

MEMO
KRONOS2 – VERSION 2.0



Danmarks Nationalbank
Corporate Services
Portfolio Management and Central Bank Systems

CC:
Account holders

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2 INTRODUCTION

One of Danmarks Nationalbank's objectives is to contribute to the efficiency and stability of payment and settlement systems. Such systems are essential for the effective functioning of the financial sector in Denmark.

Danmarks Nationalbank has several roles to play in payment systems. Danmarks Nationalbank's payment system, Kronos¹, handles settlement of large, time-critical payments in Danish kroner between financial institutions. Danmarks Nationalbank also acts as the settlement bank for payment systems and the cash leg of securities transactions in Denmark. Furthermore, Danmarks Nationalbank oversees payment and securities settlement systems in Denmark.

Danmarks Nationalbank will replace the existing customer-oriented systems in the central bank area with Kronos2, which will affect a large part of the financial sector.

A standard RTGS system has been chosen, with the highest possible degree of standard implementation. The system selected is Perago, which is also used in Sweden and Norway, among other countries. However, the system will be customised to support special Danish areas, such as the automatic collateralisation arrangement and the Straksclearing². Kronos2 comprises two systems, Perago and Calypso, where the latter will process account holders' pledging of securities. Today, the system for trading monetary policy instruments is the DN Inquiry and Transfer System (DN-F). This will also change, cf. Chapter 10.

Danmarks Nationalbank has seen the sector participating actively in the project, and the sector's opinions have been useful, e.g. when choosing between options within the standard system.

This memo describes some of the changes which the introduction of Kronos2 to replace Kronos will bring in the Danish payments infrastructure. The replacement will go live on 18 April 2017. This memo is targeted at participants currently using or somehow having an interest in Danmarks Nationalbank's systems. The content of the memo was presented in brief at the introduction meetings in May 2016. The memo

¹ Kronos is a Real-Time Gross Settlement (RTGS) system.

² The Straksclearing is the system for express transfer of retail payments.

supplements the training of account holders, which will take place from 12 September to 30 November 2016.

This memo will not describe the effects of the changes in the payments infrastructure on the participants' daily routines, business procedures, systems, bookkeeping and reconciliation, etc.

2.1 Memo structure

Chapter 3 describes the account setup in Kronos and Kronos2. Chapter 4 reviews settlement via VP and Nets. Chapter 5 outlines the collateral system in Kronos2, while Chapter 6 deals with FUTOP (futures and options). Chapter 7 describes a new Straksclearing model, and Chapter 8 presents the changed liquidity management tools. Chapter 9 concerns rights management, Chapter 10 deals with monetary policy instruments, and Chapter 11 describes cash holdings.

3 ACCOUNT SETUP

3.1 Primary account

In both Kronos and Kronos2, participants hold liquidity in their primary accounts at Danmarks Nationalbank. The primary account balance is impacted by e.g. deposit and lending transactions, foreign exchange and securities transactions as well as retail payments. The participants must ensure that there is always sufficient liquidity for payment execution and consider how to allocate their liquidity during the day. Payments are settled individually in real time.

To facilitate settlement of payments, Danmarks Nationalbank offers the participants credit within the monetary policy day, i.e. intraday credit. This credit is granted as overdrafts on their current accounts at Danmarks Nationalbank and is extended against securities or certificates of deposit as collateral.

At the end of the monetary policy day, i.e. at 3:30 pm, participants may not have negative balances (overdrafts) at Danmarks Nationalbank.

3.1.1 Primary account in Kronos

In Kronos, the primary account is the current account, which accrues interest at the current account rate.

3.1.2 Primary account in Kronos2

In Kronos2, the primary account is split into two accounts. Each participant has both a settlement account and a loan account. Payments from the settlement account and loan account are executed individually

and in real time via the RTM. RTM stands for Real Time Mechanism, comprising both the settlement account and the loan account, equivalent to the present current account.

The following applies to the two Kronos2 accounts:

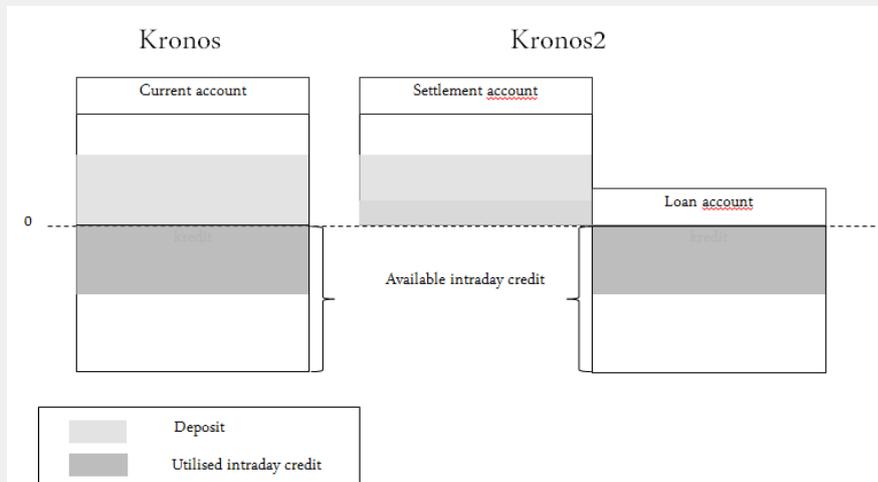
- Settlement account
The settlement account is the participants' primary account at Danmarks Nationalbank. The balance can only be positive. Incoming and outgoing payments (MT103 and MT202) are entered to the settlement account.
- Loan account
The loan account is a separate account for intraday credit from Danmarks Nationalbank to the participants. The balance is either zero or negative. If the balance is negative, the participant has made use of the intraday credit facility.

If a participant has drawn on its loan account, any outstanding amount must be covered by 3:30 pm at the latest, at the close of the monetary policy day. If the participant fails to cover the outstanding amount, it is automatically covered by transfer of funds from the settlement account to the loan account. Deposits in the settlement account accrue interest at the current account rate.

Chart 1 illustrates the current account in Kronos and the settlement and loan accounts in Kronos2.

Primary account in Kronos and Kronos2

Chart 1



Kronos: A participant can view any deposit in the current account. Any drawing on the intraday credit also appears from the current account.

Kronos2: A participant can view any deposit in the settlement account. Any drawing on the intraday credit appears from the loan account. A participant may have a deposit in the settlement account and drawing on the loan account at the same time.

3.2 Queuing feature

Today, Kronos offers a feature for queuing payments if a participant's liquidity in the current account is insufficient for payment settlement at the required time. The participant thus avoids payment rejection in the system, which would require the participant to enter the payment into the system again when there is cover for the payment.

Kronos2 does not support this queuing feature. If a participant tries to execute a payment in Kronos2 without cover, the payment is rejected. Rejected payments must therefore be re-registered in the system³.

³ This has been agreed with the sector.

3.3 Settlement accounts

Danmarks Nationalbank acts as settlement bank in both Kronos and Kronos2. Each primary account has a number of settlement accounts attached. In these accounts, participants can reserve amounts for each settlement cycle. This means that within a given period of time, spanning the settlement cycle, the participants cannot dispose of the funds in the settlement account. This account structure with settlement accounts allows Danmarks Nationalbank to guarantee the amounts reserved during settlement.

The participants hold a settlement account for each of the retail payment systems (the Sumclearing, the Intradagclearing and the Straksclearing), the securities settlement system (VP) and the foreign exchange settlement system (CLS).

3.3.1 Settlement accounts in Kronos

Today, the participants have the following settlement accounts at their disposal:

- The Sumclearing, the Intradagclearing and the Straksclearing
- VP trade settlement
- VP periodic payments
- PvP
- CLS

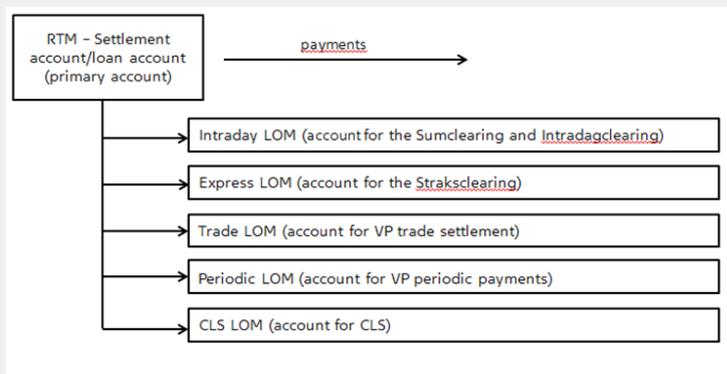
3.3.2 Settlement accounts in Kronos2

In Kronos2, the settlement accounts are called LOM accounts⁴. At the close of the monetary policy day, i.e. at 3:30 pm, the balance is zero on all LOM accounts. Chart 2 outlines the LOM accounts.

⁴ LOM stands for Liquidity Optimizing Mechanism.

Account setup

Chart 2



Participants may transfer liquidity from the RTM to the LOM accounts. A participant may also transfer funds between its own LOM accounts. Finally, a participant may transfer liquidity from a LOM account to the RTM, unless a settlement cycle is running. This is more extensive than the current setup.

3.3.2.1 Retail payments

In Kronos, each participant has one settlement account, to be used for the Sumclearing, the Intradagclearing and the Straksclearing. That is not the case in Kronos2, where each participant will have one settlement account for the Sumclearing and Intradagclearing, called the Intraday LOM, and one settlement account for the Straksclearing, called the Express LOM, cf. Chart 2.

3.3.2.2 VP trade settlement

Kronos2 will also include a settlement account for VP trade settlement, as in the present system. This account is called the Trade LOM.

3.3.2.3 VP periodic payments

Kronos2 will also include a settlement account for VP periodic payments in Danish kroner, as in the present system. This account is called the Periodic LOM.

Unlike Kronos, Kronos2 does not support periodic payments in Swedish kronor and Icelandic kronur, so there will be no settlement accounts for these currencies. VP is currently working with the account controllers in question on transferring portfolios of Icelandic securities that have been

VP-registered via the VSI link back to Iceland. As regards Swedish kronor, VP is currently seeking to process such payments in Sveriges Riksbank.

3.3.2.4 *PvP*

In the present system, exchange of kroner and euro between the parties takes place in a Payment versus Payment (PvP) settlement cycle.

In collaboration with the sector it has been decided that Kronos2 will not support PvP settlement. Consequently, there is no PvP settlement account. The background to the decision is that only professionals settle euro transactions, and they will do so on the TARGET2-Securities (T2S) platform once T2S has been implemented with euro in 2016.

3.3.2.5 *CLS (Continuous Linked Settlement)*

CLS is an international clearing and settlement system that settles foreign exchange transactions in 18 currencies at present, including Danish kroner. Like the present system, Kronos2 will also have a CLS settlement account. It is called CLS LOM. Any participant using CLS may transfer an amount from its CLS LOM account to CLS' LOM account.

4 VP AND NETS SETTLEMENT

4.1 Procedure

VP and Nets settlement is carried out at fixed times during the day, as in the present system. Before a settlement cycle, liquidity is transferred from the RTM to the relevant LOM account. Credit lines are also submitted for each participant, informing VP or Nets about the balance on the LOM account, i.e. the amount guaranteed by Danmarks Nationalbank on behalf of the participant. After each settlement, any balance on the LOM account is automatically transferred to the participant's settlement account, bringing the LOM account balance to zero.

The Straksclearing settlement procedure is slightly different. The participant's Straksclearing credit line does not reflect the balance on the Express LOM account, but is registered as realisation of collateral on the collateral list, cf. Chapter 7. The Express LOM is used only in connection with settlement at fixed times, cf. Box 1. The positions are then booked. After each settlement, any balance on the LOM account is automatically transferred to the participant's settlement account.

4.2 Settlement cycles

Box 1 contains an overview of the settlement cycles for the Sumclearing, Intradagclearing and Straksclearing and VP settlement in Kronos2. The settlement times are the same as the current ones, except that the timing

of the night-time Sumclearing and Intradagclearing settlement is no longer flexible.⁵

Settlement in Kronos2		Box 1
The table contains an overview of Nets and VP settlement cycles with settlement times.		
Settlement cycle	Time of settlement	
VP10, securities transactions	6:00 pm	
VP20, securities transactions	12:35 am	
The Straksclearing	12:50 am	
The Sumclearing and Intradagclearing	1:30 am	
The Sumclearing, technical	3:00 am	
The Straksclearing	5:20 am	
The Sumclearing and Intradagclearing, technical	6:00 am	
VP30, securities transactions	7:05 am	
The Straksclearing	8:20 am	
The Intradagclearing	9:00 am	
VP35, periodic payments	9:15 am	
VP40, securities transactions	10:15 am	
The Straksclearing	11:20 am	
The Intradagclearing	12:00 noon	
VP60, securities transactions	12:00 noon	
The Straksclearing	1:20 pm	
The Intradagclearing	2:00 pm	
The Straksclearing	2:30 pm	
Note: Euro and CLS settlements are not included in the overview.		

4.3 Real time transactions in VP

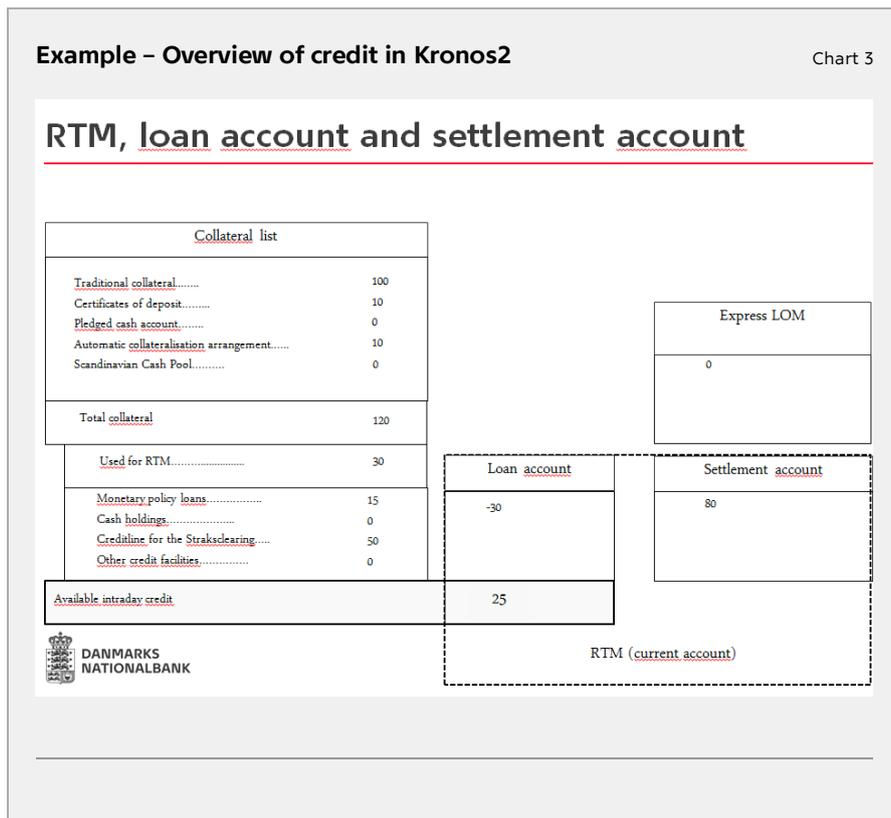
In the present system, securities transactions in the VP settlement system can be executed in real time outside the fixed settlement cycles. It has been agreed with the sector that Kronos2 will also support real time transactions in VP.

⁵ The timing of the night-time settlement of retail payments has been discussed in the sector. The sector would like settlement to take place at 1:30 am.

5 COLLATERAL IN KRONOS2

5.1 Collateral list

Credit available from Danmarks Nationalbank is stated on a special list in Kronos2 – the *collateral list*. This is a new feature compared with the present system. Chart 3 shows the collateral list principle and the interaction with the RTM.



The top part of the collateral list in Chart 3 shows the collateral value of the assets pledged to Danmarks Nationalbank by the participants. This includes traditional collateral, certificates of deposit, the pledged cash account⁶, the automatic collateralisation arrangement and the Scandinavian Cash Pool. In the example in Chart 3, the total value of the participant's collateral is 120.

The statement of collateral on the collateral list includes specification of what the collateral has been used for in Kronos2. In the example in Chart 3, the participant has been granted an intraday loan of 30, so the loan account balance is negative by 30. Since the balance on the settlement

⁶ The pledged cash account is for Straksclearing purposes only, cf. Chapter 7.

account is 80, the participant has a "current account deposit" of 50 in the RTM.

The available intraday credit, i.e. the unused part, is calculated as the total value of collateral in Kronos2 less credit already used for intraday loans, monetary policy loans, etc. The available intraday credit in this example is calculated as: 120 (total collateral) – 30 (used for RTM) – 15 (monetary policy loans) – 50 (credit line for the Straxclearing) = 25.

With the intraday credit of 25 and the 80 in the settlement account, the participant's "*disposable* current account liquidity" is 105.

5.2 Traditional collateralisation

Traditional collateralisation is an arrangement for pledging of collateral for monetary policy loans, intraday credit, etc. Under this arrangement, the participants request transfer of securities to/from a safe custody account in VP that has been pledged to Danmarks Nationalbank.

The participants may only request transfer of securities to/from the pledged safe custody account via Kronos2. Kronos2 will then submit a request to VP to execute an express transaction between the pledged safe custody account and one of the participant's own safe custody accounts. Once the transaction has been settled in VP, the drawing right in Kronos2 changes. Since the transfer is an express transaction, the participant's safe custody account must be a securities dealer account. Requests may be submitted from 7:00 am to 3:30 pm.

Kronos2 contains a list of the securities eligible for traditional collateralisation. They are the same securities which are eligible for the automatic collateralisation arrangement, cf. below.

On payment of interest and redemptions on the securities pledged, the proceeds initially go to Danmarks Nationalbank. The amount is immediately transferred to the participants, and the drawing right is reduced accordingly. Amounts in kroner are disbursed in Kronos2, while amounts in euro are disbursed in TARGET2⁷.

5.3 The automatic collateralisation arrangement

Automatic collateralisation is an arrangement for pledging of collateral for intraday credit in Danish kroner. Credit under the automatic collateralisation arrangement must be covered by 3:00 pm on the same monetary policy day. Kronos2 participants can use the automatic

⁷ TARGET2 is the trans-European RTGS system for settlement of payments in euro. Payments between financial institutions and transfers for settlement in other euro payment and settlement systems are settled in TARGET2.

collateralisation arrangement for settlement purposes and for their daily payments.

Kronos comprises a separate automatic collateralisation account. This is not the case in Kronos2. In Kronos2, the part of the automatic collateralisation that has been reserved for the system is included in the total pool of collateral pledged to Danmarks Nationalbank, along with traditional collateralisation, certificates of deposit, etc., cf. Chart 3.

Kronos2 will enable the participants to manually reserve liquidity under the automatic collateralisation arrangement from 7:00 am to 3:00 pm.

5.3.1 Maximum automatic collateralisation arrangement

Kronos2 will introduce a new feature called the maximum automatic collateralisation arrangement. After VP settlement cycle 20 at 12.35 am, a maximum drawing is made under the automatic collateralisation arrangement, and the funds are transferred to the participant's collateral list, which may be used as required for the Sumclearing, Intradagclearing and Straksclearing. In the early morning of the following banking day, Danmarks Nationalbank releases the automatic collateralisation arrangement before the VP settlement cycle at 7:05 am is run. At the request of the sector, VP will introduce a cap on the automatic collateralisation arrangement, whereby the participants define the amounts that may be transferred. This means that part of the automatic collateralisation arrangement will not be transferred to Danmarks Nationalbank.

5.4 Scandinavian Cash Pool (SCP)

Scandinavian Cash Pool (SCP) is an automated system for pledging of cross-border collateral for intraday credit in Danish and Norwegian kroner and Swedish kronor. The main principle of SCP is that liquidity raised from the central bank of one country can be pledged as collateral for intraday credit from the central bank of another country. Credit under SCP must be redeemed by 2:00 pm on the same monetary policy day at the latest.

5.4.1.1 SCP in Kronos

A participant seeking access to intraday credit in Danish kroner at Danmarks Nationalbank via SCP must have an SCP loan account at Danmarks Nationalbank. The participant's SCP loans are registered to this account. At the same time, an amount corresponding to the registered loan is transferred to the participant's current account.

If the participant seeks access to intraday credit at Norges Bank or Sveriges Riksbank on the basis of liquidity raised at Danmarks Nationalbank, the participant must also have an SCP pledge account at Danmarks Nationalbank.

5.4.1.2 SCP in Kronos2

SCP is supported in Kronos2, but the arrangement is different.

In Kronos2, the participant has a dedicated SCP pledge account to which the participant may transfer liquidity. The value of the pledged assets received from Norway or Sweden will not be transferred to the participant's RTM, but appears on the participant's collateral list – see Chart 3. This SCP pledge can now be used in connection with the participant's intraday credit.

It still applies in Kronos2 that if the participant seeks access to intraday credit at Norges Bank and Sveriges Riksbank on the basis of liquidity raised from Danmarks Nationalbank, the participant must have an SCP pledge account at Danmarks Nationalbank. The participant must also be registered at Norges Bank and Sveriges Riksbank.

In Kronos2, Scandinavian Cash Pool (SCP) is called Regional Cash Pool (RCP).

6 FUTOP (FUTURES AND OPTIONS)

Kronos enables a central counterparty (CCP) to organise its margin payments via Kronos. This is supported by the creation of sub-accounts under the CCP's current account for each participant with margin payments. The participants may then transfer kroner to the sub-accounts, which accrue interest at the current account rate. The only CCP to use this arrangement has been Nasdaq Clearing AB, which is continuing the FUTOP clearing. Danmarks Nationalbank offered this arrangement to the EMCF (European Multilateral Clearing Facility) when CCP clearing was introduced at Nasdaq OMX Copenhagen in 2009, but the Danish participants were not interested. The reason is that the current account is in the name of the CCP, so the participants are not sure whether their secured creditor status will be maintained in the event of insolvency, even though the funds are separate. The arrangement has not been used since the spring of 2013, when Nasdaq Clearing introduced automated procedures for margin payments at their settlement banks.

Retaining this arrangement would require further development of Kronos2. Nasdaq Clearing does not see any need to retain the

arrangement in Kronos2. Danmarks Nationalbank has therefore decided, in cooperation with the sector, that the arrangement will not be supported.

7 THE STRAKSCLEARING

The Straksclearing is the system for immediate transfer of small amounts between citizens in Denmark on a 24/7 basis. These transfers are called instant payments.

7.1 Liquidity rule in the Nets system

In Kronos2, raising liquidity for Straksclearing purposes will be fully automated for all participants.

The participants register one liquidity rule in the Nets system, which automatically generates requests to Kronos2 about releasing or raising further liquidity for Straksclearing purposes. This rule replaces the participants' current eight rules in the Nets system, including the "Stopklods" rule. This rule provides for splitting the liquidity reserved for the Straksclearing into small portions as required. The Kronos2 system is accessible 24/7, enabling the participants to make more efficient use of their liquidity.

It has been agreed with the sector that Nets is to check every 15 minutes whether there are participants who have utilised more than 50 per cent of their liquidity rule. If so, further liquidity for Straksclearing purposes will automatically be procured for the participants in question. Similarly, Nets will release some of the liquidity for participants whose available liquidity exceeds 150 per cent of the liquidity rule. However, a credit line cannot be reduced to more than 50 per cent of the liquidity rule. This is to ensure that there is still liquidity in the Straksclearing for settlement purposes. Each time liquidity is adjusted for a participant, a new credit line is transmitted to Nets. Kronos2 can send and receive messages 24/7, so that the participants can benefit from always being able to bind a minimum of liquidity for the Straksclearing, without any risk that consumers' use of instant payments will be impeded due to insufficient liquidity reservation.

7.2 Credit line and pledged cash account

In Kronos2, a credit line to the Straksclearing will, as a general rule, be based on available credit, meaning that it appears as utilised on the collateral list.

If a participant's collateral is insufficient for the Straksclearing, liquidity is dedicated from the settlement account to a pledged cash account where the credit line is increased. The pledged cash account is earmarked for the Straksclearing and ensures that liquidity is still available for the Straksclearing. The balance on the pledged cash account is shown in the collateral list and included in the total pool of collateral on the list, see the example in Chart 3. In the example, the participant has a credit line of 50 for the Straksclearing, which is solely based on collateral in Kronos2. That is why the balance on the pledged cash account is zero in the example.

If a participant's balance on the pledged cash account is positive at the turn of the monetary policy day at 3:30 pm, this balance is included in the calculation of the participant's current account balance. The pledged cash account accrues interest at the current account rate.

In Kronos2, the pledged cash account is called an interim account.

7.3 Express LOM

A participant's credit line for the Straksclearing does not reflect the balance on the participant's Express LOM. In Chart 3, there is a credit line of 50 for the Straksclearing, but the Express LOM balance is 0. The Express LOM is used only in connection with the settlement cycles at 12:50 am, 5:20 am, 8:20 am, 11:20 am, 1:20 pm and 2:30 pm.

7.4 Settlement

If a participant in the example in Chart 3 needs to pay 45 in a Straksclearing settlement, this amount is automatically transferred from the settlement account to the Express LOM, and the credit line is reduced from 50 to 5 on the collateral list.

Collateral is pledged for the credit line, but no intraday credit is granted for Straksclearing settlement if the participant has sufficient liquidity on the settlement account, which is the case here. Nets then increases the credit line up to the participant's rule amount.

8 ADJUSTMENT OF LIQUIDITY MANAGEMENT TOOLS

8.1 Standing order

Today, Kronos participants can use the standing order facility for settlements in Kronos at fixed times.

The standing order facility will still be available in Kronos2, but it is up to the participants themselves to fix the days of the week and times, if any, at which they wish to use standing orders.

8.2 Maximum liquidity

In Kronos, the participants may select the *Maximum liquidity* function. Maximum liquidity means that the participants place all disposable current account liquidity on the settlement account for night-time retail payments. Nearly all participants currently use this function. This function will lapse, since Kronos2 is open 24/7 and enables automatic transfer of liquidity for night-time settlements.

8.3 Coverage

In Kronos, the participants may select the *Coverage* function. Participants enter an amount in Kronos, which is automatically added to the forecast received from Nets in connection with settlement of retail payments. Coverage is used to cover any gap between the forecast and the actual liquidity requirement.

It has been agreed with the sector to move the Coverage function to the Nets system, since the function is not standard in Kronos2. So the participants are required to register the amount of coverage in the Nets system.

9 MANAGEMENT OF RIGHTS

Danmarks Nationalbank has chosen to centralise user administration, meaning that Danmarks Nationalbank will administer all users in the system. This includes creation of users and allocation of standardised, pre-defined user profiles for the individual banks' users. In addition, Kronos2 supports the 2-eyes, 4-eyes and 6-eyes principles in connection with authorisation of pre-defined actions, such as payment instructions. The banks themselves will decide whether they wish to use any of these principles, and Danmarks Nationalbank will then create them in the system.

10 MONETARY POLICY INSTRUMENTS

Monetary policy instruments consist of certificates of deposit, lending against securities as collateral called monetary policy loans and liquidity-adjusting deposits and loans. Certificates of deposit are typically offered in an open market operation and can be traded with both Danmarks Nationalbank and other monetary policy counterparties. Monetary policy loans are only offered in an open market operation and can be traded with Danmarks Nationalbank only. Liquidity-adjusting deposits and loans

can also be traded with Danmarks Nationalbank only and are traded on bilateral terms.

In the current system setup, certificates of deposit and monetary policy loans are handled in the DN-F system.

In Kronos2, monetary policy instruments will be handled in the GCSD module. GCSD stands for General Central Securities Depository. The GCSD module is accessed via a browser and has the same URL and login as access to the RTGS. For practical reasons, the two areas will be displayed in two separate tabs in the browser.

Besides the shared login, there are other close connections between the RTGS and GCSD modules, as the banks' RTM settlement accounts, corresponding to their current accounts, and collateral will be placed in the RTGS. This means that check for adequate cover and settlement in connection with execution of monetary policy transactions will take place in interaction with the RTGS.

10.1 Certificates of deposit and monetary policy loans in open market operations

Like Kronos, Kronos2 will also enable trading of certificates of deposit and monetary policy loans with Danmarks Nationalbank. Standard terms and conditions for open market operations will appear from an overview of eligible monetary policy instruments. The overview of eligible monetary policy instruments is a new feature in Kronos2, and from there a trading view can be accessed, from which trades can be executed. In the current system, the participants have two accounts for certificates of deposit. In Kronos2, the participants will have a single account for certificates of deposit.

10.2 Certificates of deposit on bilateral terms

The current Kronos system enables trading on bilateral terms with Danmarks Nationalbank or another counterparty (certificates of deposit only). This feature will still be available in Kronos2. It will also be possible to monitor the status of a trade from registration in the trade view until settlement.

10.3 Liquidity-adjusting deposits and loans on bilateral terms

A new feature in Kronos2 is access to trade in liquidity-adjusting deposits and loans. These instruments are offered on bilateral terms only, subject to prior agreement with Danmarks Nationalbank.

10.4 New special features

New features in Kronos2 are queuing of certificate of deposit transactions and prioritisation of transactions for sellers whose portfolios do not yet contain sufficient certificates of deposit to complete the transaction.

Another new feature is the option for early redemption of a loan against collateral directly in Kronos2, subject to permission from Danmarks Nationalbank under the loan terms and conditions.

Finally, another new feature is access to a position monitor displaying all monetary policy portfolios by instruments. It is possible to view a specification of each portfolio with underlying transactions. The position monitor is updated in real time.

11 CASH HOLDINGS

In Kronos2, cash holdings features will be handled in the GCSD module. This module is accessed via a browser with the same login as the RTGS module. Most functionality in the cash holdings module is relevant for the cash holders only.

In reality, participant banks (account holders) have only one accessible feature in the cash holdings module in GCSD. This feature enables registration of bilaterally agreed return of banknotes and coins to Danmarks Nationalbank and will automatically activate payment for the banknotes and coins in the RTGS module. Banknote and coin intermediation in Denmark takes place via a third party (BKS/Loomis). This means that all interaction with banks is handled by a third party outside Danmarks Nationalbank's systems. Subsequently, the cash holdings and the third party settle the transaction, also outside Danmarks Nationalbank's systems.