High-level requirements on a CSD platform in Sweden

Swedish Securities Dealers Association

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1. Introduction

1.1 Background
A Central Securities Depository (CSD) is a core financial market infrastructure of vital importance for the efficient functioning and the stability of the financial market it serves. A CSD platform shall be robust and reliable and can be expected to have a long lifetime. At the same time, the platform’s ability to continuously support the market with the services it needs as well as changed demands is of crucial importance.

The Swedish market needs a new CSD platform. The reasons are multiple and have accumulated over a long period of time; requests for new CSD services, new regulations e.g. CSDR, CPMI-IOSCO PFMI, new or changed processes due to European harmonisation and international standardisation of communication protocols, a new pan-European utility (Target-2-Securities, T2S), market practices and last but not least the fact that the old system is old and increasingly more difficult and costly to maintain and develop.

Given its crucial role for the financial markets, the CSD is of key interest for market participants. Representing many of the financial market participants in Sweden, the Swedish Securities Dealers Association (SSDA) has therefore historically been closely involved in numerous CSD issues and a CSD working group (CSD WG) has been established for this purpose.

Against the background of the need of a new CSD platform for the Swedish market an important work stream for the CSD WG has been to establish requirements for such a platform.

1.2 Objective and limitations of this report
In this report, the CSD WG of the SSDA presents its views on the high-level and generic requirements to which a CSD platform in Sweden should comply.

The requirements are described on a high-level and are neither described in any detail nor conclusive. The requirements are meant to be generic and do not relate to any specific CSD platform.

The requirements are primarily identified from an investor perspective, rather than from an issuer perspective. The issuer perspective is equally important but the requirements from the issuers’ perspective should be identified separately from this report.

The requirements regarding T2S are not exhaustive and would need to be adjusted if Sweden decides to connect to T2S.

1.3 Organisation of this report
This report has five sections. Following this introduction (Section 1), the report provides an overview of developments in the post-trade securities industry (Section 2). The market’s requirements for the CSD platform are then presented (Section 3) followed by a section which discusses the replacement project (section 4). A summary is in the last section (Section 5).
2. Developments in the post-trade securities industry

The CSD segment – issuance, settlement, asset servicing and safe-keeping of securities – has been relatively stable in Sweden as well as in other European countries and more generally for a long period of time. The CSD business has further not been much exposed to competition historically. Currently, there are however a lot of changes taking place that will have large consequences for the industry in Europe. These changes will most likely also impact competition between CSDs going forward.

In particular, the combined effect of new regulation (CSDR, see below) which enters into effect in 2016, the European platform for securities settlements that is about to go live from 2015-18 (T2S, see below) as well as harmonisation of corporate action processing in accordance with the CAJWG and T2S standards will drive changes to the post-trade securities industry in Europe. At the same time, there are changing demands for CSD services by market participants. A scenario where CSDs have to cater for more rapid service development and thus more frequent changes to the service offering than previously; either driven by changes in the regulatory framework, by standardisation and harmonisation or by the CSD’s need to position itself in a more competitive market is expected going forward.

In this part, major developments in the post-trade securities industry are described. A first section describes the major European developments and a second section describes developments and characteristics in the Nordic countries including Sweden.

2.1 Developments in Europe

As mentioned above, there are in Europe two major developments taking place currently that will impact the post-trade securities industry fundamentally; new regulation in the form of the Regulation on settlement and Central Securities Depositories (CSDR) and the launch of a pan-European platform for securities settlement, Target-2-Securities (T2S).

The CSDR introduces an obligation of dematerialisation for most securities, harmonised settlement periods for most transactions in such securities, settlement discipline measures and common rules for CSDs. The extent to which is yet not certain, and which is pending final outcome of technical standards currently being prepared by ESMA, CSDR introduces far-reaching and very detailed requirements for both CSDs and their participants. In order to comply with these requirements, CSDs and their participants will need to develop a lot of functionality which do currently not exist in many of the European CSDs.

The project to build a pan-European securities settlement system, T2S, was launched in 2006. T2S is being built by the European Central Bank (ECB)/Eurosystem, which will also be system operator once T2S is running. Migration to T2S will take place in waves and will begin with a first wave in June 2015.

For those countries that choose to connect their CSDs to T2S, T2S would be an outsourcing of settlement functions and other functions from the local CSD to the Eurosystem. As in any outsourcing this will not affect the legal status of the local CSD, which would remain recognised and authorised locally. Any accounts on the T2S platform, legal or otherwise, would be legally attributed to the local CSD. This means that T2S would form a part of the local CSD system in accordance with local law and that the local CSD (and its Account Operators) would continue to be legally responsible for opening, maintaining and closing CSD accounts.
In addition to these two major developments, of potential relevance for CSDs ahead is also that the post-financial crisis regulatory reform is driving an interest for collateral management services. Rapid financial market changes are impacting management and mobilisation of collateral and this development is expected to continue going forward.

2.2 Developments in the Nordic countries including Sweden

In the Nordic countries, financial market participants are typically active on a number of markets. Harmonisation across these markets to the extent possible has thus historically been, and still is, a priority for financial market participants in the region.

New and changing demands have led the CSDs active in the Nordic countries to engage in a number of activities recently.

In Finland, Euroclear Finland is currently launching a new CSD platform. The platform is being launched in three releases; the first release, replacing the previous fixed income system took place in February 2015. A second release is scheduled for May 2016 and will replace the equity transaction system and a third release will connect the Finnish market to T2S in 2017.

In Norway, VPS has recently bought a new CSD system. The project to implement the new system started in 2014, and is expected to last until the second quarter of 2017. In Denmark, VP has decided to connect to T2S and work is currently ongoing to prepare VP’s existing IT platform for participation. VP will go live in two phases – in a first phase with EUR settlement 2016 and in a second phase with DKK settlement in 2018.

In Sweden, at the same time as harmonisation, in a Nordic as well as in a European perspective, is a priority, there are specific needs that nevertheless should be taken into consideration for a CSD offering its services to the Swedish market. In addition, there are also ongoing discussions regarding future needs and developments.

In general, the number of settlement instructions has decreased in Sweden due to the introduction of mandatory CCP-clearing in late 2009. CCP-clearing was at that time introduced for transactions in large-cap shares executed on a trading venue. CCP-clearing was in February 2015 extended to include also mid-cap shares.

An issue in Sweden regards the account structure. In Europe, there are important differences across the CSDs in regards to their role in the securities safekeeping chain. Two main models can be distinguished:

- a direct holding model in which end-investor accounts are directly maintained at the level of the CSD, and
- an indirect holding model in which end-investor accounts are maintained at the level of CSD participants who in turn maintain omnibus accounts at the level of the CSD.

In Sweden the model is mixed with two account categories, both owner accounts and nominee accounts. While the majority of the accounts – in terms of number of accounts – currently are owner accounts, the majority of the holdings – both in terms of number of securities per account and in terms of value – are held on nominee accounts. The model has served the market well and is expected to continue to do so. A CSD platform thus needs to be able to support this mixed model.
Through the account model, there are volume issues that are not comparable to what a CSD traditionally handles. Volume-demands concern several areas such as processing, design, data storage, replications/continuity solutions etc.

There are further specific instruments, the so called Premium Lottery Bonds, for which functionality needs to be safeguarded. Premium lottery bonds are a savings product where, instead of interest payments, investors can win cash prizes tax-free. To be able to draw the prizes every single lottery bond in an issuance is identified both with the ISIN number as well as by a unique combination of a series number and an order number within the series. For a consecutive numeric order of 10 bonds a guaranteed prize is often given. The instrument has been issued since 1918 by the Swedish National Debt Office. A new CSD system should support issuance, DvP/FoP settlement in the secondary market and functionality for management of maturities and draws for these instruments.

There are also issues in relation to the account structure and the current set-up that have been identified earlier by Swedish market participants where there are gaps today which need to be addressed going forward. First, there needs to be an agreement between all the investor/account owner and their Account Operator. For some of the existing accounts in Sweden there are currently no such agreement, which is problematic for a number of reasons. Second, the Account Operator must be able to not only credit but also debit the account owner’s securities and cash account in relation to corporate actions, and finally, the securities account in the CSD must be linked to a cash account which the Account Operator can access, i.e. a cash account with the Account Operator, and thus not another bank.

There is also at this juncture uncertainty as to whether Sweden should connect to T2S or not. A decision will start to be prepared during 2015 and will most likely be taken during winter 2015. This uncertainty implies that the functional scope for a new CSD platform is not known. Whereas the requirements of a CSD remains the same regardless whether Sweden joins or not, joining T2S would have a number of implications.

First, if joining, there are functionalities on the T2S platform that, depending on the timeline for joining, would not need to be duplicated on the local CSD platform. The most important of these functionalities regards liquidity management and liquidity optimisation. T2S has all the necessary functionality in this area.

Second, in order to be able to migrate to T2S at all, a CSD platform must further comply with the following requirements:

The CSD system must be able to support both a “hybrid layered account model”, where accounts and holdings may be either on the T2S platform or on the CSD’s platform, and a “direct account model”, where all accounts and holdings are on the T2S platform, in an efficient manner for the Swedish market to allow the outsourcing of settlement and accounts to T2S.

Both account categories - owner accounts and nominee accounts - should also be allowed to migrate onto T2S. In case of a migration to T2S, only CSD accounts on T2S would be linked to cash accounts.

The principles and model applied in a layered model for “mirroring”, at the level of T2S, the balance for securities held at the level of the CSD system must be clearly described.

Since the Swedish market at this point in time has not yet made a firm decision whether to join T2S this condition may at the start of T2S create a higher rate of competition in loyalty when issuers decides on CSDs to easily reach investors in the 23 T2S markets that will be available as “one” and
vice versa for investors. It is therefore important for the Swedish market that a local CSD in Sweden, outside T2S for the time being and possibly also in the years to come, is attractive for issuers and investors when the competitive landscape changes with T2S.

In sum, from a Swedish perspective, whereas harmonisation to the extent possible remains to be a priority, there are a limited number of issues that are primarily national in scope that will also need to be taken into consideration when planning for and developing a new CSD platform for the Swedish market. At the same time, there are major European developments that most likely will change the post-trade securities industry going forward. There is still uncertainty regarding a number of these developments; the requirements imposed on CSDs by CSDR and, perhaps most importantly, whether the Swedish market should be connected to T2S. In any case, a CSD platform will need to be T2S-ready and due considerations need to be given to assure that the Swedish market remains attractive for issuers and investors going forward.
3. High-level requirements

In this part, the high-level requirements identified by the CSD WG to which a CSD platform shall comply are presented. The requirements are described on a high level and are not described in detail.

The requirements are divided under three headings; general and fundamental requirements (3.1), functional requirements (3.2) and non-functional requirements (3.3).

3.1 General and fundamental requirements

There are a number of general and fundamental requirements to which a CSD platform must comply.

A CSD platform must first and foremost be designed to ensure that the CSD, its issuers and its participants can be compliant with applicable laws and regulations including, but not limited to, the CSDR and the CPMI-IOSCO PFMI discussed in section 1.1.

The platform must further be designed so that it is possible to cater for the needs resulting from upcoming regulations1. In this respect, the new CSD platform must be “future proof”, i.e. be designed and set up in a manner that allows efficient development over time, due to a changed regulatory framework, due to changes in volumes or due to requests from the market (e.g. new financial instruments issued with the CSD, new products or services, a T2S outsourcing and easy establishment of links to other CSDs).

A CSD platform must enable stakeholders, e.g. issuers and participants, to obtain more effective and efficient processes, both in comparison with certain current processes and with the aim to reach as close as possible to a standardised set-up in line with European standards. The goal should be to have a market which remains attractive for all investors and issuers and where practices are recognisable in a European perspective.

A CSD platform needs to be compliant with ISO 15022 and ISO 20022 in parallel.

A CSD platform must support and apply proper segregation in its registers and processes to avoid commingling of different parties’ securities and cash.

The CSD must use terminology known and accepted by stakeholders (issuers, CSD participants and their clients, account holders, vendors and other infrastructures); ideally European standard terminology.

The CSD must allow for CSD participants to decide which roles and tasks need 2-eye or 4-eye principles.

It must be possible to use local language (including Swedish letters, Å, Ä and Ö) e.g. for information regarding names and addresses for account holders and issuers etc.

Finally, there are a number of areas which the CSD WG consider to be important and which should be discussed and agreed between the CSD and its participants:

1 For example, the Capital Markets Union Initiative that was recently launched in the EU could lead to changed requirements in the future.
- Access rights and segregation of duties; the design of users’ access rights and profiles in the CSD system must support the legal obligations of CSD participants to limit users’ access only to functionality, transactions and accounts of relevance for the user. Access to historic data must be ensured after transition to a new platform.
- Client and account data should not be shared between Account Operators.
- The CSD system must have rules for archiving.
- The participants of the CSD should be offered different connectivity options.
- Audit trail and logging on all levels should be shown to users and possible to extract through reports.
- Communication formats: whenever applicable, internationally agreed formats for communication should be used (i.e. applicable ISO standards).

3.2 Functional requirements
The CSD WG has grouped core functionality into seven areas; participant set-up, roles and hierarchies, account model, account categories and account types, transaction flows (settlement and corporate actions), liquidity management and optimisation, reporting and query tools, static data and local requirements in addition to those described in previous section (3.1).

3.2.1 Participant set-up, roles and hierarchies
The set-up and hierarchy of roles is fundamental to how a CSD system supports the processes, e.g. issuance, settlement and asset servicing. The set-up of the hierarchy of roles is a critical matter which must be tailored by the CSD to support members’ business models and at the same time allow for a shifting regulatory environment. It is therefore important to the market that there is flexibility in the CSD system and that it allows existing roles on a “stand-alone” basis.

A CSD participant, a Swedish or non-Swedish financial institution that has been authorised as a CSD participant by the CSD, can have multiple roles in the CSD but must have at least one role. It is the CSD that sets up and maintains CSD participants and their roles in the CSD system. A CSD participant shall be able to tailor the set-up of its hierarchy (identities and roles). In the CSD system it should be possible to search and view CSD participants, their roles and the interconnectivity between these roles – internally within a CSD participant but also roles linked to other CSD participants in the CSD.

Regulations such as CSDR bring requirements, e.g. in the area of settlement discipline, which might incentivise a more diverse set-up.

The CSD membership should be defined and agreed at the level of a legal entity. A proper identification should be used for the legal entity and for its identities and roles in the system. The CSD participant (one legal entity) shall be able to maintain as many membership identities as it needs for the purpose of safekeeping securities, performing settlement, asset servicing or acting as an issuer agent.

There are today five existing roles: Clearing Member, Account Operator, Nominee, Settlement Bank and Issuer Agent. The roles in the CSD system are possible to have independent of other roles, i.e. a certain role must not require that the CSD member also have one or more other roles with the CSD.

The Account Operator has a technical connection with the CSD and opens, amends and closes accounts on the instruction from the account holders. Accounts opened by one Account Operator in the CSD system are fully separated from accounts opened by other Account Operators. It is possible
for an Account Operator to have Power of Attorney to accounts belonging to Account Operators other than itself. It should be possible to outsource the role as Account Operator to another operator. The CSD participants, acting as Account Operators, accesses the accounts via the interfaces provided by the CSD; access is either via an application-to-application interface, where the participant’s system has an interface to the CSD’s system, or via a Graphical User Interface (GUI) where a user is accessing the CSD system directly to instruct or query the system. The role does not automatically mean that the Account Operator has access to all accounts.

On behalf of Settlement Participants and Issuer Agents, Account Operators are generally responsible for sending settlement instructions, amendments and cancellations to the CSD and are also recipients of feedback of these settlement instructions in form of status, allegements and settlement confirmations. On behalf of account holders, Account Operators are also responsible for sending instructions of elective corporate action events to the CSD and receive feedback of these instructions.

The role Account Operator is expected to be maintained in Swedish legislation and thus needs to be supported in a new CSD platform.

A CSD participant shall be able to have multiple Account Operator identities since it must be possible to differentiate between systems used by different business units within the CSD participant and also be compliant with required business models of a CSD participant.

A CSD participant shall be able to use or act as an Account Operator on behalf of another CSD participant.

A CSD participant authorised as a Nominee by the CSD has the right to be registered on a nominee account in the CSD system as the holder of instruments in place of the underlying beneficial owner of the instrument i.e. “Bank X on behalf of owners”. A Nominee is authorised by the CSD as either a Swedish or a non-Swedish Nominee. Through an Account Operator a Nominee can open nominee accounts in the CSD. The Nominee can itself be Account Operator in the CSD or can use the services of an Account Operator.

On nominee accounts in the CSD the Nominee safekeeps the aggregate holdings of CSD registered securities held on their underlying customers’ accounts in their in-house systems.

In relation to their nominee accounts a Nominee is responsible towards the CSD – at the request of the CSD – to provide nominee reporting to the CSD.

A Swedish Nominee is a tax withholding agent and reports withheld tax to the Swedish tax authority on tax withheld in relation to holdings on nominee accounts in the CSD. For non-Swedish Nominees, currently the CSD is the withholding agent. The CSD offers a non-Swedish Nominee tax deduction at source and reports the withheld tax to the Swedish tax authority.

When applicable the Swedish Nominee provides regulatory reporting for its’ underlying customers to the tax authority, e.g. year-end reporting. For owner accounts and for non-Swedish Nominees the CSD currently provides such regulatory reporting.

As holdings on nominee accounts in the CSD are held in the name of the Nominee “on behalf of customers” there is no title transfer i.e. change of ownership from the Nominees underlying customer to the Nominee – the holdings on nominee accounts always belong to the customer.

The role Nominee is expected to be maintained in Swedish legislation and thus needs to be supported in a new CSD platform.
The role as Settlement Participant will also be needed. A Settlement Participant (currently Clearing Member) participates in the CSD’s clearing and settlement and can report trade instructions to the system for settlement. A Settlement Participant (Clearing Member) is responsible for ensuring that securities and payments are settled on intended settlement dates. A CSD participant shall be able to have multiple Settlement Participant identities.

The roles Issuer and Issuer Agent will be needed. An Issuer Agent is an Account Operator with a special authorisation to act in conjunction with the issuance of financial instruments and for corporate actions in issued securities where the participation of an issuer agent is required in accordance with the CSDs Rules for Issuers and Issuer Agents.

The role as Settlement Bank will be needed. A Settlement Bank operates on behalf of one or more Settlement Participant, and handles the disbursement or receipt of payments at settlement.

Changes to roles and responsibilities in a CSD system will impact members’ business models and any changes therefore need to be thoroughly discussed and analysed by the CSD operator and its participants. This process needs to be made clear by the CSD.

3.2.2 Account model, account categories and account types
Currently there are a variety of accounts available to the CSD participants and the account holders. Accounts are divided into two main categories; owner accounts (ägarkonton) and nominee accounts (förvaltankonton). Within these categories there are different account types with differences in terms of service levels, e.g. between a CSD account Basic and a Service Account.

The CSD has outsourced the right to make registrations on a CSD account to an Account Operator. The Account Operator opens, amends and closes the account on the instructions from the account holder.

The account model in the future should primarily be seen from a legal perspective, i.e. there should in a future CSD platform, be two categories of accounts; owner accounts and nominee accounts.

The mixed model of the Swedish market with two account categories, where both owner accounts and nominee accounts are used, shall be supported in a new CSD system. Different account types shall be possible in the system in order for accounts to be used for different purposes, or for different service levels, within the same account category. An example would be own book trading accounts (handelslager) and Service accounts which both are owner accounts, but with different rules and processes associated with them. It must be evident at all times who is the owner, or has the right to dispose of, securities registered on an account in the CSD system. It shall be possible to hold all types of securities on one single securities account, i.e. no segregation as today of AM, equities instruments, and PM, fixed income instruments. The CSD system must allow for registration of rights and restrictions in a manner similar to the existing. The CSD system should for applicable service levels be responsible for taxation management in relation to corporate action processing as well as for required regulatory reporting e.g. to tax authorities. ²

3.2.3 Transaction flows; settlement and corporate actions
A new CSD platform should to the extent possible be aligned with the harmonised European standards for both settlement and corporate actions processing. This includes aligning the transaction flows to the T2S model.

² This is the case for owner accounts and nominee accounts if the Nominee is non-Swedish.
The settlement schedule should be flexible, and easily allow for changes. Night-time settlement should be possible, and it should be possible to have the settlement day start before the actual calendar day. This does not necessarily mean the market requests or desires night-time settlement, but the possibility must exist. If settlement takes place in batches, rather than continuously, the number of batches should also be flexible and allow the market to easily add more batches. Technical netting of securities and “true” netting of cash should be included in the settlement process. Functionality for dissolving “empty chains” should also be included.

Settlement instructions should always be matched before settlement can start; no unilateral transactions should be allowed. Instructions may be sent as unmatched, for the CSD system to match, or as already matched, by a sender which is allowed to instruct on both accounts. The possible matching fields should at least include all the matching fields in T2S, but the matching criteria should be flexible, and allow for market specifics (e.g. organisation number instead of BIC).

Settlement instructions should be of all types supported by the ISO 20022 and 15022 standards and T2S, i.e. DVP, FOP, DWP and PFOD.

Unmatched settlement instructions should be kept in the CSD system for 20 business days after the instructed settlement date or the day of registration, in line with European standards, before they are automatically cancelled by the system. Matched settlement instructions, i.e. transactions, should remain in the CSD system and be moved forward to the next settlement date each day until they are either settled or cancelled.

The CSD system should support hold & release, linking, prioritisation of settlement instructions and partial settlement.

Cancellation of a matched settlement instruction should only be possible bilaterally, by having the counterparty cancel its instruction also.

An allegement functionality should be provided by the CSD system, both for settlement instructions and cancellations.

Settlement messaging should be flexible, both at a general level (i.e. different types of messages) and at a detailed level (i.e. different types of statuses/reasons in the status advice subscription) and account holders/members should be able to customise subscriptions and frequency per account.

The European standards for corporate actions processing should be adhered to, including but not limited to categories of events and key dates and their schedule. All processing should be made in the CSD system, regardless if the event is controlled by an issuer agent or paying agent separate from the CSD. This includes all kinds of cash payments, both from and to the issuer, which should use the same payment mechanism as that for settlement.

Corporate action-related transactions should be processed in the CSD system as (matched) settlement transactions in line with the T2S functionality. However, these transactions should be clearly identified as corporate actions transactions (using the various transaction codes) and the CSD should provide messaging related to these, e.g. status advise or settlement confirmation, as corporate actions messages and not settlement messages.

Instructions for elective corporate action events which may result in movements of securities and/or cash, should be sent to the CSD system as corporate actions instructions. These instructions should be forwarded to the issuer agent or similar party if required, and, once accepted, “converted” into settlement transactions and registered on the CSD accounts.
The CSD system should support transaction management, i.e. market claims and transformation. Automated buyer protection may be provided by the CSD system, but this is purely optional and should only be provided if deemed cost-effective.

The CSD system must keep the same functionality and connections to the collateral system at RIX (the large value payment system at the Swedish central bank) so that a pledge transaction or a release transaction of a pledged security is quick. Authorisation rules must be able to apply so that a pledge transaction can be done by one single user. This is necessary as pledge transactions have to be made extremely quick to solve a situation with lack of liquidity in the central bank system.

3.2.4 Liquidity management and optimisation

3.2.4.1 General
The CSD should cater for settlement in CeBM (central bank money) for SEK and in other currencies if the CSD is a member of the central bank of the currency, and in CoBM (commercial bank money) for other currencies where the CSD is not a member of the central bank of the currency. Where possible, the CSD should use the integrated model where the central bank outsources accounts to the CSD.

Liquidity management in the CSD should be provided through collateralisation and through Settlement Banks having central bank cash accounts in the CSD system.

Settlement Banks should transfer cash to their accounts in the CSD system by crediting the CSD’s cash account in the central bank – the credited cash should then be mirrored to their respective cash accounts in the CSD system. Cash is required for settlement, issuance and corporate action activities in the CSD (settlement payments).

To be able to provide settlement payments in CeBM Settlement Banks should be a member of the respective central bank of the settlement currency e.g. the Swedish Central Bank for SEK or Target2 for EUR and should also be authorised as a Settlement Bank by the CSD.

For Liquidity Management Settlement Participants and Issuer Agents (CSD Participants) in the CSD should have to use the services of a Settlement Bank. The Settlement Bank could be the same entity as the CSD Participant or could be an external entity providing settlement bank services to CSD participants.

Through Liquidity Management services the Settlement Bank should provide guarantees and liquidity for CSD Participants settlement payments in the CSD – according to individual agreements outside of the CSD.

CSD Participants who are authorised as Settlement Banks by the CSD should be identified in the CSD system by their unique BIC11 – this could be the same as the BIC11 of the CSD Participant associated with the Settlement Bank or could be another BIC11 dedicated to the Settlement Bank role.

3.2.4.2 Auto collateralisation
Auto-collateralisation is the process where settlement instructions are settled by automatically triggering a Settlement Banks intraday credit facility with the central bank. This intraday credit facility is collateralised either by the instrument that is being purchased or by instruments deposited on the Settlement Banks collateral account with the Central Bank.

To provide an efficient settlement auto collateralisation service this should be connected to automated substitution - if an instrument that is pledged as collateral for intraday credit with the central bank is required for settlement this instrument should automatically be substituted for other
instruments eligible as collateral on the Payment Bank’s collateral account, thereby releasing the instrument required for settlement.

3.2.4.3 Settlement limit
In the CSD system the Settlement Banks should guarantee the settlement payments of their CSD Participants up to a settlement limit that should be possible to set up on each CSD Participant in the CSD system. It should also be possible for Settlement Participants to set up settlement limits for their clients in the CSD system.

In the CSD system Settlement Banks should be responsible for setting up, maintaining and removing settlement limits for their CSD Participants and Settlement Participants should be responsible for setting up, maintaining and removing settlement limits for their clients - in each respective currency. Settlement Banks and Settlement Participants should be able to utilise A2A API or CSD system GUI for the administration of settlement limits.

3.2.4.4 Cash settlement forecasts
Through the CSD system cash settlement forecasts should be provided to Settlement Banks as well as to their underlying CSD Participants. Cash settlement forecasts should be created by the CSD system in real time. Through the cash settlement forecasts Settlement Banks should be able to monitor the net settlement amounts of their individual CSD Participants as well as the net amounts per each future settlement date at the level of the Settlement Bank. CSD Participants should be able monitor cash forecasts for their own settlement and Settlement Participants should be able to monitor cash forecasts for their clients.

Settlement Banks and CSD Participants should be able to subscribe to cash settlement forecasts through A2A API or through the CSD system GUI. They should also be able to request ad hoc cash settlement forecast reporting through the CSD system GUI.

Cash settlement forecasts should be provided on the level of:

- Settlement Bank
- CSD Participant
- Sub CSD participant (CID)

It should be possible for a Settlement Bank respectively a CSD Participant to request cash settlement forecasts for:

- Settlement
- Issuance related payments
- Corporate action payments

and/or:

- Net of the three payment types

Cash settlement forecasts should always include confirmed redemptions and coupon payments.

3.2.4.5 DvP settlement instructions
Matched DvP settlement instructions should be checked for availability of required instruments respectively cash in the CSD system’s settlement engine through an ongoing lifecycle process during each settlement day. The CSD systems settlement engine should utilise technical netting and optimisation algorithms for detection of the most efficient settlement of each settlement instruction.
at each point in time. The settlement of cash should be on a net basis while the settlement of instruments is on a gross basis.

### 3.2.4.6 Settlement Payments

On the day before the settlement day, and before the start of settlement on each settlement day, Settlement Banks should monitor - in the CSD systems GUI or through A2A API - CSD Participants that have net cash settlement obligations towards the CSD vs their settlement limits to ensure that they have sufficient cash, collateral and/or guarantees to cover these obligations.

Before settlement starts on each settlement day the Settlement Banks should check that they have sufficient collateral and/or transfer cash to enable settlement in the CSD for their CSD Participants settlement obligations.

At the end of the settlement day – if Settlement Banks have excess cash on their cash accounts with the CSD - this cash should be automatically transferred by the CSD to the Settlement Bank’s pre-defined account(s) with the central bank(s).

It should also be possible for Settlement Bank to request transfer of excess cash intraday on the settlement day.

Each deposit and withdrawal of cash to/from a Settlement Banks cash account in the CSD system should be booked on this account. A Settlement Bank should be able to subscribe to account statements from the CSD for its cash accounts through ISO statements for requested periodicity.

### 3.2.5 Reports and query tools

A CSD platform needs functionality for reports and query tools. This functionality is expected to be even more important going forward. In addition to existing regulatory requirements, the CSD WG expects that the CSD regulation and the settlement discipline rules will create new reporting requirements.

The ability of the platform to adapt to new needs and to be able to be customised according to different needs of participants are considered to be important. Also, as reporting needs differ between participants due to their size and/or their business models, it must be possible to tailor the set-up of a participant’s reporting from the system.

It is further assumed that participants and account holders will be able to subscribe to standard ISO messages and statements such as statement of holdings, transactions, pending etc.

All functions must be available in GUI which must be intuitive and user friendly and should be tailored to the user’s access rights. The GUI must support all functionality in the system, partly for contingency reasons but also as smaller participants may choose to use only the GUI. It should also be considered whether certain GUI functions should be available in local language.

Reporting to account holders should be available in local language, in addition to English.

### 3.2.6 Static data

The CSD system should have databases, functionality, messaging and GUI for e.g.

- Instruments including linking to issuers e.g.
  - Instrument identification
  - Classification of instrument types
• Local or linked instruments
• Corporate action events - ISO corporate action event types
• Participants and their linking and identification – BIC11, LEI, personal/organisation number, CSD participant ID
• Accounts including right & restrictions, classifications, account types e.g.
  o Beneficial owner
  o Nominee
  o Cash accounts in different currencies for Payment Banks – Account Operator of these accounts is the respective Central Bank
  o Collateral Accounts for collateralisation of settlement payments - Account Operator of these accounts is the respective Central Bank
  o Issuance
  o Distribution
• System and application parameters
• CSD processing including calendars, schedules, deadlines
  o Settlement
  o CeBM and CoBM payments
  o Corporate action event processing
  o Issuance and distribution processing
• Reporting subscriptions
  o Participants
  o Regulators
  o CSD Operations
• Regulatory and other reporting e.g.
  o KYC
  o AML
  o QI
  o FATCA
  o Tax
  o Nominee reporting (förvaltarrapportering)
• External communications
  o Central and commercial banks
  o Regulators
  o Tax Authorities
  o CSD/ICSD/custodian links
  o Static data information providers
  o SWIFT
  o MQ
• ISIN creation – CSD as numbering agency e.g.
  o ISIN generation
  o ISIN compilation rule

CSDs, for set up and maintenance, and CSD Participants, for search & view, shall be able to easily access static data in the CSD system in GUI but also more automatically. In addition Issuer Agents
should be able to set up and maintain, through ISO messaging as well as through the CSD system GUI, instruments and corporate action events confirmed through CSD four eye verification.

It should be possible to restrict set up, maintenance as well as search & view so that only authorised users at the CSD respectively at the CSD Participants have access.

The CSD system should provide simple and complex searches of static data - all static data attributes should be searchable. The status of a static data attribute should always be shown when viewing the instrument i.e. if the attribute is in status active, non-active, suspended, interim.

The system should provide flexible functionality for static data attributes including where required business logic, calculations, audit trail and logging.

It should be possible for CSD Participants and other interested parties to subscribe - in ISO format - to issuer and instrument data as well as corporate action data from the CSD system.

3.2.7 Additional local requirements
As already mentioned in section 2, there are some local issues to consider. In addition, legal requirements which are specific for the Swedish market are at a high level covered by the general comments made in section 3.1. As a general point, however, local legal requirements, e.g. tax withholding and reporting, nominee reporting (disclosure of shareholders) must be fulfilled.

Solutions to these requirements should ensure efficient handling for both domestic and non-domestic investors, issuers and participants. This should include the use of international standards (e.g. ISO) when applicable.

3.3 Non-functional requirements
There are also non-functional requirements which a CSD platform should comply with.

The CSD platform must have a robust design catering for high volumes of accounts\(^3\), settlement instructions and parallel processing. An example where parallel processing is required is in the processing of multiple corporate action events during very short processing windows.

The CSD platform shall maintain a high level of availability (up-time). Contingency matters shall be considered and discussed with participants e.g. the storage and mirroring of data. As part of contingency requirements a CSD should be able to manage bilateral settlement between parties if CCP-clearing is not possible due to the failure of the CCP (technical and otherwise).

CSD Participants should be able to communicate with the CSD through:

- MQ - ISO20022, ISO15022 messaging as well as A2A API for non-ISO processes such as account management, nominee reporting, numbering of serial bonds, reporting etc
- SWIFTNet – ISO20022, ISO15022, MT payment messaging
- GUI – including all features in ISO messaging + full view and search functionality with drill-down options

The CSD should enable CSD Participants to have both production and contingency communication to the CSD platform.

Further, the following documentation should be available to the participants:

- System design documentation, including a description of the system architecture

\(^3\) As in Sweden, the account model results in large volumes. See previous discussion in 2.2.
- CSD service description
- Functional descriptions with process flows
- Messaging guides – ISO1502, ISO20022 and any proprietary messaging
- User handbook – online and as download
- Contingency documentation

Stable documentation should ideally be available at least 24 months prior to each go-live.

There should be more than one test environment; both a production-like environment and an environment for acceptance test of new developments.

Finally, what regards migration to a new platform, the risks with all migration scenarios are large and that is also the case with the CSD as it is such a major part of the financial infrastructure. Whereas a phased approach to migration seems to be the most suitable, the WG believes the option of a big bang should not be disregarded. The approach to migration and the risks associated with the preferred approach should be discussed with stakeholders. A plan for mitigation of risks has to be produced.
4. The CSD platform replacement project

The CSD WG advises both the CSD and its participants to make use of the “pre migration” period to identify and take care of any matters which could prepare for and simplify the actual migration period.

The CSD’s offering to participants and its goal with a new platform should form the foundation for the forthcoming dialogue with stakeholders. A process with joint requirement work (CSD plus participants), consultation on the CSD’s proposals and, once requirements are agreed, a transparent change request process for any amendments to the agreed requirements is fundamental.

In order for a successful completion of a program of this size, demanding both in terms of complexity and in terms of timeline, it is advisable to early in the process establish an agreement between stakeholders on the principles for interaction. Also, mutual commitment to the program is essential to secure resources. Both these actions would reduce risks in the implementation process of a new CSD platform.

The basis for a successful replacement program is the cooperation between the CSD, the market participants and other stakeholders. The CSD WG has listed examples of areas where it is important that the CSD and stakeholders establish an agreement on principles for cooperation and clarify their mutual expectations.

- Agreed overall time plan. A project timeline should include review and amendment of rule book (e.g. definitions, terminology, rights and obligations).
- Agreed principles for communication with stakeholders, including timeline for documentation, format and place for publication of documentation etc.
- Well established reference groups for business and technical matters.
- Training of users should be planned in close cooperation with participants and part of the planning from start.
- Open information meetings with interested stakeholders.
- A transparent change request process with formal involvement of participants for any amendments to agreed requirements.
- The price model and list of fees are strong incentives when participants chose their set-up. Hence, early availability of these is important for participants.

Most market participants are organised within the Swedish Securities Dealers Association who is prepared to establish reference groups for both business and technical purposes.
5. Summary

In this report, the CSD WG of the SSDA has presented its high-level generic requirements to which a CSD platform should comply.

What regards general requirements, a CSD platform must first and foremost be compliant with applicable laws and regulations. A CSD platform also needs to be able to deal with changing needs/demands in the future. It is the view of the CSD WG that a system that is easy to adapt to changing requirements will be very important going forward. Finally, the CSD platform must enable stakeholders, issuers and participants, to obtain more effective and efficient processes, both in comparison with certain current processes and with the aim to reach as close as possible to a standardised set up in line with European standards.

The functional requirements presented in this report relates to participant set-up and roles, account model, transactions flows and settlement, corporate actions, liquidity management, reports and query tools, static data and local requirements.

Participants’ set-up and roles is fundamental to how a CSD system supports the processes and is a critical matter which must be tailored by the CSD to support CSD participants’ business models and at the same time allow for a shifting market and regulatory environment. Any changes to roles must thus be discussed and analysed thoroughly.

What regards account model, the account model in the future should primarily be seen from a legal perspective, i.e. there should, as today, be two categories of accounts; owner accounts and nominee accounts. The mixed model of the Swedish market with two account categories, where both owner accounts and nominee accounts are used, shall be supported in a new CSD system.

A CSD platform should to the extent possible be aligned with the harmonised European standards for both settlement and corporate actions processing, including aligning the transaction flow to the T2S model. The settlement schedule should further be flexible and allow for changes. Hold and release, linking, prioritisation of settlement instructions and partial settlement should be supported.

The CSD should cater for settlement in central bank money for SEK and other currencies where the CSD is a member of the central bank of the currency and should use the integrated model where the central bank outsources accounts to the CSD. For other currencies, settlement in commercial bank money should be catered for. Liquidity management in the CSD should be provided through collateralisation and through Settlement Banks having central bank cash accounts in the CSD system. The settlement system of the CSD should use technical netting and optimisation algorithms for detection of the most efficient settlement of each settlement instruction at each point in time.

A CSD also needs functionality for reports and query tools. It is important that this functionality is possible to adjust to new needs and reporting requirements going forward. All functionality must be available in GUI which must be intuitive and user friendly.

The CSD should have databases, functionality, messaging and GUI for among other things instrument identification, classification of instrument types, corporate action events, participants and accounts. The CSD and its participants should be able to easily access this static data.

There are in addition a number of local requirements that must be catered for by the CSD. Local legal requirements must be fulfilled and the CSD needs to be able to handle certain local instruments.
As the Swedish market has yet not made a firm decision whether to join T2S or not, it is important that a new CSD platform is T2S ready. However, depending on this decision, some of the requirements put forward in this report will be functionality that is available on T2S and thus do not need to be developed for the local CSD platform.

There are also non-functional requirements which a CSD should comply with. The CSD platform should be robust, cater for high volumes and maintain a high-level of availability. Stable documentation should be available to participants, preferably at least 24 months prior to each go-live. The approach to migration to a new platform and the risks associated with the preferred approach should be discussed with stakeholders. A plan for mitigation of risks has to be produced.

Finally, what regards the CSD replacement project the CSD WG emphasises in this report that the basis for a successful replacement programme is the cooperation between the CSD, its participants and other stakeholders. In this respect, many market participants in Sweden are organised within the Swedish Securities Dealers Association who is prepared to establish reference groups for both business and technical purposes going forward.