**ISO 20022**

**ATM Interface for Transaction Processing and ATM Management**

Approved by the Cards and Related Financial Services SEG on 6 April 2016

**Message Definition Report** **- Part 1**

Edition October 2017

Table of contents

[1. Introduction 4](#_Toc444097919)

[1.1 Terms and definitions 4](#_Toc444097920)

[1.2 Glossary 4](#_Toc444097921)

[1.3 Document Scope and Objectives 6](#_Toc444097922)

[1.4 References 6](#_Toc444097923)

[2. Scope and Functionality 7](#_Toc444097924)

[2.1 Background 7](#_Toc444097925)

[2.2 Scope 7](#_Toc444097926)

[2.3 Groups of candidate MessageDefinitions and Functionality 7](#_Toc444097927)

[2.3.1 ATM Interface for Transaction Processing 7](#_Toc444097928)

[2.3.2 ATM Management 9](#_Toc444097929)

[3. BusinessRoles and Participants 10](#_Toc444097930)

[4. BusinessProcess Description 12](#_Toc444097931)

[4.1 BusinessProcess Diagram 12](#_Toc444097932)

[5. Description of BusinessActivities 14](#_Toc444097933)

[5.1 BusinessProcess – Customer Session Process 15](#_Toc444097934)

[5.2 BusinessProcess – Customer Transaction Process 17](#_Toc444097935)

[5.3 BusinessProcess – ATM Management Process 19](#_Toc444097936)

[6. BusinessTransactions 20](#_Toc444097937)

[6.1 Withdrawal Transactions 20](#_Toc444097938)

[6.1.1 Successful Withdrawal with Withdrawal Completion 20](#_Toc444097939)

[6.1.2 Declined Withdrawal 21](#_Toc444097940)

[6.1.3 Withdrawal with an Invalid PIN 22](#_Toc444097941)

[6.1.4 Approved Withdrawal with Incident 23](#_Toc444097942)

[6.1.5 Withdrawal with Accepted Post Approval Surcharge 24](#_Toc444097943)

[6.1.6 Withdrawal with Declined Post Approval Surcharge 25](#_Toc444097944)

[6.1.7 Withdrawal with Accepted Pre-Approval Surcharge 26](#_Toc444097945)

[6.1.8 Withdrawal with Declined Pre-Approval Surcharge 27](#_Toc444097946)

[6.1.9 Withdrawal without Positive Completion 28](#_Toc444097947)

[6.1.10 Withdrawal with Customer Account Selection after an Inquiry 29](#_Toc444097948)

[6.1.11 Dynamic Currency Conversion Withdrawal using an Inquiry 30](#_Toc444097949)

[6.1.12 Successful Withdrawal with Maximum Authorised Amount and Offline PIN 31](#_Toc444097950)

[6.1.13 Withdrawal Staged outside the ATM, and Performed with a One-shot Card 32](#_Toc444097951)

[6.2 Deposit Transactions 33](#_Toc444097952)

[6.2.1 Successful Verified Deposit 33](#_Toc444097953)

[6.2.2 Successful Unverified Deposit 34](#_Toc444097954)

[6.2.3 Decline of a Check Deposit 35](#_Toc444097955)

[6.3 Fund Transfer Transactions 36](#_Toc444097956)

[6.3.1 Successful Fund Transfer between Accounts of the Same Bank 36](#_Toc444097957)

[6.3.2 Inter Bank Fund Transfer 37](#_Toc444097958)

[6.3.3 Declined Fund Transfer 38](#_Toc444097959)

[6.3.4 Approved Fund Transfer with ATM User Cancellation 39](#_Toc444097960)

[6.4 ATM Management 40](#_Toc444097961)

[6.4.1 Acquirer Availability Verification 40](#_Toc444097962)

[6.4.2 Successful PIN Change with Magnetic Stripe Card 41](#_Toc444097963)

[6.4.3 Unsuccessful PIN Change with Magnetic Stripe Card 42](#_Toc444097964)

[6.4.4 Successful PIN Change with an ICC Card 43](#_Toc444097965)

[6.4.5 ATM Manager Requests Card Capture 44](#_Toc444097966)

[6.5 Security 45](#_Toc444097967)

[6.5.1 Security Configuration Update 45](#_Toc444097968)

[6.5.2 Remote Key Loading Requested by the Acquirer 46](#_Toc444097969)

[6.5.3 Unsolicited Remote Key Loading 47](#_Toc444097970)

[7. Revision Record 48](#_Toc444097971)

**Preliminary note:**

The Message Definition Report (MDR) is made of three parts:

* **MDR - Part 1** describes the contextual background required to understand the functionality of the proposed message set. Part 1 is produced by the submitting organisation that developed or maintained the message set in line with a MDR Part1 template provided by the ISO 20022 Registration Authority (RA) on [www.iso20022.org](http://www.iso20022.org)
* **MDR – Part 2** is the detailed description of each message definition of the message set. Part 2 is produced by the RA using the model developed by the submitting organisation.
* **MDR – Part 3** is an extract of the ISO 20022 Business Model describing the business concepts used in the message set. Part 3 is an Excel document produced by the RA.

# Introduction

## Terms and definitions

The following terms are reserved words defined in ISO 20022 – Part1. When used in this document, they will be in UpperCamelCase notation.

|  |  |
| --- | --- |
| Term | Definition |
| BusinessRole | functional role played by a business actor in a particular BusinessProcess or BusinessTransaction |
| Participant | involvement of a BusinessRole in a BusinessTransaction |
| BusinessProcess | unrealized definition of the business activities undertaken by BusinessRoles within a BusinessArea whereby each BusinessProcess fulfils one type of business activity and whereby a BusinessProcess may include and extend other BusinessProcesses |
| BusinessTransaction | particular solution that meets the communication requirements and the interaction requirements of a particular BusinessProcess and BusinessArea |
| MessageDefinition | formal description of the structure of a MessageInstance |

## Glossary

**Acronyms**

|  |  |
| --- | --- |
| Acronym | Definition |
| ATM | Automated Teller Machine |
| AES | Advanced Encryption Standard |
| ASN.1 | Abstract Syntax Notation 1 |
| DES | Data Encryption Standard |
| DUKPT | Derived Unique Key Per Transaction |
| EMV | Europay, MasterCard, Visa |
| FIPS | Federal Information Processing Standard |
| ICC | Integrated Circuit Card |
| IP | Internet Protocol |
| ISO | International Organization for Standardization |
| KEK | Key Encryption Key |
| MAC | Message Authentication Code |
| MDR | Message Definition Report |
| PAN | Primary Account Number |
| PED | PIN Entry Device |
| PIN | Personal Identification Number |
| PKI | Public Key Infrastructure |
| RSA | Rivest Shamir Adleman |
| SC2 | TC 68/SC2 Financial Services, security |
| SHA | Secure Hash Algorithm |
| STIP | STand-In processing |
| UKPT | Unique Key Per Transaction |
| UML | Unified Modelling Language |
| XML | eXtensible Mark-up Language |

## Document Scope and Objectives

This document is the first part of the ISO 20022 Message Definition Report (MDR) that describes the BusinessTransactions and underlying message set. For the sake of completeness, the document may also describe BusinessActivities that are not in the scope of the project.

This document sets:

* The BusinessProcess scope (business processes addressed or impacted by the project)
* The BusinessRoles involved in these BusinessProcesses

The main objectives of this document are:

* To explain what BusinessProcesses and BusinessActivities these candidate MessageDefinitions have addressed
* To give a high level description of BusinessProcesses and the associated BusinessRoles
* To document the BusinessTransactions and their Participants (sequence diagrams)
* To list the candidate MessageDefinitions

## References

| Document | Version | | Date | | Author | |
| --- | --- | --- | --- | --- | --- | --- |
| ISO 20022 Business Justification – ATM Interface for Transaction Processing and ATM Management | |  | | 2013-01-23 | | IFX Forum & Nexo |
| ATM Message Usage Guide | | 1.0 | | 2016 | | Nexo |
| Card Payment Protocols Security | | 3.0 | | 2016 | | Nexo |

# Scope and Functionality

## Background

This Message Definition Report covers a set of 29 ISO 20022 MessageDefinitions developed by IFX Forum Inc. and Nexo A.I.S.B.L. (formerly EPASOrg) in close collaboration with their respective members and approved by the ISO 20022 Cards and Related Retail Financial Standards Evaluation Group (SEG) on 6 April 2016. These messages are specifically designed to support the withdrawal of cash at an ATM location, the management of an ATM, the security associated to the exchanges of messages at application level and the possibility to reject a transaction, if relevant.

Four of the MessageDefinitions (caam.001, caam.002, caam.003, caam.004) were updated in 2017 without impact on this part of the Message Definition Report.

## Scope

This ATM message set focuses on the communication between an ATM and host system(s) to cover extensive transaction processing, security, ATM inventory, state of health, and terminal management.

## Groups of MessageDefinitions and Functionality

### ATM Interface for Transaction Processing

**ATM Withdrawal Exchanges:**

* *ATMWithdrawalRequest* (catp.001): sent by an ATM to an acquirer to request the approval of a withdrawal transaction at an ATM;
* *ATMWithdrawalResponse* (catp.002): sent by an acquirer to inform the ATM of the approval or decline of the withdrawal transaction;
* *ATMWithdrawalCompletionAdvice* (catp.003): sent by an ATM to an acquirer to inform of the result of a withdrawal transaction at an ATM;
* *ATMWithdrawalCompletionAcknowledgement* (catp.004): sent by an ATM to an acquirer to acknowledge the receipt of an *ATMWithdrawalCompletionAdvice* message;

**ATM Deposit Exchanges:**

* *ATMDepositRequest* (catp.012): sent by an ATM to an acquirer to request the approval of a deposit transaction at an ATM;
* *ATMDepositResponse* (catp.013): sent by an acquirer to inform the ATM of the approval or decline of the deposit transaction;
* *ATMDepositCompletionAdvice* (catp.014): sent by an ATM to an acquirer to inform of the result of a deposit transaction at an ATM;
* *ATMDepositCompletionAcknowledgement* (catp.015): sent by an ATM to an acquirer to acknowledge the receipt of an *ATMDepositCompletionAdvice* message;

**ATM Fund Transfer Exchanges:**

* *ATMTransferRequest* (catp.016): sent by an ATM to an acquirer to request the approval of a fund transfer at the ATM;
* *ATMTransferResponse* (catp.017): sent by an acquirer to inform the ATM of the approval or decline of the transfer transaction;

**ATM PIN Management Exchanges:**

* *ATMPINManagementRequest* (catp.010): sent by an ATM to an acquirer to request an operation on the cardholder PIN;
* *ATMPINManagementResponse* (catp.011): sent by an acquirer to provide the information and the outcome of the cardholder PIN operation requested in the *ATMPINManagementRequest* message;

**ATM Transaction Completion:**

* *ATMCompletionAdvice* (catp.008): sent by an ATM to an acquirer to inform of the result of a transaction performed on the ATM;
* *ATMCompletionAcknowledgement* (catp.009): sent by an acquirer to an ATM to acknowledge the receipt of an *ATMCompletionAdvice* message;

**ATM Inquiry Exchanges:**

* *ATMInquiryRequest* (catp.006): sent by an ATM to an acquirer to request information about a customer (e.g. card, account);
* *ATMInquiryResponse* (catp.007): sent by an acquirer to provide the information and the outcome of the verifications requested in the *ATMInquiryRequest* message;

**ATM Message Rejection:**

* *ATMReject* (catp.005): sent by a host or an ATM to reject a received message;

### ATM Management

**ATM Device Management Exchanges:**

* *ATMDeviceReport* (caam.001): sent by an ATM to report the result of maintenance commands performed by the ATM, the components of the ATM, or the status of the ATM components;
* *ATMDeviceControl* (caam.002): sent by a maintenance host to an ATM in response to an *ATMDeviceReport* message. The message contains a sequence of maintenance commands the ATM must perform;

**ATM Reconciliation Exchanges:**

* *ATMReconciliationAdvice* (caam.009): sent by an ATM to an acquirer to send all the counters of the ATM. It can be sent by an operator function or as a response of a command sent by a server;
* *ATMReconciliationAcknowledgement* (caam.010): sent by an acquirer to an ATM to acknowledge the receipt of an *ATMReconciliationAdvice* message;

**ATM Key Exchanges:**

* *ATMKeyDownloadRequest* (caam.003): sent by an ATM to an acquirer to initiate the download of one or several cryptographic keys;
* The *ATMKeyDownloadResponse* (caam.004): sent to an ATM in response to an *ATMKeyDownloadRequest* message, to download of one or several cryptographic keys;

**ATM Diagnostic Exchanges:**

* *ATMDiagnosticRequest* (caam.005): sent to inform an acquiring server that the ATM is available, and to the ATM that the acquiring server is available. The server will also validate this ATM is a valid ATM for its particular network;
* *ATMDiagnosticResponse* (caam.006): sent in response to an ATMDiagnosticRequest message ensuring the availability and the validity of the parameters;

**ATM Exception Exchanges:**

* *ATMExceptionRequest* (caam.011): sent by an ATM to an acquirer or its agent to inform that an exception occurred outside a service;
* *ATMExceptionResponse* (caam.012): sent in response to an ATM to acknowledge the receipt of an *ATMExceptionRequest* message;

**Host Contact Exchanges:**

* *HostToATMRequest* (caam.007): sent by a host to an ATM to request the ATM to contact a host by sending a maintenance message;
* *HostToATMAcknowledgement* (caam.008): sent by an ATM to a host to acknowledge the receipt of a *HostToATMRequest* message;

# BusinessRoles and Participants

A BusinessRole represents an entity (or a class of entities) of the real world, physical or legal, a person, a group of persons, a corporation. Examples of BusinessRoles: “customer”, “financial Institution”, “ATM”.

A Participant is a functional role performed by a BusinessRole in a particular BusinessProcess or BusinessTransaction: for example the “ATM user”, “acquirer”, “issuer” etc.

The relationship between BusinessRoles and Participants is many-to-many. One BusinessRole (that is, a person) can be involved as different Participants at different moments in time or at the same time. Different BusinessRoles can be involved as the same Participant.

In the context of ATM exchanges, the high-level BusinessRoles and typical Participants can be represented as follows.



| **Participants and BusinessRoles definitions** | |
| --- | --- |
| **Description** | **Definition** |
| BusinessRoles | |
| Acquirer | An entity, or a party which has been contracted with, to acquire cash or related withdrawals or deposits transactions. |
| Issuer | An entity issuing a card or an identification to carry out cash or related withdrawal or deposit transactions to an ATM User. |
| ATM User | An entity to whom a card or an identification is issued to carry out cash or related withdrawal or deposit transactions. |
| ATM | An automated system providing business services to a bank customer or accountholder. |
| Participants | |
| Customer | An individual to whom a card or identification is issued to carry out cash or related withdrawals or deposit transactions. |
| Payment Institution | A financial institution, or a party which has been contracted with, entitled to carry out cash or related withdrawal or deposit transactions. |
| ATM | An automated system providing business services to a bank customer or accountholder. |

|  |  |  |
| --- | --- | --- |
|  | **BusinessRoles/Participants Matrix Table** |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Participants  BusinessRoles | ATM User | ATM | Acquirer | Issuer |
| Customer | X |  |  |  |
| Payment Institution |  |  | X | X |
| ATM |  | X |  |  |

# BusinessProcess Description

## BusinessProcess Diagram

This diagram shows the high level BusinessProcess covered by ATM transaction and ATM management business.



**Customer Session process:**

* *Definition*: The process of identifying the profile of an ATM user, to perform a sequence of transactions on an ATM.
* *Trigger*: The ATM user provides information to be checked by an acquirer or an issuer.
* *Pre-conditions*: The ATM device is in service, and does not perform any maintenance operation or any session with an ATM user.
* *Post-conditions*: The session is closed. The ATM is ready to accept a new ATM user or to perform maintenance operation.
* *Role*: ATM user, acquirer and issuer.

**Customer Transaction process:**

* *Definition*: The process of an ATM user performing a transaction with an ATM user.
* *Trigger*: An ATM user selects an operation propose by the ATM.
* *Pre-conditions*: A customer session has been successfully open by an ATM user.
* *Post-conditions*: The transaction is completed. The ATM is ready to accept a new transaction or to close the customer session.
* *Role*: ATM user, Payment Institution.

**ATM Management process:**

* *Definition*: The process of taking control of the ATM device.
* *Trigger*: The ATM status requires maintenance operations.
* *Pre-conditions*: No customer session open.
* *Post-conditions*: The ATM maintenance process is completed.
* *Role*: ATM, Payment Institution.

# Description of BusinessActivities

This section presents the different BusinessActivities within each BusinessProcess. BusinessActivities of a process are described in swim lane diagrams and are referred in this document as activity diagrams.

The development of an activity diagram is part of the ISO 20022 modelling process and allows capturing the requirements.

The activity diagram provides a zoom-in on the BusinessActivities taking place during each of the BusinessProcesses described in Section 4. It also shows the BusinessActivities that are triggered when another BusinessActivity has a negative result.

What is the activity diagram about?

* It is a diagram representing the ‘common lifecycle’ of a BusinessProcess
* A start point ⚫ shows where the lifecycle of the BusinessProcess commences and the end points show where the lifecycle may possibly end



* A lozenge means that a choice between several actions can be made
* A bar means that several actions are initiated in parallel



* The flow of activities between the involved Participants (parties)
* BusinessActivities may result in different actions, that is, information is conveyed from one party to another party.

Both in-scope and out-of-scope activities are included, with a different level of details. There are no information requirements for out-of-scope activities, except that they should be clearly identified in the diagram.

Activity diagrams are always accompanied with a text describing the BusinessActivities and their interactions.

## BusinessProcess – Customer Session Process



|  |  |
| --- | --- |
| **Descriptions of the BusinessActivities** | |
|  | **Initiator** |
| **Customer Identifier Presentation**: The ATM user presents identification information to the ATM, for instance through the insertion of a card. | **ATM User** |
| **Identifier Acceptance**: The ATM verifies that the identifier presented by the ATM user is valid. | **ATM** |
| **Customer Authentication Information**: The ATM user provides information for authentication, according to the devices of the ATM, such as entering the PIN of a card. | **ATM User** |
| **Customer Profile Inquiry**: The ATM seeks the profile of the ATM user to identify the services available for this ATM user. The ATM may request to the acquirer a dedicated customer profile with the authentication of the ATM user. | **ATM** |
| **Customer Authentication**: The acquirer authenticates the ATM user and retrieves the customer profile with the help of its financial institution. If the authentication fails, the ATM user is then rejected and the customer session ends. Otherwise the customer profile is delivered to the ATM. | **Acquirer Issuer** |
| **Customer Menu**: The ATM displays to the ATM user the services available, based on its customer profile. | **ATM** |
| **Menu Item Selection**: The ATM user selects a service proposed by the ATM. He may also decide to end the customer session. | **ATM User** |
| **ATM Customer Transaction**: The ATM performs the service selected by the ATM user with the help of the acquirer/issuer. | **ATM** |
| **Acquirer Customer Transaction**: The acquirer performs the service requested by the ATM user at the ATM. | **Acquirer Issuer** |

## BusinessProcess – Customer Transaction Process

The activity diagrams of Customer Transaction BusinessProcesses are specialised per type of transactions. The activity diagram below presents the business process of a cash withdrawal transaction.



|  |  |
| --- | --- |
| **Descriptions of the BusinessActivities** | |
|  | **Initiator** |
| **Customer Session Opening**: The ATM opens a customer session for the ATM user, as described in the Customer Session BusinessProcess. | **ATM User ATM** |
| **Withdrawal Selection**: The ATM user selects cash withdrawal among the services proposed by the ATM for the customer profile of the ATM user. The ATM user enters the information requested by the ATM to perform the withdrawal transaction. | **ATM User** |
| **Withdrawal Request**: The ATM requests to the acquirer the issuer approval of the withdrawal transaction.  If the issuer declines the transaction, the withdrawal ends without cash dispensing. | **ATM Acquirer Issuer** |
| **Perform Withdrawal**: The ATM performs the withdrawal transaction, removing the card, dispensing the cash, and printing of a customer receipt. | **ATM** |
| **ATM User Withdrawal**: The ATM user completes the withdrawal transaction, removing the card, taking the cash and the receipt. | **ATM User** |
| **Withdrawal Completion**: The ATM complete the transaction by sending to the acquirer the outcome of the withdrawal transaction. The acquirer stores the information. | **ATM Acquirer** |

## BusinessProcess – ATM Management Process



|  |  |
| --- | --- |
| **Descriptions of the BusinessActivities** | |
|  | **Initiator** |
| **Periodic Maintenance Contact**: The ATM contacts periodically the acquirer sending the components of the ATM and their status. | **ATM** |
| **ATM Maintenance List**: The acquirer checks the status of the ATM components and build the list of maintenance operations to perform by the ATM. | **Acquirer** |
| **ATM Maintenance**: The ATM performs the maintenance commands, in cooperation with the acquirer. | **ATM Acquirer** |

# BusinessTransactions

This section describes the message flows based on the activity diagrams documented above. It shows the typical exchanges of information in the context of a BusinessTransaction.

## Withdrawal Transactions

Most of the presented BusinessTransaction are initiated by a card.

### Successful Withdrawal with Withdrawal Completion



This BusinessTransaction presents a successful withdrawal transaction with the following steps:

1. The ATM user inserts a card in the ATM, selects the withdrawal transaction, enters his PIN and the requested amount.  
   The ATM sends an *ATMWithdrawalRequest* message to the acquirer for the approval of the withdrawal transaction.
2. The acquirer performs the verifications of the message and requests to the issuer the approval of the withdrawal transaction.   
   Once the transaction has been approved by the issuer, the acquirer returns the outcome of the withdrawal transaction in the *ATMWithdrawalResponse* message to the ATM.
3. The ATM checks the availability of the cash in the cassettes, releases the card to the ATM user, dispenses the requested amount, prints a receipt and completes the transaction.  
   The ATM sends to the acquirer an *ATMWithdrawalCompletionAdvice* message to inform about the result of the withdrawal.
4. The acquirer takes into account the transaction and acknowledges with an *ATMWithdrawalCompletionAcknowledgement* message to the ATM.

### Declined Withdrawal



This scenario presents a withdrawal transaction declined by the issuer along the following steps:

1. The ATM user inserts a card in the ATM, selects the withdrawal transaction, and enters his PIN as well as the requested amount.  
   The ATM sends an *ATMWithdrawalRequest* message to the acquirer for the approval of the withdrawal transaction.
2. The acquirer performs the verifications of the message and requests to the issuer the approval of the withdrawal transaction.   
   The issuer declines the transaction, and the acquirer returns the outcome of the withdrawal transactionin the *ATMWithdrawalResponse* message to the ATM.
3. The ATM releases the card to the ATM user (unless capture is requested by the issuer), prints a receipt and completes the transaction.  
   The ATM sends to the acquirer an *ATMWithdrawalCompletionAdvice* message to inform about the result of the withdrawal. A completion advice is however optional and depends on the configuration of the ATM by the acquirer.
4. The acquirer takes into account the transaction and acknowledges with an *ATMWithdrawalCompletionAcknowledgement* message to the ATM.

### Withdrawal with an Invalid PIN



This scenario presents a successful withdrawal transaction with the following steps:

1. The ATM user inserts a card in the ATM, selects the withdrawal transaction, and enters his PIN and the requested amount.  
   The ATM sends an *ATMWithdrawalRequest* message to the acquirer for the approval of the withdrawal transaction.
2. The acquirer performs the verifications of the message and requests to the issuer the approval of the withdrawal transaction.   
   The verification of the PIN by the issuer fails, and issuer declines the transaction.  
   The acquirer returns the outcome of the withdrawal transactionin the *ATMWithdrawalResponse* message to the ATM.
3. The ATM request to the ATM user to re-enter his PIN, and sends a new *ATMWithdrawalRequest* message to the acquirer containing the new PIN entered by the ATM user.
4. The acquirer performs the verifications of the message and requests to the issuer the approval of the withdrawal transaction.   
   The verification of the new PIN by the issuer succeed, and issuer approves the transaction.  
   The acquirer returns the outcome of the withdrawal transactionin the *ATMWithdrawalResponse* message to the ATM.
5. The ATM checks the availability of the cash in the cassettes, releases the card to the ATM user, dispenses the requested amount, prints a receipt and completes the transaction.  
   The ATM sends to the acquirer an *ATMWithdrawalCompletionAdvice* message to inform about the result of the withdrawal.
6. The acquirer takes into account the transaction and acknowledges with an *ATMWithdrawalCompletionAcknowledgement* message to the ATM.

### Approved Withdrawal with Incident



This scenario presents a withdrawal transaction with an incident after the approval:

1. The ATM user inserts a card in the ATM, selects the withdrawal transaction, enters his PIN and the requested amount.  
   The ATM sends an *ATMWithdrawalRequest* message to the acquirer for the approval of the withdrawal transaction.
2. The acquirer performs the verifications of the message and requests to the issuer the approval of the withdrawal transaction.   
   Once the transaction has been approved by the issuer, the acquirer returns the outcome of the withdrawal transactionin the *ATMWithdrawalResponse* message to the ATM.
3. The ATM cannot dispense the notes to the ATM user.   
   The ATM sends to the acquirer an *ATMWithdrawalCompletionAdvice* message to inform about the failure of the withdrawal.
4. The acquirer takes into account the failure of the transaction, reverses the financial transaction with the issuer, and acknowledges the outcome of the withdrawal with an *ATMWithdrawalCompletionAcknowledgement* message to the ATM.

### Withdrawal with Accepted Post Approval Surcharge



This scenario presents a withdrawal transaction with post approval surcharge:

1. The ATM user inserts a card in the ATM, selects the withdrawal transaction, enters his PIN and the requested amount.  
   The ATM sends an *ATMWithdrawalRequest* message to the acquirer for the approval of the withdrawal transaction.
2. The acquirer performs the verifications of the message and requests to the issuer the approval of the withdrawal transaction.   
   Once the transaction has been approved by the issuer, the acquirer returns the outcome of the withdrawal transactionin the *ATMWithdrawalResponse* message to the ATM with a surcharge to be approved by the ATM user.
3. The ATM user accepts the surcharge, the ATM checks the availability of the cash in the cassettes, releases the card to the ATM user, dispenses the requested amount, prints a receipt and completes the transaction.   
   The ATM sends to the acquirer an *ATMWithdrawalCompletionAdvice* message to inform about the result of the withdrawal.
4. The acquirer takes into account the transaction and acknowledges with an *ATMWithdrawalCompletionAcknowledgement* message to the ATM.

### Withdrawal with Declined Post Approval Surcharge

This scenario presents a withdrawal transaction with post approval surcharge:

1. The ATM user inserts a card in the ATM, selects the withdrawal transaction, enters his PIN and the requested amount.  
   The ATM sends an *ATMWithdrawalRequest* message to the acquirer for the approval of the withdrawal transaction.
2. The acquirer performs the verifications of the message and requests to the issuer the approval of the withdrawal transaction.   
   Once the transaction has been approved by the issuer, the acquirer returns the outcome of the withdrawal transactionin the *ATMWithdrawalResponse* message to the ATM with a surcharge to be approved by the ATM user.
3. The ATM user declined the surcharge, and the ATM sends to the acquirer an *ATMWithdrawalCompletionAdvice* message to inform him that the ATM user declined the surcharge.
4. The acquirer takes into account the failure of the transaction, reverses the financial transaction with the issuer, and acknowledges the outcome of the withdrawal with an *ATMWithdrawalCompletionAcknowledgement* message to the ATM.

### Withdrawal with Accepted Pre-Approval Surcharge



This scenario presents a withdrawal transaction with pre-approval surcharge:

1. The ATM user inserts a card in the ATM, selects the withdrawal transaction, enters his PIN and the requested amount.  
   The ATM sends an *ATMWithdrawalRequest* message to the acquirer for the approval of the withdrawal transaction.
2. The acquirer performs the verifications of the message and sends an *ATMWithdrawalResponse* message to the ATM with the request for a surcharge to be approved by the ATM user.
3. The ATM user accepts the surcharge, and the ATM sends a new *ATMWithdrawalRequest* message to the acquirer for the approval of the withdrawal transaction with the surcharge.
4. The acquirer performs the verifications of the message and requests to the issuer the approval of the withdrawal transaction.   
   Once the transaction has been approved by the issuer, the acquirer returns the outcome of the withdrawal transactionin the *ATMWithdrawalResponse* message to the ATM.
5. The ATM checks the availability of the cash in the cassettes, releases the card to the ATM user, dispenses the requested amount, prints a receipt and completes the transaction.   
   The ATM sends to the acquirer an *ATMWithdrawalCompletionAdvice* message to inform about the result of the withdrawal.
6. The acquirer takes into account the transaction and acknowledges with an *ATMWithdrawalCompletionAcknowledgement* message to the ATM.

### Withdrawal with Declined Pre-Approval Surcharge

TThis scenario presents a withdrawal transaction that declines a pre-approval surcharge:

1. The ATM user inserts a card in the ATM, selects the withdrawal transaction, enters his PIN and the requested amount.  
   The ATM sends an *ATMWithdrawalRequest* message to the acquirer for the approval of the withdrawal transaction.
2. The acquirer performs the verifications of the message and sends an *ATMWithdrawalResponse* message to the ATM with the request for a surcharge to be approved by the ATM user.
3. The ATM user declines the surcharge, and the ATM sends to the acquirer an *ATMWithdrawalCompletionAdvice* message to inform about the result of the withdrawal with the declined surcharge.
4. The acquirer takes into account the transaction and acknowledges with an *ATMWithdrawalCompletionAcknowledgement* message to the ATM.

### Withdrawal without Positive Completion



This scenario presents withdrawal transaction on an ATM which is configured to send a completion only in case of failure:

* When the withdrawal transaction is successful, as in this scenario, the ATM do not send any message at the end of the transaction.
* When the withdrawal transaction fails after a positive *ATMWithdrawalResponse*, the ATM sends an *ATMCompletionAdvice* message to report the failure, instead of the message *ATMWithdrawalCompletionAdvice*.

1. The ATM user inserts a card in the ATM, selects the withdrawal transaction, enters his PIN and the requested amount.  
   The ATM sends an *ATMWithdrawalRequest* message to the acquirer for the approval of the withdrawal transaction.
2. The acquirer performs the verifications of the message and requests to the issuer the approval of the withdrawal transaction.   
   Once the transaction has been approved by the issuer, the acquirer returns the outcome of the withdrawal transactionin the *ATMWithdrawalResponse* message to the ATM.

The ATM checks the availability of the cash in the cassettes, releases the card to the ATM user, dispenses the requested amount, prints a receipt and completes the transaction. As the withdrawal is successful, no completion message is sent to the acquirer.

### Withdrawal with Customer Account Selection after an Inquiry



This scenario presents a withdrawal transaction with a selection of the account supporting the withdrawal:

1. The ATM user inserts a card in the ATM and enters his PIN. The ATM sends to the acquirer an *ATMInquiryRequest* message to get the customer profile.
2. The acquirer requests the authentication of the ATM user with the PIN verification. The acquirer gets the profile of the ATM user and sends to the ATM the *ATMInquiryResponse* message containing the profile.
3. The ATM user selects the withdrawal transaction, enters the requested amount and selects the account used for the withdrawal.  
   The ATM sends an *ATMWithdrawalRequest* message to the acquirer for the approval of the withdrawal transaction.
4. The acquirer performs the verifications of the message and requests to the issuer the approval of the withdrawal transaction on the account chosen by the ATM user.   
   Once the transaction has been approved by the issuer, the acquirer returns the outcome of the withdrawal transactionin the *ATMWithdrawalResponse* message to the ATM.
5. The ATM checks the availability of the cash in the cassettes, releases the card to the ATM user, dispenses the requested amount, prints a receipt and completes the transaction.   
   The ATM sends to the acquirer an *ATMWithdrawalCompletionAdvice* message to inform about the result of the withdrawal.
6. The acquirer takes into account the transaction and acknowledges with an *ATMWithdrawalCompletionAcknowledgement* message to the ATM.

### Dynamic Currency Conversion Withdrawal using an Inquiry



This scenario presents a withdrawal transaction with a dynamic currency conversion of the transaction amount:

1. The ATM user inserts a card in the ATM, selects a withdrawal, and enters the requested amount. The ATM sends to the acquirer an *ATMInquiryRequest* message to get the dynamic currency conversion conditions.
2. The acquirer gets the dynamic currency conversion conditions for the card, and sends these information to the ATM in the *ATMInquiryResponse* message.
3. The ATM user approves the dynamic currency conditions, and enters his PIN.  
   The ATM sends an *ATMWithdrawalRequest* message to the acquirer with the converted amount for the approval of the withdrawal transaction.
4. The acquirer performs the verifications of the message and requests to the issuer the approval of the withdrawal transaction on the account chosen by the ATM user.   
   Once the transaction has been approved by the issuer, the acquirer returns the outcome of the withdrawal transactionin the *ATMWithdrawalResponse* message to the ATM.
5. The ATM checks the availability of the cash in the cassettes, releases the card to the ATM user, dispenses the requested amount, prints a receipt and completes the transaction.   
   The ATM sends to the acquirer an *ATMWithdrawalCompletionAdvice* message to inform about the result of the withdrawal.
6. The acquirer takes into account the transaction and acknowledges with an *ATMWithdrawalCompletionAcknowledgement* message to the ATM.

### Successful Withdrawal with Maximum Authorised Amount and Offline PIN



This BusinessTransaction presents a successful withdrawal transaction with the following steps:

1. The ATM user inserts a card in the ATM, selects the withdrawal transaction, and enters his PIN. The PIN is verified locally with the smart card.  
   The ATM sends an *ATMWithdrawalRequest* message to the acquirer for the approval of the withdrawal transaction without any amount.
2. The acquirer performs the verifications of the message and requests to the issuer the approval of the withdrawal transaction for a maximum amount.   
   Once the transaction has been approved by the issuer, the acquirer returns the outcome of the withdrawal transactionauthorisation in the *ATMWithdrawalResponse* message to the ATM with the maximum authorised amount.
3. The ATM user enters a amount of the withdrawal lower or equal to the maximum authorised amount. The ATM checks the availability of the cash in the cassettes, releases the card to the ATM user, dispenses the requested amount, prints a receipt and completes the transaction.  
   The ATM sends to the acquirer an *ATMWithdrawalCompletionAdvice* message to inform about the result of the withdrawal with the dispensed amount.
4. The acquirer takes into account the transaction and acknowledges with an *ATMWithdrawalCompletionAcknowledgement* message to the ATM.

### Withdrawal Staged outside the ATM, and Performed with a One-shot Card

This scenario presents a withdrawal transaction which is prepared with the acquirer, performing only the cash dispense on the ATM:

1. The ATM user initiates a withdrawal on a branch, selecting the amount and the account of the withdrawal. The operator get the approval of the withdrawal transaction which is stored by the acquirer, and provides a one-shot card to the ATM user to get the cash at the ATM.

The ATM user inserts the one-shot card in the ATM. The ATM sends to the acquirer an *ATMWithdrawalRequest* containing the one-shot card identification but without any amount.

1. The acquirer performs the verifications of the message, retrieves the withdrawal transaction linked to the one-shot card, and sends the amount of the withdrawal in the *ATMWithdrawalResponse* message to the ATM, requesting to retain the card.
2. The ATM checks the availability of the cash in the cassettes, keeps the one-shot card, dispenses the requested amount, prints a receipt and completes the transaction.   
   The ATM sends to the acquirer an *ATMWithdrawalCompletionAdvice* message to inform about the result of the withdrawal.
3. The acquirer takes into account the transaction and acknowledges with an *ATMWithdrawalCompletionAcknowledgement* message to the ATM.

## Deposit Transactions

### Successful Verified Deposit



This BusinessTransaction presents a successful deposit of bank notes, with the following steps:

1. The ATM user inserts a card in the ATM and enters his PIN.  
   The ATM sends an *ATMInquiryRequest* message to the acquirer requesting the profile and to authenticate the customer.
2. The acquirer performs the verifications of the message, requests to the issuer host the customer profile and the authentication of the customer.   
   The acquirer and returns the profile containing the allowed services in the *ATMInquiryResponse* message to the ATM.
3. The ATM user selects the deposit service, chooses the account, and makes a deposit of 5 notes of 20$.  
   The ATM sends an *ATMDepositCompletionAdvice* message to inform the acquirer about the deposit of the ATM user.
4. The acquirer acknowledges with an *ATMDepositCompletionAcknowledgement* message to the ATM, and performs the credit of the account.

### Successful Unverified Deposit



This BusinessTransaction presents a successful deposit of an envelope, with the following steps:

1. The ATM user inserts a card in the ATM and enters his PIN, select the unverified deposit service and enters the amount of the deposit.  
   The ATM sends an *ATMDepositRequest* message to the acquirer for the approval of the deposit transaction and to authenticate the customer.
2. The acquirer performs the verifications of the message, requests to the issuer the approval of the deposit transaction with the authentication of the customer.  
   Once the transaction has been approved by the issuer, the acquirer returns the outcome of the authorisation in the *ATMDepositResponse* message to the ATM.  
   The ATM user deposes the envelope in the ATM.

### Decline of a Check Deposit



This BusinessTransaction presents a successful deposit of bank notes, with the following steps:

1. The ATM user inserts a card in the ATM, enters the PIN and scan a check.  
   The ATM sends an *ATMDepositRequest* message to the acquirer to authenticate the customer and request the approval of the deposit.
2. The acquirer performs the verifications of the message, requests to the issuer host the authentication of the customer and the approval of the deposit.  
   The issuer declines the check deposit because of the check amount.  
   The acquirer send the decline of the deposit transaction in the *ATMDepositResponse* message to the ATM.

## Fund Transfer Transactions

### Successful Fund Transfer between Accounts of the Same Bank



This BusinessTransaction presents a successful fund transfer with the following steps:

1. The ATM user inserts a card in the ATM, enters the PIN of the card, selects the fund transfer service, the source and destination accounts, and the amount of the transfer.  
   The ATM sends an *ATMTransferRequest* message to the acquirer for the approval of the fund transfer.
2. The acquirer performs the verifications of the message and requests to the issuer host the approval of the fund transfer.   
   Once the transaction has been approved by the issuer, the acquirer returns the outcome of the fund transfer in the *ATMTransferResponse* message to the ATM.
3. The ATM displays to the ATM user the summary of the fund transfer transaction.  
   The ATM user accepts the transfer, and the ATM sends to the acquirer an *ATMCompletionAdvice* message to inform about the agreement of the ATM user.
4. The acquirer acknowledges with an *ATMCompletionAcknowledgement* message to the ATM, and initiates the transfer between accounts.

### Inter Bank Fund Transfer



This BusinessTransaction presents a fund transfer between accounts of different bank, with the following steps:

1. The ATM user inserts a card in the ATM.  
   The ATM sends an *ATMInquiryRequest* message to the acquirer for requesting the profile of the customer.
2. The acquirer performs the verifications of the message, requests to the issuer host the customer profile, and returns the profile containing the allowed accounts for transfer in the *ATMInquiryResponse* message to the ATM.
3. The ATM user enters his PIN, selects the fund transfer, and chooses the source and destination accounts, and the amount of the transfer.  
   The ATM sends an *ATMTransferRequest* message to the acquirer for the approval of the fund transfer.
4. The acquirer performs the verifications of the message and requests to the issuer host the approval of the fund transfer.   
   Once the transaction has been approved by the issuer, the acquirer returns the outcome of the fund transfer in the *ATMTransferResponse* message to the ATM.
5. The ATM displays to the ATM user the summary of the fund transfer.  
   The ATM user accepts the transfer, and the ATM sends to the acquirer an *ATMCompletionAdvice* message to inform about the agreement of the ATM user.
6. The acquirer acknowledges with an *ATMCompletionAcknowledgement* message to the ATM, and initiates the transfer between accounts.

### Declined Fund Transfer



This BusinessTransaction presents a fund transfer declined by the issuer with the following steps:

1. The ATM user inserts a card in the ATM, selects the fund transfer, enters his PIN, the source and destination accounts, and the amount of the transfer.  
   The ATM sends an *ATMTransferRequest* message to the acquirer for the approval of the fund transfer.
2. The acquirer performs the verifications of the message and requests to the issuer host the approval of the fund transfer.   
   The issuer host declines the transfer because of insufficient fund in the source account.   
   The acquirer returns the outcome of the fund transfer in the *ATMTransferResponse* message to the ATM.

### Approved Fund Transfer with ATM User Cancellation



This BusinessTransaction presents an approved fund transfer cancelled by the ATM user, with the following steps:

1. The ATM user inserts a card in the ATM, enters his PIN, selects the fund transfer, the source and destination accounts, and the amount of the transfer.  
   The ATM sends an *ATMTransferRequest* message to the acquirer for the approval of the fund transfer.
2. The acquirer performs the verifications of the message and requests to the issuer host the approval of the fund transfer.   
   Once the transaction has been approved by the issuer, the acquirer returns the outcome of the fund transfer in the *ATMTransferResponse* message to the ATM.
3. The ATM displays to the ATM user the summary of the fund transfer transaction.  
   The ATM user cancels the transfer.  
   The ATM sends to the acquirer an *ATMCompletionAdvice* message to inform about the refusal of the ATM user.
4. The acquirer acknowledges with an *ATMCompletionAcknowledgement* message to the ATM, and the transfer between accounts is not performed.

## ATM Management

### Acquirer Availability Verification



This scenario presents the sending of an *ATMDiagnosticRequest* message to verify the availability of the host:

1. After a significant period of time without transaction, the ATM check the availability of the acquirer.  
   The ATM sends an *ATMDiagnosticRequest* message to the acquirer and wait for the response of the message.
2. The acquirer perform a validation of the *ATMDiagnosticRequest* message, and sends the *ATMDiagnosticResponse* message to the ATM.

### Successful PIN Change with Magnetic Stripe Card



This scenario presents a successful PIN change related to a magstripe card with the following steps:

1. An ATM user start a session inserting a new card in the ATM. The ATM recognize an on-us customer and sends to the acquirer an *ATMInquiryRequest* message to get the customer profile.
2. The acquirer gets the profile of the ATM user and sends to the ATM the *ATMInquiryResponse* message containing the profile. The only service available to the ATM user with that card is the PIN change.
3. The ATM propose to the ATM user to change the PIN of the card or to end the session.  
   The ATM user enter the current card PIN, with the new PIN twice. The ATM sends an *ATMPINManagementRequest* message to the acquirer for the update of the card PIN.
4. The acquirer performs the verifications of the message and requests to the issuer host the approval of the PIN update.   
   After the approval of the update from the issuer, the acquirer sends the outcome in the *ATMPINManagementResponse* message to the ATM.   
   The ATM provides the successful result of the PIN change to the ATM user who closes the session, and get the card released by the ATM.

### Unsuccessful PIN Change with Magnetic Stripe Card



This scenario presents an unsuccessful PIN change related to a magstripe card with the following steps:

1. An ATM user start a session inserting a new card in the ATM. The ATM recognize an on-us customer and sends to the acquirer an *ATMInquiryRequest* message to get the customer profile.
2. The acquirer gets the profile of the ATM user and sends to the ATM the *ATMInquiryResponse* message containing the profile. The only service available to the ATM user with that card is the PIN change.
3. The ATM propose to the ATM user to change the PIN of the card or to end the session.  
   The ATM user enter the current card PIN, with the new PIN twice. The ATM sends an *ATMPINManagementRequest* message to the acquirer for the update of the card PIN.
4. The acquirer performs the verifications of the message and requests to the issuer host the approval of the PIN update.   
   After the approval of the update from the issuer, the acquirer sends the outcome in the *ATMPINManagementResponse* message to the ATM.
5. The *ATMPINManagementResponse* message was not received by the ATM. The ATM sends to the acquirer an *ATMCompletionAdvice* message to inform about the absence of response from the PIN update.
6. The acquirer takes into account the transaction and acknowledges with an *ATMCompletionAcknowledgement* message to the ATM.   
   The ATM provides the successful result of the PIN change to the ATM user who closes the session, and get the card released by the ATM.

### Successful PIN Change with an ICC Card



This scenario presents a PIN change related to an ICC card with the following steps:

1. A ATM user start a session inserting a new card in the ATM. The ATM recognize an on-us customer and sends to the acquirer an *ATMInquiryRequest* message to get the customer profile.
2. The acquirer gets the profile of the ATM user and sends to the ATM the *ATMInquiryResponse* message containing the profile. The only service available to the ATM user with that card is the PIN change.
3. The ATM propose to the ATM user to change the PIN of the card or to end the session.  
   The ATM user enter the current card PIN, with the new PIN twice. The ATM sends an *ATMPINManagementRequest* message to the acquirer for the update of the card PIN.
4. The acquirer performs the verifications of the message and requests to the issuer host the approval of the PIN update.   
   After the approval of the update from the issuer, the acquirer sends the outcome in the *ATMPINManagementResponse* message to the ATM containing an ICC script to update the PIN in the ICC.
5. The ATM sends the script to the ICC that performs successfully the PIN update.  
   The ATM sends to the acquirer an *ATMCompletionAdvice* message to inform about the result of the ICC script.
6. The acquirer takes into account the transaction and acknowledges with an *ATMCompletionAcknowledgement* message to the ATM.   
   The ATM provides the unsuccessful result of the PIN change to the ATM user who closes the session, and get the card released by the ATM.

### ATM Manager Requests Card Capture



This BusinessTransaction presents the capture of a card requested by the ATM manager, with the following steps:

1. The ATM user inserts a card in the ATM and enters his PIN.  
   The ATM sends an *ATMInquiryRequest* message to the acquirer for requesting the profile and to authenticate the customer.
2. The acquirer performs the verifications of the message, requests to the issuer host the customer profile.  
   The authentication fails and the issuer host requests to capture the card.   
   The acquirer returns the *ATMInquiryResponse* message to the ATM requesting to capture the card.
3. The ATM captures the card and sends an *ATMExceptionAdvice* message to inform the acquirer about the capture card of the ATM user.
4. The acquirer acknowledges with an *ATMExceptionAcknowledgement* message to the ATM, and update the card status.

## Security

### Security Configuration Update



This scenario presents an update of the security parameters of the ATM:

1. The ATM sends an *ATMDeviceReport* message to the acquirer, including the capability and the configuration of the security components of the ATM.
2. The acquirer analyses the security configuration of the ATM and would like to change the MAC algorithm used by the ATM to exchange messages. The acquirer sends an *ATMDeviceControl* message to the ATM including a command to update the configuration of the hardware security module on the ATM followed by a command to send a new *ATMDeviceReport* message to verify the result of the command.
3. The ATM modifies the current security configuration and sends an *ATMDeviceReport* message to the acquirer, including the result of the command.
4. The acquirer verify the result of the command and sends an *ATMDeviceControl* message without any command.

### Remote Key Loading Requested by the Acquirer



This scenario presents an ATM key download requested by the acquirer:

1. The ATM sends an *ATMDeviceReport* message to the acquirer, including the configuration and the status of the keys of the ATM.
2. The acquirer analyses the keys version of the ATM and would like to update some of the keys. The acquirer sends an *ATMDeviceControl* message to the ATM including a command to download ATM keys followed by a command to send a new *ATMDeviceReport* message to verify the result of the command.
3. The ATM sends an *ATMKeyDownloadRequest* message to the acquirer, to initiate the key download process with the appropriate security information.
4. The acquirer prepare the keys to download and their protection, and sends an *ATMKeyDownloadResponse* message.
5. The ATM modifies the current security configuration and sends an *ATMDeviceReport* message to the acquirer, including the result of the command.
6. The acquirer verify the result of the command and sends an *ATMDeviceControl* message without any command.

### Unsolicited Remote Key Loading



This scenario presents an ATM key download at the initialisation of the ATM:

1. The ATM sends an *ATMKeyDownloadRequest* message to the acquirer, to initiate the download of application key process with the appropriate security information.
2. The acquirer prepare the keys to download and their protection, and sends an *ATMKeyDownloadResponse* message.
3. The ATM modifies the current security configuration and sends an *ATMDeviceReport* message to the acquirer, including the result of the command.
4. The acquirer verify the result of the command and sends an *ATMDeviceControl* message without any command.

# Revision Record

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Revision** | **Date** | **Author** | **Description** | **Sections affected** |
| December 2015 | 31 December 2015 | IFX & nexo | Initial version | All |
| February 2016 | 24 February 2016 | ISO 20022 RA | Editing before SEG submission | All |
| May 2016 | 3 May 2016 | ISO 20022 RA | Editing before publication | All |
| October 2017 | October 2017 | ISO 20022 RA | Urgent maintenance 2017 | 2.1 |

**Disclaimer**:

Although the Registration Authority has used all reasonable efforts to ensure accuracy of the contents of the iso20022.org website and the information published thereon, the Registration Authority assumes no liability whatsoever for any inadvertent errors or omissions that may appear thereon. Moreover, the information is provided on an "as is" basis. The Registration Authority disclaims all warranties and conditions, either express or implied, including but not limited to implied warranties of merchantability, title, non-infringement and fitness for a particular purpose.

The Registration Authority shall not be liable for any direct, indirect, special or consequential damages arising out of the use of the information published on the iso20022.org website, even if the Registration Authority has been advised of the possibility of such damages.

**Intellectual Property Rights**:

The ISO 20022 MessageDefinitions described in this document were contributed by IFX Forum, Inc. and nexo AISBL. The ISO 20022 IPR policy is available at www.ISO20022.org > About ISO 20022 > Intellectual Property Rights.