP stack (NIST SIP stack deployed under Android 2.3).
- Backup and restore last RCS info if user account has changed.
- OTA provisioning via HTTPS.
- Session refresh management.

Misc. 2/2

- Support of GIBA & HTTP Digest for IMS attachment.
- Support several network access: mobile or Wi-fi.
- RCS API for multi-applications context.
- SIPS
- GRUU for multidevice management.

Implementation

Software architecture

Applications

| Address Book | Dialer | Widget | Chat view | ... |

RCS API (AIDL interface / Intents / Database providers)

✿ RCS-e stack

| Contacts | Chat | | Chat history |

| Capabilitiy discovery | Social presence | Richcall | Event log | Richcall history | RCS settings |

| Anonymous fetch manager | Options manager | IMS service dispatcher | Conference event manager | Content Sharing |

| Network access manager | Registration manager | User account manager | Call monitoring | OTA provisioning |

| SIP stack (NIST) | SDP stack | MSRP stack | RTP stack | XCAP stack |

Supported standards

- See list of supported standards at:

  http://android-rcs-ims-stack.googlecode.com/svn/trunk/core/SUPPORTED-STANDARDS.txt

Metrics

Java NCSS Trend

RCS stack + NIST SIP stack

Legend: Javadocs, Multi-line comments, NCSS, Single line comments
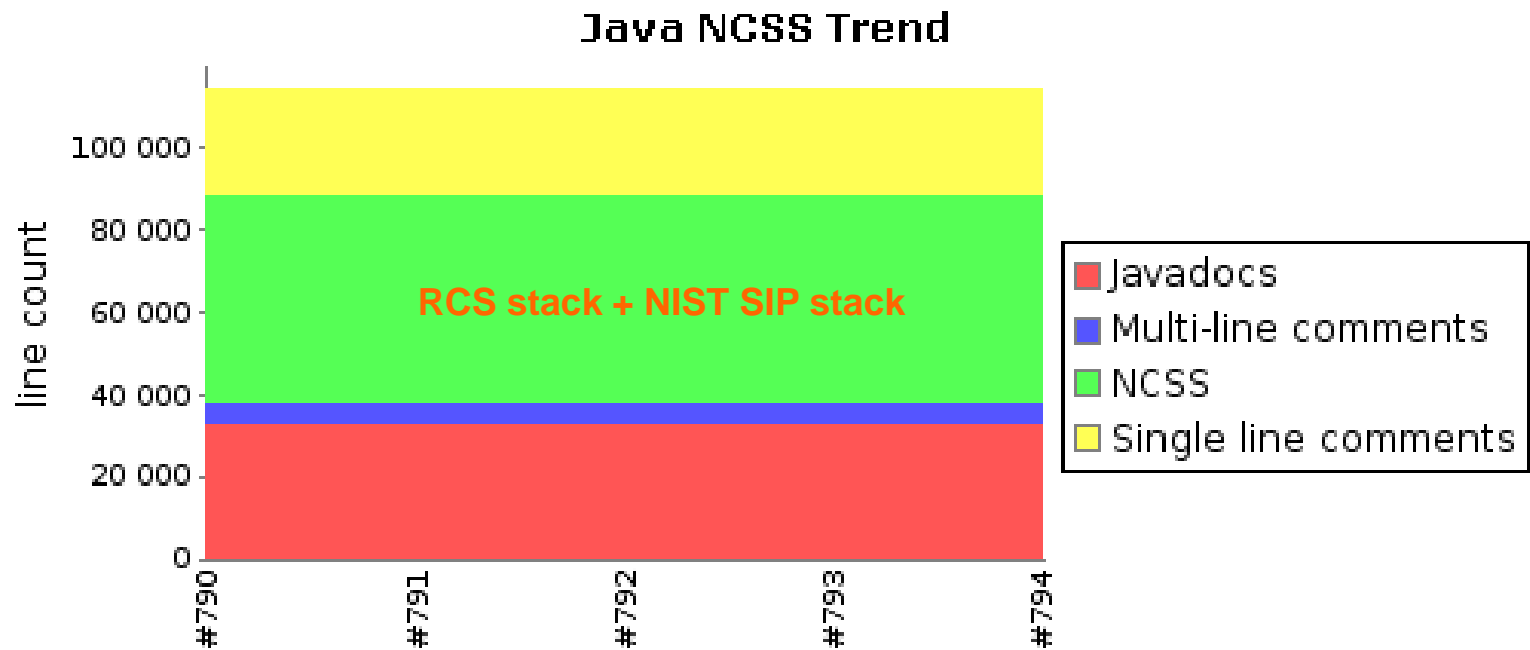
Tools

- Bug tracking via Mantis.
- Continueous Integration via Hudson.
- RI application which offers a low level UI interface to test RCS stack and its protocols:
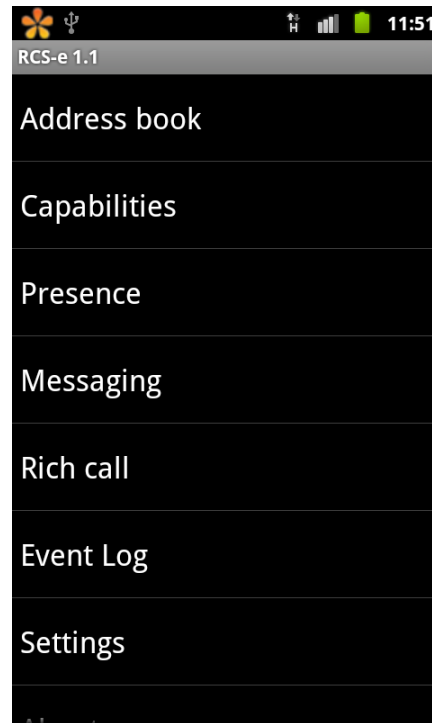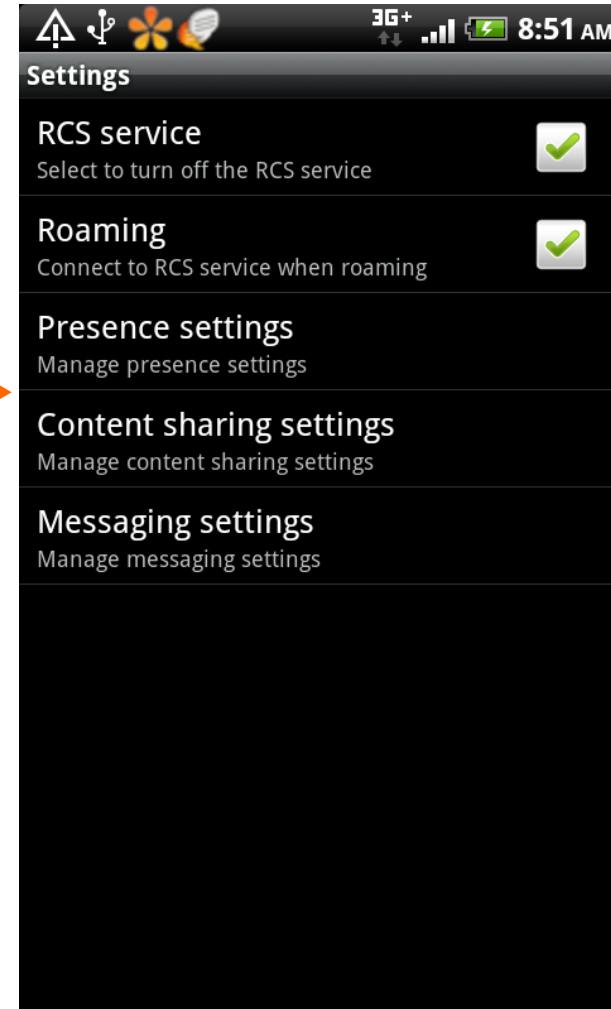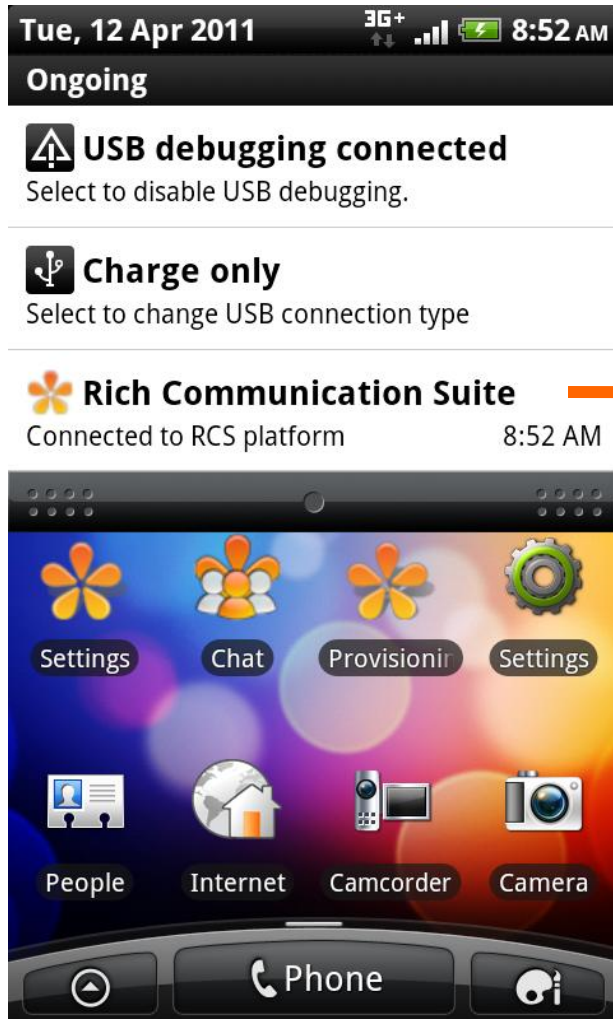

RI application

RCS-e applications Screenshots

RCS account
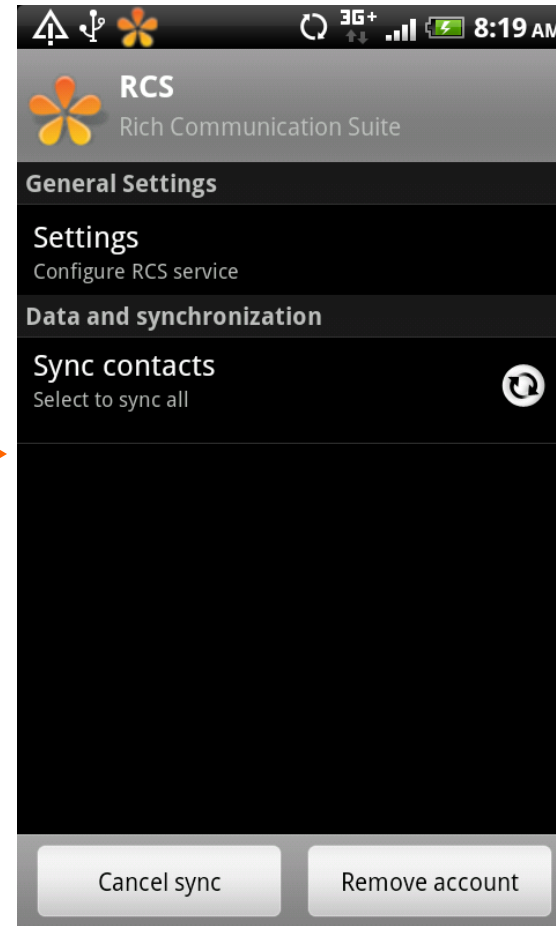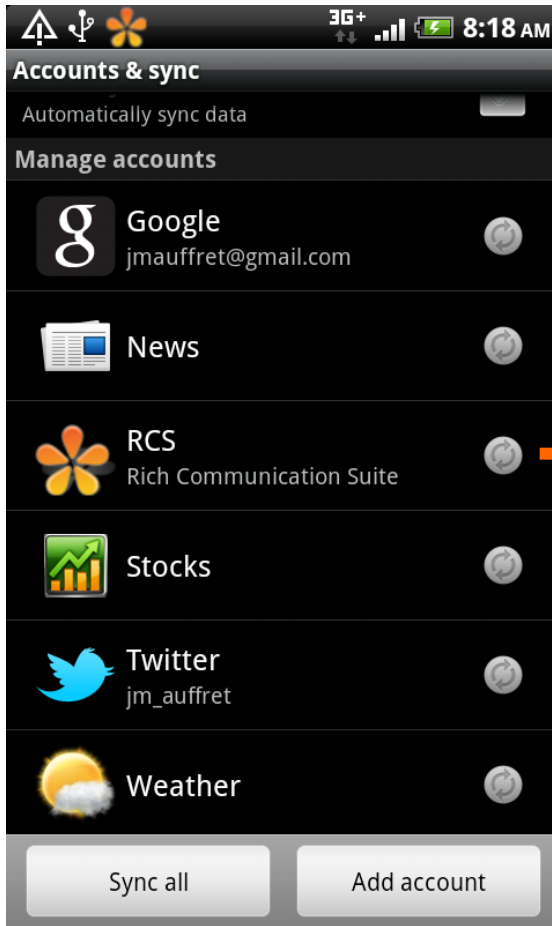
RCS settings

Native address book integration 1/2

Native address book from HTC
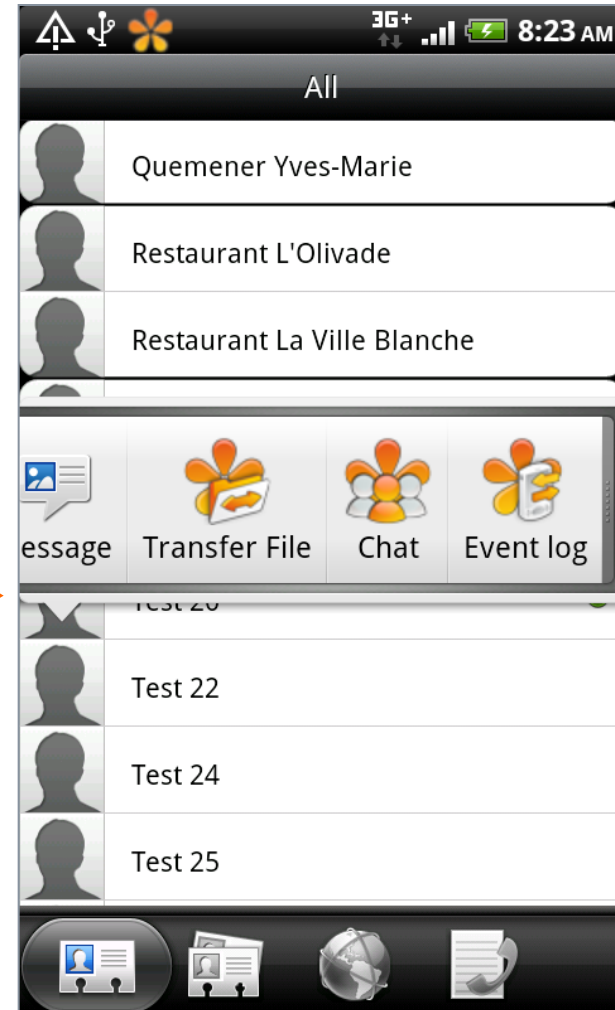
Local provisioning application

Only for debug