

# Briefing Paper: Verifying functionality for Rich Communications Services

## How to test and validate the full variety of Rich Communications Services

RCS is starting to take market share but its mix of capabilities and complex mix of protocols and interfaces means that there can be a huge variety of Test and Monitoring Scenarios



# Briefing Paper: Verifying functionality for Rich Communications Services

## How to test and validate the full variety of Rich Communications Services

RCS is starting to take market share but its mix of capabilities and complex mix of protocols and interfaces means that there can be a huge variety of Test and Monitoring Scenarios.

### Introduction:

#### RCS is on a strong upward trajectory

RCS – Rich Communications Service – has gained significant traction in recent years. By mid-2020, 90 operators had launched RCS in 60 countries. It's become integral to Android devices and, RCS traffic volumes are growing. While SMS continues to grow, RCS is starting to take market share. That's because it offers a wider range of engagement possibilities – messaging, chat, sharing and so on. However, this mix of capabilities means that RCS is based on a complex mix of protocols and interfaces – and that there can be a huge variety of Test and Monitoring Scenarios.

It is expected that RCS will reach a volume of more than 700 million messages between 2020 and 2023 – with a growth rate of more than 850% during that period, according to telemediaonline. So, while still relatively low volumes in comparison to other messaging services, such as SMS, it's on a strong upward trajectory.

While RCS has grown from a slow beginning, the ubiquity of the mobile identity (every mobile user has an MSISDN) and the fragmented nature of other (closed user group) chat and messaging applications, means that RCS remains the only way to reach the largest pool of mobile users.

Consequently, MNOs are using RCS to support their consumer customers and

also as a revenue-generator to support relationships with businesses that seek to reach mobile users through a single identity. As such, MNOs have to deliver reliable RCS services that can meet any use case and provides performance to match SLAs with their B2B partners in order to secure and protect new revenue.

They must be able to verify RCS functionality, at a granular level and with the flexibility to cover all required use cases – and at scale in live networks, as new use cases are brought to life.

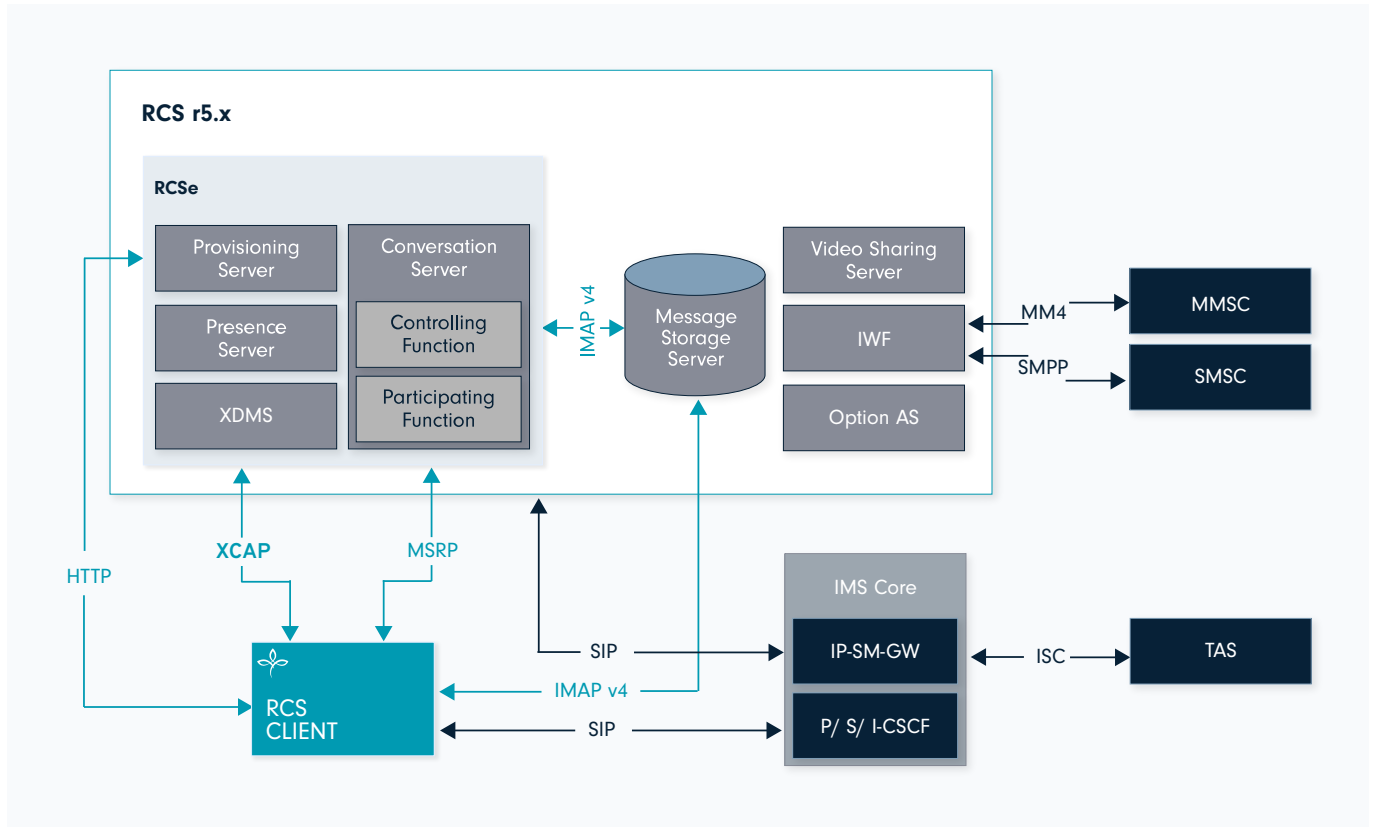
In this briefing paper, we'll explore how that can be achieved, so that MNOs can secure ROI from their RCS partnerships, despite the underlying complexities.

---

*“MNOs will increasingly be asked to support (and back with SLAs) services from the business partners they seek to attract and from which they expect to secure revenue...Usability is the name of the game, so that engineers in MNOs can rapidly and continuously validate different scenarios, with the flexibility to build new scenarios and to model new kind of behaviour.”*

---

**Figure 1:**  
RCS Client emulation with Emblasoft



## The challenge: Why is RCS so complicated?

*“Emblasoft provides a complete solution that enables the flexible verification of RCS services, across different scenarios and call flows, and for any third-party RCS infrastructure – client or server side.”*

RCS depends on interaction between clients (installed on devices) and network-based servers. Because it’s a multi-messaging service, enabling various capabilities beyond basic text chat, there are several protocols to consider and a range of complex signalling flows.

These include:

- SIP
- MSRP
- RTP
- HTTP
- Diameter

RCS is designed to support an open ecosystem. So, any MNO can choose any RCS solution from a vendor, while the device clients can come from different sources.

Similarly, businesses can use different chat bots for customer interaction – so there are many variables in delivering an RCS service.

For example, user sessions and transactions can span different devices. A user may start a conversation on a mobile, switch to a web portal, and move to a laptop – over a sustained period of time. Consistency and persistence are thus of the utmost importance, because customer engagement may be long-lasting and take many forms within the same basic conversation, or dialogue.

As a result, performance must be maintained for all use cases across this multi-stakeholder ecosystem and an operator must carefully validate each service element and resulting scenario.

## The solution: Enter Emblasoft

To accomplish this, a solution is required that can simulate both client and server layers, so that, on the one hand, interaction with user clients can be modelled and validated and, on the other, interaction between different clients can also be explored.

It is also necessary to be able to configure different RCS sessions and capabilities, with full control of the relevant parameters. Finally, since session requirements can change – as, for example, a chat session moves to a video call, or when an image is shared, such dynamic interaction can also be modelled for specific Test and Monitoring Scenarios.

Emblasoft provides a complete solution that enables the flexible verification of RCS services, across different scenarios and call flows, and for any third-party RCS infrastructure – client or server side. An example of the solution in deployment as a full RCS client is included in Figure 1.

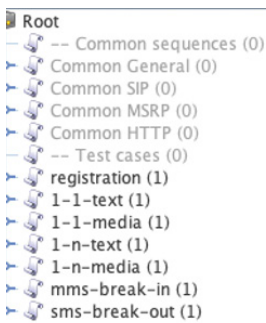
The solution has several key components. First, it includes support for the necessary protocols and client/ server elements, in a single, integrated package.

Second, the use case offers the ability to combine protocols for the simulation of RCS traffic for testing and active monitoring in production networks. Third – and perhaps most important beyond basic functional requirements – it’s possible to easily and quickly configure new Test and Monitoring Scenarios.

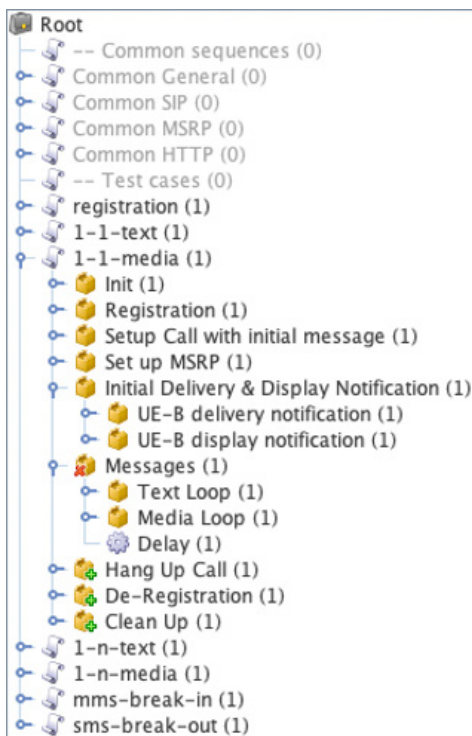
This is key, because MNOs will increasingly be asked to support (and back with SLAs) services from the business partners they seek to attract and from which they expect to secure revenue.

Usability is the name of the game, so that engineers in MNOs can rapidly and continuously validate different scenarios, with the flexibility to build new scenarios and to model new kind of behaviour.

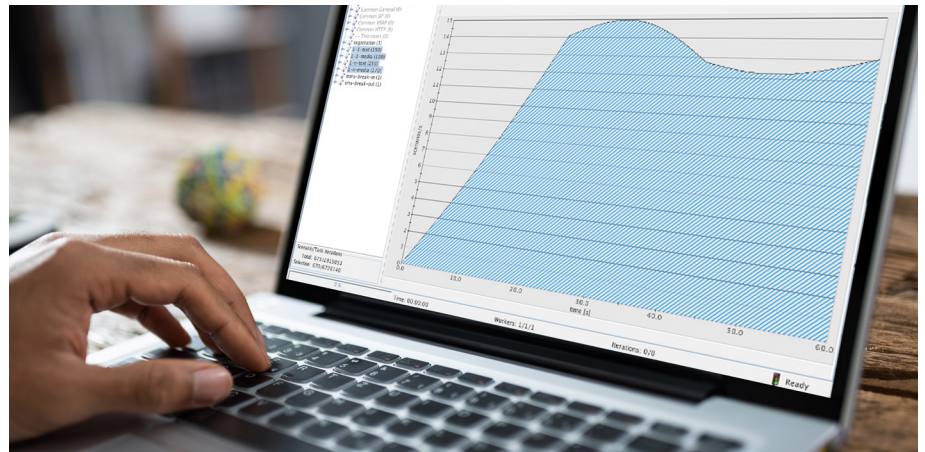
**Figure 2:**  
High-level monitoring and test scenarios



**Figure 3:**  
Flexible control of session scenarios



**Figure 4:**  
RCS performance at scale



## In action: What does this mean in practice?

With Emblasoft, MNOs can continuously verify RCS scenarios, covering different user activities. They can do so across any permitted scenario, with full control of the relevant parameters – which means they can keep ahead of new opportunities and guarantee performance for their B2B partners that seek to reach mobile users.

Now they can do so at scale. Because Emblasoft enables the support of multiple clients and high session volumes (scaling elastically, according to processing resources in virtual environments), MNOs can validate performance across a realistic sample of their user base – with millions of parallel sessions.

As a result, MNOs can verify that the expected user experience is delivered and understand how to scale their RCS solution for anticipated and real traffic growth. They can drive load with accurate and controlled traffic modelling. This also allows engineers to test entirely new scenarios, enabling them to foster creativity with their partners and to explore advanced forms of interaction.

### What's unique?

While the solution enables simulation of any RCS scenario and the reuse of cases to simulate network loading, the deployment of a thin client into production environments allows KPIs to be captured from active monitoring in the live network – providing end-to-end verification across the service lifecycle.

### What are the results?

First, the performance and functional compliance of different RCS clients can be measured and validated, ensuring that users with different clients and devices can obtain the same experiences.

Second, MNOs can better understand service performance at scale – in turn, allowing them to ensure the correct allocation of processing resources for the provision of the service. Planning is also made more efficient, because a realistic understanding of the actual performance delivered by a given RCS solution under different loads allows future requirements to be clearly understood, avoiding over- or under investment.

Third, while validation of user experience and client performance in the lab is one thing, ensuring that this performance is maintained in the field is quite another. The end-to-end nature of the solution covering lab and live environments means that it's possible to ensure consistency as solution move from trial to full production deployment.

Finally, with Emblasoft, MNOs have full control to configure any RCS scenario, so as their commercial portfolio and relationships grow, they can keep pace with demand and provide the assurance to meet any agreed SLA – while also delivering the right experiences to their customers.

---

*“with Emblasoft, MNOs have full control to configure any RCS scenario, so as their commercial portfolio and relationships grow, they can keep pace with demand and provide the assurance to meet any agreed SLA – while also delivering the right experiences to their customers.”*

---



---

*“Emblasoft enables MNOs to accomplish this, via a single, comprehensive tool with a convenient, flexible user interface. It can sit at the heart of your RCS deployments, across the complete service lifecycle, from initial validation to full, in-service active monitoring.”*

---

## In summary: Test the full spectrum of RCS

If you have or plan to launch RCS services, you need to do two things.

First, to ensure that your customers enjoy a consistent user experience, across different devices and for different aspects of the RCS suite. Second, to ensure a route to profitable monetisation with B2B partners, eager to reach their customers through the security of the mobile device. Key to both of these goals is the ability to validate RCS service scenarios, at scale in test and production environments – and for all possible scenarios.

Emblasoft enables MNOs to accomplish this, via a single, comprehensive tool with a convenient, flexible user interface. It can sit at the heart of your RCS deployments, across the complete service lifecycle, from initial validation to full, in-service active monitoring.

Get in touch to find out more.

### RCS Service Testing from Emblasoft

- Complete flexibility for RCS functional and performance testing
- Ready-to-use, turnkey RCS scenario testing
- Full support for all RCS protocols
- Function and load testing
- Active monitoring in live environments for real-time KPIs
- Compare and validate test and production characteristics

#### Emblasoft Test and Measurement AB

Hammarby allé 29  
SE-120 32 Stockholm  
Sweden

contact@emblasoft.com



**emblasoft.com**

© Copyright 2022 Emblasoft  
All rights reserved