



SWIFT Partners

# SWIFTReady Financial EAI

Label criteria 2011

Version 1.0

January 2011

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# 1 Preface

## 1.1 Purpose

SWIFT developed the SWIFTRReady label programme to verify the compliance of financial applications and middleware products against SWIFT messaging services, standards and connectivity through the Alliance interfaces.

This document focuses on the SWIFTRReady Financial EAI, and provides an overview of the criteria that a Financial EAI must comply with to be granted with the SWIFTRReady label from SWIFT.

## 1.2 Audience

The target audience for this document is both vendors considering the certification of a product, and SWIFT Users that look after an overview of the SWIFTRReady Label contents. The audience should be familiar with SWIFT world from both a technical and a business perspective.

## 1.3 SWIFTRReady Programme

The SWIFTRReady label programme covers the entire financial application chain, from Trade, Treasury and Payment, to Corporate and Securities segments.

Each SWIFTRReady label defines a set of criteria, which are reviewed every year to ensure that the software remains aligned with the financial market evolution and with customer needs.

These criteria are designed to reflect the capability of a financial application to provide message processing automation in a SWIFT context, and to support straight through processing (STP) in order to increase customer value, limit customisation needs and cost, and reduce time to market.

## 1.4 Related Documents

The following documents can be found over [http://www.swift.com/partners/certify\\_your\\_application](http://www.swift.com/partners/certify_your_application)

- **The SWIFTRReady application programme** provides an overview of the SWIFTRReady programme, including the benefits to join for application vendors. It also explains the SWIFTRReady validation process, including the technical, functional and customer validation.
- **The SWIFTRReady label criteria portfolio** is a reference guide for all SWIFTRReady label business criteria. Each criterion is provided with an applicability statement (Mandatory for all labels, Optional for all labels, or Label dependent).
- **The SWIFTRReady technical validation guide** provides a detailed description of the technical validation processes for each label.

## 2 SWIFTReady Financial EAI

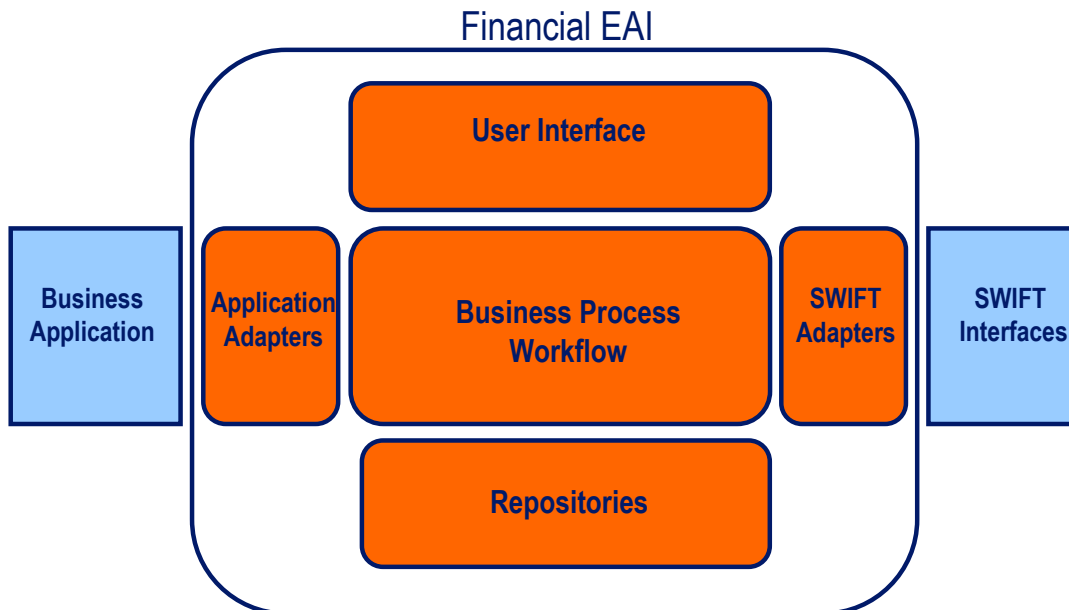
### 2.1 Scope

The SWIFTReady Financial Enterprise Application Integration (FEAI) Label was created in 2000 to ensure the proper orchestration of data flows and business transactions between back-office applications and SWIFT Interfaces deployed at Financial Institutions (FI) and corporate customers. SWIFT customers are more and more looking in generalised B2B services, requiring standardisation of end-to-end business processes, such as payment transaction across the whole chain of participants.

The **EAI** refers to the combination of processes, software, standards and hardware resulting in the integration of enterprise systems and disparate corporate entities to permit single business transactions across multiple systems.

The **Financial EAI** more particularly focuses on the specific needs of the financial community, including actors such as banks, brokers, fund managers, traders, banking and securities market infrastructures and corporate treasury departments. The Financial EAI connects business applications with messaging services and integrates the flow of business transactions with SWIFT Solutions. It provides a configurable framework for automated message processing. All standards and formats available on SWIFT are supported by a SWIFTReady Financial EAI

The Financial EAI maps data coming from business applications into messages and files that are ready to be supplied to any financial counterparty through SWIFT interfaces.



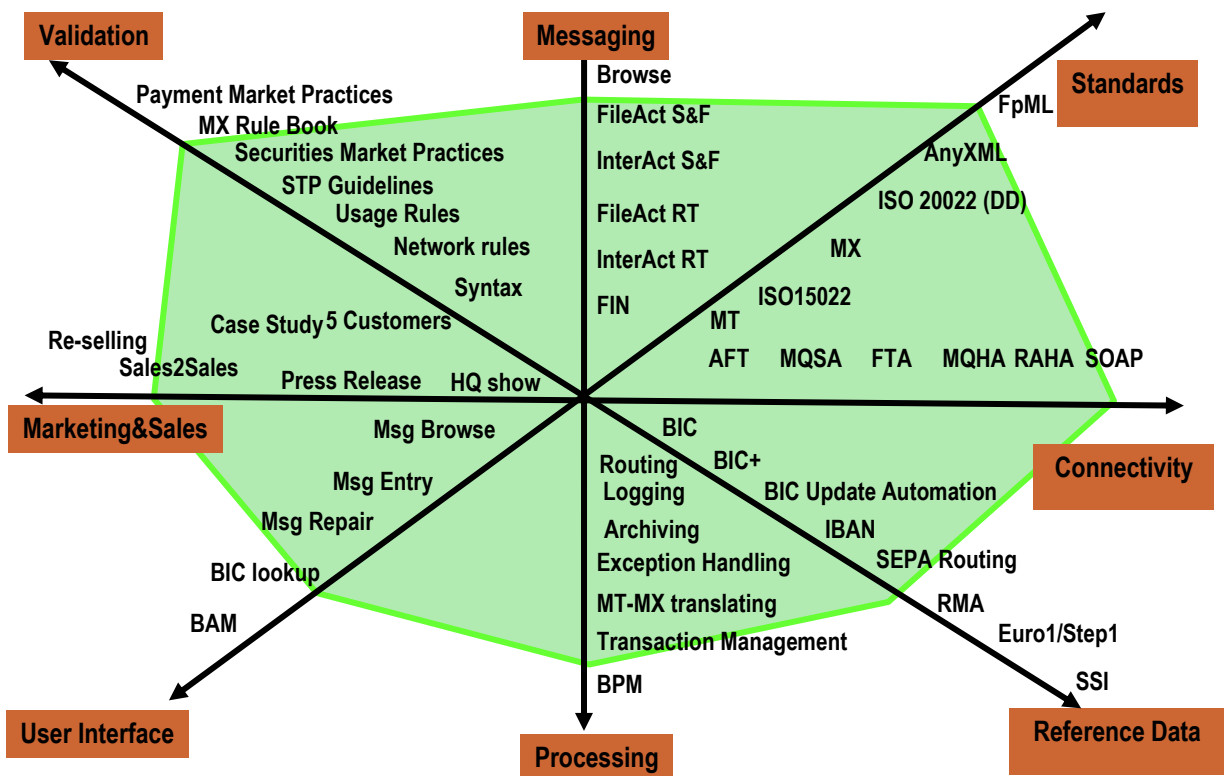
- **Business Processes & Workflow Engine:** the EAI kernel copes with data extraction and mapping, and with messages and files creation, translation, validation, storage, routing, enrichment, exception handling, sending to SWIFT, parsing and reconciliation based on SWIFT Acknowledgment (**ACK**) and Delivery Notifications (**DeIN**) from counterparty. It implements business rules for financial transactions. It also supports Standard Business Messages using a data dictionary approach, which is built onto ISO15022 and ISO20022 standards.
- **Application Adapters:** this includes technical adapters to back-office applications (adapter to databases, applications and file systems using .Net, MQ, JMS, SOAP, WS or other protocols), and the business data transformation into the required format (XML, FIN, FpML, XBRL) possibly using out-of-the-shelf messaging data services. The proper message headers are

created, based on information communicated by business applications and by B2B partner profiles.

- **User Interfaces:** business flows need to be managed to deal with exception, message entry, enrichment and repair, reference data look-up (BIC, IBAN, ISIN, SEPA Routing, Euro1/Step1, AML Directories), and Business Activity Monitoring (BAM).
- **SWIFT Adapters:** adapters to SWIFTAlliance Access and Gateway interfaces including reconciliation mechanisms.
- **Repositories:** messages and events need to be recorded and archived for audit and business process management purpose. In addition, resilient access to reference data (BIC, IBAN, ISIN, CIVIC and Partners profile), business rules and meta-data is required.

## 2.2 Dimensions

The Financial EAI label intends to capture the features requested by SWIFT Users. These have been gathered into several dimensions, which are expanded in the next sections.



1. **Standards** support, including SWIFT Standards (MT, MX), industry (FpML, FIX, AnyXML, XBRL) and proprietary (DEX, E2A, RGV).
2. **SWIFT Connectivity**, involving MQSeries, SOAP, File or API based adapters to SWIFT Interfaces.
3. **Reference Data** access to enrich and repair messages for validation and STP compliance.
4. **Messaging Services** support (FIN, FileAct, InterAct). It includes message generation and data mapping, envelope wrapping, bulking and unbulking, security and routing.
5. **Message Processing**, including routing, exception handling, translation, repair, enrichment, duplicate checking, monitoring, and transaction management.
6. **Message Validation** against messaging services, SWIFT standards and market practices.

7. **User Interfaces** to manage messaging flows, monitor, edit, enrich and repair messages.
8. **Marketing and Sales** collaboration requirements, including a list of customers using the Vendor Application product in a SWIFT context.

## 2.3 New requirements for 2011

To qualify for the SWIFTReady Application label, a Financial EAI must comply with a set of mandatory criteria that are described in the upcoming sections.

The requirements that are **new in 2011** are summarised in the below synopsis and are **marked in blue in subsequent sections**.

The last column lists all new **optional** requirements that may be supported in 2011. These will not be mandated for the conferral of the Financial EAI label. Still, vendors will be recognised for the support of these options, whenever they can demonstrate compliance. Supported options will be published on [www.swift.com/partners/locator](http://www.swift.com/partners/locator).

Dimension	Feature	New Mandatory Requirements in 2011	New Optional Requirements in 2011
Standards	MT	<b>Standard release 2011</b>	
	MX	<b>ISO release 2010-11</b>	
Connectivity	Alliance Access	<b>Integration with Access using native MQHA or SOAP</b>	
			<b>FileAct adapter (Access 7.0)</b>
	Alliance Gateway		<b>Integration with Alliance Gateway is optional if the EAI connects with Access for all messaging services</b>
	Alliance Lite		<b>Alliance Lite 2.0 AutoClient</b>
Message Processing	Translation Mapping		<b>MT/ MX co-existence support for Funds, Payment initiation and Securities settlement</b>
Directories	BIC, BICPlusIBAN, SEPA,		<b>Monthly Directories fetch through FileAct S&amp;F</b>

The presence of optional criteria in this document provides an indication over the programme evolution, as some of the optional criteria may become mandatory in future label versions. The complete list of requirements for 2011 (new and old) are summarised in [section 11](#) of this document.

### 3 Standards

SWIFT develops messaging standards to support business transactions in the financial market. FIN is the original messaging service, based on proprietary message standards. Later, support for standards on FIN was extended to include ISO 15022 standards, which are FIN messages built from a data dictionary. Message types that operate over FIN are referred to as **MT** messages.

In 1997, SWIFT launched SWIFTNet, an IP-based secure network. This network allows for the exchange of message types represented in XML format. It provides support for message standards ISO 20022, FpML and XBRL (additional information can be found on [www.ISO20022.org](http://www.ISO20022.org) and [www.isda.org](http://www.isda.org)). Messages Types of standard ISO 20022 are referred to as **MX**.

Today the network traffic of MT still represents the majority of SWIFT traffic. These are being progressively complemented and/or replaced by XML-based messages, which ease processing and validation, and enable the transfer of richer data for complex transactions.

Label Requirement	Reference number 1	Mandatory
The Financial EAI should support all the MT and MX required for the solution at stake, as listed in SWIFT User Handbook. Message support implies the capacity to capture business payload, transform them into MT and MX messages, validate them against the SWIFT Standards and dedicated solution rulebook (when available).		

#### 3.1 MT

The 250+ FIN messages convey business payload named Message Type (**MT**). Each MT is defined by a three-digit number and holds a specific business meaning. MT are categorised as follows:

Category	Category Name	Number of Messages
0	System messages	56
1	Customer Payments and Cheques	18
2	Financial Institution Transfers	19
3	Treasury - Foreign Exchange, Money Markets & Derivatives	26
4	Collections & Cash Letters	18
5	Securities	67
6	Treasury – Precious Metals & Syndications	15
7	Documentary Credits & Guarantees	29
8	Travelers Cheques	11
9	Cash Management & Customer Status	21

MT Messages are gathered into Business Transactions (Trading, Settlement, Funds). For instance, a Trading Transaction includes Order to Buy (MT502), Trade Confirmation (MT515, MT518), or Statement of Open Orders (MT576). More information over supported Business Transactions can be found on <http://www.swift.com/solutions/standards/business>.

The Financial EAI should support the MT messages required for the Application domain. It means that they should be able to parse the requested MT messages coming from a SWIFT interface. It

should be able to validate the requested MT subset (as per list provided in [Annex A](#)) against SWIFT syntax and semantic rules. System messages are supported by qualified SWIFT Interfaces.

Label Requirement	Reference number 2	Mandatory
<p>The Financial EAI should support all the MT messages of the UHB. The EAI should be able to:</p> <ul style="list-style-type: none"> <li data-bbox="240 443 1394 501">○ Generate all outgoing MT messages pertaining to the solution at stake, validate them against Standards syntax and semantic rules, and route them to the appropriate SWIFT interface.</li> <li data-bbox="240 533 1394 591">○ Receive and parse any incoming MTs as listed in the UHB for the solution at stake, transform, validate, and route them as appropriate.</li> </ul>		

## 3.2 MX

Leveraging the emergence of XML as de facto standards for inter-systems communication, SWIFT uses the UNIFI (ISO 20022) methodology to design standards, based on business processing modelling. The ISO 20022 methodology uses a central data dictionary containing reusable business elements to build XML standards, named MX, that are used in business transactions and provide interoperability across financial services.

At the end, the whole financial community should be moving to MX, but adoption will vary by business area, depending on the drivers. SWIFT intends to provide translation rules to support interoperability in business areas where coexistence of MT and MX is necessary. First translation rules for Funds and Payment have been published on [www.swift.com/standards](http://www.swift.com/standards). [Translations rules for Securities Settlement and Reconciliation and Corporate Actions have been published in 2010.](#)

An MX message contains the business area specific payload. It has the structure defined by the corresponding XML Schema Definition (XSD), as published in the UHB. These schemas provide not only message structure but also instructions on message scope and usage, rules and guidelines. Sample data is also provided in the UHB.

The currently available MX messages are structured according to market segments. The *Business Area*, is represented by 4 (rather meaningful) letters. For example, 'camt' stands for the 'Cash Management' Business Area. The table below gives an overview of the most common MX Business Areas.

The XML schema definitions (XSD) are published on [www.iso20022.org](http://www.iso20022.org), together with business samples and Message Definition Reports (MDR).

MX supports XML features, such as the facets on simple data type (pattern, min and max length, numerical limits, enumeration, max digit and decimal numbers). MX also supports complex data types to gather common characteristics that are inherited by XML schemas and XML instances.

Schema validation involves syntax checking against well-formed XML rules (single-rooted paired elements, opening and closing tags). In addition the XML instance must be validated against its corresponding schema (XSD), including allowed character set, format, cardinality, enumeration, and mandatory/optional presence. XSD are available in deployment packages on [swift.com/support](http://swift.com/support).

Extended validation ensures that the message is validated against the MX rule Book. It involves cross-element (if field A is present then field B must take value X or Y), intra-element (the fractional part of an amount is checked against the currency), calculations (check digit of IBAN code) and external table look-up (BIC, Country or Currency Code).

Label Requirement	Reference number 3	Mandatory
The Financial EAI should support the MX required for the application domain, as listed in SWIFT User Handbook ( <a href="#">UHB</a> ) for the business application. It should be able to support Extended Validation for the generic fields present in most MX. A complete list of generic fields that should be validated is provided in a later section.		

### 3.3 ISO15022

ISO 15022 de-couples business elements from physical representation, and ensure that business items are always represented the same way, irrespective of the message contents. It provides the tools to define MT standards used in the Securities industry. These tools consist of a set of syntax and message design rules, a dictionary of data fields and a catalogue of MT messages using these data fields and rules.

Business elements (such as Net Cash Amount, Cut-off Time, and Beneficiary) belong to business classes (such as Amount, Party, Date/Time). Business elements are reused across MT messages, bearing the same syntax, tag and business rules.

The Financial EAI should support the ISO 15022 data dictionary. In particular, each data field element and related qualifier should be centrally managed, so that each data field update percolates up to all MT messages that use this data field.

This logical link can be implemented in various forms as long as the user can find the corresponding business data in related messages. This implementation leads to data mapping in the following two logical steps:

- Identify the business meaning of every field in the incoming message
- Generate automatically the corresponding business message including these business elements.

Label Requirement	Reference number 4	Mandatory
The Financial EAI should be able to map field values into a canonical, syntax neutral representation using a central dictionary methodology. The same applies for SWIFT incoming messages parsing and storage		

### 3.4 ISO20022

ISO 20022 provides the financial industry with a common platform for the development of messages in a standardised syntax (mainly XML), using:

- a modelling methodology, based on unified modelling language (UML) to capture financial business models, business transactions and associated message flows into a syntax-independent data dictionary
- a set of XML design rules to convert the messages described in UML into XML schemas

SWIFT applies the ISO 20022 definitions to structure SWIFT Standards XML (MX) message types. Any MX artefact (XML element, simple or complex type, attribute) has a corresponding business artefact definition (message component, element, data type). MX and business artefacts are both represented in UML.

The ISO 20022 Financial Dictionary contains reusable items, which can be categorised into business concepts (association, component, rule, actor and role), data types and message concepts (message element and rule). Non-reusable artefacts (business processes, information flows, MX messages, and technical message elements) are found in the SWIFT Standards Reference Guide.

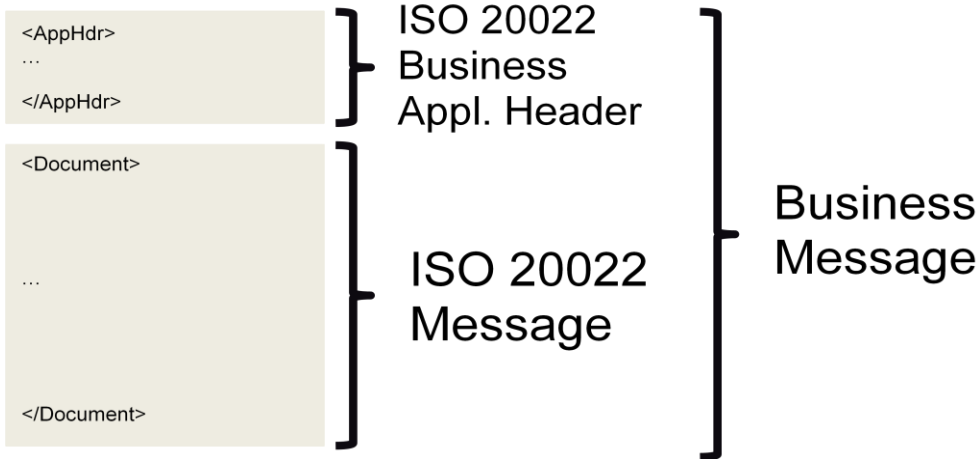
The ISO2022 data dictionary is available free of charge in electronic downloadable format on [www.ISO20022.org](http://www.ISO20022.org).

The complete catalogue of ISO 20022 messages, including the ISO 20022 data dictionary, the Message Definition Reports (MDR) and XML schemas (XSD) for current and future versions, is available on the ISO 20022 website [www.ISO20022.org](http://www.ISO20022.org).

Label Requirement	Reference number 5	Mandatory
The Financial EAI should support the ISO 20022 data dictionary, i.e. all reusable business elements and components, as basis for parsing, validating and storage of MX messages and associated rules.		

### Business Application Header

In 2010, ISO introduced a Business Application Header (BAH) to harmonise the access to operational data and make it easier to implement ISO 20022 messages. The idea being the BAH is to extract routing and message features information (such as sender, receiver, possible duplicate, signature, priority) from the business payload and to expose it in a header that can be accessed by business applications and middleware in the same way for all MX messages. The BAH is network independent and allows intermediate applications to access and update the routing information without having to touch to the business payload.



The BAH is available as an additional XML schema, which comes on top of the business payload. It replaces the Application header (AppHdr) that is found today in some of the MX messages. New ISO 20022 messages and new version of existing MX messages will progressively require the BAH.

SWIFT is planning to support the new business application header early 2011 for some standards. In Q1 2011, the new Clearing solution introduces 10 new Clearing (*set*) and updates 6 collateral and cash management messages (*colr* and *camt*). The BAH is published in the [ISO 20022 Catalogue of Messages](#).

Label Requirement	Reference number 6	Optional
The Financial EAI should support the ISO 20022 Business Application Header for routing and operational data processing		

### Extensions and restrictions

ISO 20022 also introduces extensions and restrictions to meet the needs of individual customers and communities.

Extensions provide supplementary data to existing ISO 20022 messages, available as ISO 20022 compliant definitions and processed the same way as the rest of the messages. Extensions should be developed and used by exception when the data at stake is too specific or too volatile to include it in the ISO standard, for urgent business need only or to accommodate market specific needs. ISO 20022 extensions are submitted to ISO for approval prior to publishing.

Restrictions will be made available as ISO 20022 Variants. Variants are usually defined and published by communities to bring clarity and raise awareness on specificities. Variants need to be compliant with the published ISO 20022 version of the message.

Label Requirement	Reference number 7	Optional
The Financial EAI should support the ISO 20022 Extensions and Restrictions		

### 3.5 Standards Developer Kit (SDK)

SWIFT's [Standards Developer Kit](#) is a coherent set of electronic standards resources designed to help developers stay ahead by creating flexible implementations using up-to-date technology.

The SDK Release 2 includes:

- the **MX Repository**, which provides MX / ISO 20022 messages derived from a rich and detailed formal model. The model fully defines the structure and content of all messages and the meaning of the business concepts to which they refer.
- the **MT/XML Schema Library**, a complete set of XML schema definitions for MT messages, and software which shows how to convert messages from an MT format to an MT XML representation and back. This approach allows XML integration between applications while the MT (FIN) format will continue to be transported over the SWIFT network.
- the **MT-MX Translation Reference**, an executable reference implementation of SWIFT's translation rules, including machine consumable standards definition, XML schemas and source code. It is provided with a comprehensive set of test messages and accompanying documentation. This reference product is intended to allow customers and vendors implementing translation projects to test that their implementations conform to the published Standards Translation Rules.

The SDK simplifies the implementation, testing and yearly update of SWIFT standards in your EAI or business application

The use of the SDK is recommended to ensure full compliance with SWIFT Standards. In particular, it is suggested to use the XML schema of the MT messages as internal formalism to represent the MT messages. SWIFT intends to provide a validation code (XLST or other formalism) to support syntactic and semantic validation of the MT messages.

Label Requirement	Reference number 8	Optional
The Financial EAI should support the SDK. In particular, it should support the XML version of the MT messages, as generated by the SDK		

### 3.6 FpML

The Financial products Mark-up Language (FpML) is an XML message standard developed for the OTC Derivatives industry. SWIFT created an FpML Closed User Group (CUG) linking buy-side with asset-servicing institutions, to transport FpML messages related to trade notification process for interest rate and credit derivatives.

FpML 1.0 enables the transport of contract notification messages between buy-side and custodians.

FpML 2.0 will be delivered in March 2011 and includes cancellation of post-trade events and confirmation messages.

SWIFT central services will validate FpML 2.0 messages against

- Syntactical rules (FpML schema validation)
- ISO references (Country, Currency codes and BIC)
- Semantic rules (cross field validation rules available for products Type = IRS, CDS, CDX or CXT).

The contract FpML 2.0 messages (Created, Novated, Increased, Terminated and Cancelled) should be supported.

Label Requirement	Reference number 9	Optional
The Financial EAI should support FpML schema validation and FpML extended validation, in alignment with SWIFT central validation.		

### 3.7 XBRL

The eXtensible Business Reporting Language (XBRL) is a member of the XL based languages. XBRL is a framework designed to standardize and automate the flow of business reporting through the use of XML-based “tags” to identify specific information in the text of a business report such as a financial disclosure. Encoded in each tag is how the specific text is to be interpreted as data. For example, if a corporation were to include the term “net profit” in a financial disclosure document, an XBRL tag applied to that term might indicate the data should be read as a percentage.

The XBRL framework has three sub-components:

- An XBRL **Taxonomy** acts like a dictionary, defining a common language, with descriptions and classifications for the contents of XBRL documents.
- An XBRL **Document** is an XML document, conforming to the XBRL format and typically containing the information required in a single periodic financial report or statement.
- XBRL **Tools** – these fulfil multiple functions to make the adoption of XBRL as easy as possible.

XBRL is aligned with GAAP (Generally Accepted Accounting Principles) and IFRS (International Financial Reporting Standards), and is being aligned with ISO 20022 for corporate actions. A number of other plans are in discussion to further extend XBRL to domains such as tax and asset backed securities.

Using the XBRL framework greatly enhances the automation rates of business information, as software programmes at each institution that needs the data will be able to automatically recognize the tagged data within an XBRL document.

Label Requirement	Reference number 10	Optional
The Financial EAI should support the XBRL Taxonomy		

## 4 SWIFT Connectivity

The Financial EAI should connect with SWIFT through one of the available **Alliance** interface

The Financial EAI should integrate with Alliance Access, Integrator or Gateway, or Lite depending on technical and business requirements related to the solution at stake:

- **Alliance Access** is the preferred choice of connectivity. It provides File, SOAP and MQ based adapters to support FIN, InterAct and FileAct messaging services.
- The **Alliance Integrator** can be selected as an alternative to Access. Alliance Integrator is an Access add-on that provides an integration framework to simplify the Financial EAI connectivity
- **Alliance Gateway** should only be considered when Alliance Access does not provide the necessary features to support the messaging services or business service levels. This is mostly the case for market infrastructures that need to deploy run-time servers for FileAct or InterAct real-time messaging services.
- **Alliance Lite** AutoClient provides basic file based connectivity for funds and investment managers, corporates and small banks.

The EAI should be developed and tested using Alliance Access Release 7.0, which has been launched Q4 2010. [Proper support of Alliance Access 7.0 is mandated for the 2011 label.](#)

The selection of the appropriate Alliance adapter varies according to the underlying messaging service and standards requested by the solution at stake:

Messaging service	Standards	Interface	Mandatory Alliance adapter	Optional Alliance adapter
FIN	MT	Access	AFT and (MQHA or SOAP)	MQSA (1)
		Lite		AutoClient
InterAct store&forward (SF)	MX FpML XML	Access	AFT and (MQHA or SOAP)	MQSA
		Gateway		RAHA (2) MQHA (2)
InterAct real-time (RT)	MX FpML XML	Access (client)	MQHA or SOAP	MQSA
		Gateway		RAHA MQHA
FileAct real-time (RT)	Any	Access	AFT and (MQHA or SOAP (3) or Direct FileAct)	
		Gateway		FTA/FTI (4) RAHA (2) MQHA (2)
		Lite		AutoClient
FileAct store&forward	Any	Access (client)	AFT and (MQHA or SOAP (3) or Direct FileAct)	
		Gateway		FTA/FTI (4) RAHA (2) MQHA (2)

- (1) MQSA can no longer be ordered. It is supported in maintenance mode only.
- (2) Applications using these host adapters need to submit their applications to the SWIFT Interface qualification programme
- (3) SOAP for FileAct will be available as of Q3 2011
- (4) FTA/FTI are not qualified for SWIFTNet R7.0 and will no longer be supported after March 31, 2012

The Financial EAI provides generic adapters that capture business data for various file systems, documents and business application databases, and map them to the requested MT or MX formats, prior to route and dispatch them to the appropriate Alliance interface.

A financial EAI deals with the messaging and network complexities and eases the integration with SWIFT. The EAI adapters should be customised and configured to map to the Financial EAI, which should also provide the appropriate message reconciliation mechanisms.

Label Requirement	Reference number 11	Mandatory
<b>The Financial EAI should integrate with SWIFT through one of the Alliance Access adapters on the Release 7.0</b>		

The following table displays for every available solution the list of adapters (3 last columns) that supports these solutions, either completely (marked with √), or partially (in which case, the limitation is provided). The required standards, messaging protocol and mode are also provided.

**Note that any application that directly connects to the Alliance Gateway R7.0 using the RAHA or MQHA adapters, needs to pass the SWIFT [interface qualification](#).**

SWIFT Solutions & Market Initiatives	Standard	Messaging Service	Mode	Access AFT MQHA SOAP	Gateway RAHA MQHA	Gateway FTA FTI (1)
Cash Reporting	MT, MX	FIN, IA	SF	√	√	
Funds	MX	IA	SF	√	√	
Exceptions & Investigations	MX	IA	SF	√	√	
Trade Service Utility	XML	FA	RT & SF	√	√	√
		IA	RT & SF	√	√	
Data Distribution Corporate Actions Reference Data	MT, Proprietary	FIN, FA	RT	√	√	FA
Accord	MT, XML	FIN, IA, BR	RT	MT	√	
TARGET2	MT, XML, MX (Cash)	FIN, IA, FA	RT & SF	√	√	
Bulk Payment SEPA	MX, MT, Proprietary	FA	RT & SF	√	√	√
CLS Third Party	MT XML	FIN IA	RT	√	√	
Affirmations (Accord)	XML	IA	RT		√	
Proxy Voting	MX	IA	SF	√	√	
FpML	FpML	IA	SF	√	√	
Corporate Access (Trade, Treasury, Supply chain))	MT, XML	FIN, FA	RT & SF	√	√	FA
Transaction Reporting	MX	FA	SF	√	√	√
Worker Remittances	MX	FA	SF	√	√	√
Collateral Management	MT, MX	FIN, IA, FA	SF	√		
Islamic Banking	MT	FIN	SF	√		

(1) Not supported as of 31 march 2012

## 4.1 Alliance Access integration

**Alliance Access** provides the following adapters:

- Automated File Transfer (AFT). MT, MX, FpML and AnyXML messages are bulked together in files that are transferred to Alliance Access Input directory. Messages coming from SWIFT are read from an Alliance Access message partner output directory. The XMLv2 format is recommended. The RJE and PCC formats only support MT.
- The SOAP Host Adapter supports the exchange of any MT, MX, FpML and AnyXML messages across a very large range of operating systems and platforms (FileAct support is planned for Q3 2011)
- Alliance Access MQ Host Adapter (MQHA), based on the Alliance Access Application Interface instead of ADK supports the exchange of any MT, MX, FileAct, FpML and AnyXML messages across a very large range of operating systems and platforms. MQHA is superseding the MQSA adapter.
- WebSphere MQ Interface for Alliance Access (MQSA) supports the exchange of any MT and MX messages across a very large range of operating systems and platforms. This adapter will not be enhanced in the future.

**Alliance Access R7.0** introduced also new adapters:

- Direct FileAct Host Adapter supporting the FileAct Real Time and Store&Forward protocol.

The table below shows a summary of the available adapters for the various messaging services, and the supported envelope format:

Access Adapter	FIN	InterAct	FileAct	Format
AFT	√	√	√	RJE (FIN) or XMLV2
MQSA (1)	√	√		MQ-MT or XMLv1
MQHA	√	√	√	MQ-MT or XMLv2
SOAP	√	√	Q3 2011	XMLv2
Direct FileAct			√	XMLv2

(1) MQSA can no longer be ordered. It is supported in maintenance mode only

Label Requirement	Reference number 12	Mandatory
<p>The Financial EAI should integrate with <b>Alliance Access Release 7.0 using at least AFT and one of MQHA or SOAP adapters. Additional adapters support is encouraged and their support will be published in the product sheet on swift.com</b></p> <p><b>MQSA support is no longer accepted as a valid adapter for the SWIFTReady 2011 label criteria.</b></p>		

These adapters need dedicated message envelopes to integrate with Alliance Access. The most commonly used is RJE format which only supports MT. However, a generic envelope format has recently been made available for most adapters (MQHA, AFT, SOAP, File Transfer), and is referred to as the **XMLv2** format.

The different exchange formats supported are described in the Alliance Access System Management Guide, part D, Annex G. As of Alliance Access 7.0, payloads are available in XML format for both MT and MX messages.

Label Requirement	Reference number 13	Mandatory
<p>The Financial EAI should support the XML envelope format for MT, MX and Files. This envelope format is named <b>XML version 2</b>, and includes the following information :</p> <ul style="list-style-type: none"> <li>• <b>Message</b>, that can be MX or MT, AnyXML or File Format exchanged between Financial EAI and Alliance Access</li> <li>• <b>MessageStatus</b>, providing the result of Alliance Access validation processing, including error codes.</li> <li>• <b>TransmissionReport</b>: containing the Transmission Notification and the original message</li> <li>• <b>DeliveryReport</b>, containing the Delivery Notification reconciled with the original message</li> <li>• <b>DeliveryNotification</b>, without the original message but with some reconciliation information</li> </ul>		

#### 4.1.1 MQSA support

The WebSphere MQ middleware uses a central message queuing mechanism to temporarily store messages from Alliance Access which can be picked up by a Financial EAI at its own speed, while introducing a transparency layer for the operating system and communications protocol. MQSA supports the exchange of any MT or MX set of messages, and the reception of Information Notification (local Alliance Access syntax and signature validation result), Transmission Notification (ACK/NAK), and Delivery Notification.

The Financial EAI can use the MQSeries Local Reports feature to (1) reconcile messages in application repositories using the Correlation Identifier and (2) convey notifications to back-office applications.

**MQSA support is no longer required in 2011, as it will be replaced with the native MQHA adapter.**

#### 4.1.2 MQHA support

MQHA is the new WebSphere MQ adapter for Alliance Access, available since Alliance Access R6.2. It uses the standard mechanism of message partner definition available in Alliance Access, including routing rules and profile definition.

The main benefits of going from MQSA to MQHA are:

- Simple configuration and management using 'message partners' concept of Alliance Access
- No need any more for customers to purchase the ADK run-time license
- Increased capacity and scalability

As there are some fundamental differences between the datagrams sent by MQSA and those sent by MQHA, it is necessary to analyze the impact, and where needed change the Financial EAI to allow them to use datagrams exchanged with the embedded MQ Host Adapter.

The '[Migrating to MQ Host Adapter](#)' guide available in the UHB outlines the differences between MQSA and MQHA, and describes the impact of the migration. It also lists the prerequisites of the migration and details the migration tasks that must be performed. It should be strictly adhered to.

Label Requirement	Reference number 14	Mandatory
The Financial EAI should support MQHA (or SOAP) connectivity using the XML v2 envelope. The Migration guide should be implemented and tested. <a href="#">The tests should be performed over Alliance Access R7.0</a>		

### 4.1.3 AFT support

Automated File Transfer (AFT) supports the automated exchange of a mix of MX and MT batched into a file and provided in a local or remote file system. AFT allows to:

- Batch MT /MX messages in an AFT-formatted file, and transfer it (using FTP or another file transfer mechanism) to AFT Input Directory
- Read files from AFT Output Directory; un-batch the files into MT and MX messages, Message Status (result of local Alliance Access validation), Transmission Notifications (result of SWIFT Central Services validation) and Delivery Notifications.
- Reconcile Transmission Notifications (ACK and NAK) with sent messages
- Reconcile Delivery Notifications (positive or negative) coming from the counterparty
- Handle exceptions (NAK, file format errors, signature errors, duplicate handling) by reading into AFT Error and Report Directory and route to the Exception Handler

Note that AFT has limited capabilities in terms of local reconciliation. Files that are rejected (wrong file format or signature) can be retrieved through error reports, but once the file has been un-bulked, the invalid messages are routed to the Alliance Access repair queue, and can no longer be retrieved.

In addition, AFT does not manage sequence control, and is not appropriate for time-critical or high-volume applications.

Label Requirement	Reference number 15	Mandatory
The Financial EAI should support AFT Connectivity using the XML v2 envelope. It should also deal with both positive and negative acknowledgements.		

### 4.1.4 SOAP Host Adapter

Alliance Access 7.0 introduces a full-fledged SOAP Host Adapter, which supports the interactive exchange of MT or XML messages with Financial EAI's using the SOAP protocol. FileAct support is planned for Q3 2011. The SOAP Host Adapter uses web services over HTTPS to exchange messages with Financial EAI's. These messages are exchanged in SOAP format, a common message format used with Web services. The SOAP payloads are wrapped in the XMLv2 (revision 2) envelope.

The SOAP interactive message exchange is controlled through an additional SWIFT-defined protocol on top of the SOAP protocol. This protocol provides a set of primitives in order to manage the message exchange sessions, to guarantee and ensure unique delivery of messages. These primitives are :

- Open / Close of a session
- Send a message to Alliance Access
- Acknowledge a message received from Alliance Access
- Request Alliance Access to send a message waiting delivery

SWIFT provides WSDL specifications of the protocol for rapid development

Label Requirement	Reference number 16	Mandatory
The Financial EAI should support the SOAP (or MQHA) Adapter for FIN and InterAct SF services, using MT, MX or AnyXML message type.		

### 4.1.5 FileAct Integration

Alliance Access 7.0 introduces FileAct integration both for real-time and store-and-forward modes.

The **AFT mechanism supports FileAct** via the file system (directories for IN, OUT and Error files) to interface with Financial EAI. It uses both a payload file and an accompanying parameter file, formatted in XML v2 (revision 2) to convey routing and addressing information. The XML v2 format has been extended in order to cater for FileAct-specific needs. The adapter also produces network and delivery notifications, which are available as XMLv2 reports.

The **Direct FileAct Adapter** enables the exchange of payloads only (no need for XMLv2 companion files). It uses data directories to select the message partners. It supports basic FileAct services (not the Y/T copy mode).

Label Requirement	Reference number 17	Mandatory
The Financial EAI should support the Alliance Access FileAct RT and SF services. At least one of both modes (XMLv2 companion file or Direct FileAct adapter) should be supported.		

## 4.2 Alliance Lite

Alliance Lite is an Internet-based service that provides a direct, secure and low cost access to SWIFT. Customers do not have to install SWIFT-specific connectivity products at their premises. Instead, they can access Alliance Lite using a standard Internet connection with a SWIFT-issued hardware security token.

Alliance Lite supports integration with the back office through a lightweight **AutoClient**. The AutoClient is in essence a daemon or file-listener, with very limited footprint that is installed at the customer's premises. The AutoClient offers a low-TCO solution to receive/deliver messages and files from a back-office application and to upload/download these messages and files to/from the Alliance Lite service.

The AutoClient processes the content of 4 pre-defined directories:

- Emission directory: all files to be sent through Lite are dropped in this directory.
- Reception directory: all files received by Lite for this institution are put in this directory.
- Errors directory; for local errors generated by AutoClient (FIN and FileAct)
- Archive directory: any file successfully processed by Lite will be moved in this directory.

Alliance Lite with the AutoClient is restricted to:

- FIN
- FileAct RT (SF is not supported)
- InterAct Funds messages provided in a proprietary csv format

Label Requirement	Reference number 18	Optional
The Financial EAI should integrate with Alliance Lite using AutoClient for FIN, InterAct and FileAct, it should read on Reception and Error directories, and reconcile as appropriate		

## 4.3 Alliance Gateway integration

Alliance Gateway R7.0 provides the following adapters:

- Remote API Host Adapter (RAHA)  
It provides a set of APIs available on 3 platforms (AIX, Sun and Windows). RAHA supports tight integration of FileAct and InterAct flows in any mode (SF or RT, push or pull modes).
- WebSphere MQSeries Host Adapter (MQHA)  
It provides the same level of integration for FileAct and InterAct on a vast range of platforms. MQHA is not recommended for FileAct, as MQ files are limited to 100 MB while FileAct can transfer up to 250 MB in real-time mode.
- Web Service Host Adapter (WSHA)  
It enables a Web services application that connects to Alliance Gateway to exchange SOAP messages with another application over SWIFT. The SOAP format is translated by WSHA into InterAct RT message. FileAct can also be used when both sender and receiver are using WSHA.  
Alternatively, this adapter allows as well to use SOAP to provide InterAct and FileAct messages to Alliance Gateway.
- SOAP Proxy
- File transfer Agent / Integrated (FTA/FTI).  
FTA and FTI both support FileAct RT and SF. Files are transferred to Alliance Gateway directories. FTA automates the file transmission, while FTI waits for a user of application command to be issued. For the current releases, neither FTA nor FTI can guarantee data confidentiality in DMZ.  
FTA/FTI are not qualified messaging interfaces for SWIFTNet Release 7.0, as they don't support RMA. Still customers can continue to these interfaces until Q2 2012.

**As of the Alliance R 7.0, the Gateway adapters are no longer mandated for the granting of SWIFTReady labels. The Alliance Access adapters should always be chosen as first candidates to integrate with SWIFT.**

### 4.3.1 RAHA/MQHA Support

RAHA and MQHA can be used for InterAct and FileAct in RT or SF modes. Integrating with Alliance Gateway using these adapters is a complex exercise requiring networking expertise (session and security handling), and should be restricted to the only situations where Alliance Access cannot be used (ex: FileAct application server)

**As of SWIFTNet R7.0, any application that interfaces directly with Alliance Gateway using RAHA or MQHA, will be subject to qualification as a [SWIFT Interface provider](#).**

Label Requirement	Reference number 19	Optional
The Financial EAI should integrate with Alliance Gateway RAHA or MQHA for InterAct or FileAct traffic. Partners selecting this approach have to pass through the interface qualification.		

### 4.3.2 WSHA Support

WSHA is the new SOAP adapter, available with Alliance Gateway R6.1 and further releases for InterAct.

WSHA usage is restricted to specific market infrastructure and central application providers. It requires all messaging parties to deal with the same protocol.

Label Requirement	Reference number 20	Optional
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The Financial EAI should integrate with Alliance Gateway WSHA for InterAct traffic

### 4.3.3 FTA/FTI support

FTA / FTI are Gateway interfaces supporting FileAct RT and SF.

These interfaces are not qualified interfaces for the SWIFTNet R7.0

Label Requirement	Reference number 21	Optional
<p>The Financial EAI should correctly handle the structured FileAct header in emission and reception. This involves the enhancement of parameter files <i>Sw:HeaderInfo</i> fields to include the number of transactions in each file and specify the result in the <i>TotalNumberOfTransactions</i> data element of the File Header info.</p> <p>For FTA/FTI, the Companion parameter file (File Transfer User Guide R7.0) should be used to convey detailed information that is used by FTA to complete the header information.</p>		

## 5 Reference Data

### 5.1 BIC Integration

The BIC (Business Identifier Code) identifies both financial and non-financial institutions.

The BIC Directory is a database containing the exhaustive list of institutions connected on the SWIFT network.

The Financial EAI should provide access to these directories both for message validation and as look-up function in the message creation and message repair stations.

The BIC Directory is downloadable from [www.swift.com](http://www.swift.com) in full or delta versions. It should either be copied into the application repository system, or stored in back-office for access by the Financial EAI through a defined interface.

In 2011, SWIFT plans to provide the BIC Directory monthly updates through FileAct. This will allow for the application to automate the BIC Directory update.

Label Requirement	Reference number	22	Mandatory
The Financial EAI should support look up to local BIC Directory and validation of generated messages against the BIC directory			

### 5.2 BICPlusIBAN

The BICPlusIBAN Directory includes the full list of the ISO9362 BIC's cross-referenced with more than 400,000 national bank codes/sort codes from over 60 countries, including codes from the American Banking Association (ABA).

It also provides the ISO13616 IBAN structures of more than 50 countries, and all national bank codes used in IBANs, cross-referenced with the BICs used in SEPA.

It also includes the directory of countries, currencies and holidays.

Financial institutions and corporates use the BICPlusIBAN Directory to:

- Validate the BIC in payments and customer databases
- Look up the BIC and its details such as an institution's name and address
- Look up the institution's participation in payments services
- Look up the connected SWIFT BIC serving a non-connected BIC
- Translate between the BIC and the corresponding national bank/sort code
- Make customer or supplier databases SEPA-ready
- Look up the BIC corresponding to an IBAN

The BICPlusIBAN Directory is available as a downloadable, electronic file suited for integration, or for manual look-up.

The BICPlusIBAN Directory also allows to derive the BIC from the International Bank Account Number (IBAN) in outgoing SEPA payments over 50 countries, or to validate that both BIC and IBAN belong to the same institution.

Furthermore, the BICPlusIBAN provide look-up facilities for bank/branch/clearing codes against the beneficiary BIC. It also contains banks' participation in RTGS systems and many other bank details.

The directory can be downloaded from [swift.com](http://swift.com) on the [BIC Downloads page](#). BICPlusIBAN supersedes the BIC+ Directory that is being removed from the market.

The Financial EAI should be able to validate the BICPlusIBAN against specific MT and MX messages, which are:

- 1) MT102 (STP or not) field tags 52A and 57A (plus 52C and 57C for MT102\_not\_STP)
- 2) MT103 (STP or not) field tags 52A, 56A, 57A (plus 52D, 56D, 56C, 57C and 57D for MT103\_not\_STP)
- 3) Pacs MX messages

In MT messages, the IBAN of the beneficiary customer is contained in field 59A (preferably) or 59.

IBAN code should be validated for **pacs** messages used in SEPA. In particular:

- a) the IBAN checksum should be checked with Modulo 97 formula, ISO standard 13616,
- b) the country specific IBAN format, should be checked against the IBAN registry format (downloadable from swift.com)
- c) the national bank identifier in payment messages should be checked against the IBAN
- d) the BIC issued in payment message should be checked for existence,
- e) the IBAN and the BIC should be checked as belonging to the same institution.

For c), d) and e) one needs SWIFT's BICPlusIBAN Directory available on swift.com. d) can also be checked against the SWIFT BIC Directory.

Label Requirement	Reference number	23	Mandatory
<p>The Financial EAI should support validation of generated messages against the BICPlusIBAN directory. It should use the IBAN-BIC directory to validate the IBAN-BIC combinations, translate BIC into national bank/ clearing codes, and to derive the BIC from the IBAN</p> <p>In addition, the application shall optionally repair payment messages for which the issued BIC and IBAN do not match, or derive the BIC from IBAN when the BIC is missing.</p>			

### 5.3 SEPA Routing Directory

The SEPA Routing Directory contains operational information on SEPA participants, their operational readiness for the SEPA schemes and on how payment transfers can reach them.

Financial institutions in SEPA are using this directory to:

- Validate the counterparty's BIC
- Validate the counterparty's adherence to the SEPA Credit Transfer Scheme (presence in the European Payments Council's Register of Participants)
- Look up the BIC's operational readiness
- Find the available and preferred payment channels (Clearing and Settlement Mechanisms) for sending a SEPA payment to the receiving bank.

Available as a downloadable, electronic file suited for integration in applications or for stand-alone look-up using the SWIFT BIC Enquiry Tool (free of charge). The directory is updated monthly.

The SEPA Routing directory specifications and samples can be downloaded from [www.swift.com](http://www.swift.com) on the [BIC Downloads page](#) or on SWIFTCommunity (<https://www.swiftcommunity.net/>), registered vendors community.

The SEPA Routing Directory contains:

- The **BICs and names** of the financial institutions that have signed the SEPA Credit Transfer adherence agreement with the European Payments Council (EPC) (and later on the Direct Debit agreement).
- The **operational BICs** of these institutions which are able to process the SEPA payments.
- The **channels** (SEPA-ready ACH or other Clearing and Settlement Mechanisms (CSM) through which the financial institutions can receive the SEPA payments, and the preference for using these channels.

- At a later stage it will contain the SEPA Direct Debit Scheme information as well.

The Financial EAI should be able to use this SEPA Routing Directory to validate **pac**s messages against the Scheme to be used for a given correspondent BIC before sending a SEPA credit transfer payment instruction.

The Financial EAI can optionally implement the following logic for SEPA related **pac**s messages to be sent to SWIFT:

- Split the target correspondent BIC into a BIC Code (8 characters) and a Branch Code (3 characters). If the branch code is empty, substitute it with XXX.
- Search the SEPA Directory with the BIC code, the branch Code, the Service Level (for example, SEPA), and the Scheme Instrument (for example, SCT for pac.s.008 message and SDD for pac.s.003 messages)
- If no record is found for a specific branch code, then repeat the search with XXX in the branch code.
- If at least one record is found with an operational readiness date older than the current date and with an active validity period, then the BIC is ready to accept payment instructions for the service level/scheme instrument and can receive payment instructions through the payment channel, and the message is validated.
- If no record is found, the message should be routed to manual investigation to validate that the counterpart bank is ready to accept SEPA payment instructions.

Label Requirement	Reference number 24	Mandatory
The Financial EAI should be able to use the SEPA Routing Directory to validate <b>pac</b> s messages against the Scheme to be used for a given correspondent BIC before sending a SEPA credit transfer payment instruction. The Financial EAI should also implement the necessary logic for SEPA related <b>pac</b> s messages to be sent to SWIFT.		

## 5.4 SWIFT Directory distribution through FileAct

SWIFT has developed a distribution service of the monthly Directory files through FileAct Store and Forward.

This service is live in January 2011. It allows users to automatically receive the monthly updated directory files by fetching the adequate FileAct Store and Forward queue.

At the monthly publication date, SWIFT will put the selected directory packages on your FileAct Store and Forward queue.

A script will need to be available to uncompress and decompose the directories packages and then identify the distinct files in the packages which need to be pushed to the EAI reference database and other internal systems..

SWIFT created an example procedure on how the integration of the Bank File can be automated in SWIFT Alliance.

Label Requirement	Reference number 25	Optional
The Financial EAI should automate files fetching from the Store and Forward queue and push the files automatically to the EAI reference database.		

## 6 SWIFT Messaging Services

SWIFT provides several messaging services to support the needs of the financial community. FIN and InterAct cater for the automation of structured financial information transfers to business partners, while FileAct conveys large payload of free format and bulked/low value information.

### 6.1 FIN

FIN is a secure, reliable and resilient, access-controlled, structured, store-and-forward messaging service. Value added processing includes message validation against SWIFT Standards, delivery monitoring and prioritisation, on top of central message storage and retrieval.

FIN supports more than 240 Message Types (MT) categorised into 9 market segments according to their business usage (Payment, Treasury, FXMM, Derivatives, Collections, Securities, Trade, Precious Metals and Cash Management).

FIN messages are made of data blocks for addressing and control (block 1 to 3), MT business payload (block 4) and system trailers block (block 5).

{1: BASIC HEADER BLOCK}
{2: APPLICATION HEADER BLOCK}
{3: USER HEADER BLOCK}
{4: TEXT BLOCK}
{5: TRAILER BLOCK}

FIN messages need to be either accepted or rejected by the receiving application by sending an MT of type F21 (acknowledgement message) to the emitting institution.

Label Requirement	Reference number 26	Mandatory
The Financial EAI should support the FIN protocol. In particular, it should be able to generate the correct FIN headers, body and trailer blocks, and should be able to parse and act upon incoming messages as appropriate.		

### 6.2 InterAct

InterAct caters for the interactive real-time and store-and-forward exchange of messages between applications. InterAct is widely used in many of SWIFT's solutions, including Funds, Exceptions and Investigations, TSU, Proxy Voting, Derivatives(FpML) and Cash Reporting. It is also used for Market Initiatives such as TARGET2, SEPA, MiFID, Euroclear CCI and Giovannini.

InterAct supports XML format and other structured formats (FIX, FpML) wrapped into an XML envelope. InterAct Central Services provide enhanced validation services over MX messages, which are XML messages designed with the ISO 20022 methodology.

InterAct can be used to send and receive a business payload in real-time (RT) or Store&Forward (SF) modes.

InterAct messages can be sent through Alliance Access or Alliance Gateway, using one of the available adapters. Alliance Access accepts any XML format, including MX and FpML.

Alliance Access provides a resilient store-and-forward local messaging hub, manages the SWIFT protocol (security, network and SF queue management) and reconciliation process. These features are not natively supported on Alliance Gateway.

The Financial EAI should support all InterAct modes to cover the needs of all of SWIFT's solutions and Market Initiatives. The Messaging Operations guide (see UHB) should be strictly adhered to.

Label Requirement	Reference number 27	Mandatory
The Financial EAI should support the InterAct messaging service over Alliance Access and adhere to the latest release of the Messaging Operations Guide in the online UHB.		

### 6.3 FileAct

FileAct secures the transfer of data files using RT or SF protocols. FileAct is particularly suitable for bulk payments, securities corporate actions, reference data and reporting, but is also used for central-bank and intra-institution reporting, and for check images.

FileAct supports up to 250 Mb in RT of structured and unstructured data. Today, SWIFT Central Services validate and store the header, and leaves the whole file payload untouched.

FileAct is supported over Alliance Gateway with a dedicated host adapter (FTA or FTI) or generic MQHA (for up to 100 Mbytes payload) and RAHA adapters.

FileAct is also supported over the new Alliance Access adapter coming with release 6.3

FTA support is mandatory for the Financial EAI label, while MQHA or RAHA support for FileAct becomes optional.

Label Requirement	Reference number 28	Mandatory
The Financial EAI should support the FileAct InterAct messaging service over Alliance Access release 7.0 and adhere to the latest release of the Messaging Operations Guide in the online UHB.		

## 7 Message Processing

### 7.1 Message Creation

The Financial EAI should provide tools to automate the extraction of business data from structured files and databases, and map this data into MX, MT or other accepted SWIFT formats. A graphical design tool should provide the field mapping and data transformation rules from the application format (IDoc, Cobol CopyBook, files, CSV, Exel doc, DB tables) into MX and MT fields. Standards message libraries can be used for this purpose. For MX, the XML payload should be generated using the XML schema definition (XSD) supplied by SWIFT.

For MT, the new XML schema provided by SWIFT can be used to map and validate the formatted data.

Label Requirement	Reference number 29	Mandatory
The Financial EAI should support business data capturing and mapping to MT and/or MX messages.		

Messages should be validated prior to being routed to SWIFT interfaces. Message headers should be added according to data source, and enriched with correspondent profile data maintained in the application repository.

When creating the Message *RequestControl* header, the Financial EAI should provide a value for the *ProductList* field. The *ProductList* should contain the identification of all products that are involved in the generation of the Request. This information is logged within SWIFT, and is not forwarded to the Responder. The *VendorName* within the *ProductList* should be the Partner Identifier Code (PIC) of the application provider as provided by SWIFT. Details are provided in the SWIFT Service Design Guide.

The *ApplicationName* is a short identifier of the application package and is chosen by the Partner. The Product Version identifies the version of the application according to the versioning of the application provider.

Label Requirement	Reference number 30	Mandatory
The ProductList information should be filled in as appropriate for every generated message or file.		

### 7.2 Content-based Routing

Business messages should be routed from the Financial EAI to the correct SWIFT Interface (Alliance Access or Alliance Gateway) and vice-versa. The rule engine should allow to route messages according to:

- Message header content: sender, receiver, and request and service type
- Message payload content.

For instance:

*If the payment amount is larger than Threshold, then route it to exception handling.*

Rule Engine should also allow bulking payloads together, prior to wrapping it into FIN, InterAct or FileAct envelopes. Additional processing, such as message transformation, enrichment, local security management, and storage, should also be available.

Label Requirement	Reference number 31	Mandatory
The Financial EAI should support routing to the appropriate interface adapter		

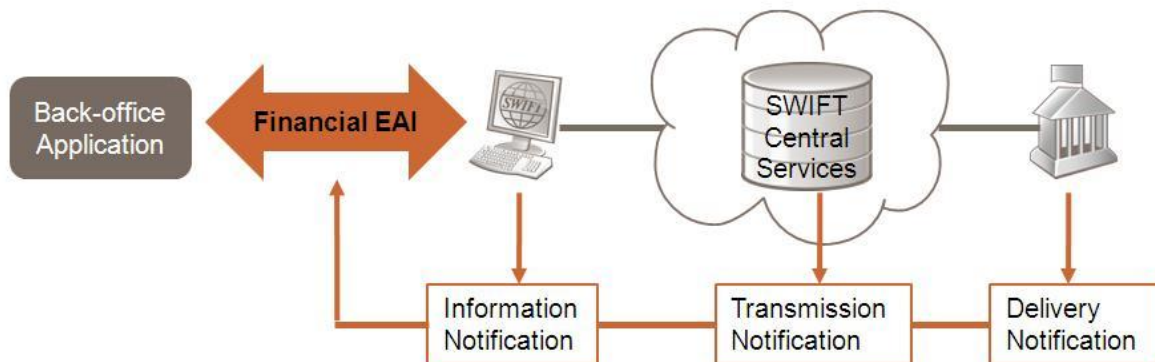
## 7.3 Reception from SWIFT

Messages received from SWIFT can include several MT messages. The Financial EAI should open up and un-bulk the batch file into separate payloads and individual business messages (MT/MX). Message Validation is not necessary on incoming messages, but MT messages should be parsed into business objects and stored as such in the Financial EAI repository. Depending on target application, data transformation and other processing may be required.

Label Requirement	Reference number 32	Mandatory
The Financial EAI should support reception of individual messages and batch files. All MT and MX messages should be properly parsed, stored and routed to the appropriate back-office application.		

## 7.4 Reconciliation

SWIFT validates messages at different levels and provides notifications related to the validation and transmission results of the sent messages. The Financial EAI should capture these Notifications and ensure technical reconciliation, error handling, repair and retransmission.



The Financial EAI should handle reconciliation at four levels:

1. **Interface reconciliation (Information Notification):** Alliance Access validates MT and MX messages against syntax and security signature. Messages that fail validation are routed to a specific routing point and Information Notifications and *MessageStatus* are generated. These can be captured and processed by the Financial EAI for exception handling and repair prior to resending. Capturing and acting upon Information Notifications is an optional requirement.
2. **Network reconciliation (Transmission Notification):** For most services (FIN, InterAct and FileAct SF), messages are validated by SWIFT central services that return ACK (field 451=0) or NAK (field 451 =1) messages. Alliance Access maps these into *TransmissionNotifications* and make them available for the Financial EAI through MQSA or AFT. The Financial EAI should read these ACK/NAK and act as appropriate: ACK should be reconciled with the original message using the Notification's *SenderReference*, and NAK should be sent to Exception Handler for repair and possible Transmission retrieval.
3. **Counterparty reconciliation (Delivery Notification):** on reception of a message, the counterparty may issue an acknowledgment that is transformed by SWIFT Central Services into a Delivery Notification (DelN), which is made available to the sender. On Alliance Access, DelN are mapped into *DeliveryReport* or *DeliveryNotification*, depending on Traffic reconciliation set up in Alliance Access.

For InterAct and FileAct SF on Alliance Gateway, DeIN should be fetched from central queues. For InterAct and FileAct RT on Alliance Gateway, the DeIN is replaced by the Response of the interactive Query/Response mechanism. In any case, the DeIN should be conveyed to back-office application for message reconciliation. Non-delivery notification should lead to transmission retrial, preferably initiated by the Financial EAI.

4. Finally, a Business reconciliation involving a business response may take place in the back-office. For instance, a Trade Allocation (MT514) is responded by a trade Confirmation (MT515). This business reconciliation should be managed by the counterpart application. A BPM is also able to cope with some level of business reconciliation, as it happens in SWIFT's Exceptions and Investigations solution. A MT103 is typically responded with a MT900 (confirmation of Nostro debit).

Reconciliation notifications should be reconciled with original messages that have been stored in the Financial EAI repository.

The situation involving third party involved in the transaction (T or Y –copy to central institution) is more complex. Typically a central bank will issue a MT012 (Accept) or MT019 (Reject) to the sender.

Additional details on reconciliation process and notification message formats is provided in Alliance Access System Management Guide, part D, Annex G5.

Label Requirement	Reference number 33	Mandatory
The Financial EAI should reconcile message with the four different levels of reconciliation mechanisms.		

## 7.5 Message Repair and Exception Handling

A Financial EAI should be able to repair messages prior to sending them to the SWIFT interface. A repair can be mandated to avoid network rejection, but also, it helps decrease cost for non-STP compliance.

Repair can be automated or manual.

- Automated Repair: the validation engine identifies inconsistent or incomplete data (BIC is missing, or not aligned with provided bank name and address), and corrects the message to ensure STP compliance. This is usually based on data pattern matching systems originated from artificial intelligence related mechanisms.
- Manual Repair: faulty messages are routed to manual intervention (usually a web browser or classical GUI). Messages should appear with a business field tag and provide a look-up function for BIC and other reference data. It may also be required to change the security related parameter and to flag the message for retransmission.

The Financial EAI should at least provide a manual repair station with a reference data look-up function. Manual interventions should be recorded in a log file for audit purposes.

Message manipulations should be restricted to users with a dedicated security profile. Actions taken on messages will be logged, and messages will be stored before and after manipulation for audit purposes.

The message editor should be 'format aware'. In particular, field names will be expanded, and field options will be provided as drop down menus (ex: code words, dates, BIC look-up).

Label Requirement	Reference number 34	Optional
The Financial EAI should support manual repair and exception handling		

## 7.6 Duplicate and Retry management

In case of a transmission failure, the Financial EAI will retry the transmission of a configurable number of times. This holds for InterAct and FileAct processing. Retransmission attempts will be notified as possible duplicate emission (PDE).

Label Requirement	Reference number 35	Optional
The Financial EAI should support duplicate checking and retry management.		

## 7.7 Event Logging

The Financial EAI should log events related to the message lifecycle (creation, validation, transformation, repair, authorisation, sent to SWIFT, received from SWIFT, ACK/NAK, delivered, reconciled) for audit purposes. Important events should be consolidated into a business activity monitoring (BAM) tool.

Label Requirement	Reference number 36	Optional
The Financial EAI should support event logging to track the important events during the lifecycle of a message transaction.		

## 7.8 Message Archiving

A message that passes through the Financial EAI should be safe-stored together with all interventions and reconciliation(s) that occurred on the message (creation, mapping, validation, authorisation, reconciliation against interface, network and counterparty).

To ensure an efficient follow-up of the transaction, including the transformation and routing at the Financial EAI level, the application should be able to access copies of the messages.

As the originator may be located in a different time zone, a copy of the message before and after transformation has to be accessible for error tracking. Archiving does not need to cover a long period of time but may be able to ensure 24/7 operations. Archiving can use raw data, but should preferably use structured data to be able to search on payload values and reports as appropriate.

Label Requirement	Reference number 37	Optional
The Financial EAI should support message archiving		

## 7.9 Business flows orchestration

The Financial EAI should provide business process management and business rules orchestration.

## 7.10 Monitoring and Supervision

The Financial EAI should provide a supervisory station to monitor technical and business processes and messaging flows.

Label Requirement	Reference number 38	Optional
The Financial EAI should support technical and business activity monitoring		

## 7.11 MT/MX translation

The SWIFT community has agreed that MT and MX will coexist and will both be transported over the SWIFT network for some period of time.

To support this coexistence period, SWIFT has developed translation rules in human readable format. The rules are provided for MT and MX messages where equivalence is established and where the community of users has a need for translation support.

The SWIFT Standards Translation Guide available on [www.swift.com/standards](http://www.swift.com/standards) provides all the necessary information and rules to translate a particular MT or MX source message to its equivalent MX or MT target message. The machine readable rules (in XSLT format) are available on request.

Translation rules are currently available for:

- Credit Transfer Messages (103 Core and 103 STP to *pac*s MX)
- Cash Management
- Investment Funds (502 and 515 REDM/SUBS NEWM to *setr* MX)
- Corporate Actions
- Securities Settlements and Reconciliations

Label Requirement	Reference number 39	Optional
The Financial EAI should support MT/MX co-existence		

## 8 Message Validation

### 8.1 MT Message Validation

FIN Central Services validate every FIN message against syntactic and semantic rules. Messages that do not pass validation are rejected by the central system, incurring substantial cost for SWIFT users. To avoid this, the Financial EAI should provide the same level of validation on the generated messages as does the SWIFT.

FIN messages are composed of different blocks (headers, body, and trailer). The message body should be a valid MT.

A well-formed MT is composed of [sequences of] **fields**. A valid field is made of field tags (2 digits 01 to 99), optional letter (A..Z) and Component ([string of] characters) with optional Qualifier. Fields are characterised by their presence in a message (optional, mandatory), their cardinality (allowed number of occurrences), and permitted values.

Several MT rule layers have been added over the years. Most are checked by SWIFT Central Services.

MT Rule Name	User Compliance	Alliance Access Validated	SWIFT Validated	Vendor Support
MT Message Format Validation Rules	Mandatory	Partial (character set and Syntax)	Yes (full validation)	Mandatory
MT Usage Rules	Mandatory	No	No	Mandatory

STP Guidelines	Optional	No	No	Optional
Market Practices (SMPG)	Optional	No	No	Optional

### 8.1.1 Message Format Validation Rules (MFVR)

The Network Validation rules are defined in the Message Format Validation Rules (MFVR) as documented in the SWIFT UHB. MFVR are updated on a regular basis, following the SWIFT Standards Release cycle. The Financial EAI should follow the MFVR evolution.

Validation	Purpose	Code	Examples
Character Set	Valid character set; message, field and sequence length	Mxx	SWIFT defined 3 character set (X, Y, Z) depending on usage
Syntax	Field and component format; mandatory fields and sequence	Txx	T13 : field tag is not expected at this location  T27: BIC incorrectly formatted or invalid.
Code Word	Valid code word usage	Kxx and T0x	Code word: 'D' for Debit, 'C' for Credit  T05 - Code word error in Field 68B, subfield 4, in MT 609
Semantic	Cross-field validation (conditional)  Over 300 rules are defined across the 200 MT	Cxx to Exx	C02: The currency code should be the same for all currency occurrences in the entire message.  C05 - BIC should NOT be a BEI, BEID or TRCO  C18 -If fields 32B and 71B are present, field 33 should be present.
MUG	Message User Group (24 rules)	Gxx	G07 CLS : in an MT300 eligible for the FIN-Copy service CLS or CLT, anyField 53 present in sequence B should be used with the letter option "A".
VAS	Value-Added Service related (5 rules)	Bxx	B01: PAC Trailer used for non-FIN Copy service message.

Label Requirement	Reference number 40	Mandatory
The Financial EAI should support validation against the MFVR for the Standard 2011 for all of the <a href="#">outgoing MTs</a> that are required as part of the solution.		

### 8.1.2 MT Usage Rules

Usage rules are not validated on the network, and do not generate error codes. Usage rules are nevertheless mandatory for the correct usage of MT field. The Financial EAI should support Usage rules.

Some examples for the MT103 :

- Field 33B Currency: used when the currency and amount are different from those specified in field 32B.

- Field 36 Exchange Rate: should be present when a currency conversion or an exchange has been performed on the Sender's side.
- Field 77T can only be used if both Sender and Receiver of the message have subscribed to the Extended Remittance Information MUG. If the field is used, the Sender should set the validation flag to REMIT in field 119 of the user header of the message. If field 77T is not present, the code of the validation flag should not be REMIT.

Label Requirement	Reference number 41	Mandatory
The Financial EAI should support validation against the MT Usage Rules listed in the SRG 2011 for the outgoing MTs that are required for the solution. The support should be flexible enough as to allow customers to switch the MT Usage Rules validation 'on' (message rejected with error) or 'off' (message accepted and warning generated).		

### 8.1.3 STP Guidelines

STP Guidelines are not validated on the network and are not mandatory for the correct usage of the message. They concern best practices. Guidelines affect more than one field in the message, or more than one SWIFT message. They identify specific issues, and provide clarification and examples, with the aim to improve straight-through processing.

This includes generic principles, such as avoiding the use of full name and address for a financial institution. More and more, banks are charging for non-STP compliance, and the Financial EAI should be able to detect these non-compliances

Label Requirement	Reference number 42	Mandatory
The Financial EAI should support validation against the STP Guidelines listed in the SRG 2011 for all MTs that are required for the solution. The support should be flexible enough as to allow customers to switch the validation 'on' (message rejected with error) or 'off' (message accepted and warning generated).		

### 8.1.4 Market Practices

Market practices can be seen as an instance of a FIN message where some optional fields / keyword become mandatory for a specific country, or a specific market.

Market Practices are defined by Industry groups to globally harmonise market practices to enhance STP at an industry level. The Securities Market Practices Group ([www.smpg.info](http://www.smpg.info)) is a global securities industry group setup in 1998. SMPG objective includes the harmonisation of non-regulated geographical differences as well as the consistent implementation of ISO150022 and ISO 20022 messaging standards by securities industry participants for processing within and across all markets. The SMPG is currently active in more than 30 countries and is made up of the different players in the securities markets (custodians, fund managers, broker-dealers, IMIs etc). Discussions focus on automation and end-to-end processing throughout the securities life cycle.

Market practices include country-specific settlement rules for MT53x and 54x messages .They cope with common specialisations such as making certain qualifiers mandatory, for example /PSET/, and BICs.. Market practices are currently also being investigated for the Payments market. However, for 2011, PMPG will have no impact on message validation yet, and will not be part of the Financial EAI SWIFTReady validation.

More recently, the Payments Market Practice Group (PMPG) has been introduced to provide market practice recommendation for implementation and use of payment messages, as related to financial instrument transactions inclusive of instruction, confirmation and status messages between investment managers, custodians and sub custodians.

Label Requirement	Reference number 43	Optional
The Financial EAI should support validation against the Market Practices listed in the SMPG or PMPG web sites for the market segments and regions that the product is serving.		

## 8.2 MX Message Validation

MX messages should be validated against relevant XML schemas (XSD) and against Extended Validation Rules that are provided in the MX rule books (Solutions Service Description available on the UHB).

Extended Validation Rules should be applied on the following generic MX fields:

- XML elements of type BIC (Datatype: BICIdentifier) should be checked against existence in the BIC directory (ISO 9362)
- XML elements of type BEI (Datatype: BEIIdentifier) should be checked against existence in the BEI list on SWIFT
- XML elements containing an amount AND a currency (Data Type: ActiveCurrencyAndAmount and ActiveOrHistoricCurrencyAndAmount) should be checked for existence against Currency Code ISO 4217, and against the number of digits of the amount as specified by ISO 4217 for that specific currency
- Country codes (Data Type: CountryCode) should be checked for existence against ISO 3166
- IBAN identifiers (Data Type: IBANIdentifier) should be validated against IBAN **structure** as provided by ISO 13616 (Country Code, check digits and a basic bank account number)
- XML elements of type *BICorBEI* (Data Type: AnyBICIdentifier) should be checked against existence in the BIC list on SWIFT
- XML elements of type *ActiveCurrency* (Data Type: ActiveCurrencyCode) should be checked against existence in the currency list on SWIFT
- XML elements of type *ActiveOrHistoricCurrency* (Data Type: ActiveOrHistoricCurrencyCode) should be checked against existence in the currency list on SWIFT

Label Requirement	Reference number 44	Mandatory
The Financial EAI should support XSD, extended XML Validation rules and the rule book applying to the label under consideration.		

Other rules may apply for particular solutions. The support of these additional rules is optional for the Financial EAI label.

The XSD for the following solutions should be made available in the Financial EAI:

- Cash Reporting
- FpML
- Funds
- Exceptions and Investigations
- Proxy Voting
- SCORE

These are available on [www.swift.com/support](http://www.swift.com/support) > Download Centre > Alliance SWIFT Standards Packages.

## 9 User Interface

### 9.1 Message Browser

The Financial EAI should be able to browse incoming and outgoing messages in a formatted way. In particular, FIN messages should be visualised using user-friendly GUI or web browser where field names are provided to map onto the FIN tag fields code.

Label Requirement	Reference number 45	Mandatory
The Financial EAI should support message visualisation for every message type requested by the SWIFTReady label.		

### 9.2 Message Entry

Manual message entry using a structured message editor is a feature requested by many customers. Field and message validation should be provided, and syntactical errors should be highlighted to the user.

A full-fledged message entry workstation is not mandated for the Label, but will be recognised as a value-added option.

Label Requirement	Reference number 46	Optional
The Financial EAI should support an entry screen for every message type that is subject to be sent to SWIFT for this label.		

### 9.3 Message Repair

The Financial EAI will allow editing messages in order to repair them in exceptional cases. This holds for messages that do not pass validation and need urgent repair prior to sending them to SWIFT.

Message manipulation will be restricted to the user with a dedicated security profile. Actions taken on messages need to be logged, and messages will be stored before and after manipulation for audit purposes.

The message editor will be format aware. In particular, field names will be expanded, and field options will be provided depending on expected type (ex: code words, dates, BIC look-up).

Label Requirement	Reference number 47	Optional
The Financial EAI should provide a repair station.		

### 9.4 BIC look-up

A Financial EAI will need to provide a look-up facility to the BIC and BICPlusIBAN Directory. This is to correct and enrich the messages to ensure format validation (ensure mandatory BIC fields are provided and correctly filled out) and increase STP (optional BIC fields that should be provided to increase automation at reception side).

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Label Requirement	Reference number 48	Optional
The Financial EAI should support BIC look-up facility.		

## 9.5 Business Activity Monitoring (BAM)

BAM tracks processing chains at both technical and business levels. This helps financial institutions to maintain control of their data flows, through detailed views of inter-application data transformation. Through multiple connectors positioned at all levels of the processing chain, BAM ensures end-to-end supervision and monitoring, guaranteeing complete control of all data flows.

A business transaction is made of messages flowing from back-office to SWIFT (ex: Payment initiation) and back from SWIFT to the back-office (ex: Payment confirmation). Message events (message generated, validated, repaired, sent, acknowledged, delivered, reconciled) can be tracked and displayed in the dashboard for monitoring purposes. Rules can be generated to associate alarms to some events (ex: message DeIN note received after 3 days). Reports should be generated.

BAM is recommended but not mandated at this point in the SWIFTReady programme.

Label Requirement	Reference number 49	Optional
The Partner Application should support BAM		

## 10 Marketing and Sales

Collaboration in terms of administrative and marketing information is requested. In particular the application provider should provide SWIFT under non-disclosure agreement with customer related information.

The application provider should provide SWIFT with a list of at least five live customers that actively use the Financial EAI to connect to SWIFT.

By 'customer' we mean a separate financial institution using the product to generate and receive messages and files transported over SWIFT. Five live sites from the same customer are not enough to qualify for a label.

SWIFT reserves the right to contact the relevant customer to validate the functionality of the application submitted for SWIFTReady certification. A questionnaire will be sent as the basis for the customer validation which can be in the form of a telephone interview, an e-mail or a discussion at the customer site.

The information provided by the customer will be treated as confidential and will not be disclosed, unless explicitly expressed by the customer.

Label Requirement	Reference number 50	Mandatory
<p>The application provider should supply the following information under NDA:</p> <ul style="list-style-type: none"> <li>• A list of customers that actively use the Financial EAI in a SWIFT context. A list of all customers active in the finance sector. The list should provide institution names, locations, and an overview of the integration scope (domain, features, and sites) for the present and previous year.</li> <li>• A product roadmap for 2011 and 2012 containing the plans for further Financial EAI development, support of SWIFT's solutions and new releases.</li> <li>• A complete set of Financial EAI documentation, including features overview, SWIFT adapters, workflow engine capability and user manuals.</li> <li>• A dedicated web page on the partner web site describing the SWIFTReady application used in a SWIFT context. The page should be maintained with the same URL for a complete year that will be referenced to on <a href="http://www.swift.com">www.swift.com</a></li> </ul>		

## 11 Label 2011 Summary

The required features for the 2011 SWIFTReady label criteria are provided in the following synopsis :

Dimension	Feature	Required (depending on label)	Optional
Messaging Protocols	FIN	FIN over Alliance Access (AFT <b>or</b> MQHA or SOAP )	
	InterAct	Alliance Access support Any Format (MT, MX, AnyXML) Mode SF	Alliance Gateway support for RT (send and receive payload) and SF (push and pull mode) FpML extended validation
	FileAct	RT (Send and Fetch files) SF (push and pull Alliance Access File Transfer	Alliance Gateway RAHA or MQHA FTA or FTI support
Standards	MT	SRG 2011 Parse all MT. Validate MT listed in Annex A	
	MX	SRG 2011 Well-formatted XML Generic MX Rule book (MVAL)	Rule Book for E&I, Funds, Cash Reporting, Proxy Voting, SCORE
	ISO 15022	Data Dictionary for MT messages	Use SWIFT DD for internal data representation
	ISO 20022	Data Dictionary for MX messages	Use ISO 20022 to model business rules and business transaction Business Application Header Restrictions and Extensions
	FpML		Schema and semantic validation
Connectivity	Alliance Access	Alliance Access R7.0 AFT <b>and</b> native MQHA or SOAP for MX, MT and AnyXML messages Support XML Format V2 (Revision 2)	Alliance Access for FpML ADK support SOAP Adapter (Alliance Access 6.3) File Transfer Adapter (Alliance Access 6.3)
	Alliance Gateway	Alliance Access R7.0 FTA or FTI for FileAct	RAHA <b>or</b> MQHA for all InterAct and FileAct mode WSHA support for InterAct
Message Validation	MFVR	SRG 2011 MFVR All Message Format validation Rules (also named network rules) for latest Standards edition	
	MT Usage Rules	All MT Usage rules	
	STP Guidelines	All STP Guidelines	
	Market Practices	Demonstrate Market Practice rules easy support capability	Support SMPG rules Support ISO15022 Market Practices
	MX	Well formed XML schema, XML facets validation Generic Validation rules checked	
Reference Data	BIC Directory	BIC Directory look-up and message validation	BIC download automation
	BICPlusIBAN	Validate BIC and IBAN	Repair/enrich msg with BIC/IBAN

Dimension	Feature	Required (depending on label)	Optional
	SEPA Routing	Validate Routing codes	
Message Processing	Message creation	Generate M/MT message header and payload from files and DB records. Fill in ProductList	
	Routing	Content based routing (envelope and payload)	
	Reception	Debulk and parse MT and MX	
	Reconciliation	All Notifications (Information, Transmission and Delivery) reconciled with original messages in Vendor Application repository	
	Repair	Manual Repair	Full Automated Repair for STP compliance
	Duplicate	Handle Duplicate checking and Retry	
	Log and archive	Log events and archive messages	
	Monitoring	Message Monitoring station	
	MT-MX		MT-MX translation
	Business flow orchestration		Business rules management
User Interface	Browser	MT and MX message browser	Web-based GUI
	Entry		Message entry station
	Repair	Manual repair station	Fully-fledged Message Repair Station
	BIC look-up	BIC search interface	
	BAM		Business Activity Monitoring for message flow control and alarms management

## 12 Glossary

Term	Definition
ACK	The term used in communication protocols to acknowledge that one party has correctly received the information sent by another party. Issuance of an ACK does not indicate that the issuer accepts the business content of the information that it has acknowledged
ACH	Automated Clearing House, ensuring the clearing of payments messages.
AI	Alternative Investments. A solution using FpML format
API	Application Programming Interface. A set of formalised software calls and routines that other applications can reference. Programmes reference an application's API to invoke the functionality of that application
ASP	Application Service Profile
BAM	An application that analyses, reports in real time, and alerts of significant business events. It gathers data, key performance indicators, and business events from multiple applications, and consolidate them in dashboards and reports
BIC	Business Identification Code. This code unambiguously identifies a financial or non financial institution, or an entity within a financial institution. The ISO 9362 standard specifies the elements and the structure of a BIC. A BIC consists of either eight (BIC8) or 11 (BIC11) contiguous characters. These characters comprise either the first three, or all four, of the following components: <u>bank code</u> , <u>country code</u> , <u>location code</u> , and <u>branch code</u> . So far, SWIFT has issued 86,000 BIC. BIC that are not connected to SWIFT have a character "1" in their 8 <sup>th</sup> position. Non-connected BIC are typically found in field 50A or 59A of MT102 (beneficiary customer).
BIC Directory	The SWIFT directory that lists the <u>Bank Identifier Codes (BIC)</u> that SWIFT has registered according to the ISO 9362 standard, and the names and addresses of the corresponding entities. It also contains additional information, for example, the <u>market infrastructures</u> in which the entities participate. The scope of the additional information varies according to the version of the directory. As from 2011, the BIC Directory will be updated on a monthly basis and available for download on <a href="http://www.swift.com">www.swift.com</a> > Ordering & Support > Ordering.
BIC Plus Database	The SWIFT directory that lists identifiers that the financial industry recognises (for example, <u>Bank Identifier Codes (BIC)</u> , <u>CHIPS Universal Identifiers (CHIPS UID)</u> , and national clearing codes). BIC Database Plus provides the identification codes, and the names and addresses of the corresponding entities
BPM	Business Process Management - Software that enables modelling, integration, monitoring, and optimisation of business process flows, crossing application, company boundaries or human interaction.
Bulk Payment	A solution supporting low value payment through FileAct. Service Description is available at <a href="https://www2.swift.com/uhbonline/books/protected/en_uk/2/snbpsd/index.htm">https://www2.swift.com/uhbonline/books/protected/en_uk/2/snbpsd/index.htm</a>
CAG	Corporate Access Group. New SWIFT corporate access model, approved by SWIFT board in 2006 to offer a simplified participation process for corporates
Cash Reporting	Cash Reporting is a solution that enable the exchange of real-time information on cash held in accounts maintained at various counterparties
CCI	Common Communication Interface for Euroclear CSD and ICSD
Delivery Notification	A system-generated message (MT 011) that confirms that the system has effectively delivered a message for which the user has requested the <u>delivery monitoring</u> feature. The notification provides the date and time of delivery.
DMZ	Demilitarized zone - A small network that is located between a user's internal local area network and one or more external networks. On both sides, firewalls or other traffic filters protect the small network.
E&I	Exceptions and Investigations. A solution
Vendor Application	Enterprise Application Integration
FI	Financial Institution. This includes but is not limited to banks, brokers, investment managers, payment and securities infrastructures.
FIN Message Structure	FIN messages have the following general structure: {1: Basic Header Block} {2: Application Header Block} {3: User Header Block} {4: Text Block or body} {5: Trailer Block} Blocks 3, 4 and 5 may contain sub blocks or fields delimited by field tags. Block 3 is optional. Many applications populate this with a reference number so that the Ack. can be used for reconciliation purposes.
FileAct	An automated SWIFT messaging service that SWIFT has designed to enable customers to

Term	Definition
	exchange files. FileAct supports both interactive and store-and-forward modes. It is particularly suited for the exchange of large volumes of data.
FXMM	Foreign Exchange and Money Market
Host Adapter	The software that handles the necessary conversions (protocol, data format, security, and transport) between two messaging paradigms (for example, WebSphere MQ and <a href="#">InterAct</a> ). <a href="#">Alliance Gateway (Alliance Gateway)</a> offers host adapters to facilitate the integration of applications with SWIFT
ISO 20022	A standard created in 2004 to support the development of all financial messages, using a business-modelling methodology and XML syntax. UNIFI stands for Universal Financial Industry message scheme. SWIFT is the UNIFI registration authority. Candidate UNIFI (that is, ISO 20002) messages are those developed in compliance with UNIFI.
ITB	Integration Test Bed. A SWIFT network domain that vendors and developers use to test applications or interfaces before deployment on the SWIFT's production network
Market Initiative	Projects initiated by the financial industry to support the move towards single and regulated market. Examples are TARGET2, Giovannini, MiFID, SEPA.
Market Practices	The geographical, functional, and sectorial agreement about how standards may be used in a specific business scenario, for a specific market, to guarantee efficient execution of a financial transaction
Messaging Operations Guide	SWIFT manual describing the operational requirement for InterAct, FileAct and Browse. It is included in SWIFT UHB, and should be strictly adhered to
MFVR	Message Format Validation Rules - The document that provides complete information about the validation procedures that the SWIFT network applies to the text part (block 4) of the FIN user-to-user input messages.  For more details, see the Standards volumes of the UHB.
MIC	Market Identification Code. A code allocated by a Registration Authority under an international identification scheme, as described in the latest edition of the international standard ISO 10383, which specifies a universal method of identifying exchanges, trading platforms and regulated or non-regulated markets as sources of prices and related information in order to facilitate automated processing
MQSA	MQSeries adapter for Alliance Access
MQSeries	Messaging middleware from IBM that allows programmes to communicate with each other across all IBM platforms, Windows, VMS and a variety of Unix platforms. Introduced in 1994, it provides a common programming interface (API) that programmes are written to. The MQ stands for Message Queue. Now renamed WebSphere MQSeries
MT	FIN message Type. A specific type of SWIFT Standards message that is expressed in SWIFT's proprietary syntax and identified by a 3-digit number.
MX	XML messages designed using IS20022 methodology
NAK	Negative Acknowledgment The rejection of a message input to a SWIFT messaging service. An error code indicates the reason for the rejection.
PDE	Possible Duplicate Emission – flag added in message envelope when attempting new transmission after failure from previous attempt.
PDU	Protocol Data Unit. Basic unit of information that is exchanged between a <b>Vendor Application</b> and Alliance Access. It includes a business payload (message, report, status) wrapped into an envelope that carries addresses, security, format and validation level information.
RDBMS	Relational Database Management Systems
RT	Real-time. One of the modes used by InterAct and FileAct
Alliance Access	Alliance Access – SWIFT Interface for MT and MX messages
Alliance Gateway	Alliance Gateway provides centralised, automated, and high-throughput integration, with in-house applications and service-specific interfaces. SWIFT has designed Alliance Gateway to enable customers to concentrate messaging flow of messages between SWIFT and remote financial applications over IP or WebSphere MQ. It is an interface solution for handling InterAct and FileAct exchanges, but also FIN through the Alliance Access
SCORE	Standardised Corporate Environment – SWIFTSolution for the Corporate, involving Cash Management, Treasury and Payment initiation messages
SF	Store&Forward mode .One of the modes used by InterAct and FileAct
SOAP	Simple Object Access Protocol. A lightweight protocol used to exchange XML-based messages over a computer network, using HTTP or other web-based protocols.
STP	Straight-through Processing. The handling of a message without resort to manual intervention or message repair (except for policy), such that it is entered only once. Thereafter, the system processes it automatically for the rest of the cycle.
SWIFT Central	SWIFT operations centres runs a series of services ranging form Store&Forward queues for

<b>Term</b>	<b>Definition</b>
Services	FIN, Interact and FileAct, to security infrastructure, message validation, archiving, and routing.
Solution	SWIFT provides a complete range of end-to-end solutions covering every aspect of financial services processing (standards rule book, messaging). These include: <u>Payments &amp; cash management</u> , <u>treasury &amp; derivatives</u> , <u>trade services</u> , <u>securities pre-trade/trade</u> , <u>pre-settlement</u> , <u>clearing &amp; settlement</u> , <u>custody services</u> and <u>reporting</u> , alternative investments,
Transmission Notification	The Acknowledgment sent by SWIFT Central services can be transmitted to the <b>Vendor Application</b> as a Transmission Notification
TSU	Trade Service Utility. The Trade Services Utility is a collaborative centralised matching utility designed to help banks meet the supply chain challenge. Banks build individually on the core functionality of the TSU to offer competitive services complementary to their existing offering.
UHB	<u>SWIFT User Handbook</u> . The set of documents, regularly amended, that constitutes a contractual basis for the operational relationship between SWIFT and any SWIFT user. It includes all standard messaging.

## Annex A – MT Messages to support

The list of MT messages that are subjected to be requested for the SWIFTReady technical qualification is as follows:

MT	Description
101	Request For Transfer
102 and 102+	Multiple Customer Credit Transfer
103 and 103+	Single Customer Credit Transfer
104	Direct Debit and Request for Debit Transfer Message
105	EDIFACT Envelope
110	Advice of Cheque(s)
111	Advises or confirms the issuance of a cheque to the drawee bank
112	Status of a Request for Stop Payment of a Cheque
190	Advice of Charges, Interest and Other Adjustments
191	Request for Payment of Charges, Interest and Other Expenses
192	Request for Cancellation
195	Queries
196	Answers
198	Proprietary Message
199	Free Format Message
200	Financial Institution Transfer for its Own Account
201	Multiple Financial Institution Transfer for its Own Account
202	General Financial Institution Transfer
203	Multiple General Financial Institution Transfer
204	Financial Markets Direct Debit Message
205	Financial Institution Transfer Execution
210	Notice to Receive
290	Advice of Charges, Interest and Other Adjustments
292	Request for Cancellation
295	Queries
296	Answers
298	Proprietary Message
299	Free Format Message
300	Foreign Exchange Confirmation
304	Advice/Instruction of a Third Party Deal
305	Foreign Currency Option Confirmation
320	Fixed Loan/Deposit Confirmation
321	Instruction to Settle a Third Party Loan/Deposit
330	Call/Notice Loan/Deposit Confirmation
340	Forward Rate Agreement Confirmation
341	Forward Rate Agreement Settlement Confirmation
350	Advice of Loan/Deposit Interest Payment
360	Single Currency Interest Rate Derivative Confirmation
361	Cross Currency Interest Rate Swap Confirmation
362	Interest Rate Reset/ Advice of Payment
380	Foreign Exchange Order
392	Request for Cancellation
395	Queries
396	Answers
398	Proprietary Message

MT	Description
400	Advice of Payment
410	Acknowledgement
412	Advice of Acceptance
420	Tracer
422	Advice of Fate and Request for Instructions
450	Cash Letter Credit Advice
456	Advice of Dishonour
490	Advice of Charges, Interest and Other Adjustments
498	Proprietary Message
500	Instruction to Register
502	Order to Buy or Sell
508	Intra-Position Advice
509	Trade Status Message
513	Client Advice of Execution
515	Client Confirmation of Purchase or Sale
517	Trade Confirmation Affirmation
518	Market-Side Securities Trade Confirmation
527	Triparty Collateral Instruction
535	Statement of Holdings
536	Statement of Transactions
537	Statement of Pending Transactions
538	Statement of Intra-Position Advices
540	Receive Free
541	Receive Against Payment
542	Deliver Free
543	Deliver Against Payment
544	Receive Free Confirmation
545	Receive Against Payment Confirmation
546	Deliver Free Confirmation
547	Deliver Against Payment Confirmation
548	Settlement Status and Processing Advice
558	Triparty Collateral Status and Processing Advice
559	Paying Agent's Claim
564	Corporate Action Notification
565	Corporate Action Instruction
566	Corporate Action Confirmation
567	Corporate Action Status and Processing Advice
568	Corporate Action Narrative
576	Statement of Open Orders
578	Settlement Allegement
586	Statement of Settlement Allegements
590	Advice of Charges, Interest and Other Adjustments
595	Queries
596	Answers
598	Proprietary Message
600	Precious Metal Trade Confirmation
601	Precious Metal Option Confirmation
604	Precious Metal Transfer/Delivery Order
605	Precious Metal Notice to Receive
606	Precious Metal Debit Advice
607	Precious Metal Credit Advice
608	Statement of a Metal Account
700	Issue of a Documentary Credit
701	Issue of a Documentary Credit
705	Pre-Advice of a Documentary Credit
707	Amendment to a Documentary Credit

<b>MT</b>	<b>Description</b>
710	Advice of a Third Bank's or a Non-Bank's Documentary Credit
711	Advice of a Third Bank's Documentary Credit
720	Transfer of a Documentary Credit
730	Acknowledgement
732	Advice of Discharge
734	Advice of Refusal
740	Authorisation to Reimburse
742	Re-imburement Claim
747	Amendment to an Authorisation to Reimburse
750	Advice of Discrepancy
752	Authorisation to Pay, Accept or Negotiate
754	Advice of Payment/Acceptance/Negotiation
756	Advice of Re-imburement or Payment
760	Guarantee
767	Guarantee Amendment
768	Acknowledgement of a Guarantee Message
769	Advice of Reduction or Release
791	Request for Payment of Charges, Interest and Other Expenses
795	Queries
798	Proprietary Message
800	T/C Sales and Settlement Advice [Single]
801	T/C Multiple Sales Advice
802	T/C Settlement Advice
900	Confirmation of Debit
910	Confirmation of Credit
920	Request Message
935	Rate Change Advice
940	Customer Statement Message
941	Balance Report
942	Interim Transaction Report
950	Statement Message
960	Request for Service Initiation Message
961	Initiation Response Message
962	Key Service Message
963	Key Acknowledgement Message
964	Error Message
970	Netting Statement
971	Netting Balance Report
972	Netting Interim Statement
973	Netting Request Message
991	Request for Payment of Charges, Interest and Other Expenses
995	Queries
996	Answers
998	Proprietary Message
999	Free Format Message

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