



RTGS Renewal Programme API Update – Autumn 2021

Following an industry-wide consultation, the Bank of England (“the Bank”) announced in May 2017 that it would renew the Real-Time Gross Settlement (RTGS) service. This is a critical piece of national infrastructure delivering final and risk-free settlement for the UK’s high value and time critical payments. The new RTGS service will deliver a range of new features and capabilities, including increased resilience, greater access, wider interoperability, improved user functionality and strengthened end-to-end risk management. The Bank has identified opportunities to improve the current offering for how RTGS users interact with the RTGS system. As part of the renewed service the Bank committed to providing an exposed API (Application Programming Interface) to allow external participants to develop sophisticated and automated real-time tools for accessing RTGS transactional and liquidity data. In addition to this, the Bank committed to look at whether other functionality could benefit from being enabled by APIs.

The role of APIs in the renewed RTGS

Application Programming Interfaces (APIs) are a core part of the vision of the renewal of RTGS, as detailed in the 2017 Blueprint, and they directly contribute towards the objectives of the Bank of England in two ways. Firstly, access to RTGS via APIs can incentivise asset infrastructures and new entrants to settle their payments in central bank money, due to the efficiency of the interfaces that APIs can deliver. This can have positive financial stability implications, as central bank money is a riskless settlement asset. Secondly, delivering new functionality, such as APIs, in the renewed RTGS contributes towards the Bank’s objective of supporting competition and innovation in the financial sector.

However, the inclusion of APIs in the renewed RTGS not only contributes towards the overall objectives of the Bank, they are also enablers or enhancers of new RTGS functionalities and features, such as contributing towards the future enablement of 24x7 technical availability and improved liquidity management. APIs can also lead to increased system resilience, by providing an alternate means for payments to be sent in contingency situations if other channels and system interfaces are down. As has already been mentioned, APIs will be able to support greater access to the renewed RTGS and they shall achieve this by providing efficient interfaces that be compatible with institutions that have new technology capabilities or business models. Finally, the delivered APIs will enable interoperability with other systems, due to harmonised UK and international API standards that will have been adopted and implemented.

API Development and Delivery

Given the criticality of the RTGS system, the Bank has adopted a phased approach to the development, delivery and transition from the old system to the new system. This approach reduces delivery risk as smaller pockets of change, known as discrete delivery events, can be introduced and proven before introducing further change. This enables the delivery and transition of the new RTGS to take place in a controlled and incremental manner. Another benefit of this approach is that it allows benefits of the new system to be realised sooner, as certain features, functionalities and services can be delivered earlier in the transitional journey. This transition approach has resulted in four overarching transition states: TS1, TS2, TS3 and TS4, with the delivery of APIs being spread over TS2, TS3 and TS4.

Transition State 2

In TS2 the Bank is introducing a Minimum Viable Product (MVP) of the overall capability that will be delivered by the end of the Programme using SWIFT API Gateway. The API features and functionalities delivered in TS2 are simple as the main objective at this point is to begin developing API capabilities and obtain feedback from the early users. The APIs in TS2 offer read access to CHAPS payments data.

A questionnaire on the TS2 API proposals was sent to the RTGS direct participants in December of 2020. The feedback received indicated that the participants were happy with the API use cases and the data fields that would be exposed by the API. A number of the participants have since signed up to use the TS2 APIs and in October 2021 we published the API specifications of read-only access to CHAPS transactions for testing by users. We have initially developed the API specifications and started to collaborate with users via Enterprise SwaggerHub as an interim solution. During the rest of TS2 we plan to build a developer portal with a basic sandbox, API documentation and SWIFT SDK and Micro-Gateway.

Transition State 3

The ambition for TS3 is to enable users to undertake all likely user engagement and administration, billing, reporting and analytics and account management functionality via APIs. Therefore, the Bank plans to expand the business functionality available through APIs to include access to all transactions (not only CHAPS payments); account data (balances and bilateral and multilateral positions); payment and liquidity controls; notifications; and statements. The Bank will prioritise APIs for frequent processes that can be easily automated as industry engagement confirmed they are the ones that will provide most value to participants. All the functionality exposed through APIs will be available through alternative User Interfaces (UIs) so that the use of APIs will remain optional. In TS3 the Bank also intends to deploy testing simulator APIs for participant readiness and deliver enhancements to the API developer portal. In terms of ecosystem enablement, during TS3 the Bank will engage in deeper discovery and user collaboration for feedback, including bugs and suggestions, and provide enhanced sandbox and documentation that will include instructions, examples and code samples.

In the first half of 2021, the Bank sent an engagement questionnaire was sent to the direct participants, which provided them the opportunity to review, comment and ask questions on the proposals, while also allowing the Bank to receive ratification on the output of the use-case streamlining. The Bank is now progressing with the design and development work for the TS3 APIs. Future, bilateral engagement with the RTGS participants shall be organised once sufficient progress has been made along the API development roadmap.

Transition State 4

The API features and functionalities to be delivered in TS4 will include any items that were unable to be delivered in the previous transition states, as well as items that deliver innovative capabilities that will be new in the renewed RTGS.

For TS4 and beyond we propose, subject to consultation, to consider moving gradually towards a situation where all types of participant interaction are available via APIs, including submission of payments. The use cases we plan to consider are business functionality like additional liquidity management features reporting and analytics, billing, further notifications, participant management of network preferences and payment submission in contingency and for business as usual. We plan to continue to enhance the API environment in TS4 with the following additions: a BOE SDK that leverages the SWIFT security SDK and the Bank's external PKI; a complete set of try out tools (advanced sandbox environment, playground, API explorer); a forum or community channel and enhanced communication channels.

Other possible TS4 API use-cases may include the ability for users to submit synchronisation requests and receive earmark confirmations; or control the synchronisation settings and parameters. Synchronisation operators may be able to change participant settings or obtain business intelligence (BI) data. Participants may also be able to request liquidity in a different currency via a liquidity bridge.

As TS4 is the final transition state in the RTGS renewal roadmap, the engagement activities for the TS4 APIs are not as mature as those of the TS2 and TS3 APIs. However, the engagement will likely follow a similar structure of questionnaires and participant conversations, once planning and design work has progressed.

Next Steps

The RTGS API planning, design, development, testing and implementation work will continue for all transition states as we progress through 2022. The Bank will continue to engage with the RTGS participants and the wider industry throughout this process.