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ECSDA considerations on ISO messages for financial transactions and recommendations on their use.

*The basis for CSD engagement with local communities and
relevant stakeholders and further preparations.*



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Executive summary

The standardisation of messages has been a key enabler to improve the level of Straight Through Processing (STP) of (I)CSDs services over the past decades. The way (I)CSDs communicate with their participants is in constant evolution.

The main standard used today in the post-trade industry is ISO 15022, but in the last few years, the usage of a more sophisticated version of ISO standard, ISO 20022, has increased.

The evolution of the ISO standard has been driven by the following key factors:

- i) Creation of market infrastructures (e.g., T2S),
- ii) EU legislation requirements (e.g., SRDII),
- iii) Modernisation of (I)CSDs' own IT systems, and
- iv) Definition of new market standards (e.g., SCoRE).

European CSDs aim at further increasing the standardisation and efficiency of post- and pre-trade processes. The emergence of the new ISO 20022 standard for messaging is in line with this objective. Although along with the benefits, it also brought challenges for (I) CSDs and their participants; a coexistence period between the existing formats (ISO 15022 and/or proprietary messages) and new formats (ISO 20022) is needed to ensure a smooth transition to a new message format.

The ECSDA Board agreed to set up a dedicated Messaging Task Force to assess the current state of use of the different messaging standards and plans related to the migration to ISO 20022, as well as provide recommendations on the way forward.

Besides some background information and the expected evolution of the ISO standards in the European CSDs community, this paper provides recommendations on:

- The rules to put in place to ensure a smooth transition during the co-existence of the two ISO standards;
- The timeline for the discontinuation of ISO 15022 for some business domains;
- The usage of ISO 20022 data dictionary as a way to structure the information beyond the message formats.

Please note that these are *recommendations* and ECSDA intends to consult the relevant market stakeholders where needed.

While this paper was in preparation, ISSA, and ECSDA have also been working together on a survey addressed to the key financial industry actors about ISO 20022. The conclusions of the present paper should not be in contradiction with the analysis of the joint ISSA – ECSDA survey.

I. Background

ISO 20022

ISO 20022 is an international message standard introduced in 2004. It aims at harmonising pre-existing message standards (such as ISO 15022, SWIFT MT message, FIX) by using the same model and syntax.

The ISO 20022 standard makes a clear distinction between:

- Business/semantic

The ISO 20022 methodology starts with the creation of the business model covering a very large set of concepts used in the financial industry. It provides a definition and a structure for each of them.

- Syntax

The ISO 20022 messages are implemented using the XML format (and related XSD schema defining the detailed message structure).

The maintenance and evolution of the ISO 20022 standards are managed by the ISO 20022 Standard Evaluation Group made up of industry experts. It ensures consistent evolution of the existing messages and the creation of new ones.

For several years, ISO 20022 messages have been in use across the world, including, by CSDs and ECB T2S. Over the next three years, a new large migration wave will gradually take place to replace SWIFT MT messages with ISO 20022 in the domain of cross-border payments. The ECB AMI-SeCo [Single Collateral Management Rulebook for Europe \(SCoRE\)](#) standards will also reinforce the usage of ISO 20022 in i) corporate actions, ii) triparty collateral management, and iii) billing domains.

Main differences between ISO 15022 and ISO 20022

ISO 15022 and ISO 20022 use two different syntaxes. The compatibility between the two depends on the business domain. Some sets of messages have a similar structure in both formats (which allows interoperability), and others have a completely different structure (which makes the translation from one to the other very complex).

The two examples of message extracts below illustrate the issue.

1. Example of a corporate action announcement:

In this first example, the information is structured similarly in ISO 15022 and ISO 20022.

Translation possible

ISO 15022	ISO 20022
...	...
:22F::CAEV// INTR	<EvtTp>
:22F::CAMV// MAND	<Cd> INTR </Cd>
:16S:GENL	</EvtTp>
:16R:USECU	<MndtryVlntryEvtTp>
:35B:ISIN FR1234567890	<Cd> MAND </Cd>
...	</MndtryVlntryEvtTp>
	<UndrlygScty>
	<FinInstrmId>
	<ISIN> FR1234567890 </ISIN>
	...

2. Example of a general meeting notification:

This second example shows that, for some message types, the translation is not possible because of the ISO 20022 richer structure. In this case, ISO 20022 brings significant added value.

No translation !

ISO 15022	ISO 20022
...	...
:22F::CAEV// MEET	<Tp> CMET </Tp>
...	...
:16R:ADDINFO	<Rsltn>
:70ADTX:	<IssrLbl> 1 </IssrLbl>
1 Approve the company's accounts. 2 Confirm dividend	<Desc> Approve the company's accounts </Desc>
...	...
	</Rsltn>
	<Rsltn>
	<IssrLbl> 2 </IssrLbl>
	<Desc> Confirm dividend </Desc>
	...
	</Rsltn>

Free text vs
structured data

In addition, in some cases, ISO 20022 messages do not have an ISO 15022 equivalent (e.g. the shareholder identification or market claim messages for which free text content must be used.).

These examples also illustrate that, depending on the message set, the coexistence is possible (because of a similar message structure) or could lead to a very complex translation which could break the STP in many occurrences.

Even for messages having a similar structure in ISO 15022 and ISO 20022, some technical differences exist. For instance, i) the maximal length of a reference in ISO 15022 is 16 characters but a reference in ISO 20022 can have up to 35 characters or, vice versa, ii) a rate can have up to 13 decimals in ISO 15022, while the maximal number of decimals in ISO 20022 for the same field is 10. To ensure full interoperability, it will thus be required to implement some restrictions in message usage both for ISO 15022 and ISO20022 standards. This point is covered in more detail in Section IV.

ISO 20022 beyond messages

As mentioned earlier, ISO 20022 makes a distinction between the business model and the message syntax. The ISO 20022 business model contains a large data dictionary that can also be used to structure the information in other syntaxes. In the case of Application Programming Interfaces (APIs), this could be in JSON, which is the most common format used in APIs).

II. Current use of ISO messages by CSDs and their plans

Based on the consultation of the ECSDA members (23 CSDs provided input), the following trends have been observed in the current and future usage of ISO 15022 and ISO 20022 in nine main domains:

General meetings

Since SRD II implementation, most European CSDs and their participants use ISO 20022 for securities falling under the SRDII scope (listed equities of EEA companies) but some CSDs have extended ISO 20022 to other asset classes. Multiple CSDs are even considering discontinuation of former message formats, such as ISO 15022 or proprietary messages.

Corporate actions

The implementation of ECMS and related SCoRE standards will increase the adoption of ISO 20022 in the corporate actions domain as ECMS supports only ISO 20022. The SCoRE CA Standards require the adoption of the messaging standards for corporate actions in two waves: Wave one - (I)CSDs, Eurosystem central banks and Eurosystem counterparties are to adopt ISO 20022 messaging from the date of the ECMS launch (now foreseen on 8 April 2024) and Wave two - other actors involved in the processing of CA and meeting events are to adopt ISO 20022 messaging as of November 2025¹. During the months of the finalisation of the present paper, the exact timeline of Wave 2 roll-outs continued to be discussed by the AMI-SeCo participants. ECSDA will take into account the related AMI-SeCo discussions.

As a result of the ECSDA survey, six (6) CSDs reported that they already support ISO 20022 for Corporate Actions, and other EEA CSDs should start offering ISO 20022 in the coming years due to the implementation of ECMS and the related SCoRE standards. The implementation of ISO 20022 is also, in some cases, a consequence of CSDs' IT modernisation and cross-market harmonisation projects building upon ECMS and SCoRE Standards to create further efficiencies.

Despite the willingness of some CSDs to discontinue ISO 15022 sooner rather than later (because of dual maintenance cost/complexity), none have already a defined plan to decommission ISO 15022 and fully adopt ISO 20022. Most of the feedback (65%) indicates that discontinuing ISO 15022 for Corporate Actions by 2027 would be too early (lack of participants' readiness and time required to adapt) but it could be an achievable timeline if the deadline is set several years later.

¹ AMI-SeCo, *Single Collateral Management Rulebook for Europe*, December 2021, p. 7. Available at: https://www.ecb.europa.eu/paym/intro/publications/pdf/amiseco202112_corporateevents.en.pdf "In Wave 1 (I)CSDs, Eurosystem central banks and Eurosystem counterparties will implement ISO 20022 messaging by November 2023. Other actors involved in the processing of CA and meeting events will then adopt ISO 20022 messaging as part of Wave 2, which has an implementation deadline of November 2025." ECSDA note that with the postponement of the go-live date of ECMS to April 2024, the corresponding SWIFT Release and the deadline for compliance with the Standard were also moved April 2024.

Settlement & reconciliation

Because of T2S, a very large majority of CSDs already support ISO 20022, on top of ISO 15022 (some also support proprietary formats). However, the willingness to fully move to ISO 20022 is lower than for asset servicing/corporate events domains. The reason for this is that the market appetite/readiness is low and, unlike for asset servicing, there is no regulatory or market infrastructure initiative to push for a full market migration to ISO 20022. The low added value of ISO 20022 compared to ISO 15022 in this domain also limits the appetite for a bolder move.

We, therefore, expect that ISO 15022 will remain the dominant standard still for a longer period.

Funds

The funds market has been in a coexistence phase for a couple of years and both ISO 15022 and ISO 20022 are used. CSDs' feedback seems to indicate that ISO 20022 would be slightly more used than ISO 15022 but, at this stage, there is no plan to decommission ISO 15022.

Collateral management

Similarly to corporate actions, we observe the intention to adopt ISO 20022 in Collateral management because of the ECMS/SCoRE standards implementation. However, the market readiness and appetite are still quite low, a full market adoption of ISO 20022 (and decommissioning of ISO 15022) will probably not happen in the coming years.

Clearing

Very few (three) CSDs offer clearing services. For those supporting it, the supported formats are either ISO 15022, ISO 20022, or proprietary formats. Due to the limited representation of CSDs, it is not appropriate for us to take a view of the situation in this domain.

Regulatory reporting

Regulatory reporting is supported by various formats (ISO 15022, ISO 20022, or proprietary) depending on regulation requirements.

Payments

As per ongoing initiatives (CPBR+, T2/T2S, CHAPS and others) and the deadline to decommission cash MT messages by the end of 2025, most CSDs will gradually migrate to ISO 20022.

III. Main drivers & challenges to implementing ISO 20022

The main **DRIVERS** to implement ISO 20022 are summarised below:

- In some domains, the ISO 20022 messages allow the exchange of better structured and richer information compared to existing ISO 15022 / MT messages (for instance general meetings and payment messages contain richer information than their equivalent MT messages);
- Legal/Regulatory requirements can impose the reporting of specific information defined or developed only in the ISO 20022 standards (e.g., SRD II shareholder identification and general meetings, SFTR, CSDR);
- Some messages (payment) in older formats will be decommissioned in the coming years;
- Market standards (AMI-SeCo SCoRE) require the offering of ISO 20022;
- Some market infrastructures (e.g., T2S or ECMS) impose the usage of ISO 20022;
- Beyond messaging, ISO 20022 also offers a well-documented data model/data dictionary that can be used to structure information and leverage it in any other communication means (including, for instance, APIs);
- Usage of more modern technology (ISO 20022 is based on XML which is a more common format than the FIN format of ISO 15022 messages);
- Consistency of message format: when ISO 20022 is already used for multiple business domains, extending it to other business domains can increase consistency and rationalise systems infrastructures.

On the other hand, the implementation of ISO 20022 faces some CHALLENGES:

- It usually requires costly developments (but does not always bring improvements compared to ISO 15022);
- It requires building expertise on operational users' and IT experts' sides;
- The migration to a new format cannot be done alone but is tightly linked to the readiness of counterparties with whom messages are exchanged. This can result in local implementation limited to direct participants.

Due to the above-mentioned challenges, the implementation of ISO 20022 is usually supported by a period of coexistence to allow market players to migrate at a different pace.

IV. Coexistence

The coexistence of multiple message formats is not new. Several CSDs already offer various message formats to interact with their counterparties which can be ISO 15022, ISO 20022, or proprietary formats. We observe that proprietary format is being gradually phased out by several CSDs and the dominant message formats are now ISO 15022 and ISO 20022.

The settlement in T2S is based on ISO 20022 but many institutions are still using ISO 15022 for the settlement activity. Legislation, such as SRD II or CSDR settlement penalties, has recently increased the usage of ISO 20022. Soon, the SCoRE standards will also extend the usage of ISO 20022 to all corporate actions in parallel with ISO 15022 which is still the dominant standard for Corporate Actions.

As a result, the CSDs have (or will have soon) to support two standards in parallel to interconnect with the various types of counterparties (participants, T2S, ECMS, issuer agents, etc). (In addition to some proprietary formats are still supported by some CSDs).

Offering a coexistence of ISO 15022 and ISO 20022 messages has multiple benefits:

- Gradual transition and coexistence limit the risk of a big bang migration approach;
- The CSDs participants can migrate to ISO 20022 at their own pace (which can depend, for instance, on the modernisation of their infrastructures);
- Offering flexibility in message format avoids barriers for participants to connect to a CSD which would impose only one of the standards.

Nevertheless, coexistence also presents the following drawbacks:

- It creates additional costs because of the maintenance of two sets of messages in parallel. Consequently, the efforts are doubled for each SWIFT release, any system upgrade or market practice evolution;
- The coexistence requires developing and maintaining the expertise in two standards, both on the IT and operational side;
- The translation from ISO 15022 to ISO 20022 is not always possible because structured fields are not always available in ISO 15022 messages.
- Supporting both formats also requires limiting the use of some fields both in ISO 15022 and ISO20022. For instance, to ensure backward compatibility, some fields' length must be reduced and the full character set of ISO 20022 can't be used.
- Use of non-harmonised coexistence rules or non-application of coexistence rules by some entities could result in processing information in an inconsistent way (for instance, CA event information could slightly differ depending on the message sender).
- Similar results could occur even if two CSDs are using the same coexistence rules but manage non-compliant messages in a different way: either repair manually or reject. (For reference, T2S reacts by the technical rejection of messages breaking the coexistence rules as those rules are hard coded in the message schemas.)

Section VI of this document describes the recommendations of the ECSDA Messaging Task Force to facilitate the coexistence period.

V. Alternative channels, including APIs

As highlighted in the introduction, the ISO 20022 is not only a set of messages but also a full data dictionary of business concepts. The elements of this data dictionary can be used in any communication means.

This includes, for instance, API which is more and more used in the industry. Using standardised data increases interoperability and consistency across communication channels.

ISO 20022 will be an enabler to develop APIs in a scalable manner. To support core services, it makes sense to define standardised API resources. This will avoid that each CSD uses a different data structure in APIs providing similar information.

ECSDA supports the ongoing initiatives and working group (ISSA, ISO SEG) promoting standardisation of API using ISO 20022.

APIs should first be used as an additional channel to support the flow of information not covered by existing messages. In the future, API could also become a real alternative to traditional message-based interfaces. *ECSDA will monitor this evolution and the readiness of the CSDs and their participants to explore this new communication means.* ISO 20022 will certainly be a key enabler to ensure a consistent approach to building interoperable APIs.

VI. Recommendations

We observed that the adoption of ISO 20022 is highly variable depending on the business domain. ISO 20022 could soon become the main standard for some domains (e.g. payments, general meetings) but ISO 15022 will probably remain the dominant messaging format for some other domains (e.g. settlement and reconciliation). The ECSDA Messaging Task Force does not deem it an issue to have differing migration paces per domain.

Once a domain starts its migration to ISO 20022, it is key, in the ECSDA view, to define a transition period. Such a transition period shall be long enough to allow the smooth migration of CSDs' participants.

The main recommendations of the ECSDA Messaging Task Force are articulated around the following:

- 1) The rules to apply to ensure interoperability during the coexistence period,
- 2) Recommendation on the timing of when ECSDA CSDs should stop supporting ISO 15022, and
- 3) Usage of ISO 20022 as a data dictionary for other communication means.

These recommendations will be further confirmed based on exchange and consultation with the relevant stakeholders.

1). Interoperability

Coexistence rules

In order to support interoperability between ISO 15022 and ISO 20022, the ECSDA Messaging Task Force strongly recommends **using the same field limitations in both standards**. For instance, using a maximum of 16 characters in references allows processing both in ISO 15022 (maximum 16 characters) and in ISO 20022 (maximum 35 characters). This way, the information can be transmitted through the chain of holding without any truncation. (It is important to note that for some fields, ISO 20022 can also be more restrictive, it will thus be required to implement the shortest field length between the two standards). Detailed coexistence rules for ISO20022 messages are *discussed further in the relevant fora, and should be made available shortly. These rules could slightly differ per domain/message set.*

They are mainly based on the rules already defined and used today by T2S.

Another point that still needs to be harmonised is how exactly the coexistence rules are to be applied in the areas different from settlement and reconciliation. In particular, T2S has implemented the coexistence rules at the level of the message schema, which results in the technical rejection of all such messages. However, in the area of CAs repairing messages is common practice but in this case, there is the risk that one CSD may process a CA event (if it repairs a non-compliant message), while another CSD does not process the same event (if it rejects the message at the technical level).

Versioning

When using ISO 20022, the ECSDA Messaging Task Force recommends ***always using the latest version of the messages (apply for yearly release)*** to benefit from messages evolutions and use the same message version in the whole chain of holding. This also avoids alteration of data and ensures compatibility with ISO 15022 which follows a yearly maintenance process. Supporting the coexistence of ISO 15022 and ISO 20022 is quite challenging but supporting multiple versions of ISO 20022 would be even more complex. The number of parallel versions of the same message (e.g. MT564, seev.031 v10, seev.031 v11, seev.031 v12) could soon become unmanageable. That is the reason why all intermediaries and platforms (including T2S) must use the same version of the ISO 20022 messages.

Customisation

Even the use of the latest version of ISO 20022 by all parties may not result in optimal use of the new standard. For example, T2S and ECMS are applying comparatively more restrictive customisation of the messages used by them than the other parties resulting in technical rejection of messages which may contain some fields, even if this may not be used by T2S or ECMS. Instead, the approach should be, where possible, to ignore the content of such fields and pass on the information where relevant. Thus the ECSDA Messaging Task Force strongly recommends to market infrastructures, market participants, authorities and providers of outsourcing services work together to minimise the customisation of messages where possible using as a basis the respective SMPG templates.

2). Mandatory usage of ISO 20022

To limit the coexistence issues over time (and related cost/complexity) the ECSDA Messaging Task Force recommends that the CSDs discontinue ISO 15022 after a given period of coexistence, for some business domains. ***This discontinuation can be applied earlier by markets that would be ready earlier to fully migrate.***

The ECSDA messaging task force recommends the following **migration approach** for the **European CSDs and their participants**:

- Corporate actions:

Further to wave 2 of the SCoRE standards, we expect a large adoption of the ISO 20022 for Corporate Action as of the exact date for wave 2 that will be confirmed.

ECSDA recommends that CSDs stop offering ISO 15022 five years after the SCoRE wave 2 adoption, which would mean discontinuing ISO 15055 in around 2030 (this date might be reviewed depending on the date that will be agreed upon for the SCoRE wave 2, which is still under discussion at AMI-SeCo).

- Market claims:

The market claims should follow the same migration path as corporate actions.

ECSDA recommends that CSDs stop offering ISO 15022 messages on market claims at the same time as corporate actions, in 2030 (subject to confirmation of SCoRE wave 2 date).

- **General meetings:**

To a large extent (mainly SRD II scope), ISO 20022 is already used for meetings. It should also be extended to other instruments (beyond SRD II scope) with the adoption of the SCoRE wave 2.

As ISO 20022 is already largely used for General meetings, the ECSDA messaging task force recommends that CSDs stop offering ISO 15022 within the next three years, which means discontinuing ISO 15022 by 2026.

- **Settlement and reconciliation:**


The market appetite to discontinue ISO 15022 is still low and we don't expect CSD participants will be ready to fully migrate to ISO 20022 in the coming years.

For this domain, no end date can be proposed at this stage. This domain will be monitored and reassessed in the future.

- **Other domains:**

The task force does not provide recommendations about the migration of other business domains, such as funds, triparty collateral management, and clearing as these services are offered by a limited number of CSDs. No recommendation is proposed neither for the regulatory reporting as highly dependent on the regulation itself.

The timeline below summarizes this migration approach and the related milestones:



	Current situation	2024	2025	2026	2027	2028	2029	2030	Later ?
Corporate actions	Mainly ISO15022	ECMS: ISO2022 mainly for NCBs	SCORE wave 2 (to be confirmed)					Discontinue ISO15022	
Market claims	ISO15022							Discontinue ISO15022	
General meetings	ISO20022 for SDR II scope	ECMS: ISO2022 mainly for NCBs	SCORE wave 2 (to be confirmed)	Discontinue ISO15022					
Shareholder id	Mainly ISO20022								
Settlement & reco.	ISO15022 & ISO20022								No end date planned yet for ISO15022

Figure 1. Milestones for decommissioning ISO 15022 for business domains. Source: ECSDA

It is also strongly recommend to avoid usage of proprietary formats. . They should instead, when possible, be replaced by ISO messages.

3). ISO 20022 to structure information in APIs

Another dimension to be considered is the usage of ISO 20022 as a data dictionary that can be used in any communication means such as APIs. ***ECSDA supports standardisation initiatives about APIs as they will allow leveraging the flexibility of APIs while still allowing standardisation of the information.***

Appendix

- **Reference to additional sources of information**

- www.ISO 20022.org
- www.smpg.info
- [SCoRE Rulebook](#)

Glossary

API – Application Program Interface

(I)CSD or CSDs – Central Securities Depositories, subject to EU Regulation 909/2014 or other national legislation. ICSD stands for international CSD, highlighting a high number of cross-border links, currencies and international participants and issuers services by them, although they are subject to the same legislation as other CSDs.

ECB AMI-SeCo – European Central Bank Advisory Group on Market Infrastructures for Securities and Collateral

ECMS – European Collateral Management System

FIX – Financial Information eXchange

ISO – International Organisation for Standardisation

MT message – or ISO 150022, is a message format in use for several services provided by financial institutions

SCoRE – Single Collateral Management Rulebook for Corporate Actions

SRD II – Shareholders Right Directive II, **Directive (EU) 2017/828**, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017L0828>

STP – Straight Through Processing

XML –Extensible Markup Language (XML) is a markup language that provides rules to define any data.



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