



EUROPEAN CENTRAL BANK

EUROSYSTEM

# T2S Special Series

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## One year with T2S – what's next?

*With T2S having just celebrated its first anniversary, this issue of the T2S Special Series reflects on what we have achieved so far and where we are heading with our common market infrastructure. We ask market participants about their views both on the roll-out of T2S so far and on how they see the future.*



## Acknowledgements:

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## Introduction

### Happy birthday, T2S!

How time flies! It is already one year since T2S went live. It seems like only yesterday that we celebrated the launch of the platform. But now, it is key part of the day-to-day life of the central securities depositories (CSDs) that have already migrated and their clients. The platform is operating smoothly and we are looking forward to the next wave of participants joining the platform on 12 September. Preparations for each of the upcoming migration waves are well on track and it is great to see the benefits of the single settlement platform starting to unfold across Europe.

To mark the first anniversary, we have produced a new T2S Special Series dedicated to the views of the market both on the roll-out so far and on how they see the future. But first, allow me to update you on some recent developments and to give you a brief flavour of the Eurosystem's vision for what may lie ahead.

### So much done, so much more to do

Alongside all our usual day-to-day work, we in the ECB's Directorate General Market Infrastructure & Payments find ourselves in somewhat of a period of reflection. We have completed, or are hard at work on finalising, TARGET2, [TARGET2-Securities \(T2S\)](#), post-trade harmonisation and the [Single Euro Payments Area \(SEPA\)](#), all of which are moving Europe closer to a fully integrated financial market infrastructure. At the same time, however, new technologies and business models are presenting new challenges and ideas that will change the way our financial architecture looks in the future.

Now is the perfect time for us to take stock, to look around and to consider the future direction of our market infrastructure. We will be taking a holistic view, considering not only how we can best capitalise on what is already in place (such as SEPA, T2S and [TARGET2](#)), but also which new innovations can further enhance what we already have and how we can better integrate our systems and services.

### Vision for the future: 1 + 1 = 3!

As we look to the future, we are reviewing the market infrastructure services offered by the Eurosystem. We want to take advantage of new innovations to ensure that those services are as efficient as possible. And we want to do it in consultation with the market – we have already experienced through our past collaboration that, when we work together, the outcome is greater than the sum of what could have been achieved alone.

To this end, on 22 March we held an [information session](#) for the market, where issues relating to real-time gross settlement could be discussed openly and frankly. Shortly before, in February, we launched a [market consultation](#) on the future of Europe's financial market infrastructure. The results of this consultation are presented in this Special Series. We expect to be able to make more concrete proposals to the market on the Eurosystem's future services by the autumn.



Marc Bayle de Jessé  
ECB

However, it is not only through collaboration with the market that we expect one and one to equal three! We also intend to explore synergies between our existing services. For example, by moving TARGET2 and T2S closer together, we can create a service that is even more effective and efficient than the individual components are in their current format.

### **Here comes the MIB!**

One final development I would like to bring to your attention is the creation of the new [Market Infrastructure Board](#) (MIB).

Not to be confused with the secret alien-investigating organisation – though of course equally well dressed! – our MIB is an open and transparent management body covering all of the Eurosystem's market infrastructure initiatives. It meets in various compositions, including the T2S Board, for example, which will continue to oversee T2S decision-making and stakeholder management.

The MIB will thus play a key role as we look to streamline and enhance the Eurosystem's market infrastructure services and promote efficient payment services in Europe.

We are excited by all the opportunities we see for the years ahead and we want to collaborate with you closely on these changes. That is why we have devoted this T2S Special Series to the views of the market.

I hope you will enjoy reading this T2S Special Series!

*Marc Bayle de Jessé  
Director General  
Market Infrastructure & Payments  
European Central Bank*

## News from T2S

We have a lot to report on the T2S front. Two more central securities depositories (CSDs), from Belgium and Portugal, now operate on the platform. By the end of 2016, six more CSDs are set to join. Exciting times are upon us, and this is why we have decided to serve you the latest stories from the T2S kitchen directly from the source. We've invited Brigitte Daurelle (CEO of Euroclear Belgium, Euroclear France, Euroclear Nederland), Meike Ströter (Deputy Head of Market Infrastructure Management Division, European Central Bank), Philippe Leblanc (4CB Project Manager for T2S), Fabrizio Palmisani (Head of Payment Systems Directorate, Banca d'Italia), Mathias Papenfuß (Chairman of the CSDR Task Force), Mehdi Manaa (T2S Programme Manager) and Stephen Lomas (Head of Global Transaction Banking Market Policy, Deutsche Bank) to contribute to this unconventional edition of news from T2S. What lies ahead for T2S and how is the platform performing? Find out below.



Brigitte Daurelle  
Euroclear

**12 September is fast approaching and all eyes are now on the wave 3 participants. Brigitte, Euroclear is one of the two largest CSDs to migrate to the T2S platform, which means even more pressure. How are your preparations for the migration going?**

**B. Daurelle:** As a provider of financial market infrastructure, we fully understand how important it is that our migration to T2S is safe and stable. We are making good progress in our preparations and are on track.

Since completing a successful migration rehearsal in mid-March, we have been working closely with our clients to test all the core functionalities we will provide through T2S. Through this community testing, clients are telling us that the environment is stable; their feedback has been positive. We see community testing as a collaborative effort with clients. This means that we regularly test client readiness, but also that we try to listen and adapt to clients' requests.

Clients were telling us that they wanted more time to test the market claims functionality so we chose to accelerate our IT development plans to deliver this as part of a roll-out on 6 June. This is a month earlier than previously scheduled.

Right now, we are finalising preparations for the final migration rehearsal on 2 July, as well as working very hard to close out the defects that we need to fix and to produce a post-T2S migration delivery plan that will be available to clients in July. While there remains a lot of work to be done, we are fully confident that our migration to T2S in September will be safe and stable.

**Meike, it's been a year since the T2S platform was launched – seven CSDs and their markets have migrated to T2S and are successfully operating on the platform. Many readers are naturally curious about settlement volumes. Do you have any figures on these?**

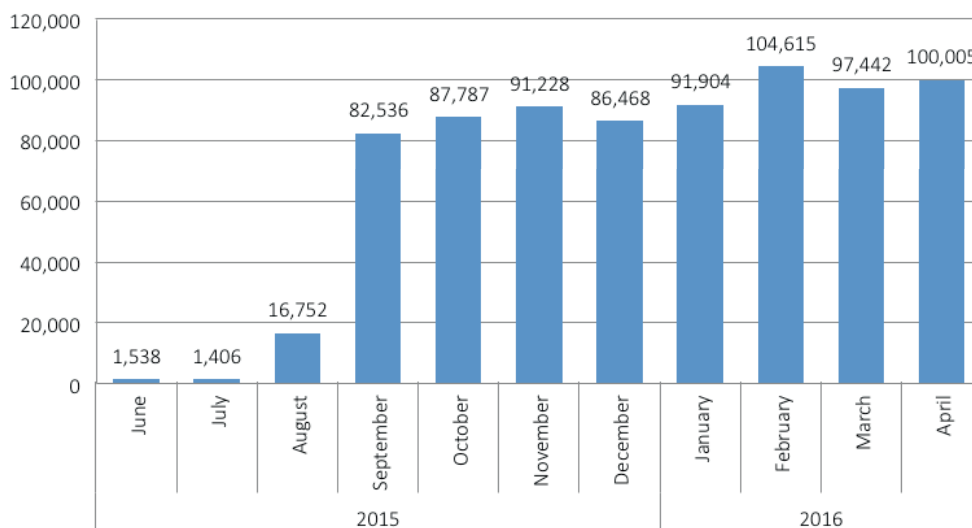
**M. Ströter:** T2S celebrated a major milestone with its first birthday as a running platform just recently. Despite T2S's infancy, operations on the platform are running smoothly – I am sure Philippe will have more exciting details to share! As to the volumes, I am very happy to report that, since the beginning of 2016, over 2 million securities transactions have been settled, on average, each month. February was

the first month when we crossed this monthly threshold. For 2016, this makes for an average of nearly 100,000 transactions settled each day! According to our projections, by the time the remaining 14 markets are connected to T2S, we expect to hit 550,000 transactions per day.



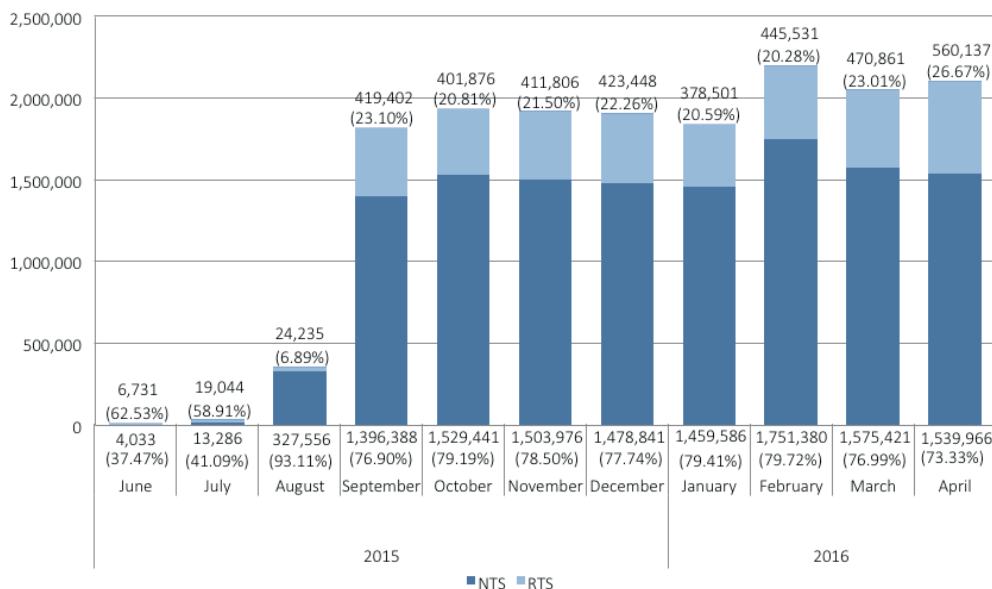
Meike Ströter  
ECB

**Chart 1: Daily average volume of settled transactions**



When looking at the ratio of real-time to night-time settlement, in general, about 77% of the total number of transactions per month were processed overnight, while the remaining 23% were settled in real time. The sharp decrease in the percentage of night-time settlement observed between August 2015 and September 2015 was due to the migration of Monte Titoli to T2S. Night-time settlement decreased from 93.11% in August 2015 to 76.90% in September 2015, although it has still proven to be the preferred form of settlement in recent months. Now that users are familiar with the platform and its features, fluctuations can be explained by shifts in users' business behaviour.

**Chart 2: Comparison of real-time and night-time settlement volumes Philippe, are operations running smoothly on the T2S platform?**



**P. Leblanc:** I have no difficulty in saying “yes”. With batch settlement cycles being performed daily with a comfortable safety margin, each cycle lasting around one hour, and with 0.2 seconds as a median for real-time settlement, we can look to the coming migration waves with confidence. However, we are optimising the functioning of the platform further; indeed the volumes are expected to multiply by four within a year, when the majority of all CSDs due to join T2S will have migrated. Just to give you an idea of the volumes involved, in April 2016 T2S handled a daily average of 100,000 settlement instructions, 25% of which were processed in real time, representing an overall daily amount of €360 billion. The use of the auto-collateralisation functionality has more than doubled over the last three months, nearing 10% of the settled amounts in April, which may indicate an evolution in the behaviour of participants as they seek to fully benefit from the possibilities offered by T2S.



Philippe Leblanc  
4CB

Although cross-CSD settlement has remained marginal so far, it should also take off once all participants are present on the platform.

But above and beyond the figures, what stands out for me is the successful outcome of an emblematic European project, conducted by the Eurosystem in close collaboration with the market. The development of the platform was entrusted to the 4CB, an achievement we can collectively be proud of.

**T2S has an innovative auto-collateralisation feature which is expected to significantly decrease banks' liquidity needs. Fabrizio, are you pleased with the take-up of this function?**

**F. Palmisani:** With the migration to T2S, the Italian financial community was particularly worried about moving to a securities settlement system that could potentially have needed much more liquidity from its participants than before; the previous system, in fact, settled on a net basis, while T2S operates on a gross basis to ensure a higher level of security in the settlement process.



Fabrizio Palmisani  
Banca d'Italia

However, this fear proved unfounded. The optimisation and auto-collateralisation mechanisms – that have the precise purpose of restoring the efficiency of a net settlement system – have worked very well.

In particular, auto-collateralisation, provided by T2S at no extra cost and with the option even to use as collateral the same securities that are being purchased, has proven to be a very useful tool.

Data relating to the 55 dedicated cash accounts (DCAs) opened at the Banca d'Italia show that financial operators have progressively reduced the amount of liquidity transferred from TARGET2 to T2S – from €19 billion to €14 billion per day in the period September 2015 to May 2016 – even if the total value of the transactions to be settled has increased (from €107 billion to €132 billion in the same period). The efficiency gains were possible thanks to the enhanced use of auto-collateralisation, which increased from €5 billion per day to €13 billion per day.

Financial operators that opened their DCAs at central banks of countries which have not yet migrated to T2S and to which the Banca d'Italia offers specific securities custody services also used auto-collateralisation for securities held at Monte Titoli; this type of transaction also increased in the period considered – from €6 billion to €14 billion per day – confirming the growing appreciation for the auto-collateralisation functionality.

**Mathias is the chairman of the newly created CSDR Task Force, which has been established to assess what needs to be changed on the T2S platform to help ensure that CSDs comply with CSD Regulation. How is the work progressing? Can you give us some insights into the scope and reach of the expected changes?**

**M. Papenfuß:** The task force started with an assessment of all CSDR-related documentation of potential relevance for T2S. This activity narrowed down the scope of our activities quite quickly. The task force then issued a first set of change requests; these are important for changing and implementing international standards for the purpose of meeting regulatory reporting requirements.

The current work focuses on describing the business requirements for establishing a penalty regime for failed settlement instructions. The cornerstones of this penalty regime, which will be set up by the task force, might serve as a “rulebook” for the harmonised implementation of the regime outside T2S, where applicable according to the CSD Regulation. This is a joint effort whereby the task force is supported by experts (from banks acting as observers in the CSD Steering Group), representatives of trade associations and the 4CB.

The objective is to have a solid draft by the end of September 2016, even though the provisions of the CSD Regulation might not be definitively published by then.

**Let's turn to the future. The Eurosystem's vision for the future was announced in October 2015. Over half a year later, some deeper reflections on the future of market infrastructure in Europe have already taken place. We're keen to hear more on this issue from the T2S Programme Manager, Mehdi Manaa. To what extent has the successful collaboration on T2S inspired the vision? And what impact is this initiative likely to have on T2S, Mehdi?**

**M. Manaa:** The T2S project has indeed shown us that collaborating with the market can achieve miracles. From the outset, we strived to develop T2S in line with the needs of market players. With this close collaboration it has become apparent that a number of pieces are missing if we truly want to complete the “integrated market infrastructure puzzle”. For example, we are still not offering integrated and fully harmonised collateral management at the Eurosystem level. With the Eurosystem's vision in mind, we want to explore the ideas that fall within our mandate and that contribute to more integration and efficiency in Europe. The T2S project has also helped establish a truly close-knit community that stands together in the face of challenges and proactively finds viable solutions to emerging obstacles. The set-up has been proven to work – who's to say that a similar arrangement might not also benefit the resolution of impending cash-related issues? The success of T2S is a core inspiration for our vision for the future integration of market infrastructure in Europe.

In the context of the Eurosystem's vision, we are also exploring the synergies between TARGET2 and T2S, taking into consideration that the features in T2S are state of the art, in order to achieve cost savings. However, the priority remains to successfully migrate all markets to T2S before considering substantial changes to the platform.

The Eurosystem's vision involves continuing to contribute to European integration, but we are also not neglecting technological progress and its pace of development, which means that we need to keep on our toes and on the lookout for ways to optimise our market infrastructure even further.



Mathias Papenfuß  
Clearstream



Mehdi Manaa  
ECB



**Again, looking ahead, T2S isn't the only cutting-edge technology around. Blockchain and distributed ledger technologies (DLT) – apart from making daily headlines – are increasingly being explored by both the private and public sectors. Stephen, Deutsche Bank is among the DLT pioneers. What do you see as the potential of DLT? Does DLT have a place in the T2S landscape?**

**S. Lomas:** For financial services in general, and transaction banking in particular, we see benefits in the adoption of DLT all along the value chain. However, these will vary for securities, payments and trade finance products. The technology could drive process efficiencies in transaction banking back offices and we expect more possibilities in the securities space than, for example, in cash management. Benefits can also be viewed from both client and capital perspectives, particularly the potential capital benefits of reducing collateral requirements through shorter securities settlement cycles, thereby freeing up working capital that clients can retain.

It is still early days and therefore hard to judge which adaptations will gain traction and what the implications for existing products and processes will be. Adoption of blockchain will vary based on geographies, regulatory frameworks, the complexity of affected assets, and market place implementation, including the cost implications when new and existing technologies co-exist for a period of time. The true test of the adjustments needed will only be visible when the first DLT implementation proposals are made by market infrastructure providers.

We would like to thank our respondents for their contributions.



Stephen Lomas  
Deutsche Bank

## Real-time gross settlement in the future

### What does the market have to say about the consolidation of TARGET2 and T2S?

Supporting financial market integration is one of the drivers of the [Eurosystem's](#) work. With the aim of completing the EU's Single Market, the Eurosystem has done a lot to improve the financial market infrastructure so that liquidity and financial assets can flow freely between financial institutions, irrespective of borders.

Today, payments can flow safely and efficiently across the EU thanks to [TARGET2](#), the real-time gross settlement (RTGS) system owned and operated by the Eurosystem, while the [Single Euro Payments Area](#) (SEPA) has harmonised the way retail payments in euro are made. Benefits are also reaching the post-trade industry following the launch in June 2015 of the pan-European platform for securities settlement TARGET2-Securities (T2S).

The Eurosystem has laid out its [vision for the future of the financial market infrastructure](#) and will work to continuously enhance it in line with the latest technological developments and market needs and requirements.

The T2S project has proved that involving the market in public initiatives fosters strong commitment and leads to successful results. That is why the Eurosystem would like to take the same approach and draw on the expertise of both the public and the private sectors in identifying its future endeavours.



### Consulting the market

Technical consolidation of TARGET2 and T2S and enhancing RTGS services are among the key action points highlighted in the Eurosystem's vision for the future of the financial market infrastructure. To identify the current market needs in that area and find the most appropriate solutions to address them, the Eurosystem released a [consultative report](#) on 15 February 2016. All TARGET2 users and other interested stakeholders were invited to share their views on the future provision of RTGS services by 4 April 2016.

123 institutions representing 22 European countries sent their feedback. They welcomed the opportunity to contribute their ideas and showed a positive attitude towards the Eurosystem's plans to openly review its RTGS functionalities and services.

In addition to the consultation, the ECB hosted an [information session](#) to encourage further dialogue with the market. About 90 representatives of banks, financial market infrastructures, network providers and central banks joined the event to gain a better understanding of the key points outlined in the consultative report. The insightful discussions and exchange of views on the occasion of this meeting showed a clear will for further collaboration between the public and the private sectors on cash-related issues.

### Overview of the responses

Most of the respondents to the consultation expressed their satisfaction with the current TARGET2 system in terms of functionalities, stability and security. That is why they expect the envisaged reform to bring them additional tangible value.

The market showed strong support for the Eurosystem's plan to consolidate the TARGET2 and T2S platforms as a mean to achieve higher efficiency and to support innovation. Nevertheless, some respondents expressed a preference to keep payments and securities settlement as two distinct services on the new consolidated platform and requested that the governance and the financial rules for each of them be clarified in due time.

In addition, the consultation asked for feedback on two broader topics: new technical functionalities and enhanced business services.

### Harmonised interface to Eurosystem services

The respondents to the consultation supported the idea of a harmonised interface and a single gateway to both payment and securities settlement services provided by the Eurosystem, which would be possible thanks to the technical consolidation of the two platforms. They expect it to bring clear benefits in terms of cost savings and simplification for end users. Some respondents suggested making use of the new technological advancements in the financial industry to achieve higher cyber resilience.

### Multi-currency settlement

25 EU national central banks are connected to TARGET2: 20 belonging to the euro area, including the European Central Bank, and five from countries that have not adopted the euro as their currency. Also, many of the TARGET2 users operate in several EU countries, using different currencies. Therefore, it was no surprise that more than 60% of the respondents supported the provision of multi-currency RTGS services, which allow a central bank to use the Eurosystem's RTGS service for its national currency. Only 4% of respondents saw no benefits to this.

TARGET2 is a payment system owned and operated by the Eurosystem. More than 1,700 financial institutions are directly connected to the platform and use it to initiate **large-value payments** on their own behalf or on behalf of their customers in central bank money. TARGET2 settles both interbank and retail transactions.

TARGET2 settles individual payment transactions in real time, known as **real-time gross settlement**, or RTGS. On average, about 344,000 transactions with a turnover of €1.8 trillion pass through the system each day. In five days of operations TARGET2 processes an amount equivalent to the euro area's annual GDP.

### ***Migration to ISO 20022***

Financial market infrastructures have been progressively adopting the messaging standard ISO 20022 for both securities post-trade processing and payment services. T2S uses ISO 20022 exclusively to communicate with its users. The benefit of using this new messaging standard in TARGET2 has also been acknowledged and the consolidation of the two infrastructures would be a suitable time to migrate fully to ISO 20022.

However, preferences for when this migration should take place vary among the respondents. As the new payment standards would make it possible to transport more information market participants that plan to exchange retail payments via the RTGS system favour faster implementation. At the same time, larger participants with strong international linkages are calling for the migration date to be synchronised with other key RTGS systems worldwide.

### ***Network agnostic system***

TARGET2 uses SWIFT as its sole network service provider, while two providers (SIA-Colt and SWIFT) were selected for T2S via a public tender. The consolidation between the two platforms would also allow RTGS services to be independent vis-à-vis network service providers. Benefits could be expected in terms of higher competition among providers and lower costs for end users, which would make the platform more accessible to small and medium-sized participants. However, the respondents shared their concerns about imposing a dual connection to both network providers with the aim of enhancing resilience, as this would be too complex and costly for them.

### ***Extended opening hours***

TARGET2 is open for the real-time settlement of payment transactions during working days from 7:00 to 18:00. The market's feedback on the possible extension of day-trade operating hours also reflects their primary use of the system for settling either large-value or retail payments. Adjusting the RTGS operational time frame to cover a larger part of the day would be of benefit to the processing of retail transactions and, potentially, instant payments.

### ***Liquidity management tools***

Optimisation algorithms, liquidity saving and monitoring are among the sophisticated liquidity management tools provided by TARGET2 and T2S. The market expressed a strong wish to keep these services because they provide crucial support for payments settlement, liquidity management and monitoring. Some of the respondents also provided input on a number of possible enhancements.

### ***New data analysis services***

Fuelled by regulatory compliance requirements and the opportunity to better understand and identify business opportunities, the demand for data analysis based on actual transaction-level data is increasing. About one third of the respondents to the consultation expressed strong interest in developing new RTGS analytical services related to comprehensive liquidity management, ex post analysis of system usage and computation of indicators. Analytical tools that could help banks meet regulatory reporting requirements were supported in particular by respondents with no internal solutions in place.

For more details about the responses to the consultation, have a look at the feedback summary.

### **What's next?**

The insightful feedback and comments received are of great help in understanding the market's needs and concerns. Over the next few months the Eurosystem will assess them further and develop a concrete proposal for enhancing its RTGS services in the future.