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# Annex to the decision

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## In-depth analysis of the T2 platform

### Summary

The steering group for the RIX programme proposes that the Riksbank negotiate with the Eurosystem<sup>1</sup> on the use of the T2 platform to provide the RIX-RTGS settlement service for large-value payments in Swedish kronor. In these negotiations, certain issues of importance to the Riksbank will be specifically taken into account. The primary reason for the recommendation is that the Riksbank can ensure a robust, stable and efficient payment system in the long term by moving to the T2 platform and using the Eurosystem as the application and operations provider.

In 2024, the Riksbank should start work on carrying out the necessary preparations to launch an implementation project in the second half of 2025. Such preparations should include decisions on the project plan, budget and project organisation. The Swedish market will be involved in the development of the project plan, including the timing of the transition to the T2 platform.

## 1 Introduction

The Riksbank has previously conducted the feasibility study Future RIX.<sup>2</sup> This feasibility study analysed three possible options for settling payments in Swedish kronor: (i) maintaining the existing system; (ii) procuring a new system; or (iii) using the T2 platform. In September 2021, the Executive Board decided that the Riksbank should aim to use the T2 platform.<sup>3</sup> At the same time, the Executive Board decided to carry out an

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<sup>1</sup> The Eurosystem consists of the European Central Bank (ECB) and the national central banks (NCBs) of those states that have adopted the euro single currency. As long as there are countries in the European Union that have not adopted the euro, the Eurosystem will coexist with the European System of Central Banks (ESCB): [ECB, ESCB and the Eurosystem \(europa.eu\)](#).

<sup>2</sup> Study: [Future RIX, September 2021 \(riksbank.se\)](#). Basis for decision: [Future RIX - the Riksbank's future system for the settlement of large-value payments, September 2021 \(riksbank.se\)](#).

<sup>3</sup> Alongside Future RIX, a feasibility study was also carried out with the aim of investigating alternative possibilities for settling securities. This was also part of the Executive Board's policy decision in September 2021; see "[Future securities settlement – renewed position on T2S, September 2021 \(riksbank.se\)](#)".

in-depth analysis ahead of the crucial decision on whether to open contractual negotiations on the T2 platform with the Eurosystem.

The Riksbank started its in-depth analysis of the T2 platform in 2023. The analysis covers a number of areas, with operational, legal and security aspects being further analysed. Most of these investigations have required close co-operation with the ECB and the Riksbank therefore established a Letter of Intent with the ECB in October 2023. In addition, the Riksbank has also cooperated with the payment market through reference and working groups.

This memorandum makes a recommendation on whether the Riksbank should negotiate a contract with the Eurosystem to use the T2 platform for the settlement of payments in Swedish kronor.

First, the conclusions of the feasibility study conducted by the Riksbank in 2021 are presented. This is followed by a summary of how the Riksbank currently manages the development, support and operation of the existing RIX-RTGS payment system and how this management would work with the T2 platform, followed by a description of whether the Riksbank can carry out its tasks with the T2 platform, the conditions for using the T2 platform, the market's view of using the T2 platform and the costs of transition and operation. Finally, conclusions and recommendations are presented.

## 2 Conclusions from the Future RIX feasibility study

In the feasibility study Future RIX, the Riksbank examined the alternatives for a future settlement system for large-value payments in Swedish kronor. The study concludes that moving to the T2 platform would provide the Riksbank with significant economies of scale, as well as access to Eurosystem resources and expertise. In turn, this would benefit the participants in the payment system provided by the Riksbank. This transition could also potentially increase competition in the Swedish payment market and benefit Swedish society through more cost-efficient payments in Swedish kronor. These benefits would be difficult to achieve with a national system provided by the Riksbank alone on its own platform.

Using the T2 platform is therefore deemed to bring significant benefits and efficiency gains. However, the feasibility study shows that this will initially be both costly and resource-intensive for both the Riksbank and the RIX participants. Leaving the T2 platform would also be very difficult, as a transition would have required major adjustments by both the Riksbank and participants.

The feasibility study highlighted a number of areas that it is important to investigate in more detail before a decision is made on transitioning to the T2 platform. First, the Riksbank needs to investigate whether a transition is compatible with Swedish security protection legislation. It also needs to include a proposal on how the Riksbank should design a contingency solution for payment settlement in Swedish kronor. Second, the Riksbank also needs to investigate what possibilities there are to make any national

adjustments that may be necessary, for example to extend the opening hours of RIX for the settlement of payments in the event of disruptions on the Swedish market.

For its feasibility study, the Riksbank consulted the payment market. The market responded that it can see a number of benefits from the T2 platform, such as significant economies of scale for management and development. In the long run, this could lead to lower costs. Another benefit mentioned by some banks was more resources dedicated to security work, in particular cybersecurity. In the consultation, the market emphasised the importance of working contingency solutions and that the transition must take place in a manner acceptable to the participants. The market also considered it important to clarify how the Riksbank can be assured of its influence within the Eurosystem's governance structure.

### 3 Existing arrangements for development, support and operation

The Riksbank engages two private companies for the development, support and operation of RIX-RTGS, which is the system where large-value payments are currently settled in Swedish kronor. The application itself is provided by Nexi, which has had a supply and maintenance agreement with the Riksbank since 2005. The latest maintenance contract runs until May 2025 and therefore needs to be renegotiated in 2024. As in the previous renegotiation (2018), the Riksbank, with the support of the procurement function, has assessed that RIX-RTGS is protected by intellectual property rights, which means that only Nexi can provide the associated services. This makes it possible to renegotiate the contract without a new procurement process. The operation of the system has been outsourced to CGI Sweden, as have other IT operations for the Riksbank. The Riksbank's agreement with CGI will be extended on an ongoing basis, but at most until 2028. For the following period, a new procurement needs to be conducted.

Nexi is an Italian listed company with 29 per cent of its known shareholders being private equity firms and 17 per cent Italian public bodies. Its ownership structure has changed since the Riksbank originally signed the agreement. With private suppliers, there is always a risk that ownership will change in a way that the Riksbank is not comfortable with. If that were to happen, it would, in practice, take a long time for the Riksbank to replace Nexi as a supplier, even though the Riksbank has access to the programme code and could theoretically arrange maintenance on its own.

Including the Riksbank, some 13 central banks are currently Nexi customers, including the central banks of Denmark, Norway, Iceland, New Zealand and Canada. However, Danmarks Nationalbank has decided to use the T2 platform instead from 2025. In addition, Norges Bank and Seðlabanki Íslands are also exploring a possible transition to the T2 platform.

Since 2009, the Riksbank has had a contingency solution for RIX-RTGS, which has only been used on one occasion, in 2013. It needs to be modernised and developed in line with the Riksbank's contingency planning to become more sustainable over time. The starting point is that it should be able to handle the same flows as the current contingency solution. Modernisation can be achieved partly by minimising the proportion of manual elements. The contingency solution also needs to work for RIX

Participants not located in Sweden, which places new demands on alternative ways of communicating in the event of disruptions. However, a review and subsequent modernisation of the Riksbank's contingency solution needs to be carried out regardless of the platform through which the Riksbank provides RIX-RTGS.

## 4 Development, support and operation of the T2 platform

The T2 platform is part of a set of TARGET services developed and operated by the Eurosystem to ensure the free flow of liquidity, securities and collateral in Europe. They are used partly to implement the Eurosystem's monetary policy and to promote financial stability.

TARGET services consist of T2 (for the settlement of payments), T2S (for the settlement of securities), TIPS (for the settlement of instant payments) and ECMS (for collateral management). They are provided, developed and operated by the four largest Eurosystem central banks: Deutsche Bundesbank, Banca d'Italia, Banque de France and Banco de España (together 4CB).

The T2 platform has operating sites in two regions with two sites each. The regions are linked by an internal network operated by the four central banks. Operation alternates between the two regions according to a schedule, with the inactive region acting as a backup for the active one. Participants, including national central banks, communicate with the T2 platform via the Eurosystem common interface ESMIG.<sup>4</sup>

The T2 platform has two parts: CLM<sup>5</sup> and RTGS.<sup>6</sup> CLM is used for liquidity management and transactions with the central bank, including credit. RTGS is used for payments.

Using the T2 platform would mean several changes for the Riksbank. One is that, instead of providing a platform itself with a private system provider and a private operator, the Riksbank would become part of a collective with a platform developed and operated by the same institutions.

Further development of the T2 platform takes place under an established and agreed change management process. All central banks using the T2 platform can propose changes to the system. Such changes are investigated by working groups of the T2 platform governance structure and approved by the MIB before being decided upon by the Governing Council of the ECB. The Governing Council is the highest decision-making level of the Eurosystem, in which only euro area countries participate. As far as possible, decisions on changes are taken by consensus, with representatives acting in the best interests of the Eurosystem as a whole.<sup>7</sup> This means that no central bank can ensure that the changes it desires will be implemented. Conversely, it also means that the Governing Council can decide on changes that are not desirable for an individual market. For the Riksbank, it will be more difficult to influence decisions on changes as we cannot

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<sup>4</sup> Eurosystem Single Market Infrastructure Gateway.

<sup>5</sup> Central Liquidity Module.

<sup>6</sup> Real-Time Gross Settlement.

<sup>7</sup> Mandate of the Market Infrastructure Board (MIB), *ANNEX III, Code of Conduct: [Decision - 2019/166 - EN - EUR-Lex \(europa.eu\)](#)*.

participate in the Governing Council. This is described in more detail in the section *Prerequisites for using the T2 platform* below.

With the T2 platform, the Riksbank would be supported by the T2 platform's support organisation but would still be responsible for supporting RIX participants. The Riksbank would also determine the conditions to be applied to the Riksbank's participants under the framework of the technical design of the T2 platform.

Using the T2 platform implies that the operating hours applicable to the Swedish krona would need to be adapted to the external constraints applicable to the T2 platform. This means that the Riksbank would not be able, as at present, to decide independently to delay the closure of RIX-RTGS if important participants, such as a clearing house active in Sweden, are encountering technical problems. It cannot be ruled out that the T2 collective would allow closure of the T2 platform to be delayed but the current wording of the T2 documentation does not guarantee this.

The availability requirement for the T2 platform is 99.7 per cent calculated on a quarterly basis. This can be compared with the Riksbank's requirement of 99.85 per cent, which is calculated on both a four-monthly and a quarterly basis. The difference in these requirements can be said to be equivalent to about one hour per quarter. The outcome for the T2 platform for the period 2004–2023 was 99.92 per cent.

In the event of a T2 platform failure, there is a contingency solution, ECONS II, which can be activated if the T2 collective decides to do so. This solution is similar to the Riksbank's current contingency solution, with the major difference that the participants themselves register payments. Unlike the Riksbank's current solution, there is no information on the current balance on the T2 platform and new liquidity therefore needs to be injected. Under the regulatory framework, ECONS II can only be used for highly critical or critical payments, meaning payments to CLS Bank, margin payments to central counterparties and payments that may cause systemic risk and must be settled on the correct day. Examples of this third type of payments are liquidity transfers to RIX-INST or payments to other systemically important payment systems.

## 5 Prerequisites for using the T2 platform

### 5.1 Legal conditions

The Riksbank shall promote an efficient payment system and provide a system for payment settlement.<sup>8</sup> The Riksbank shall also ensure an ample capacity to continue its operations during peacetime crisis situations and in the event of elevated preparedness.<sup>9</sup>

This latter means that the Riksbank shall ensure that the Swedish financial system can settle payments in central bank money, even during peacetime crisis situations and

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<sup>8</sup> See Chapter 9, Sections 13 and 15 of the Instrument of Government (1974:152) and Chapter 3, Section 2, first paragraph of the Sveriges Riksbank Act (2022:1568).

<sup>9</sup> Chapter 5, Section 1 of the Sveriges Riksbank Act.

times of heightened alert. This requirement does not prevent someone else from providing the required technical platform.<sup>10</sup>

If the Riksbank intends to outsource parts of its activities, and if the procedure entails a requirement for a security protection agreement, a special security protection assessment and a suitability assessment must first be carried out in accordance with the Act on Protective Security for the Riksdag and its Authorities.<sup>11</sup> In this process, the Riksbank assesses the security value of its operations and, if necessary, checks the supplier's information security, physical security and personnel security.

Another important area to analyse is the handling of data in the technical system in relation to the Public Access to Information and Secrecy Act<sup>12</sup> and the protection of personal data. The confidential information that could be shared with the ECB and the 4CB in the context of joining the T2 platform is mainly information on individuals' financial circumstances. Such information is subject to absolute confidentiality and may only be disclosed if there is an applicable provision that overrides such confidentiality. The confidentiality-overriding provision that is most straightforward to apply provides for the possibility for authorities to disclose information covered by confidentiality to another authority entrusted with the technical processing or storage of the information on behalf of the disclosing authority, unless this is inappropriate in the circumstances.<sup>13</sup> In order to make use of such a provision, the Riksbank must ensure that the agreement with the ECB and the Eurosystem does not result in the data being used for anything other than technical processing or technical storage on behalf of the Riksbank. In addition, in order for the confidentiality-overriding provision to apply, the disclosure must not be considered inappropriate. Here, the type of information concerned is relevant.

When the T2 platform is used, personal data will be processed. The EU General Data Protection Regulation (2016/679) ("GDPR") applies to the processing of personal data. The GDPR sets out a number of requirements that must be met for a personal data processing operation to be carried out.

As a general rule, services procured by a public authority need to be procured under the Public Procurement Act.<sup>14</sup> However, services provided by central banks are exempt.<sup>15</sup> This means that, in this case, the Riksbank does not need to carry out a competitive procurement process as the outsourcing relates to a service that is carried out by central banks within the ESCB and is thus exempt from procurement requirements.

## 5.2 Governance structure limits the Riksbank's options

The Riksbank's ability to maintain its operations with the T2 platform is linked to how the governance structure for the TARGET services is designed. The governance structure for the TARGET services is divided into three different levels, of which the Riksbank would be part of the second, governing level:

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<sup>10</sup> See Government Bill 2021/22:41, p. 217.

<sup>11</sup> Section 17 of the Act on Protective Security for the Riksdag and its Authorities (2019:109).

<sup>12</sup> Public Access to Information and Secrecy Act (2009:400).

<sup>13</sup> Chapter 10, Article 2a of the Public Access to Information and Secrecy Act.

<sup>14</sup> Chapter 1, Section 2 of the Public Procurement Act (2016:1145).

<sup>15</sup> Chapter 3, Section 24, paragraph 2 of the Public Procurement Act.

- 1) **decision-making level:** Governing Council of the ECB, comprising the ECB and the central banks of the euro area countries (including the 4CB)
- 2) **governing level:** technical and operational management bodies of all central banks (T2 and T2S) and central securities depositories (T2S) using the respective platform
- 3) **providing level:** for the four central banks (4CB) that provide and are responsible for the operation of the platforms.

The Market Infrastructure Board (MIB) and the Non-Euro Currencies Steering Group (NECSG) forums are at the governing level (level 2) of each platform. The MIB is tasked with safeguarding the day-to-day operation of the T2, T2S and TIPS platforms provided by the Eurosystem. The MIB is also responsible for managing all Eurosystem projects related to market infrastructure and payments. To a large extent, the MIB ensures that its task is carried out through a number of working groups for each platform, which report to the MIB.<sup>16</sup> NCBs participate in the MIB on a rotation basis. Representatives of the 4CB and ECB have permanent seats. Representatives in the MIB decide on the development and operation of the respective platform in the best interests of the Eurosystem.<sup>17</sup> The NECSG includes all non-euro area central banks using one of the platforms, together with representatives of the 4CB and the ECB. The NECSG is tasked with coordinating the views of non-euro countries in order to present a common view on specific issues to the MIB. If necessary, the NECSG can escalate issues of particular importance directly to the Governing Council.<sup>18</sup> As Sweden is a non-euro area country, the Riksbank will not be allowed to participate in the Governing Council of the ECB, which is the highest decision-making body for TARGET services.

The governance structure entails certain limitations for the Riksbank in terms of its ability to independently govern and promote good functionality for the settlement of payments on the Swedish payment market. In order to mitigate the risks that may arise from these restrictions, the Riksbank should participate actively in relevant working groups. This gives the Riksbank good insight into proposed changes and the opportunity to participate in and influence their development. However, there is still a risk that changes that the Riksbank considers inappropriate or that will prevent the Riksbank from fulfilling its mandate will be proposed and adopted, even if the Riksbank participates actively in the working groups. For changes of the latter kind, an escalation process has been established through which the Eurosystem, together with the relevant non-euro NCB, will seek a solution. In the event that it is not possible to resolve such a situation, the Riksbank has the right to request withdrawal from the platform without having to implement the change during the withdrawal period.<sup>19</sup> However, dealing with such a situation by cancelling the contract with the Eurosystem is not considered a realistic option, as switching payment settlement services is a very costly and complex process. As the Riksbank can presently fulfil its mandate using the T2 platform, our assessment is that any changes that may arise will not be serious enough to make it necessary to terminate the agreement.

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<sup>16</sup> Mandate of the Market Infrastructure Board (MIB), *Annex II, Rules of Procedure*: [Decision - 2019/166 - EN - EUR-Lex \(europa.eu\)](#).

<sup>17</sup> Mandate of the Market Infrastructure Board (MIB), *ANNEX II Rules of Procedure, 2. Membership and term of office*: [Decision - 2019/166 - EN - EUR-Lex \(europa.eu\)](#).

<sup>18</sup> TIPS Non-euro Currencies Steering Group (TIPS NECSG): [Governance \(europa.eu\)](#).

<sup>19</sup> Mandate of the Governor's Forum.

Nor does the governance structure allow the Riksbank to be part of the group that supervises and follows up the work of the front line. These places are reserved for the 4CB and ECB. The ECB has a standardised risk management process based on ISO 31000, just like the Riksbank's current risk management process. While the Riksbank would be able to report risks and incidents through front-line working groups, questions remain about how this process would be implemented and realised in practice.

### **5.3 A dedicated contingency solution is needed**

The Riksbank's special security protection assessment concludes that an appropriate contingency solution is needed in the event that the Riksbank transitions to the T2 platform. This means that one precondition for using the T2 platform will be that the ECB authorises the Riksbank to provide its own contingency solution and over which it has sufficient autonomy.

### **5.4 Safety management**

The Riksbank needs to ensure that a transition to the T2 platform continues to mean that the system and the confidentiality, accuracy and availability of its information are managed and monitored in a systematic and secure manner. To do this, the Riksbank has assessed how well the security work and governing frameworks for the T2 platform fulfil the accepted ISO/IEC 27000 standard. The Riksbank has also examined audits to verify compliance with the requirements.

## **6 Can the Riksbank fulfil its task using the T2 platform?**

All in all, the Riksbank's assessment is that, with a contingency solution, it will be able to fulfil its current mandate using the T2 platform for payment settlement. Using the T2 platform, the Riksbank can continue to provide a system for the settlement of payments in a way that fulfils the requirement in the Sveriges Riksbank Act to "contribute to the stability and efficiency of the financial system, including the ability of the public to make payments".

On the other hand, the Riksbank would have limited scope to delay the closing of the T2 platform by itself. At present, the Riksbank can do this with RIX-RTGS. This is a limitation that could cause problems for RIX participants if a disruption were to occur but the Riksbank can mitigate the negative effects by implementing reserve routines. The extent to which the Riksbank should provide such proprietary routines for areas where the T2 platform does not support functions that exist in the Riksbank's current system will be a matter of principle for the Riksbank.

In simple terms, the T2 platform has the same basic functions as the Riksbank's current payment system, although there are differences in some details. As the platforms basically have the same functions, nothing prevents the Riksbank from operationally implementing monetary policy as it desires with the T2 platform. Monetary policy operations are ultimately payments from or to the Riksbank and can therefore also be made using the T2 platform. With regard to financial stability, oversight of RIX could be



improved by using the T2 platform, as the Riksbank would then also be included in oversight cooperation for the T2 platform. Neither would transition to the T2 platform be expected to have a negative impact on financial stability as long as the risks are carefully considered during the transition phase itself.

In the event of a transition to the T2 platform, the Riksbank's existing support systems for collateral management and interest rate calculation would have to remain in place and be adapted to the T2 platform. The Riksbank would also need to establish an additional support system for fee handling.

A risk assessment has been carried out in accordance with the Rule for managing substantial changes.

## 7 The payment market's view of the T2 platform

RIX-RTGS has 45 participants, known as RIX participants. In the spring of 2024, the Riksbank conducted a consultation in which RIX participants were asked to state how well RIX-RTGS fulfils their needs, to describe the pros and cons of going over to the T2 platform and to evaluate three main scenarios for switching to the T2 platform. In total, 37 participants responded.

RIX participants that already use the T2 platform, or intend to switch to it, and that do not have the Swedish market as their home market see significant advantages in the Riksbank switching to the T2 platform. The major Swedish banks and the Swedish clearing house emphasise that a transition to the T2 platform would be positive, provided that it lowers their costs for settling payments. So does the Swedish Bankers' Association. The majority of them state that a transition to the T2 platform would be costly.

The market considers a move to the T2 platform to be positive as it would increase the degree of harmonisation. At the same time, they point out that much of that harmonisation can happen even without the T2 platform. One major player also points out that there is a risk if multi-currency settlement is harmonised on a single platform. A disruption in this platform would then have simultaneous consequences for several currencies, which could negatively affect participants. The market sees it as negative that the Riksbank would have limited opportunities to influence the T2 platform. This, it argues, could negatively affect the innovation that the Swedish market has historically been good at. It also stresses that moving to the T2 platform would deny the Riksbank its ability to delay the closure of RIX-RTGS in the event of disruptions on the Swedish market.

The market has emphasised the importance of ensuring that a proprietary contingency solution is no worse than the current one when switching to the T2 platform. It has also pointed out that there are no current balances from the T2 platform, which means that new liquidity has to be provided.

At the same time, RIX participants state that the current RIX-RTGS has better operational reliability and is more user-friendly than the T2 platform.

In the event of a decision to use both platforms, the majority would prefer to move to the T2 platform before the T2S platform. According to them, starting to use both platforms at the same time would result in excessive resource conflicts and would not allow the platforms to be tested effectively. They estimate that a transition to the T2 platform would take around three to four years and could start in 2027 at the earliest, and that a transition to the T2S platform would take another three to four years.

## 8 The Riksbank's cost estimates and resource needs for transition and operation

### 8.1 Cost estimates and resource needs for migration to the T2 platform

The Riksbank estimates that a transition to the T2 platform will entail a cost of around SEK 80 million in necessary system adaptations, including the cost of the contingency solution, which is estimated at around SEK 60 million (an uncertain figure that will be updated after the requirements and design of the contingency solution have been established). The transition would require an average of around 29 full-time equivalents (FTEs) over the 4.5 years it would take, equivalent to around SEK 180 million. These estimates are in line with those of Danmarks Nationalbank for its ongoing T2 platform accession project.

Among the system adaptations the Riksbank needs to make is the establishment of a new fee management system for RIX participants' fees. The Riksbank's current price model means that the Riksbank strictly applies the principle of full cost recovery. This means that RIX participants should not only be charged the direct costs of RIX but also a share of all indirect costs, including all common support and part of the costs of the Executive Board, for example.<sup>20</sup> According to the existing cost policy, 95 per cent of the Riksbank's full costs for RIX are allocated to the RIX participants (including the Riksbank itself) and 5 per cent to monetary policy (i.e. the Riksbank itself). To manage fees in the future, a system is needed to compile both the costs incurred in relation to the ECB and the Riksbank's own costs for staff, IT and so on. In addition, the Riksbank needs to adjust its interest calculation system as the version available on the T2 platform does not cover the Riksbank's need for interest calculation for a standing lending facility. As stated in the section *Prerequisites for using the T2 platform* above, the Riksbank also needs to upgrade and adapt its existing contingency solution to the T2 platform.

A large part of the costs of a contingency solution will be incurred even if the Riksbank retains the current settlement platform.

The estimates of the resources needed to move to the T2 platform have been based on the Danish T2 platform accession project currently under way. It is estimated that 29 FTEs are needed on average per year, with a transition time of 4.5 years. Furthermore, it is estimated that approximately 70 per cent will consist of internal resources and 30 per cent of consultants; see table below.

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<sup>20</sup> *Principles for pricing the supply of RIX services etc.*, adopted 26 August 2008 ref. no. 2008-569-KAP.

**Table 1 Resource needs for transition to the T2 platform**

<u>Hourly rate/distribution</u>	<u>Cost (million SEK)</u>
SEK 800 per internal staff 70%	110
SEK 1,200 per consultant 30%	70
<b>Total</b>	<b>180</b>

## 8.2 Changes in costs with the T2 platform

All in all, the Riksbank assesses that a transition to the T2 platform would initially result in fee increases for RIX participants over a longer period of time. Costs will eventually fall off and economies of scale may become relevant.

The Riksbank's fee for using RIX is divided into i) a fixed fee that is the same for all RIX participants, ii) a supplementary fee paid by RIX participants with domestic revenues of at least SEK 1 billion (the size of the supplementary fee depends on the size of their revenues) and iii) a fixed transaction fee.<sup>21</sup> Other central banks may claim that they also apply full cost recovery but, in fact, they may apply it less strictly.

The Riksbank's licence costs for the RTGS system are around SEK 9 million annually, with around SEK 1–2 million in additional changes. Moreover, the Riksbank pays around SEK 19 million to its IT service provider. Licensing and ancillary costs have increased by more than 100 per cent over a ten-year period, and it is reasonable to assume that this trend will continue. This would result in increased fees for RIX participants in the future.

If the Riksbank moves to the T2 platform, the cost paid by RIX participants to execute a transaction will instead consist of two different parts: i) the ECB's fixed costs for executing a transaction and holding accounts on the T2 platform (including operating, support and licence costs) and ii) the Riksbank's internal costs according to the existing pricing model.<sup>22</sup> Finally, the Riksbank's costs for the transition to the T2 platform during the [seven] years that the implementation costs are amortised are added to this.

Whether the total fee paid by RIX participants will be lower with the T2 platform once the implementation costs have been amortised is uncertain.

## 9 Conclusions

Moving to the T2 platform means that the Riksbank is moving from a solitary position providing the settlement system on its own platform to instead participating in a collective with a common platform. There are both advantages and disadvantages to this.

<sup>21</sup> In addition, the Riksbank charges a fee for collateral management.

<sup>22</sup> See footnote 12.

## 9.1 T2 platform likely to provide a more secure payment system

A large user community provides expertise and is jointly responsible for development and operation. This will enable the Riksbank to meet both current and future challenges better than today - not least in the areas of preparedness and security. From a contingency perspective, it is an advantage that the platform has sites in two different regions of the Eurosystem, combined with the fact that its business contingency solution has redundancy through two different sites. It is also a strength from an organisational perspective that the operation of the platform is distributed across four central banks. This arrangement provides a high degree of redundancy and stability for the timely settlement of payments, but also from an organisational perspective, as several central banks are jointly responsible for maintaining operations.

It may be advantageous for the Eurosystem to be both a system provider and a user of the T2 platform. They then have both solid knowledge of how the platform is used and a strong interest in its smooth functioning as it supports the central banks' own core activities. At the same time, there may of course be a risk of protecting one's self-interest with regard to a central bank that is not part of the Eurosystem.

Having the same system and operations provider also minimises the risk of "things falling through the cracks". At present, the Riksbank has two different suppliers, neither of which is responsible for the whole, which means an increased risk of this. In addition, the T2 platform would also mean that the Riksbank avoids the risk of a private supplier acquiring a new problematic owner.

In the consultation conducted by the Riksbank in 2024, RIX participants stated that they are satisfied with the current RIX-RTGS and that it fulfils their needs. They consider the system to be reliable and user-friendly.

## 9.2 Risk that the Riksbank will be one of the few left in Europe without the T2 platform

All Nordic countries have contracts with the same supplier for the RTGS application, which has given the Nordic central banks a collective strength to demand efficient prices and good quality deliveries. Being part of a user community with other central banks with which it has close contact has been very valuable for the Riksbank. However, within the Nordic region, changes are underway that will lead to changes in the former user community. In 2025, Denmark will move to the T2 platform, and Iceland and Norway are considering doing the same. This means that, for the foreseeable future, the Riksbank may be one of the few central banks in Europe with a solitary solution, i.e. with a bilateral supplier contract. There are significant challenges for the Riksbank to continue as a solitaire. As a solitary bank, the Riksbank itself needs to ensure that there is good redundancy and stability for payments to be settled at any given time. This requires the establishment of sites but also an upgraded business contingency solution. In such an arrangement, the Riksbank also needs to allocate more resources than at present to supplier management in order to influence the development of the payment platform. The assessment is that, over time, the Riksbank will become more vulnerable and less able to ensure a payment system that is robust, stable and efficient.

As regards the costs incurred by RIX participants in carrying out transactions, it is likely that they will continue to increase. If the Riksbank is also the only central bank in Europe that continues to operate as a solitary bank, it will probably be difficult to negotiate favourable agreements from a cost perspective.

### **9.3 Governance structure limitations and supplier risks**

There is a risk that it will not be possible to implement all the changes that the Riksbank or the Swedish payment market want on the T2 platform. Conversely, there may also be a risk that the Eurosystem implements changes that the Riksbank and the Swedish market consider inappropriate. However, as stated above, this risk should be seen as more a matter of principle than a real possibility.

For the payment system to be stable, it should fulfil the needs of the Riksbank and the Swedish payment market. Changes to satisfy such needs are likely to be easier to implement in a stand-alone solution where the Riksbank has bilateral agreements with suppliers for application and operation. However, with such a solution there are other risks that may affect the Riksbank's ability to make independent decisions. For example, a bilateral contractual relationship requires the Riksbank to be able to find and use system suppliers that are cost-effective and of high quality. There are currently a very limited number of suppliers providing the RTGS application. With regard to private suppliers, the Riksbank is also unable to influence the ownership structure, which could be problematic if a supplier is bought by someone the Riksbank does not trust. In such a situation, the formal access to the application code may have limited practical value. There is also a risk that system suppliers will not be willing or able to make the changes the Riksbank wants, at least not at the desired time, that they will use standard solutions that the Riksbank does not want or that the functions the Riksbank uses will disappear when the supplier updates or changes the system. As mentioned above, it is important to continue to be part of a user community with other central banks with which one has close contact.

The assessment is that a continued solution with a private system provider will be more challenging in the future than it has been so far. The Riksbank needs to be more involved in the development of the system platform. It is thus not just the governance structure of TARGET services that requires this. It will mean increasing costs. There is, of course, also a risk that the Riksbank will face rising costs for the services purchased from systems and operating suppliers. One supplier risk that should not be overlooked is also that of having separate suppliers for systems and operations.

### **9.4 It may take time for the economies of scale of the T2 platform to materialise**

The transition process to the T2 platform will be costly for RIX participants. The Riksbank's costs will lead to fee increases for RIX Participants for at least the [seven] years during which the implementation costs are written off. In the medium term, this means that a transition to the T2 platform will not meet market expectations for lower costs. Instead, RIX participants may face increased costs that could lead to further concentration and exclusion in the market as smaller players will find it difficult to manage them. This could be seen as negative in terms of the Riksbank's mandate. The

Riksbank's ambition should be that it will eventually be cheaper and safer for RIX participants if the Riksbank switches to the T2 platform, and that the Swedish market will thereby gain economies of scale in terms of costs.

For the Riksbank, a transition to the T2 platform should have a positive effect on internal IT operating costs in the long term. The outsourced environment the Riksbank has today is surrounded by very high security, where the level is determined by the systems that are most worthy of protection. These systems, and their operating environments, are therefore expensive to manage and RIX is one of the systems that contributes significantly to these costs.

## **9.5 RIX participants' views must be taken into account**

RIX participants are sceptical that using the T2 platform will lead to lower costs in the long run. Lower costs would otherwise be the big advantage for them with the T2 platform. The Riksbank shares the view that it may be difficult to achieve lower costs for participants in the medium term. However, the Riksbank also sees significant cost increases if the Riksbank were to retain the current solitary platform.

The Riksbank and the RIX participants share the assessment that a transition to the T2 platform can speed up the harmonisation work that is under way in the market. However, much of this work can probably be done even without using the T2 platform. Nevertheless, the Riksbank sees that further harmonisation can be facilitated by using the T2 platform.

The Riksbank shares the market's conclusion that the Riksbank's influence is limited in a transition to the T2 platform, as the Riksbank has no seat on the ECB's Governing Council. However, the Riksbank assesses that there is very little risk of the Governing Council taking decisions of such a nature that the Riksbank wishes to terminate the agreement.

The Riksbank shares the market's conclusion that the Swedish market has been good at innovation. However, much of this innovation has so far taken place outside the Riksbank's settlement system. To the extent that the innovation needs to relate to the settlement system, there may be advantages in it being partly driven or controlled by central banks, as profit-driven innovation is not always favourable from a competitive point of view and is therefore not better for the end consumer.

The RIX participants have also emphasised the disadvantages of the Riksbank not being able to decide itself on postponing the closure of RIX-RTGS on the T2 platform. It can be noted that the occasions on which the Riksbank has so far applied a postponement of the closing time are few. However, there may be times when the possibility of settlement in central bank money on the right day is important. Individual RIX participants have also emphasised that they would miss certain registration possibilities that exist in the Riksbank's current system but not in the T2 platform. In the event of a transition to the T2 platform, the Riksbank may consider developing reserve routines to limit potential problems for RIX participants where this is possible, practical and can be done at a reasonable cost.

## 9.6 Implies consequences for the Riksbank's internal work

As mentioned above, a transition to the T2 platform will require increased resource needs over a longer period of time. When the project is in its most intensive phase, it will almost require an extra RIX division in terms of staff. In addition, there will be a resource need to be filled for the entire market, not just the Riksbank internally. This resource requirement will be challenging for both the market and the Riksbank to fulfil.

Internally, this means that other priority projects will probably have to wait, and that the organisation as a whole will actively participate in the transition to the platform in various ways.

## 10 Recommendation

*It is proposed that the Riksbank negotiate with the Eurosystem to use the T2 platform to provide the settlement service for large-value payments in Swedish kronor, RIX-RTGS.*

The primary reason for the recommendation is that the Riksbank can ensure a robust, stable and efficient payment system in the long term by moving to the T2 platform and using the Eurosystem as the application and operations provider.

The Riksbank should also start work on internal preparations, such as decisions on the project plan, project organisation and budget. The proposal is to start contract negotiations in 2024, with the aim of beginning a transition to the T2 platform in 2025. A transition is expected to take around five years, provided that the necessary resources are available.

The Riksbank will consult the RIX participants in the work of drawing up a timetable for the transition. The transition should not disrupt the planned transformation of the Swedish payments market.