



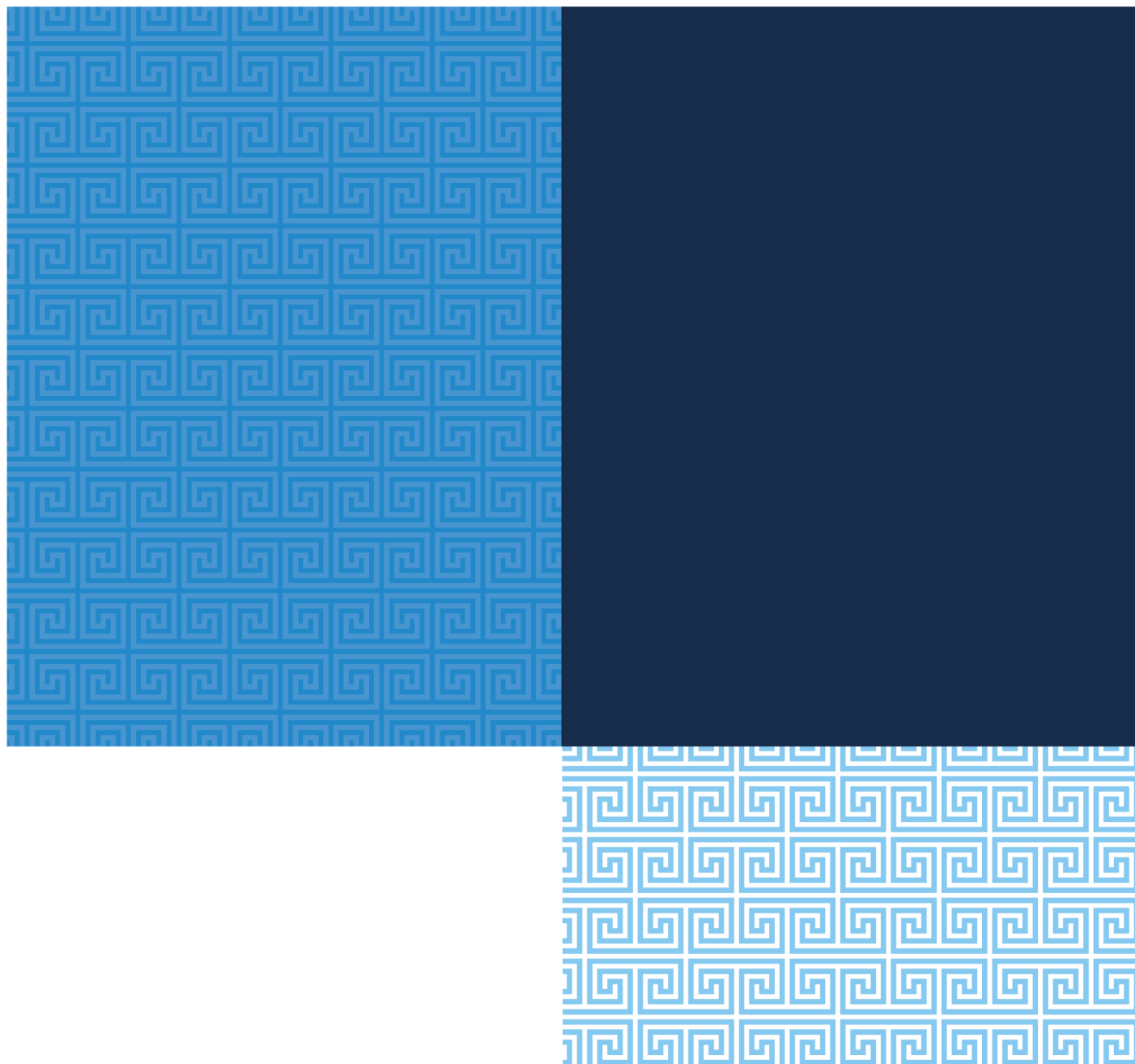
BANK OF ENGLAND

RTGS/CHAPS



Real-Time Gross Settlement (RTGS) system and CHAPS Annual Report

September 2021



Foreword

During another challenging year, as the Covid-19 pandemic has continued, our RTGS and CHAPS services have remained resilient whilst operating remotely, enabling payments to settle smoothly throughout. This has supported the Bank's mission to promote the good of the people of the United Kingdom by maintaining monetary and financial stability. This is to the credit of our staff and those in the wider payments industry.

The RTGS/CHAPS Board, which is responsible for providing strategic leadership for the RTGS and CHAPS services, and of which I am the Executive Chair, continues to provide key input and leadership on a wide range of topics to support and challenge the executive. During the last 18 months, the terms of two of our original independent Board members came to an end – Noel Harwerth and Sandy Boss – who I'd like to thank for their commitment. We were joined by two new members in their place – Michael D'Souza, now chair of our Risk Committee, and Steve Bell.

We have continued to see Covid-19 drive changes in the use of the RTGS and CHAPS services. RTGS settles over £700bn on an average day, with a new RTGS peak value day of £943bn set on 14 September 2020. For CHAPS alone, a new record value day of £485bn was set on 30 November 2020. While values have continued to increase, due largely to financial market conditions, volumes have been lower. Volumes from March 2020 – February 2021 were around 10% lower compared to the previous year as a result of the knock-on impact of the Covid-19 pandemic. Since this point, however, volumes have largely recovered, primarily due to the continued economic recovery towards pre-pandemic levels and partly because of CHAPS use in the active property market. Our CHAPS data has continued to be used both internally and externally to support policy work. The ONS now publishes data every fortnight on spending in key retail sectors based on card receipts transferred to larger merchants via CHAPS as part of its series of experimental, faster indicators on the impact of Covid-19 on the UK economy and society.

Over 2020/2021, our RTGS and CHAPS services continued to play a central role within the domestic and international landscape. Our mission is supported by four strategic themes, summarised below:

- **Safe and Resilient:** In early 2021 we upgraded the hardware for RTGS. We also successfully completed a 'live test' with CHAPS Direct Participants of our third-site contingency solution, MIRS – contributing to a high level of confidence in the robustness of the solution and external understanding. We are developing our operational resilience framework in line with the expectations set by the Bank of England (including the PRA) and FCA.
- **Well Run:** An important change we're delivering is a refresh of the CHAPS rulebook, planned to take effect in January 2022. This is an important enabler for us to drive further proportionality in our approach to participant assurance – especially looking ahead to the higher number of participants that the renewed RTGS will be able to support.
- **Responsive:** We took the decision to keep the RTGS and CHAPS tariffs flat for 2021/22 notwithstanding the decline in volumes as a result of Covid-19. We will, however, keep tariffs under review. Later in the year, we will consult externally on changes to the fee structure that would take effect in early 2024 to account for the benefit of the renewed RTGS.
- **Renewed:** Following the appointment of Accenture in July 2020 as our Technology Delivery Partner for the RTGS Renewal Programme, we have moved to the delivery phase which

includes: ISO 20022 like-for-like for CHAPS payment messages in June 2022; ISO 20022 enhanced in February 2023; and then a new core ledger for RTGS in autumn 2023.

Looking ahead, our major focus is continuing to prepare for RTGS Renewal and to realise the benefits of increased resilience, widened access, greater innovation, increased interoperability and improved user functions for the financial system as a whole. We will be continuing to work with industry to ensure collective readiness for the critical RTGS Renewal change; we have already commissioned additional assurance for the most systemic CHAPS Direct Participants.

- As well as the technical requirements around the move to ISO 20022, we are seeking to unlock wider benefits through how the data is populated and used. We have published market guidance for property payments and are working on guidance for corporate payments. Participants have already started testing for the ISO 20022 changes and the infrastructure build is underway moving us closer to enabling the next generation of payments through our future infrastructure.
- For the core ledger, we will complete design activity around settlement, liquidity management and account structure functionality – again, seeking input from the industry as these are areas that can create greater efficiencies for those who make direct use of RTGS. As well as enhancing resilience, this will support greater competition and innovation – we are already seeing interest from those keen to join CHAPS in 2024 and beyond.
- Later in 2021, we expect to consult on functionality for inclusion in Transition State 4 – a series of additional enhancements for the RTGS service. The renewed RTGS will be modular, with changes introduced in a more agile way. Areas under consideration include support for multiple message networks and other contingency options; additional API; extended operating hours; and synchronisation.

This annual report is an important part of our wider commitment to transparency and accountability. Through this report, we are sharing our strategic focus, and how we are working with industry to deliver effective RTGS and CHAPS services while providing value for money.



Dave Ramsden
Deputy Governor for Markets & Banking
Executive Chair of RTGS/CHAPS Board
6 September 2021

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1. RTGS and CHAPS

Why are RTGS and CHAPS important?

Payments are essential to the efficient functioning of the UK economy, underlying core economic activity such as purchasing goods and services or paying salaries. Most payments are now made electronically, with banks and other financial institutions using accounts in RTGS to settle money owed to one another from the payment systems.

The RTGS and CHAPS services are systemically important to the UK and we have a target of **at least 99.95% operational availability**. An operational issue in RTGS and/or CHAPS could have a wide-ranging impact on the financial system and broader economy.

The Bank of England's mission is to promote the good of the people of the United Kingdom by maintaining monetary and financial stability. The provision of the Real Time Gross Settlement (RTGS) and CHAPS services directly supports our mission in three ways:

- By offering settlement accounts to eligible institutions, RTGS plays a vital role in the functioning of the UK economy through supporting **safe and efficient settlement** of obligations in central bank money across a wide range of payment systems. Settlement is final and risk-free as central-bank money is the ultimate secure and liquid sterling asset, the lowest risk way for financial institutions to meet their payment obligations.
- Reserves held in reserves accounts in RTGS – under the Bank's [Sterling Monetary Framework \(SMF\)](#) – are remunerated at **Bank Rate**. RTGS therefore acts as the platform through which monetary policy decisions are implemented.
- CHAPS provides a safe and efficient system for individual high-value, and often **time-critical, payments** to settle. The Bank also acts as **end-to-end risk manager** for CHAPS with the objective of **reducing risks to financial stability**.

Given the systemic importance of CHAPS to the UK the [Bank's Financial Market Infrastructure Directorate](#) independently supervises the Bank's operation of the CHAPS payment system to the same standards applied to recognised UK payment systems, but on a non-statutory basis. The Bank's supervisory and operational areas have independent governance structures, reporting to different Deputy Governors.

Further information on RTGS and CHAPS can be found on the Bank's [website](#), including: [A brief introduction to RTGS and CHAPS](#).

RTGS

RTGS lies at the heart of every payment in the UK. Through RTGS, the Bank provides settlement to direct participants of CHAPS, CREST, six retail payment systems (Bacs, Image Clearing System (ICS) for cheques, Faster Payments, LINK, MasterCard Europe and Visa Europe) and the Bank's Note Circulation Scheme. RTGS is also the mechanism through which the Bank implements monetary policy decisions (reserves accounts are held within RTGS and remunerated at Bank Rate), and

provides liquidity to the UK's financial system. The balance held in reserves accounts was £762bn at end-February 2021.¹

In the twelve months to end-February 2021, RTGS settled an average of over **£750 billion** each working day; around the UK's GDP every three days. RTGS settled **£943 billion** on its peak value day in the period (14 September 2020). The vast majority of the value settled (99%) is from CHAPS and CREST (Chart 1). Of the retail systems – which we settle on a net basis – Bacs accounts for 56% (Chart 2).

Chart 1: Majority of value settled in RTGS is from CHAPS and CREST (March 2020 – February 2021)

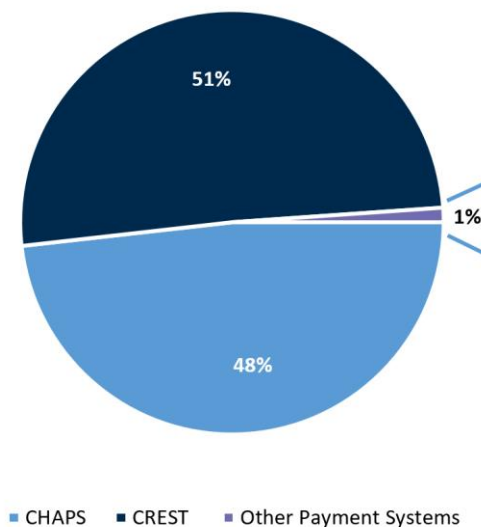
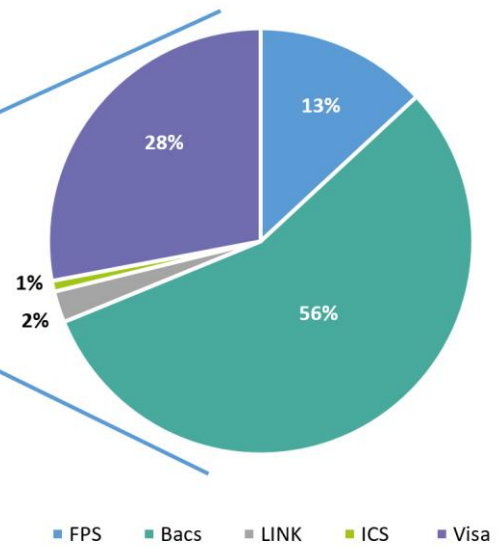


Chart 2: Proportion of settlement value from other UK payment systems (March 2020 – February 2021)



Note: MasterCard is not included as it started settling in RTGS later in 2021.

CHAPS

CHAPS is one of the largest high-value payment systems in the world and provides efficient, irrevocable sterling payments, free of settlement risk. From March 2020 to end-February 2021, CHAPS settled over **£92 trillion** of payments, equating to an average of over **£367 billion** each working day. The CHAPS system settles an average of around **174,000** payments each day with an average payment value of **£2.1 million**.

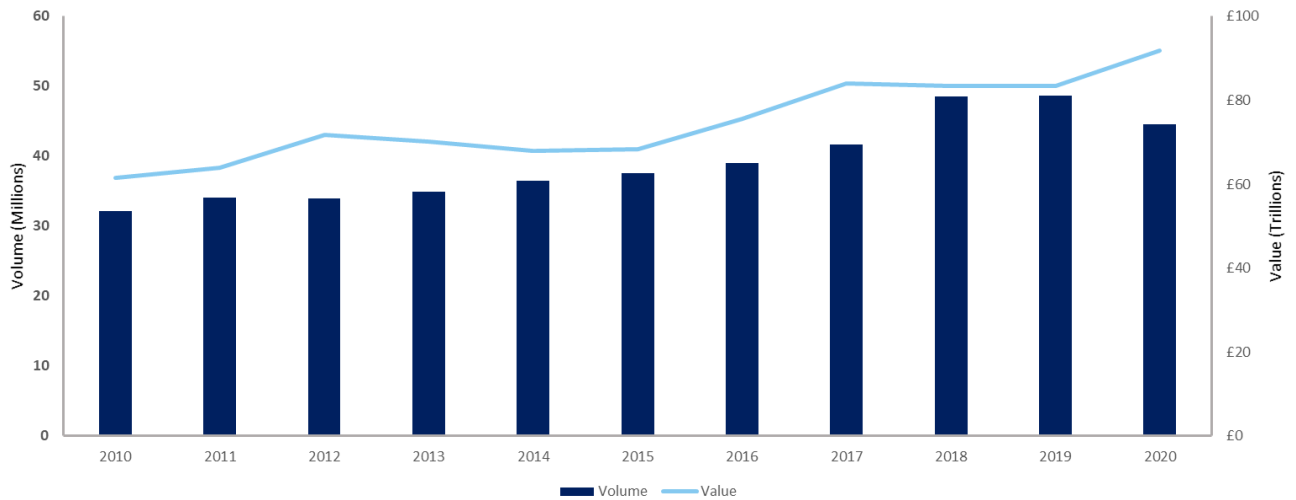
Total value settled in CHAPS:
£92,556,825,720,594
(March 2020 – February 2021)

CHAPS volumes declined year-on-year from March 2020 to February 2021, largely due to the economic disruption caused by the outbreak of Covid-19. Volumes are now increasing in line with economic recovery. This increase has largely been due to activity in the property market.

CHAPS values rose particularly during the early stages of the pandemic, and remained above 2019 levels throughout 2020. This was largely driven by money market transactions.

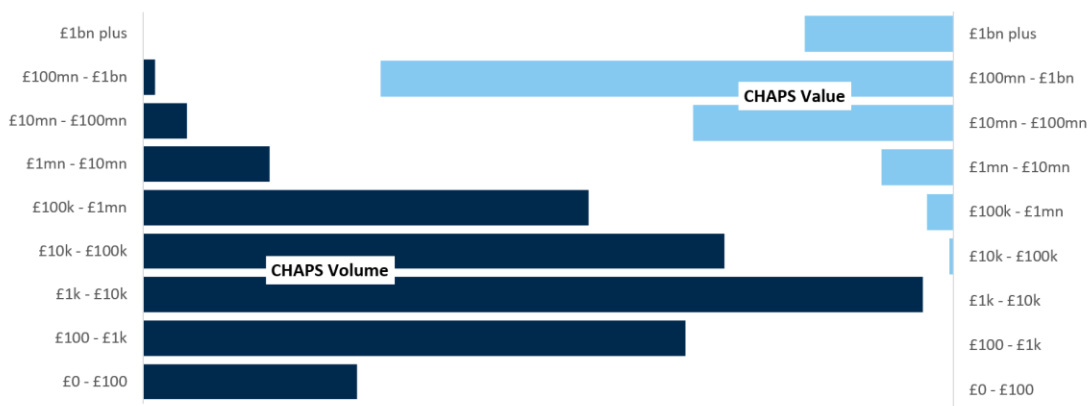
¹ The majority of figures cover the reporting period of March 2020 – February 2021, in line with the Bank's strategic and financial years. In some instances, we have provided figures covering up to June 2021 to provide a more recent update.

Chart 3: CHAPS annual values and volumes (calendar years 2010 – 2020)



In addition to high-value payments, CHAPS also processes a significant volume of low-value and retail payments. These are often time-sensitive or cross-border. While 97% of CHAPS payments by value are more than £1mn, the majority by volume is relatively low-value; 56% of CHAPS volumes are payments of less than £10,000 (Chart 4).

Chart 4: CHAPS payment band profile (March 2020 – February 2021)



Box 1. CHAPS all-time record day

On 30 November 2020, a new **CHAPS value record** was set of **£485 billion**. This exceeded the previous record of £479bn, on 18 March 2020, by **£6 billion (1%)**. This value record was due to a combination of high activity across secured money markets, settlement of foreign exchange, and flows with other Financial Market Infrastructure.

Figure 1. CHAPS values and volumes (March 2020 to February 2021)

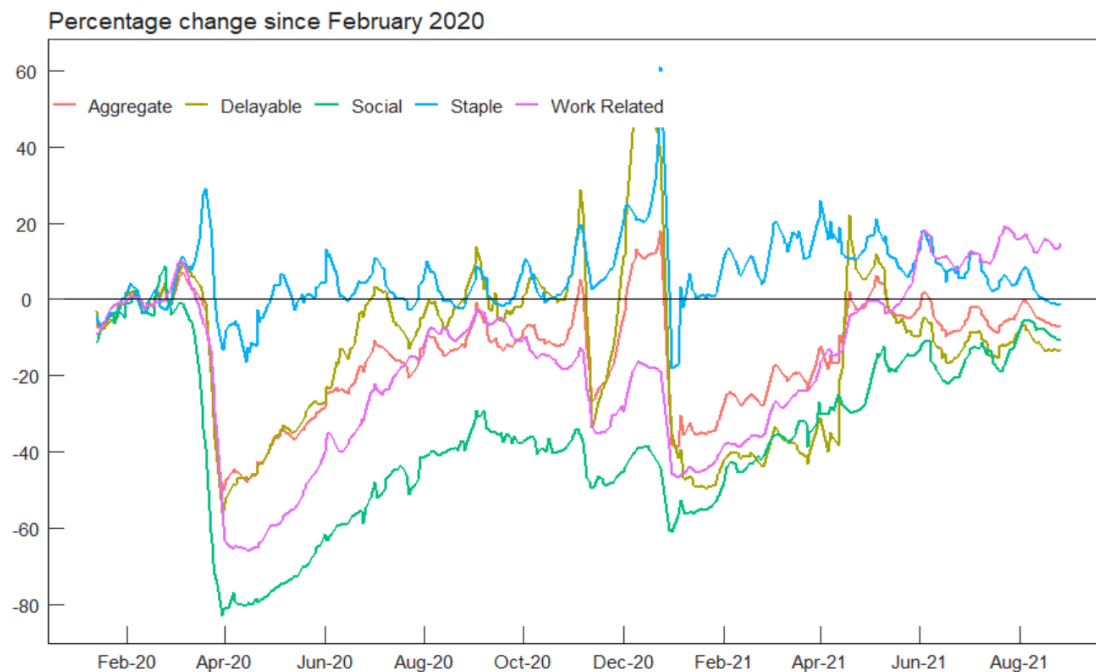
Average daily value
£367 billion
 From an average daily volume of
174,000 payments

Peak daily value of
£485 billion
 Peak daily volume of
285,606 payments

CHAPS is commonly used for housing and other property transactions. Due to expected high levels of housing transactions linked to changes in Stamp Duty, we extended the CHAPS settlement day on 30 June 2021 by two hours in response to demands from the property market. A number of the banks providing services to UK retail customers – such as individuals and conveyancers – also extended cut-off times for relevant client channels.

CHAPS data is used within the wider Bank to support supervisory and policy work – for example, prudential liquidity analysis and cross-border analysis to support the work underway with the G20, Financial Stability Board and the Committee on Payments and Market Infrastructures. We also provide an early view on changes to spending in key retail sectors, in light of Covid-19, based on card receipts transferred to larger merchants via CHAPS. Chart 5 is based on CHAPS payments that a sample of around 100 UK companies receive from their merchant acquirers on a daily basis. These payments reflect the sales that these companies make through debit and credit card purchases, which are summed to estimate rolling seven-day revenues. In 2021, we started to provide this aggregate data to the Office for National Statistics for weekly [publication](#) as part of their real-time faster indicators on economic activity and social change in the UK.

Chart 5: Fast indicators for UK spending from CHAPS data



2. Our management of RTGS and CHAPS

Given the systemic importance of RTGS and CHAPS, it is essential that we have appropriately effective and robust arrangements in place for our governance of RTGS including strategy setting and risk management. We aim to provide the RTGS and CHAPS services in a way that reflects: best-in-class standards of resilience; responsiveness to market developments and user needs; and value for money considerations. In operating CHAPS, we also seek to draw on the full set of tools, information and resources available to the Bank. This includes working with PRA supervisors and external organisations such as the National Cyber Security Centre.

Governance

We have dedicated, combined governance arrangements for RTGS and CHAPS where the RTGS/CHAPS Board provides strategic leadership. The RTGS/CHAPS Board is chaired by the Bank's Deputy Governor for Markets & Banking and is comprised of Bank executives and independent members.

- The four independent external appointees provide additional challenge, broader experience and insight into the Board's decision-making. The career experience of independent members is diverse and includes banking, payments and/or risk management experience in executive roles before moving into non-executive roles.
- The executive members include those who are accountable for functions associated with RTGS and CHAPS, as well as those with wider responsibilities and supervisory experience.
- Overall, the RTGS/CHAPS Board operates within the Bank's wider governance structure, reporting to the Governor and the Bank's [Court of Directors](#). The Bank is accountable to the public through Parliament – including through the House of Commons' Treasury Select Committee.

Board effectiveness

To ensure the effective governance of the RTGS and CHAPS services, reviews of the Board's effectiveness are undertaken and identified improvements are implemented. A comprehensive review was completed in January 2019 and improvements implemented; a follow-up review concluded that good progress had been made. A self-assessment of the Board's effectiveness was concluded in summer 2021, again noting its effectiveness, identifying a number of opportunities for further improvement that are being taken forward. As part of our 2020 self-assessment against the Principles for Financial Market Infrastructures, we judged our governance arrangements as observed under *Principle 2 – Governance*.

Transparency

The Bank is committed to providing users and the wider public with an appropriate level of information over how the Bank operates the RTGS and CHAPS services. We provide this through a number of routes including: publication of our self-assessment of RTGS and CHAPS against the Principles for Financial Market Infrastructures making our annual ISAE 3402 audit available securely to our users; and publication of our tariffs as well as the provision of more detailed costing

information to fee-payers. Information is available on our [public website](#) and we also provide more detailed and/or sensitive information via private extranets to CHAPS Direct Participants and other RTGS users.

We also regularly consult our key stakeholders whenever we are developing new policy proposals relating to the RTGS/CHAPS live services or when we are considering the implementation of any changes to how the services are run. We aim to consult stakeholders as early as possible so we can take their views into account. We also aim to ensure that we provide stakeholders with enough information on our proposals so that they can provide sufficiently robust feedback and to understand the impact, and benefits, the proposals may have. For instance, we are committed to consulting the industry in Q4 2021 on our proposals to revise the allocation of shared RTGS costs to the payment systems for which we settle and the structure of the fees charged to users. See Chapter 4 for further information.

Box 2. RTGS/CHAPS Board Responsibilities

The [RTGS/CHAPS Board](#) is responsible for setting the strategy for our management and operation of the RTGS and CHAPS services, consistent with the Bank's mission. As the operator of CHAPS, the RTGS/CHAPS Board is also accountable for the end-to-end risk management of the CHAPS system and is responsible for setting the rules and technical standards. The RTGS/CHAPS Board supports this through the oversight of risks that could impact the resilience of the payment system. The Board's responsibilities are delegated from Court via the Governor; in turn the RTGS/CHAPS Board delegates the day-to-day operation of the RTGS and CHAPS services to the executive.

The RTGS/CHAPS Board's responsibilities, including those of the Board Risk Committee, are published on the Bank's [website](#). To support its responsibilities, it draws on a range of internal and external assurance (see Box 3). The RTGS/CHAPS Board takes appropriate input from RTGS and CHAPS users, including through the Strategic Advisory Forum and the RTGS Renewal Programme's Senior Sponsors' Body.

In taking decisions on RTGS and CHAPS, the RTGS/CHAPS Board:

- first considers the Bank's monetary and financial stability objectives, ensuring any decisions are consistent with the Bank's overall mission;
- seeks to promote efficiency, innovation and competition in sterling payments, wherever that can be safely done without impairing financial stability; and
- subject to these other principles, considers how to provide services that are: simple to develop, operate, and use; flexible in response to changing demands; and provide value for money for the Bank and the wider market.

RTGS Renewal governance

The RTGS/CHAPS Board works closely with the **RTGS Renewal Committee (RRC)**. RRC is the sub-committee of Court responsible for overseeing the delivery, overall scope and financial management

of the **RTGS Renewal Programme**, including ensuring that the programme delivers demonstrable value for money. The RTGS/CHAPS Board is responsible for strategic decisions in managing the impact and risk to the live RTGS service from the Renewal Programme, including ensuring the live service and its participants are ready to transition to the new RTGS service. In addition, the RTGS/CHAPS Board oversees the Renewal Programme's engagement with the industry, including the industry's readiness to implement the changes required by the programme.

The RTGS/CHAPS Board and the RRC are jointly responsible for the key decisions to transition to the new RTGS service. Information flows and consultation requirements are in place between the RRC and the RTGS/CHAPS Board on matters that would impact each other's responsibilities.

The RTGS Renewal Programme also has a comprehensive executive governance structure, including a **Programme Board** and a number of underlying boards including those that focus on policy, technical and business service design, procurement and security.

Funding

The Bank operates the RTGS and CHAPS services with an objective to recover costs fully from users over the medium term: without generating any long-term profit or loss; to smooth costs where appropriate to reduce tariff volatility. Under the current arrangements, per-item fees – which form the majority of income – are charged for CHAPS and CREST settlement and small fixed fees are recovered from each settlement participant per settlement service. Our total income through the tariff was £21.6mn in the tariff financial year ending 31 March 2021, with 98% from CHAPS and CREST settlement participants.

Lower volumes as a result of the Covid-19 pandemic temporarily reduced income under the CHAPS per-item tariff; this was offset against accumulated surpluses. Depending on the extent to which volumes recover during 2021/22, the Bank may need to consider increasing the 2022/23 tariff to ensure that we do not have a deficit at the point at which we transition to the renewed RTGS service. The likelihood and magnitude of any increase ahead of the introduction of the new core ledger will be kept under review.

Strategy setting

Our strategy for RTGS and CHAPS has evolved each year since CHAPS was brought into the Bank in 2017:

- In 2018/19 our focus was on '**integration**' following the transfer of responsibilities for CHAPS to the Bank in November 2017.
- For 2019/20, our focus was on '**consolidation**', including how we undertake end-to-end risk management for CHAPS and maturing our governance arrangements.
- For 2020/21, our focus was on '**augmentation**', with further maturity of our risk management arrangements, enhancing the CHAPS rulebook and seeking to maximise the financial stability benefits of CHAPS being part of the central bank.

- For 2021/22, our focus is on ‘**preparation and realisation**’ for the renewed RTGS service, especially Transition State (TS2) which will include the adoption of ISO 20022 for CHAPS payment messages.

In developing our strategy, the RTGS/CHAPS Board considers and agrees the strategic outcomes for the year ahead. These target outcomes are informed by consideration of relevant external developments through a structured horizon scanning and emerging risk process.

- Horizon scanning identifies and assesses potential changes to the banking and payments landscape as well as emerging risks to RTGS and CHAPS and therefore our strategy.
- This horizon scanning process is informed by consultation with internal and external experts across a range of topics reflecting the importance of understanding external views on RTGS and CHAPS to inform our strategy and supporting activities.
- External engagement covers financial institutions with direct and indirect access to CHAPS, and other RTGS users. We engage through bilateral and industry wide discussions, for example, through our Strategic Advisory Forum and relevant trade associations.
- We also engage with other UK financial authorities, other central banks and private-sector operators of high-value payment systems.

Key elements of our strategy

In delivering our agreed strategy, we aim to provide services that, in addition to being value for money, are based around four key themes:





- **Safe and resilient**, delivering world leading standards in the face of evolving threats through the use of the full set of tools and resources available to the Bank.
- **Well run**, providing efficient and cost effective services to users.
- **Responsive** to user voice and changes in the wider environment.
- **Renewed** to ensure that safe and resilient settlement in central bank money remains at the core of a rapidly changing payments landscape.

We prioritise **safe and resilient** and **well run** as these are preconditions for the remaining themes of **responsive** and **renewed**.

Through the [RTGS Renewal Programme](#) we are delivering a resilient, flexible and innovative system for the UK to meet the challenges posed by a rapidly changing landscape, including issues flagged in our strategic planning and horizon scanning rounds. Our renewed RTGS and CHAPS services will support competition and innovation in the wider banking and payments markets while ensuring – and enhancing – monetary and financial stability.

In Chapter 3 of this report, we set out how we advanced our strategy in the reporting year and in Chapter 4 we set out how we will continue to do so going forward.

Figure 2: Summary of our current strategic outcomes for 2021/22, by key theme.

Strategic Themes	Strategic Outcomes
<p data-bbox="240 315 419 338">Safe and Resilient</p> 	<ul data-bbox="480 315 1536 510" style="list-style-type: none"> <li data-bbox="480 315 1536 409">• Develop our access policies to enable changes to balance sheet access and new types of account holders and payment systems, in a way that supports innovation and competition but delivers appropriate risk management outcomes. <li data-bbox="480 450 1536 510">• Create a more proportionate, simplified and integrated, risk based approach to CHAPS participant risk management that also supports our access objectives.
<p data-bbox="284 544 376 566">Well Run</p> 	<ul data-bbox="480 544 1536 779" style="list-style-type: none"> <li data-bbox="480 544 1536 577">• Operate the RTGS and CHAPS live service to agreed standards and risk tolerance. (Timeless) <li data-bbox="480 577 1536 611">• Enhance cross-team collaboration and improve ways of working. (Timeless) <li data-bbox="480 651 1536 712">• Further enhance the operational resilience of the RTGS and CHAPS services, aiming to achieve best-in-class standards. <li data-bbox="480 712 1536 779">• Delivering the world leading service standards by further developing our role as end-to-end risk manager for the CHAPS system.
<p data-bbox="276 808 384 831">Responsive</p> 	<ul data-bbox="480 808 1536 875" style="list-style-type: none"> <li data-bbox="480 808 1536 875">• Agree how to balance the Bank's policy objective of promoting competition and innovation in payments with cost recovery.
<p data-bbox="284 1003 376 1025">Renewed</p> 	<ul data-bbox="480 1003 1536 1104" style="list-style-type: none"> <li data-bbox="480 1003 1536 1037">• Determine the actions that may be required to support wider UK payments capability. <li data-bbox="480 1037 1536 1104">• Complete the internal and external preparation work for the renewed RTGS service including the new ISO 20022 messaging standard.

Risk management framework

A clear and documented risk management framework is a core part of effective governance arrangements. The Bank operates a standard 'three lines of defence' model for risk management – with the reporting lines for the second and third lines independent from the first line.

There is a Bank-wide risk management framework, complemented by a local framework specific to RTGS. In line with the governance arrangements outlined above, the RTGS/CHAPS Board has delegated the setting (and monitoring) of the RTGS and CHAPS risk management framework and risk profiles to the RTGS/CHAPS Board Risk Committee. This Risk Committee is also responsible for setting the RTGS and CHAPS risk tolerances – consistent with the overall Bank risk tolerance – and overseeing the RTGS and CHAPS end-to-end risk management framework. It provides assurance to the Board that the Bank is fulfilling its risk management responsibilities as the operator of the RTGS and CHAPS systems. It also plays a key role in providing strategic steer and challenge on the risk framework's design and implementation.

Under our integrated risk management approach, we use a single, combined risk register for RTGS and CHAPS with common indicators and reporting procedures. This includes assessing both emerging and established risks specific to RTGS and CHAPS (in line with the Bank-wide risk management framework).

We use three risk domains: participant; supplier; and internal. The Bank seeks to keep its exposure to risk low and seeks to have a control environment and risk culture that supports this. There is a very low tolerance for operational risks which impact business-critical functions such as the operation of the RTGS and CHAPS services in order to provide a high degree of reliability, security and availability.

Box 3. Independent assurance

The International Standard on Assurance Engagements (ISAE) 3402 is an internationally recognised auditing standard developed by the Internal Auditing and Assurance Standards Board. This standard is commonly used in relation to financial infrastructure provision and provides assurance on the design and operation of the control framework, processes and technology which supports the Bank's delivery of RTGS and CHAPS. We share the ISAE 3402 with users of RTGS.

The 2020/21 audit, completed by an external reviewer, concluded that the control environment had been designed and was operating so as to provide assurance that the Bank's control objectives for RTGS were achieved. This conclusion was in line with previous years' reports. There were around a dozen minor exceptions, none of which the external reviewer considered to have material impact.

ISO 27001 certification is an internationally recognised standard for information system security management. A full certification lasts for three years and includes two annual surveillance audits and a three-year recertification audit. The annual surveillance audit consist of two parts, an interview with key staff and an on-site visit. Information security is also audited on a Bank-wide basis, as well as at a business area level specific to RTGS.

The Bank's next full three year re-certification of ISO 27001 will take place in 2022. Part one and two of the annual surveillance audits were successfully completed in January 2021 and July 2021 respectively.

We regularly publish a self-assessment against the Principles for Financial Market Infrastructures (PFMIs) as the operator of the RTGS and CHAPS services (and not as a user of those services, or in our broader roles as supervisor of Financial Market Infrastructures and banks). The PFMIs are internationally agreed standards considered essential to strengthening and preserving financial stability.

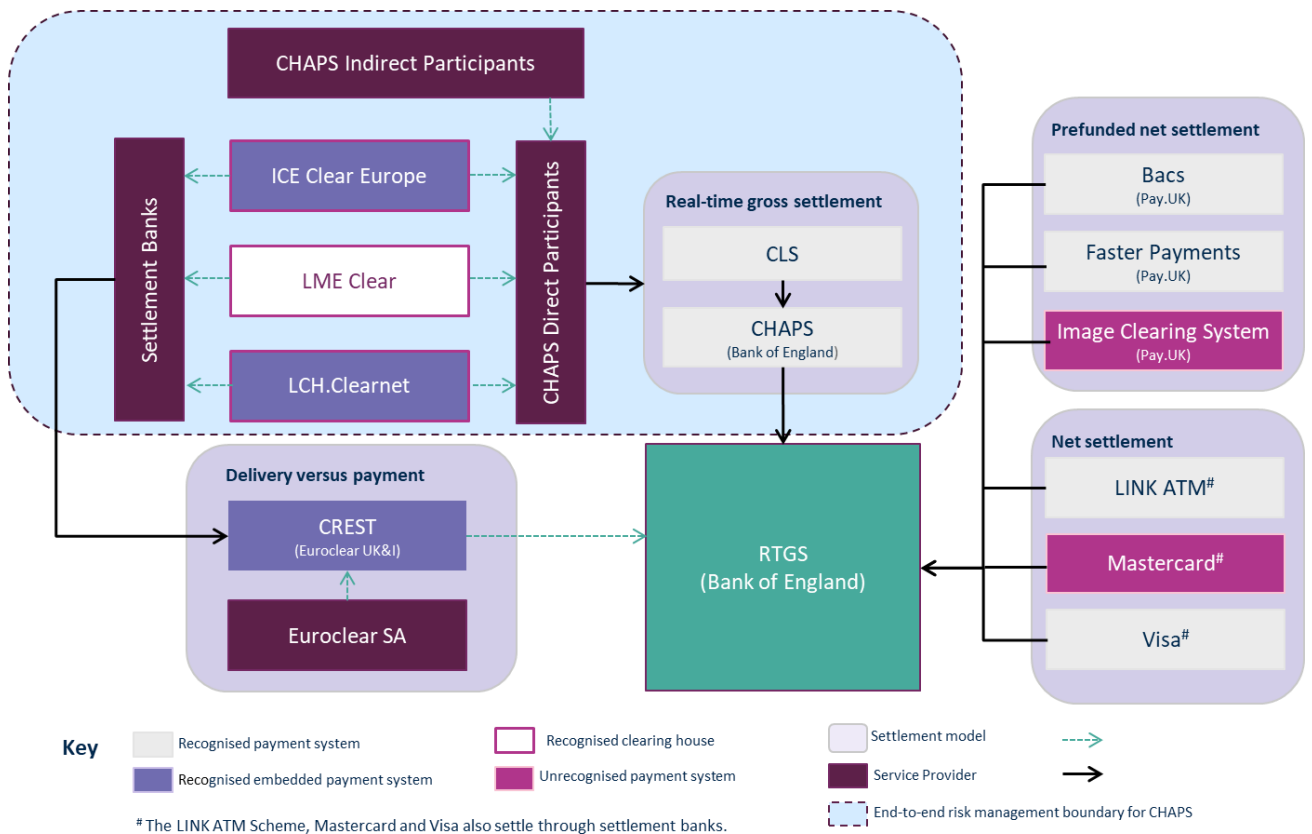
The self-assessment was based on the principles relevant to the Bank's RTGS and CHAPS services. Some principles are relevant only to characteristics associated with specific types of Financial Market Infrastructures, and hence did not apply to one or both of the RTGS and CHAPS services. The most recent self-assessment for the RTGS and CHAPS services was concluded at end-August 2020. Overall, we self-assessed that the Bank had achieved 'observed' status for most of the principles relevant to the Bank's RTGS and CHAPS services. The exception was *'Principle 3 – Framework for the comprehensive management of risks'* where we continue to remain 'broadly observed'. Although this was not due to any structural flaw, we concluded that more time was required to reach the appropriate level of maturity, although significant improvements have been made each year.

Further information covering our approach for managing risks associated with the RTGS and CHAPS services are set out in our regular [self-assessment against the Principles for Financial Market Infrastructures](#). We have expanded below on two key focus areas: our role as the end-to-end risk manager for CHAPS, including participant risk management; and cyber risks. Chapter 3 includes further information on risk management activities undertaken in 2020/21.

End-to-end risk management for the CHAPS payment system

As the end-to-end risk manager for the CHAPS system, we seek to ensure that the end-to-end flow of payments is safe, secure and stable. Establishing a single end-to-end risk manager was a key driver behind the move to the Bank becoming the CHAPS payment system operator in 2017 alongside its existing responsibility for running the RTGS system. The risk management boundaries of CHAPS are shown in Figure 3 below.

Figure 3: RTGS and CHAPS end-to-end risk management framework



The Bank does not seek – and is unable – to directly manage all risks across the end-to-end CHAPS system. Our approach is to assign responsibilities for risks according to where they can be managed most effectively. We therefore coordinate with the owners of these risks (such as CHAPS Direct Participants and critical service providers such as SWIFT) to seek assurance that the CHAPS payment system, taken as a whole, is operating within our risk tolerance, as set by the RTGS/CHAPS Board.

The CHAPS Reference Manual sets out the rules and requirements that CHAPS participants are expected to meet. The Bank undertakes assurance of CHAPS Direct Participants against these requirements before permitting access to CHAPS on an ongoing basis.

A particular focus is the risk associated with financial institutions accessing CHAPS indirectly, i.e. through a CHAPS Direct Participant. This arrangement, known as tiering, introduces credit, liquidity and operational risk between direct and indirect participants. Under the CHAPS rulebook, the Bank has the right to withdraw consent to a 'tiered relationship' under specific criteria if there are insufficient mitigating circumstances to address the risks. For example, if an indirect participant's values exceed more than 2% of overall CHAPS values, the Bank has a presumption that it will move to direct access.

We work with the wider Bank, including the PRA, to enable two-way information sharing to help increase mutual understanding of the risks to CHAPS and potential actions to mitigate such risks. This includes in support of the agenda to enhance the operational resilience of the UK's financial system. As well as the PRA who supervise the majority of CHAPS Direct Participants, we work with the Financial Conduct Authority (FCA) and Payment Systems Regulator, who also supervise most CHAPS participants and have a shared interest in a well-functioning payment system, to seek their input and support for risk reduction measures. These relationships are particularly important where a firm is seeking to join CHAPS; has an operational incident; or otherwise poses risks to the CHAPS system through its actions.

Cyber risks to RTGS and CHAPS

It is important that the Bank continues to develop the resilience of RTGS and CHAPS to cyber risks. The Bank benefits from regular engagement and advice from the UK's National Cyber Security Centre (NCSC), and a representative from the NCSC attends RTGS/CHAPS Board and its Risk Committee meetings, providing independent expertise and advice. From an RTGS perspective our cyber strategy seeks to ensure we have the right level of governance and risk management around RTGS people, processes and technology. Cyber defence around the RTGS infrastructure as a whole consists of multiple layers, each intended to detect and defeat different types of threat. These defences are continuously monitored, reviewed and updated. We engage regularly with the central functions in the Bank which operate these defences including the Bank's Chief Information Security Officer. The RTGS/CHAPS Board and executive participate in a range of cyber scenarios each year to reflect, in particular, on our recovery and response capabilities.

We have a cyber strategy for CHAPS, and refreshed security requirements were published as part of the CHAPS Reference Manual, including enhancements to the supporting assurance approach developed. The requirements are aligned with the comprehensive principles of the National Institute of Standards and Technology's (NIST) Cybersecurity Framework: identify, protect, detect, response and recover. It is best practice for Financial Market Infrastructures to align with such leading standards in order to reflect industry best practice.

3. Developments between March 2020 – February 2021

For 2020/21, our focus was on ‘**augmentation**’, with an emphasis on maturing our risk management arrangements, enhancing the CHAPS rulebook and continuing to maximise the financial stability benefits of CHAPS being part of the central bank. Key outcomes and activities were focused around our four strategic themes.

- **Well run:** In order to deliver safe and reliable day-to-day operations, we provided staff with the tools and technology to complete their roles remotely. This has involved running the RTGS service and managing incidents remotely.
- **Responsive:** We prioritised the safe delivery of the live services and the wellbeing of our staff given the ongoing challenges presented by the Covid-19 pandemic.
- **Safe and Resilient:** We continued to support new participants and payment schemes through providing access to settlement in central bank money to improve financial stability including policy and operational engagement in the lead up to new joiners for CHAPS, CREST and retail payment systems. We have also continued to work to improve operational resilience, including learning from operational incidents.
- **Renewed:** Over this period, we appointed a Technology Delivery Partner and have worked together to progress development of the renewed RTGS service. This includes the move to the ISO 20022 messaging standard for CHAPS payments and commencing a programme of monitoring industry readiness for the forthcoming changes.

Prioritisation of Activities

Throughout the Covid-19 pandemic, we have continued to play our role in serving the UK economy. Our focus during this challenging period has been on ensuring that we were able to continue to provide the live RTGS and CHAPS services to the high standards required. We regularly reviewed our priorities and, where appropriate, phasing of certain activities.

In response to the lockdown in March 2020, the vast majority of Bank’s staff, including those that operate and support RTGS and CHAPS, successfully transitioned to, and have sustained, remote working. During this period, our staff have also successfully managed significant incidents including: a series of SWIFT connectivity issues in July 2020, multiple CHAPS Direct Participant incidents and multiday issues with CREST including the first ever Non-Standard CREST Closure. To support our staff throughout this period, we deprioritised certain aspects of our non-critical work such as streamlining certain governance and reporting as well as temporary and risk-based rationalisation of our operational contingency testing programme.

Responsive

Stakeholder Engagement

Understanding the needs of RTGS and CHAPS users in light of current and future changes in the wider UK payments landscape is essential in providing a robust and resilient service. The success of this relies on continuous collaboration with the payments industry, which is especially important for RTGS Renewal, as we work together to review and prepare the industry for global change. We feed



industry views into our decision making, including input to Board-level discussion.

We have continued to undertake an extensive programme of external engagement, despite the challenges posed by the pandemic. This included high-profile speaker events in which we encourage the industry to engage with us in order to enact positive change in the payments landscape.

In the last year, we have consulted stakeholders on a variety of policy issues relating to the RTGS and CHAPS live services. Through the Strategic Advisory Forum, we have regularly engaged on issues such as the delivery of the renewed RTGS service; our approach to recovering the costs of the renewed RTGS service; and the delivery of the refreshed CHAPS Reference Manual. We will continue to use the Strategic Advisory Forum as a forum for updating stakeholders on our ongoing change programmes, and have extended it to include RTGS.

We have also facilitated many workshops and roundtables to focus on particular areas of interest. One example of this is an industry retail fraud roundtable we held in March to encourage greater information sharing between CHAPS participants to help combat CHAPS fraud.

Horizon Scanning

Horizon scanning helps us to holistically understand emerging developments in the payments landscape and assess potential risks to, and opportunities for, RTGS and CHAPS. We gather and analyse information on developments with input from a network of subject matter experts across the Bank, external stakeholders such as the Payment Systems Regulator, FCA and Pay.UK. In addition, we consult the Strategic Advisory Forum on developments, and our regular meetings with CHAPS Direct Participants are a valuable source of information.

The results of this process, including any priority developments and recommended actions, are reported to the RTGS/CHAPS Board and inform a wide range of our activities. In 2020/21, we explored recent developments in digital identification, digital currencies and the non-bank payment service providers / FinTech sectors. Most recently, the results of this horizon scanning analysis have fed into work on the current and future RTGS and CHAPS tariff approach and the design of account structure for the renewed RTGS service.

Throughput Forbearance

We shared with CHAPS Direct Participants the circumstances in which we would forbear with respect to the CHAPS throughput targets – specific times by which some CHAPS Direct Participants must make a certain proportion of their payments, by value. This was prompted by volatile financial market conditions observed as a knock-on impact due to the Covid-19 pandemic in spring 2020.

Safe and resilient

Access Criteria

Holding an account in RTGS that can be used for settlement is a requirement for direct access to certain payment systems, including CHAPS and a number of retail payment systems.

Wider access to settlement in central bank money can help to contribute to financial stability and subject to where we can safely do so without impairing financial stability, can



also enable a more innovative and competitive market in payments. Our access criteria for RTGS accounts are set out in our [Settlement Account Policy](#) and our criteria for becoming a CHAPS Direct Participant are set out in the [CHAPS Reference Manual](#). We keep these access criteria under regular review. In 2020/21, we progressed work to introduce a new type of account - an omnibus account (see Box 4).

Before we permit organisations to settle in RTGS, each must demonstrate its operational capacity to participate in and efficiently settle in RTGS. For example, non-bank payment service providers must each undergo a supervisory assessment by the FCA to assess compliance with existing regulatory requirements and satisfy the FCA that feedback has been addressed. Non-bank payment service providers with an account in RTGS are subject to ongoing and strengthened supervisory oversight by the FCA to assess their continuing compliance.

Box 4. Omnibus accounts

In April 2021, the Bank published the policy for omnibus accounts in RTGS. Under the omnibus account model, a new or existing operator of a payment system can hold funds in this account to fund their participant's balances with central bank money.

The offering of omnibus accounts is consistent with the [RTGS Renewal Blueprint](#); the Bank's response to the [Future of Finance Report](#); and the [building blocks](#) identified by the Financial Stability Board to improve cross-border payments globally. It supports a more resilient, innovative and competitive payments system, facilitating innovation by supporting a greater range of payment systems.

Omnibus accounts are open to regulated payment system operators to pool participant funds. This allows the operator to fully fund wholesale settlement on their platform with central bank money. The payment system operator holds this account on behalf of their participants. The account can hold funds both during and outside of the RTGS operating hours.

Innovative payment services have the potential to reduce systemic risks and save costs for UK financial institutions and businesses. The omnibus account model will allow payment system operators to offer innovative payment services, while having the security of central bank money settlement.

While enabling omnibus accounts can benefit financial stability and innovation, it can also present risks. As such, the Bank set out a number of eligibility requirements designed to manage and mitigate the financial, legal and operational risks that could arise and is working closely with the area of the Bank responsible for the regulation of payment system operators.

Settlement Contingency Planning

In 2016, the Bank facilitated an industry wide SIMEX16 exercise which focussed on a prolonged technical outage of RTGS. As a result of this exercise, the industry developed the concept of a

Voluntary Sterling Settlement Postponement (VSSP); the ability should a severe operational incident require it, to implement one or more day(s) suspension to sterling settlement in RTGS, and the FMIs that settle in it. In late 2019, the industry, with support from the Bank and UK Finance as co-chairs of the Cross Market Operational Resilience Group, started further work to understand and seek to reduce operational and legal barriers to implement a VSSP.

In light of the Covid-19 pandemic, the industry were asked to accelerate this work and to look specifically at how to manage high levels of staff absences in one or more of the sterling settlements systems. Working with the industry, a further contingency tool has been codified and signed off: Amended Settlement Hours. This would permit the completion of all critical settlements for the day, within a compressed timetable, to help manage high staff absences. In addition, there was significant progress to gain assurance that a VSSP and/or Amended Settlement Hours could be used in the event of a major operational incident.

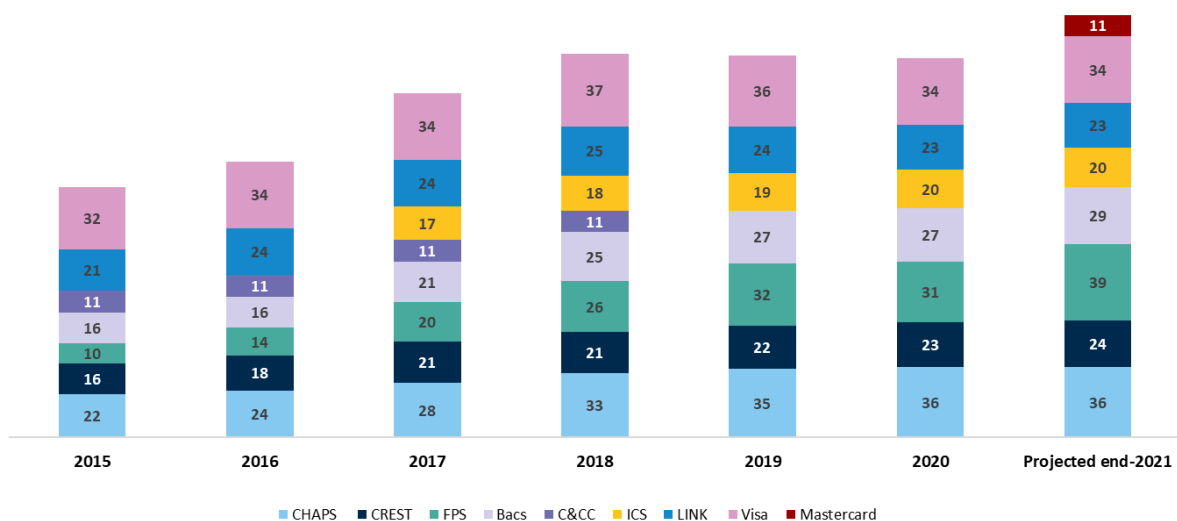
Well Run

On-boarding to RTGS and CHAPS

There are now more than 70 organisations using RTGS to settle directly in one or more payment systems. During the reporting period, Banco Santander joined as a CHAPS Direct Participant and CREST settlement bank. We also added two new settlement participants to the Faster Payments retail payment system (Chart 6). One of these was a non-bank payment service provider.

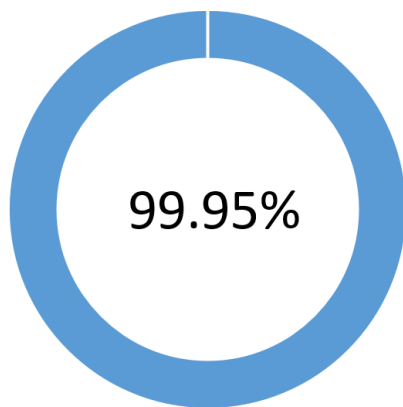


Chart 6: Settlement participants per payment system per calendar year since 2015



Operational resilience of RTGS and CHAPS

Figure 4. RTGS availability target



The Bank has a strong focus on making its infrastructure as stable as possible, targeting availability for at least 99.95% of its defined operating hours. RTGS availability in 2020/21 met our target of 99.95% (Figure 4). However, the target was not met in July 2020 due to a 10 minute RTGS settlement delay caused by an issue with our internal SWIFT infrastructure.

In spring 2020, we adapted the incident management process to make better use of collaborative tools and technology when all staff, including operational teams, moved to working from home. All roles involved with managing incidents now have the tools and technology to complete them remotely. Going forward, the Bank will adapt to managing incidents under hybrid working arrangements.

The most significant incident was on Friday 11 September 2020 when CREST encountered an issue with the connection in their system and Euroclear Group's Single Settlement Engine. While RTGS was available throughout the incident and continued to meet its availability target, CREST settlement itself was disrupted as CREST was unable to return a settlement notification to RTGS. After attempting to rectify the issue, with considerable industry engagement including the Cross Market Business Continuity Group, a Non-Standard CREST Closure (NSCC) was invoked for the first time. The NSCC arrangements successfully enabled settlement to complete and for RTGS and CREST to close. A number of key learnings around industry understanding of the NSCC and internal processes were highlighted. We are working closely with Euroclear UK & Ireland, as the operator of CREST, to enhance the NSCC process and enhance internal and external understanding.

In February 2021, we published our [Market Infrastructure Resiliency Service \(MIRS\) invocation principles](#) on our external website. The document sets out the factors that the Bank will consider when deciding whether to invoke MIRS – our tertiary solution - as a contingency solution for RTGS (including CHAPS settlement). It is intended to help external and internal stakeholders including CHAPS Direct Participants and the operators and participants of other payment systems that settle in RTGS. We also carry our regular testing for MIRS to improve confidence in MIRS invocation (see Chapter 4).

Replacement of RT1 hardware/software

In spring 2021, we completed work to upgrade the current RTGS infrastructure to remove any immediate obsolescence issues. This should be the last major hardware change before the renewed RTGS system goes live in autumn 2023.

Retail Fraud

Retail fraud can have a material impact on its victims, particularly for CHAPS where the amounts can be significant, and often life-changing, for the victim. Where the Bank is able to assist, it is engaging

with CHAPS Direct Participants to assist with innovative ways to combat retail fraud. Two examples of this are:

- We are working with a number of CHAPS Direct Participants and Vocalink on a Proof of Concept to put CHAPS data through Vocalink's financial crime analytics to better understand the pattern of fraudulent CHAPS payments (and identify likely frauds which can then be tackled). This project was delayed due to the Covid-19 pandemic but is expected complete in 2021/22.
- Confirmation of Payee (CoP) is an account name-checking service that helps to make sure payments are not sent to the wrong account. In November 2020, we took a decision not to mandate CoP for CHAPS, although we keep this under review. This is because a large majority of CHAPS Direct Participants, outside of those mandated by the Payment System Regulator, already have plans to introduce CoP. This is reliant on further changes to the CoP arrangements to enable them to join which are scheduled for later in 2021. We will continue to encourage CHAPS Direct Participants to join CoP whilst keeping this under regular review and remaining close to regulatory and industry developments in this space.

Renewed

In July 2020, following a public procurement, the Bank appointed Accenture as the Technology Delivery Partner for the RTGS Renewal Programme.



Figure 5: Our RTGS Vision



Industry Engagement on Renewal

The RTGS Renewal Programme involves open and collaborative dialogue with extensive stakeholder engagement at all stages. A key engagement tool during 2020/21 was the External Advisory Body (EAB), which represents a broad range of interests. EAB members provide a cross-section of views and challenge to the RTGS Renewal Programme. We have since replaced EAB with a new, increasingly delivery-focussed, Senior Sponsor's Body. We have also continued to engage virtually with the wider industry, including running virtual forums, publishing various publications and continuing to engage bilaterally with the industry to ensure readiness.

Messaging Standards

ISO 20022 is an established international financial services messaging standard that will bring significant benefits to the UK's payments industry. This includes greater resilience, security, user experience and innovation. It will also facilitate greater competition in payments. The Bank and Pay.UK will implement ISO 20022 in CHAPS and the New Payments Architecture (NPA) respectively.

Since 2019, the Bank and Pay.UK's joint Standards Advisory Panel has supported the implementation of payment standards in UK payments by providing expertise on industry preferences and implications. In 2020/21, the Bank and Pay.UK:

- Published respective policy implementation approaches for messaging standards for CHAPS and the NPA.
- Delivered joint industry events in support of the published policy implementation documents.
- Shared our respective timelines for the implementation of technical standards collateral for CHAPS and the NPA.
- Presented to the industry a comparison view of each organisation's technical guidance.

CHAPS as a Retail Alternative

Since 2018, we have been working with the industry, including Pay.UK, to explore a potential contingency solution for allowing batches of critical retail payments to settle directly in RTGS, while ensuring critical wholesale payments are not impacted. This solution could help meet the Financial Policy Committee's proposed impact tolerance for retail payments in the unlikely event of a major outage.

A number of important design choices around the NPA will greatly shape payment system providers' future internal retail payments architecture and process design. Given that the strategy and timelines for the delivery of the NPA is still to be confirmed, we have postponed work until there is greater clarity.

4. Our strategy for 2021-2022

Our focus in 2021/22 is on ‘**preparation and realisation**’. The activities for each theme are set out below. These are supported by a number of strategic outcomes based on service delivery, risk management, and medium term RTGS Renewal related transformation activities.

In common with other organisations, what we will be able to deliver in the 2021/22 strategy year is likely to be impacted by the ongoing Covid-19 pandemic. We will continue to prioritise the operation of the live RTGS and CHAPS services, subject to supporting the wellbeing of our staff. As restrictions relax, we expect to support a hybrid working model.

Safe and resilient

The resilience of the CHAPS system is about more than just the central RTGS infrastructure or management of the CHAPS Direct Participants in isolation. Weaknesses in security or operations at any point in the payment chain could threaten stability and trust in the whole system. It is vital to have a holistic view of CHAPS as a network through which financial or operational risk can be transmitted. We can take this holistic view as end-to-end risk manager of CHAPS, drawing on the tools and resources available to the Bank to assess and manage risks.



Develop our access policies to enable changes to balance sheet access and new types of account holders and payment systems, in a way that supports innovation and competition but delivers appropriate risk management outcomes.

Access

In April 2021, we published our Omnibus Account Policy (see Box 4 in Chapter 3). We have set out a number of eligibility requirements designed to manage and mitigate the financial, legal and operational risks that could arise. We are also progressing the first formal application for an omnibus account.

Negative interest rates

In 2020, the Bank briefed the Monetary Policy Committee (MPC) on plans to explore how a negative Bank Rate could be implemented quickly and effectively, should the outlook for inflation and output warrant it in future. In February 2021, the MPC asked the PRA to engage regulated firms to begin making operational changes to their systems and processes in order to be ready to implement Negative Interest Rates safely. Simultaneously, the Bank commenced internal technical preparations to deliver the option of a tiered system of reserve remuneration, should that be judged appropriate, alongside a negative Bank Rate. Relevant changes to Sterling Monetary Framework and RTGS documentation were published in July 2021, and in August 2021 the MPC noted that a negative Bank Rate could now be implemented by the system as a whole, with or without tiered reserve account remuneration, if warranted.

Create a more proportionate, simplified and integrated, risk based approach to CHAPS participant risk management that also supports our access objectives.

CHAPS participant risk management

The CHAPS Reference Manual is the key document that sets out our expectations for CHAPS Direct Participants. The Reference Manual seeks to ensure the smooth functioning of the end-to-end CHAPS system, including managing risks that CHAPS Direct Participants pose, through rules which Direct Participants are expected to meet. Following the publication of the new enhanced security requirements in June 2020, all Direct Participants will self-attest on their compliance with the new requirements; and we will complete supporting assurance activity.

Building on the effectiveness of the security enhancements and applying lessons learned from the first responses received in Q1 2021, we will continue to evolve our enhanced assurance model as part of the wider refresh of the CHAPS Reference Manual. This will include a greater focus on outcomes (including operational resilience) and greater proportionality, focusing on those Direct Participants who pose the greater risk to the end-to-end flow of payments. The second phase of our consultation with Direct Participants, on the refreshed CHAPS Reference Manual, ended in August 2021; we expect to make the final document available to Direct Participants in October 2021. The new requirements are expected to start taking effect from January 2022. These changes will support further risk-based evolution of our assurance approach to ensure that the frequency and depth of the assurance undertaken on each participant reflects its importance to the smooth flow of CHAPS payments.

Policy for use of the Cloud by CHAPS Direct Participants

Cloud continues to be an area of growing interest for CHAPS Direct Participants. This interest is partly influenced by their thinking regarding how they will upgrade their infrastructure to manage ISO 20022 and RTGS Renewal. Over the last year, work has been ongoing to make changes to the CHAPS Reference Manual to permit CHAPS Direct Participants to outsource their CHAPS related infrastructure to a Cloud Service Provider. This is on the basis that it is done in a safe and controlled way and without detriment to the wider CHAPS system. Enabling broader access to Cloud technologies is consistent with the Bank's (including the PRA) and the Payment Systems Regulator's mandate to open access and embrace innovation. It will also enable the potential resilience-enhancing benefits outlined in the [Future of Finance report](#). We have now introduced the required changes to align with the PRA [Supervisory Statement on Outsourcing](#). This will ensure appropriate controls are in place for outsourcing, including to Cloud Service Providers, including future adoption by CHAPS Direct Participants.

Well Run

We will continue to deliver safe and reliable day-to-day operations, including considering any changes that are required to support the transition to the renewed RTGS service as well as to safely retire the current RTGS infrastructure.



Operate the RTGS and CHAPS live services to agreed standards and risk tolerance; including managing RTGS1 to a safe retirement.

Effective governance arrangements and adherence to supervisory requirements

Continuous improvement of the RTGS and CHAPS services is necessary and we will continue developing our medium term strategy for RTGS and CHAPS. This is especially in the context of ongoing preparations for RTGS Renewal. We work to ensure that the effective governance of the service continues through adherence to regulatory requirements and standards, in addition to relevant governance good practice. We also undertake regular reviews of the effectiveness of the RTGS/CHAPS Board (see Chapter 2), implementing identified improvements.

On-boarding to RTGS and CHAPS

The work to deliver the renewed RTGS service will require periods of low or no change to support safe delivery. We have considered the availability of on-boarding slots for RTGS, including CHAPS, during this period of transition.

- For CHAPS, we have had to reduce the number of slots available during the transition period to the renewed RTGS service. In particular, the final slots ahead of the introduction of a new core ledger for RTGS in late 2023 have now been allocated. The next available joining date for CHAPS is unlikely to be before early 2024. We welcome expressions of interest for direct access to CHAPS from eligible organisations who want to understand the relevant rules and future technical requirements with a view to being ready to join from 2024 onwards.
- For the retail payment systems, we expect to be able to provide around ten slots for new settlement participants in the prefunded payment systems in each of 2021 and 2022, and around half a dozen for the retail systems that do not use the prefunding arrangements in RTGS in the same period. It is possible that a number of these could support more than one on-boarding event in the same slot. We are assessing the number of retail slots that can be supported in 2023.

MIRS testing

The Market Infrastructure Resiliency Service (MIRS) is a contingency solution for RTGS (including CHAPS settlement) that is intended to address a dual site failure of RTGS. It also provides an additional level of resilience to some types of incidents that would affect the main RTGS infrastructure. MIRS provides the core RTGS functionality, as well as processing capacity to ensure continuity of the Bank's critical RTGS and CHAPS services. We carry out regular testing to ensure we continue to improve testing and confidence in MIRS invocation decision making. We successfully completed the most recent MIRS Live test on 9 April 2021. This was an important milestone in an enhanced testing programme for MIRS, helping to build confidence and familiarity in the event MIRS is needed in a live scenario.

Operational resilience

Shortcomings in the operational resilience of RTGS and CHAPS can lead to major operational disruption, impact financial stability and damage the Bank's reputation. As such, further enhancing the operational resilience of the RTGS and CHAPS services is one of our highest priorities. In common with other regulated firms and Financial Market Infrastructures, we are expected to comply with the new operational resilience requirements set out by the regulatory authorities. We will undertake analysis to identify steps to develop and implement an operational resilience framework for CHAPS

and certain aspects of RTGS. It would also contribute to our compliance with the Principles for Financial Market Infrastructures – especially *Principle 17 – Operational risk*, as well keeping us within our risk tolerance statements.

Our initial focus will be on defining our important business service(s) and setting impact tolerance(s) for CHAPS. Our provisional view here is that the important business service is the provision of CHAPS settlement, and the associated impact tolerance – aligned with that set by the Bank’s Financial Policy Committee – is for the settlement of all critical CHAPS payments to be complete by the end of day. We are participating in an industry led pilot to explore principles in this space and to consider interdependencies between Financial Market Infrastructures and participating banks. We will also further develop our approaches for asset mapping and scenario testing.

Responsive

Understanding the needs of RTGS and CHAPS users in light of current and future changes in the wider payments landscape is essential in providing a robust and resilient service. We give appropriate weight to those views and requirements gathered and feed them into our decision making, including input to Board-level discussion.



Engagement also ensures we are alert to changing trends in the payment and settlement landscape. At a general level, we are building up a better picture of the plans for CHAPS Direct Participants and other Financial Market Infrastructures on how they may be impacted by the current environment. We will continue to undertake a horizon scanning/emerging risk review, drawing on broader sources of internal and external expertise.

We support this through a broad programme of engagement with external stakeholders. We will also continue to engage domestically and internationally with our counterparts operating other RTGS and high-value payment systems on topics including ISO 20022 and cross-border payments.

Retail fraud in CHAPS

We will continue our work to facilitate open discussions around retail fraud in CHAPS. This will include continued engagement with CHAPS Direct Participants, Pay.UK, the Payment Systems Regulator and UK Finance to support their ongoing work on initiatives. One area of particular interest is facilitating greater information sharing. We are working with UK Finance to consider whether to encourage or require CHAPS Direct Participants to sign up to a system that allows real-time information sharing once a fraud has been reported to the victim’s payment service provider.

In addition, there are a number of industry-led working groups which are considering initiatives for further action. While these are predominantly aimed at Faster Payments, we will consider if these initiatives are also suitable for CHAPS.

Agree how to balance the Bank’s policy objective of promoting competition and innovation in payments with cost recovery.

Cost recovery strategy for the renewed RTGS service

In the [Blueprint](#) for the renewed RTGS service, we stated that the costs of RTGS Renewal will be recovered through RTGS tariffs. We will not start collecting tariffs that start to recover the costs of the renewed RTGS service any earlier than January 2024. Over the coming year, we will continue our work to design a long-term cost recovery strategy for RTGS/CHAPS. As part of the mechanism for future recovery, we intend to revise the allocation of shared RTGS costs to the payment systems for which we settle (e.g. CHAPS, Faster Payments and etc.) and the structure of the fees charged to participants (e.g. settling participants in each payment system).

We are committed to consulting the industry before publishing the final tariff approach for the renewed RTGS service that would take effect in 2024. This includes seeking industry views on our principles, our potential cost allocation approach and fee structures and the planned recovery timetable. We plan to publish the consultation in Q4 2021. The Bank will then review responses and publish a response outlining any changes to our approach in Q3 2022. Ahead of the formal consultation, we will also continue to engage with the industry.

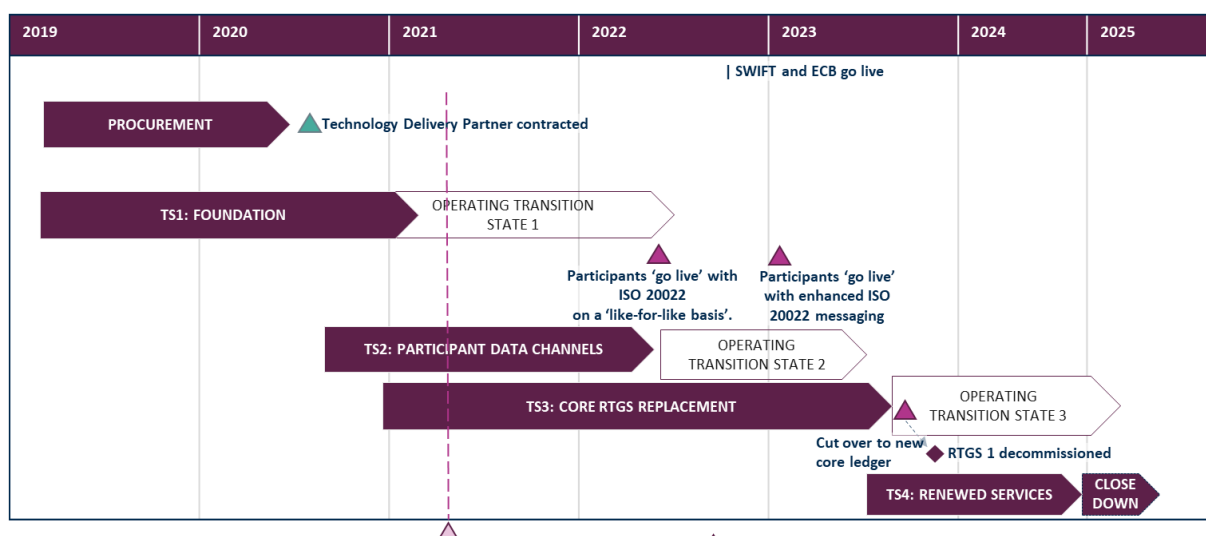
Renewed

The renewed RTGS service will need to be able to respond to the changing structure of the financial system and facilitate simpler and quicker access to services, ensuring that safe and resilient settlement in central bank money remains at the core of a rapidly changing payments landscape.



The renewed RTGS will also need to meet user demand for a simpler and more highly resilient payment pathways as well as building capacity and flexibility to interface with new payment technologies as adoption increases. Importantly, it will need to achieve this whilst demonstrating clear value for money.

Figure 6: RTGS Renewal Programme plan



Determining the actions that may be required to support wider UK payments capability.

RTGS as a contingency for NPA retail payments; future NPA settlement models; and impact on RTGS liquidity requirements

As discussed in Chapter 3, the strategy and timelines for the delivery of Pay.UK's New Payments Architecture (NPA) are still to be confirmed. Given that, we have postponed work on aspects of NPA related activities until there is greater clarity such as CHAPS acting as a contingency alternative for batches of retail payments. We remain in dialogue with Pay.UK with a view to resuming work once their updated plans on the design and delivery of the NPA become clearer.

We will continue to provide settlement services to other payment systems, moving these instructions to ISO 20022. We anticipate that the new ISO 20022 message that we develop for this purpose can be used in similar applications across the world. This will not only align the data model across different messaging applications, but will promote wider interoperability as well as improved flexibility to enhance these services for the future.

We are also engaging on the NPA settlement model to seek to ensure that its requirements can be supported by the renewed RTGS. In particular, we are looking at how the current prefunding functionality will be supported in the renewed RTGS and working with Pay.UK on how this will integrate with the NPA. We have been working closely to Pay.UK and their participants to understand emerging requirements and how to best deliver an efficient set of arrangements that continues to eliminate settlement risk between the directly-settling participants.

Complete the internal and external preparation work for the renewed RTGS service including the new ISO 20022 messaging standard.

ISO 20022

The adoption of the ISO 20022 messaging standard for CHAPS and aspects of RTGS will mean the availability of richer, enhanced and more structured data in UK payments. Implementation of the emerging international standard will increase the efficiency of payments by reducing manual interventions, it will improve resilience and security via enhanced means to identify suspicious transactions and will open up new opportunities for analytics, enhancing competition and innovation in the market.

Under the auspices of the Bank and Pay.UK's joint Standards Advisory Panel, our collaboration on standards will extend into 2021. Going forward, we intend to:

- Work with UK Finance and the Payments Standards Strategy Group on the strategic direction for the governance of payment standards in the UK.
- Work closely with the industry to develop meaningful use cases and end-to-end journeys for utilising enhanced data to address existing challenges, such as authorised push payment fraud and tax administration.
- Provide to the industry a CHAPS and NPA schema comparison view against the original pacs.008 Common Credit Message, outlining where the schemas align and diverge.

Further develop the requirements with the industry for how the key enhanced data would be consistently implemented and used to unlock benefits, and ensure an aligned approach.

CHAPS payment messages

In June 2022, ISO 20022 will be adopted for CHAPS payment messages on a like-for-like basis. From February 2023, the richer data contained within the new messages will be mandatory for CHAPS Direct Participants to receive. To ensure the quality of data submitted is sufficiently high, from spring 2024 the Bank will start mandating the sending of certain enhanced data, with a view to expand to all circumstances in due course. Examples of enhanced data the Bank is implementing include:

- Payment users will be able to uniquely identify all parties in a transaction by the use of the Legal Entity Identifiers (LEI).
- All payment initiators will be able to assign a globally standardised Purpose Code to each payment assisting with fraud identification, the prioritisation of payments and enhanced analytics.
- Where addresses and other data are present in the payment message, they should be in a structured format where possible from February 2023 - particularly for domestic transactions. No unstructured data should be submitted from 2025.

Unlocking the benefits of the enhanced ISO 20022 data relies on payment initiators submitting payment messages in a consistent manner. The Bank is therefore working with industry to develop a set of CHAPS best practice Market Guidance on the usage of enhanced data within ISO 20022 payment messages, to sit alongside the published Technical Guidance. A first guide for the property use case was published by the Bank in April 2021 with a guide for corporate payments to follow later in 2021.

The Bank has continued its close collaboration with other operators in the UK and abroad. With Pay.UK, the Bank continues to align the implementation of ISO 20022 for domestic wholesale and retail payments. This includes shared resources and expertise dedicated to the design of the technical schemas and developments on policy across the two organisations. This is to support alignment on the usage of fields throughout different messages across the messages (known as the 'Common Credit Message'), which forms the basis of technical development and collaboration. The Bank has also collaborated with other operators internationally who are moving to the ISO 20022 standard. This will ensure alignment and efficacy is optimised internationally. In practice, this will bring the same benefits of increased resilience, security and better interoperability and innovation – but on an international scale.

Internal readiness

As the transition towards the renewed RTGS draws closer, we are also undertaking significant internal work to ensure that we are sufficiently prepared. We are making investments to ensure that the technical and system changes required to support the transition are in place in sufficient time. We are also embarking on an extensive training programme for our staff. This is to ensure that they have the required skills to use the suite of new systems that will be put in place. Finally, we are making a raft of changes to our internal and external documentation ahead of transition. Early deliverables have included a new digital 'check list' system for the operators of RTGS to use as well as a new contact management tool.

Industry readiness

Industry readiness has continued at pace with CHAPS Direct Participant change programmes well under way. We are monitoring their progress through regular engagement and reporting and have appointed an external assurance provider to review the readiness of the most systemic CHAPS Direct Participants at key points in the Programme. With input from the industry, we are also finalising personas for RTGS users which will inform our design work. These personas will provide accurate representations of the wide variation of RTGS user needs; improve our understanding of current user experience with RTGS; and keep our focus on end user goals.

Table A.2 Daily average RTGS settlement values and volumes March 2020 – June 2021

CHAPS values (£mn)	£358,914
<i>CHAPS volumes</i>	<i>179,078</i>
CREST DvP values (£mn)	£381,158
<i>CREST DvP volumes</i>	<i>13,019</i>
FPS net values (£mn)	£1,166
Bacs net values (£mn)	£4,737
LINK net values (£mn)	£203
Cheque imaging net values (£mn)	£67
Visa Europe net values (£mn)	£2,399
Total values (£mn)	£748,644

Table A.3 CHAPS gross monthly values and volumes March 2020 – June 2021

	Volume (000s)	Value (£mn)
Mar-20	4,134	£8,658,312
Apr-20	3,304	£7,646,687
May-20	3,090	£7,106,107
Jun-20	3,498	£8,592,674
Jul-20	3,741	£8,347,184
Aug-20	3,249	£6,946,590
Sep-20	3,939	£7,999,333
Oct-20	3,884	£7,635,350
Nov-20	3,774	£7,512,744
Dec-20	4,117	£7,879,154
Jan-21	3,539	£7,406,326
Feb-21	3,608	£6,826,365
Mar-21	4,408	£7,823,691
Apr-21	3,909	£6,573,710
May-21	3,603	£6,104,811
Jun-21	4,373	£7,535,916

Annex 2. Key speeches

Speech Title	Speaker	Date	Link
Payments after the Covid crisis – emerging issues and challenges	Christina Segal-Knowles	15 June 2020	https://www.bankofengland.co.uk/speech/2020/payments-after-the-covid-crisis-speech-by-christina-segal-knowles
Cross-border payments – innovating in a changing world	Victoria Cleland	13 October 2020	https://www.bankofengland.co.uk/speech/2020/victoria-cleland-keynote-presentation-at-the-central-bank-payments-conference-2020
The case for an open financial system	Andrew Bailey	10 February 2021	https://www.bankofengland.co.uk/speech/2021/february/andrew-bailey-mansion-house
The Bank of England and fintech: public support for private innovation	Dave Ramsden	21 April 2021	https://www.bankofengland.co.uk/speech/2021/april/dave-ramsden-uk-fintech-week-2021-keynote
Operational resilience – outcomes in practice	Lyndon Nelson	5 May 2021	https://www.bankofengland.co.uk/speech/2021/may/lyndon-nelson-uk-finance-webinar-building-operational-resilience
Do we need ‘public money’?	Jon Cunliffe	13 May 2021	https://www.bankofengland.co.uk/speech/2021/may/jon-cunliffe-omfif-digital-monetary-institute-meeting
Innovation to serve the public interest	Andrew Bailey	15 June 2021	https://www.bankofengland.co.uk/speech/2021/june/andrew-bailey-cityuk-annual-conference
Central Bank Digital Currency: An update on the Bank of England’s work	Tom Mutton	17 June 2021	https://www.bankofengland.co.uk/speech/2021/june/tom-mutton-pre-recorded-keynote-speech-the-future-of-fintech-digital-conference
A new dawn for payments	Victoria Cleland	21 June 2021	https://www.bankofengland.co.uk/speech/2021/june/victoria-cleland-keynote-address-at-the-city-week-2021-a-new-dawn-for-payments