RCS-e open source stack

Roadmap

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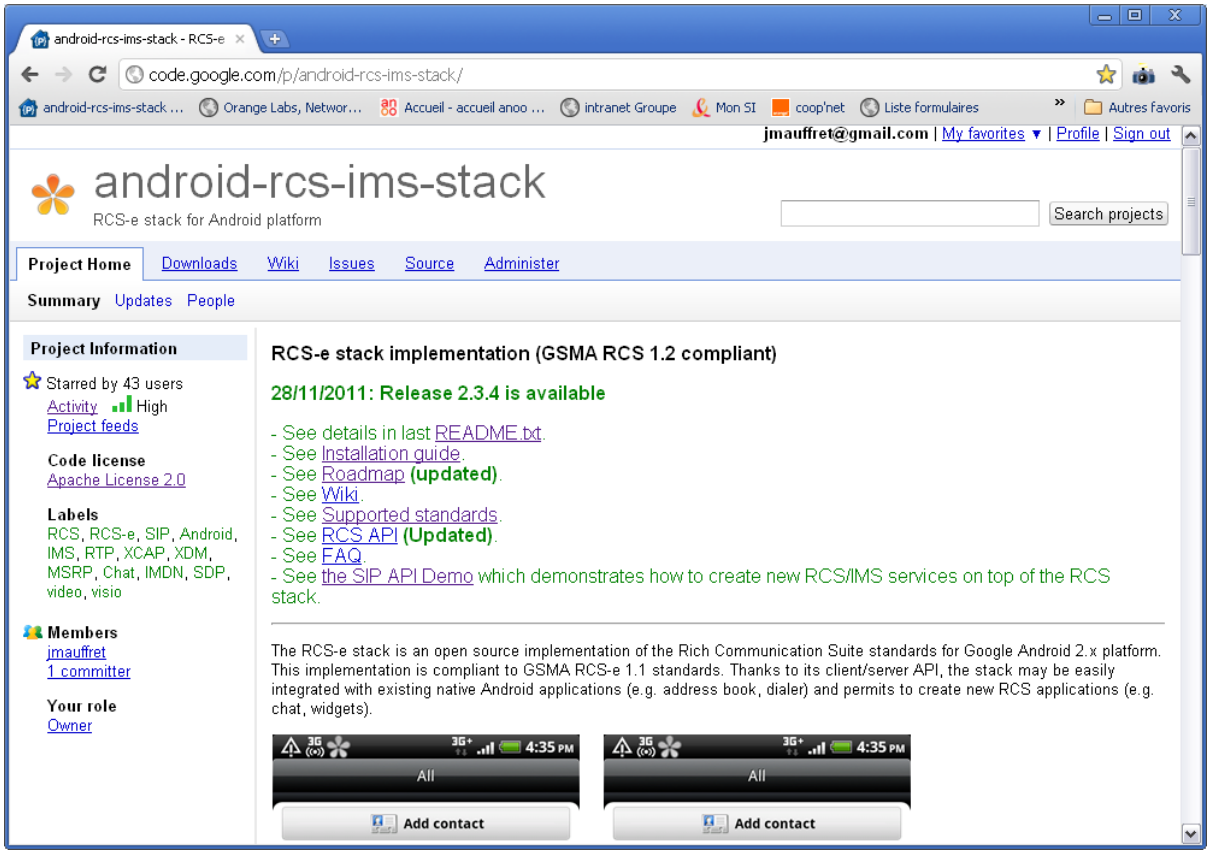
History…

- 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.

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 12: Sprint 18**
  - Bug fix after IOT tests.
  - Rename package of the NIST SIP stack to avoid concurrency problems with native NIST SIP stack.
  - Update source code copyrights.

Roadmap 2012

- **March 30: Sprint 19**
  - IOT tests.
  - GSMA RCS Implementation Guidelines.
  - Nonce caching.
- **April 13: Sprint 20**
  - IOT tests.
  - GSMA RCS Implementation Guidelines.
- **April 30: Sprint 21**
  - Provisioning terms.
  - IOT tests.
- **May 21: Sprint 22**
  - Backup & restore RCS settings.
  - Bug correction.
- **June 22: Sprint 23**
  - GSMA UI Connector.
  - Bug correction.

Roadmap 2012

- **July 06: Sprint 24**
  - IOT test fest (Madrid).
  - IPv6 tests.

- **Next sprints:**
  - **RCS5 / Blackbird release**

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”).

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

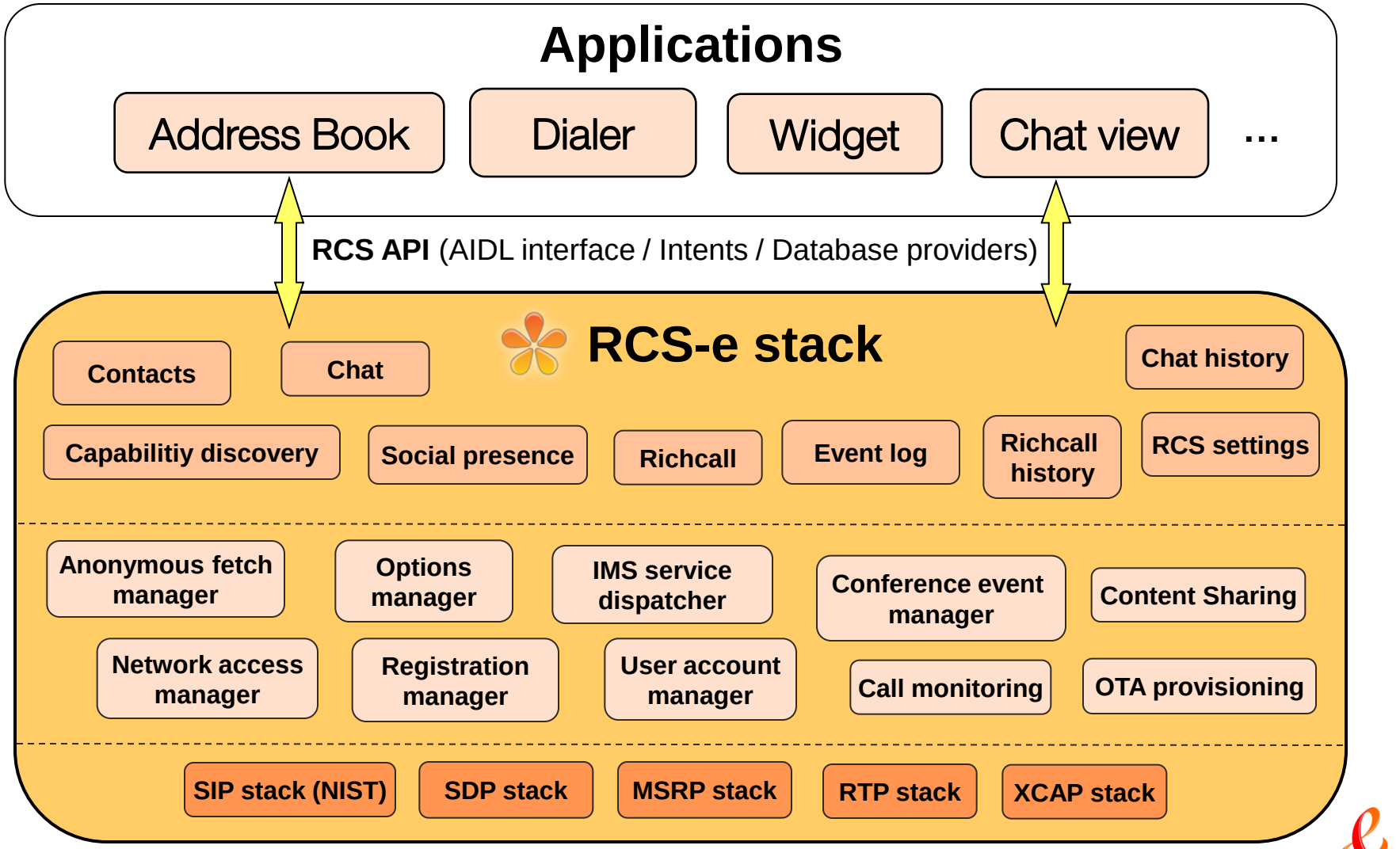
- Address book integration via ContactContract API.
- Event log history (one content provider which aggregates Call/SMS/MMS/Chat & FT per contact).
- RCS account based on SyncAdapter API.
- Presence is now an optional package which may be activated by configuration.
- RTP stack is now part of the media 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

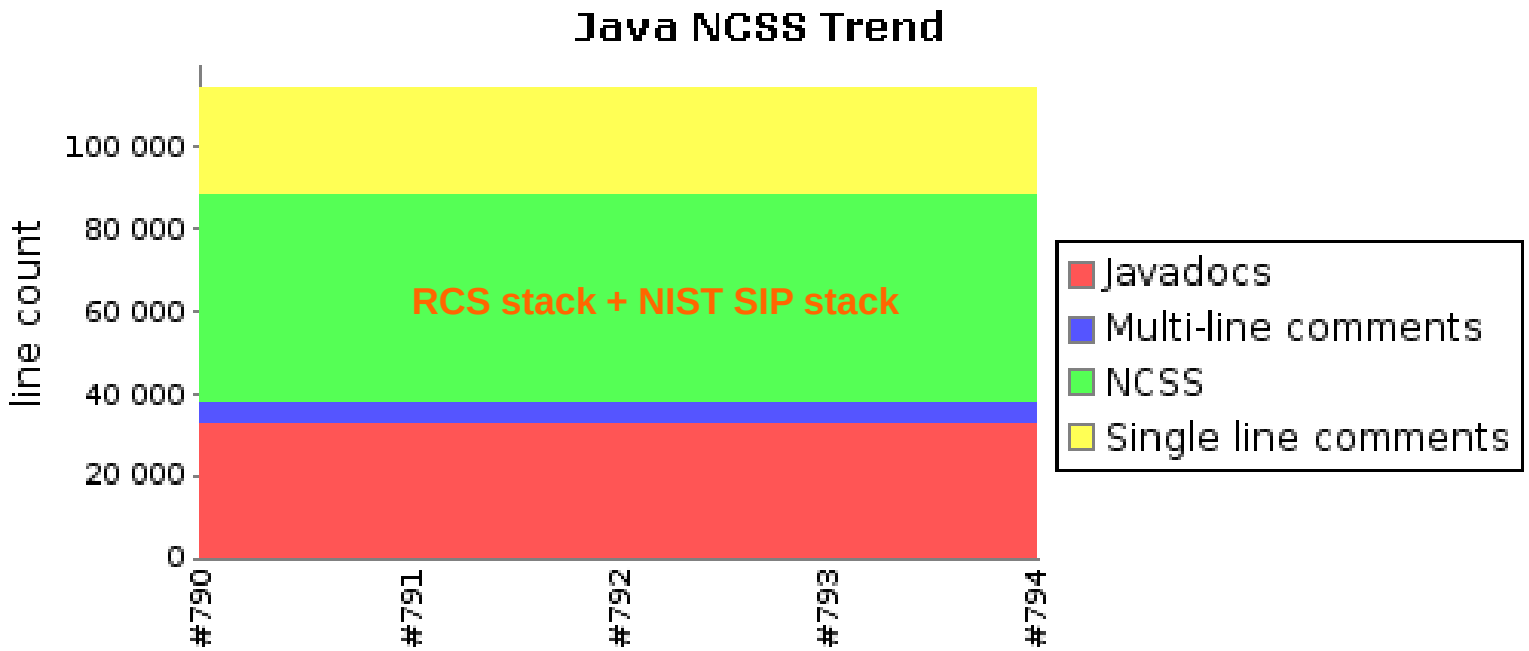
Software architecture



Supported standards

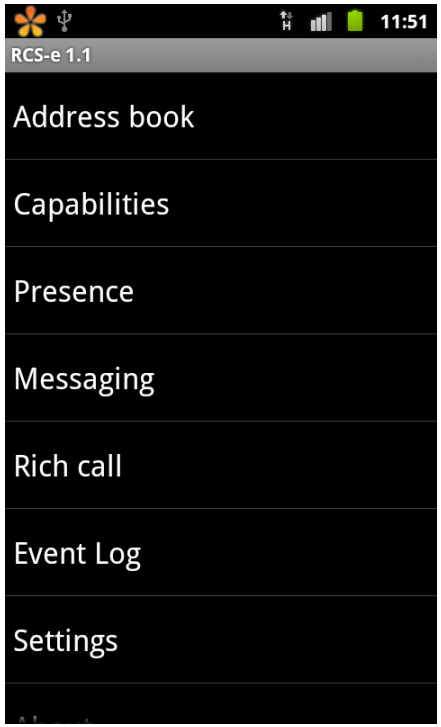
- See list of supported standards at:
  http://android-rcs-ims-stack.googlecode.com/svn/trunk/core/SUPPORTED-STANDARDS.txt

Metrics


Java NCSS Trend
line count
100 000
80 000
60 000
40 000
20 000
0
#790
#791
#792
#793
#794
RCS stack + NIST SIP stack
Javadocs
Multi-line comments
NCSS
Single line comments

Tools

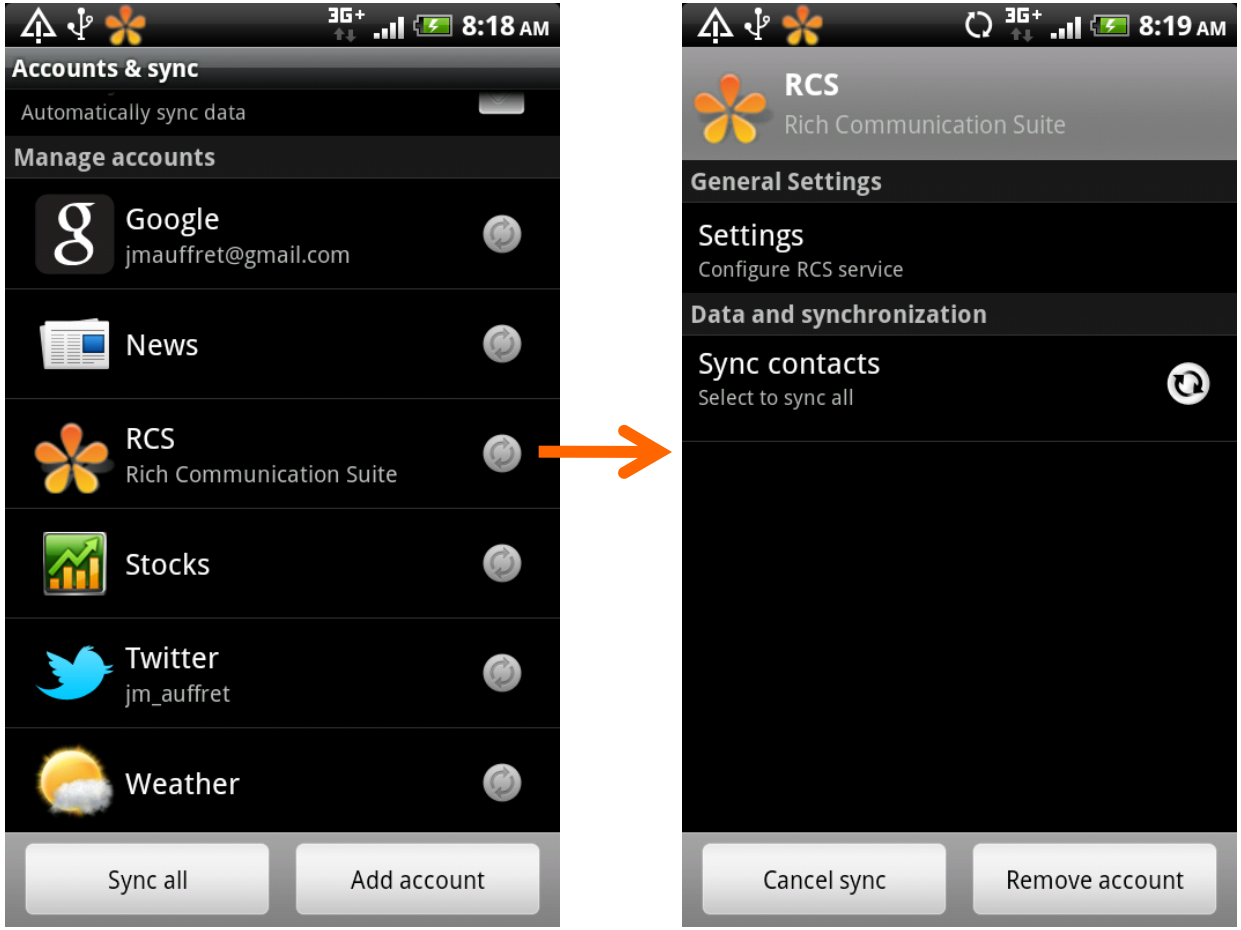
- Bug tracking via Mantis.
- Continueous Integration via Hudson.
- RI application which offers a low level UI interface to test RCS stack and its protocols:



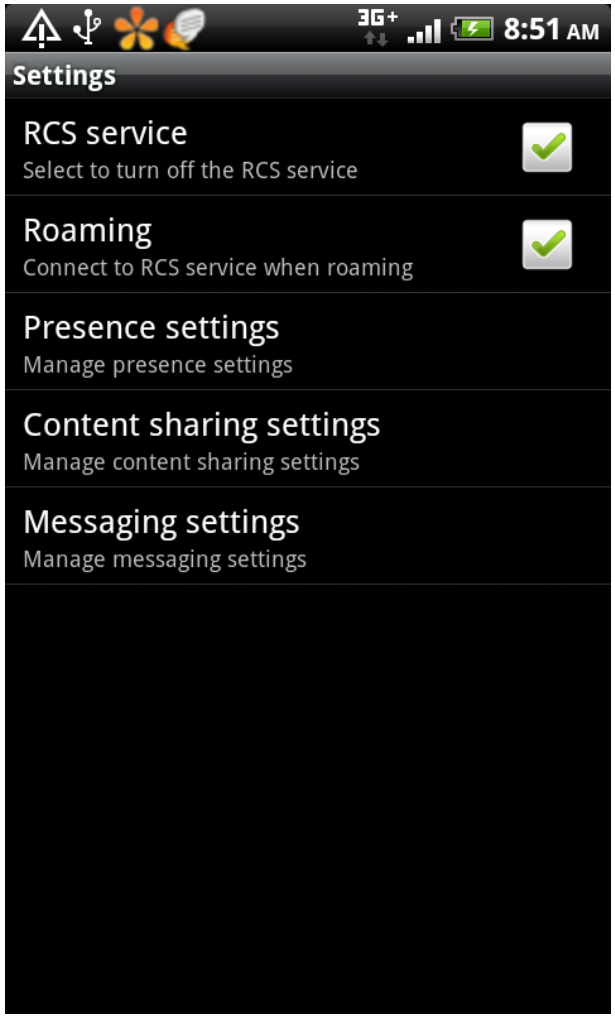
RI application

RCS-e applications
Screenshots

RCS account

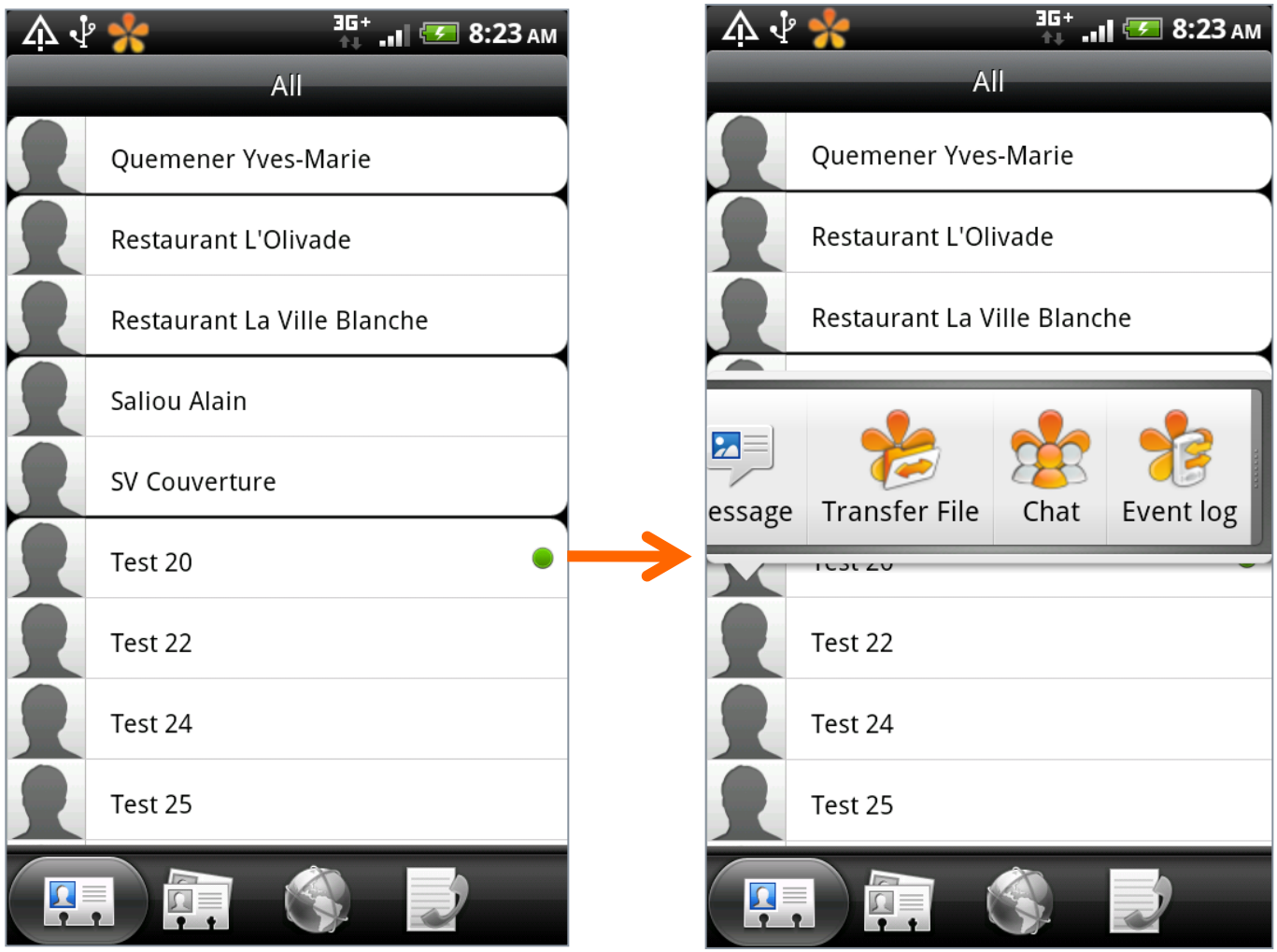

8:18 AM
Accounts & sync
Automatically sync data
Manage accounts
Google
jmauffret@gmail.com
News
RCS
Rich Communication Suite
Stocks
Twitter
jm_auffret
Weather
Sync all
Add account
8:19 AM
RCS
Rich Communication Suite
General Settings
Settings
Configure RCS service
Data and synchronization
Sync contacts
Select to sync all
Cancel sync
Remove account

RCS settings



Native address book integration 1/2

Native address book from HTC



Local provisioning application

Only for debug