ISO 20022 implementation compliance checklist

Introduction

The ISO 20022 Registration Authority (RA) is often questioned about how to ensure compliance with the ISO 20022 standard and whether there is a possibility for an implementation to get certified as ISO 20022 compliant, as is possible for other standards such as ISO 9000.

There is no official certification authority for ISO 20022, and the implementation of ISO 20022 message definitions will depend a lot on the specific requirements of the community that is implementing, that is, the 'community of users'.

The aim of this document is to give guidance to implementers about some key aspects to be considered in order to be as compliant as possible with the standard. As the name indicates, it is a checklist that can be used by implementers, adopters (consultants, tool providers, service providers, etc.), and consumers of ISO 20022 messages to tick whether they have considered each of the key aspects related to ISO 20022 compliance.

This checklist relies on a strict list of compliance rules, defined by the ISO 20022 Technical Support Group (TSG), which is included in the Appendix.

Checklist

1. **Use of official ISO 20022 Message Definitions**

   The first requirement is obviously to base the implementation on the official ISO 20022 Message Definitions that are registered and published by the ISO 20022 Registration Authority in the Catalogue of Messages on the iso20022.org website. ISO 20022 Message Definitions usually permit a wide range of different implementations. The community of users will need to select an implementation that complies with the Message Definition (see item 3 below), while best addressing their specific needs.

   - It is worth mentioning that, if some requirements cannot be addressed by a Message Definition, there is a possibility, for any interested party, to introduce a request to adapt the Message Definition to address a specific requirement (see ISO 20022 Maintenance Process).
   - For the benefit of users that are participating in many ISO 20022 communities, it is important to ensure some consistency between implementations of the same ISO 20022 Message Definitions. Following the recommendations of Market Practice Groups[1], participating to these Market Practice Groups, or consulting/adopting the implementation guidelines produced by other existing community of users, can help ensuring this consistency.
   - Also for the benefit of users that are participating in many ISO 20022 communities, it is important to adopt the new versions of messages and to synchronise the migration to the new versions across communities of users. ISO 20022 uses a yearly

[1] Examples of Market Practice Groups include Securities Market Practice Group (SMPG), Common Global Implementation – Market Practice (CGI-MP), ISO 20022 Real Time Payments Group (RTPG), Payments Market Practice Group (PMPG).

maintenance process that culminates with the publication of any new versions of Message Definitions usually in February[2]. Advance draft versions of these new versions are already made available in December of the previous year.

- Implementers and representatives of communities of users are also welcome to participate in the relevant ISO 20022 Standards Evaluation Groups (SEG) which are in charge of evaluating and approving changes requested to existing Message Definitions and new versions of Message Definitions. Participating in these groups allows users and implementers to make sure that the requested changes are justified and are worth the required implementation effort.

2. **ISO 20022 Business Transaction**

   Although Business Transactions are not (yet) formally described in ISO 20022, the Message Definition Report (MDR) Part 1 of each message set describes how the organisation that developed the message set recommends the various participants to the transaction to exchange the messages. The MDR Part 1 is one of the three parts of the MDR available for each message set in the Catalogue of Messages.

3. **Messages must be valid ISO 20022 Message Instances**.

   The actual message instances that are exchanged by the users of the community must comply with the corresponding ISO 20022 Message Definitions. This implies that the XML messages (.xml) must, among others, be valid against the corresponding XML schema (.xsd)

[2] The official publication deadline of new versions resulting from the yearly maintenance is April-May of each year.

published in the Catalogue of Messages[3]. This is one of the advantages of XML; the XSD permits an easy validation of the message instances.

- Some Market Practice Groups, adoption initiatives or communities of users may generate and publish XML schemas which look like the original ISO 20022 XML schemas, but are in fact restricted versions of the original schema – or subsets - where all the items of the original ISO 20022 schemas not relevant to their implementation have been removed. If they are constructed in a proper way, in compliance[4] with the original ISO 20022 schemas, these subset schemas can be very useful for the community of users to test that their implementation complies with the restrictions they have agreed. The actual ISO 20022 compliance is however always checked against the original ISO 20022 schemas[5] published on the iso20022.org website.

4. Messages must respect the ISO 20022 Constraints

Message instances must be valid against the Constraints that are registered for the Message Definition. Constraints are defined in the Message Definition Report (MDR) Part 2 under the heading "Constraints". They comprise rules and guidelines. The MDR Part 2 is one of the three parts of the MDR available for each message set in the Catalogue of Messages.

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[3] Or the message instance must be valid against the ASN.1 Schema, if such an ASN.1 Schema is published in the Catalogue of Messages. Or the message instance must be valid against an approved Domain Specific Syntax Schema, if so indicated in the Catalogue of Messages.

[4] A subset remains compliant to the original ISO 20022 Message Definition if only optional items are removed or made mandatory, the code sets are restricted to fewer code values, the number of time repetitive items may appear is reduced, a choice is restricted to one or fewer options, the size or pattern of a text item is restricted.

[5] Under certain conditions, subsets can be officially registered by the RA with a specific 'variant' number (see https://www.iso20022.org/variants.page) . In such case, the compliance of the implementation is checked against the schema of the ISO 20022 variant.

- Sometimes, the use of a message set is further described in an ISO 20022 Message Usage Guide (MUG). The guidelines in the MUG are part of the official ISO 20022 documentation and should therefore be complied with.

5. **Messages must use registered code values**

Message Definitions may include internal Code Sets and external Codes Sets. When internal, the possible codes of the Code Set are included in the XML schema, which makes it mandatory to use these codes to comply with rule n° 3 in this checklist. When the Code Set is external to the schema, the possible codes are listed in the lists of External Code Sets that are published on the ISO 20022 website. When message instances use codes from an External Code Set, then these codes must be listed in that external Code Set.

- Please note that these lists are reviewed and may be maintained on a quarterly basis. If you would like to add a code to an external code set, please use the specific change request template.

6. **Use of the Business Application Header**

The application that receives a message needs to process first preliminary business information, such as who are the business sender and receiver, what is the exact purpose, the message reference, the creation date, the priority, the authorized signature, etc. To facilitate this preliminary processing and avoid that the application had to seek this information at different places within each message, a Business Application Header (head.001) was created by the ISO 20022 Technical Support Group (TSG) in 2010. The BAH is thus a separate structure which includes part of the message payload. The BAH has not been adopted consistently across all business areas: most of the Securities and FX message sets are designed to be used with a BAH, while most Payments message sets, already in use in 2010, were not adapted for the BAH, that is, the preliminary business information that is supposed to be conveyed in the BAH is still present in the message itself. As a result, the Catalogue of Messages includes two types of message sets: those that are intended for use with the BAH, because the preliminary business information cannot be included in the message, and those that include the preliminary business information in the message itself

and, thus, do not need using a BAH. Each business domain catalogue of messages (Securities, Payments, Trade, Forex, Cards) indicates whether a message set is intended for use with the BAH.

The general rule is that the use of the BAH is not mandatory and is thus not a prerequisite for achieving ISO 20022 compliance. Each community of users decides whether they want to use the BAH and for which messages.

- Not using the BAH for Message Definitions that are intended for use with the BAH maybe a challenge, since the preliminary business information that is supposed to be conveyed in the BAH cannot be included in the message and will need to be communicated via another means.
- Using the BAH for Message Definitions that already include the preliminary business information is always possible, but will require the community of users to agree on which preliminary business information is to be considered when it is present both in the BAH and in the message itself.
- The BAH MUG describes the usage guidelines for the BAH. Use of the BAH in a manner that is not compliant with the provisions of the BAH MUG results in non-compliance to ISO 20022.

7. Use of Supplementary Data extensions

Many ISO 20022 Message Definitions include a 'SupplementaryData' component that allows communities of users to add information to a message that is not catered for by any other components of the Message Definition. However, use of this component is submitted to strict rules that are described on this page: http://www.iso20022.org/supplementary_data.page.

Only SupplementaryData extensions authorized by a SEG and registered by the RA must be used.

A spreadsheet at the bottom of the above mentioned web page shows the list of ISO 20022 Message Definitions that include a SupplementaryData component and which SupplementaryData message extensions have been approved for use in which Message Definition(s).

Appendix

This document is produced by the RA and the TSG mandated by the RMG through resolution 14/306: "*the RMG resolves for the TSG and RA to document clearly what are the requirements to claim ISO 20022 compliance.*"

Normative references

[1] ISO 20022 edition 2013 Part 1: Metamodel

[2] ISO 20022 edition 2013 Part 4: XML Schema generation

[3] ISO 20022 edition 2013 Part 8: ASN.1 generation

[4] Catalogue of ISO 20022 messages (https://www.iso20022.org/full_catalogue.page)

[5] Business Justification Template (https://www.iso20022.org/documents/general/BJtemplate.doc)

[6] Business Application Header – Frequently Asked Questions (https://www.iso20022.org/documents/general/BAH_FAQ.pdf)

[7] ISO 20022 Documentation Clarity Matrix (https://www.iso20022.org/documents/general/ISO20022_Documentation_Clarity_Matrix.pdf)

Compliance rules

1. MessageDefinitions must be registered and published by the ISO 20022 Registration Authority on the iso20022.org website [4].
2. Messages must be valid ISO 20022 MessageInstances. This means validity against the corresponding SyntaxMessageScheme. SyntaxMessageScheme may be expressed using XML

[1], ASN.1 [3] or another approved Domain Specific Syntax as per the rules and guidelines described in the business justification template [5].

3. When XML is used as SyntaxMessageScheme, message instances must be valid against the published XSDs [4].
4. Message instances must be valid against the Constraints that are registered for this MessageDefinition. Constraints are defined in the MessageDefinitionReport under the heading Constraints. They comprise rules and guidelines.
5. When a MessageInstance uses codes from an externally defined CodeSet, then these codes must be listed in that external CodeSet. The list of external CodeSets can be found on the ISO20022.org web site: https://www.iso20022.org/external_code_list.page
6. The BAH MUG describes the usage guidelines for the BAH. Use of the BAH in a manner that is not compliant with the provisions of the BAH MUG results in non-compliance to ISO 20022.
7. The use of SupplementaryData must follow the rules explained on this page: https://www.iso20022.org/supplementary_data.page

   Only SupplementaryData extensions registered by the RA must be used. The spreadsheet on that web page shows which SupplementaryData message extension applies to which MessageDefinition(s).

Annex – Terminology

Below definitions were taken from ISO 20022:2013 Part 1

3.26

Constraint

rule that shall be universally satisfied, i.e. all conditions required for the Constraint to be applicable are known

EXAMPLE An Account has an AccountOwner.

3.45

MessageChoreography

precise and complete description of a MessageInstance exchange within a BusinessTransaction, describing the sequence and correlation of MessageInstances within a conversation, including the constraints on the interaction between Participants

NOTE Every BusinessTransaction contains its own MessageChoreography

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MessageDefinition

formal description of the structure of a MessageInstance

NOTE 1 The MessageDefinition is built as a tree structure of MessageComponentTypes and DataTypes. A MessageDefinition is uniquely identified in the BusinessProcessCatalogue.

NOTE 2 A MessageDefinition can have several market practices

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MessageInstance

instance of MessageDefinition, containing a set of structured information exchanged between BusinessRoles, in the scope of a BusinessTransaction

EXAMPLE Notice Of Execution, Order To Buy, Credit Transfer.

NOTE A MessageInstance is expected to be valid against the related MessageDefinition in the ISO 20022 Repository. This implies validity against the SyntaxMessageScheme as well as validity against the Constraints and market practices that are registered for this MessageDefinition.