



SWIFT Response

ESMA Discussion
Paper/2014/299

Draft Technical Standards -
Central Securities
Depository Regulation

22 May 2014

Foreword

SWIFT thanks the European Securities and Markets Authority for the opportunity to respond to the Discussion Paper on Central Securities Depositories Regulation.

SWIFT is a member-owned, cooperative society headquartered in Belgium. SWIFT is organised under Belgian law and is owned and controlled by its shareholding Users, comprising over 2,300 financial institutions. We connect over 10,500 connected firms, across more than 215 territories. A fundamental tenet of SWIFT's governance is to continually reduce costs and eliminate risks and frictions from industry processes.

SWIFT provides market infrastructures (including many EU CSDs), banking, securities, and other regulated financial organisations, as well as corporates, with a comprehensive suite of messaging products and services. We support a range of financial functions, including payments, securities settlement, reporting, and treasury operations. SWIFT also has a proven track record of bringing the financial community together to work collaboratively, to shape market practice, define formal standards and debate issues of mutual interest.

The detailed comments provided below cover the parts of the consultation of most relevance to the role which SWIFT plays in the financial community and are particularly focused on the issue of communication procedures and standards.

We thank the Authority again for the opportunity to comment. Please do not hesitate to contact us should you wish to discuss this further.



Natasha de Terán

SWIFT | Head of Corporate Affairs | Corporate Affairs
Tel: + 44 20 7762 2151
Mob: + 44 7780 483 467
www.swift.com

Table of Contents

1	Detailed Comments	4
1.1	Question 1	4
1.2	Question 3	5
1.3	Question 29	7
1.4	Question 40	8
2	Appendix 1	9
3	Appendix 2	10

1 Detailed Comments

1.1 Question 1

Which elements would you propose ESMA to take into account to form the technical standards on confirmation and allocation between investment firms and their professional clients?

Confirmation and Allocation measures (Article 6)

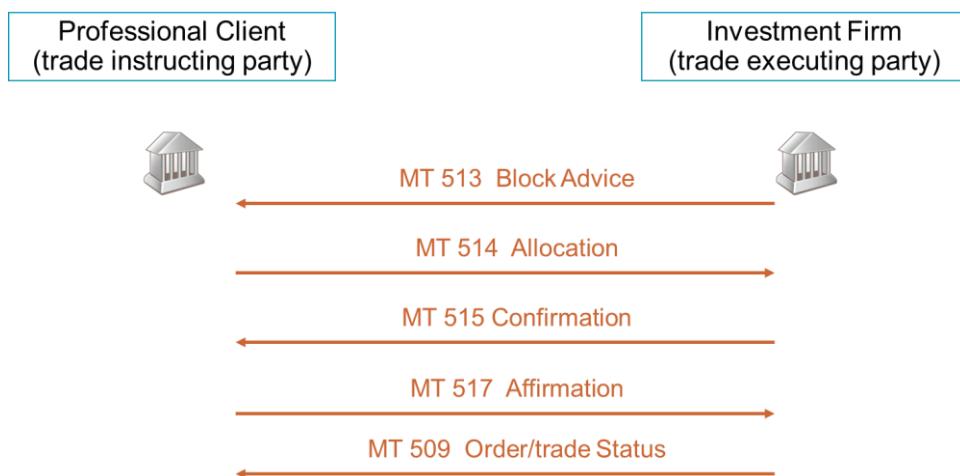
As ESMA observes in the Discussion Paper, the timely and automated exchange of confirmations and allocations is essential to efficient settlement, helping to avoid settlement fails and lowering operational risk.

Such communication is best achieved by the electronic exchange of standardised messages between counterparties. This could be undertaken either directly between the counterparties, or indirectly (potentially via a matching system), but ideally would take place on trade date – not after. Furthermore it is crucial that the confirmation process includes *full* confirmation of the settlement details of the transaction(s), and not just the basic economic terms of the trades, as well as any settlement chain details. Where allocations are required, the settlement details of each allocation should be provided, and ideally affirmed back (note that the use of the ‘affirmation’-step is domicile-dependent). All this will allow settlement instructions to be lodged early in the settlement process at the CSDs.

The widespread adoption of “open” message standards will also be essential to increasing efficiency and reducing fails. Commonly agreed, open standards are free-to-use standards designed for channel-neutral electronic message exchanges, usable on any network.

Open messaging standards (such as ISO 20022 used for T2S, and ISO 15022 used in many CSD communities for “downstream” settlement) which support this “upstream” process are available and in use, supporting both the direct and indirect models. The ISO 15022 messages which already enable the communication required for efficient allocations and confirmations are illustrated below:

Graph 1: Typical confirmation and allocation message flow (ISO 15022)



Like ISO 15022, the Financial Information Exchange protocol (FIX) and ISO 20022 standards are agnostic, free-to-use standards designed for channel-neutral electronic message exchange which can be

used on a variety of networks and solutions. These standards could also be used to support the processes outlined above, however whilst the ISO 15022 standards supporting “downstream” settlement have already been refined and harmonised by the global Securities Market Practice Group (to specify, for each asset class in over 30 markets, exactly how the settlement chain should be recorded at every conceivable level of detail), the FIX and ISO 15022 messages covering processes “upstream” of the settlement chain, do not benefit from SMPG Market Practice Guidelines.

To encourage greater harmonisation of market practice ESMA should consider encouraging the development of a Europe-wide Trade Initiation, Confirmation and Allocation market practice harmonisation exercise. Such an effort would ideally be led by an appropriately-resourced and representative industry body (such as the SMPG itself, for example), and its output should be documented according to established formulae and formats, such as those currently used by the SMPG community for settlement refinement and harmonisation purposes. The scope of this exercise would (initially) be a market practice guide covering all asset classes and markets in the scope of the CSD-R, showing clearly how the confirmation and settlement legs of the transaction should be integrated and harmonised to support the new T+2 mandate.

Were such a market practice guide developed, it would in all likelihood be refined and expanded over time, and adopted by participants in markets outside the EU, which would lead to efficiency gains for EU firms in non-EU markets, and vice versa.

Conclusion

In summary, our view would be that these regulatory technical standards should focus on ensuring harmonised electronic exchange of messages that enable not just the economic terms of the trade to be agreed, but also the full settlement details between all the parties in the chain, including investment firms and their professional clients, **on trade date**. The RTS should require this be done using standards and processes, refined by SMPG market practice, thus promoting high levels of automation and interoperability, fostering competition, lowering costs and frictions and enabling consumer choice.

1.2 Question 3

ESMA welcomes concrete proposals on how the relevant communication procedures and standards could be further defined to ensure STP.

CSD Communication Procedures (Article 35)

The discussion paper notes the requirement in Article 35 of the CSD Regulation for the use by CSDs of ‘international open communication procedures and standards for messaging and reference data’ in their communication with participants, and with other market infrastructures.

A practical proposal which addresses this requirement can be found in the ‘Giovannini Protocol’, which was written to address the communication and standards issues inherent in Giovannini Barrier¹, the barrier that deals with the national differences in information technology (IT) and interfaces used by post-trade clearing and settlement providers.

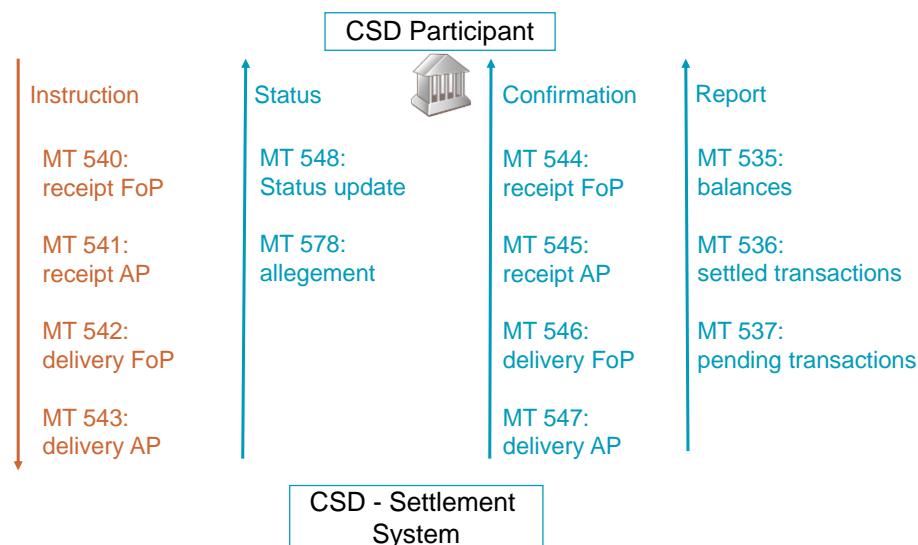
The protocol was published in 2006 following extensive industry consultation and has since been implemented by many settlement providers, including many CSDs. Full EU-wide compliance across

¹ The Giovannini group, as advisor to the European Commission, published two reports in the early 2000s identifying 15 ‘barriers’ to efficient and cost-effective cross-border clearing and settlement of securities transactions within the European Union (EU).

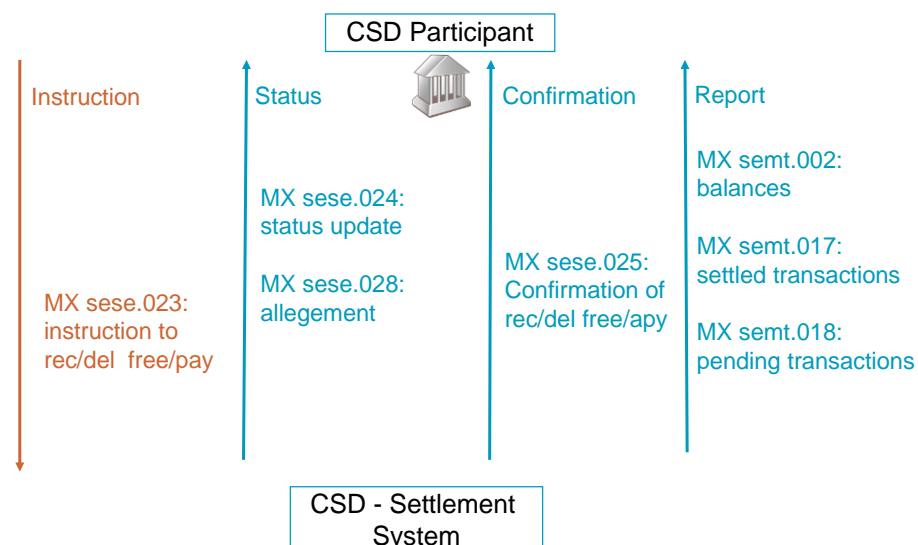
settlement and asset servicing processes has not, however, been achieved by all providers for all relevant communication flows. As settlement providers, CSDs should be encouraged to use the core elements of the protocol for the communications activities identified in Article 35. The core elements of the protocol which we would now put forward for consideration in respect of Article 35 compliance are as follows:

- Data Standards.** Implementation of support for ISO 15022 and ISO 20022 standards and syntaxes in compliance with existing SMPGGP practices, to enable institutions engaged in either domestic or cross border securities settlements to use these standards and syntaxes in their communication with CSDs. The core aim should be to provide all domestic and cross-border settlement institutions with the common option to use ISO 15022 and ISO 20022 standards and syntaxes for their communication with CSDs. In addition the same standards options should be supported by CSDs for their communication with other securities clearing and settlement market infrastructures. The relevant message flows in ISO 15022 and ISO 20022 are shown in the diagrams below:

Graph 2: Typical CSD securities message flow (ISO 15022)



Graph 3: Typical CSD securities message flow (ISO 20022)



2. **Transfer Layer Standards.** The transfer layer should support machine-to-machine data transfer which supports the use of ISO 15022 and ISO 20022 structured messages and file formats, and supports Internet Protocol (IP) for communication and routing.
3. **Transfer Layer Security.** All machine-to-machine transfers should feature:
 - Authentication and data integrity, via PKI;
 - Non-repudiation;
 - Time stamping.

The Certificate Registration Authority associated with the PKI service must implement industry recognised best practices for certificate issuance. In addition market best practice minimum key lengths should be implemented, to ensure strong encryption.

4. **Transfer Layer Service Levels.** As per the original Giovannini Protocol recommendations, the transfer layer should be available during TARGET2 opening hours (as a minimum) and should satisfy business and regulatory requirements for performance, resilience and network management. Additionally the transfer layer should provide the following services:
 - Audit logs of messages or files (retention should be in accordance with regulatory requirements);
 - Guaranteed delivery of messages or files;
 - Delivery once, and only once, of all messages or files.

For the communication flows relevant to Article 35, the Giovannini protocol provides a practical way forward. The protocol includes the option of ISO 15022 message standards, which are widely used today by CSDs and their participants for settlement processes, and which also fulfil the open standards criteria set out in the CSD-R.

The consultation correctly notes that ISO 20022 message formats are mandated for T2S (and for SEPA). Over time, we would expect more securities settlement communications will migrate to ISO 20022, but this will not be immediate. In the meantime, the adoption of the core elements of the Giovannini protocol, including the option of using ISO 15022 or ISO 20022 messaging standards, provides an optimal way of ensuring that international open' standards are used to facilitate efficient recording, payment and settlement.

SWIFT would be pleased to provide further background on any elements of the aforementioned protocol, and how it could be implemented in securities settlement communications with CSDs.

For ease of reference we attach a list of ISO 15022 and 20022 messages covering settlement in Appendix 1 and the original Giovannini Protocol document in Appendix 2.

1.3 Question 29

How does it impact the current costs of record keeping, in particular with reference to the use of the LEI?

Recordkeeping (Article 29)

Whilst obtaining LEIs under the Global LEI scheme is inexpensive, migrating CSD record keeping to the LEI represents a significant system change which will have important cost implications for some CSDs. A phase-in period for this change is therefore proposed. During this phase-in period it is to be expected that the usage of the LEI would become more pervasive in the industry, partly as a result of other regulatory mandates e.g. EMIR, MiFID reporting etc. As the use of the LEI expands in the financial industry, the

benefits from this unique identifier will begin to accrue. We therefore expect that the cost benefits of moving to one standard identifier will become compelling over time.

1.4 Question 40

In your opinion, will these requirements for CSDs be a good basis for identifying, monitoring and managing the risks that key participants, utility providers and other FMs pose to the operations of the CSDs? Would you consider other requirements? Which and why?

As the Discussion Paper notes (175), CSDs need to identify the risks from Critical Service Providers (CSPs). In our view it is important not only that they do this – but that they do this consistently under an agreed framework that will satisfy both the CSD's own concerns, as well as those of their supervisors. We note that CPSS-IOSCO is developing an assessment process for CSPs, as part of the follow-up to their 2012 Principles for FMs (including CSDs). As an organisation which provides critical services to CSDs, not just in the EU but globally, we would welcome a regulatory framework which provides CSDs, their users and their supervisors with the maximum level of certainty and consistency in the EU and beyond.

2 Appendix 1

Core Settlement Message Standards in ISO 15022 (MT) and ISO 20022 (MX)

MT	Message Name	MX Identifier	MX Name
MT540	Receive Free Instruction	sese.023	SecuritiesSettlementTransactionInstruction
MT541	Receive Against Payment Instruction	sese.023	SecuritiesSettlementTransactionInstruction
MT542	Deliver Free Instruction	sese.023	SecuritiesSettlementTransactionInstruction
MT543	Deliver Against Payment Instruction	sese.023	SecuritiesSettlementTransactionInstruction
MT544	Receive Free Confirmation	sese.025	SecuritiesSettlementTransactionConfirmation
MT545	Receive Against Payment Confirmation	sese.025	SecuritiesSettlementTransactionConfirmation
MT546	Deliver Free Confirmation	sese.025	SecuritiesSettlementTransactionConfirmation
MT547	Deliver Against Payment Confirmation	sese.025	SecuritiesSettlementTransactionConfirmation
MT548	Settlement Status and Processing Advice	sese.024	SecuritiesSettlementTransactionStatusAdvice
MT578	Settlement Allegement	sese.028	SecuritiesSettlementTransactionAllegement

3 Appendix 2

Original Giovannini Protocol Documentation from 2006

Elimination of Giovannini Barrier One

Final Protocol recommendation

**Andrew Douglas
SWIFT
March 2006**

Table of contents

Table of contents	1
Foreword	3
1 Executive summary	4
2 Introduction	6
3 Protocol definition process	6
4 Protocol principles	7
4.1 Market structure.....	7
4.2 Purpose of the Giovannini Protocol	7
4.3 Protocol structure.....	8
4.4 Protocol scope	8
4.4.1 Impact area.....	8
4.4.2 Instrument scope	9
4.5 Protocol terminology.....	9
4.5.1 Protocol.....	9
4.5.2 Data standard	9
4.5.3 Data syntax.....	11
4.5.4 Participants, infrastructures and institutions.....	11
4.6 Domestic versus cross-border applicability of the Protocol.....	11
4.7 Service provision	11
5 Protocol content	12
5.1 Data layer for equities, fixed income and exchange traded funds	12
5.1.1 Element 1: Data standards	12
5.1.2 Element 2: Data security	13
5.1.3 Element 3: Data service	13
5.2 Transfer layer for equities, fixed income and exchange traded funds.....	13
5.2.1 Element 4: Transfer layer standards	13
5.2.2 Element 5: Transfer layer security.....	13
5.2.3 Element 6: Transfer layer service.....	14
5.3 Exchange traded derivatives	14
6 Protocol implementation.....	15
7 Protocol support.....	17
7.1 Central securities depositories	17
7.2 Clearing houses and central counterparties	17
7.3 Virtual matching utilities and electronic trade confirmation providers	17

7.4	Institutions.....	18
7.5	Investment managers	18
7.6	Regulators	18
7.7	Others	19
8	Monitoring.....	20
9	Cost-benefit analysis.....	21
9.1	General industry	21
9.2	Participant type	21
10	Next steps.....	23
	Attachment 1: Composition of Independent Advisory Group	24
	Attachment 2: ISO 15022 and ISO 20022 compared	25
	Attachment 3: Glossary	27

Foreword

"SWIFT has contributed to the elimination of the so-called Barrier One with great determination. It has provided a model for other private-sector initiatives aimed at making European clearing and settlement a fully integrated function. SWIFT has moved fast to secure a mandate (informal, of course) from CESAME and has immediately embarked on a complex and structured process of analysis and consultation.

Since the beginning, SWIFT has periodically informed its user community and the wider marketplace through CESAME. The process has been highly efficient and successful in developing new standards which de facto eliminate Barrier One. The next fundamental phase is the adoption of these standards which is the result of voluntary decisions by market participants. The European Central Bank's decision to support the new standards will be an important factor in securing their quick adoption."



Alberto Giovannini
Chairman, Giovannini Group
March 2006

"The ESCB supports and appreciates the work done so far in helping to remove technical obstacles to market integration and paving the way towards standardized, harmonized and efficient clearing and settlement systems in Europe.

In line with the timeline identified, and assuming the protocol is implemented by other major market players, the ESCB will also adopt it for its operations."



Daniela Russo
Deputy Director General
Directorate General Payment Systems and Market Infrastructure
March 2006

"The recommended protocol represents an indispensable contribution to integrate the European capital markets and to make cross-border Clearing & Settlement more efficient, less costly and less risky.

The removal of Barrier One is essential and a pre-requisite for the dismantling of other barriers identified by the Giovannini Group. The work done by the Independent Advisory Group is congruent and complementary to the work on the broader Recommendation 2 of the Group of Thirty. It is also worth mentioning that through the efforts in designing this solution by the industry for the industry, the private sector underlines its willingness to contribute to the reduction of impediments in cross-border Clearing & Settlement in Europe."



Stephan Schuster
Chairman of Independent Advisory Group
Co Chair of the European G30 Monitoring Group
March 2006

1 Executive summary

The Giovannini Protocol has been defined on behalf of the clearing and settlement industry by a representative group of key industry participants, the Independent Advisory Group (IAG - see Attachment 1). The Protocol has also been subject to multiple industry reviews and has been endorsed by a substantial number of key European Union (EU) clearing and settlement industry participants.

The key Protocol recommendations are summarised in the following six elements:

For equities, fixed income and exchange traded funds	Element 1: Data standards	<p>a) It is <u>mandatory</u> for all participants in EU cross-border clearing and settlement and asset servicing of equities, fixed income and exchange traded funds, to implement support for the use of ISO 15022 and ISO 20022 standards and syntaxes, with coexistence solutions where appropriate, in compliance with existing market practices of the Securities Market Practice Group (SMPG).</p> <p>b) It is <u>mandatory</u> for all EU infrastructures to implement support for ISO 15022 and ISO 20022 standards and syntaxes in compliance with existing SMPG market practices to enable institutions engaged in domestic clearing and settlement activity to use these standards and syntaxes where appropriate. The long-term aim is to provide all domestic and cross-border clearing and settlement institutions with the common option to use ISO 15022 and ISO 20022 standards and syntaxes.</p> <p>c) It is <u>mandatory</u> that all participants in EU clearing and settlement implement support for all ISO data standards relevant to ISO 15022 and ISO 20022 as they are approved. This does not prevent the necessary use of local non-ISO standards where domestic users require this support.</p> <p>Where relevant to other EU initiatives, such as the Markets in Financial Instruments Directive (MiFID), support for these standards should be implemented to ensure straight-through processing from pre-trade to asset servicing.</p>
	Element 2: Data security	This is out of scope, as data security, that is security of data before sending and after receiving, is typically the responsibility of either the target application or the participant using the data. Security during transfer of data is dealt with in Element 5.
	Element 3: Data service	A gap analysis of the ISO 15022 and ISO 20022 message suite must be completed by SWIFT's Standards Department for all infrastructures in all EU States (plus other countries as necessary) to identify missing functionality. Standards must then be extended to include this functionality.

	Element 4: Transfer layer standards	<p>It is <u>mandatory</u> for a Giovannini-compliant transfer layer to offer machine to machine data transfer services with the following features:</p> <p>Use of ISO 15022 and ISO 20022 structured messages and file formats where they exist</p> <p>Internet Protocol (IP) for communication and routing</p> <p>It is <u>recommended</u> that a Giovannini-compliant transfer layer also offer manual operator based data transfer services via a graphical user interface (GUI) using ISO 15022 and ISO 20022 structured messages and file formats, where they exist.</p>
	Element 5: Transfer layer security	<p>A Giovannini-compliant transfer layer must:</p> <p>Apply the following security services to all machine to machine transfers (and GUI, if provided):</p> <ul style="list-style-type: none"> • Authentication and data integrity, via PKI • Non-repudiation • Time stamping <p>The Certificate Registration Authority associated with the PKI service must implement industry recognised best practices for certificate issuance.</p> <p>Market best practice minimum key strength must be implemented.</p>
	Element 6: Transfer layer service	<p>A Giovannini-compliant transfer layer must:</p> <ul style="list-style-type: none"> • Be at least available during TARGET opening hours • Satisfy business and regulatory requirements for performance, resilience and network management • Provide the following services: <ul style="list-style-type: none"> – Audit log of message or file (retention in accordance with local requirements as specified by the relevant securities regulator) – Guaranteed delivery of message or file – Delivery once, and only once, of message or file
For exchange traded derivatives	Relevant expert bodies such as the Futures Industry Association (FIA), Futures and Options Association (FOA), FpML, Eurex, LCH.Cleamet and FIX Protocol Ltd must consult on the feasibility and, if appropriate, recommend a plan to achieve compliance with the Protocol for exchange traded derivatives.	
Protocol implementation	<p>It is mandatory for all participants to complete implementation during a five year window beginning March 2006. Implementation will be staged over that period according to the individual plans of each participant. Compliance will therefore ramp up over the implementation period.</p> <p>Implementation monitoring will be done in conjunction with ISSA and related to corresponding monitoring of G30 Recommendation 2. A key deliverable for the end of 2006 will be a mapping of all EU infrastructure plans for compliance during the implementation window.</p>	
Cost-benefit analysis	Qualitatively, the benefits are clear, improved efficiency and reduced risk. A quantitative cost-benefit analysis will be delivered by the end of 2006.	

2 Introduction

In 2001, the Giovannini group, as advisor to the European Commission, published a report identifying 15 'barriers' to efficient and cost-effective cross-border clearing and settlement of securities transactions within the European Union (EU). These barriers have become apparent as 25 separate countries, each with its own domestically focused legal regime, fiscal policy and national infrastructure supporting the local securities market, work towards the creation of a single integrated European capital market.

In April 2003, a second report identified the organisations responsible for defining solutions to the elimination of each barrier. The Barrier One recommendation was:

"National differences in the information technology and interfaces used by clearing and settlement providers should be eliminated via an EU-wide protocol. SWIFT should ensure the definition of this protocol through the Securities Market Practice Group (SMPG). Once defined, the Protocol should be immediately adopted by the European System of Central Banks (ESCB) in respect of its operations. This barrier should be removed within two years from the initiation of this project."

SWIFT accepted this responsibility and agreed with the SMPG chairman that it would carry out the necessary research to define the required Protocol with direct SMPG input.

3 Protocol definition process

A consultation paper published in early 2005 contained a suggested protocol structure. Consultation feedback can be viewed at www.swift.com/index.cfm?item_id=43429.

A key element of the feedback was that SWIFT should continue to define the Protocol guided by the four principles of leverage, inclusivity, openness and neutrality.

An Independent Advisory Group (IAG - see Attachment 1) was formed based on membership of the EU's Clearing and Settlement Advisory and Monitoring Experts (CESAME) Group to maintain these principles, analyse feedback and define the Protocol. IAG membership plus all meeting minutes and slides can be viewed at www.swift.com/index.cfm?item_id=43429.

A draft Protocol was published for industry review between 25 October 2005 and 27 January 2006. All feedback received can be viewed at www.swift.com/index.cfm?item_id=43429.

This document defines the Protocol proposed to eliminate Giovannini Barrier One.

4 Protocol principles

4.1 Market structure

The interaction of market participants across the transaction lifecycle can be generically represented as shown below in Diagram 1 and is used as the agreed basic market shape.

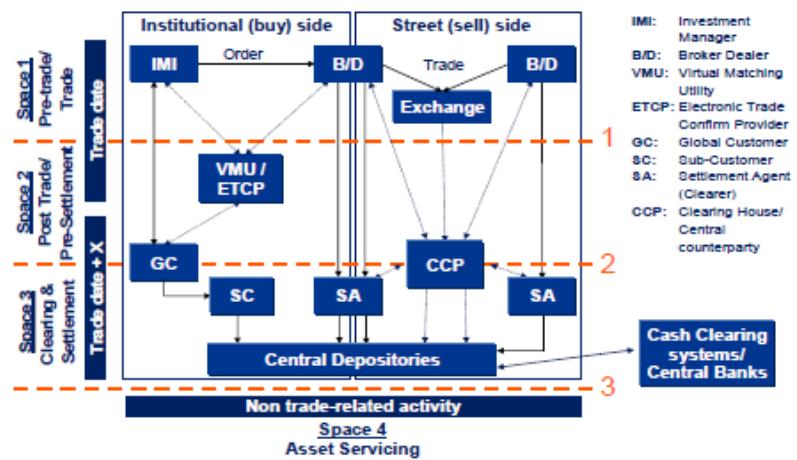


Diagram 1: Basic market shape

4.2 Purpose of the Giovannini Protocol

Without a single authoritative body defining a solution, there has been no agreed baseline toward which infrastructures could develop local solutions, leading to the creation of the current patchwork of solutions using local standards and technology.

The Giovannini Protocol defines an agreed set of EU-wide data standards and technology recommendations aimed at creating an environment where all industry participants can interoperate, eliminating some of the complexity and cost of cross-border clearing and settlement.

There is no recommendation of a Protocol review period, based on the assumption that its implementation will eliminate Barrier One and provide standardisation that should not be displaced by technological advancement.

4.3 Protocol structure

The Protocol is based on a two-layer structure and comprises a definition of the minimum mandatory content of each of the six elements identified below in Diagram 2.

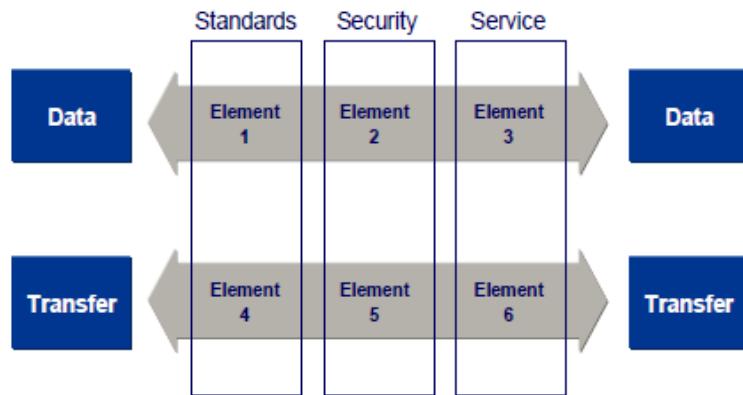


Diagram 2: Six element protocol structure

4.4 Protocol scope

4.4.1 Impact area

For 'buy-side' communication, the Protocol should be used to generate all input to the global custodian, local custodian and (I)CSD. This will therefore include the outputs of any virtual matching utility (VMU) or electronic trade confirmation (ETC) provider, the global and local custodian and the (I)CSD. It should also include the output of the investment manager (IMI) and this is to be encouraged, although it should be recognised that IMI activity is out of scope of the Protocol.

For 'sell-side' communication, the Protocol should be used to generate all inputs to the settlement agent and (I)CSD. This will therefore include the outputs of the clearing house or central counterparty (CCP), settlement agent and the (I)CSD.

The impact area is represented graphically in Diagram 3.

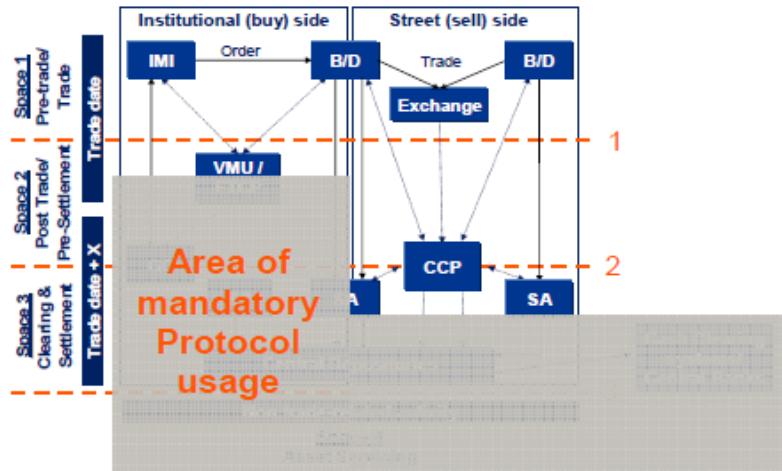


Diagram 3: Protocol impact area

4.4.2 Instrument scope

From the original Giovannini report, the instruments in scope are clearly equities, fixed income and exchange traded derivatives. As clearing and settlement of exchange traded funds occurs in the same way as equities, they are also considered to be in scope. Non-exchange traded funds, over the counter (OTC) derivatives and commodities have not been explicitly considered in this paper, although implementation of the Protocol in these sectors is actively encouraged.

4.5 Protocol terminology

4.5.1 Protocol

For the purposes of this document, the Protocol has been defined as a set of best practice rules governing communication procedures between any two counterparties. This includes a data standard and syntax and a number of technology elements associated with the transfer of data.

4.5.2 Data standard

Within this Protocol, a data standard is defined as having four components:

- A single agreed business process model
- A single data dictionary of agreed business data elements and their definitions
- A catalogue of messages developed using agreed data elements and syntax
- A set of agreed market practices, where relevant.

The Protocol recommends (see Section 5) the concurrent use of ISO 15022 and ISO 20022 as standards for the EU clearing and settlement industry.

The four elements identified above are stored in the ISO 20022 Repository, where they are available for inspection and use by all participants in the global financial services industry, confirming the drive of the

International Organisation for Standardisation (ISO) towards the development of open standards. A summary of the characteristics of ISO 15022 and ISO 20022 is contained in Attachment 2.

Clearly, today there is little relationship between ISO and non-ISO standards, and this is a core issue that the European securities industry, and indeed the global financial services industry, faces in relation to the development of true, cost effective straight-through processing. As discussed in earlier papers, multiple standards exist within market spaces and within instrument silos, although it is clear that ISO 20022 is gaining acceptance across all areas of the European market, as illustrated in Diagram 4.

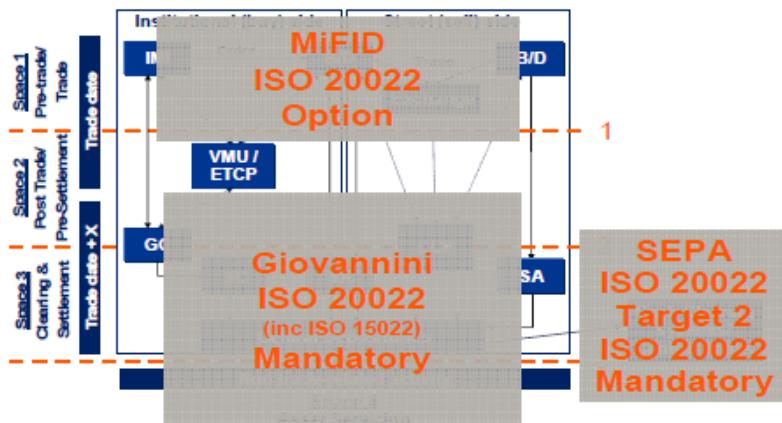


Diagram 4: ISO 20022 as a common standard for the EU financial service industry

It is hoped that the flexibility, open nature and inclusiveness of ISO 20022 will encourage existing standards in other domains to subscribe to the ISO 20022 Repository, which would lead to the creation in future of a fully interoperable Protocol hierarchy as shown in Diagram 5.

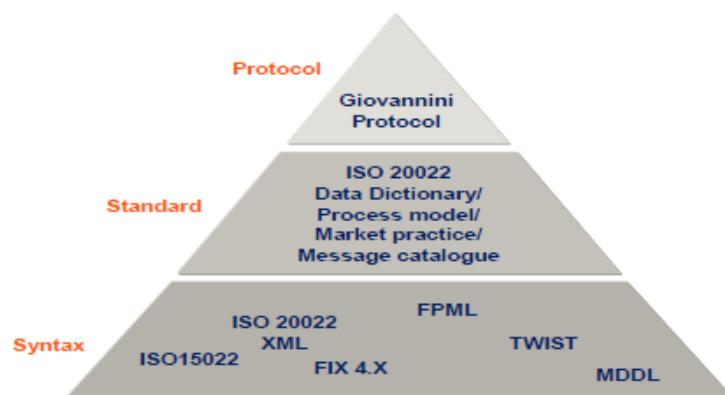


Diagram 5: A fully interoperable Protocol hierarchy

4.5.3 Data syntax

A syntax is the manner in which data elements are assembled to form a message. Some syntaxes are also considered to be standards, such as ISO 15022 and FIX, as they include a data dictionary and a process model. In general, translation between syntaxes is facilitated through the adoption of a single data dictionary and a single process model, as identified above.

4.5.4 Participants, infrastructures and institutions

In this document, the terms 'participant', 'infrastructure' and 'institution' are used extensively.

'Participants' – A collective term for all players in the clearing and settlement industry. This includes infrastructures and institutions.

'Infrastructures' – All commonly recognised cash and securities clearing and settlement systems and their operators, such as central securities depositories, clearing houses and central counterparties and central banks. For the purposes of this Protocol, virtual matching utilities (VMU) and electronic trade confirmation (ETC) providers are also included in this category.

'Institutions' – Refers to broker-dealers, custodians, settlement agents and ancillary institutions such as transfer agents that access services provided by infrastructures in the commission of clearing and settlement business.

4.6 Domestic versus cross-border applicability of the Protocol

During the 2001 Lisbon Summit, the leaders of the European States clearly outlined their belief in the benefits associated with the creation of a single integrated financial market for Europe. Ultimately, this is the goal on which many EU initiatives are converging, such as the Markets in Financial Instruments Directive (MiFID) and Giovannini for the securities market, together with the Single Euro Payment Area (SEPA) and Target 2 for corresponding payments markets. After implementation of these solutions, there will be no distinction between cross-border and domestic transactions in the EU, there will only be EU domestic activity.

Within this EU domestic framework, all infrastructures will be accessible by all institutions. Thus, institutions operating 'near' to an infrastructure (today's domestic user) will find themselves communicating via a different Protocol to those institutions 'far' from the same infrastructure (today's cross-border user). Conversely, when 'near' institutions attempt to exploit new business opportunities that arise in the single integrated financial market by accessing a 'far' infrastructure, the only viable option will be via a Giovannini-compliant protocol. Over time, institutions will therefore have to implement the Protocol to communicate with 'far' infrastructures. This will stimulate demand to their 'near' infrastructures and provide the impetus for total market standardisation on this Protocol.

Opinion submitted during the review of the draft Protocol clearly demonstrates a belief that maximum economy of scale, and thus maximum benefit, will be derived through implementation of the Protocol for 'near' (domestic) as well as 'far' (cross-border) clearing and settlement activity. This document does not specify a time by when this must happen as this is beyond the scope of the Protocol but it does encourage such take up as early as possible.

4.7 Service provision

Transfer layer functionality is independent of data layer, and can be sourced from single or multiple providers according to the preference of the purchaser (see Section 5.2.1).

5 Protocol content

5.1 Data layer for equities, fixed income and exchange traded funds

5.1.1 Element 1: Data standards

a) It is mandatory for all participants in EU cross-border clearing and settlement and asset servicing of equities, fixed income and exchange traded funds to implement support for the use of ISO 15022 and ISO 20022 standards and syntaxes, with coexistence solutions where appropriate, in compliance with existing SMPG market practices. 'All participants' includes, but is not limited to:

- Virtual matching utilities and electronic trade confirmation providers*
- Clearing houses and central counterparties*
- [I]CSDs
- Central banks and cash clearing systems
- Broker-dealers
- Subcustodians and global custodians
- Local and global settlement agents
- Entities supporting asset servicing activity, such as transfer agents

For entities marked *, which operate at a perceived boundary between two syntaxes, the generation of ISO 15022 and ISO 20022 messages into the downstream process is mandatory. The additional system support to accept inbound ISO 15022 and ISO 20022 messages is a recommended option. For all other entities, acceptance and generation of ISO 15022 and ISO 20022 messages, where they exist, is mandatory.

b) It is mandatory for all EU infrastructures to implement support for ISO 15022 and ISO 20022 standards and syntaxes in compliance with existing SMPG market practices to enable institutions engaged in domestic clearing and settlement activity to use these standards and syntaxes where appropriate. The long term aim is to provide all domestic and cross-border clearing and settlement institutions with the common option to use ISO 15022 and ISO 20022 standards and syntaxes.

c) It is mandatory that all participants in EU clearing and settlement implement support for all ISO data standards relevant to ISO 15022 and ISO 20022, as they are approved. This includes, but is not limited to:

ISO 3166	– Country Codes	ISO 4217	– Currency codes
ISO 6166	– ISIN	ISO 8601	– Date and time format
ISO 9362	– BIC	ISO 10383	– MIC
ISO 10962	– CFI	ISO 13616	– IBAN

This does not prevent the necessary use of local non-ISO standards where domestic users require this support.

Where relevant to other EU initiatives, such as MiFID, support for these standards should be implemented to ensure STP from pre-trade to asset servicing. Non-compliant syntaxes should become compliant with the ISO 15022 and ISO 20022 standard as defined in Section 4.5.2.

5.1.2 Element 2: Data security

This is out of scope as security of data before sending and after receiving is typically the responsibility of either the target application or the participant using the data. Security during transfer of data is dealt with in Element 5 (see Section 5.2.2).

5.1.3 Element 3: Data service

a) A gap analysis of the ISO 15022 and ISO 20022 message suite must be completed by SWIFT Standards Department for all infrastructures in all EU States (plus other countries as necessary) to identify missing functionality. Standards must then be extended to include this functionality.

The gap analysis should prioritise the analysis of discrete processes, such as settlement instruction, for all countries, rather than look at all processes for a specific country.

b) If required, mapping between syntaxes (for example at the interface between trade and post-trade activity) will be conducted by the relevant standards authorities on a country by country basis and at a product by product level, in compliance with existing market practice and business rules.

c) To ensure timely maintenance of ISO 15022 and ISO 20022 messages and to allow for continued innovation of processes and instruments, custom messages can be created using extensibility tools and rules provided by the standards authority, pending incorporation into the ISO 15022 and ISO 20022 standards.

5.2 Transfer layer for equities, fixed income and exchange traded funds

5.2.1 Element 4: Transfer layer standards

It is mandatory for a Giovannini-compliant transfer layer to offer machine to machine data transfer services with the following features:

- Use of ISO 15022 and ISO 20022 structured messages and file formats where they exist
- Internet Protocol (IP) for communication and routing

It is recommended that a Giovannini-compliant transfer layer also offer manual operator based data transfer services via a graphical user interface (GUI) using ISO 15022 and ISO 20022 structured messages and file formats where they exist

Note: Transfer layer providers do not need to offer every service as part of their commercial offering, but each participant must be able to transfer data using the mandatory service identified above. Selection of transfer services appropriate to a specific communication is agreed bilaterally between participants.

5.2.2 Element 5: Transfer layer security

A Giovannini-compliant transfer layer must:

- Apply the following security services to all machine to machine transfers (and GUI, if provided):
 - Authentication and data integrity, via public key infrastructure (PKI)
 - Non-repudiation
 - Time stamping
- Liability arising from authentication and non-repudiation can vary from 0-100% according to the commercial positioning of the service by the transfer layer provider.
- The Certificate Registration Authority associated with the PKI service must implement industry recognised best practices for certificate issuance.
- Market best practice minimum key strength must be implemented.

5.2.3 Element 6: Transfer layer service

A Giovannini-compliant transfer layer must:

- be at least available during TARGET opening hours
- satisfy business and regulatory requirements for performance, resilience and network management
- provide the following services:
 - Audit log of message or file (retention in accordance with local requirements as specified by the relevant securities regulator)
 - Guaranteed delivery of message or file
 - Delivery once and only once of message or file

5.3 Exchange traded derivatives

Relevant expert bodies such as the Futures Industry Association (FIA), Futures and Options Association (FOA), FpML, Eurex, LCH.Cleamet and FIX Protocol Ltd must consult on the feasibility and, if appropriate, recommend a plan to achieve compliance with the Protocol for exchange traded derivatives.

During pre-publication feedback, FIA accepted responsibility to lead an industry consultation on the applicability of the Protocol to global exchange traded derivatives. This study will be delivered within two years of publication of the Protocol, with a plan to achieve compliance within five years of publication of the Protocol, if relevant.

6 Protocol implementation

Following extensive consultation with the clearing and settlement participants, implementation of the Protocol over a five year continuum, commencing from publication in March 2006, has been identified as an achievable solution. This continuum is illustrated in Diagram 6. This establishes a minimum Protocol 'shelf life' of five years, and whilst it may preclude the use of the latest developments, it provides participants with the certainty of a realistic period for amortisation of development costs. It encourages early implementation to give the longest period of guaranteed usage. This guarantee period is felt to be one of the best ways to promote take up, ensuring participants have time to recoup their investment in the Protocol.

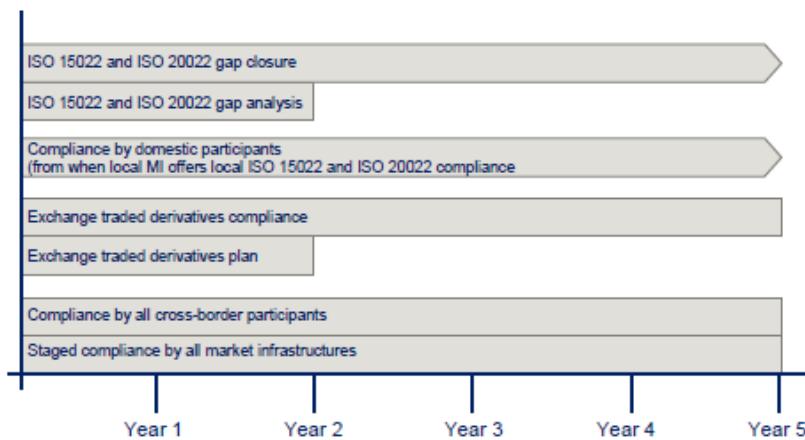


Diagram 6: The implementation continuum

Implementation by participant type:

Infrastructures	<p>It is mandatory for all infrastructures supporting the clearing and settlement of equity, fixed income and exchange traded funds, that is VMU and ETC providers, clearing houses and CCPs* and (I)CSDs to have implemented support for the data and transfer layers by March 2011.</p> <p>The majority of infrastructures have indicated their willingness to adopt the Protocol (see Section 7.1) predominantly by a staged implementation. Consequently, for certain infrastructures, implementation projects are already underway and will ensure compliance in certain areas will be achieved well before 2011. As part of the implementation monitoring process (see Section 8), a roadmap of implementation plans for all infrastructures will be drafted by the end of 2006.</p>
* See Section 7.2 for further information related to clearing houses and CCPs.	

Cross-border institutions	<p>It is <u>mandatory</u> for all institutions engaged in cross-border clearing and settlement of equity, fixed income and exchange traded funds, that is broker-dealers, global and sub-custodians, global and local settlement agents, to implement support for the data and transfer layers by March 2011.</p> <p>It should be noted that many current cross-border institutions already comply with at least the data layer element of the Protocol through the broad industry migration to ISO 15022 initiated on the SWIFT network in 2003.</p>
Domestic institutions	<p>It is <u>optional</u> for all institutions engaged in domestic clearing and settlement of equity, fixed income and exchange traded funds, that is broker-dealers, local custodians and local settlement agents, to implement support for the data and transfer layers by March 2011.</p>
Others	<p>Exchange traded derivatives: Relevant expert bodies must complete a feasibility study on compliance with the Protocol as defined in Section 5.3 by March 2008. If relevant, this study must include plans to achieve compliance by March 2011.</p> <p>Standards gap analysis: SWIFT must complete the ISO gap analysis for all current infrastructure clearing and settlement processes as defined in Section 5.1.3 by March 2008, and begin work to fill the identified gaps as soon as feasible thereafter. Due to ongoing process and product innovation, it is impractical to specify an end date for this activity.</p> <p>This work commenced on 16 February 2006 when 20 European CSDs attended a gap analysis initiation meeting at SWIFT's offices in Brussels. It is intended to complete the high level analysis for all EU CSDs by mid-2006. A similar programme for clearing houses is under construction.</p>

7 Protocol support

Due to the absence of regulatory enforcement, the success of the Protocol hinges on implementation by all EU clearing and settlement participants and especially by infrastructures. If this does not happen, the cross-border market will remain as it is today, fragmented and costly.

As part of the draft Protocol review, participants were asked to confirm:

- their belief that the Protocol would eliminate Barrier One
- their commitment to implement within the originally stated deadlines.

Support for the Protocol, summarised by participant type, has been explicitly given as described in the sections that follow.

7.1 Central securities depositories

As the lynchpin of the ultimate success of the Protocol, it is encouraging to confirm that all responding central securities depositories (CSDs) indicated broad support for the Protocol as a solution to Barrier One. The majority believe that continuous implementation over the five year period is both appropriate and reasonable. Written commitment respecting such a deadline as far as is possible, has been received from 21 of the 25 EU CSDs and both (I)CSDs:

Austria	– OeKB	Belgium	– Euroclear BE
Denmark	– VP	Estonia	– SSD Ltd
Finland	– APK (NCSD)	France	– Euroclear FR
Germany	– Clearstream Banking	Greece	– Helex
Hungary	– Keler Rt	Italy	– Monte Titoli
Ireland	– CRESTCo (Euroclear)	Lithuania	– CSDL
Luxembourg	– Clearstream Banking	Netherlands	– Euroclear NL
Slovakia	– SDCP SK	Slovenia	– KDD
Spain	– Iberclear	Sweden	– VPC (NCSD)
Poland	– KDPW	Portugal	– Interbolsa
United Kingdom	– CRESTCo (Euroclear)	ICSDs of Clearstream Banking & Euroclear Bank	

The CSDs from whom no commitment has yet been received are those from:

Cyprus	Czech Republic
Latvia	Malta

7.2 Clearing houses and central counterparties

Both Eurex and LCH.Clearnet as major cross-border clearing houses, whilst expressing support for the Protocol as a solution for the elimination of Barrier One, have expressed concerns about the ability of the current ISO standards to support the clearing process. The high level five year goal remains in place subject to the results of the planned clearing house and central counterparty gap analysis (see Sections 5.1.3 and 6).

7.3 Virtual matching utilities and electronic trade confirmation providers

Clear participant feedback is an expectation that any service provider currently operating in, or entering this space, should do so in conformance with the Protocol. The only relevant organisation providing commitment in this space was Omgeo which confirmed that it "will accommodate a new industry protocol

in accordance with [our] clients' needs". Omgeo also confirmed its belief that to be truly successful, this initiative will ultimately require regulatory support to generate critical mass.

7.4 Institutions

Explicit support for the Protocol as a solution to the elimination of Barrier One and a commitment to implement the Protocol was provided by 17 of the largest European and global clearing and settlement institutions. These are:

ABN AMRO	The Bank of New York
BNP Paribas	Citigroup
Credit Anstalt	Credit Suisse
Deutsche Bank	HSBC
HypoVereinsbank	JPMorgan
Lehman Brothers	Merrill Lynch
Morgan Stanley	Northern Trust
Royal Bank of Scotland	State Street
UBS	

ING also expressed broad support for the Protocol as a solution to Barrier One, but felt unable to comment on implementation at this time.

In addition to individual institutions, the following organisations representing the views of multiple institutions also expressed support for the Protocol as a solution to Barrier One:

APACS
European Association of Cooperative Banks
European Banking Federation
European Savings Banks Group
French Association of Securities Professionals ('AFTI' - 500 institutional members)
French SWIFT National User Group, (GUF - 100 institutional members)
German SWIFT National User Group
Norwegian SWIFT National User Group (33 institutional members)
Swedish SWIFT National User Group
Swedish Securities Dealers Association
Securities Market Practice Group as well as the individual National Market Practice Groups of Austria, Belgium, Finland, Sweden, the United Kingdom and Ireland.

7.5 Investment managers

The following organisations explicitly endorsed the Protocol:

BVI (The Association of German Asset Managers)
Efama (The European Fund and Asset Management Association)
Scottish Widows

7.6 Regulators

Support for the concept of the single communication protocol solution has been provided by the following securities regulatory authorities:

Austria	Denmark
Ireland	The Netherlands

7.7 Others

Unqualified support for the Protocol as a solution to Barrier One has been offered by the following EU and non-EU organisations, although in many cases, concerns were expressed in relation to the originally identified timeframes:

Hong Kong Monetary Authority
Hong Kong Exchange
ISITC US
Japanese National Market Practice Group/ISITC Japan
Jasdec
SIS SegalIntersettle
SIS x-clear
South African National Market Practice Group
Swiss Commission for Financial Standardisation (SCFS)
Thailand Securities Depository

In addition to concerns about implementation timeframes, further qualified support for the solution, summarised below, was provided by the following organisations:

BT Radianz: Considers this "*an appropriate solution to the elimination of Barrier One for equities and fixed income clearing and settlement*", that the industry should use "*the most widely adopted standard for clearing and settlement in each individual asset class*" and that a "*high level of interoperability between standards within one agreed protocol should be the industry's goal*". BT Radianz "*supports the use of open, industry-driven and industry-owned standards and believes participants should be free to use those most appropriate to their needs and, as such, standards should not be mandated by other parties*".

FIX Protocol Ltd: Answered "*yes provided that the scope is settlement processing and that the distinction between ISO 15022 and ISO 20022 and the depiction of standards within diagram 1 is clarified*". FPL also believes that "*extending the most widely adopted standard in a space to universal coverage is the best first step towards achieving the industry's goals of simplicity, automation and ROI*". Thus, for the focus on cash equities and fixed income, FPL sees "*the FIX Protocol being used from pre-trade up to and including post-trade and pre-settlement, and the ISO 15022 messages to service settlement*".

SIA: Whilst being generally supportive of the initiative in a European context, SIA caution that it is "*difficult to predict how relevant this cross-border protocol would be for and among more autonomous markets outside of the EU, if its expansion were proposed at any stage*".

It should be noted that STRATE, the South African CSD, felt the Protocol was an inappropriate solution to Barrier One due to the recommendation of both ISO 15022 and ISO 20022, as well as expressing reservations about the timelines.

8 Monitoring

G30 Recommendation 2 is congruent with this Protocol, that is the implementation of ISO 15022 XML (now called ISO 20022) solutions over IP networks. ISSA has responsibility for the ongoing monitoring of the global implementation of G30 Recommendation 2. It is logical to leverage this, and ISSA agreed at its November 2005 Board Meeting, that in conjunction with SWIFT, it would take on joint responsibility for monitoring and reporting implementation progress for the Protocol.

SWIFT and ISSA will work during the second quarter of 2006 to devise an appropriate implementation monitoring programme that will allow regular reporting to the CESAME group.

A key element of the monitoring programme will be the mapping of the current EU landscape for infrastructures. This will indicate, for all infrastructures, the following information:

- Current status against the key elements of the Protocol
- Plans for 100% compliance to be achieved in stages over the five year implementation continuum
- Key milestones where compliance for specific functions will be achieved
- An estimated end date for their programme to adopt the Protocol
- Identification of dependencies and issues.

This landscape map, built in conjunction with the infrastructures, is intended for delivery by the end of 2006.

9 Cost-benefit analysis

To justify industry investment in Protocol compliance, a tangible benefit must be demonstrated. At present, this analysis is qualitative, as described in the sections below.

9.1 General industry

Implementation of the Giovannini Protocol will provide automatic compliance with the requirements outlined in other industry initiatives:

G30 Recommendation 2: "*Harmonise messaging standards and communication protocols - All market participants should adopt ISO 15022 as the global standard for straight-through securities messaging across the entire securities life cycle. Over time, XML should become the language to describe standardised messages. All market participants should support and use communication networks that adopt open, standardised, IP-based protocols for securities transactions.*"

CPSS-IOSCO Standard 16: "*Securities settlement systems should use or accommodate the relevant international communication procedures and standards in order to facilitate efficient settlement of cross-border transactions.*"

ESCB-CESR Standard 16: "*Entities providing securities clearing and settlement services, and participants in their systems should use or accommodate the relevant international communication procedures and standards for messaging and reference data in order to facilitate efficient clearing and settlement across systems. This will promote straight-through processing across the entire securities transaction flow.*"

Additionally, the industry is currently concerned with the implications and implementation of the Market in Financial Instruments Directive (MiFID) which states:

MiFID Article 34: "*Member states shall require that investment firms from other Member States have the right of access to central counterparty, clearing and settlement systems in their territory for the purposes of finalising or arranging the finalisation of transactions in financial instruments.*" (Note: Article 33 additionally refers to access to regulated markets, but these are outside the scope of the Giovannini Protocol)

Whilst this relates primarily to the relaxation of legal restrictions on remote access, once these have been removed, the Protocol will eliminate any technical issues around direct cross-border infrastructure access.

Implementation of the Protocol will, therefore, provide a substantial industry compliance cost saving by addressing five separate initiatives concurrently.

9.2 Participant type

Infrastructure: Participation in the 2003 industry migration from ISO7775 to ISO 15022 means many infrastructures have already adopted solutions that are partially or totally data layer and transfer layer compliant. Thus, the cost of compliance for them is less than for those operating only bespoke local solutions. However, as there are gaps in the recommended data standard, it is likely that all infrastructures will have at least some development work to implement new messages as they become available to provide full ISO 15022 and ISO 20022 support for existing non-standard processes. It is assumed that such maintenance activity will be accommodated during the regular development cycle of an infrastructure and that it is a cost of doing business rather than an additional development cost.

The cost-benefit analysis for infrastructures will focus on the cost of implementing ISO15022 and ISO 20022 middleware to isolate their core systems and domestic participants from short term changes to their systems. This will be offset by the fact that an infrastructure may operate a legacy system requiring

wholesale replacement, and the Protocol will provide them with a consistent and stable target for a development already planned.

Cross-border institution: This sector is already largely compliant with at least the data layer requirements through migration to ISO 15022. Thus, their focus will be on cost reduction and potential access to new markets made possible by standardised direct infrastructure connections.

Domestic institution: Predominantly, this category will not have implemented many, if any, of the identified Protocol elements. Nor does the Protocol mandate this, although it does recognise that additional cost savings are possible through wholesale adoption of the Protocol by domestic as well as cross-border participants.

The proposed Protocol allows sufficient flexibility for domestic markets to migrate, where cost justified, within timeframes they can set, making adoption of the Protocol a project to be accommodated within normal development cycles and budgets.

A quantitative cost-benefit analysis is currently being conducted, and this will be published later in 2006 and delivered as a separate report.

10 Next steps

This Protocol is delivered to the EU clearing and settlement industry participants for immediate commencement of implementation.

During 2006, the implementation monitoring process will include further deliverable reports on the following:

- Implementation map for all infrastructures
- Cost-benefit analysis
- Best practices details where relevant (to be provided in response to requests made during review)

Attachment 1: Composition of Independent Advisory Group

Chairman	Stephan Schuster Co-Chair of G30 European Monitoring Committee
Secretariat	Andrew Douglas SWIFT

Clearing and settlement participant representatives:

ABN AMRO	Ruud Sleehoff Head of Market Infrastructures
BNP Paribas	Pierre Willems Head of Local Clearing and Custody Product
Citigroup	Brian Crabtree Director, Global Transaction Services
Deutsche Bank	Stephen Lomas Head of Domestic Custody, Trust and Securities Services
Deutsche Börse	Karl van Gestel Head of Settlement and Custody Design
Federation Bancaire	Didier Hermans European Advisor
Euroclear	Jan Sonck Director, Common Communications Interface
LCH.Clearnet	Pierre-Dominique Renard Director Infrastructure and Service Design
Morgan Stanley	Keith Berrett Executive Director
NCSD	Heikki Ylipekkala Director, Business Development

Exceptional invitees:

FIX Protocol Ltd	Kevin Houstoun Global Technical Committee Co-chair
	Peter Randall Executive Director
ISSA	Thomas Rohr (UBS) VP, Securities Messaging
SMPG	Charles Boniver Bank of New York
SWIFT Standards	Jamie Shay Head of Securities Standards

Attachment 2: ISO 15022 and ISO 20022 compared

ISO 15022	ISO 20022
SCOPE	
ISO 15022 is a standard developed specifically for the securities industry.	ISO 20022 is a standard developed to cover all aspects of the Financial Services industry, including securities, cash, trade etc.
DATA DICTIONARY	
Yes - ISO 15022.	Yes - As the ISO 20022 data dictionary becomes fully populated, there will be a mixture of new data elements and terms that already exist in the ISO 15022 data dictionary. Terms already existing in ISO 15022 will be identified in ISO 20022 by a synonym linking both dictionaries e.g. trade date in ISO 20022 is linked to ISO 15022 using the synonym - 98a: TRAD
BUSINESS MODELS	
None	<p>Yes - Before messages can be created, the business process must be analysed and flows between different participants fully mapped. These 'business information diagrams' illustrate the relationship of all business components (e.g. security and cash related to instrument) as well as activity flows representing business processes (e.g. trading) and the order in which processes must be carried out (e.g. trading prior to settlement)</p> <p>Once processes are modeled, individual communications or 'messages' are modeled. A message model is syntax independent and is used to generate messages in the desired syntax.</p>
MARKET PRACTICE	
<p>Yes - Defined by the Securities Market Practice Group (SMPG) to harmonise inherent differences in global market practice leading to greater standardisation which reduces the cost and risk associated with an activity.</p> <p>ISO 15022, however, leaves room for interpretation of Market Practices which has meant that the hoped for standardisation resulting from the adoption of Market Practice, has not necessarily been fully realised.</p>	<p>Yes - Market Practice defined for ISO 15022 will be used by ISO 20022 where appropriate. However, ISO 20022 does not allow the same leeway for interpretation as exists in ISO 15022 through the application of specific additional logic layers:</p> <p>Messages include rules in their structure, e.g. in the PEP/ISA transfer message, once a security is identified as PEP, the message is structured in such a way as to make it impossible to give information for ISA's.</p> <p>Schema rules (i.e. in the message definition), e.g. a deal must be specified as an amount of money or a number of units</p> <p>Rules delivered with schemas (i.e. as pieces of code), e.g. for physical delivery, an address must be given. Since these rules are delivered with the schemas, they are not subject to interpretation by programmers.</p> <p>SMPG will continue to harmonise markets in areas where no global market practice exists.</p>

SYNTAX	
The ISO 15022 syntax is specific to ISO 15022 messages. Therefore, implementation of ISO 15022 messages requires specific expertise and programming which reduces flexibility and increases cost.	XML is the ISO approved syntax for the physical representation of ISO 20022 messages. XML is a de facto industry standard used by many organisations and for which many off-the-shelf tools are available. As syntax is independent of both the model and dictionary, if a new syntax is chosen in the future, the dictionary and the business models will not change, i.e. there will be no impact on firms' applications that process the business content of messages.

Attachment 3: Glossary

APACS	Association for Payment Clearing Services
BIC	Bank Identification Code
CCP	Central CounterParty
CESAME	Clearing and Settlement Advisory and Monitoring Experts Group
CESR	Committee of European Securities Regulators
CFI	Classification of Financial Instruments
CPSS	Committee on Payment and Settlement Services
CSD	Central Securities Depository
ESCB	European System of Central Banks
ETC	Electronic Trade Confirmation
FIX	Financial Information eXchange
FOA	Futures and Options Association
FPL	FIX Protocol Ltd
FpML	Financial Products Mark-up Language
G30	Group of Thirty
GUI	Graphical User Interface
IBAN	International Bank Account Number
IMI	Investment Management Institution
ICSD	International Central Securities Depository
IOSCO	International Organisation of Securities Commissions
ISIN	International Securities Identification Number
ISO	International Organisation for Standardisation
ISSA	International Securities Services Association
MIC	Market Identification Code
MiFID	Markets in Financial Instruments Directive
NCSD	Nordic Central Securities Depository
OTC	Over The Counter
PKI	Public Key Infrastructure
SEPA	Single Euro Payment Area
SIS	SegalInterSettle
SMPG	Securities Market Practice Group
TARGET	Trans-European Automated Real-time Gross settlement Express Transfer
VMU	Virtual Matching Utility