



HARMONIZATION AND STANDARDIZATION OF BOND MARKET INFRASTRUCTURES IN ASEAN+3

ASEAN+3 BOND MARKET FORUM
SUB-FORUM 2 PHASE 3 REPORT

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SUB-FORUM 2 PHASE 3 REPORT**



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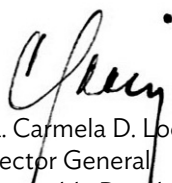
Foreword

The Asian Development Bank (ADB) is working closely with the Association of Southeast Asian Nations (ASEAN) and the People's Republic of China (PRC), Japan, and the Republic of Korea—collectively known as ASEAN+3—to develop local currency bond markets and facilitate regional bond market integration under the Asian Bond Markets Initiative in order to strengthen the resilience of the region's financial systems.

ADB is providing support to the ASEAN+3 Bond Market Forum (ABMF) by acting as the Secretariat. ABMF was established in 2010 with the endorsement of ASEAN+3 finance ministers and comprises more than 100 members and experts drawn from financial institutions, central banks, and market authorities in the region. It functions as a common platform to foster standardization of market practices and harmonization of regulations relating to cross-border bond transactions in the region.

This report is an outcome of the dedicated efforts of ABMF members and experts to create more efficient and sound bond market infrastructures, and to improve their inter-operability through harmonization of transaction flows, standardization of messaging items, and implementation of international standards. Bond markets should be developed in line with a common understanding of what needs to be harmonized and integrated from the early stages of market development. This report provides a roadmap toward more standardized and harmonized markets by 2020.

Thanks to the efforts of the members and experts, ABMF is becoming Asia's primary forum for the exchange of views between the public and private sectors on the development of the region's bond markets. ABMF tackles industry challenges and continues to function as a regional platform to propose and implement measures toward more integrated bond markets. It is an excellent example of regional cooperation and collaboration between the public and private sector for the realization of a regional good. As the Secretariat of ABMF, ADB will continue to support the development of ASEAN+3 bond markets and to coordinate among various stakeholders for regional institutional building.



Ma. Carmela D. Locsin
Director General
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Statement from SF2 Chairs

It is a common understanding that Asia—in particular the Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea (ASEAN+3)—is now leading the world economy. Payment and settlement infrastructures in the region have steadily developed in recent decades and become efficient and robust systems, which are now equivalent with or better than those of developed economies in other regions, as evidenced by the survey results of Phases 1 and 2 of the ASEAN+3 Bond Market Forum Sub-Forum 2 (ABMF SF2). However, payment and settlement infrastructures, related regulations, and market practices still differ in each economy of ASEAN+3. Therefore, ABMF SF2 members and experts have discussed how to harmonize and standardize messages and practices in the region to achieve cross-border straight-through-processing (STP) in the region.

The Chair and Vice-Chairs express their heartfelt gratitude to the members and experts of ABMF SF2 for their contributions to making cross-border STP possible in the region. The Chair and Vice-Chairs hope to have the continuous support of the members and experts, since it is still in the early stages of implementing the objectives of the Asian Bond Markets Initiative to further develop liquid and well-functioning bond markets and effectively channel the region's abundant savings to meet its growing investment needs. The Chair and Vice-Chairs also express their heartfelt gratitude to the Asian Development Bank Secretariat Team, in particular the Asian Development Bank consultant for ABMF SF2 and his team, for drafting this report.

Jong-Hyung Lee
Chair of ABMF SF2

Margaret Mutiara Tang
Vice-Chair of ABMF SF2

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Vice-Chair of ABMF SF2

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ASEAN+3 Bond Market Forum Sub-Forum 2 (ABMF SF2) members and experts kindly provided inputs by answering questionnaires and commenting on diagrams during the market visits, and through a comprehensive review of this draft report. The international experts very kindly provided input and freely shared their needs and assessments, often drawing from proprietary sources. In addition, the team thanks all interviewees who gave useful comments and responses during the Phase 3 meetings and market visits. This report should be regarded as a crystallization of a regional collaborative effort toward more harmonized and integrated ASEAN+3 bond markets.

The Asian Development Bank (ADB) consultant also appreciated the advice of a variety of stakeholders as well as the impeccable support of the ADB Sustainable Development and Climate Change Department team. This report could not have been published without such strong support and cooperation from the ABMF members and experts in the region. The team also thanks the national members and experts of Hong Kong, China for hosting the ABMF Phase 3 meetings. The smooth organization of the meetings made possible the conduct of intensive discussions through multiple sessions at each meeting.

No part of this report represents the official views of any of the institutions that participated as ABMF members or experts. The views presented are those of the ADB Consultant for ABMF SF2 who prepared this report.

Abbreviations

ABMF	ASEAN+3 Bond Market Forum
ABMI	Asian Bond Markets Initiative
ADB	Asian Development Bank
ANNA	Association of National Numbering Agencies
ASEAN+3	Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea
BICFI	Business Identifier Code for Financial Institutions
CSD	central securities depository
DVP	delivery-versus-payment
EU	European Union
FCAD	Financial Collateral Arrangements Directive
GMRA	Global Master Repurchase Agreement
GoE	Group of Experts
ISIN	International Securities Identification Number
JASDEC	Japan Securities Depository Center, Inc.
NNA	national numbering agency
PSEG	Payment Standard Evaluation Group
PSMS	Pre-Settlement Matching System
RTGS	real-time gross settlement
SFD	Settlement Finality Directive
SF2	Sub-Forum 2
SSEG	Securities Standard Evaluation Group
SSS	Securities Settlement System
STP	straight-through-processing
TC68	Technical Committee 68

Note:

In this report, international standards for naming conventions—International Organization for Standardization (ISO) 3166 for country codes and ISO 4217 for currency codes—are used to reflect the discussions of the ASEAN+3 Bond Market Forum Sub-Forum 2 to promote and support implementation of international standards in financial transactions in the region. ASEAN+3 comprises the Association of Southeast Asian Nations (ASEAN) plus the People's Republic of China, Japan, and the Republic of Korea.

The economies of ASEAN+3 as defined in ISO 3166 include Brunei Darussalam (BN; BRN); Cambodia (KH; KHM); the People's Republic of China (CH; CHN); Hong Kong, China (HK; HKG); Indonesia (ID; IDN); Japan (JP; JPN); the Republic of Korea (KR; KOR); the Lao People's Democratic Republic (LA; LAO); Malaysia (MY; MYS); Myanmar (MM; MMR); the Philippines (PH; PHL); Singapore (SG; SGP); Thailand (TH; THA); and Viet Nam (VN; VNM).

The currencies of ASEAN+3 as defined in ISO 4217 include the Brunei dollar (BND), Cambodian riel (KHR), Chinese renminbi (CNY), Hong Kong dollar (HKD), Indonesian rupiah (IDR), Japanese yen (JPY), Korean won (KRW), Lao kip (LAK), Malaysian ringgit (MYR), Myanmar kyat (MMK), Philippine peso (PHP), Singapore dollar (SGD), Thai baht (THB), and Vietnamese dong (VND).

Executive Summary

This report, *Harmonization and Standardization of Bond Market Infrastructures in ASEAN+3*, is an outcome of Phase 3 discussions under the ASEAN+3 Bond Market Forum Sub-Forum 2 (ABMF SF2) and follows the ABMF SF2 Phase 2 Report, *ASEAN+3 Information on Transaction Flows and Settlement Infrastructure*.

Harmonization of Message Flow

An important step to achieving cross-border straight-through-processing (STP) and better interoperability in ASEAN+3 is the proposal of a harmonized message flow known as the reference delivery-versus-payment (DVP) flow based on the following basic concepts:

- i. Real-time gross settlement (RTGS) is to be used for both bond settlement and cash settlement,
- ii. DVP is to be secured,
- iii. central bank money is to be used for cash settlement,
- iv. cash settlement for DVP should be effected by credit transfer,
- v. data are to be transferred from upstream infrastructure to downstream infrastructure whenever possible, and
- vi. the quality of data transferred and processed is to be confirmed when the data are entered by different parties.

Standardization of Message Items Related to DVP Settlement

In order to secure interoperability in ASEAN+3, essential and minimum message items to effect DVP settlement are expected to be standardized in accordance with ISO 20022. Bond settlement instruction, matched result, bond settlement confirmation, cash settlement information and instruction, and cash settlement confirmation shall be standardized based on the ISO 20022 definition taking the existing message items in ASEAN+3 into account.

Adoption of International Standards in ASEAN+3

The current status of adopting international standards for central securities depository (CSD) and RTGS systems in each economy of ASEAN+3 is presented as a preliminary result. The CSDs of all 10 economies where bond markets already exist in ASEAN+3 have adopted or decided to adopt international standards, either ISO 20022 or ISO 15022, for messages. China Central Depository and Clearing and the Japan Securities Depository Center are operating book-entry systems based on ISO 20022.¹ The Hong Kong Monetary Authority, Monetary Authority of Singapore, and Thailand Securities Depository are operating book-

¹ The 10 economies include the People's Republic of China; Cambodia; Hong Kong, China; Indonesia; Japan; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam.

entry system based on ISO 15022. All CSDs in ASEAN are expected to adopt ISO 20022 by 2020. Regarding the RTGS systems, the People's Bank of China and Autoriti Monetari Brunei Darussalam are operating RTGS based on ISO 20022. The Hong Kong Monetary Authority, Monetary Authority of Singapore, and Bank of Thailand are operating their RTGS systems based on the international standard. All central banks in ASEAN are expected to adopt ISO 20022 for their RTGS systems by 2020, since ASEAN central banks have already agreed to adopt ISO 20022 as their standard for CSD and RTGS systems.

International Securities Identification Number

Adoption of international standards in ASEAN+3, in particular the International Securities Identification Number (ISIN), for cross-border transactions has been agreed by the members and experts of ABMF SF2. Also, the recommendation of the Association of National Numbering Agencies to allocate an ISIN within 24 hours following a request is expected to be met by ASEAN+3 economies. This recommendation is being implemented in the region. ISIN allocation flows in individual economies are presented in the Attachment.

Collateral and Repo

A survey was conducted to generate an overview of repo transactions in ASEAN+3 economies. Also, experiences in Europe were shared with ABMF SF2 members and experts, since the use of bonds as collateral or in similar ways to obtain local currency liquidity in other economies is an urgent issue given increasing demand for collateral in ASEAN+3 markets.

There are several types of repo transactions. In this report, repo transactions are categorized into two types. One is a repurchase agreement (sell and buy-back), which is commonly known as repo in many markets, by transferring ownership title. The other type is borrowing or lending (including pledged) that does not transfer ownership title, considering the transaction flows and interest payment processes. A repurchase agreement (sell and buy-back) is a standard repo transaction adopted globally and generally in accordance with the Global Master Repurchase Agreement. However, to introduce the standard repurchase agreement (sell and buy-back), the payment of tax on coupon payments and capital gains needs to be streamlined or waived to avoid complex transaction flows. This remains a barrier for smooth securities transactions in ASEAN+3.

Settlement Barriers

ABMF SF2 members and experts have reviewed the current status of settlement barriers related to the payment process (message standard, pre-matching, securities numbering, settlement cycle, and physical certificates). It was recognized that a lack of clear legislation in clearing and settlement, taxation, and capital and cash controls remain challenges.

Policy Recommendations

ABMF SF2 has been promoting the adoption of international standards for bond market infrastructures in the region, which has also been supported by the Asian Bond Markets Initiative Task Force 3. ABMF SF2 members and experts are grateful for the understanding and support of the region's authorities. The following are the policy recommendations in line with the joint statement of the Asian Bond Markets Initiative objectives:

- A. **Harmonization of Message Flow**
DVP Model 1 of the Bank for International Settlements definition shall be adopted for bond settlement in ASEAN+3 whenever the market infrastructures (CSD and RTGS systems) in each economy undergo reconstruction. A bond shall be blocked (earmarked) first; after transferring funds, which means after completing cash settlement, a blocked bond shall be released to effect (complete) DVP settlement given that bonds are less liquid than cash.
- B. **Adoption of International Standards**
International standards shall be adopted when the market infrastructures (CSD and RTGS systems) in each economy undergo reconstruction and/or total refurbishment. The following are examples of the international standards to be adopted:
- message standard: ISO 20022,
 - financial institution identifier: ISO 9362 (BICFI),
 - securities numbering: ISO 6166 (ISIN),
 - country code: ISO 3166-1, and
 - currency code: ISO 4217.
- C. **Standardization of Message Items**
Essential and minimum message items to effect DVP settlement shall be standardized based on ISO 20022. The following messages and their items are proposed as a preliminary basis for further discussions on standard message items:
- bond settlement instruction: sese.023,
 - matched results: sese.024,
 - bond settlement confirmation: sese.025,
 - cash settlement information and instruction: pacs.009, and
 - cash settlement confirmation: camt.054.
- D. The region's active participation in international standard decision-making is highly desirable. In this regard, it is advised that each economy that does not yet have an ISO 20022 Technical Committee 68 (TC68) national mirror committee establish the committee by joining TC68 as a participating member when the economy becomes ready to contribute to the decision-making processes related to ISO 20022.
- E. **Establishment of National Numbering Agency**
ABMF SF2 has been promoting ISIN as the standard securities numbering in ASEAN+3 for cross-border STP. Therefore, it is advised that each economy that does not yet have a national numbering agency establish it when the economy reaches the stage of issuing a significant amount of bonds.
- F. **Repo**
ABMF SF2 recommends adopting a repurchase agreement (sell and buy-back), which is a standard repo transaction in line with the Global Master Repurchase Agreement. It is also recommended that transaction flows related to collateral and repo services be surveyed.

Roadmap and Next Steps

The current roadmap for ABMF SF2 includes the following Phases:

- A. 2015–2016: Standardization phase
 - i. Agree on a reference model of DVP flow and essential and minimum items
 - ii. Prompt ISIN and Bank Identifier Codes
 - iii. Promote awareness of international standards and support establishment of standard evaluation groups (SEGs) in the region such as a Securities Standard Evaluation Group and Payment Standard Evaluation Group to promote ISO standards
 - iv. Conduct study on collateral and repo services, including interest payment flows
 - v. Support the Cross-Border Settlement Infrastructure Forum
- B. 2017–2018: Implementation Phase
 - i. Support establishment of SEGs in the region and ISO TC68 national mirror committees in each economy to support financial services standardization
 - ii. Implement standards in the economies that are ready for adoption of and migration to international standards
 - iii. Review the reference model and standard message items (group members and experts)
 - iv. Coordinate regional activities of harmonization and standardization in economies that are ready to contribute to such activities
- C. 2019–onward: Fully Operational Phase
 - i. Participate in international standardization through SEGs and ISO TC68 activities
 - ii. Implement international standards
 - iii. Review the reference model and standard message items
 - iv. Confirm operationalization of the regional activities of harmonization and standardization in ASEAN+3
 - v. Promote further harmonization and standardization in the region

Next steps include (i) a draft reference DVP flow agreed upon by ABMF SF2 members; (ii) draft message items based on ISO 20022 agreed upon by ABMF SF2 members; (iii) ISIN adopted as the common standard of securities numbering in ASEAN+3 and allocated in each economy in line with the Association of National Numbering Agencies' recommendation (within 24 hours); (iv) further study of the harmonization of market practices in ASEAN+3 economies, including collateral and repo practices; and (v) support from other ASEAN+3 economies and the Asian Development Bank for Brunei Darussalam, Cambodia, the Lao People's Democratic Republic, and Myanmar, which are still developing their bond market infrastructures.

Introduction

Overview of Previous Activities

This report is an outcome of the Phase 3 discussion of the ASEAN+3 Bond Market Forum Sub-Forum 2 (ABMF SF2).¹ ABMF SF2 was launched in 2010 with the goal of implementing cross-border straight-through-processing (STP). ABMF SF2 is under the framework of the ASEAN+3 Finance Ministers and Central Bank Governors' Meeting. ABMF SF2 members and experts are listed in the Appendix 1. An outline of ABMF SF2, including its purpose and governance structure, is also included in the Appendix 2.

During Phases 1 and 2, ABMF SF2 conducted surveys of bond market infrastructures and practices in ASEAN+3 (Figure 1).² The results revealed that robust and sound bond market infrastructures, such as central securities depository (CSD) and real-time gross settlement (RTGS) systems, are already in place in the 10 surveyed economies. Figures 2 and 3 present the market infrastructure for the government bond market and corporate bond market, respectively, in each ASEAN+3 economy.

Figures 4 and 5 present interest-payment-related entities in the government bond market and corporate bond market, respectively, in each ASEAN+3 economy.

Follow-Up on Phase 2 Policy Recommendations

Based on the survey results, the Phase 2 Report identified a total of 19 policy recommendations in six categories. These six categories include (i) bond market infrastructures; (ii) delivery-versus-payment (DVP) flows; (iii) interest payment flows; (iv) message standards, including numbering and coding; (v) market practices and other issues; and (vi) cross-border STP and local currency liquidity.

Bond Market Infrastructures

1. **Pre-settlement matching system (PSMS).** In accordance with the policy recommendation of the Phase 2 Report, PSMS is included as a part of the reference DVP flow.

¹ ASEAN+3 comprises the 10 members of the Association of Southeast Asian Nations (ASEAN) plus the People's Republic of China, Japan, and the Republic of Korea.

² The following documents cover in more detail the activities of ABMF SF2 during Phases 1 and 2: *ASEAN+3 Bond Market Guide (ABMF Phase 1 Report)*. <http://www.adb.org/publications/asean3-bond-market-guide>; *ASEAN+3: Information on Transaction Flows and Settlement Infrastructures (ABMF SF2 Phase 2 Report)*. http://asianbondsonline.adb.org/features/abmf_phase_2_report/subforum2_asean+3_information_transaction_flows_settlement_infrastructures.pdf#search='ASEAN3%3A+Information+on+Transaction+Flows+and+Settlement+Infrastructures

Figure 1: Outline of Activities of ABMF-SF2

Implementation of Cross-Border STP in ASEAN+3

Phase 1

1. Survey on bond market infrastructures in ASEAN+3
2. Survey on DVP flows from trade to settlement of government bonds

Phase 2

1. Survey on government and corporate bonds
2. Add interest payments and redemption flows in addition to DVP flows
3. Conduct fit and gap analyses in line with international standards
4. Propose policy recommendations and roadmap

Phase 3

1. Harmonize and standardize bond trade and settlement flows and message items in ASEAN+3
2. Survey on cross-border DVP, collateral, and repo

ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; DVP = delivery-versus-payment; STP = straight-through-processing.
Source: ABMF SF2.

2. **Central counterparty (CCP).** Since the Phase 2 Report pointed out that developing CCP is currently not an urgent priority for straight bond trade and settlement, CCP remains out of the scope of ABMF SF2.
3. **Central and local matching.** Though both central and local matching models are regarded as standards for ASEAN+3, central matching seems to be the de facto standard in ASEAN+3.
4. **Bond settlement using central bank money.** In accordance with the policy recommendation of Phase 2 Report, government bonds are to be settled with central bank money in ASEAN+3.
5. **Price discovery and transparency.** Strengthening price discovery and transparency was one of the recommendations of the Phase 2 Report, but continues to be a challenge—survey methodology appropriate for ASEAN+3 markets has not yet been developed—and may be further discussed with regard to the Information Platform.

DVP Flows

1. **Enhancing STP in CSD-related data flows.** Enhancing STP was recommended in the Phase 2 Report. The reference DVP flow will contribute to implementing STP in the region.
2. **Developing a reference model for DVP flows.** Developing a reference DVP flow was one of the most important recommendations of the Phase 2 Report. A reference DVP flow was proposed and accepted by members and experts as a result

Figure 2: ASEAN+3 Government Bond Market Diagram

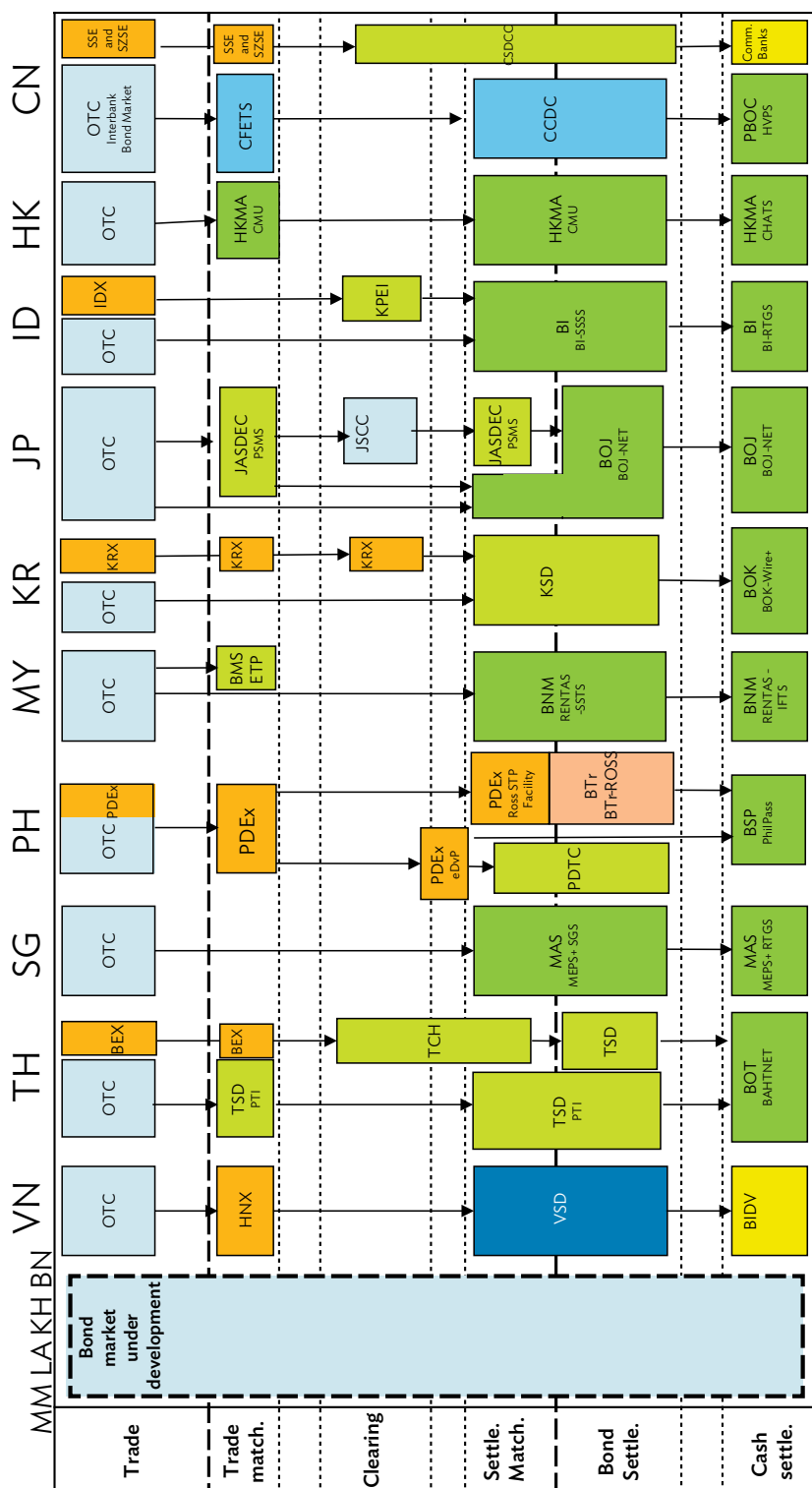
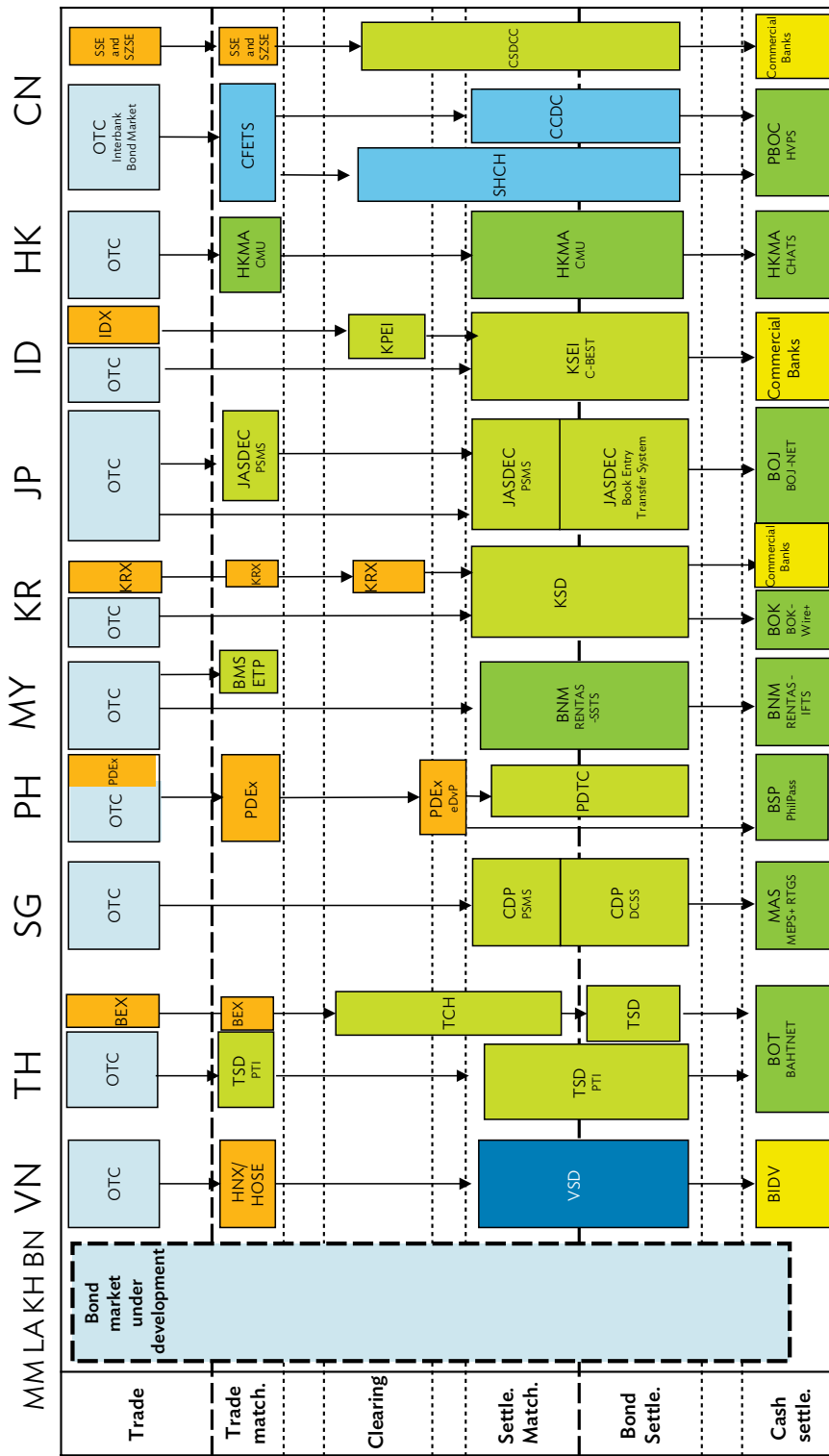


Figure 3: ASEAN+3 Corporate Bond Market Diagram

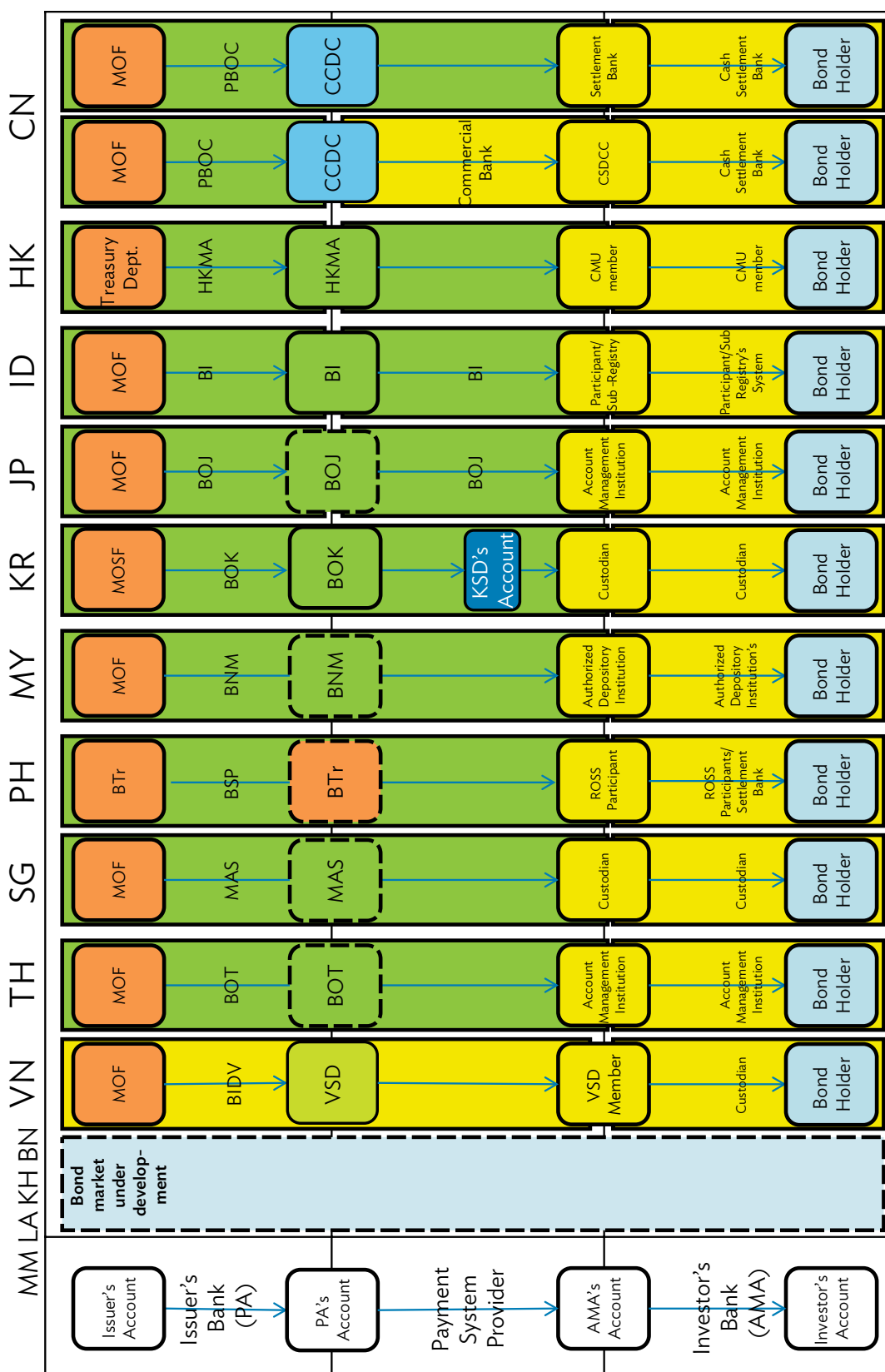


AMA = Account Management Agent; ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; BAHTNET = Bank of Thailand Automated High-value Transfer Network; BI = Bank Indonesia; BIDV = Bank for Investment and Development of Vietnam; BMS = Bursa Malaysia; BN = Bank Negara Malaysia; BOK = Bank of Korea; BOK-Wire+ = The Bank of Korea Financial Wire Network; BOT = Bank of Thailand; BSP = Bank of Singapore; BTR = Bureau of the Treasury; CDDC = China Central Depository & Clearing; CDP = Central Depository Private Limited; CFETS = China Foreign Exchange Trade System; CHATS = Clearing House Automated Transfer System; CMU = Central Money Markets Unit; CN = People's Republic of China; CSDCC = China Securities Depository and Clearing Corporation; eDVP = electronic delivery-versus-payment; HK = Hong Kong; HKMA = Hong Kong Monetary Authority; HNX = Hanoi Stock Exchange; HOSE = Ho Chi Minh City Stock Exchange; HVPS = High-Value Payment System; ID = Indonesia; IDX = Indonesia Stock Exchange; IFTS = Interbank Funds Transfer System; JASDEC = Japan Securities Clearing Corporation; JP = Japan; JSCC = Japan Securities Clearing Corporation; KH = Korea; KPEI = Kiling Penjaminan Efek Indonesia (Securities Clearing Underwriting Indonesia); KR = Republic of Korea; KRX = Korea Exchange; KSD = Korea Securities Depository; LA = Lao People's Democratic Republic; MAS = Monetary Authority of Singapore; MAS+ = MAS Electronic Payment System; MM = Myanmar; MY = Malaysia; OTC = over-the-counter; PA = Paying Agent; PBOC = People's Bank of China; PDEX = Philippine Dealing & Exchange Corp.; PDTC = Philippine Depository & Trust Corp.; PH = Philippines; PhilPass = Philippine Payments and Settlements System; PSMS = pre-settlement matching system; PTI = Post-Trade Integration; RENITAS = Real-time Electronic Transfer of Funds and Securities System; RoSS = Registry of Scripps Securities; RTGS = real-time gross settlement; SG = Singapore; SGS = Singapore Government Securities; SHCH = Shanghai Clearing House; SSE = Shanghai Stock Exchange; SSS = Shanghai Securities Settlement System; SST = Scripps Securities Trading System; STP = straight-through-processing; SZSE = Shenzhen Stock Exchange; TH = Thailand; TSD = Thailand Securities Depository; VN = Viet Nam; VND = Vietnam Securities Depository.

Notes: This diagram shows entities that are involved in major types of transactions. Retail bond markets are not included in this diagram.

Source: ABMF SF2.

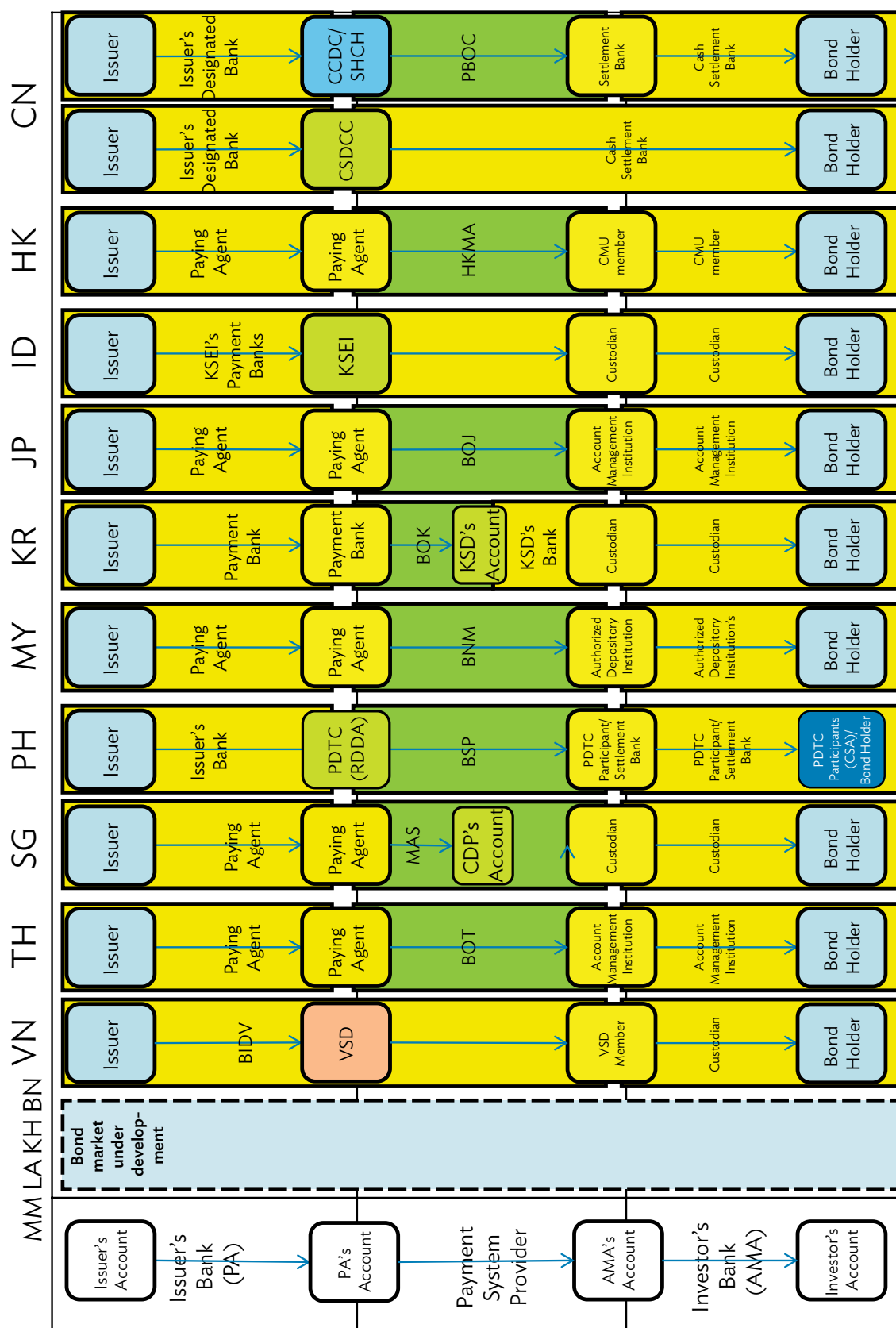
Figure 4: Government Bond Interest Payment Related Entities



AMA = Account Management Agent (generally a custodian); BI = Bank of Indonesia; BMS = Bursa Malaysia; BN = Brunei Darussalam; BOJ = Bank of Japan; BOK = The Bank of Korea; BOT = Bank of Thailand; BSP = Bangkok Sentral ng Pilipinas; BTr = Bureau of the Treasury; CCDC = China Central Depository & Clearing; CMU = Central Money Markets Unit; CN = People's Republic of China; HK = Hong Kong; HKMA = Hong Kong Monetary Authority; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Republic of Korea; KSD = Korea Securities Depository; LA = Lao People's Democratic Republic; MAS = Monetary Authority of Singapore; MM = Myanmar; MY = Malaysia; PA = Paying Agent; PBOC = People's Bank of China; PH = Philippines; ROSS = Registry of Scripless Securities; SG = Singapore; TH = Thailand; VN = Viet Nam; and VSD = Vietnam Securities Depository.

Source: ABMF SF2.

Figure 5: Corporate Bond Interest Payment Related Entities



AMA = Account Management Agent (generally a custodian); BIDV = Bank for Investment and Development of Vietnam; BMS = Bursa Malaysia; BN = Brunei Darussalam; BOJ = Bank of Japan; BOK = The Bank of Korea; BOT = Bank of Thailand; BSP = Bangkok Sentral Piliptinas; CCDC = China Central Depository & Clearing; CDP = Central Depository Private Limited; CMU = Central Money Markets Unit; CN = People's Republic of China; CSDCC = China Securities Depository and Clearing Corporation; HK = Hong Kong; China; HKMA = Hong Kong Monetary Authority; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Republic of Korea; KSD = Korea Securities Depository; KSEI = Kustodian Sentral Efek Indonesia (Indonesian Central Securities); LA = Lao People's Democratic Republic; MAS = Monetary Authority of Singapore; MIM = Myanmar; MY = Malaysia; PA = Paying Agent; PBOC = People's Bank of China; PDTC = Philippine Depository & Trust Corp.; PH = Philippines; RoSS = Registry of Scrips Securities; SG = Singapore; TH = Thailand; VN = Viet Nam; and VSD = Vietnam Securities Depository.

Source: ABMF SF2.

of Phase 3 activities. The reference DVP flow is supposed to be implemented when each market infrastructure is in the process of being reconstructed. Harmonization of the DVP flow in the region will be accomplished gradually.

Interest Payment Flows

1. **Survey on the roles of the paying agent, account management agent, and tax withholding agent across economies.** According to the recommendation of the Phase 2 Report, the roles and functions of the paying agent, account management agent, and tax withholding agent were supposed to be clarified during Phase 3, but instead will be proposed as a part of next steps in relation to repo transactions.
2. **Harmonization of interest payment flows.** The harmonization of interest payment flows was identified as an important issue by the Phase 2 Report, but it remains a challenge due to differences in tax regimes across the region; for example, the rules for a tax withholding agent differ from economy to economy. It will be one of the most important issues for cross-currency repo and cross-border STP.

Message Standard Including Numbering and Coding

1. **Migration to ISO 20022.** Migration to ISO 20022 was proposed as one of the most important recommendations for Phase 3 activities and has been progressing significantly. All CSD and RTGS systems in ASEAN+3 are to adopt international standards (ISO 20022) by 2020.
2. **Standardization of message items.** Message items to effect DVP settlement were supposed to be standardized. Essential and minimum message items to be standardized have been proposed as a result of Phase 3 discussions.
3. **International Securities Identification Number (ISIN).** Based on the recommendations of the Phase 2 Report, allocation of ISIN as a unique identification number in accordance with the Association of National Numbering Agencies' (ANNA) recommendation (within 24 hours) is expected to be followed by CSDs in the region by 2020. Brunei Darussalam, Cambodia, the Lao People's Democratic Republic, and Myanmar do not yet have a national numbering agency (NNA); they will be supported by Asian Development Bank and ANNA efforts to establish one in each ASEAN+3 economy.
4. **Business Identifier Code (BIC).** The Phase 2 Report recommended using BIC as the financial institution identification code. This recommendation was accepted and will be followed by all CSD and RTGS systems in the region by 2020.

Market Practices and Other Issues

1. **Harmonization of market practices.** The harmonization of market practices, which was recommended by the Phase 2 Report, will be a subject of discussion during the next phase, with a particular focus on cross-border collateral and cross-currency repo.
2. **Investor identification.** The harmonization of investor identification was recommended by the Phase 2 Report. This is also a subject for discussion during the next phase along with further development of the Global Legal Entity Identifier.
3. **Account structure.** The harmonization of account structures was recommended in the Phase 2 Report. This remains a challenge due to differences in taxation and regulations that may reflect different policy stances among authorities in the region and different circumstances in each economy. Also, there is an emerging trend in the region to adopt a segregated account rather than an omnibus account.

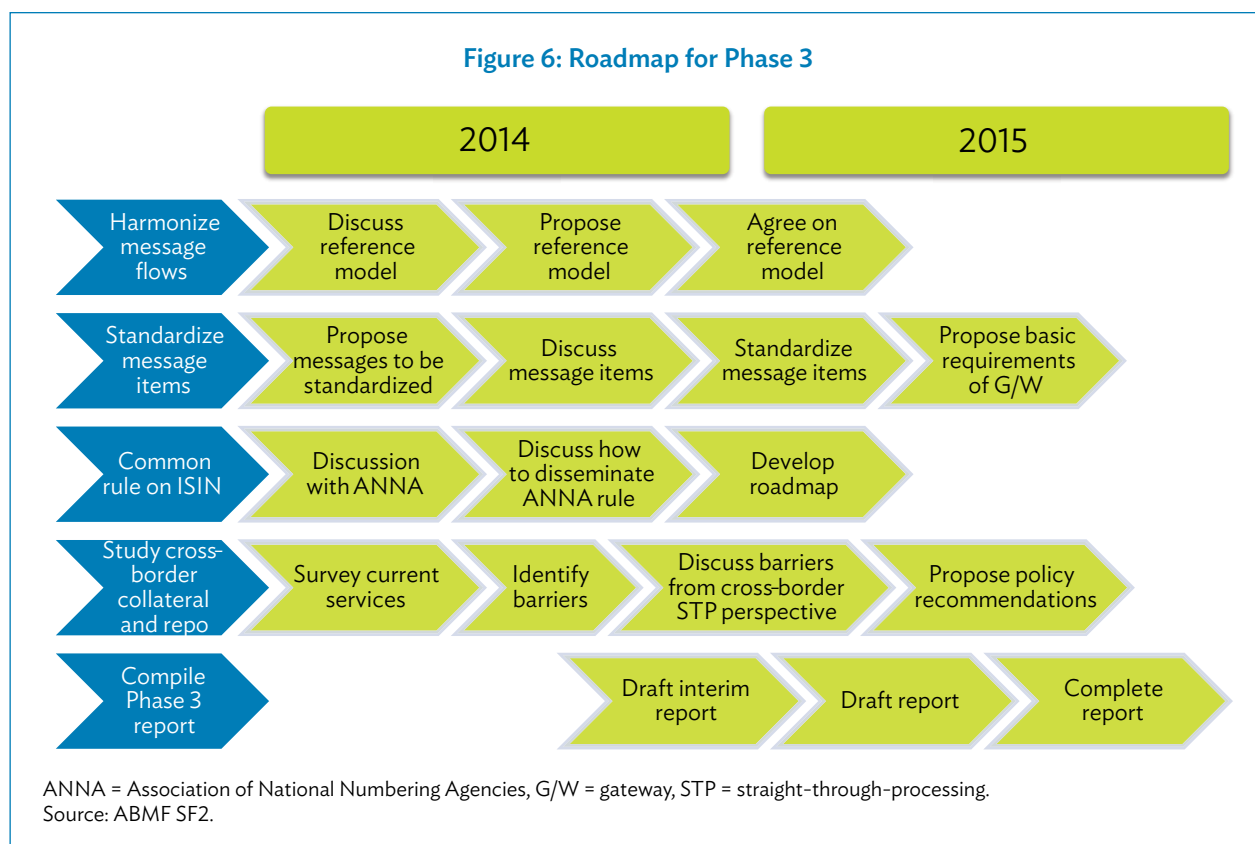
4. **Language for bond settlement instruction.** The standardization of language was also recommended in the Phase 2 Report. This remains a very difficult issue because there are many local languages and scripts in the region. English is becoming a de facto standard; for example, ISIN is to be published in English and payment system communication is conducted in English in many economies in the region. Hopefully, the advancement of technology will overcome language barriers.

Cross-Border STP and Local Currency Liquidity

1. **Cross-border collateral and repo services.** The promotion of cross-border collateral and repo services was recommended in the Phase 2 Report. This remains an issue for the next phase and also will be discussed by ABMF Sub-Forum 1 and the Cross-Border Settlement Infrastructure Forum.
2. **Capital and cash controls.** Capital and cash controls were recommended to be removed gradually while keeping in step with developments in the markets.

Expected Work Items of Phase 3

Among the policy recommendations, work items chosen for Phase 3 were (i) harmonizing message flows, (ii) standardizing message items for ISO 20022 migrations, (iii) adopting common rules on ISIN, and (iv) studying cross-border collateral and repo services. The Phase 3 roadmap to implement the aforementioned working items is shown in Figure 6.



The schedule and meetings of ABMF SF2 from the start of Phase 3 through August 2015 is shown in Table 1.

Table 1: Schedule of ABMF SF2

		Meeting Schedule	Tasks
2014	Jan		Preparation of questionnaire items
	Feb		
	Mar	15th ABMF SF2 in Manila, Philippines	Reply to questionnaire from each economy
	Apr		
	May		
	Jun	Economy Visits (Philippines, Malaysia, Indonesia)	Survey on message items
	Jul		
	Aug		
	Sep	16th ABMF SF2 in Hong Kong, China Economy Visits (Hong Kong, China)	Drafting the report and supplemental surveys
	Oct		
	Nov		
	Dec		Interim report
2015	Jan	17th ABMF SF2 in Manila, Philippines	
	Feb		
	Mar		
	Apr	18th ABMF SF2 in Manila, Philippines	Phase 3 report
	May		
	Jun		
	Jul		
	Aug	19th ABMF SF2 in Manila, Philippines	

ABMF SF2 = ASEAN+3 Bond Market Forum Sub-Forum 2.
Source: ABMF SF2.

Harmonization of Message Flows

ABMF SF2 members and experts have regularly discussed the harmonization of message flows in ASEAN+3 given that it is one of the most important issues. The Asian Development Bank (ADB) Consultant for ABMF SF2 proposed a few candidates as reference DVP flows for discussion based on the Phase 2 survey results. During Phase 3, the members and experts concluded that the DVP flow detailed below is to be proposed as the reference model DVP flow for ASEAN+3. Market infrastructure operators in each economy shall honor the reference model when they reconstruct their market infrastructures, including CSD and RTGS systems. The trade and settlement of bonds involves market infrastructures such as a trading system, post-trade matching system, CCP, PSMS, CSD, and RTGS. As a first step, the harmonization of flows from PSMS to settlement (both bond and cash settlement) was discussed, since harmonization of trade-related infrastructures are still a challenge in ASEAN+3.

Trade and post-trade matching systems are important for STP of bond trade and settlement. Also, direct transfer from an upstream system (e.g., trading, post-trade matching, and exchange) to a downstream system (e.g., PSMS and CSD) is very important. The connection between post-trade and trading systems remains a challenge because standardization is very difficult given the variety of players involved in trades.

Concept of Harmonizing DVP Flows

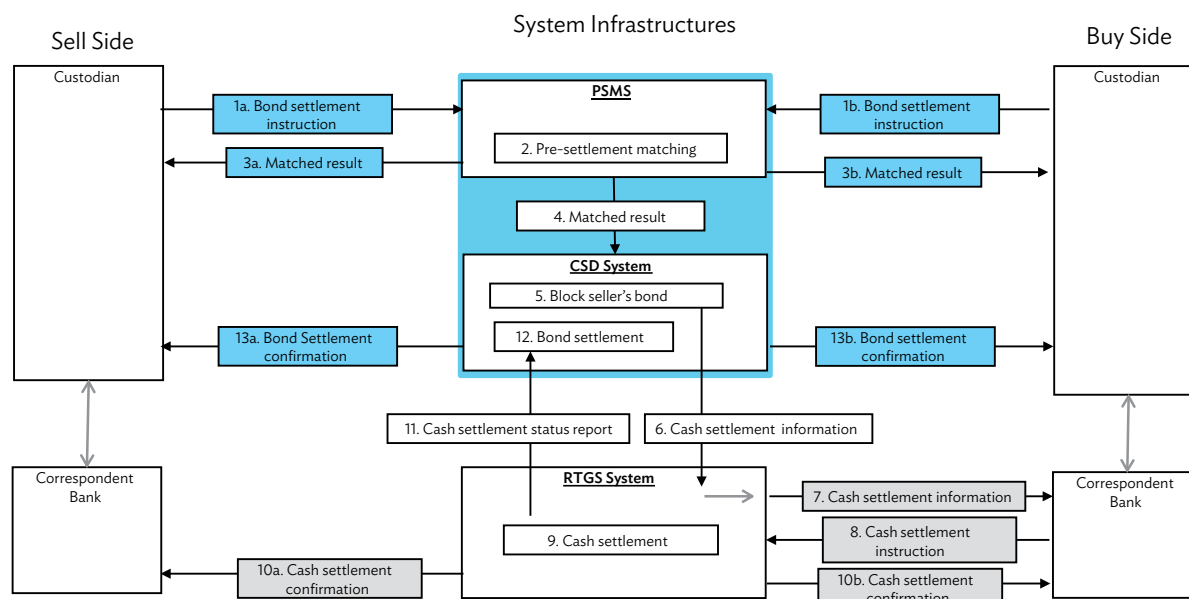
As an important step to achieving cross-border STP and better interoperability in ASEAN+3, a harmonized message flow known as the reference DVP flow has been proposed. The reference DVP flow is based on the following basic concepts:

1. RTGS is to be used for both bond settlement and cash settlement,
2. DVP is to be secured,
3. central bank money is to be used for cash settlement,
4. cash settlement for DVP should be effected by credit transfer,
5. data are to be transferred from upstream infrastructure to downstream infrastructure whenever possible, and
6. the quality of data transferred and processed is to be confirmed when the data are entered by different parties.

Reference DVP Flow

The proposed reference DVP flow is listed below and shown in Figure 7 as the basis for further discussion:

Figure 7: Proposed Reference DVP Flow



CSD = central securities depository, DVP = delivery-versus-payment, PSMS = pre-settlement matching system, RTGS = real-time gross settlement.

Source: ABMF SF2.

1. Custodians (both sell and buy sides) enter the term “Securities Settlement Transaction Instructions” into a PSMS (or a CSD if PSMS functions are provided by the CSD).³
2. Pre-settlement matching needs to be completed 1 day before the settlement date (S-1).
3. Matched results (Securities Settlement Transaction Status Advice) are sent back to the sell side and buy side.
4. Matched results are transferred from a PSMS to a CSD, if the PSMS and CSD are operated in different platforms.
5. The CSD blocks (earmarks) the sell-side bond.
6. The CSD transfers cash settlement information to the RTGS to effect cash settlement for the DVP settlement.
7. The RTGS forwards the cash settlement information to the correspondent bank of the buy side. Although a forwarding message and the subsequent step, cash settlement instruction, is omitted in some markets, it is recommended that credit transfer instructions from the buy side be effected for high-value payments like bond DVP settlement, in particular for cross-border transactions. When omitting steps 7 and 8, a pre-arrangement, such as earmarking the exact amount for the settlement, needs to be secured beforehand.
8. The buy-side correspondent bank sends cash settlement instruction to the RTGS to effect credit transfer for DVP settlement.
9. Cash settlement is effected by transferring funds from the buy-side current account to the sell-side current account in the RTGS.

³ The term “Securities Settlement Transaction Instructions” is an official term, although Figure 8 uses the term “Bond settlement instruction” since ABMF SF2 discussions cover bond transaction flows.

10. When cash settlement is successfully completed, cash settlement confirmations are sent to both the sell and buy sides.
11. Also, a cash settlement status report is sent from the RTGS to the CSD.
12. The blocked bond is released to the buy-side account in the CSD.
13. Bond settlement confirmations are sent from the CSD to both the sell and buy sides.

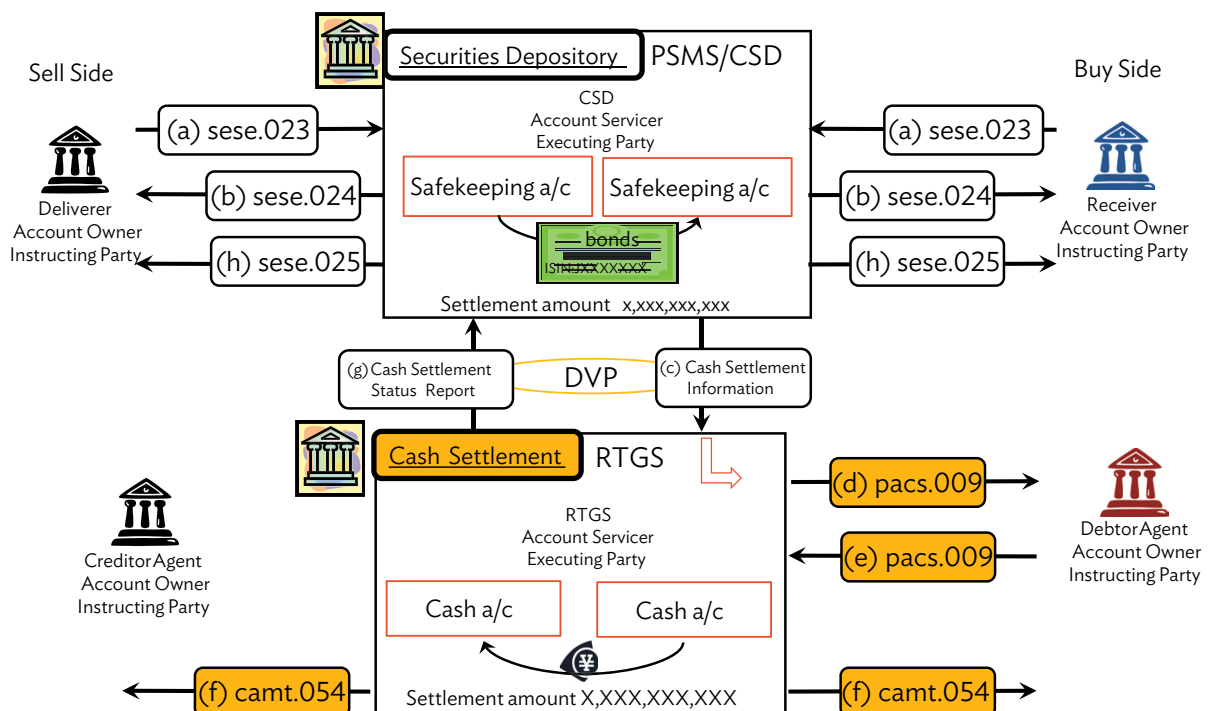
Standardization of Message Items Related to DVP Settlement

Overview of Message Items

ABMF SF2 proposes to standardize the essential (minimum) message items to effect DVP settlement in ASEAN+3. Examples of messages are shown in Figure 8.

Table 2 presents a proposal for further discussion of how ISO 20022 messages might correspond to the reference DVP flow.

Figure 8: Examples of Standard ISO 20022 Messages



a/c = account, camt. = cash management, CSD = central securities depository, DVP = delivery-versus-payment, pacs. = payments clearing and settlement, PSMS = pre-settlement matching system, RTGS = real-time gross settlement, sese. = securities settlement. Source: ABMF SF2.

Table 2: ISO 20022 Messages Corresponding with Reference DVP Flow—Proposal

ISO 20022 Messages	Messages Correspond to Reference DVP Flow
sese.023 Securities Settlement Transaction Instruction	(a) Bond settlement instruction
sese.024 Securities Settlement Transaction Status Advice	(b) Matched results
sese.025 Securities Settlement Transaction Confirmation	(h) Bond settlement confirmation
pacs.009 Financial Institution Credit Transfer	(d), (e) Cash settlement information/instruction
camt.054 Bank to Customer Debit Credit Notification	(f) Cash settlement confirmation

DVP = delivery-versus-payment, ISO = International Organization for Standardization.

Note: For messages between the central securities depository and real-time gross settlement, (c) and (g), please refer to Progress Report on Establishing Regional Settlement Intermediary and Next Steps, published in May 2015. Source: ABMF SF2.

The definitions of each message based on ISO 20022 as shown in Table 2 are given below:

sese.023. An account owner sends a Securities Settlement Transaction Instruction (sese.023) to an account servicer to instruct the receipt or delivery of financial instruments with payment by book-entry. The account owner is a CSD participant and the account servicer is the CSD.

sese.024. An account servicer sends Securities Settlement Transaction Status Advice (sese.024) to an account owner to advise on the status of a Securities Settlement Transaction Instruction previously sent by the account owner, or the status of a settlement transaction existing in the books of the servicer for the account of the owner. The status may be either processing, pending processing, internal matching, matching, or settlement. The status advice may or may not be sent in response to the request of the account owner.

sese.025. An account servicer sends a Securities Settlement Transaction Confirmation (sese.025) to an account owner to confirm the delivery or receipt of financial instruments against payment by book-entry.

pacs.009. The Financial Institution Credit Transfer (pacs.009) is sent by a debtor financial institution to a creditor financial institution, directly or through other agents and/or a payment clearing and settlement system. It is used to move funds from a debtor's account to a creditor's account, where both the debtor and creditor are financial institutions.⁴

The Financial Institution Credit Transfer can be used

1. if it is exchanged between agents and contains one credit transfer instruction where debtor and creditor are both financial institutions;
2. if the message does not allow for grouping—a Credit Transfer Transaction Information block must be present for each credit transfer transaction; and
3. the message can be used in domestic and cross-border scenarios.

⁴ The Financial Institution Credit Transfer (pacs.009) can also be used for transferring information to move funds.

camt.054. The Bank to Customer Debit Credit Notification is sent by the account servicer to an account owner or to a party authorized by the account owner to receive the message. It can be used to inform the account owner, or authorized party, of a debit and/or credit entry reported to the account.

The Bank to Customer Debit Credit Notification message

1. provides information for cash management and/or reconciliation,
2. can be used to notify debit entries and credit entries,
3. can include underlying details of transactions that have been included in the entry,
4. can be received by someone who is not the account owner but a party entitled by the account owner to receive the account information (also known as a recipient), and
5. does not contain balance information (needs to be discussed).

Conventional messages such as ISO 15022 that correspond to ISO 20022 messages are shown in Figure 9.

Figure 9: Conventional Messages (ISO 15022) Corresponding to ISO 20022 Messages

	ISO 15022 Messages		ISO 20022 Messages	
Bond Settlement Instruction	MT541 Receive against Payment	NEWM	sese.023 Securities Settlement Transaction Instruction	APMT, RECE
	MT543 Deliver against Payment	NEWM	sese.023 Securities Settlement Transaction Instruction	APMT, DELI
Bond Settlement Confirmation	MT545 Receive against Payment Confirmation		sese.025 Securities Settlement Transaction Confirmation	
	MT547 Deliver against Payment Confirmation		sese.025 Securities Settlement Transaction Confirmation	
Matched Result	MT548 Transaction Status Advice		sese.024 Securities Settlement Transaction Status Advice	
Cash Settlement Instruction	MT202 Credit Transfer Instruction		pacs.009 Cash Settlement Transaction Instruction	
Cash Settlement Status Report	MT900 Confirmation of Debit		camt.054 Bank to Customer Debit Credit Notification	Debit
	MT910 Confirmation of Credit		camt.054 Bank to Customer Debit Credit Notification	Credit

camt. = cash management, ISO = International Organization for Standardization, MT = message type, pacs. = payments clearing and settlement, sese. = securities settlement.

Source: ADB Consultant for ABMF SF2 modifications to National Bank of Belgium. 2012. *NBB-SSS Adaptation Plan to T2S Phase1: Harmonisation and New IT Platform*. Brussels.

Essential and minimum items transferred between market infrastructures (CSD and RTGS systems) and their participants are shown in Table 3–7 for sese.023, sese.024, sese.025, pacs.009, and camt.054, respectively.

Bond Settlement Instruction

An account owner (CSD participant) sends a Securities Settlement Transaction Instruction (sese.023) to an account servicer (CSD) to instruct the receipt or delivery of financial instruments with payment or by book-entry, respectively. Table 3 shows message items that are extracted from sese.023 as essential and minimum items to effect DVP settlement. These message items are the key items for harmonization of bond settlement. SF2 recommends that all bond settlement infrastructures adopt these message items when current systems are being reconstructed. This does not necessarily mean other items are not to be added to instructions.

Table 3: Message Items for Bond Settlement Instruction (sese.023)

Message Items	Definition
Transaction Identification	Unambiguous identification of the transaction as known by the instructing party
Securities Movement Type	Specifies if the movement on a securities account results from a deliver or a receive instruction (such as DELI or RECE)
Payment	Specifies how the transaction is to be settled, for example, separate settlement or against payment (such as FREE or APMT)
Settlement Date	Date and time at which the securities are to be delivered or received.
Financial Instrument Identification	Financial instrument representing a sum of rights of the investor vis-a-vis the issuer (such as International Securities Identification Number)
Settlement Quantity	Total quantity of securities to be settled (such as face value)
Safekeeping Account	Account to or from which a securities entry is made
Securities Transaction Type	Identifies the type of securities transaction (such as REPU for repo and TRAD for settlement of trade)
Delivering Settlement Parties	Identifies the chain of delivering settlement parties (such as Business Identifier Code)
Receiving Settlement Parties	Identifies the chain of receiving settlement parties (such as Business Identifier Code)
Debtor and/or Debtor Agent	Party that owes an amount of money to the (ultimate) creditor (such as Business Identifier Code); debtor agent (financial institution servicing an account for the debtor)
Creditor and/or Creditor Agent	Party to which an amount of money is due (such as Business Identifier Code); creditor agent (financial institution servicing an account for the creditor)
Settlement Amount	Total amount of securities to be paid or received in exchange for the securities (amount of money in the cash entry)
Credit Debit Indicator	Indicate an entry is a credit or debit (such as CREDIT or DEBIT)

Source: ABMF SF2.

Message items which are not essential items to effect DVP may also be included as a “standard message items.” One example may be “trade date.” Trade date is an important item from a market practice perspective, in particular from cross-border transaction evidenced by the fact that Global SMPG recommends trade date as one of 10 common elements for securities settlement instruction and other messages.

Matched Results

Sese.024 defines Securities Settlement Transaction Status Advice. An account servicer (CSD) sends sese.024 to an account owner (CSD participant) to advise on the status of a Securities Settlement Transaction Instruction (sese.023) previously sent by the account owner or the status of a settlement transaction existing in the books of the servicer for the account of the owner. The status is the matched result (either matched or unmatched). Table 4 shows essential items to be informed as matched results.

Bond Settlement Confirmation

Sese.025 defines Securities Settlement Transaction Confirmation. An account servicer (CSD) sends sese.025 to an account owner (CSD participant) to confirm the delivery or receipt of financial instruments against payment by book-entry. The minimum items comprising bond settlement confirmation are shown in Table 5.

Table 4: Message Items for Matched Result Advice (sese.024)

Message Items	Definition
Transaction Identification	Provides unambiguous transaction identification information
Matching Status	Provides the matching status of the instruction (matched or unmatched)
Safekeeping Account	Account to or from which a securities entry is made
Financial Instrument Identification	Financial instruments representing a sum of rights of the investor vis-a-vis the issuer (such as International Securities Identification Number)
Settlement Quantity	Total quantity of securities to be settled (such as face value)
Settlement Date	Date and time at which the securities are to be delivered or received
Securities Movement Type	Specifies if the movement on a securities account results from a deliver or a receive instruction
Payment	Specifies how the transaction is to be settled, for example, against payment (APMT)
Receiving Settlement Parties	Identifies the chain of receiving settlement parties (such as Business Identifier Code)
Delivering Settlement Parties	Identifies the chain of delivering settlement parties (such as Business Identifier Code)

Source: ABMF SF2.

Table 5: Message Items for Bond Settlement Confirmation (sese.025)

Message Items	Definition
Transaction Identification	Unambiguous identification of the transaction as known by the instructing party
Securities Movement Type	Specifies if the movement on a securities account results from a deliver or a receive instruction (such as DELI or RECE)
Payment	Specifies how the transaction is to be settled, for example, separate settlement or against payment (such as FREE or APMT)
Effective Settlement Date	Date and time at which the securities are to be delivered or received
Financial Instrument Identification	Financial instrument representing a sum of rights of the investor vis-a-vis the issuer (such as International Securities Identification Number)
Settlement Quantity	Total quantity of securities to be settled (such as face value)
Safekeeping Account	Account to or from which a securities entry is made
Securities Transaction Type	Identifies the type of securities transaction (such as REPU for repo and TRAD for settlement of trade)
Delivering Settlement Parties	Identifies the chain of delivering settlement parties (such as Business Identifier Code)
Receiving Settlement Parties	Identifies the chain of receiving settlement parties (such as Business Identifier Code)
Debtor and/or Debtor Agent	Party that owes an amount of money to the (ultimate) creditor (such as Business Identifier Code); debtor agent (financial institution servicing an account for the debtor)
Creditor and/or Creditor Agent	Party to which an amount of money is due (such as Business Identifier Code); Creditor agent (financial institution servicing an account for the creditor)
Settlement Amount	Total amount of securities to be paid or received in exchange for the securities (amount of money in the cash entry)
Credit Debit Indicator	Indicate an entry is a credit or debit (such as CREDIT or DEBIT)

Source: ABMF SF2.

Cash Settlement Information and Instruction

Pacs.009 defines Cash Settlement Information and Instruction. It is used to move funds from a debtor account to a creditor account, where both the debtor and creditor are financial institutions. The minimum items comprising Cash Settlement Information and Instruction are shown in Table 6.

Cash Settlement Confirmation

Camt.054 defines Cash Settlement Confirmation. It is sent by the account servicer to an account owner or to a party authorized by the account owner to receive the message. It can be used to inform the account owner, or authorized party, of debit or credit entries reported to the account. The minimum items comprising Cash Settlement Confirmation are shown in Table 7.

Table 6: Message Items for Cash Settlement Instruction (pacs.009)

Message Items	Definition
End to End Identification	Unique identification, as assigned by the initiating party, to unambiguously identify the transaction
Transaction Identification	Unique identification, as assigned by the first instructing agent, to unambiguously identify the transaction that is passed on, unchanged, throughout the entire interbank chain
Interbank Settlement Amount	Amount of money moved between the instructing agent and the instructed agent
Debtor and/or Debtor Agent – BICFI	Financial institution that owes an amount of money to the (ultimate) financial institutional creditor
Creditor and/or Creditor Agent – BICFI	Financial institution that receives an amount of money from the financial institutional debtor

BICFI = Business Identifier Code for Financial Institutions.

Source: ABMF SF2.

Table 7: Message Items for Cash Settlement Confirmation (camt.054)

Message Items	Definition
Notification Identification	Unique identification, as assigned by the account servicer, to unambiguously identify the account notification
Creation Date Time	Date and time at which the message was created
Account	Unambiguous identification of the account to which credit and debit entries are made
Amount	Amount of money in the cash transaction
Credit Debit Indicator	Indicates whether the entry is a credit or a debit entry
Status	Status of an entry on the books of the account servicer
Bank Transaction Code	Set of elements used to fully identify the type of underlying transaction resulting in an entry

Source: ABMF SF2.

More detailed message items for bond settlement instructions, matched results, bond settlement confirmations, cash settlement instructions (including information), and cash settlement confirmations are shown in Appendix 3.

ISO 20022 Standardization

Adoption of ISO 20022 in ASEAN+3

ABMF SF2 members and experts shared their plans and policies to adopt ISO 20022 at a future time when existing CSD (book-entry) and RTGS systems are being reconstructed. ABMF SF2 members and experts also identified significant trends in the adoption of ISO 20022 in ASEAN+3 economies.

Based on the information obtained at ABMF meetings, the current status of adoption of ISO 20022 in ASEAN+3 is shown in Tables 7 and 8 for CSD and RTGS systems, respectively.

All economies in ASEAN+3 that have not already adopted international standards for messages and numbering, including technological aspects related to bond settlement, will have done so by 2020. The current status of adopting international standards for CSD and RTGS systems in each economy in Table 8 is presented as a preliminary assessment that will be confirmed and updated, if necessary, as not all central banks and CSDs have announced their plans.

All CSDs in the 10 economies where bond markets already exist have either adopted or decided to adopt international standards (ISO 20022 or ISO 15022) for messages. The China Central Depository and Clearing Company and Japan Securities Depository Center (JASDEC) are already operating their book-entry systems based on ISO 20022. The Hong Kong Monetary Authority, Monetary Authority of Singapore, and Thailand Securities Depository Co. are already operating their book-entry systems based on ISO 15022. All CSDs in ASEAN have agreed to adopt ISO 20022 as the standard for their CSDs by 2020. Regarding RTGS systems, the People's Bank of China (PBOC) and Autoriti Monetari Brunei Darussalam (AMBD) are already operating their systems based on ISO 20022. The Hong Kong Monetary Authority, Monetary Authority of Singapore, and Bank of Thailand are already operating RTGS systems based on international standards. All central banks in ASEAN have agreed to adopt ISO 20022 as the standard for RTGS systems by 2020.

Example of Migration to ISO 20022 (Japan)

Zengin Data Telecommunication System, which is a domestic funds transfer system of the Japanese Banks' Payment Clearing Network (Zengin-net), adopted ISO 20022 in 2011. JASDEC adopted ISO 20022 for its PSMS and book-entry transfer system in 2014. The Bank of Japan Financial Network System, which is the final settlement system for Japanese yen as well as the central bank's book-entry system for Japanese Government Bonds, is scheduled to adopt ISO 20022 in October 2015. In the case of Zengin Data Telecommunication System, conventional proprietary messages remain without a specific decommission period. In the case of JASDEC's book-entry transfer system, a 5-year coexisting period (ISO 20022 and ISO 15022) is scheduled to conclude with the decommissioning of ISO 15022 at the end of 2018. In the case of the Bank of Japan Financial Network System, conventional proprietary

Table 8: Adoption of ISO 20022 in ASEAN+3 CSDs

Eco- nomy	CSD	Name of Bond Settlement System	Inst.	Standardization of Message Items (SSS)							System Renewal	
				ISO ISO15022	ISO20022	ISIN	BIC	Charac. code set	Comm protocol	Overall	Inauguration current system	Reconstruct. period
BN	AMBD	NPSS	G		Y (2016)	Y (201X)	Y	Y	Y	Y (2016)		2016
BN	(TBD)		C		Y (201X)	Y (201X)	Y	Y	Y	Y (201X)		201X
CN	CCDC	CBGS	G/C	N	Y	Y	Y	Y	Y	Y	2013	
CN	CSDC	MNS	G/C	N	Y (201X)	Y (201X)	Y	Y	Y	Y (201X)	Nov. 2011	
CN	SHCH	SHCH-SSS	C	N	Y (201X)	Y (201X)	Y	Y	Y	Y (201X)	Dec 2011	
HK	HKMA	CMU	G/C	Y	N	Y	Y	Y	Y	Y	Mar. 1990	
ID	BI	BI-SSSS	G	Y	Y (201X)	Y	Y	Y	Y	Y (201X)	Mar 2003	2018
ID	KSEI	C-BEST	C	Y	Y (2016)	Y	Y (2016)	Y	Y	Y (2016)		2016
JP	BOJ	BOJ-NETJGB Service	G	N	Y (2015)	Y (2015)	Y (2015)	Y	Y	Y (2015)	1990/Jan 2001	2015
JP	JASDEC	BETS	C	Y	Y	Y	Y	Y	Y	Y	Jan. 2014	
KH	CSX	-	G/C	N								
KR	KSD	SSS/SAFE+	G/C	N	Y (201X)	Y	Y	Y (201X)	Y	Y (201X)	Nov 2011	
LA	BOL	-	G/C	N								
MM	CBM	-	G/C	N	Y (201X)	Y (2015)	Y (2015)	Y (2015)	Y (2015)	Y (201X)		2015
MY	BNM	RENTAS SSTS	G/C	Y (2016)	Y (2018)	Y	Y (2017)	Y	Y	Y (2018)	Jul 1999	2018
PH	BTr	BTr-ROSS	G	Y (2015)	Y (2015)	Y (2015)	Y (2015)	Y	Y	Y (2015)	Nov 1996	2015
PH	PDTCT	PDTCT Depository	G/C	Y (2015)	Y (2015)	Y (2015)	Y (2015)	Y	Y	Y (2015)	Mar 1995	2015
SG	MAS	MEPS+ SGS	G	Y	N	Y	Y	Y	Y	Y	Dec 2006	
SG	CDP	DCSS	C	Y (2015)	Y (2015)	Y	Y (2015)	Y	Y	Y (2015)	-	2015
TH	TSD	PTI	G/C	Y	N	Y	Y	Y	Y	Y	Oct 2007	2019
VN	VSD	VSD-BES	G/C	Y	Y (201X)	Y	Y (201X)	Y	Y	Y (201X)	May. 2014	2016

■ Cross-border STP ready (ISO 20022)
 ■ Cross-border STP ready (ISO 15022)
 ■ Not ready but decided

■ Not clear and need to be confirmed
 ■ Not ready yet

AMBD = Autoriti Monetari Brunei Darussalam; ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; BES = book-entry system; BETS = Book-Entry Transfer System; BI = Bank Indonesia; BIC = Bank Identifier Code; BIDV = Bank for Investment and Development of Vietnam; BI-SSSS = Bank Indonesia-Scripless Securities Settlement System; BN = Brunei Darussalam; BNM = Bank Negara Malaysia; BOJ = Bank of Japan; BOJ-NET = Bank of Japan Financial Network System; BOK = The Bank of Korea; BOK Wire+ = The Bank of Korea Financial Wire Network; BOL = Bank of Lao; BOT = Bank of Thailand; BSP = Bangko Sentral ng Pilipinas; BTr = Bureau of Treasury; C-BEST = Central Depository and Book-Entry Settlement; CBGS = Central Bond General System; CBM = Central Bank of Myanmar; CCDC = China Central Depository and Clearing; CDP = Central Depository (Pte.) Limited; CMU = Central Money Markets Unit; CN = People's Republic of China; CSDC = China Securities Depository and Clearing; CSX = Cambodia Securities Exchange; DCSS = Debt Securities Clearing and Settlement System; HK = Hong Kong, China; HKMA = Hong Kong Monetary Authority; ID = Indonesia; IFTS = Interbank Funds Transfer System; ISO = International Organization for Standardization; JASDEC = Japan Securities Depository Center; KSEI = PT Kustodian Sentral Efek Indonesia; KH = Cambodia; KR = Republic of Korea; LA = Lao People's Democratic Republic; MAS = Monetary Authority of Singapore; MEPS+ = MAS Electronic Payment System; MM = Myanmar; MNS = Multilateral Netting System; MY = Malaysia; N = no; NPSS = National Payment Settlement System; PBOC = People's Bank of China; PH = Philippines; PDTCT = Philippine Depository and Trust Corporation; PTI = Post Trade Integration; RENTAS = Real-time Electronic Transfer of Funds and Securities System; RoSS = Registry of Scripless Securities; SGS = Singapore Government Securities; SHCH = Shanghai Clearing House; SSS = Securities Settlement System; SAFE+ = Speedy, Accurate, Faithful, Efficient; RENTAS = Real-time Electronic Transfer of Funds and Securities; RTGS = real-time gross settlement; SG = Singapore; SSTS = Scripless Securities Trading System; STP = straight-through-processing; TH = Thailand; TSD = Thailand Securities Depository; VN = Viet Nam; VSD = Vietnam Securities Depository; Y = yes.

Notes: In the Philippines, the interface between the Bureau of the Treasury and its participants is provided by PDS Group. Therefore, the above information is from the PDS Group. Information on the People's Republic of China; Hong Kong, China; the Republic of Korea; Singapore; and Thailand needs to be updated.

- ISO 15022: ISO 15022 is adopted for the messages related to bond settlement.
- ISO 20022: ISO 20022 is adopted for the messages related to bond settlement.
- ISIN (adoption): ISIN is adopted (full membership in NNA exists).
- BIC: BIC can be used, including conversion by using a table with proprietary codes.
- Character code set: Unicode (UTF-8) is adopted.
- Communication protocol: TCP/IP is adopted as communication protocol.
- Inauguration of the current system: Inauguration year of the current bond settlement system.
- Reconstruction period: Plausible year of completing of reconstruction based on the assumption of ADB Consultant for ABMF SF2.

Source: ABMF SF2.

Table 9: Adoption of ISO 20022 in ASEAN+3 Real-Time Gross Settlement Systems

Eco- nomy	Operator	Name of the System	Standardization of Message Items (RTGS)						System Renewal	
			ISO		BIC	Char. code set	Commun. protocol	Overall	Inauguration current system	Reconstruct. period
BN	AMBD	-	N	Y	Y	Y	Y	Y	2015	
CN	PBOC	HVPS	N	Y	Y	Y	Y	Y	2014	
HK	HKMA	CHATS	Y	N	Y	Y	Y	Y	Dec 1996	
ID	BI	BI-RTGS	Y	Y (201X)	Y (2014)	Y	Y (2014)	Y (201X)	Nov 2000	2015
JP	BOJ	BOJ-NET	N	Y (2015)	Y (2015)	Y	Y	Y (2015)	1987, Nov 2011	2015
KH	NBC	-	N	Y (201X)	Y (201X)	Y (201X)	Y (201X)	Y (201X)		201X
KR	BOK	BOK-Wire	N	Y (201X)	Y	Y	Y	Y (201X)	Apr 2009	
LA	BOL	-	Y		Y	Y	Y	Y		
MM	CMB	-	N	Y (2015)	Y (2015)	Y (2015)	Y (2015)	Y (201X)		2015
MY	BNM	RENTAS IFTS	Y (2016)	Y (2018)	Y (2017)	Y	Y	Y (2018)	Jul 1999/2004/2011	2018
PH	BSP	PhilPass	Y	Y (2015)	Y	Y	Y	Y (2015)	1995/Dec 2002	2015
SG	MAS	MEPS+	Y	N	Y	Y	Y	Y	Dec 2006	2015
TH	BOT	BAHTNET	Y	N	Y	Y	Y	Y	2013	2019
VN	SBV (BIDV)		N	Y (201X)	Y (201X)	Y (201X)	Y (201X)	Y (201X)	2010	201X

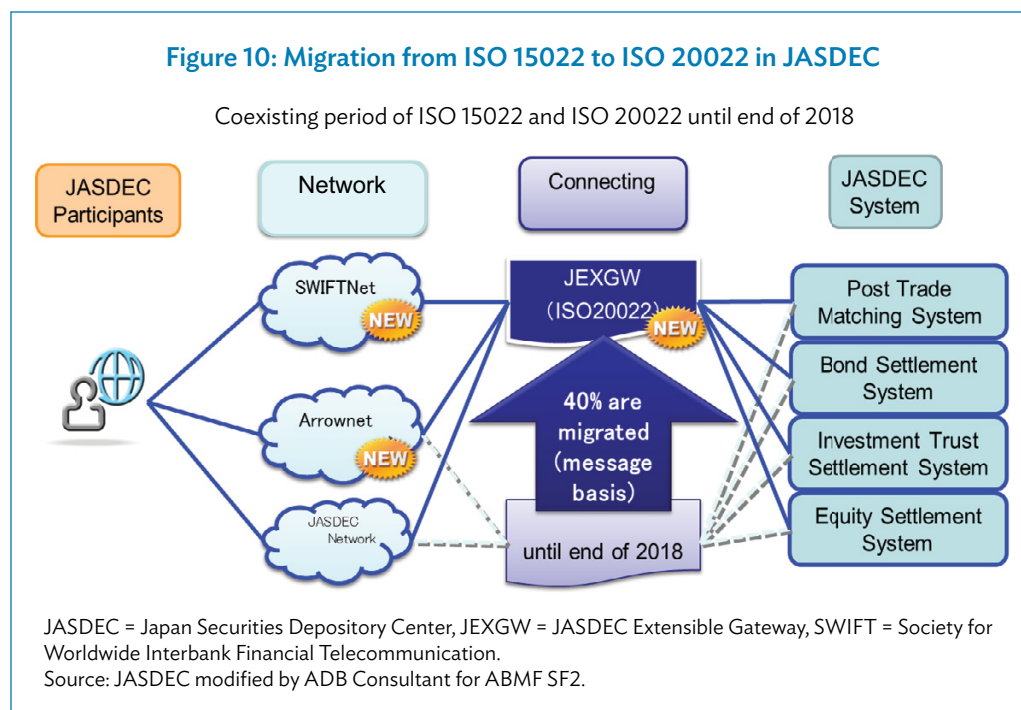
■ Cross-border STP ready (ISO 20022)
 ■ Cross-border STP ready (ISO 15022)
 ■ Not ready but decided
■ Not clear and need to be confirmed
 ■ Not ready yet

ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; BAHTNET = Bank of Thailand Automated High-value Transfer Network; BI = Bank Indonesia; BIC = Bank Identifier Code; BIDV = Bank for Investment and Development of Vietnam; BMS = Bursa Malaysia; BN = Brunei Darussalam; BNM = Bank Negara Malaysia; BOJ = Bank of Japan; BOJ-NET = Bank of Japan Financial Network System; BOK = The Bank of Korea; BOK Wire+ = The Bank of Korea Financial Wire Network; BOT = Bank of Thailand; BSP = Bangko Sentral ng Pilipinas; CHATS = Clearing House Automated Transfer System; CN = People's Republic of China; HK = Hong Kong, China; HKMA = Hong Kong Monetary Authority; HVPS = High-Value Payment System; ID = Indonesia; IFTS = Interbank Funds Transfer System; ISO = International Organization for Standardization; KH = Cambodia; KR = Republic of Korea; LA = Lao People's Democratic Republic; MAS = Monetary Authority of Singapore; MEPS+ = MAS Electronic Payment System; MM = Myanmar; MY = Malaysia; N = no; PBOC = People's Bank of China; PH = Philippines; PhilPass = Philippine Payments and Settlements System; RENTAS = Real-time Electronic Transfer of Funds and Securities System; RoSS = Registry of Scripless Securities; RTGS = real-time gross settlement; SG = Singapore; STP = straight-through-processing; TCP/IP = Transmission Control Protocol/Internet Protocol; TH = Thailand; VN = Viet Nam; Y = yes.

Notes: The State Bank of Viet Nam is planning to be a cash settlement operator by adopting ISO 20022. Information on the People's Republic of China; Hong Kong, China; the Republic of Korea; Singapore; and Thailand needs to be updated.

- i. ISO 15022: ISO 15022 is adopted for the messages related to bond settlement.
- ii. ISO 20022: ISO 20022 is adopted for the messages related to bond settlement.
- iii. BIC: BIC can be used, including conversion by using a table with proprietary codes.
- iv. Character code set: Unicode (UTF-8) is adopted.
- v. Communication protocol: TCP/IP is adopted as communication protocol.
- vi. Inauguration of the current system: Inauguration year of the current bond settlement system.
- vii. Reconstruction period: Plausible year of completing of reconstruction based on the assumption of ADB Consultant for ABMF SF2.

Source: ABMF SF2.



messages will be decommissioned at the starting day of new ISO 20022 messages (13 October 2015), reflecting demands from market participants. An illustration of JASDEC's migration from ISO 15022 to ISO 20022 is shown in Figure 10.

Establishing an Institutional Framework for ISO 20022

Since bond market infrastructures such as CSD and RTGS systems will adopt ISO 20022 as the message standard when it comes time to reconstruct such infrastructure, all ASEAN+3 economies will become harmonized and, through standardization, achieve cross-border STP.

Considering such a situation, each market infrastructure operator is expected to contribute to ISO 20022 activities, including joining the decision-making processes of ISO 20022-related messages and standards. All ASEAN+3 economies are expected to establish the relevant organization to support ISO activities when they are ready to become a full member of ISO. The current ISO membership of ASEAN+3 economies is shown in Table 10.

In order to contribute to ISO activities, it is important to establish an institutional framework, such as a regional Securities Standard Evaluation Group (SSEG) and Payment Standard Evaluation Group (PSEG) in ASEAN+3 and Technical Committee 68 (TC68) national mirror committee in each economy. Also, it is recommended to facilitate discussions on the standardization of messages based on ISO 20022 and related issues, including ISIN allocation. An overview of ISO is shown in Appendix 4.

Table 10: Membership in ISO 20022-Related Organizations of ASEAN+3 Economies

	ISO member	TC68 member	RMG	PSEG	SSEG
BN	Correspondent member (ABCI)				
KH	Correspondent member (ISC)				
CN	Full member (SAC)	Participant member	Member (PBOC)		
HK	Correspondent member (ITCHKSAR)	Observing member			
ID	Full member (BSN)				
JP	Full member (JISC)	Participant member	Member (BOJ)	Member (BOJ, Zenginkyo, NTT Data, JPMC, BTMUJF)	Member (BOJ, JASDEC, Mizuho CB, BTMUJF, NTT Data)
KR	Full member (KATS)	Participant member	Member (KFTC and KATS)	Member (KFTC)	
LA	Subscriber member (DISM)				
MY	Full member (DSM)	Observing member			
MM	Correspondent member (MSTRD)				
PH	Full member (BSP)	Observing member			
SG	Full member (SPRING SG)	Participant member	Member (Standard Chartered Bank, Deutsch Bank)	Member	Member (Standard Chartered Bank)
TH	Full member (TISI)	Observing member			
VN	Full member (STAMEQ)				

ABCI = Authority for Building Control and Construction Industry of Brunei; ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; BN = Brunei Darussalam; BOJ = Bank of Japan; BSN = Badan Standardisasi Nasional (National Standardization Agency of Indonesia); BSP = Bangko Sentral ng Pilipinas; BTMUJF = Bank of Tokyo Mitsubishi UFJ; CN = People's Republic of China; DISM = Department of Intellectual Property, Standardization, and Metrology; DSM = Department of Standards Malaysia; HK = Hong Kong, China; ID = Indonesia; ISC = Institute of Standards of Cambodia; ISO = International Organization for Standardization; ITCHKSAR = Innovation and Technology Commission of the Government of the Hong Kong Special Administrative Region; JASDEC = Japan Securities Depository Center; JISC = Japanese Industrial Standards Committee; JP = Japan; JPMC = J.P. Morgan Chase Bank; KATs = Korean Agency for Technology and Standards; KH = Cambodia; KR = Republic of Korea; LA = Lao People's Democratic Republic; Mizuho CB = Mizuho Corporate Bank; MM = Myanmar; MSTRD = Myanmar Scientific and Technological Research Department; MY = Malaysia; PBOC = People's Bank of China; PH = Philippines; PSEG = Payments Standards Evaluation Group; RMG = Registration Management Group; SAC = Standardization Administration of China; SG = Singapore; SPRING SG = Standards, Productivity, and Innovation Board, Singapore; SSEG = Securities Standards Evaluation Group; STGAMEQ = Directorate for Standards, Metrology, and Quality of Viet Nam; TC68 = Technical Committee 68; TH = Thailand; TISI = Thai Industrial Standards Institute; VN = Viet Nam. Source: ABMF SF2

International Securities Identification Number

ABMF SF2 has been promoting the International Securities Identification Number (ISIN) to be used as a standard securities number to identify bonds issued in ASEAN+3 economies. ABMF SF2 has also been promoting timely ISIN allocation in each economy in ASEAN+3 in accordance with the recommendation of ANNA. An ISIN identifies the economy where the bond is issued by adding a two-character country code, based on ISO 3166, at the beginning of the number. The economy where the bond is deposited (in a CSD) is regarded as the economy where the bond has been issued. An ISIN is to be allocated by the NNA in each economy. An overview of ISIN is shown in Appendix 5.

The 10 ASEAN+3 economies with developed bond markets have established NNAs. The remaining economies that do yet have an NNA shall be supported by ADB, ANNA, and the other 10 economies in the establishment of an NNA when each economy is ready to issue bonds regularly. Table 11 shows the current status of NNAs and the allocation of ISIN in each ASEAN+3 economy.

In order to promote cross-border STP in ASEAN+3, securities need to be identifiable by nonresident investors in other economies. When issuing securities, data (information) on the securities, including securities numbering (ISIN), also need to be known by nonresident investors located in other economies. To meet such requirements, the ISIN needs to be allocated in a timely manner in accordance with the ANNA recommendation (within 24 hours of the request). During Phase 1 of ABMF SF2, some of the international experts pointed out that a significant number of economies in ASEAN+3 do not satisfy the requirements of the ANNA recommendation. However, this survey revealed that the timeliness of ISIN allocation has improved drastically in recent years and many economies in the region were nearly meeting the 24-hour requirement.

The ISIN allocation flows for government bonds and corporate bonds in each economy of ASEAN+3 are shown in the Attachment.

Table 11: National Numbering Agencies and the Allocation of ISIN in ASEAN+3 Economies

	National Numbering Agency (NNA)	Allocation of ISIN	Availability in English
CN	China Securities Regulatory Commission (CSRC)/China Securities International Standards Committee (CSISC)	Within 48 hours	No
HK	Hong Kong Exchanges and Clearing Ltd. (HKEx)	Within 48 hours	Yes
ID	Indonesian Central Securities Depository (KSEI)	Within 24 hours	Yes
JP	Tokyo Stock Exchange (TSE)/Securities Identification Code Committee (SICC)	Within 24 hours	No
KR	Korea Exchange (KRX)	Within 24 hours	No
MY	Bursa Malaysia (BM)	Within 24 hours	Yes
PH	Securities Exchange Commission (SEC)	Within 24 hours	Yes
SG	Singapore Exchange Limited (SGX)	Within 24 hours	Yes
TH	Thailand Securities Depository (TSD)	Within 24 hours	Yes
VN	Vietnam Securities Depository (VSD)	Within 24 hours	No

ASEAN+ 3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; BN = Brunei Darussalam; CN = People's Republic of China; HK = Hong Kong, China; ID = Indonesia; ISIN = International Securities Identification Number; JP = Japan; KH = Cambodia; KR = Republic of Korea; LA = Lao People's Democratic Republic; MM = Myanmar; MY = Malaysia; PH = Philippines; SG = Singapore; TH = Thailand; VN = Viet Nam.

Note: The NNA should allocate ISIN within 24 hours following the request and make the ISIN available to users at the same time in each economy. A proprietary securities number is generally allocated by each central securities depository.

Source: ABMF SF2.

Collateral and Repo Services

Overview of Repo Transactions

It is generally anticipated that tightening regulatory frameworks, such as implementation of the Dodd–Frank Wall Street Reform and Consumer Protection Act and Basel III capital requirements, will cause shortages of good collateral. The importance of liquidity has been emphasized by many high-ranking central bank officers and experts. Amid this background, ABMF SF2 has been grappling with cross-border collateral and cross-currency repo issues over the course of Phase 3 and assessing the differences in repo markets in the region, including transaction flows and messages. This issue remains a challenge.

There are several types of repo transactions. In this report, repo transactions are categorized into two types. One is a repurchase agreement (sell and buy-back), which is commonly known as repo in many markets, by transferring ownership title. The other type is borrowing or lending (including pledged) that does not transfer ownership title, considering the transaction flows and interest payment processes. This classification is in line with market practices in Europe, which categorizes the former type as a repurchase agreement (repo) and the latter as a pledge agreement (pledge). For more details on the cross-border use of repo and collateral, please refer to Appendix 6.

In Europe, the cross-border use of collateral has been under consideration since the 1990s and a system has been successfully implemented. Indeed, the complexities of the cross-border use of collateral can only be properly analyzed based on a thorough understanding of collateralization in a national context.

Repo Transactions in ASEAN+3

According to a survey conducted by the Self-Regulatory Organization Working Group, a repurchase agreement (sell and buy-back) is more prevalent in most economies than a borrowing or lending (pledge) repo.⁵ In addition, the Global Master Repurchase Agreement (GMRA) proposed by the International Capital Market Association seems to be gaining acceptance in ASEAN+3 economies.

The survey also highlighted that transaction flows related to collateral and repo services, including interest and tax payments such as withholding, are different in each economy in the region. It was recognized that the standardization of repo transaction flows would not be

⁵ The Self-Regulatory Organization Working Group (SRO WG) is a voluntary group that convenes in conjunction with ABMF. Mr. Ryuichi Shiina of the Japan Securities Dealers Association led the survey effort and presented on repo markets in ASEAN+3 economies at several SRO WG.

Table 12: Repurchase Transactions in ASEAN+3

	Repurchase Agreement or Sale and Purchase	Pledged or Borrowing and Lending
CN	(Interbank market) <ul style="list-style-type: none"> • Outright repo: 3.4% of trade volume • Transfer of ownership occurs 	(Interbank market) <ul style="list-style-type: none"> • Pledged repo: 96.6% of trade volume • Non-transfer of ownership
HK	<ul style="list-style-type: none"> • Classic repo 	<ul style="list-style-type: none"> • Borrowing and lending market exists, but is not clear whether it is used as an alternative to repo
ID	<ul style="list-style-type: none"> • Sell and buy-back: 50%-70% • Classic asset blocking 20%-40% 	<ul style="list-style-type: none"> • Does not exist
JP	<ul style="list-style-type: none"> • Gensaki transactions (sale and purchase): 20% share in repo market 	<ul style="list-style-type: none"> • Bond borrowing and lending used as an alternative to repo (cash collateralized repo): approximately 80% share of the repo market
KR	<ul style="list-style-type: none"> • (OTC repo) Most repos are so-called classic repo that combines spot sale and forward buy in a single contract. Sell and buy-back repo is almost nonexistent. • (Exchange repo) Only classic repo 	<ul style="list-style-type: none"> • Borrowing and lending market exists, but is not used as an alternative to repo
MY	<ul style="list-style-type: none"> • Classic repo and sell and buy-back 	<ul style="list-style-type: none"> • None
PH	<ul style="list-style-type: none"> • Classic repo with third-party collateral management 	<ul style="list-style-type: none"> • None
SG	<ul style="list-style-type: none"> • Real repo (transfer of ownership) 	<ul style="list-style-type: none"> • Does not exist
TH	<ul style="list-style-type: none"> • Most repos are in the form of classic repo, while sell and buy-back is not popular because there is no tax incentive 	<ul style="list-style-type: none"> • Securities borrowing and lending exists, but is not active
VN	<ul style="list-style-type: none"> • All repos are in the form of classic repo 	<ul style="list-style-type: none"> • Does not exist

ASEAN+ 3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; BN = Brunei Darussalam; CN = People's Republic of China; HK = Hong Kong, China; ID = Indonesia; JP = Japan; KR = Republic of Korea; MM = Myanmar; MY = Malaysia; PH = Philippines; SG = Singapore; TH = Thailand; VN = Viet Nam.

Source: Self-Regulatory Organization Working Group (Mr. Ryuich Shiina) as modified by ADB Consultant for ABMF SF2.

an easy task given wide differences across ASEAN+3 economies in the tax operations and legal issues associated with these transactions.

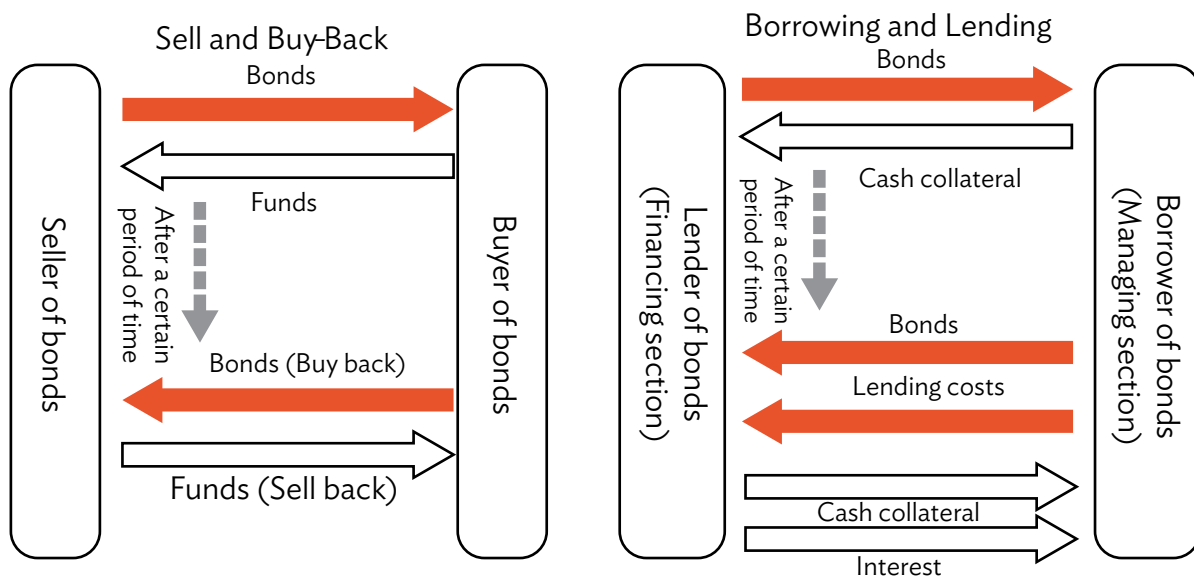
Figure 11 presents an overview of repo transactions in Japan as a case study for ABMF members and experts.

A repurchase agreement (sell and buy-back) is a bond sales transaction in which the traded bonds (spot legs) is traded back in the opposite direction (forward legs) on the date and at the price specified in an agreement concluded in advance between the parties of the transaction. The repurchase agreement (sell and buy-back) incorporates risk management measures such as the use of a package settlement provision, margin call feature, and substitution.

In a borrowing or lending transaction, one party (the lender) lends bonds to a second party (the borrower). After a specified period, the borrower returns bonds of the same kind and in the same amount to the lender, thereby settling the lending transaction. Previously, the type of borrowing and lending transaction that prevailed in Japan was used for avoiding paying the securities transaction taxes due when the bonds were sold. A transaction tax is one of the most important factors in each market for the acceptance of a certain type of repo. The

transaction tax on repo trades was abolished in Japan. As such, a repurchase agreement based on the GMRA and transferring ownership is now prevalent.

Figure 11: Overview of Repo Transactions in Japan



Source: Ministry of Finance Japan with modifications by ADB Consultant for ABMF SF2.

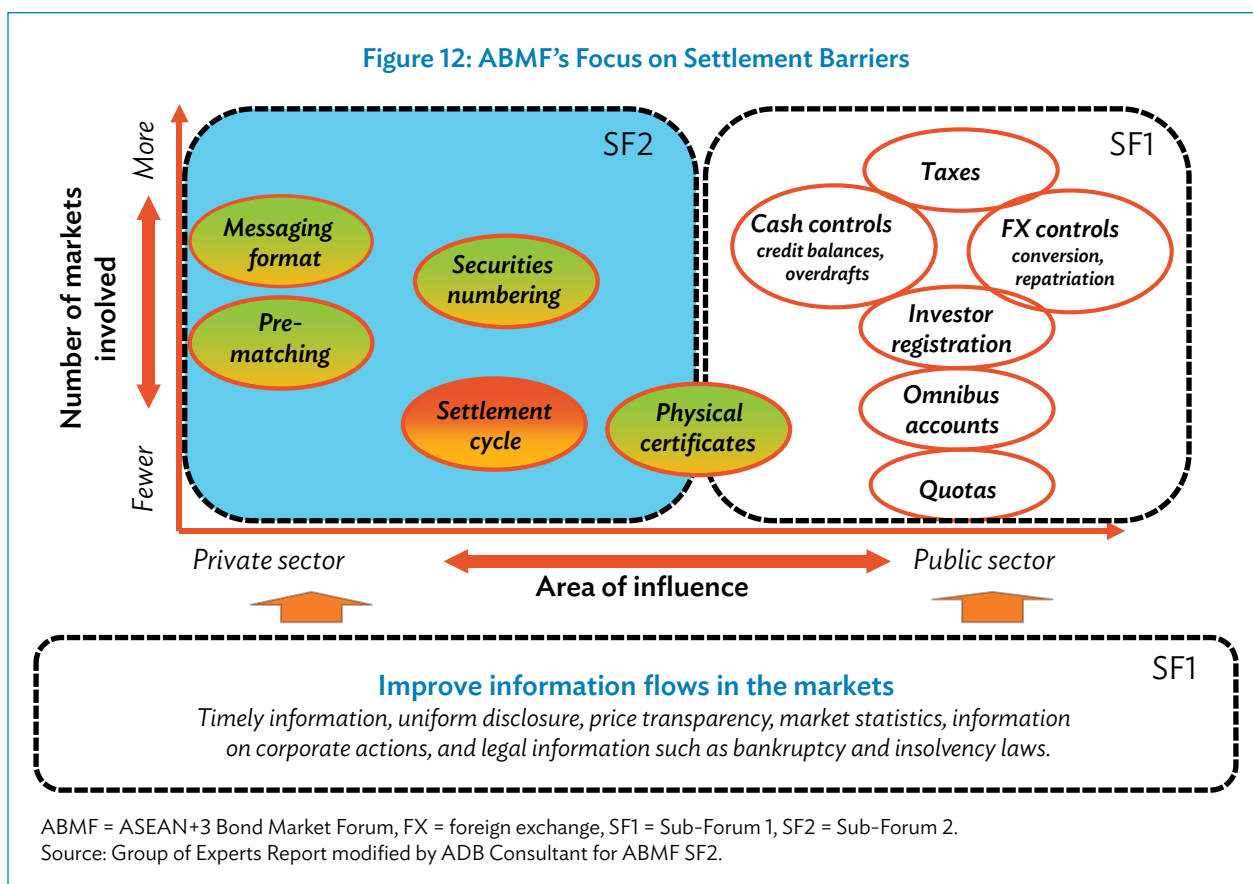
Updating the Status of Settlement Barriers

When it was launched in 2010, one of the main objectives of ABMF, as revealed in the results of a survey of the Group of Experts, was the removal of settlement barriers (Figure 12).

ABMF SF2 members and experts focused on mitigating settlement barriers through discussions and activities under Phases 1, 2, and 3. User requirements and market practices, including legal and regulatory issues, still need to be harmonized and standardized. In this section, the current status of these barriers in ASEAN+3 is discussed.

This report does not suggest that all regulations and controls need to be abolished, since many are essential to protect ASEAN+3 economies from external turmoil. As such, it should be the discretion of regulators and central banks in individual economies whether and when

Figure 12: ABMF's Focus on Settlement Barriers



to remove such regulations and controls. For this reason, it is important that the current status of settlement barriers are surveyed and clarified.

Barriers Related to ABMF SF2

Message standard

The standardization of messages based on ISO 20022 is progressing in ASEAN+3. As shown in this report, either ISO 20022 or ISO 15022 has already been implemented in leading economies in ASEAN+3. Those economies that have not yet adopted an international standard for messages are planning to implement ISO 20022 when their CSD and RTGS systems are in the process of being reconstructed.

Pre-matching

Lack of automated pre-settlement matching was often identified as the cause of failure of delivery of a traded bond. As a result of the survey and discussions of ABMF SF2, implementation of an automated PSMS is recommended and included as a part of the reference DVP model.

Securities numbering

All ASEAN+3 economies in which bond markets exist have adopted ISIN and established an NNA for ISIN issuance. According to the Phase 3 survey, the allocation of ISIN within 24 hours has been achieved in most of the economies. Dissemination of bond-related information associated with ISIN has been recognized as an important issue. Those economies that do not yet have an NNA understand the importance of establishing one. ADB and ANNA are ready to support them.

Settlement cycle

ABMF SF2 has surveyed the settlement cycle of both government bonds and corporate bonds in each market and found wide differences among ASEAN+3 economies. In addition, settlement cycles can differ for government bonds and corporate bonds, and for bonds traded by residents and nonresidents, in the same economy. This remains a challenge for cross-border trade and settlement; however, the issue needs to be addressed globally because a regional solution might risk impeding transactions with the other parts of the world.

Physical certificates

Bonds are dematerialized or immobilized in all economies that already have bond markets in the region, although physical certificates (mainly for corporate bonds) remain in some economies. Bonds are completely dematerialized in the People's Republic of China and Japan.

Other Remaining Challenges

The following issues related with taxation and regulations remain challenges.

Taxation

ABMF SF2 has also discussed taxes related to interest payments and redemption. Some economies impose a capital gains tax and stamp duty for a bond traded by a foreign investor, though these are normally exempted in most other markets. Taxes related to interest payments are another important remaining challenge.

Capital Controls and Cash Controls

The People's Republic of China maintains capital controls that require permission from the authorities to invest inside and outside of the domestic economy. Thailand restricts the cash holdings of foreigners. All other ASEAN+3 markets—except Hong Kong, China; Japan; and Singapore—require regulatory reporting based on the real-demand principle, a requirement to substantiate the underlying transaction for foreign exchange. SF2 members have recognized the need for such controls and reporting requirements; on the other hand, the regulatory reporting process could potentially be standardized if the objectives of the reporting were similar.

Account Structure

The account structure of each CSD differs by economy, mainly because of regulations and taxation. An omnibus account structure may be more convenient than a segregated account structure from a cross-border trade and settlement perspective. However, there is also an emerging trend of adopting a segregated account structure, with consideration of the transparency of the market. Account structure is another important subject and further study is needed.

Policy Recommendations

ABMF SF2 has been promoting adoption of international standards related to bond market infrastructures in the region, which has been supported by the Asian Bond Markets Initiative Task Force 3. ABMF SF2 members and experts are grateful for understanding and support by the authorities. The following policy recommendations are in line with Asian Bond Markets Initiative objectives.

Harmonization of Message Flow

DVP Model 1 of the Bank for International Settlements (BIS) definition shall be adopted for bond settlement in ASEAN+3, when the market infrastructures in each economy, such as CSD and RTGS systems, undergo reconstruction. A bond shall be blocked (earmarked) first. After the transfer of funds, which means after completing cash settlement, the blocked bond shall be released to effect (complete) DVP settlement, considering that bonds are less liquid than cash.

Adoption of International Standards

International standards shall be adopted when the market infrastructures, such as CSD and RTGS systems, undergo reconstruction and/or total refurbishment. The following are examples of the international standards to be adopted:

- message standard: ISO 20022,
- financial institution identifier: ISO 9362 (BICFI),
- securities numbering: ISO 6166 (ISIN),
- country code: ISO 3166-1, and
- currency code: ISO 4217.

Standardization of Message Items

Essential and minimum message items to effect DVP settlement shall be standardized based on ISO 20022. The following messages and their items are proposed on a preliminary basis for further discussion:

- bond settlement instruction: sese.023,
- matched results: sese.024,
- bond settlement confirmation: sese.025,
- cash settlement information and instruction: pacs.009, and
- cash settlement confirmation: camt.054.

Facilitating Standard Evaluation Groups

It is advised that each economy that does not have an ISO 20022 T68 national mirror committee consider establishing the committee by joining TC68 as a participating member when the economy is ready to contribute to the decision-making processes related to ISO 20022. Establishing SSEG and PSEG in the region will also be discussed.

Establishing an NNA

ABMF SF2 has been promoting ISIN as the standard securities numbering in ASEAN+3 economies. Also, considering the importance of the standardization of securities numbering for cross-border STP, ABMF SF2 advises that those economies that do not yet have an NNA establish one once the economy reaches the stage of issuing a significant amount of bonds.

Repo

ABMF SF2 recommends adopting a repurchase agreement (sell and buy-back type repo), which is a standard repo transaction in line with the GMRA. It is also recommended that transaction flows related to collateral and repo services be surveyed.

Roadmap Including Next Steps

Roadmap

2015–2016: Standardization phase

- Agree on a reference model of DVP flow and essential (minimum) message items for DVP settlement in the region as a preliminary basis for discussions.
- Promote ISIN and BICFI as the standard securities numbering and financial institution identifier in the region, respectively.
- Promote awareness of international standards through TC68 national mirror committees to discuss issues including an RMG, SSEG, and PSEG, as well as an NNA.
- Discuss market practices at the national level and regional level, if possible.
- Support the Cross-Border Settlement Infrastructure Forum.

2017–2018: Implementation phase

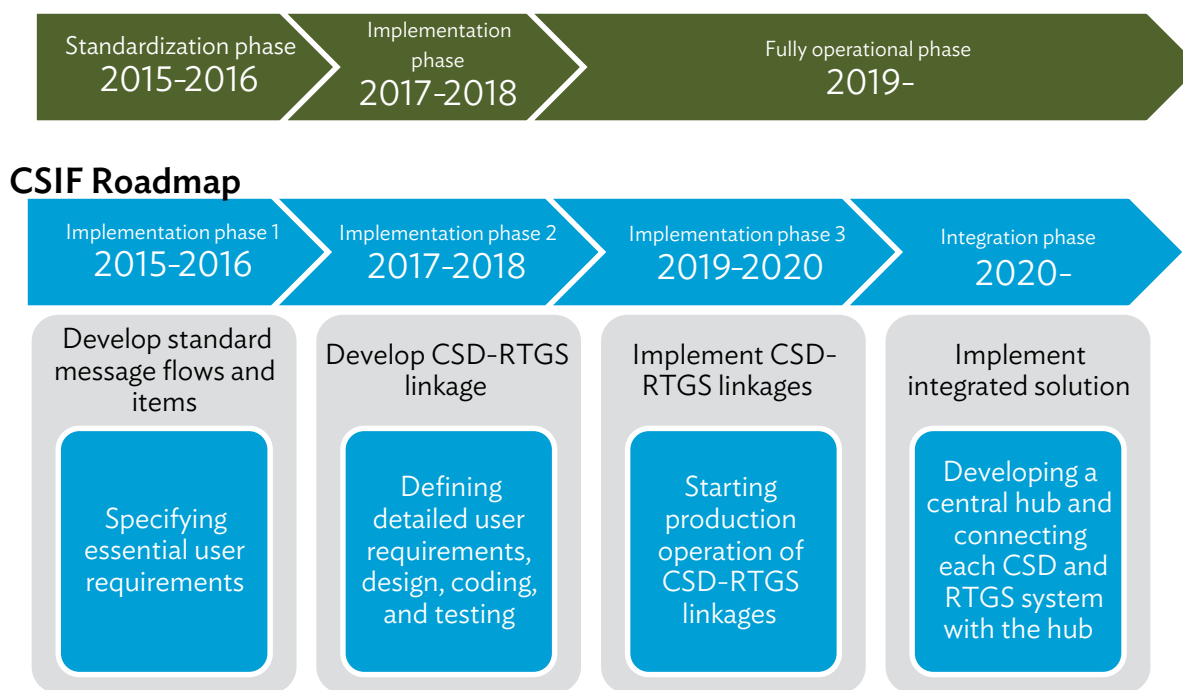
- Establish TC68 national mirror committees, including an SSEG and PSEG, in those economies that are ready to support such activities in the region.
- Implement standards in economies that are ready for adoption and migration to international standards.
- Review the reference model and standard message items among the members and experts.
- Operate and coordinate the regional activities of harmonization and standardization in economies that are ready to contribute to such activities.

2019–onward: Fully operational phase

- Fully contribute to TC68 activities and establish related committees and groups in all ASEAN+3 economies.
- Establish T68 national mirror committees in all economies, including an SSEG and PSEG in ASEAN+3.
- Implement international standards in all economies in ASEAN+3.
- Promote regional activities of harmonization and standardization in ASEAN+3.
- Review the reference model and standard message items among the group members and experts.
- Operate and coordinate the regional activities of harmonization and standardization in ASEAN+3.

An overview of the latest ABMF SF2 roadmap is shown in Figure 13.

Figure 13: Roadmap Overview



CSD = central securities depository, CSIF = Cross-Border Settlement Infrastructure Forum, RTGS = real-time gross settlement.
Source: ABMF SF2.

Next Steps

The following activities will be conducted:

1. draft reference DVP flow will be agreed upon by ABMF SF2 members;
2. draft message items based on ISO 20022 will be agreed upon;
3. ISIN will be adopted as a common standard of securities numbering in ASEAN+3 and allocated in each economy in line with ANNA's recommendation;
4. harmonization of market practices, including collateral and repo practices, in ASEAN+3 will be further surveyed; and
5. Brunei Darussalam, Cambodia, the Lao People's Democratic Republic, and Myanmar will be supported by ADB and the other ASEAN+3 economies in developing their bond market infrastructures.

Appendix 1

Members and Experts Including Observers and the ADB Secretariat

Table A1.1: National Members and Experts

		Institution	Name
BN	NM	Autoriti Monetari Brunei Darussalam (AMBD)	Mardini HJ Eddie
			Lim Shaw Fhen
CN	NM	China Security Regulatory Commission (CSRC)	Lu Dabiao
	NE	China Central Depository and Clearing Co., Ltd. (CCDC)	Zon Jun
			Ding Yahua
		Shanghai Clearing House (SHCH)	Pi Jianping
		China Foreign Exchange Trade System-National Interbank Funding Center(CFETS)	Cui Wei
HK	NM	Hong Kong Monetary Authority (HKMA)	Li Shu-Pui
	NE	Bank of China (Hong Kong)	Michael Dai
			Zhihuan E
ID	NM	Ministry of Finance, Indonesia	Agung Galih Satwiko
		Financial Services Authority (OJK), Ministry of Finance	Bayu Samodro
	NE	Indonesian Central Securities Depository (ICSD)	Margeret Mutiara Tang
		Indonesia Clearing and Guarantee Corporation (ICGC)	Indriani Darmawati
		Indonesia Stock Exchange (IDX)	Urip Budhi Prasetyo
JP	NM	Japan Securities Depository Center, Inc. (JASDEC)	Yuji Sato
	NE	Bank of Japan (BOJ)	Takahito Yamada
			Misa Takada
			Akira Yokoya
			Megumi Takei
			Yuya Ueda
		Mizuho Corporate Bank, Ltd.	Akihiko Mitani
KH	NM	Securities & Exchange Commission of Cambodia (SECC)	Va Sovy
KR	NM	Korea Securities Depository (KSD)	Jong Hyung Lee
		Korea Exchange (KRX)	Jae Hyun
	NE	Korea Securities Computing Corporation (KOSCOM)	Jae Moon So
LA	NM	Ministry of Finance	Boualith Khounsy
			Bounthum Lomany
		Securities and Exchange Commission Office, Bank of the Lao PDR	Saysamone Chantachack

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Table A1.1 continued

		Institution	Name
MM	NM	Central Bank of Myanmar	Daw May Maung Gyi
MY	NM	Bond Pricing Agency Malaysia (BPAM)	Mohd Shahrul Zain
			Meor Amri bin Meor Ayob
			Simon Ng Sean Cho
PH	NM	Philippine Dealing System Holdings Corp.-PDS Group (PDS)	Cesar Criisol
		Bankers Association of the Philippines (BAP)	Rafael S. Algarra, Jr.
			Cesar O. Virtusio
	NE	Omgeo	Cornelia C. Dagdag
SG	NM	Singapore Exchange (SGX)	Kok Leong Lai
TH	NM	The Stock Exchange of Thailand (SET)	Chanisa Chutipat
VN	NM	Vietnam Securities Depository (VSD)	Duong Ngoc Tuan
			Luu Trung Dung
			Tran Thi Thu Huyen
		Hanoi Stock Exchange (HNX)	Tran Tuan

BN = Brunei Darussalam; CN = People's Republic of China; HK = Hong Kong, China; ID = Indonesia; ISIN = International Securities Identification Number; JP = Japan; KH = Cambodia; KR = Republic of Korea; LA = Lao People's Democratic Republic; MM = Myanmar; MY = Malaysia; NE = national expert; NM = national member; PH = Philippines; SG = Singapore; TH = Thailand; VN = Viet Nam.
Source: ABMF SF2.

Table A1.2: International Experts

Institution	Name
Citibank	Rudy Ingkiriwang
BNP Paribas	Patrick Vanderbeck
Clearstream	Alton Chan
	Fei Tang
Deutsche Bank AG	Boon-Hiong Chan
	Hannah-Vina Nunez
Euroclear	Gaetan Gosset
HSBC	Patrick Edmond Cichy
J.P. Morgan	Masayuki Tagai
	Danny Tan
State Street Bank and Trust	Steven Chan
State Street Global Advisors	Hon Cheung
SWIFT	Alexandre Kech
	Antonio Delorenzo
	Mireia Guisado Parra

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Table A1.2 continued

Institution	Name
The Bank of New York Mellon	Eric Chng
The Bank of Tokyo Mitsubishi UFJ Ltd	Taketoshi Mori

Table A1.3: Observers

	Institution	Name
BN	Autoriti Monetari Brunei Darussalam	Mohd Zul Azmi Haji Mohd Ali
		Hafizuddin Hassanuddin
CN	China Central Depository & Clearing Co., Ltd	Yan Jia
		Lei Huang
	China Securities Depository and Clearing Corporation	Zi Zheng
		Zepeng Hong
		Yang Liu
		Xi Zheng
		Liang Xia
	National Association of Financial Market Institutional Investors (NAFMII)	Xiaotian Mu
		Tailei Wan
		Peng Sun
		Mingzheng Gao
		Ke Sun
HK	Asia Securities Industry and Financial Markets Association	Rebecca Turner Lentchner
	Citibank, N.A. Hong Kong	Cindy Chen
	Clearstream Banking S.A	Victor Wing Tai Ng
		Stefan Lepp
		Gerd Hartung
		Fabrice Tomenko
		Davin Cheung
	Euroclear Bank	Sherry Wang
		Olivier Grimonpont
		Fennie Kwok
		Dan Kuhnel
		Carlo Minieri
	Hong Kong Monetary Authority	Shu-pui Li
		Flora Wong
		Esmond Lee
		Kwok Hung Lee
	Omgeo-DTCC	Jean-Remi Lopez
	State Street Asia Limited	Steven Chan

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Table A1.3 continued

	Institution	Name
ID	Bank of Indonesia	Devi Riyante
	Fiscal Policy Agency, Ministry of Finance Indonesia	Vincentius Krisna Juli Wicaksono
	Indonesia Central Securities Depository	Delonika Yuki Eka Putra
	Indonesia Financial Services Authority (OJK)	Rezza Frisma Prisandy Jd
		Eko Rizanoordibyo
		Arif Budiman
	Indonesian Central Securities Depository	Gusrinaldy Akhyar
	Ministry of Finance	Parjiono
		Dalyono
	PT Kliring Penjaminan Efek Indonesia (KPEI)	Iding Pardi
JP	Daiwa Securities Co., Ltd.	Yutaka Yokoyama
	Japan Securities Dealers Association	Tomohiko Kamimae
		Ryuichi Shiina
	Ministry of Finance Japan	Katsuyuki Tomizawa
	Mizuho Bank, Ltd.	Yasuhiro Ono
		Koji Kawase
		Daisuke Ogawa
	Mori Hamada & Matsumoto	Toru Ishiguro
	Nomura International (Hong Kong) Limited	Tatsuya Yasuda
	Nomura Securities Co., Ltd.	Reiko Nobuhiro
	NTT DATA Corporation	Naotaka Shibasaki
	NTT DATA Institute of Management Consulting	Masahiro Nishihara
	NTT DATA Getronics Corporation	Toshio Kawakami
	Sumitomo Mitsui Banking Corporation	Hiroshi Kawagoe
		Haruyuki Takano
	Tokyo Stock Exchange	Takeshi Taniguchi
		Marl Lee
		Koji Ito
		Marina Doi
KH	Ministry of Economy and Finance, Cambodia	Sopheap Chan
		Lida Noh
		Chantha Chhoeng
		Vanny But
		Samnang Kan
	Securities and Exchange Commission of Cambodia	Likea Hor
		Leakhena Song

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Table A1.3 continued

	Institution	Name
KR	Bank of Communication (Seoul Branch)	Woong Ryeol Kim
	The Bank of Korea	Sungwoo Shin
		Byoung Mok Lee
		Jeeyoung Jung
	Financial Supervisory Service	Hyun-Ju Choi
	Jeonju University	Heejoon Jeong
	Korea Capital Market Institute (KCMI)	Suk Hyun
		Hyun Suk
	Korea Exchange	Seokho Han
		In-ug Ryu
	Korea Financial Investment Association (KOFIA)	Han Jo Kim
	Korea Securities Depository(KSD)	Suju Kwon
		Mandy Ku
		Jong Hyung Lee
		Eujin Kwon
	Korea Securities Computing Corporation (KOSCOM)	Yunhak Lee
		Young Min Cho
		Wan Sung Kim
		Sun Jin Jang
		Seok Bae Lee
	Ministry of Strategy and Finance	Min Soo Kwon
		Beomseok Kim
LA	Ministry of Finance, Lao PDR	Chanpasith Sengphaathith
		Visada Sipaseuth
MY	Bank Negara Malaysia	Zainal Hasfi Hashim
		Lailatul Akma Mohd Shukor
		Aden Nadia Jabarri
	CIMB Investment Bank Berhad	Thomas Meow
		Loong Yeow Boon

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Table A1.3 continued

	Institution	Name
PH	Asian Development Bank (ADB)	Kuei-Hua Wu
		Hsiao Chink Tang
		Kelly Raquel Borres
		Sheila Sombillo
		Shigeto Inukai
		Matthias Schmidt
	Bangko Sentral ng Pilipinas	Remedios Macapinlac
		Eleanor S. Turaray
		Bella Santos
	Bankers Association of the Philippines	Pinky Padronia
	Citibank N.A.	Reyes Theresa
	PDS Group	Ma. Theresa Ravalo
		Karen Bahia
		Eleanor Rivera
		Apples Francisco
		Antonio Nakpil
	Securities and Exchange Commission	Vicente Graciano Felizmenio, Jr.
		Jose Vernon Filio
		Ephyro Luis Amatong
	Bureau of the Treasury	Erwin Sta. Ana
SG	Omgeo	John Wu
	Singapore Exchange	Qingyang Lim
		Megan Teo
		Jill Hong
TH	Bank of Thailand	Chinda Yapanawech
		Ketkeaw Borvornniruttisai
	Ministry of Finance, Thailand	Nadhavudh Dhamasiri
		Sukmeena Bhasavanich
	The Securities and Exchange Commission, Thailand	Chortip Svetarundra
		Jomkwan Kongsakul
	Thai Bond Market Association	Ariya Tiranaparakij
		Pisit Leeahtam
		Tada Phutthitada

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Table A1.3 continued

	Institution	Name
VN	Hanoi Stock Exchange	Tran Anh Tuan
		Ngoc Anh Thi Dinh
		Ha Thi Nguyen
	Vietnam Bond Market Association	Thao Ta Thi Bich
UK	Payments Council	James Whittle

BN = Brunei Darussalam; CN = People's Republic of China; HK = Hong Kong, China; ID = Indonesia; ISIN = International Securities Identification Number; JP = Japan; KH = Cambodia; KR = Republic of Korea; LA = Lao People's Democratic Republic; MM = Myanmar; MY = Malaysia; PH = Philippines; SG = Singapore; TH = Thailand; VN = Viet Nam; UK = United Kingdom.

Table A1.4: ADB Secretariat

Institution	Position	Name
ADB Secretariat	Deputy Head of Members and Experts Including Observers and the ADB Secretariat	Noritaka Akamatsu
	Principal Financial Sector Specialist	Satoru Yamadera (from Oct. 2014)
	Financial Sector Specialist	Kuei-Hua Wu (Jul.–Sep. 2014)
	Senior Financial Sector Specialist (Banking)	Shinji Kawai (until Jun. 2014)
	Economics Officer	Richard Supangan
	Economics Officer	Raquel Borres (until Mar. 2015)
	Officer	Sheila Sombillo
ADB Consultant for SF2	Senior Manager, NTT DATA Corporation	Taiji Inui
ADB Consultant for SF1	Custody Business Specialist	Matthias Schmidt
ADB Consultant for SF1	Professor, Waseda University	Shigehito Inukai

Appendix 2

Purpose and Governance Structure of ABMF SF2

Purpose of ASEAN+3 Bond Market Forum

The Association of Southeast Asian Nations (ASEAN)+3 Bond Market Forum (ABMF) was established in September 2010 based on the endorsement of the ASEAN+3 Finance Ministers' Meeting as a common platform to foster standardization of market practices and harmonization of regulations relating to cross-border bond transactions in the region.¹

ABMF is expected to discuss various bond market issues to further develop liquid and well-functioning bond markets to make cross-border bond investment and settlement both smoother and cheaper; hence, the region's abundant savings will be channeled more effectively into the region's increasing investment needs.

ABMF aims to (i) assess the existing regulatory frameworks and identify recommendations on how to foster harmonization of regulations and market practices that facilitate cross-border bond transactions in the region; (ii) enhance dialogue between the private sector and ASEAN+3 officials to develop bond markets in the region and promote harmonization, standardization, and integration; and (iii) provide opportunities to exchange knowledge, expertise, and experience between the private and public sectors in the region.

ABMF took stock of the Group of Experts (GoE) report on cross-border bond transactions and settlement issues.²

Organizational Structure and Governance

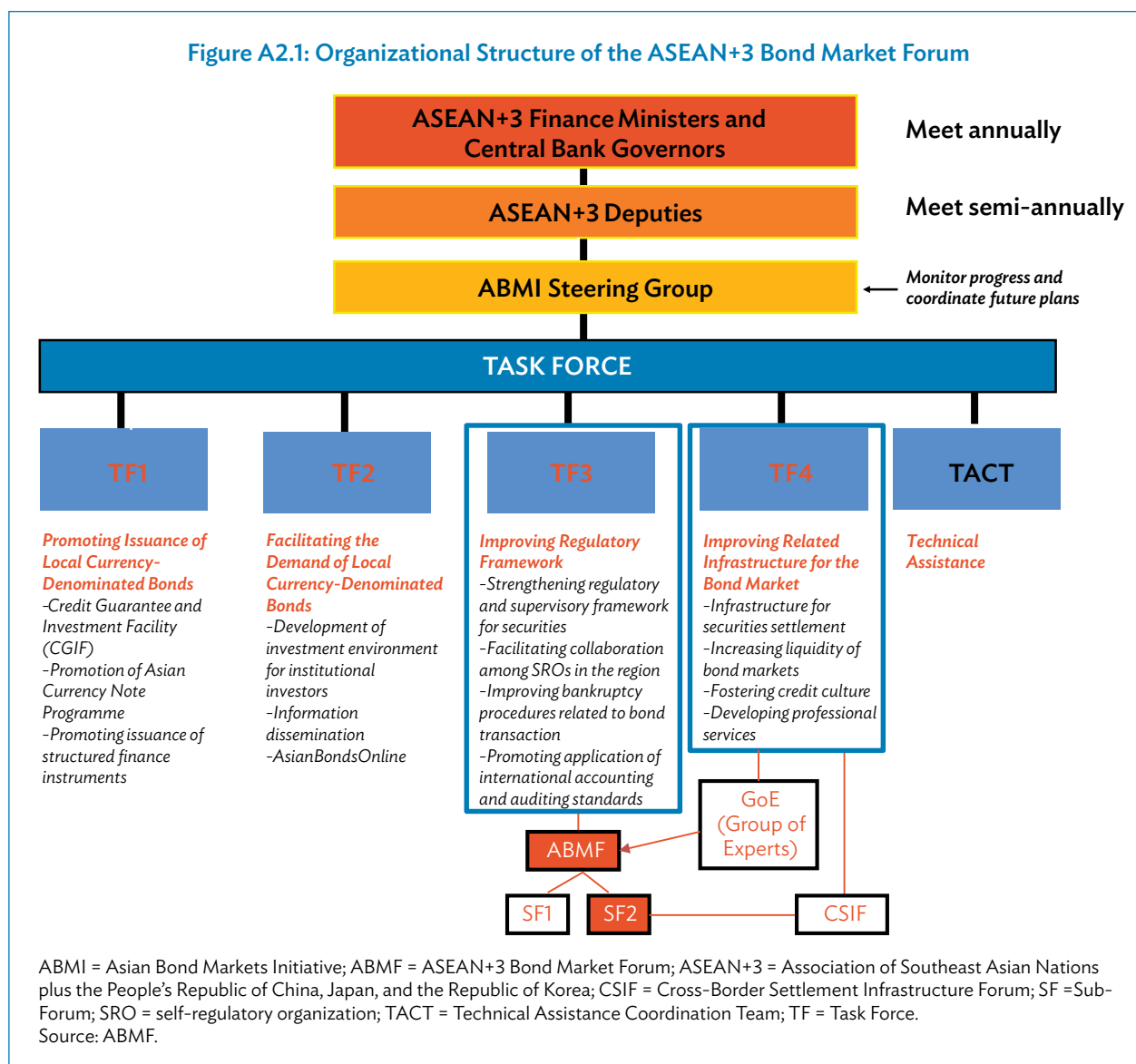
ABMF is organized under Task Force 3 (TF3) of the Asian Bond Markets Initiative (ABMI). ABMF consults with the co-chairs of TF3 in undertaking any regional activities and reports to TF3 on a regular basis regarding the progress of its activities. The organizational structure of ABMF is presented overleaf.

The ABMF consists of two sub-forums: Sub-Forum 1 (SF1) and Sub-Forum 2 (SF2) (Figure A2.1). The objective of SF1 is to close the information gap in regulations, market practices, and other areas in the region's bond markets. SF2 focuses on enhancing straight-through-processing (STP) in ASEAN+3. This report is about SF2.

¹ The Joint Ministerial Statement of the 13th ASEAN+3 Finance Ministers' Meeting on 2 May 2010 in Tashkent, Uzbekistan states: "We [ASEAN+3 Finance Ministers] took note of the Group of Experts' findings and suggestions on facilitating cross-border bond transactions and settlement, and welcomed the establishment of the technical working group on Regional Settlement Intermediary (RSI) to further evaluate the policy recommendations. We endorsed the establishment of ASEAN+3 Bond Market Forum (ABMF) as a common platform to foster standardization of market practices and harmonization of regulations relating to cross-border bond transactions in the region."

² ASEAN+3 Asian Bond Markets Initiatives Task Force 4. Groups of Experts Report. <http://asean3goe.adb.org>

Figure A2.1: Organizational Structure of the ASEAN+3 Bond Market Forum



Purpose and Position of ABMF SF2

The GoE report identified various settlement barriers related to messaging formats, securities numbering, matching, and settlement cycle. Thus, the ABMF SF2 addresses these problems to enhance regional STP by harmonization of transaction procedures and standardization of messages.

It is desirable to execute cross-border transactions without any manual processes or data conversion among market infrastructures in the region. This ideal situation can be realized if all transactions are operated through a system using common standards and consistent messaging. This is not currently possible because individual economies have their own practices and standards, which is inevitable because certain transaction procedures follow national requirements to account for unique circumstances. In addition, some segments of

a market may prefer ways of handling transactions, which creates differences in transaction procedures, hence requiring additional conversion to international practices. Furthermore, differences in language remain a significant barrier as some ASEAN+3 economies use their own characters for payment systems and communications. Adopting international standards frameworks such as International Organization for Standardization (ISO) 20022 can mitigate impediments and barriers, which will enhance interoperability in ASEAN+3 bond markets.³

Phase 1 studies of ABMF SF2 mainly discussed business flows by focusing on government bond transactions, which are larger and relatively simpler compared with corporate bond transactions. The studies identified and standardized the procedures in trade and settlement, particularly delivery-versus-payment (DVP) of government bonds. In addition, ABMF SF2 discussed other settlement-related barriers such as securities numbering, settlement cycle, and matching to improve settlement procedures.⁴

Phase 2 studies of ABMF SF2 succeeded the agenda set forth in the GoE report and Phase 1 studies. The GoE report pointed out barriers to promoting STP in ASEAN+3 bond markets. Phase 2 studies covered five barriers that were detailed in the GoE report: messaging formats, pre-matching, securities numbering, settlement cycles, and physical certificates. Phase 2 studies also covered DVP flows of corporate bonds; government bond flows in Brunei Darussalam, Cambodia, the People's Democratic Republic, and Myanmar; flows of interest and redemption payments; message formats and items; and market practices as well as foreign exchange and cash controls to implement STP.⁵

Possible Goals of SF2

One of the possible goals of ABMF SF2 is to promote STP. To achieve this objective, SF2 has clarified differences among ASEAN+3 economies about DVP and interest payment flows, message items, and market practices. Moreover, SF2 has defined typical DVP and interest payment flows for references by operators of bond market infrastructures. Another goal is to promote ISO 20022 and related international standards, in particular International Securities Identification Number and Business Identifier Code, based on the survey results (Figure A2.2).

Through the Phase 1 and 2 studies, SF2 has revealed that each economy has its own DVP flow and market practices. These differences could be barriers to achieving STP. Not all ASEAN+3 economies adopt the same rules, since they have unique legal and business requirements. To promote STP, each economy is expected to adopt the same DVP and interest payment flows to the extent possible when they are in the process of reconstructing their current bond infrastructures. If all ASEAN+3 economies comply with typical flows defined by ABMF SF2, the region's barriers to STP will be reduced steadily.

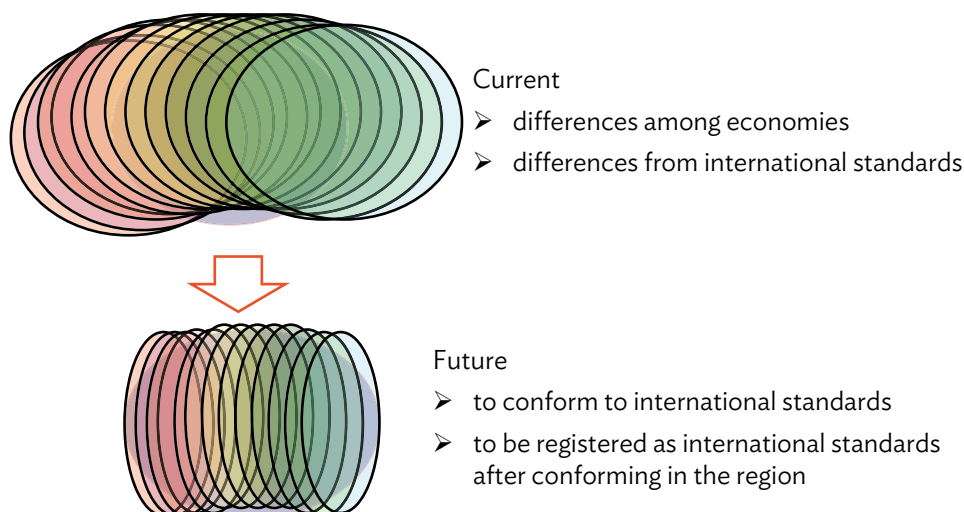
³ ISO is a worldwide federation of national standards bodies. ISO 20022 provides the financial industry with a common platform for the development of messages in a standardized XML syntax.

⁴ ABMF SF2. Phase 1 Report. https://wpqr1.adb.org/LotusQuickr/asean3abmf/Main.nsf/h_Toc/3B929170855F3F0E482579D4002E9940/?OpenDocument

⁵ ABMF SF2. Phase 2 Report. http://asianbondsonline.adb.org/features/abmf_phase_2_report/subforum2_asean+3_information_transaction_flows_settlement_infrastructures.pdf?src=spotlight

Figure A2.2: Possible Goals of Sub-Forum 2

ASEAN+3 proprietary practices



ISO 20022

ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; ISO = International Organization for Standardization.

Note: International standards (such as ISO 20022) will be the focal point and hub of local standards.

Source: ABMF SF2.

Concerning message format and items, as well as numberings and coding, ASEAN+3 proprietary practices (local standards) demonstrate differences from international standards, including ISO 20022. Also, proprietary practices of ASEAN+3 are different from economy to economy and market to market.

Therefore, proprietary practices of ASEAN+3 could be changed to meet international standards. It is important to harmonize practices in the region to make the differences narrower. International standards, such as ISO 20022, should form the basis of local standards to make harmonization a reality. Also, practices in ASEAN+3 that have been identified as being at par with international standards should be considered as a benchmark (Figure A2.3).

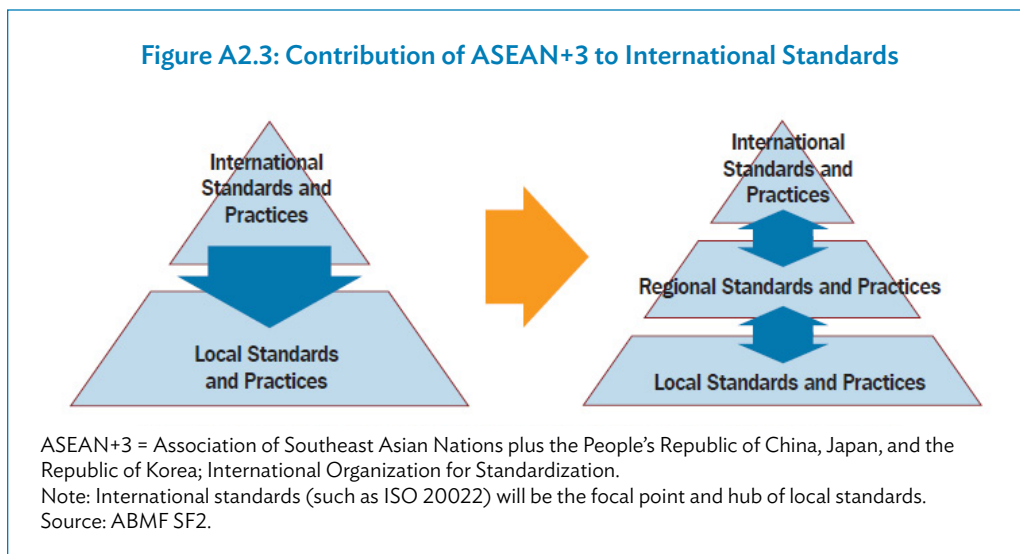
Methodology Overview

Phase 3 activities of ABMF SF2 are divided into six stages as illustrated in Figure A2.4.

Stage A: Determination of Survey Area

SF2 members agreed on the scope of the research of Phase 3 activities. Phase 2 activities covered market practices and DVP flows in corporate bond markets, and flows related to interest payments and redemption in both government and corporate bond markets. In

Figure A2.3: Contribution of ASEAN+3 to International Standards



Phase 3, SF2 has studied a reference DVP model; message items of settlement instruction; and confirmation, ISIN, repo, and other topics related to bond settlement.

The Asian Development Bank (ADB) Consultant for ABMF SF2 drafted the survey questionnaire for ASEAN+3 economies. It was then distributed to national members and experts for their responses.

Stage B: Market (Economy) Visit

The ADB Secretariat and consultant visited each economy to validate the information and data contained in the survey responses. Furthermore, during such visits, discussions with ABMF members and experts were held to collect more information. Topics of discussion were the reference DVP model, message standards, ISIN, repo, and the roadmap, among others.

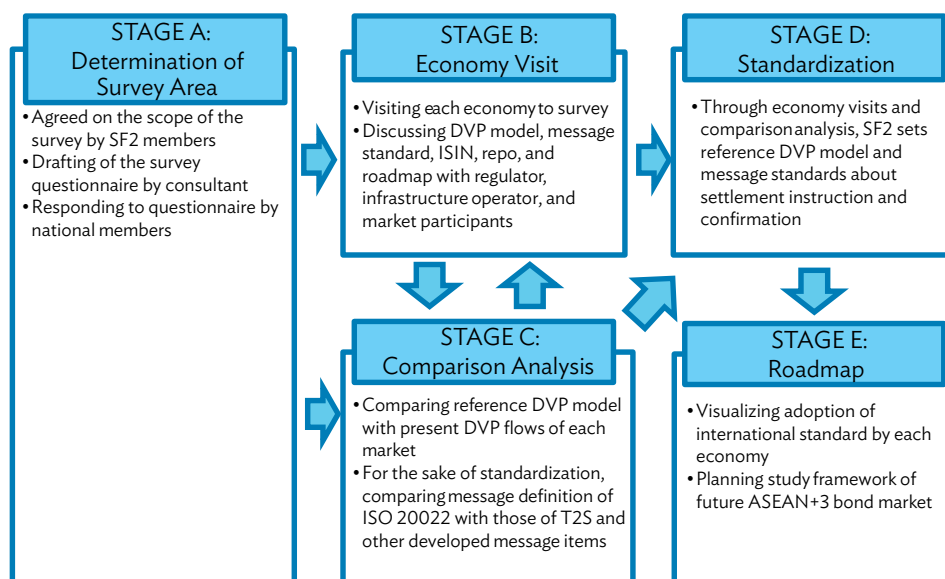
Stage C: Comparison Analysis

ABMF SF2 conducted two types of comparison analysis. One analysis was of the DVP model. ABMF SF2 has tried to create a DVP model for ASEAN+3 bond market. If each market has its own business flow for bond transactions, the realization of STP will be difficult. Acceptance of same DVP model would be a first step toward harmonization of bond settlement. Other analysis was about message standards. SF2 determined the key message corresponding with the DVP model: settlement instruction, matched result, message confirmation, cash settlement instruction, and cash settlement confirmation.

Stage D: Standardization

Through the above stages, ABMF SF2 set forth a reference DVP model and message standards for settlement instruction and confirmation for the sake of cross-border STP in the future.

Figure A2.4: Phase 3 Activities of ABMF SF2



ADB = Asian Development Bank; ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; DVP = delivery-versus-payment; ISIN = International Securities Identification Number; ISO = International Organization for Standardization; T2S = Target 2 Securities.

Source: ABMF SF2.

Stage E: Roadmap

ABMF SF2 has set out a roadmap for the future state of ASEAN+3 bond market infrastructures.

Survey Questionnaire

In order to try to reach its goals, ABMF SF2 conducted a survey on the issues related to barriers by sending a questionnaire to national members and international experts. The following are the primary topics of the ABMF SF2 Phase 3 survey:

1. reference model about DVP settlement,
2. message items related to DVP settlement,
3. settlement matching,
4. ISIN,
5. collateral and repo,
6. harmonization of market practices,
7. roadmap,
8. policy recommendations, and
9. other issues.

Appendix 3

Message Items for Cross-Currency DVP

Examples of message items and instances to effect cross-currency delivery-versus-payment (DVP) settlement are shown as a preliminary basis for discussion in Figure A3.1.

On 15 July 2014, HSBC Securities Japan Limited (IBJPJPJT), the account owner, instructs the instructs Japan Securities Depository Center (JJSDJPJT) to receive against payment securities. The securities are to be delivered by Mizuho Bank Tokyo (MHCBJPJT). The Financial Instrument is JP3165570AC61. The quantity is the face amount JPY 7,899,300,000. This is done through a Securities Settlement Transaction Instruction (sese.023).

This instruction contains the following information details

1. Transaction Identification: HSBCTK005REC02
2. Securities Movement Type: receive
3. Payment: against payment
4. Settlement Date: 15/07/2014
5. Financial Instrument: JP3165570AC61
6. Quantity: face amount 7,899,300,000
7. Safekeeping Account: 1272491
8. Securities Transaction Type: trade
9. Delivering Depository: JJSDJPJT (JASDEC)
10. Delivering Party 1: MHCBJPJT (Mizuho Bank Tokyo)
11. Receiving Settlement Party 1: IBJPJPJT (HSBC Securities Limited)
12. Debtor Agent: BLCHKHX (HSBC Bank USA, N.A.)
13. Creditor Agent: MHCBBKHH (Mizuho Bank HK Branch)
14. Settlement Amount: HKD 452,000 debit

Message items for (a) bond settlement instruction from participants to the central securities depository (CSD), (b) matched results from the CSD to participants, (h) bond settlement confirmation from the CSD to participants, (d) and (e) cash settlement instruction from participants to Real-Time Gross Settlement (RTGS) and vice versa, and (f) cash settlement confirmation from RTGS to participants are shown in Tables A3.1 through A3.5.

Table A3.1: (a) sese.023 Securities Settlement Transaction Instruction (Bond Settlement Instruction from Participants to CSD)

Document	Message Element	ISO20022 Multiplicity	<XML Tag>	Type	Definition	Example: HSBC Securities Limited send RVP message to JASDEC by sese.023.001	Example: Mizuho Bank Tokyo send DVP message to JASDEC by sese.023.001
Securities Settlement Transaction Instruction V05	Transaction Identification	[1..1]	<Document>		Document Root		
	Settlement Identification	[1..1]	<SettleStimTxInst>	Text	Message Root		
	Settlement Type and Additional Parameters	[1..1]	<TxId>		Unambiguous identification of the transaction as known by the instructing party.	HSBCTKOOSREC02	MIZUHOTK0001
	Securities Movement Type	[1..1]	<StimTpAndAddtlParams>	CodeSet	Provides settlement type and identification information.		
	Payment	[1..1]	<SettleMvmtTp>	CodeSet	Specifies if the movement on a securities account results from a deliver or a receive instruction.	RECE (receive)	DELI (deliver)
	Trade Details	[1..1]	<Pmt>	CodeSet	Specifies how the transaction is to be settled, for example, against payment.	APMT (against payment)	
	Trade Date	[0..1]	<TradDt>		Details of the trade.		
	Settlement Date	[1..1]	<StimDt>		Specifies the date/time on which the trade was executed.		
	Date	[1..1]	<Dt>		Date and time at which the securities are to be delivered or received.		
	Date	[1..1]	<Dt>		Date in ISO format.		
	Financial Instrument Identification	[1..1]	<FinInstrmId>		Specified date.	2014-07-15	2014-07-15
	ISIN	[1..1]	<ISIN>	IdentifierSet	Financial instrument representing a sum of rights of the investor vis-à-vis the issuer.		
	Quantity and Account Details	[1..1]	<QtyAndAcctDtls>		International Securities Identification Number (ISIN). A numbering system designed by the United Nations International Organization for Standardization (ISO). The ISIN is composed of a 2-character prefix representing the country of issue, followed by the national security number (if one exists), and a check digit. Each country has a national numbering agency that assigns ISIN numbers for securities in that country.	JP316570AC61 (ISIN: NTT DATA Corporation 26th unsecured straight corporate bonds)	JP316570AC61 (ISIN: NTT DATA Corporation 26th unsecured straight corporate bonds)
	Settlement Quantity	[1..1]	<StimQty>		Details related to the account and quantity involved in the transaction.		
	Quantity	[1..1]	<Qty>		Total quantity of securities to be settled.		
	Face Amount	[1..1]	<FaceAmt>	Amount	Quantity of financial instrument in units, original face amount or current face amount.		
	Safeguarding Account	[1..1]	<SlpPgAcct>		Quantity expressed as an amount representing the face amount, ie, the principal, of a debt instrument.	JPY 7,899,300,000	JPY 7,899,300,000
	Identification	[1..1]	<Id>	Text	Account to or from which a securities entry is made.		
	Settlement Parameters	[1..1]	<StimParams>		Unambiguous identification for the account between the account owner and the account service. ²	1272491	0000100
Securities Transaction Type	Code	[1..1]	<SettleTxTp>	CodeSet	Parameters which explicitly state the conditions that must be fulfilled before a particular transaction of a financial instrument can be settled. These parameters are defined by the instructing party in compliance with settlement rules in the market the transaction will settle in.		
	Cash Clearing System	[0..1]	<CshClrSys>		Identifies the type of securities transaction.		
	Proprietary	[1..1]	<Prtry>		Securities transaction type expressed as an ISO20022 code.	TRAD (trade)	TRAD (trade)
	Identification	[1..1]	<Id>		Specifies the category of cash clearing system, for example, cheque clearing.		
	Issuer	[1..1]	<Issr>		Cash settlement system expressed as a proprietary code.		
	Depository	[0..1]	<DvrgStimPlies>		Proprietary information, often a code, issued by the data source scheme issuer.	HKOI (to be discussed)	HKOI (to be discussed)
	Identification	[1..1]	<Id>		Entity that assigns the identification.	CSIF	CSIF
	Party	[1..1]	<Dptry>		Identifies the chain of delivering settlement parties.		
	AnyBIC	[1..1]	<AnyBIC>	IdentifierSet	First party in the settlement chain. In a plain vanilla settlement, it is the CSD where the counterparty requests to receive the financial instrument or from where the counterparty delivers the financial instruments.		
	Identification	[1..1]	<Id>		Unique and unambiguous way to identify an organization.		
	AnyBIC	[1..1]	<AnyBIC>	IdentifierSet	Party that, in a settlement chain, interacts with the depository.	JUSDJPJT (JASDEC)	JUSDJPJT (JASDEC)
	Identification	[1..1]	<Id>		Identification of the party.		
	AnyBIC	[1..1]	<AnyBIC>		Code allocated to a financial or non-financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 - Banking - Banking telecommunication messages - Business Identifier Code (BIC)	MHCBJPJT (Mizuho Bank Tokyo)	MHCBJPJT (Mizuho Bank)
	Receiving Settlement Parties	[0..1]	<RcvgStimPlies>		Identifies the chain of receiving settlement parties.		

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Table A31 continued

Message Element	ISO 20022 Multiplicity [0..1]	<XML Tag>	Type	Definition	Example: HSB Securities Limited send RVP message to JASDEC by esp.03.001	Example: Mizuho Bank Tokyo send DVP message to JASDEC by esp.03.001
Depository		<Dpsty>		First party in the settlement chain. In a plain vanilla settlement, it is the CSD where the counterparty requests to receive the financial instrument or from where the counterparty delivers the financial instruments.		
Identification	[1..1]	<Id>		Unique and unambiguous way to identify an organization.		
AnyBIC	[1..1]	<AnyBIC>	IdentifierSet	Unique and unambiguous way to identify an organization.	JJSDJPJT (JASDEC)	JJSDJPJT (JASDEC)
Party	[0..1]	<Pty>		Party that, in a settlement chain, interacts with the depository.		
Identification	[1..1]	<Id>		Identification of the party.		
AnyBIC	[1..1]	<AnyBIC>	IdentifierSet	Code allocated to a financial or non-financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)".	JBJPJPT (HSBC Securities Limited)	JBJPJPT (HSBC Securities Limited)
CashParties	[0..1]	<CshPties>		Cash parties involved in the transaction if different for the securities settlement parties.		
Debtor	[0..1]	<Dbr>		Party that owes an amount of money to the (ultimate) creditor.		
Identification	[1..1]	<Id>		Identification of the party.		
AnyBIC	[1..1]	<AnyBIC>	IdentifierSet	Code allocated to a financial or non-financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)".		
DebtorAgent	[0..1]	<DbrAgnt>		Financial institution servicing an account for the debtor.		
Identification	[1..1]	<Id>		Identification of the party.		
BICFI	[1..1]	<BICFI>	IdentifierSet	Code allocated to a financial or non-financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)".	BLCHKH (HSBC Bank USA, N.A.)	BLCHKH (HSBC Bank USA, N.A.)
Creditor	[0..1]	<Cdr>		Party to which an amount of money is due.		
Identification	[1..1]	<Id>		Identification of the party.		
AnyBIC	[1..1]	<AnyBIC>	IdentifierSet	Code allocated to a financial or non-financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)".		
CreditorAgent	[0..1]	<CdrAgnt>		Financial institution servicing an account for the creditor.		
Identification	[1..1]	<Id>		Identification of the party.		
BICFI	[1..1]	<BICFI>	IdentifierSet	Code allocated to a financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)".	MHCBBKHH (Mizuho Bank HK Branch)	MHCBBKHH (Mizuho Bank HK Branch)
SettlementAmount	[0..1]	<StlmAmt>	Amount	Total amount of money to be paid or received in exchange for the securities.	HKD 452,000	HKD 452,000
Amount	[1..1]	<Amt>	Amount	Amount of money in the cash entry.	DEBIT	CREDIT
CreditDebitIndicator	[1..1]	<CrdDbtInd>	CodeSet	Indicates whether an entry is a credit or a debit.		

Table A3.2: (b) sese.024 Securities Settlement Transaction Status Advice (Matched Results from CSD to Participants)

Document	Message Element	ISO20022 Multiplicity	<XML Tag>	Type	Definition	Example3: HSBCTK00gREC02 as matched status advice.	Example4: Mizuho Bank receive sese.024.001 as matched status advice.
SecuritiesSettlementTransactionStatusAdviceV03	TransactionIdentification	[1..1]	<Document>	Document Root	Message Root		
	AccountOwnerTransactionIdentification	[1..1]	<StctSctmTxId>	Text	Provides unambiguous transaction identification information.		
	AccountOwnerTransactionIdentification	[1..1]	<AcctOwntxId>	Text	Unambiguous identification of the transaction as known by the account owner (or the instructing	HSBCTK00gREC02	MIZUHOTK000
	AccountServicerTransactionIdentification	[0..1]	<AcctSvcrTxId>	Text	Unambiguous identification of the transaction as known by the account servicer.	JASDEC0001	JASDEC0001
	MatchingStatus	[0..1]	<MtgSts>		Provides the matching status of the instruction.		
	Matched	[1..1]	<Mtgcd>		Status is matched.	MACH (matched)	MACH (matched)
	Unmatched	[1..1]	<Umtcd>		Status is unmatched.		
	NoSpecifiedReason	[1..1]	<NoSpecfRsn>	CodeSet	Indicates that there is no reason available or to report.		
	Reason	[1..n]	<Rsn>		Specifies the reason of the unmatched status.		
	Code	[1..1]	<Cd>		Specifies the reason why the instruction has an unmatched status.		
	Code	[1..1]	<Cd>		Specifies the reason why the instruction has an unmatched status.		
	AdditionalReasonInformation	[0..1]	<AddtlRsnInf>	Text	Provides additional reason information that cannot be provided in a structured field.		
	TransactionDetails	[0..1]	<TxDtls>		Identifies the details of the transaction.		
	SafekeepingAccount	[1..1]	<SlkpgAcct>		Account to or from which a securities entry is made.		
	Identification	[1..1]	<Id>	Text	Unambiguous identification for the account between the account owner and the account servicer.	127491	0000100
	FinancialInstrumentIdentification	[1..1]	<FinInstmId>		Financial instruments representing a sum of rights of the investor vis-à-vis the issuer.		
	ISIN	[0..1]	<ISIN>	IdentifierSet	International Securities Identification Number (ISIN). A numbering system designed by the United Nations International Organization for Standardization (ISO). The ISIN is composed of a 2-character prefix representing the country of issue, followed by the national security number (if one exists), and a check digit. Each country has a national numbering agency that assigns ISIN numbers for securities in that country.	JP316570AC61 (ISIN: NTT DATA Corporation 26th unsecured straight corporate bonds)	JP316570AC61 (ISIN: NTT DATA Corporation 26th unsecured straight corporate bonds)
	SettlementQuantity	[1..1]	<StlmQty>		Total quantity of securities to be settled.		
	Quantity	[1..1]	<Qty>		Quantity of financial instrument in units, original face amount, or current face amount.		
	FaceAmount	[1..1]	<FaceAmt>	Amount	Quantity expressed as an amount representing the face amount, i.e., the principal, of a debt instrument.	JPY 7,899,300,000	JPY 7,899,300,000
SettlementAmount	Amount	[0..1]	<StlmAmt>	Amount	Total amount of money to be paid or received in exchange for the securities		
	CreditDebitIndicator	[1..1]	<CdtDblnd>	CodeSet	Indicates whether an entry is a credit or a debit.	HKD 452,000	HKD 452,000
	SettlementDate	[1..1]	<StlmDt>		Date and time at which the securities are to be delivered or received.	DEBIT	CREDIT
	Date	[1..1]	<Dt>	Date	Date in ISO format.		
	Date	[1..1]	<Dt>	Date	Specified date.		
	Date Time	[1..1]	<DtTm>	Date Time	Specified date and time.	2014-07-15	2014-07-15
	SecuritiesMovementType	[1..1]	<StctSvcrMvmtTp>	CodeSet	Specifies if the movement on a securities account results from a deliver or a receive instruction.	RECE (receive)	DELI (deliver)
	Payment	[1..1]	<Pmt>	CodeSet	Specifies how the transaction is to be settled, for example, against payment.		
	SettlementParameters	[1..1]	<StlmParams>		Parameters applied to the settlement of a security transfer.		
	SecuritiesTransactionType	[1..1]	<StctTxTp>		Identifies the type of securities transaction.		
ReceivingSettlementParties	Code	[1..1]	<Cd>	CodeSet	Securities transaction type expressed as an ISO 20022 code.	TRAD (trade)	TRAD (trade)
	Depository	[0..1]	<Dpsry>		Identifies the chain of receiving settlement parties.		
Depository		[0..1]			First party in the settlement chain. In a plain vanilla settlement, it is the CSD where the counterparty requests to receive the financial instrument or from where the counterparty delivers the financial instruments.		

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Table A3.2 continued

Message Element		ISO20022 Multiplicity	<XML Tag>	Type	Definition	Examples: HSBC Securities Limited receive sexe.024.001 as matched status advice.	Examples: Mizuho Bank receive sexe.024.001 as matched status advice.
Identification	AnyBIC	[1..1]	<Id>		Identification of the party.		
	Party	[1..1]	<AnyBIC>	IdentifierSet	Unique and unambiguous way to identify an organisation.	JJSDJPJT (JASDEC)	JJSDJPJT (JASDEC)
		[0..1]	<Pty>		Party that, in a settlement chain, interacts with the depository.		
		[1..1]	<Id>		Identification of the party.		
AnyBIC		[1..1]	<AnyBIC>	IdentifierSet	Code allocated to a financial or non-financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 'Banking - Banking telecommunication messages - Business Identifier Code (BIC)'	IBJPJPJT (HSBC Securities Limited)	IBJPJPJT (HSBC Securities Limited)
		[0..1]	<DivrgStumPties>		Identifies the chain of delivering settlement parties.		
	DeliveringSettlementParties	[0..1]	<Dpstry>		First party in the settlement chain. In a plain vanilla settlement, it is the CSD where the counterparty requests to receive the financial instrument or from where the counterparty delivers the financial instruments.		
		[1..1]	<Id>		Identification of the party.		
Identification	AnyBIC	[1..1]	<AnyBIC>	IdentifierSet	Unique and unambiguous way to identify an organisation.	JJSDJPJT (JASDEC)	JJSDJPJT (JASDEC)
	Party	[0..1]	<Pty>		Party that, in a settlement chain, interacts with the depository.		
		[1..1]	<Id>		Identification of the party.		
	AnyBIC	[1..1]	<AnyBIC>	IdentifierSet	Code allocated to a financial or non-financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 'Banking - Banking telecommunication messages - Business Identifier Code (BIC)'	MHCBJPJT (Mizuho Bank)	MHCBJPJT (Mizuho Bank)

Table A3.3: (h) sese.025 Securities Settlement Transaction Confirmation (Bond Settlement Confirmation from CSD to Participants)

Document	Message Element	ISO 20022 Multiplicity	<XML Tag>	Type	Definition	Examples: HSBC Securities Limited receive Securities Settlement Transaction Confirmation by using sese.025.001	Examples: Mizuho Bank receive Securities Settlement Transaction Confirmation by using sese.025.001
Document	Securities Settlement Transaction Confirmation V05	[1..1]	<Document>		Document Root		
	Transaction Identification Details	[1..1]	<SeriesStimTxConf>		Message Root		
	Account Owner Transaction Identification	[1..1]	<TxIdDtls>		Provides transaction type and identification information.		
	Account Owner Transaction Identification	[1..1]	<AcctOwnTxId>	Text	Unambiguous identification of the transaction as known by the account owner (or the instructing party managing the account).	HSBCTK005REC02	MIZUHOTK0001
	Account Servicer Transaction Identification	[0..1]	<AcctSvrTxId>	Text	Unambiguous identification of the transaction as known by the account servicer	JASDEC0001	JASDEC0001
	Securities Movement Type	[1..1]	<SecMovmntTp>	CodeSet	Specifies if the movement on a securities account results from a deliver or a receive instruction.	REDE (receive)	DELI (deliver)
	Payment	[1..1]	<Pmt>	CodeSet	Specifies how the transaction is to be settled, for example, against payment.	AGMT (against payment)	AGMT (against payment)
	Trade Details	[1..1]	<TradDtls>		Details of the trade.		
	Effective Settlement Date	[1..1]	<FtrvStimDt>		Date and time at which a transaction is completed and cleared, i.e., payment is effected and securities are delivered.		
	Date	[1..1]	<Dt>		Date in ISO format.		
	Date	[1..1]	<Dt>		Specified date.		
	Date Time	[1..1]	<DtTm>		Specified date and time.	2014-07-15	2014-07-15
	Financial Instrument Identification	[1..1]	<FinInstId>		Financial instrument representing a sum of rights of the investor vis-à-vis the issuer.		
	ISIN	[0..1]	<ISIN>	IdentifierSet	International Securities Identification Number (ISIN). A numbering system designed by the United Nations International Organization for Standardisation (ISO). The ISIN is composed of a 2-character prefix representing the country of issue, followed by the national security number (if one exists), and a check digit. Each country has a national numbering agency that assigns ISIN numbers for securities in that country.	JP26570AC61 (ISIN: NTT DATA Corporation 26th unsecured straight corporate bonds)	JP26570AC61 (ISIN: NTT DATA Corporation 26th unsecured straight corporate bonds)
	Quantity And Account Details	[1..1]	<QtyAndAcctDtls>		Details related to the account and quantity involved in the transaction.		
	Settled Quantity	[1..1]	<StldQty>		Quantity of financial instrument effectively settled.		
	Quantity	[1..1]	<Qty>		Quantity of financial instrument in units, original face amount or current face amount.		
	Face Amount	[1..1]	<FaceAmt>	Amount	Quantity expressed as an amount representing the face amount, i.e., the principal, of a debt instrument.		
	Safeguarding Account Identification	[1..1]	<SfpgAcct>		Account to or from which a securities entry is made.	JPY 7,899,300,000	JPY 7,899,300,000
	Settlement Parameters	[1..1]	<StlmParams>		Unambiguous identification for the account between the account owner and the account	1272491	0000100
Document	Securities Transaction Type	[1..1]	<SeriesTxTp>		Parameters which explicitly state the conditions that must be fulfilled before a particular transaction of a financial instrument can be settled. These parameters are defined by the instructing party in compliance with settlement rules in the market the transaction will settle in.		
	Code	[1..1]	<Cd>	CodeSet	Identifies the type of securities transaction.		
	Delivering Settlement Parties	[0..1]	<DlvrStlmParties>		Securities transaction type expressed as an ISO 20022 code.	TRAD (trade)	TRAD (trade)
	Depository	[0..1]	<Dpsty>		Identifies the chain of delivering settlement parties.		
	Identification	[1..1]	<Id>		First party in the settlement chain. In a plain vanilla settlement, it is the CSD where the counterparty requests to receive the financial instrument or from where the counterparty delivers the financial instruments.		
	AnyBIC	[1..1]	<AnyBIC>		Unique and unambiguous way to identify an organisation.	JUSDJPJT (JASDEC)	JUSDJPJT (JASDEC)
	Party	[0..1]	<Pty>		Party that, in a settlement chain, interacts with the depository.		
	Identification	[1..1]	<Id>		Identification of the party.		
	AnyBIC	[1..1]	<AnyBIC>	IdentifierSet	Code allocated to a financial or non-financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business identifier code (BIC)".	MHCBJPJT (Mizuho Bank)	MHCBJPJT (Mizuho Bank)

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Table A3.3 continued

Message Element	ISO20022 Multiplicity	<XML Tag> <MsgStmPties>	Type	Definition	Example: HSC Securities Limited receive Securities Settlement Transaction Confirmation by using sese.025.001	Example: Mizuho Bank receive Securities Settlement Transaction Confirmation by using sese.025.001
ReceivingSettlementParties	[0..1]	<RgstStmPties>		Identifies the chain of receiving settlement parties.		
Depository	[0..1]	<Dpstry>		First party in the settlement chain. In a plain vanilla settlement, it is the CSD where the counterparty requests to receive the financial instrument or from where the counterparty delivers the financial instruments.		
Identification	[1..1]	<Id>		Unique and unambiguous way to identify an organisation.		
AnyBIC	[1..1]	<AnyBIC>	IdentifierSet	Unique and unambiguous way to identify an organisation.	JJSDJPJT (JASDEC)	JJSDJPJT (JASDEC)
Party	[0..1]	<Pty>		Party that, in a settlement chain, interacts with the depository.		
Identification	[1..1]	<Id>		Identification of the party.		
AnyBIC	[1..1]	<AnyBIC>	IdentifierSet	Code allocated to a financial or non-financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)"	IBJPJPJT (HSBC Securities Limited)	IBJPJPJT (HSBC Securities Limited)
CashParties	[0..1]	<CshPties>		Cash parties involved in the transaction if different for the securities settlement parties.		
Debtor	[0..1]	<Dbr>		Party that owes an amount of money to the (ultimate) creditor.		
Identification	[1..1]	<Id>		Identification of the party.		
AnyBIC	[1..1]	<AnyBIC>	IdentifierSet	Code allocated to a financial or non-financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)"		
DebtorAgent	[0..1]	<DbrAg>		Financial institution servicing an account for the debtor.		
Identification	[1..1]	<Id>		Identification of the party.		
BICFI	[1..1]	<BICFI>	IdentifierSet	Code allocated to a financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)"	BLCHKH (HSBC Bank USA, N.A.)	BLCHKH (HSBC Bank USA, N.A.)
Creditor	[0..1]	<Cdr>		Party to which an amount of money is due.		
Identification	[1..1]	<Id>		Identification of the party.		
AnyBIC	[1..1]	<AnyBIC>	IdentifierSet	Code allocated to a financial or non-financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)"		
CreditorAgent	[0..1]	<CdrAg>		Financial institution servicing an account for the creditor.		
Identification	[1..1]	<Id>		Identification of the party.		
BICFI	[1..1]	<BICFI>	IdentifierSet	Code allocated to a financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)"	MHCBBKHH (Mizuho Bank HK Branch)	MHCBBKHH (Mizuho Bank HK Branch)
Intermediary	[0..1]	<Intrmy>		Financial institution through which the transaction must pass to reach the account with institution		
Identification	[1..1]	<Id>		Identification of the party.		
BICFI	[1..1]	<BICFI>	IdentifierSet	Code allocated to a financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)"	HKMAHKHC (DVP settlement is done by through HKD RTGS CHATS)	HKMAHKHC (DVP settlement is done by through HKD RTGS CHATS)
SettledAmount	[0..1]	<StlmAmt>		Amount effectively settled and which will be credited to/debited from the account owner's cash account. It may differ from the instructed settlement amount based on market tolerance level.		
Amount	[1..1]	<Amt>	Amount	Amount of money in the cash entry.	HKD 452,000	HKD 452,000
CreditDebitIndicator	[1..1]	<CdtDtdInd>	CodeSet	Indicates whether an entry is a credit or a debit.	DEBIT	CREDIT

Table A3.4: (d) and (e) pacs.009 Financial Institution Credit Transfer (Cash Settlement Instruction)

Message Element	ISO20022 Multiplicity	XML Tag	Type	Definition	example 7	example 8
Financial Institution Credit TransferVox(pacs.009.001.03)		<FinInstCrTrf>				
Group Header		<GrpHdr>		Set of characteristics shared by all individual transactions included in the message.		
Message Identification	[1..1]	<MsgId>	Text	Point-to-point reference, as assigned by the instructing party, and sent to the next party in the chain to unambiguously identify the message. Usage: The instructing party has to make sure that the message identification is unique per instructed party for a pre-aged period.	HKMA0001	HSBCHK0001
Creation Date/Time	[1..1]	<CreDtTm>	Date/Time	Date and time at which the message was created.	2014/7/15T11:30:30	2014/7/15T11:30:30
Number of Transactions	[1..1]	<NbOfTx>	Text	Number of individual transactions contained in the message.	1	1
Settlement Information	[1..1]	<SttlmInf>		Specifies the details on how the settlement of the transaction(s) between the instructing agent and the instructed agent is completed.		
Settlement Method	[1..1]	<SttlmMtd>	Code/Text	Method used to settle the (batch of) payment instructions.	CLRG	CLRG
Credit Transfer Transaction Information	[1..*]	<CdtTrfTxInf>		Set of elements providing information specific to the individual credit transfer(s).		
Payment Identification	[1..1]	<PmtId>		Set of elements used to reference a payment instruction.		
End-to-End Identification	[1..1]	<EndToEndId>	Text	Unique identification, as assigned by the initiating party, to unambiguously identify the transaction. This identification is passed on, unchanged, throughout the entire end-to-end chain. Usage: The end-to-end identification can be used for reconciliation or to link tasks relating to the transaction. It can be included in several messages related to the transaction. Usage: In case there are technical limitations to pass on multiple references, the end-to-end identification must be passed on throughout the entire end-to-end chain.	HSBCTK005RECo2	HSBCTK005RECo2
Transaction Identification	[1..1]	<TxId>	Text	Unique identification, as assigned by the first instructing agent, to unambiguously identify the transaction that is passed on, unchanged, throughout the entire interbank chain. Usage: The transaction identification can be used for reconciliation, tracking, or to link tasks relating to the transaction on the interbank level. Usage: The instructing agent has to make sure that the transaction identification is unique for a pre-agreed period.	HSBCTK005RECo2	HSBCTK005RECo2
Interbank Settlement Amount	[1..1]	<IntrBkSttlmAmt>	Amount	Amount of money moved between the instructing agent and the instructed agent.	HKD 452,000	HKD 452,000
Debtor	[1..1]	<Dbtr>		Financial institution that owes an amount of money to the (ultimate) financial institutional creditor.		
Financial Institution Identification	[1..1]	<FinInstnd>		Unique and unambiguous identification of a financial institution, as assigned under an internationally recognized or proprietary identification scheme.		
BICFI	[0..1]	<BICFI>	Identifier/Text	Code allocated to a financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)"	IBJPJPJT	IBJPJPJT
Debtor Agent	[0..1]	<DbtrAgnt>		Financial institution servicing an account for the creditor.		
Financial Institution Identification	[1..1]	<FinInstnd>		Unique and unambiguous identification of a financial institution, as assigned under an internationally recognized or proprietary identification scheme.		
BICFI	[0..1]	<BICFI>	Identifier/Text	Code allocated to a financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)"	BLCHKHXX	BLCHKHXX
Creditor Agent	[0..1]	<CdrAgnt>		Financial institution servicing an account for the creditor.		
Financial Institution Identification	[1..1]	<FinInstnd>		Unique and unambiguous identification of a financial institution, as assigned under an internationally recognized or proprietary identification scheme.		
BICFI	[0..1]	<BICFI>	Identifier/Text	Code allocated to a financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)"	MHC8KHXX	MHC8KHXX
Creditor	[1..1]	<Cdr>		Financial institution that receives an amount of money from the financial institutional debtor.		
Financial Institution Identification	[1..1]	<FinInstnd>		Unique and unambiguous identification of a financial institution, as assigned under an internationally recognized or proprietary identification scheme.		
BICFI	[0..1]	<BICFI>	Identifier/Text	Code allocated to a financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)"	MHC8JPJT	MHC8JPJT

Table A3.5: (f) camt.054 Bank to Customer Debit Credit Notification (Cash Settlement Confirmation)

Message Element	ISO20022 Multiplicity	XML Tag	Type	Definition	Example 9	Example 10
BarToCustomerDebitCreditNotificationV03 (camt.054.001.03)		<BkToCsmrDbt CdtNtfctm>				
Group Header						
Message Identification	[1..1]	<GrpHdr>	Text	Common information for the message.		
Creation Date Time	[1..1]	<MsgId>	Text	Point-to-point reference, as assigned by the account servicing institution, and sent to the account owner or the party authorized to receive the message, to unambiguously identify the message. Usage: The account servicing institution has to make sure that the message identification is unique per account owner for a pre-agreed period.	HKMA0001	HKMA0001
Identification	[1..1]	<CreDtTm>	Date Time	Date and time at which the message was created.	2014-7-15T11:30:45	2014-7-15T11:30:45
Creation Date Time	[1..1]	<Ntfctm>	Text	Notifies debit and credit entries for the account.		
Account	[1..1]	<Id>	Text	Unique identification, as assigned by the account servicer, to unambiguously identify the account notification.	100001	100001
Identification	[1..1]	<CreDtTm>	Date Time	Date and time at which the message was created.	2014-7-15T11:30:40	2014-7-15T11:30:40
Other	[1..1]	<Acct>	Text	Unambiguous identification of the account to which credit and debit entries are made.		
Identification	[1..1]	<Id>	Text	Unique and unambiguous identification for the account between the account owner and the account servicer.		
Other	[1..1]	<Othr>	Text	Unique identification of an account, as assigned by the account servicer, using an identification scheme.		
Identification	[1..1]	<Id>	Text	Identification assigned by an institution.	200	100
Entry	[0..*]	<Ntry>		Set of elements used to specify an entry in the debit credit notification. Usage: At least one reference must be provided to identify the entry and its underlying transaction(s).		
Amount	[1..1]	<Amt>	Amount	Amount of money in the cash entry.	HKD 452,000	HKD 452,000
Credit Debit Indicator	[1..1]	<CdtDbtInd>	Code Set	Indicates whether the entry is a credit or a debit entry.	CRDT	DBIT
Status	[1..1]	<Sts>	Code Set	Status of an entry on the books of the account servicer.	BOOK (booked)	BOOK (booked)
Bank Transaction Code	[1..1]	<BkTxCd>		Set of elements used to fully identify the type of underlying transaction resulting in an entry.		
Proprietary	[0..1]	<Ptry>		Bank transaction code in a proprietary form, as defined by the issuer.		
Code	[1..1]	<Cd>	Code Set	Proprietary bank transaction code to identify the underlying transaction.	(to be discussed)	(to be discussed)
Entry Details	[0..*]	<NtryDtls>		Provides details on the entry.		
Transaction Details	[0..*]	<TxDtls>		Provides information on the underlying transaction(s).		
Credit Debit Indicator	[1..1]	<CdtDbtInd>	Code Set	Indicates whether the transaction is a credit or a debit transaction.	CRDT	DBIT
Related Parties	[0..1]	<RltdPties>		Set of elements used to identify the parties related to the underlying transaction.		
Debtor	[0..1]	<Dbr>		Party that owes an amount of money to the (ultimate) creditor.		
Identification	[0..1]	<Id>		Unique and unambiguous identification of a party.		
Organisation Identifier	[1..1]	<OrgId>		Unique and unambiguous way to identify an organisation.		
Any BIC	[0..1]	<AnyBIC>	Identifier Set	Code allocated to a financial or non-financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)"	IBJPJPJT	IBJPJPJT
Debtor Agent	[0..1]	<DbrAgnt>		Financial institution servicing an account for the creditor.		
Financial Institution Identifier	[1..1]	<FinInstnd>		Unique and unambiguous identification of a financial institution, as assigned under an internationally recognized or proprietary identification scheme		
BICFI	[0..1]	<BICFI>		Code allocated to a financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)"	BLCHKHX	BLCHKHX

continued on next page

Table A3.5 continued

Message Element	ISO20022 Multiplicity	XML Tag	Type	Definition	Example, 9	Example, 10
BankToCustomerDebitCreditNotificationV03 (camt.054.001.03)		<BkToCsmrDbt CdtNtfctn>				
CreditorAgent	[0..1]	<CdttrAgt>		Financial institution servicing an account for the creditor.		
FinancialInstitutionIdentific	[1..1]	<FinInstnId>		Unique and unambiguous identification of a financial institution, as assigned under an internationally recognized or proprietary identification scheme.		
BICFI	[0..1]	<BICFI>		Code allocated to a financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)".	MHCBHKKHH	MHCBHKKHH
Creditor	[0..1]	<Cdttr>		Party that owes an amount of money to the (ultimate) creditor.		
Identification	[0..1]	<Id>		Unique and unambiguous identification of a party.		
OrganisationIdentificat	[1..1]	<OrgId>		Unique and unambiguous way to identify an organisation.		
AnyBIC	[0..1]	<AnyBIC>	IdentifierSet	Code allocated to a financial or non-financial institution by the ISO 9362 Registration Authority, as described in ISO 9362 "Banking - Banking telecommunication messages - Business Identifier Code (BIC)".	MHCBJPJT	MHCBJPJT

Appendix 4

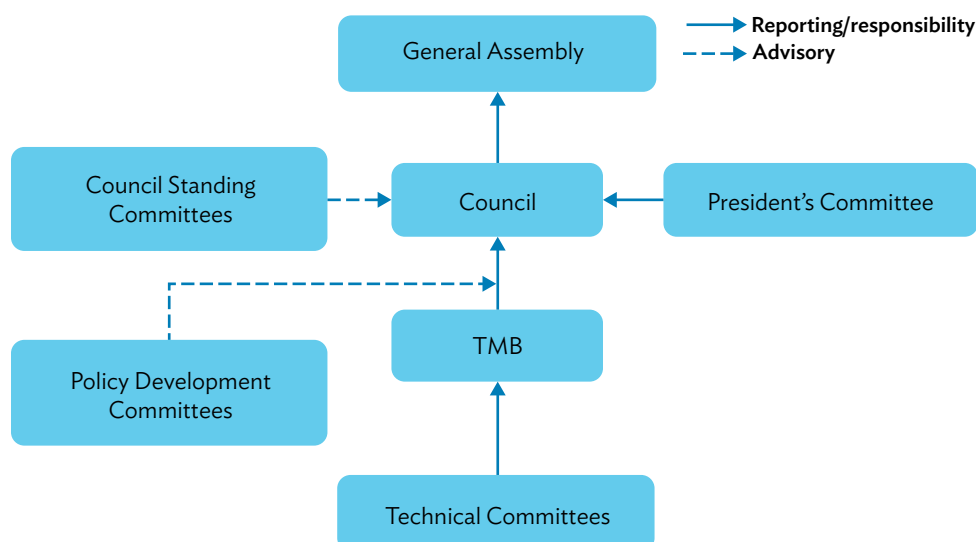
Overview of the International Organization for Standardization

Overview of International Standards

The International Organization for Standardization (ISO) is an independent, nongovernmental organization made up of members from national standards bodies of 165 countries as of January 2015. Members play a vital role in how ISO operates through the General Assembly that decides strategic objectives. There are three member categories (full member, subscriber member, and correspondence member). The Central Secretariat in Geneva, Switzerland coordinates the system directed by the Secretary-General (Figure A4.1).

ISO standards are developed by the people that need them, through a consensus process. Experts from all over the world develop the standards that are required by their sector. These experts are proposed by national members. ISO develops technical standards in many areas including technology, product safety, and energy management. More than 19,000 ISO

Figure A4.1: ISO Governance Structure



ISO = International Organization for Standardization, TMB = Technical Management Board

Note: The Secretary General is a member of the President's Committee, report to the President and to Council and receives advice from the policy and advisory groups (who also advise Council). The Central Secretariat is responsible for supporting the governance and policy and advisory structure and the operations of ISO.

Source: ISO website, http://www.iso.org/iso/home/about/about_governance.htm

standards have been published. The work is divided between technical committees. The development process is carried out through experts participating in committees and working groups. Agreement and approval of a standard reflects a double layer of consensus: first within the industry (market players) and then with the ISO country members.

ISO Technical Committee 68 (TC68) for Financial Services

There are two levels of country membership: participating member and observing member. Also, there are liaison organizations which are international or broadly based regional organizations working or interested in similar or related fields. Liaison organizations are categorized into three levels: level A (to participate at the technical committee or subcommittee levels and their working groups), level B (to receive information about the technical committees, subcommittees, and/or their working groups; mainly for intergovernmental organizations), and level C (to participate at the working group level only).

TC68 created important financial standards:

1. ISO 4217 Codes for the Representation of Currencies and Funds
2. ISO 6166 International Securities Numbering System (ISIN)
3. ISO 9362 Business Identifier Code (BIC)
4. ISO 9564 Personal Identification Number (PIN)
5. ISO 10383 Codes for Exchanges and Market Identification (MIC)
6. ISO 10962 Classification of Financial Instruments (CFI code)
7. ISO 13616 International Bank Account Number (IBAN)
8. ISO 15022 Scheme for Messages (Data Field Dictionary)
9. ISO 20022 Universal Financial Industry Message Scheme
10. ISO 17442 Legal Entity Identifier (LEI)

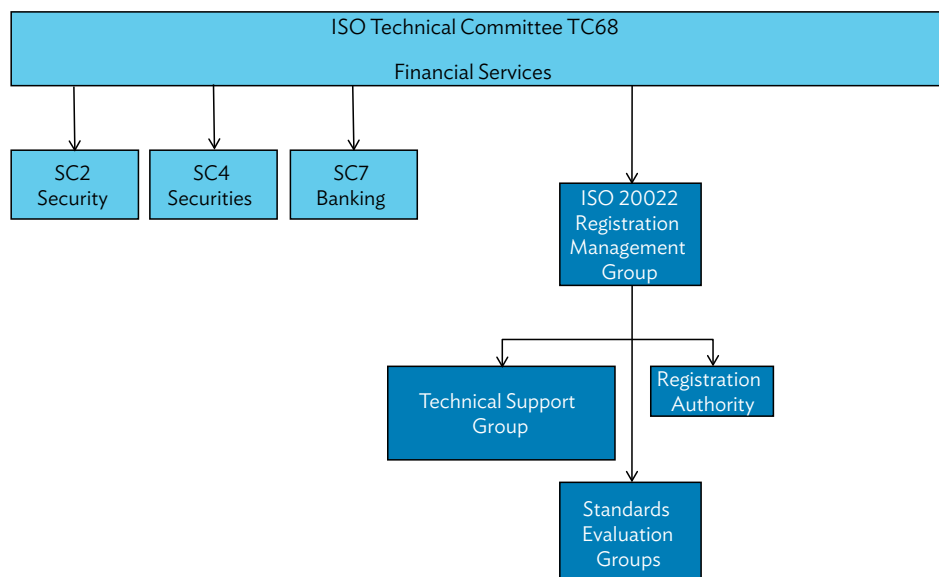
The governance and decision-making processes of ISO TC68 are as follows:

The international standards are developed through a worldwide network of national standards bodies. Such development work is performed within technical committees, their subcommittees, and working groups. There were 163 national standards bodies represented within the ISO Framework as of January 2015. The ISO standards development process is carried out through experts participating in committees and working groups. Agreement and approval of a standard reflects a double layer of consensus: first within the industry (market players) and then across ISO member countries (Figure A4.2).

Registration Management Group

The Registration Management Group (RMG) is the highest ISO 20022 registration body: it monitors the overall registration process and has oversight of the Registration Authority. It reports directly to ISO TC68 and is the umbrella organization that deals with all matters related to ISO 20022. The RMG membership comprises senior industry experts nominated by ISO member countries or category A liaison organizations.

The role of RMG is to promote and support the involvement of financial service actors to facilitate the registration and maintenance of high-quality, globally relevant, ISO 20022 compliant business models for the exchange of information for financial services.

Figure A4.2: ISO TC68 for Financial Services

ISO = International Organization for Standardization, SC = steering committee, TC = technical committee.
Source: ISO.

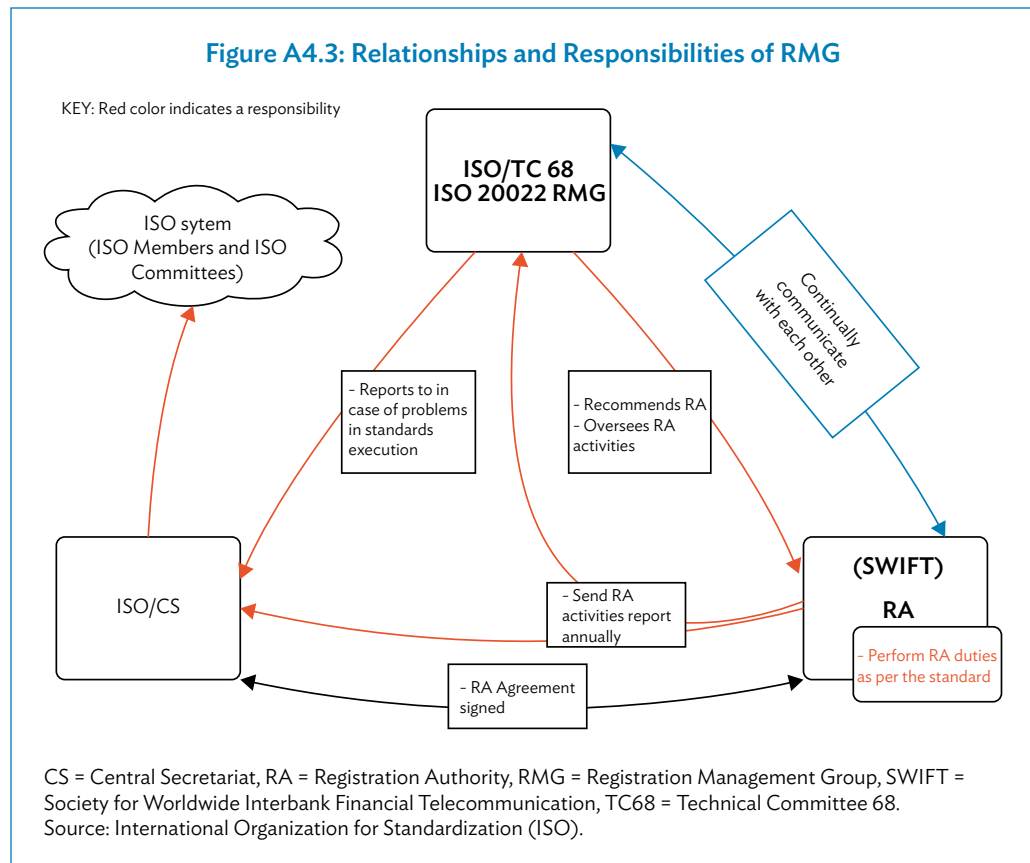
Essential activities of the RMG in support of this objective are to

1. oversee the ISO 20022 Registration Authority (RA);
2. ensure the Registration Process operates effectively and responds to technical and business challenges in support of the Registration Authority, including the setup and disbandment of sub-groups (e.g., Standards Evaluation Groups);
3. review and approve Business Justifications to manage the business scope of the ISO 20022 repository seeking to achieve full coverage of financial service activities;
4. provide a contact point for any organization wishing to engage with the standard; and
5. proactively communicate on all matters related to ISO 20022.

The mission of RMG is to ensure that ISO 20022 is a trusted standard providing high-quality business models for the exchange of information for financial services.

The key dimensions in support of this mission that the RMG must strive to deliver are

1. continuous engagement: trust that the registration process, and the management of that process, is open, accessible, and founded on a fair, reasonable, and non-discriminatory governance model;
2. effectiveness and efficiency: an efficient registration process that produces high-quality ISO 20022 compliant deliverables in a sustainable, timely, and accessible manner; and
3. delivery: ensure that the registration process produces deliverables that are relevant to the business needs of financial services.



The relationships and responsibilities of RMG are shown in Figure A4.3.

ISO 20022 RMG registration and maintenance processes are listed below:

1. The RMG plays a critical role in the registration process, since representative engagement from the industry is important.
2. The key document that the RMG focuses on is the Business Justification that describes the scope and need for new ISO 20022 messages.
3. These Business Justifications are, in fact, like a proposal from a community of users who are expressing a need to define ISO 20022 messages.
4. The critical role of the RMG membership is to avoid overlapping scopes of ISO 20022 messages, and to manage the resources needed for the registration process (1 month).
5. The submitting organization retains any intellectual property rights.
6. The Standards Evaluation Groups (SEGs) are critical in that they evaluate the ISO 20022 messages from a business perspective. Again, representative engagement from the industry is important (maximum of 3 months).
7. Messages become available in the ISO 20022 repository after evaluation, and the status of a submission is fully transparent

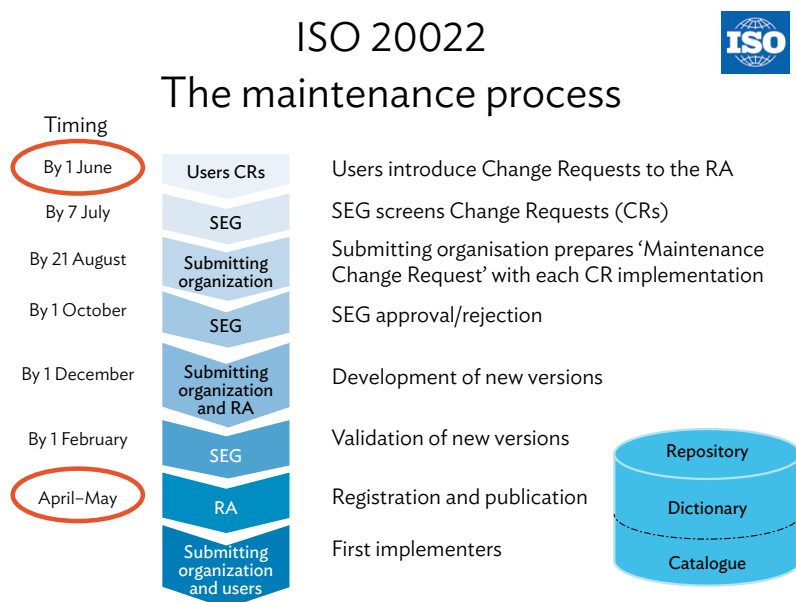
Figures A4.4 and A4.5 show the registration and maintenance processes, respectively, of ISO 20022.

Figure A4.4: Registration Processes of ISO 20022



RA = Registration Authority, RMG = Registration Management Group, SEG = Standards Evaluation Group.
Source: International Organization for Standardization (ISO).

Figure A4.5: Maintenance Processes of ISO 20022



RA = Registration Authority, SEG = Standards Evaluation Group.
Source: International Organization for Standardization (ISO).

Benefits of ISO 20022 financial services standardization

Industry standards are critical to the safe operation of the payments industry. The strategic benefits include

1. reduced operational costs: improved operational efficiency and reduced indirect costs;
2. reduced cost of compliance and risk management: reduced indirect costs associated with operational and legal compliance testing and maintenance;
3. improved Integrity at less cost: interoperability across networks and infrastructure;
4. greater service provider choice at reduced cost: open standards will improve the range and choice of service providers;
5. faster and cheaper industry innovation: easier to reuse and extend common services, reducing time to market; and
6. end-user benefits: common standards for payments aid straight-through-processing and the simplification of back-office operations.

By introducing ISO 20022, the following benefits can be realized:

1. the capability to extend both payment and remittance data in support of emerging requirements, such as enhanced data or fraud intelligence data sharing;
2. improved industry interoperability between counterparties, both within the economy and cross-border in other markets and currencies, thereby reducing complexity, costs, and risk of data manipulation and conversion in the interbank space and between banks and end users;
3. improved payments resilience via cross-scheme interoperability for scheme participants, and easier redirection of payment flows irrespective of payment type for end users, particularly in times of crisis or during service disruptions; and
4. reduced barriers to entry to the economy payments infrastructure and supply market, including banks.

Standards Evaluation Group (SEG)

The ISO 20022 SEGs are made up of industry experts in specific business domains of the financial industry as defined by ISO 20022. SEG members are nominated by ISO TC68 member countries and liaison organizations (Table A4.1).

The role of an SEG is threefold:

1. to ensure that the right industry groups are informed of proposed developments to ensure all business requirements will be addressed;
2. to validate the newly developed message definitions from a business perspective as representative of future users in order to ensure that what will be posted in the ISO 20022 repository by the Registration Authority really addresses the needs of future communities of users as described in the Business Justification accepted by the RMG in the first place; and
3. to approve changes to existing message definitions.

Table A4.1: SEG-ISO 20022 Standards Evaluation Groups

	ISO member	TC68 member	RMG	PSEG	SSEG
BN	Correspondent member (ABCI)				
KH	Correspondent member (ISC)				
CN	Full member (SAC)	Participant member	Member (PBOC)		
HK	Correspondent member (ITCHKSAR)	Observing member			
ID	Full member (BSN)				
JP	Full member (JISC)	Participant member	Member (BOJ)	Member (BOJ, Zenginkyo, NTT Data, JPMC, BTMUFI)	Member (BOJ, JASDEC, Mizuho Bank, BTMUFI, NTT Data)
KR	Full member (KATS)	Participant member	Member (KFTC and KATS)	Member (KFTC)	
LA	Subscriber member (DISM)				
MY	Full member (DSM)	Observing member			
MM	Correspondent member (MSTRD)				
PH	Full member (BSP)	Observing member			
SG	Full member (SPRING SG)	Participant member	Member (Standard Chartered Bank, Deutsch Bank)	Member	Member (Standard Chartered Bank)
TH	Full member (TISI)	Observing member			
VN	Full member (STAMEQ)				

ABCI = Authority for Building Control and Construction Industry of Brunei; ASEAN+ 3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; BN = Brunei Darussalam; BOJ = Bank of Japan; BSN = Badan Standardisasi Nasional (National Standardization Agency of Indonesia); BSP = Bangko Sentral ng Pilipinas; BTMUFI = Bank of Tokyo Mitsubishi UFJ; CN = People's Republic of China; DISM = Department of Intellectual Property, Standardization, and Metrology; DSM = Department of Standards Malaysia; HK = Hong Kong, China; ID = Indonesia; ISC = Institute of Standards of Cambodia; ISO = International Organization for Standardization; ITCHKSAR = Innovation and Technology Commission of the Government of the Hong Kong Special Administrative Region; JASDEC = Japan Securities Depository Center; JISC = Japanese Industrial Standards Committee; JP = Japan; JPMC = J.P. Morgan Chase Bank; KATS = Korean Agency for Technology and Standards; KH = Cambodia; KR = Republic of Korea; LA = Lao People's Democratic Republic; MM = Myanmar; MSTRD = Myanmar Scientific and Technological Research Department; MY = Malaysia; PBOC = People's Bank of China; PH = Philippines; PSEG = Payments Standards Evaluation Group; RMG = Registration Management Group; SAC = Standardization Administration of China; SG = Singapore; SPRING SG = Standards, Productivity, and Innovation Board, Singapore; SSEG = Securities Standards Evaluation Group; STAMEQ = Directorate for Standards, Metrology, and Quality of Viet Nam; TC68 = Technical Committee 68; TH = Thailand; TISI = Thai Industrial Standards Institute; VN = Viet Nam.

Source: ISO.

Payments SEG. The scope of the Payments SEG includes the messages supporting transactions and business processes related to credit transfers, direct debits, and checks.

Securities SEG. The scope of the Securities SEG includes the messages supporting transactions and business processes related to equities, fixed income, funds, and derivatives.

Appendix 5

Overview of the International Securities Identification Number

Introduction

The International Organization for Standardization (ISO) 6166 provides a uniform structure for the International Securities Identification Numbering (ISIN) system that uniquely identifies securities (bonds). The latest version of the ISO Standard 6166 was adopted and implemented (effective 1 August 2014). The ISIN consists of a prefix using the alpha-2 country code, the basic number which is nine characters in length, and a check digit. Figure A5.1 provides an example of an ISIN for a government bond.

The issuing economy of a bond is determined by the economy where the bond is registered in a depository of the economy, regardless of the economy of issuer or currency of denomination. ISIN is allocated by the national numbering agency (NNA) of an economy.

By adopting ISIN, local markets will gain more visibility in the global financial marketplace, enabling stronger cross-border flows in both directions.

Due to agreements among all members of the Association of National Numbering Agencies (ANNA), each NNA has unrestricted access to all other members' ISINs and defined data elements.

Overview of ANNA and NNA

ANNA is a Belgian cooperative incorporated in 1992 and acts as the Registration Authority for ISO 6166 (ISIN). As of June 2015, ANNA had 116 NNA members, consisting of 90 full members and 26 partners, representing ISIN adoption and usage in 122 economies worldwide. ANNA does not appoint entities to act as NNAs. The steps required to establish an NNA are described later in this appendix.

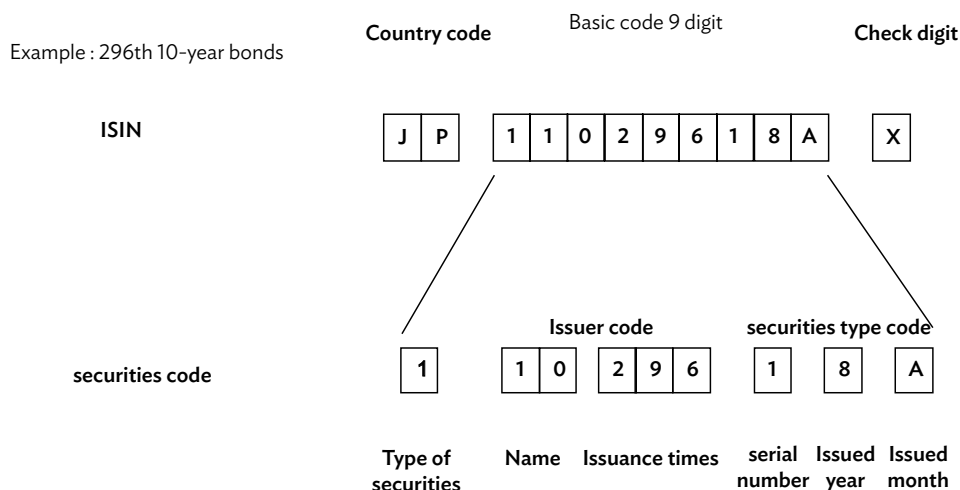
The objectives of ANNA are to

1. globally develop and promote standards under ANNA's control;
2. commit to work for the benefit of the financial industry;
3. codify, classify, and make data accessible and available to industry participants;
4. contribute to the ISO standards development process; and
5. ensure timeliness, accuracy, and quality in the application of standards.

An overview of ANNA-related international standards is shown in Figure A5.2.

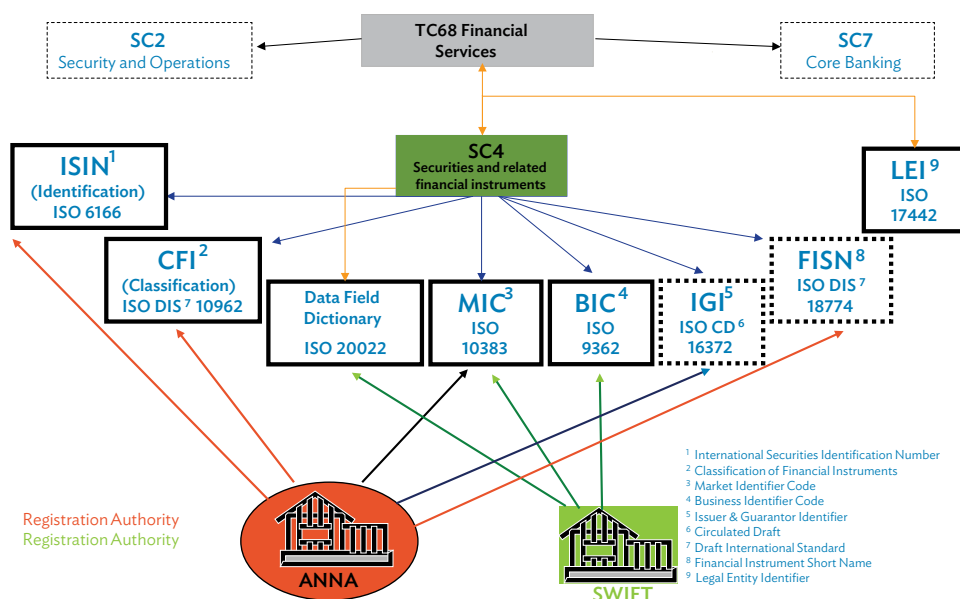
ANNA-related organizations are shown in Figure A5.3.

Figure A5.1: Sample ISIN Code Structure for a Government Bond



ASEAN+ 3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; BN = Brunei Darussalam; CN = People's Republic of China; CUSIP = Committee on Uniform Security Identification Procedures; HK= Hong Kong, China; ID = Indonesia; ISIN = International Securities Identification Number; ISO = International Organization for Standardization; JP = Japan; KH = Cambodia; KR = Republic of Korea; LA = Lao People's Democratic Republic; MM = Myanmar; MY = Malaysia; PH = Philippines; SG = Singapore; TH = Thailand; US = United States; VN = Viet Nam. Source: NTT DATA Corporation.

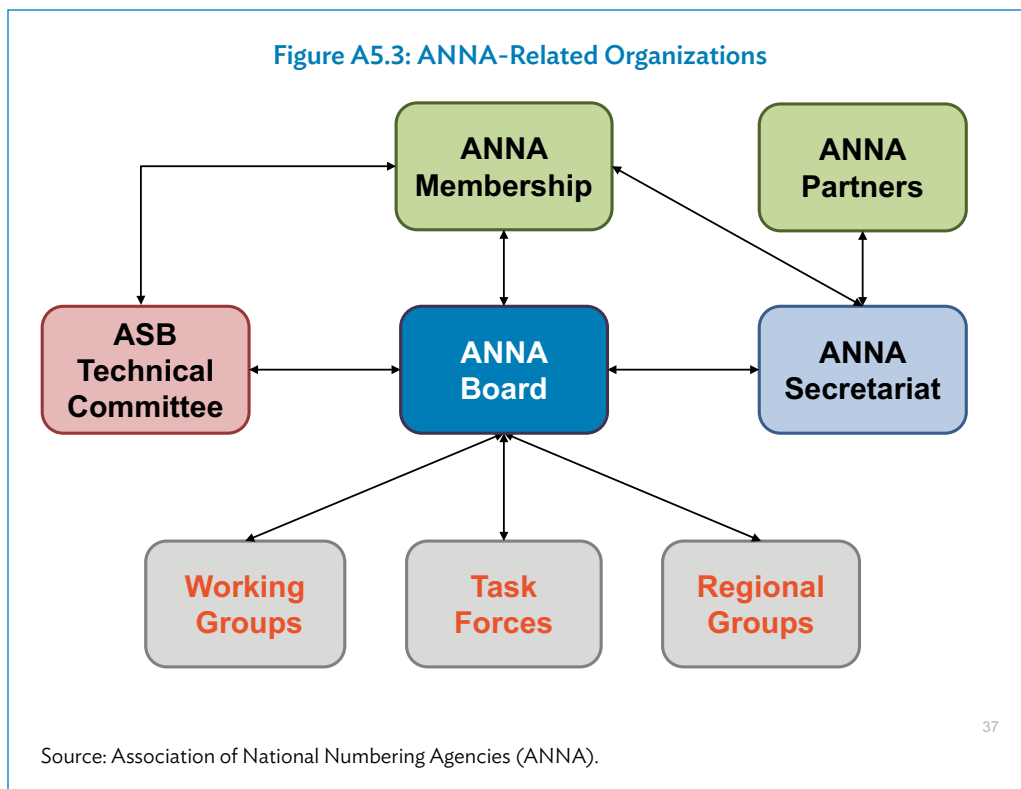
Figure A5.2: Overview of ANNA-Related International Standards



SC = steering committees, SWIFT = Society for Worldwide Interbank Financial Telecommunication, TC68 = Technical Committee 68.

Source: Association of National Numbering Agencies (ANNA).

Figure A5.3: ANNA-Related Organizations



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In ASEAN+3, the 10 economies in which bond markets already exist have each established an NNA, although NNA responsibilities in the Philippines will (possibly) be transitioning from the Philippines Dealing & Exchange Corp. to the Securities and Exchange Commission. Table A5.1 shows the NNAs in ASEAN+3 economies.

Steps to Establishing an NNA

There steps required to establish an NNA include the following:

1. The jurisdiction's capital market endorses the move to adopt ISO standards for financial instruments.
2. The regulator or market supervisory body appoints the entity to act as the NNA for that jurisdiction; ANNA recommends that only one entity is appointed.
3. An application is submitted to ANNA when the entity is in a position to start allocating ISIN.
4. Upon successful adherence to partnership requirements, application for full membership can be made; the application is voted on by full members of ANNA.
5. The documents and agreements required are ANNA's Articles of Incorporation, a partnership agreement (only applicable for partnership), an application for membership (only applicable for full membership), a letter of understanding (only applicable for full membership), and membership guidelines (for full members and partners). Membership guidelines are regularly updated and approved at general meetings.

Table A5.1: NNAs in ASEAN+3

ASEAN+3 (existing)			
Country Code	National Numbering Agency	Market Segment	Total ISINs allocated (July 2014)
CN	China Securities Regulatory Commission	Regulator	17,778
HK	Hong Kong Exchanges and Clearing, Ltd.	Stock Exchange	20,404
ID	Indonesian Central Securities Depository	CSD	6,117
JP	Tokyo Stock Exchange	Stock Exchange	37,094
KR	Korean Exchange	Stock Exchange	499,074
MY	Bursa Malaysia	Stock Exchange	8,627
PH	Transitional phase (currently covered by the US NNA)	Regulator (Q2 - Q3 2015)	1,555
SG	Singapore Exchange Limited	Stock Exchange	2,627
TH	Thailand Securities Depository	CSD	21,068
VN	Vietnam Securities Depository	CSD	2,622
ASEAN+3 economies (pending NNA appointment)			
Country Code	National Numbering Agency	Substitute NNA	ISINs assigned (July 2014)
BN	Brunei Darussalam	Germany	3
KH	Cambodia	Germany	1
LA	Lao People's Democratic Republic	Germany	1
MM	Myanmar	Germany	1

BN = Brunei Darussalam; CN = People's Republic of China; HK = Hong Kong, China; ID = Indonesia; ISIN = International Securities Identification Number; JP = Japan; KH = Cambodia; KR = Republic of Korea; LA = Lao People's Democratic Republic; MM = Myanmar; MY = Malaysia; NNA = national numbering authority; PH = Philippines; SG = Singapore; TH = Thailand; VN = Viet Nam.
Source: Association of National Numbering Agencies.

Allocation of ISIN

The NNA in each economy is responsible for issuing the ISIN for bonds issued in that economy (Figure A5.4). NNAs are coordinated through ANNA. One of the ANNA's recommendations states that the NNAs should allocate ISINs within 24 hours following the request, while also making the ISIN available to users at the same time.

Global ISIN Database and ANNA Service Bureau

ANNA developed the ANNA Service Bureau (ASB) to collect and disseminate ISIN information via a common platform to meet the needs of its members. ASB's services are also available to external market participants via subscription. This development emphasizes ANNA's commitment to moving the industry toward straight-through-processing. Working in conjunction with the NNAs, the ASB assists with improving all aspects of the timely, accurate, and standardized identification of financial instruments, as well as equitable distribution of this information. The ASB and its partners, Swiss Infrastructure and Exchange (SIX) Financial (Switzerland) and the Committee on Uniform Securities Identification

Figure A5.4: Typical Flow of ISIN Allocation

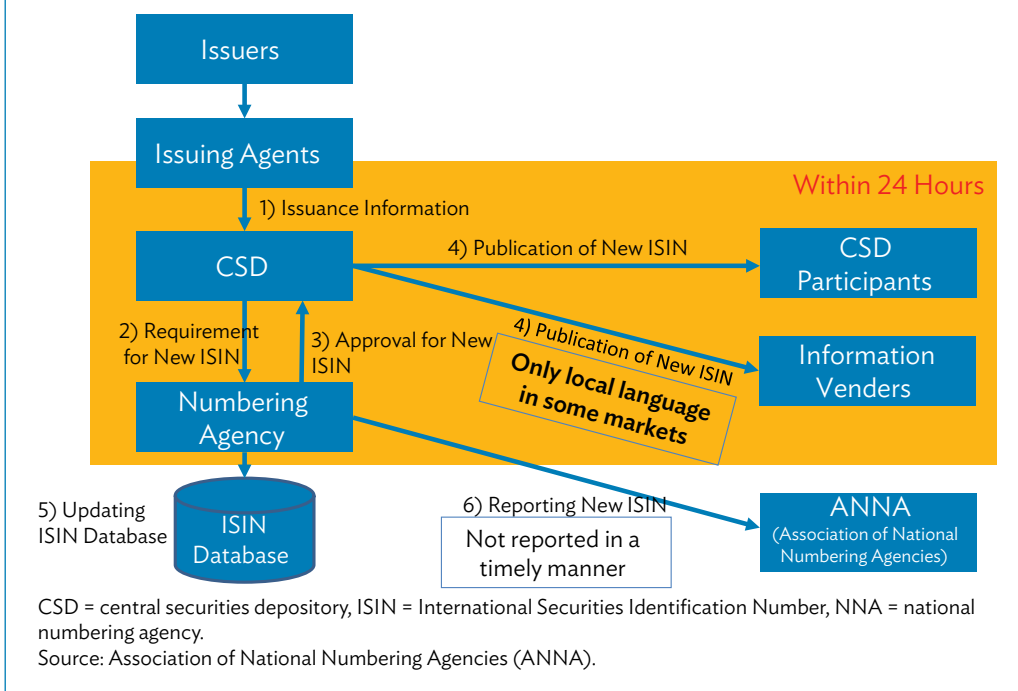
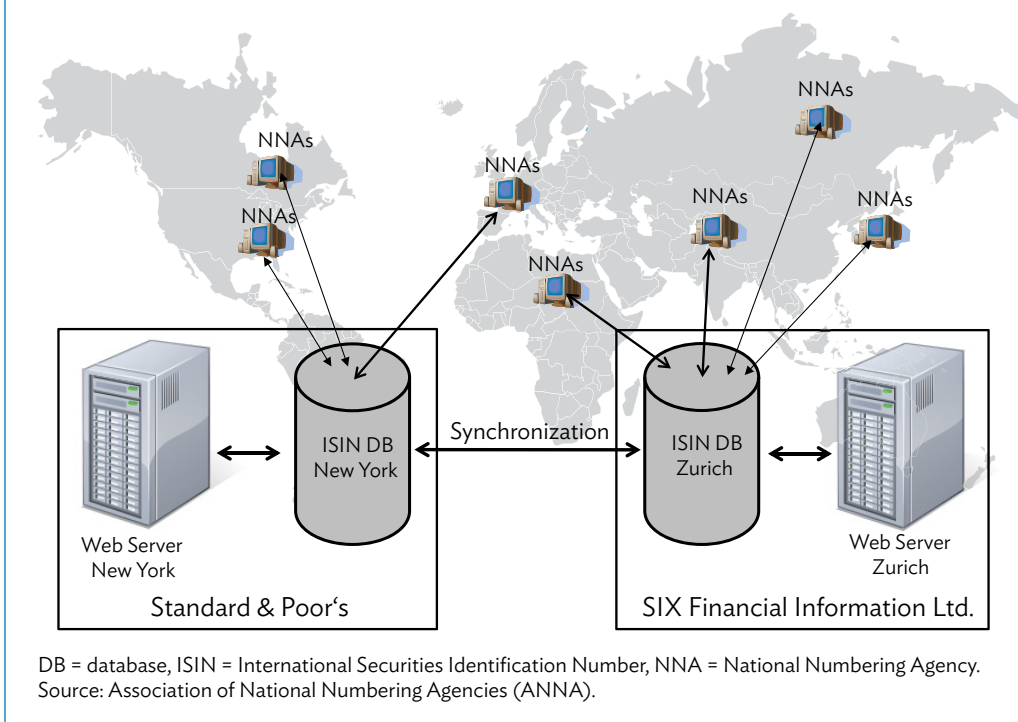


Figure A5.5: ANNA Service Bureau System



Procedures (CUSIP) Global Services (United States), operate as a central hub to receive and consolidate ISIN data from all ANNA members and partners, and assists in the dissemination of this information to global market participants. Figure A5.5 shows illustrates the functions of the ASB.

Key Issues Related to ISIN

Universal acceptance of ISIN is important in meeting the goal of cross-border straight-through-processing, which is the electronic handling of trade clearing and settlement without manual intervention. ISINs are used by share custodians to track the holdings of institutional investors in a format that is consistent across markets worldwide.

The ASEAN+3 Bond Market Forum Sub-Forum 2 is promoting the following ISIN-related standards:

- ISIN is available within 24 hours following the request of issuance,
- the sharing of ISIN with investors in other markets, and
- all information is written in English.

Appendix 6

Cross-Border Use of Collateral and Repo

The ASEAN+3 Bond Market Forum Sub-Forum 2 (ABMF SF2) has entered into Phase 3. This phase includes a survey on the cross-border use of collateral. This issue has many facets, including key factors influencing the demand for cross-border use of collateral; the current environment with central banks, internationally active banks, markets, and infrastructures; policy considerations; arrangements for the use of foreign collateral; and potential central bank actions. The mandate of ABMF SF2 in this respect is interpreted in such a manner that this survey should not result in empirical research with regard to market developments in the area of cross-border use of collateral, but rather in an overview of the legal and logistical complexities requiring further attention and resolution in order to facilitate such use. It starts with the domestic situation on an economy-by-economy basis. From there, it turns to cross-border use of collateral. Indeed, the complexities of the cross-border use of collateral can only be properly analyzed based on a thorough understanding of collateralization in a national context.¹

Eligible Collateral

Theoretically, most tangible and non-tangible assets may be used as collateral in order to ensure the fulfillment of obligations. For example, in the Settlement Finality Directive (SFD) of the European Union (EU),² collateral security is defined as “all realizable assets provided under a pledge (including money provided under a pledge), a repurchase or similar agreement, or otherwise, for the purpose of securing rights and obligations potentially arising in connection with a system, or provided to central banks of the Member States or to the future European central bank.”³ However, in the financial markets, collateral consists usually of bonds, shares, or other debt instruments. This is also called financial collateral. In the Financial Collateral Arrangements Directive (FCAD) of the EU,⁴ this notion is defined as “shares in companies and other securities equivalent to shares in companies and bonds and other forms of debt instruments if these are negotiable on the capital market, and any other securities which are normally dealt in and which give the right to acquire any such shares, bonds or other securities by subscription, purchase or exchange or which give rise to a cash settlement (excluding instruments of payment) including units in collective investment undertakings, money market instruments and claims relating to or rights in or in respect of any of the foregoing.”⁵

¹ This document was originally drafted by Mr. Erwin Nierop of the European Central Bank when he was a secondee of the ADB. The ADB Secretariat appreciates his contribution, including insightful comments and advice, to this initiative.

² European Parliament. 1998. Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on Settlement Finality in Payment and Securities Settlement Systems.

³ European Parliament. 1998. Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on Settlement Finality in Payment and Securities Settlement Systems, Article 2(m).

⁴ European Parliament. 2002. Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on Financial Collateral Arrangements.

⁵ European Parliament. 2002. Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on Financial Collateral Arrangements, Article 2.1(e).

Theoretically, the bonds may be in the form of individual or global certificates or in the form of book-entry rights. Individual certificates may be held individually and may be held in, for example, bank safes. Global certificates may be co-owned by different owners and are usually deposited with central securities depositories. In the FCAD, book entry rights are under book-entry securities collateral defined as follows: “financial collateral provided under a financial collateral arrangement which consists of financial instruments, title to which is evidenced by entries in a register or account maintained by or on behalf of an intermediary.”⁶ As in the case of payments with money in scrip form, transfers of book-entry securities are relatively easy in that they do not require physical transfers of certificates or, alternatively, documents proving the transfer of rights. Such transfers may be made to an own account of the collateral taker (in the case of repos) or to a pledge account (in the case of pledge). Collateralization of physical certificates is of course nothing new; in fact, it used to be practice before the introduction of book-entry securities. However, both in the case of repos as well as pledge, it raises a number of issues which are less important in dematerialized systems with book-entry rights. For example, in a repo transaction, the owner of the physical certificate could become temporarily the holder (in Latin: *traditio brevi manu*). If the physical security is held in the vaults of a bank, this bank could become from holder for the original owner holder for the new temporary owner (in Latin: *traditio longa manu*). In pledge constructions, it is usually necessary to bring the pledged assets out of the sphere of control of the collateral provider, which means in the case of physical assets that they have to be deposited somewhere else or, in the case of keeping by a third party, that they would have to be earmarked as having been pledged.

Repurchase Agreements (repos)

As far as relevant here, repos are transactions where parties agree to buy and sell bonds and reverse these transactions at a certain date against a certain price. In essence, this entails a (temporary) transfer of full ownership from the seller to the buyer. In the FCAD, this is under title transfer financial collateral arrangement defined as “an arrangement including repurchase agreements, under which a collateral provider transfers full ownership of financial collateral to a collateral taker for the purpose of securing or otherwise covering the performance of relevant obligations.”⁷

Repos are an attractive method for collateralization. First, they make the collateral taker independent of the collateral provider in case of the latter’s insolvency. Second, the collateral taker may stipulate that he or she may resell the collateral and, instead of returning the original securities, return securities of the same type. Third, statutory provisions allowing, the collateral taker may appropriate the securities and hold or sell at his or her discretion. In certain jurisdictions, the problem though with repos may be that they may be considered as sham constructions hiding under the veil of an outright transaction that its actual purpose is only a temporary transfer of ownership for collateralization, thus avoiding statutory provisions on pledge, which are usually more cumbersome for the collateral taker. This could lead to invalidity and unenforceability of repos. Another challenge may be that repos in certain jurisdictions may be considered as contracts of speculation or gambling, which may for example be the case in jurisdictions applying Shariah law.

⁶ European Parliament. 2002. Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on Financial Collateral Arrangements, Article 2.1(g).

⁷ European Parliament. 2002. Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on Financial Collateral Arrangements, Article 2.1(b).

In view of the importance of repos for the smooth functioning of the financial markets and collateralization in particular, the above uncertainties have led the EU to adopt in the SFD and the FCAD the principle that repos are legally valid and enforceable and EU member states had to implement this principle in their national legislation. In addition, the International Swaps Dealers Association took up on this topic and it developed a Master Repurchase Agreement, which is multi-jurisdictional, multiproduct, and multi-lingual. It is intended to be legally valid and enforceable in all relevant jurisdictions. It covers a number of financial products in separate annexes to the body of the agreement, and it is available in a number of different languages. In order to ensure the point of legal validity and enforceability, the International Swaps Dealers Association has submitted the Master Repurchase Agreement to legal counsel in the relevant jurisdictions in order to seek confirmation that it is legally valid and enforceable in these jurisdictions with generally positive replies.

Pledge Agreements (pledge)

Pledge agreements are transactions where the pledger or collateral provider agrees to establish a priority right in favor of the pledgee or collateral taker in case the collateral provider does not fulfill its financial obligations. In the FCAD, this is under security financial collateral arrangement defined as “an arrangement under which a collateral provider provides financial collateral by way of security in favor of, or to, a collateral taker, and where the full ownership of the financial collateral remains with the collateral provider when the security right is established.”⁸ Thus, in contrast to the situation in the case of repos where there is a full transfer of ownership from the collateral provider to the collateral taker, in the case of pledge there is no such transfer of full ownership but merely the establishment of a priority right.

This usually raises a number of questions. First, are there any specific formalities to establish a pledge? Second, are there any other parties with priority rights, possibly of a higher ranking, which may cover the pledged assets as well? These may, for example, be tax authorities on the basis of statutory provisions or other counterparties of the collateral provider on the basis of concurrent contracts. Third, in case of nonfulfillment of contractual obligations by the collateral provider, may the collateral taker—although he does not have the full ownership of the collateral—nevertheless realize the collateral? If the nonfulfillment is due to insolvency, could the liquidating authority postpone the realization of the collateral and for how long? If the waiting period is very long, this may hamper the smooth functioning of the financial markets. Fourth, is the collateral taker authorized to use the collateral during the duration of the pledge agreement? Indeed, immobilization of collateral for the duration of the pledge agreement may hamper the smooth functioning of the financial markets. Fifth, how can the collateral taker be protected against a situation where the collateral provider pledges the assets more than once at the same time? Obviously, answers to these questions may usually be found in statutory provisions and case law, but it is important to identify the relevant issues at stake. Indeed, the more and the heavier the conditions for pledge, the less suitable the instrument becomes for financial collateral, where eventually considerations of financial stability impose the possibility of the fast realization of collateral. That said, many systems are pledge-based and this is in itself not prohibitive for financial collateral, but it is important to (i) achieve clarity on the situation and (ii) identify those impediments which are so grave that they may hamper the smooth functioning of the financial markets, pose a threat to financial stability, and thus require contractual or statutory solutions.

⁸ European Parliament. 2002. Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on Financial Collateral Arrangements, Article 2.1(c).

Comparing repos and pledge, it is clear that from a perspective of the security of the collateral taker repos achieve the stronger protection (provided of course that they are valid and enforceable). The collateral taker obtains full ownership, may use the collateral without restrictions, and can realize it immediately (also through appropriation) whenever relevant. Repos may, therefore, be the preferred option for collateral taking. However, there may be other considerations which may rather support the use of pledge for collateral taking. As indicated above, the most important consideration may be that there are already pledge-based systems in place and that they seem to work well, which reduces the business case to switch over to pledge-based systems.

Other Techniques

There are other techniques for the establishment of collateral such as the creation of pools of collateral. For example, while repos are nowadays widely used for the taking of collateral, there may be other types of agreements being used for the collateralization of financial obligations. Furthermore, in certain countries collateral pools are established, which are governed by specific statutory provisions.

Cherry-Picking

In case of insolvency, many jurisdictions allow a liquidating authority to pick and choose which obligations will be fulfilled (the transactions in-the-money) and which ones will not (the transactions out-of-the-money). In the first case, the collateral taker will usually not have to fulfill his or her obligations as long as the collateral provider does not do so from his or her side (in Latin: *exceptio non adimpleti contractus*). In the latter case, the collateral taker will, one way or another, have to realize the collateral and after realization file a claim as a general creditor in the bankrupt estate in case of any losses.

Netting

The notion of netting was introduced in the financial markets in the 1980s in order to diminish systemic or Herstatt risk.⁹ It was intended to provide for the possibility of compensation or set-off of mutual rights and obligations between counterparties in transactions leading to a situation where only the net (hence, netting) debt had to be paid without a possibility for cherry-picking. Netting may be bilateral between two parties or multilateral (between more than two parties). In the SFD, the notion of netting is defined “the conversion into one net claim or one net obligation of claims and obligations resulting from transfer orders which a participant or participants either issue to, or receive from, one or more other participants with the result that only a net claim can be demanded or a net obligation be owed.”¹⁰ The most advanced form of netting is close-out netting. In the FCAD, under close-out netting provision this is defined as “a provision of a financial collateral

⁹ Herstatt was a relatively small commercial bank established in Cologne, Germany, which went bankrupt in 1984. Since it was relatively small, normally the contagion or spillover effect of this bankruptcy on the financial markets as a whole would have been limited. However, it appeared that a number of other banks had exposure to Herstatt and that they had hedged these exposures in the financial markets with other counterparts, leading to the risk of a domino effect of the Herstatt bankruptcy in that other banks would also fail to fulfill their obligations and thus be drawn into insolvency as well.

¹⁰ European Parliament. 1998. Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on Settlement Finality in Payment and Securities Settlement Systems, Article 2(k).

arrangement, or of an arrangement of which a financial collateral arrangement forms part, or, in the absence of any such provision, any statutory rule by which, on the occurrence of an enforcement event, whether through the operation of netting or set-off or otherwise:

- the obligations of parties are accelerated so as to be immediately due and expressed as an obligation to pay an amount representing their estimated current value, or are terminated and replaced by an obligation to pay such an amount; and/or
- an account is taken of what is due from each party to the other in respect of such obligations, and a net sum equal to the balance of the account is payable by the party from whom the larger amount is due to the other party.¹¹⁹

Cross-Border Use of Collateral

In a cross-border context, there is an additional element to the financial collateral: it is denominated in a foreign currency or located in a foreign jurisdiction.

Apart from logistical challenges, the main challenge from a legal point of view is the fact that in principle two legal systems become relevant. The first one is the law governing the credit operation. The second one is the law governing the collateral. In dematerialized book-entry right systems, the latter is usually the law of the economy where the book-entry system is located. These two legal systems may differ as far as the establishment, administration, and realization of collateral are concerned and it would have to be explored whether these differences are so grave that they are prohibitive for the cross-border use of collateral.

There are several instruments to foster cross-border use of collateral, namely through International Central Securities Depositories (ICSDs), links between Securities Settlement Systems (SSS), remote access to SSSs, and Correspondent Bank Models. In the ICSD variant, the collateral is deposited in the ICSD and the collateral provider and the collateral taker both keep accounts with the ICSD, thus allowing them to transfer the collateral from one account to another. In the links between SSS option, the interconnected SSSs would provide for the possibility that an SSS in economy A (the economy where the credit operation takes place and the collateral taker is located) would keep collateral located in economy B at an SSS in economy B. In the third construction, the collateral taker in economy A would have remote access to an SSS in economy B. In the fourth approach, the credit operation would take place in economy A and the collateral would be established, administered, and where appropriate realized in economy B on behalf of the collateral taker located in economy A. These models are further elaborated in a report on cross-border collateral arrangements prepared by the Committee on Payment and Settlement Systems of the Bank for International Settlements (BIS) and published by the BIS in January 2006.

Standards

In the EU, the SFD was adopted in order to foster the smooth operation of payment systems at a time when national payment systems were interconnected through the Trans-European Real-Time Gross Settlement Payment System in order to facilitate the free flow of the EU's single currency, the euro, throughout the euro area. In addition, since SSS resemble payment

¹¹ European Parliament. 2002. Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on Financial Collateral Arrangements, Article 2.1(c), Article 2.1(n).

systems, the SFD was also declared applicable to SSS. More in particular, the SFD provides for the following:

application to designated funds transfer systems and their participants;

- irrevocability of transfer orders once entered into a system;
- validity and enforceability of bilateral and multilateral netting arrangements;
- irrevocability of payments entered into a system before a bankruptcy declaration is published (no retroactive effect of bankruptcies, no so-called zero-hour rules, whereby the effects of a bankruptcy work back to 12 midnight of the day of the bankruptcy leading to the possible unwinding of transactions after that time, but before the bankruptcy declaration);
- the law governing the system determines the rights and obligations of an insolvent participant; and
- insulation of collateral provided in the framework of participation in a system from the insolvency of the provider, whereby the law applicable to book-entry securities provided as collateral is the law of the jurisdiction where the relevant register, account, or centralized deposit system is located.

In the same vein, the FCAD was adopted in order to create an EU regime for the provision of securities and cash as collateral under both security interest and title transfer structures including repos. This was intended to contribute to the integration and cost-efficiency of the financial markets as well as to the stability of the financial system in the EU, thereby supporting the freedom to provide services and the free movement of capital in the single market in financial services. The FCAD focuses on bilateral financial collateral arrangements. In order to ensure the legal certainty of financial collateral arrangements, member states had to ensure that certain provisions of insolvency law would not apply to such arrangements, in particular those that would inhibit the effective realization of financial collateral or cast doubt on the validity of techniques such as bilateral close-out netting, the provision of additional collateral in the form of top-up collateral and substitution of collateral. In particular, the FCAD provides for the following:

- application of effective, simple regimes for the creation of collateral under title transfer (repo) or pledge structures (twin track);
- abolition of formalities and procedures to create and enforce financial collateral (financial instruments and cash);
- recognition of the right to reuse pledged collateral;
- protection of collateral from certain insolvency effects (through recognition of substitution, top-up collateral, and close out netting); and
- creation of legal certainty on applicable law regarding book-entry securities by extending the above SFD principle).

Both directives, therefore, support financial stability but, admittedly, to the detriment of those general creditors of a bankrupt institution, who cannot claim this privileged position. This has sometimes led to differences of opinion between representatives of ministries of finance (and central banks) focusing on financial stability on the one hand and ministries of justice defending the interest of general creditors as protected in general provisions of bankruptcy law on the other hand. The two directives, therefore, attempt to strike a balance between the different interests at stake. They are binding on EU member states and they require implementation at a national level. The question may be raised if and to what extent the two directives could be used as examples for countries and regions in other parts of the world if and when they adopt rules on collateral. In this context, it is acknowledged that the two directives are in their presentation obviously determined by EU specificities. However,

on the substance they address issues, which are relevant for collateral issues around the globe, and this in a concise fashion (the SFD consist of only 14 and the FCAD of only 13 articles).

In addition to the EU's SFD and FCAD, there are several other initiatives that are relevant to collateralization and cross-border use of collateral:

- The Hague Convention on the law applicable to certain rights in respect of securities held with an intermediary. This is an International Convention with 53 members, adopted on 13 December 2002 in the Hague, the Netherlands, which determines which countries' laws apply with regard to book-entry securities.
- The Standards of the Committee on Payment and Settlement Systems of the Bank for International Settlements and the International Organization of Securities Regulators. These comprise 19 standards. Standard 1 on the legal framework reads as follows: "Securities clearing and settlement systems should have a well-founded, clear, and transparent basis in the relevant jurisdictions."¹²
- Unidroit Project on Harmonised Substantive Rules Regarding Indirectly Held Securities. This is an international initiative supported by countries such as Australia, Canada, and Japan, as well as the EU, in order to adopt an international convention with regard to book-entry securities.

¹² Bank for International Settlements. Committee on Payment and Settlement Systems. <https://www.bis.org/Thecpmi/>

Appendix 7

Foreign Exchange and Cash Control

	CN	HK	ID	JP	KR	MY	PH	SG	TH	VN	Summary	Observation
FX Trades with Underlying Investment	Yes. Funds maintained in the QFII's foreign currency accounts and special CNY accounts cannot be used for the purposes other than onshore securities investment.	No. Foreign investors are not subject to any restrictions.	Yes. All FX forward value transactions must match with the underlying securities transactions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	Yes. Nonresidents buy or sell MYR must confirm that it is in relation to a firm underlying commitment, which may include buy or sales on Bursa Malaysia Securities.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	Yes and No. THB is freely convertible for SPOT value. FX against THB for all other value dates requires proper underlying transactions.	Yes. Custodians may be able to provide foreign investors with both foreign currency and VND cash accounts for the purpose of facilitating the funding of securities transactions and repatriation of proceeds.	The PRC, Indonesia, Malaysia, Thailand, and Viet Nam have a regulation about FX trades with underlying investment.	Investors need to consider the timing of local currency arrangement.
Prohibition of Offshore FX Trading for Investment	Yes. Offshore FX is not permitted.	No. Foreign investors are not subject to any restrictions.	Yes. IDR cannot be transferred offshore.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	Yes. MYR can only be traded onshore.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	Yes. VND must be performed onshore with an authorized financial institution.	The PRC, and Indonesia prohibit offshore FX trading for nonresidents.	Investors may not be able to obtain local currency when needed.
Pre-funding	Yes. Pre-funding for securities settlement is required.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	Yes. FX should be completed, at the latest, for value 1 day before the settlement date to fund purchases. Market practice requires all securities transactions to be 100% pre-funded.	The PRC, and Viet Nam have the regulation about pre-funding.	Investors need to make funds available before sending trade orders.
Prohibition of Third-Party FX	Yes. Although there is no explicit regulation prohibiting third-party FX to obtain CNY, the CIRC regulations require a subcustodian to execute FX for its QFIIs. Therefore, it is effectively not possible to execute third-party FX to obtain CNY.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	No. Foreign investors are not subject to any restrictions.	Only the PRC prohibit third-party FX.	

	CN	HK	ID	JP	KR	MY	PH	SG	TH	VN	Summary	Observation
FX Reporting	Yes. Upon approval of investment license and quota, QFIs must remit the investment fund within 6 months. Total inbound remittances should not exceed the approved investment amount. If the principal is not fully remitted, but it is more than the equivalent of USD 20 million within the prescribed deadline, the investment quota is reduced to the actual remitted-in amount.	No. Foreign investors are not subject to any restrictions.	Yes. Regulation requires documentation of an underlying transaction to support the credit of IDR into investor accounts. Purchase of foreign currency (es) against IDR above USD 100,000 or equivalent per month/legal entity, across all banks in Indonesia, must be supported by underlying documents and a yearly statement confirming non-speculative nature of the transactions.	No. Foreign investors are not subject to any restrictions.	Yes. For providing Loans. -Amounts up to KRW 1 billion: no declaration required. -Amounts of more than KRW 1 billion to 30 billion: Nonresidents are required to make a pre-declaration to the Governor of the Bank of Korea, stating the purpose of the loan.	No. Foreign investors are not subject to any restrictions.	Yes. The Consolidated FX Rules and regulations by the BSP, under Circular 1389, requires foreign investments to be registered with the BSP in order to obtain a BSRD which is required if foreign exchange will be purchased from the banking system to service future remittances of profits and earnings and/or capital repatriation.	No. Foreign investors are not subject to any restrictions.	Yes. Any payments made from or received into accounts from a residents THB account requires proper documentation support.	Yes. The purchase of foreign currency against VND is subject to strict conditions and documentation requirements. The documents may include the client's incoming remittance instructions, FX conversion instructions, securities sales proceeds advice, and settlement instructions.	The PRC, Indonesia, the Republic of Korea, the Philippines, Thailand and Viet Nam impose FX reporting for foreign investors.	Reporting makes investors and custodians impose extra paper-work to create the documents.
Control of Overdraft and Cash Balance for Non-residents	Yes. Overdrafts are not permitted.	No. Overdrafts are permitted for foreign investors.	Yes. Cash accounts of foreign investors are not allowed to be overdrawn.	No. Overdrafts are permitted for foreign investors.	Yes. Overdrafts are not permitted for foreign investors currently.	Yes. Overdrafts are not allowed for non-residents.	Yes. Overdrafts are not allowed under local regulations.	No. Overdrafts up to SGD5 million are permitted for foreign investors, unless the overdrafts are backed by economic activity.	Yes. Foreign investors have an end-of-day limit of THB 300 million for each type of account (NRBS and NRBA). Overdrafts for non-residents are allowed, but the BOT does require the foreign investor to sign an overdraft agreement with the onshore commercial bank prior to having the credit facility in place.	Yes. Overdrafts are not allowed for foreign investors.	The PRC, Indonesia, Malaysia, and Viet Nam do not permit overdraft for nonresidents. Thailand regulate the amount of cash balance for foreign investors.	These limitations restrict for efficient use of local currency for non-residents.

CN	HK	ID	JP	KR	MY	PH	SG	TH	VN	Summary	Observation
Limitation on Repatriation Yes. For defined open-ended funds, after-tax profits and principal can be repatriated once per month after a 3-month lock-up period (from the initial USD 20 million remittance). Repatriation above USD 50 million requires SAFE's prior approval. For other investor types, SAFE approval is always required to repatriate after-tax profits or any part of the principal after the 1-year lock-up period. After-tax profits can be repatriated once each fiscal year, while the principle can be repatriated with SAFE pre-approvals. Repatriation of principal reduces the quota correspondingly.	No. Non-resident investors freely fund trades and/or repatriate funds.	Yes. IDR cannot be repatriated offshore.	No. Non-resident investors freely fund trades and/or repatriate funds.	No. There are no restrictions on repatriations of sales proceeds or income collection.	No. There are no restrictions on the repatriation of capital, profits, and income.	Yes. The Consolidated FX Rules and regulations by the BSP, under Circular 1389, requires foreign investments to be registered with the BSP in order to obtain a BSRD which is required if FX will be purchased from the banking system to service future remittances of profits and earnings and/or capital repatriation.	No. Non-resident investors freely fund trades and/or repatriate funds.	No.	Yes. Interest income and capital gains can be freely repatriated with the provision of supporting documents indicating that the money had been remitted and invested in the Vietnamese market and evidence/clearance from the tax office that all tax obligations have been fulfilled.	Indonesia prohibits repatriation. The PRC has some limitation for repatriation. The Philippines and Viet Nam require non-residents to submit appropriate documents.	Limitation on repatriation is the barrier for foreign investors, when they try to do efficient fund management.

BOT = Bank of Thailand; BSP = Banko Sentral ng Pilipinas; BSRD = Bangko Sentral Registration Document; CN = People's Republic of China; FX = foreign exchange; HK = Hong Kong, China; ID = Indonesia; IDR = Indonesian rupiah; ISIN = International Securities Identification Number; ISO = International Organization for Standardization; JP = Japan; KR = Republic of Korea; KRW = Korean won; MY = Malaysia; MYR = Malaysian ringgit; NRBA = Nonresident Baht Account; NRBS = Nonresident Baht Account for Securities; PH = Philippines; QFII = Qualified Foreign Institutional Investors; SAFE = State Administration of Foreign Exchange; SG = Singapore; SGD = Singapore dollar; TH = Thailand; THB = Thai baht; USD = US dollar; VN = Viet Nam; VND = Vietnamese dong.

Source: ABMF SF2 members, experts, and observers compiled by ADB consultant for ABMF SF2.

Appendix 8

Resource Information

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- . 2014. Basic Principles on Establishing a Regional Settlement Intermediary and Next Steps Forward: Cross-Border Settlement Infrastructure Forum. <http://www.adb.org/publications/basic-principles-establishing-regional-settlement-intermediary-next-steps>
 - . 2015. Progress Report on Establishing a Regional Settlement Intermediary and Next Steps: Implementing Central Securities Depository–Real-Time Gross Settlement Linkages in ASEAN+3. <http://www.adb.org/publications/progress-report-establishing-regional-settlement-intermediary-and-next-steps>

Appendix 9

Information Sessions and Main Agenda Items of ABMF SF2

16th ASEAN+3 Bond Market Forum Sub-Forum 2 (ABMF SF2) on 2 September in Hong Kong, China

- A pioneering industry approach based on partnership by Mr. Stefan Lepp, Chief Executive Officer, Clearstream
- Securities numbering, including allocation of International Securities Identification Number, by Mr. Dan Kuhnel, Chairman, Association of National Numbering Agencies
- Linking Asian capital markets with the international ecosystem by Olivier Grimonpont, General Manager, Regional Head, Asia-Pacific, Euroclear
- Possible roadmap and policy recommendations (tour de table session) by members and experts

17th ABMF SF2 in Manila, Philippines

- ISO 20022 management process and governance by Mr. James Whittle, UK Payments Council
- Function and importance of National Market Practice Group by Mr. Taketoshi Mori, Bank of Mitsubishi-Tokyo UFJ
- Progress of implementation of international standards by Dr. Taiji Inui, ADB Consultant for ABMF SF2 and Senior Manager NTT DATA Corporation

18th ABMF SF2 in Manila, Philippines

- Next Steps of ABMF by Mr. Satoru Yamadera, Asian Development Bank Secretariat
- Phase 3 Report by Dr. Taiji Inui

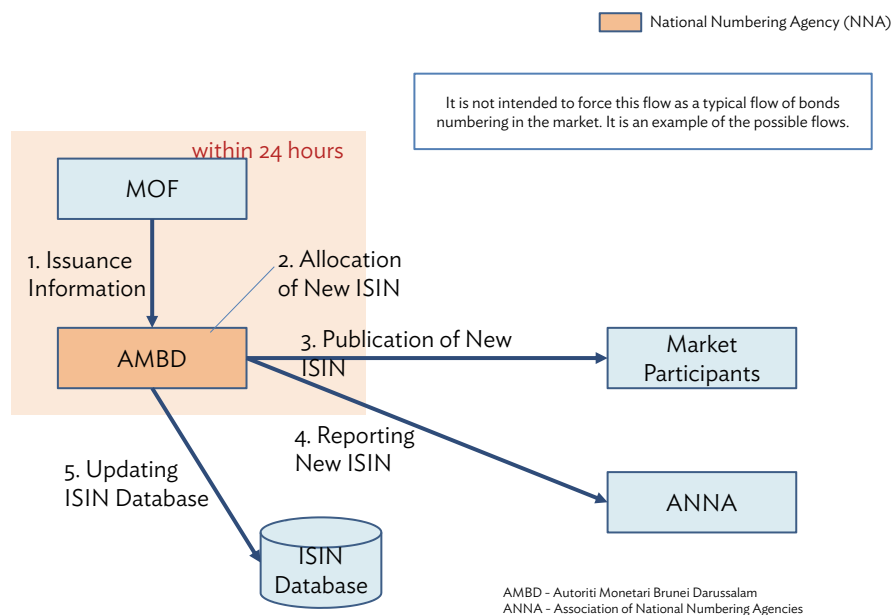
Attachment

Typical Flow and Possible Example of Bonds Numbering

- Government Bond and Corporate Bond -

Typical flows and possible examples of allocating International Securities Identification Number to government bonds and corporate bonds in the region were created based on information collected through market visits and answers from the questionnaire sent to the SF2 members.

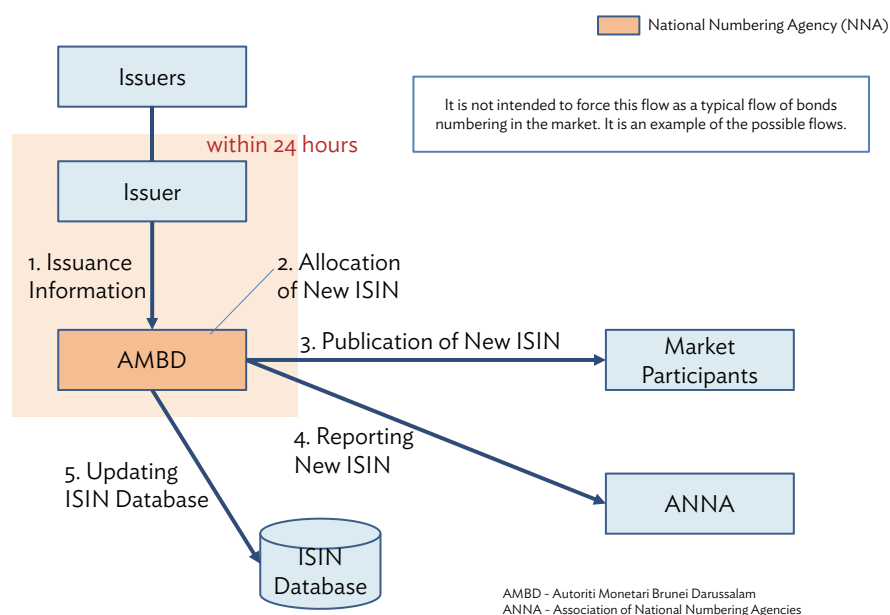
BN: (Government Bond) Possible Example of Bonds Numbering



BN: (Government Bond) Possible Example of Bonds Numbering

1. MOF sends issuance information to AMBD.
2. AMBD allocates ISIN within 24 hours.
3. AMBD announces new ISIN to market participants.
4. AMBD reports new ISIN to ANNA.
5. AMBD updates ISIN database.

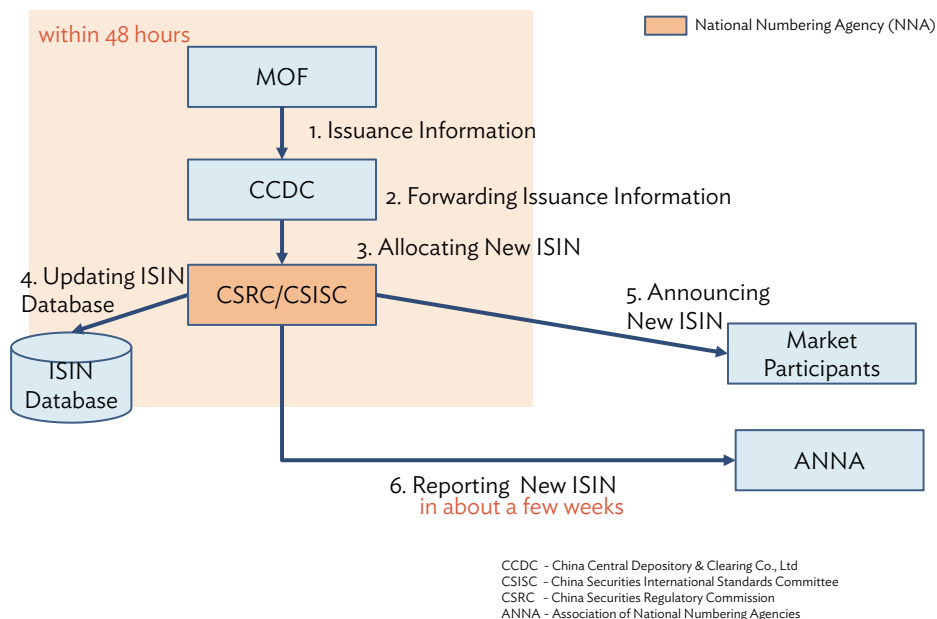
BN: (Corporate Bond) Possible Example of Bonds Numbering



BN: (Corporate Bond) Possible Example of Bonds Numbering

1. Issuance agent sends issuance information to AMBD.
2. AMBD allocates ISIN within 24 hours.
3. AMBD announces new ISIN to market participants.
4. AMBD reports new ISIN to ANNA.
5. AMBD updates ISIN database.

CN:(Government Bond) Typical Flow of Bonds Numbering

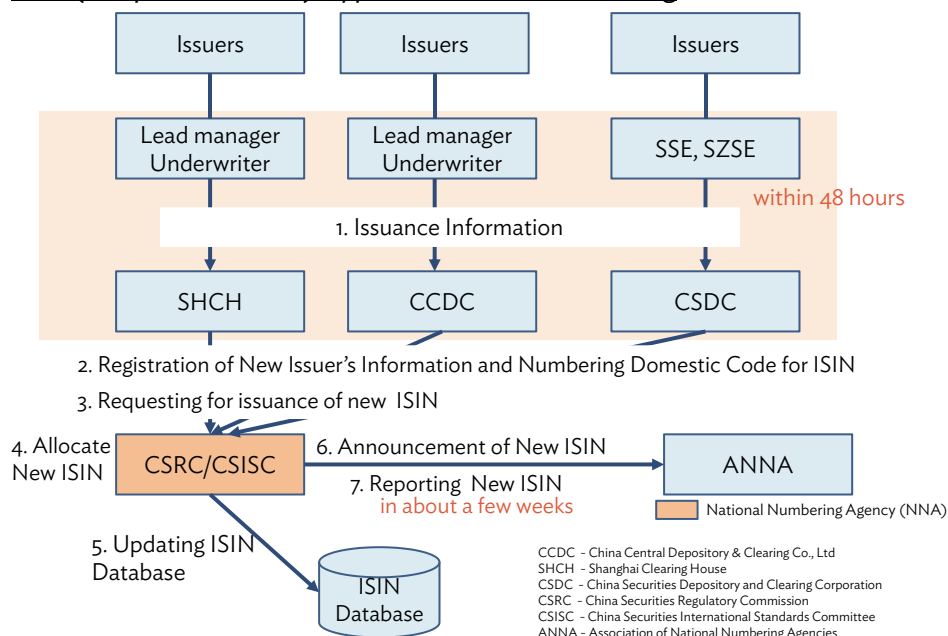


CN: (Government Bond) Typical Flow of Numbering

1. MOF as the directly issuer sends issuance information to CCDC.
2. CCDC forwards the information of the bond to CSRC/CSISC to allocate new ISIN. CCDC also forwards the information of the bond to China Securities Information Technology Services (CSITS) to allocate new ISIN on behalf of CSRC (NNA)
3. CSRC/CSISC allocates ISIN within 48 hours for CSRC.
4. CSRC/CSISC updates ISIN database.
5. CSRC/CSISC publishes to market participants.
6. CSRC/CSISC reports new ISIN to ANNA (in a few weeks).

CN = People's Republic of China, ISIN = International Securities Identification Number,
 MOF = Ministry of Finance.

CN: (Corporate Bond) Typical Flow of Numbering

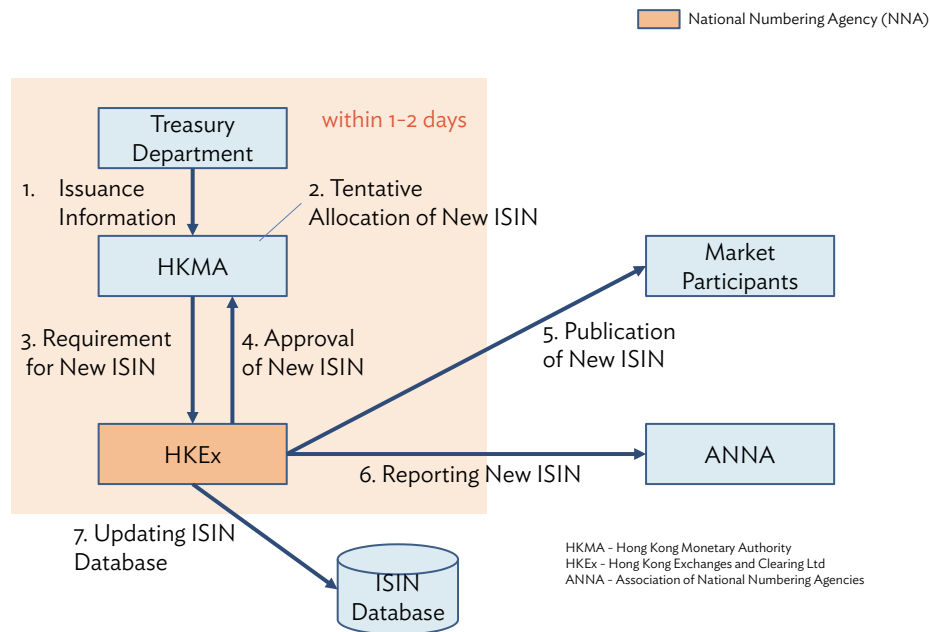


CN: (Corporate Bond) Typical Flow of Numbering

1. Lead manager (underwriter) which is issuance agent sends issuance information to one of CSDS (SHCH, CCDC, or CSDC) depending on the type of the bond.
2. Each CSD registers new issuer's information and numbering domestic code for ISIN.
3. Each CSD requests to issue new ISIN to CSRC/CSISC as the National Numbering Agency (NNA) in China. Each CSD also forwards the information of the bond to China Securities Information Technology Services (CSITS) to allocate new ISIN on behalf of CSRC (NNA).
4. CSRC/CSISC allocates ISIN within 48 hours for CSRC.
5. CSRC/CSISC updates ISIN database.
6. CSRC/CSISC announces new ISIN on its website.
7. CSRC/CSISC reports new ISIN to ANNA (in a few weeks).

CN = People's Republic of China, CSD = central securities depository, NNA = national numbering authority.

HK: (Government Bond) Typical Flow of Bonds Numbering



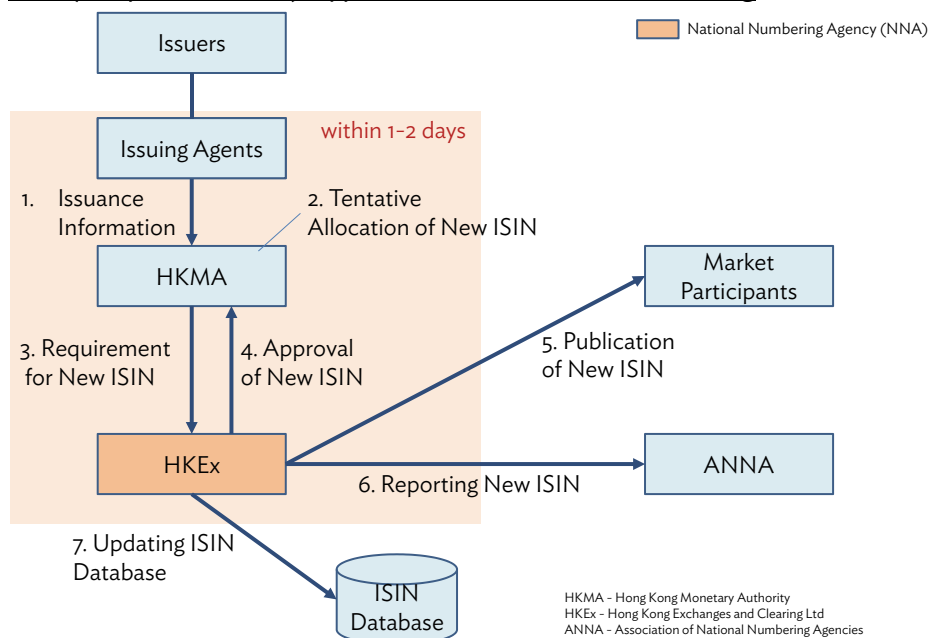
HK: (Government Bond) Typical Flow of Bonds Numbering

1. Treasury Department sends issuance information to HKMA.
2. HKMA tentatively allocates new ISIN.
3. HKMA requests an approval of new ISIN to HKEx.
4. HKEx approves ISIN within 1-2 days.
5. HKEx posts new ISIN on HKEx website on the third preceding evening of listing day.
6. HKEx reports new ISIN to ANNA.
7. HKEx updates ISIN database.

Note

- Market participants in other economies can identify the relevant ISIN from the ISIN database published in the HKEx and ANNA Service Bureau websites. Then, the market participants can obtain the exact information from the prospectus and terms sheet of the corresponding ISIN from the HKEx website.

HK: (Corporate Bond) Typical Flow of Bonds Numbering



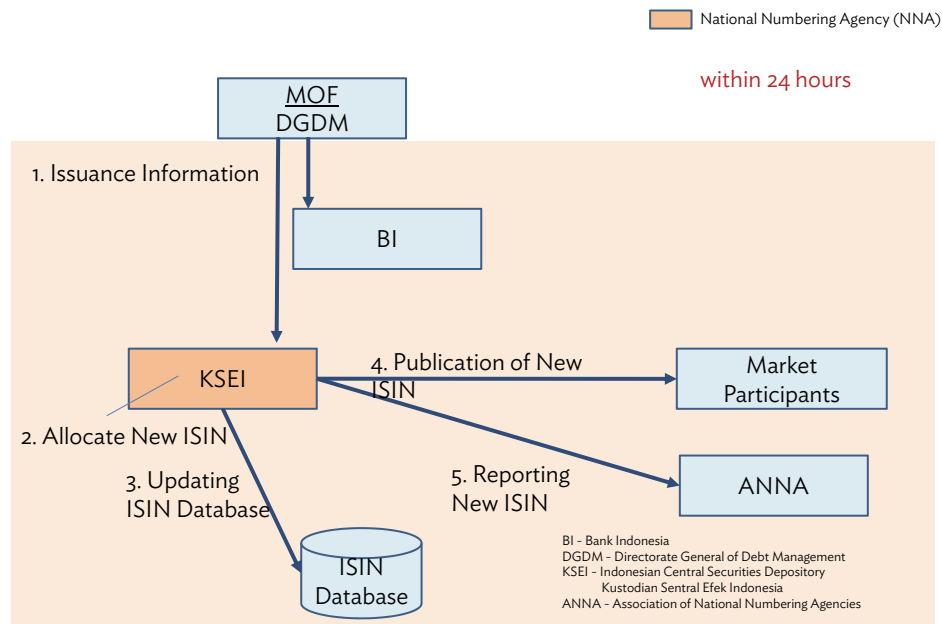
HK: (Corporate Bond) Typical Flow of Bonds Numbering

1. Issuing agent sends issuance information to HKMA.
2. HKMA tentatively allocates new ISIN.
3. HKMA requests an approval of new ISIN to HKEx.
4. HKEx approves ISIN within 1-2 days.
5. HKEx posts new ISIN on HKEx website on the third preceding evening of listing day.
6. HKEx reports new ISIN to ANNA.
7. HKEx updates ISIN database.

Note

- Market participants in other economies can identify the relevant ISIN from the ISIN database published in the HKEx and ANNA Service Bureau websites. Then the market participants can obtain the exact information from the prospectus and terms sheet of the corresponding ISIN from the HKEx website.

ID: (Government Bond) Typical Flow of Bonds Numbering



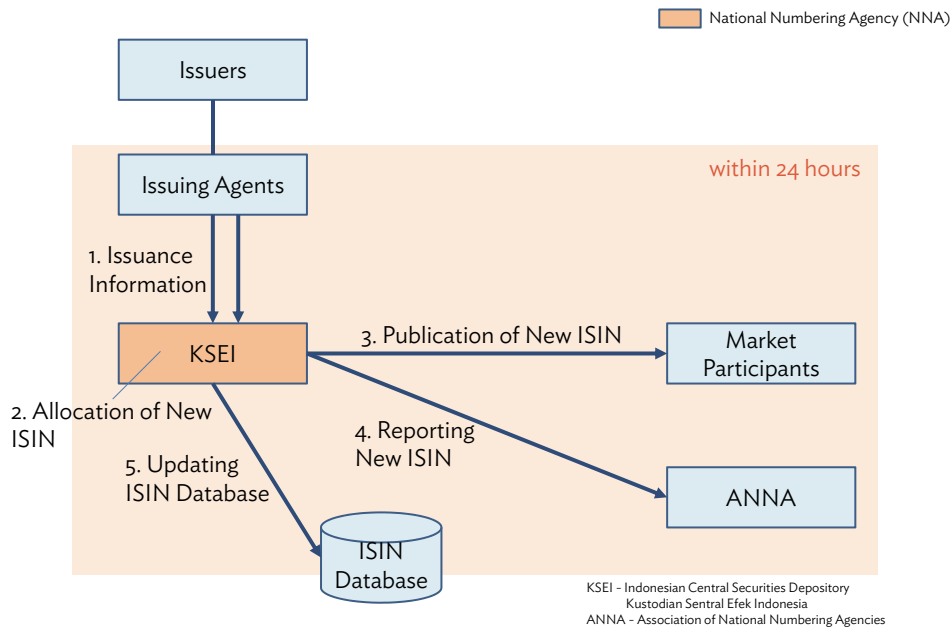
ID: (Government Bond) Typical Flow of Bonds Numbering

1. MOF sends issuance information to BI and KSEI.
2. KSEI allocates and releases new ISIN within 24 hours.
3. KSEI automatically updates ISIN database.
4. KSEI announces new ISIN to KSEI's members (securities companies and custodian banks) by e-mail and posts on KSEI website.
5. KSEI reports new ISIN to ANNA every day.

Note

- KSEI provides ISIN information on KSEI's website. Nonresident investors can get ISIN information from this website.

ID: (Corporate Bond) Typical Flow of Bonds Numbering



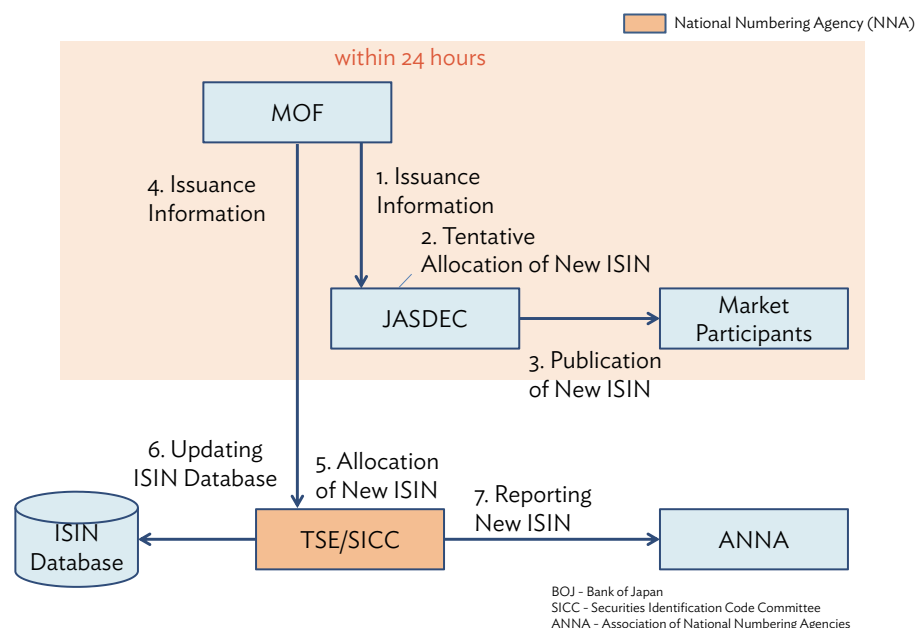
ID: (Corporate Bond) Typical Flow of Bonds Numbering

1. Issuing agent sends issuance information to KSEI.
2. KSEI allocates ISIN within 24 hours.
3. KSEI announces new ISIN to KSEI's members (securities companies and custodian banks) by e-mail and posts on KSEI website.
4. KSEI reports new ISIN to ANNA every day.
5. KSEI automatically updates ISIN database.

Note

- KSEI provides ISIN information on KSEI's website. Nonresident investors can get ISIN information from this website.
- KSEI publishes new ISIN in English and local language.
- KSEI will automatically update in ISIN Database for New ISIN Code.

JP: (Government Bond) Typical Flow of Bonds Numbering



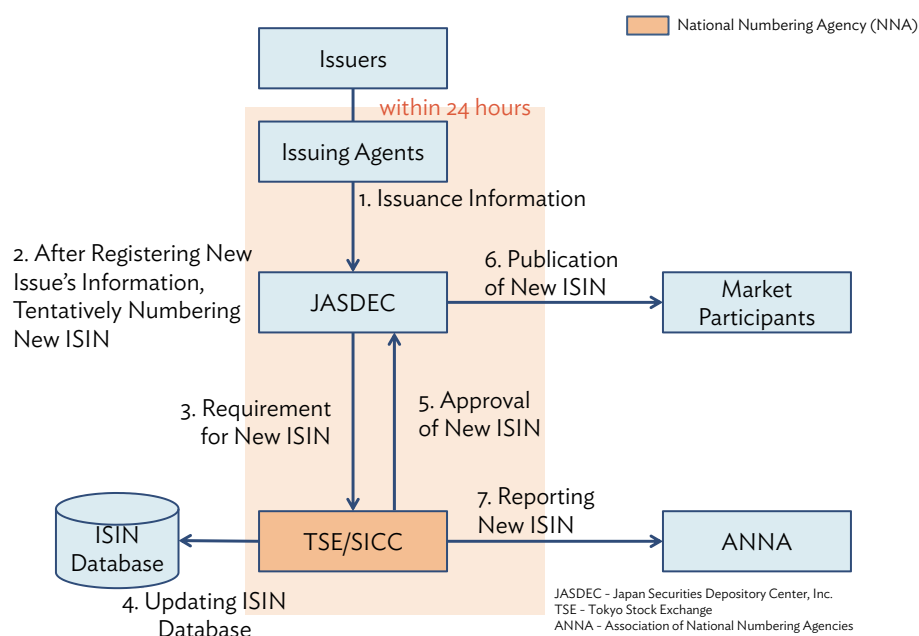
JP: (Government Bond) Typical Flow of Bonds Numbering

1. JASDEC obtains issuance information from MOF.
2. JASDEC tentatively allocates new ISIN.
3. JASDEC announces new ISIN to market participants.
4. TSE/SICC obtains issuance information from MOF.
5. TSE/SICC allocates new ISIN.
6. TSE/SICC updates ISIN database.
7. TSE/SICC reports new ISIN to ANNA.

- Note
Government bonds will adopt ISIN in October 2015. Business flow of numbering may change.

SIN = International Securities Identification Number, JASDEC = Japan Securities Depository Center,
 JP = Japan, MOF = Ministry of Finance, TSE = Tokyo Stock Exchange.

JP: (Corporate Bond) Typical Flow of Bonds Numbering



JP: (Corporate Bond) Typical Flow of Bonds Numbering

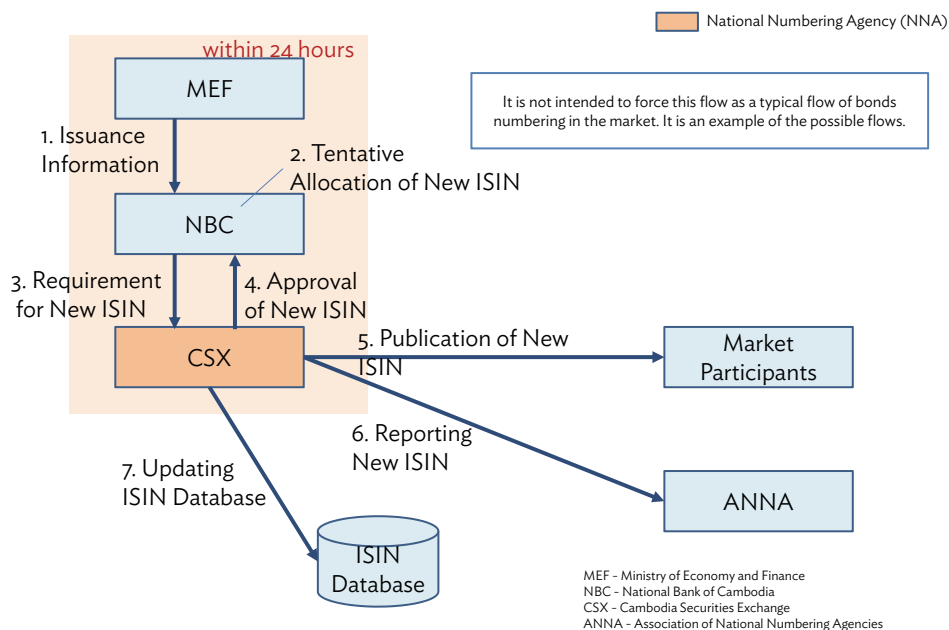
1. Issuing agent sends issuance information to JASDEC.
2. After registering new issue's information, JASDEC tentatively numbers New ISIN
3. JASDEC requests new ISIN to TSE/SICC.
4. TSE/SICC updates ISIN database.
5. TSE/SICC approves new ISIN within 24 hours.
6. JASDEC announces new ISIN to market participants 4 times a day and posts new ISIN on the JASDEC website once a day.
7. TSE/SICC reports new ISIN to ANNA.

Note

- Corporate bonds have already adopted ISIN.

ISIN = International Securities Identification Number, JP = Japan, SICC = Securities Identification Code Committee.

KH: (Government Bond) Possible Example of Bonds Numbering

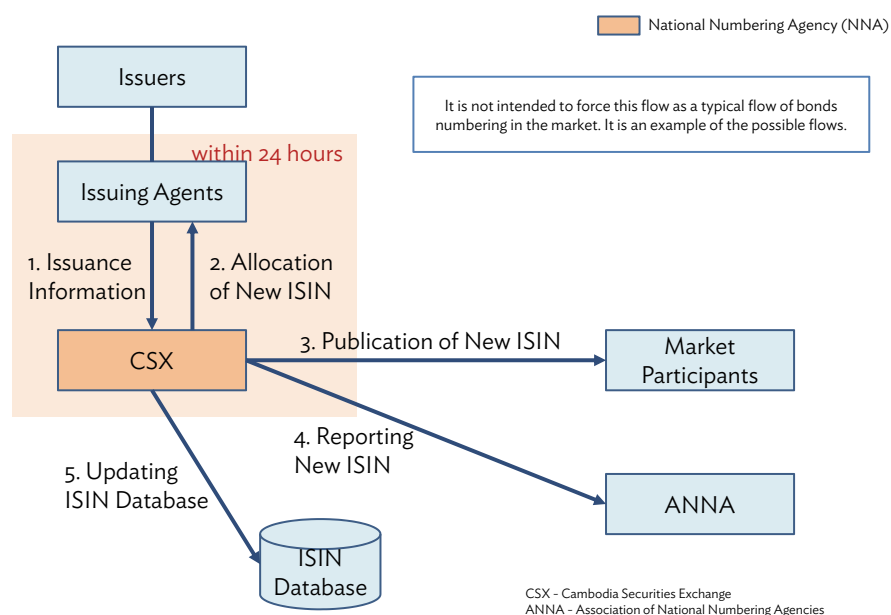


KH: (Government Bond) Possible Example of Bonds Numbering

1. MEF sends issuance information to NBC.
2. NBC tentatively allocates new ISIN.
3. NBC requests to assign new ISIN to CSX.
4. CSX assigns ISIN within 24 hours.
5. CSX announces new ISIN to market participants.
6. CSX reports new ISIN to ANNA.
7. CSX updates ISIN database.

ISIN = International Securities Identification Number, KH = Cambodia.

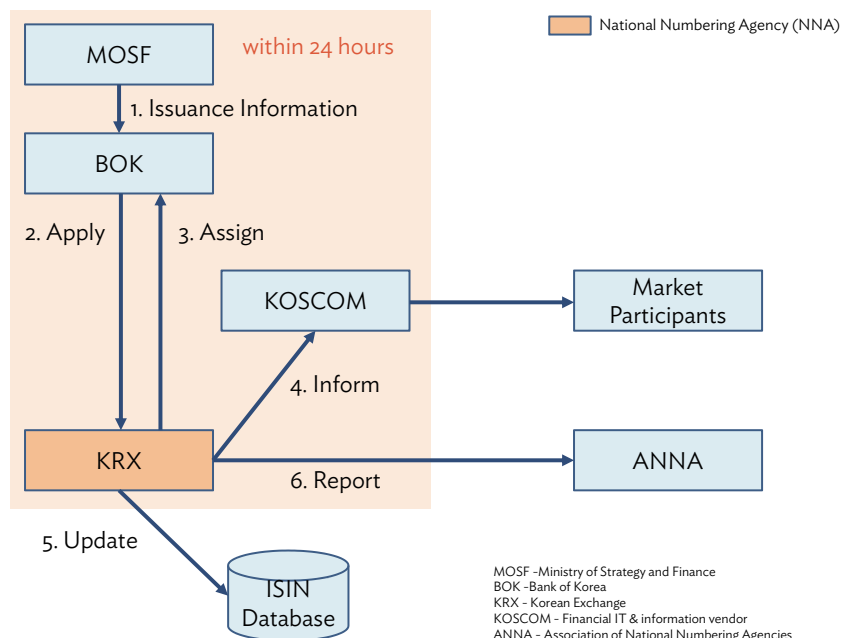
KH: (Corporate Bond) Possible Example of Bonds Numbering



KH: (Corporate Bond) Possible Example of Bonds Numbering

1. Issuing agent sends issuance information to CSX.
2. CSX allocates ISIN within 24 hours.
3. CSX announces new ISIN to market participants.
4. CSX reports new ISIN to ANNA.
5. CSX updates ISIN database.

KR: (Government Bond) Typical Flow of Bonds Numbering



KR: (Government Bond) Typical Flow of Bonds Numbering

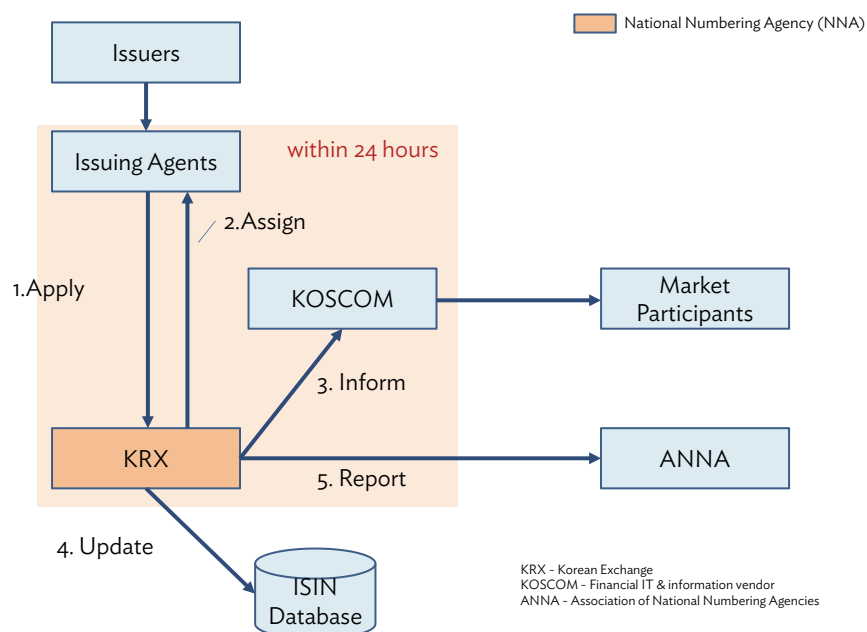
1. MOSF notifies issuance information to BOK
2. BOK applies for a new ISIN code.
3. KRX assigns ISIN.
4. KRX posts the ISIN code on its website and informs KOSCOM every 30 seconds.
5. KRX updates its ISIN database.
6. KRX reports to ANNA.

Notes

- Provided that all submitted data and document are correct, ISIN is allocated within the day of application.

ISIN = International Securities Identification Number, KOSCOM = Korea Securities Computing Corporation, KR = Republic of Korea.

KR: (Corporate Bond) Typical Flow of Bonds Numbering



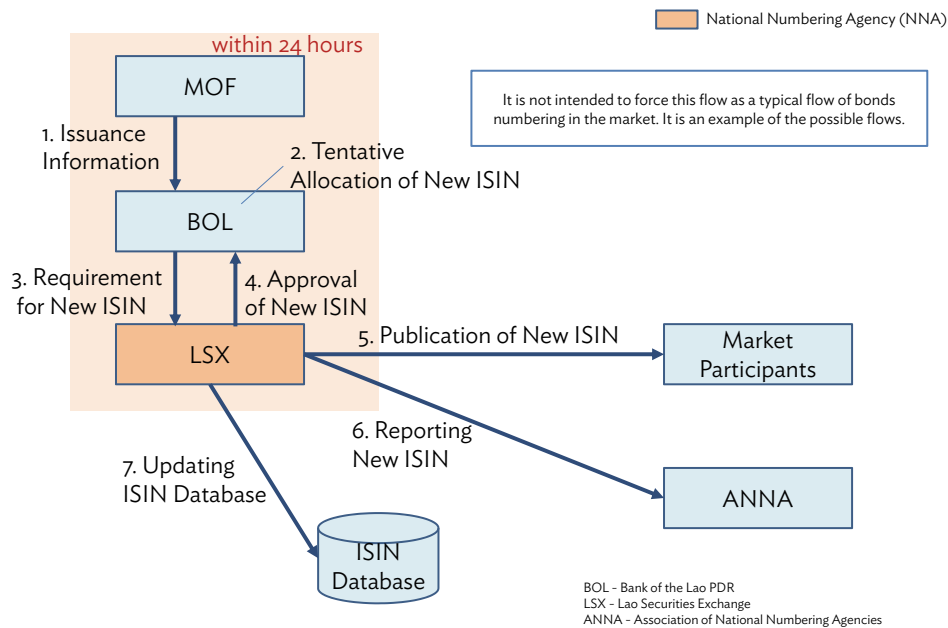
KR: (Corporate Bond) Typical Flow of Bonds Numbering

1. Issuer or issuing agent applies for a new ISIN code.
2. KRX assigns ISIN.
3. KRX posts the ISIN code on its website and informs KOSCOM every 30 seconds.
4. KRX updates its ISIN database.
5. KRX reports to ANNA.

Notes

- Provided that all submitted data and documents are correct, ISIN is allocated within the day of application.

LA: (Government Bond) Possible Example of Bonds Numbering

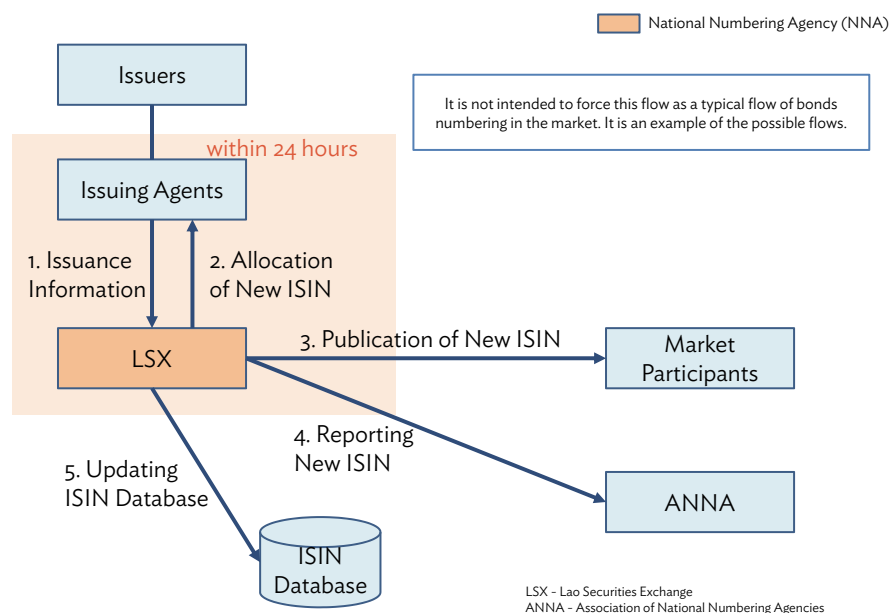


LA: (Government Bond) Possible Example of Bonds Numbering

1. MOF sends issuance information to BOL.
2. BOL tentatively allocates new ISIN.
3. BOL requests to assign new ISIN to LSX.
4. LSX assigns ISIN within 24 hours.
5. LSX announces new ISIN to market participants.
6. LSX reports new ISIN to ANNA.
7. LSX updates ISIN database.

ISIN = International Securities Identification Number, LA = Lao People's Democratic Republic,
 MOF = Ministry of Finance.

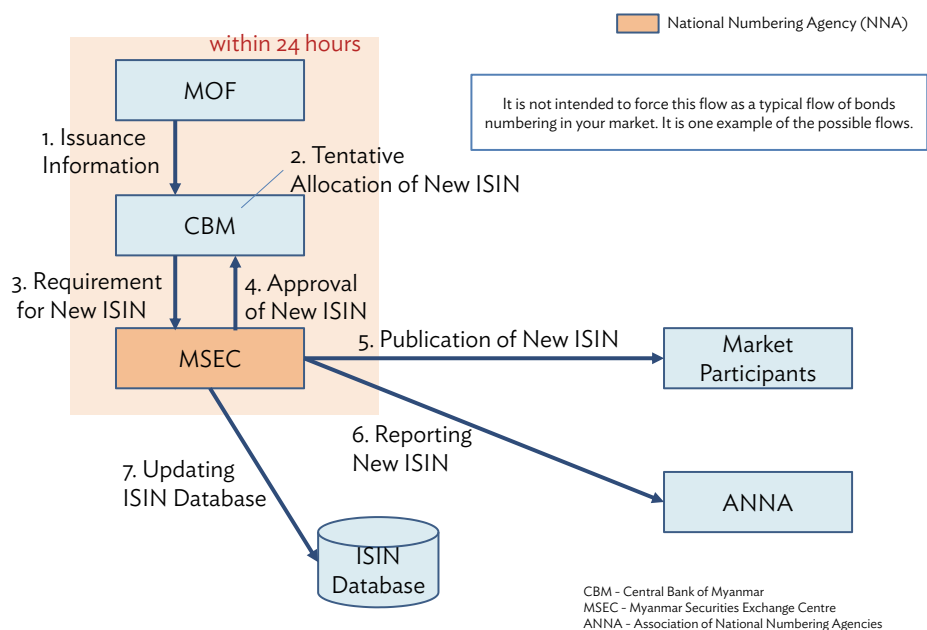
LA: (Corporate Bond) Possible Example of Bonds Numbering



LA: (Corporate Bond) Possible Example of Bonds Numbering

1. Issuance agent sends issuance information to LSX.
2. LSX allocates ISIN within 24 hours.
3. LSX announces new ISIN to market participants.
4. LSX reports new ISIN to ANNA.
5. LSX updates ISIN database.

MM: (Government Bond) Possible Example of Bonds Numbering

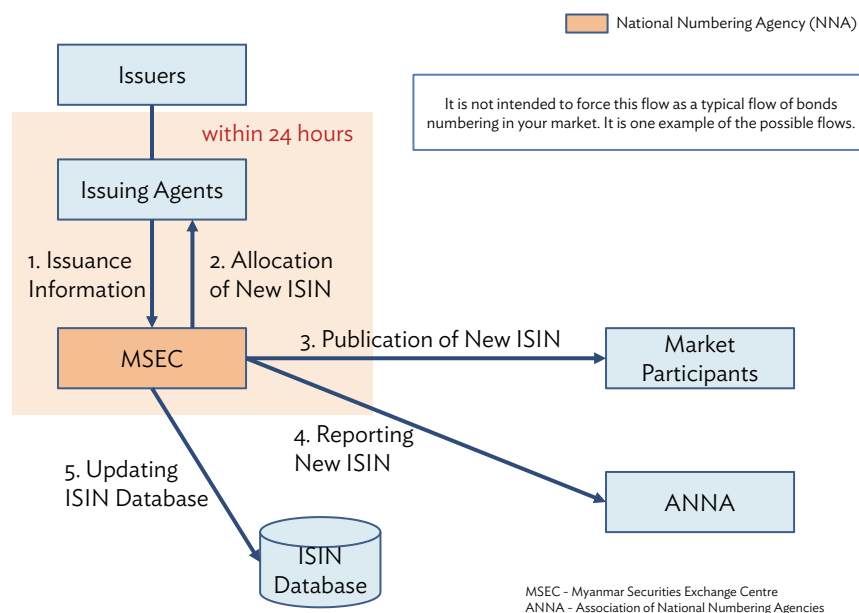


MM: (Government Bond) Possible Example of Bonds Numbering

1. MOF sends issuance information to CBM.
2. CBM tentatively allocates new ISIN.
3. CBM requests to assign new ISIN to MSEC.
4. MSEC assigns ISIN within 24 hours.
5. MSEC announces new ISIN to market participants.
6. MSEC reports new ISIN to ANNA.
7. MSEC updates ISIN database.

ISIN = International Securities Identification Number, MM = Myanmar.

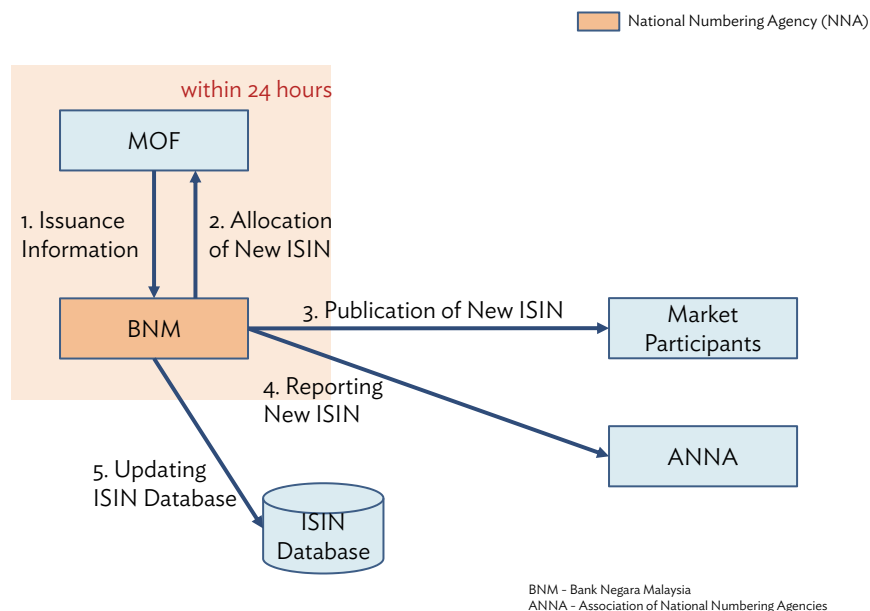
MM: (Corporate Bond) Possible Example of Bonds Numbering



MM: (Corporate Bond) Possible Example of Bonds Numbering

1. Issuance agent sends issuance information to MSEC.
2. MSEC allocates ISIN within 24 hours.
3. MSEC announces new ISIN to market participants.
4. MSEC reports new ISIN to ANNA.
5. MSEC updates ISIN database.

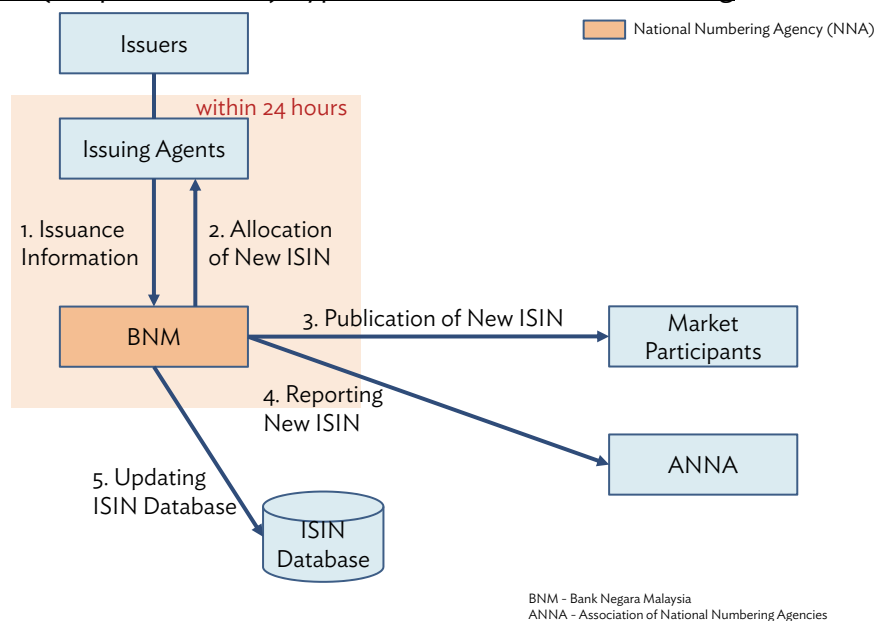
MY: (Government Bond) Typical Flow of Bonds Numbering



MY: (Government Bond) Typical Flow of Bonds Numbering

1. MOF sends issuance information to BNM.
2. BNM allocates ISIN within 24 hours.
3. BNM announces new ISIN to market participants.
4. BNM reports new ISIN to ANNA.
5. BNM updates ISIN database.

MY: (Corporate Bond) Typical Flow of Bonds Numbering

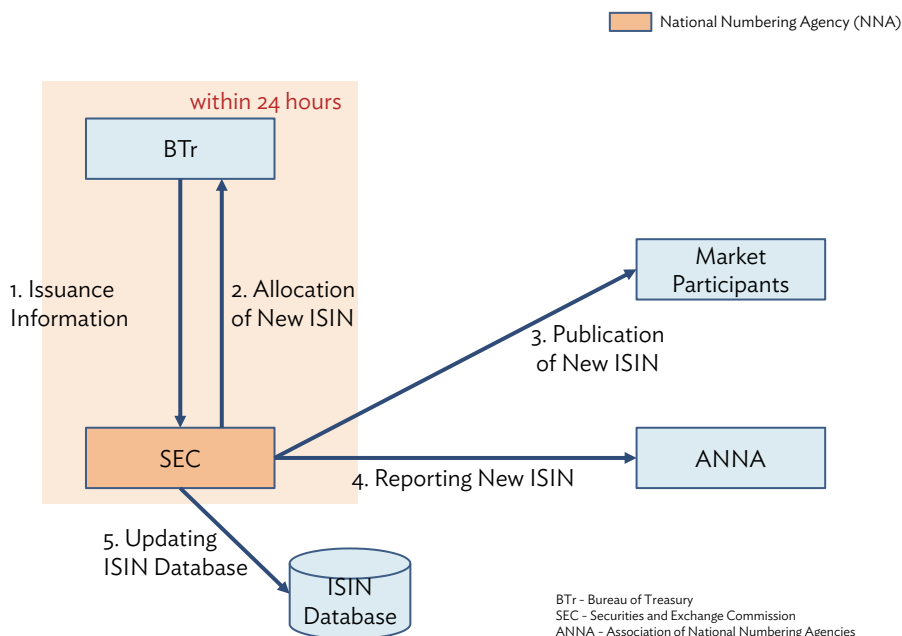


MY: (Corporate Bond) Typical Flow of Bonds Numbering

1. Issuing agent sends issuance information to BNM.
2. BNM allocates ISIN within 24 hours.
3. BNM announces new ISIN to market participants.
4. BNM reports new ISIN to ANNA.
5. BNM updates ISIN database.

ISIN = International Securities Identification Number, MY = Malaysia.

PH: (Government Bond) Typical Flow of Bonds Numbering



PH: (Government Bond) Typical Flow of Bonds Numbering

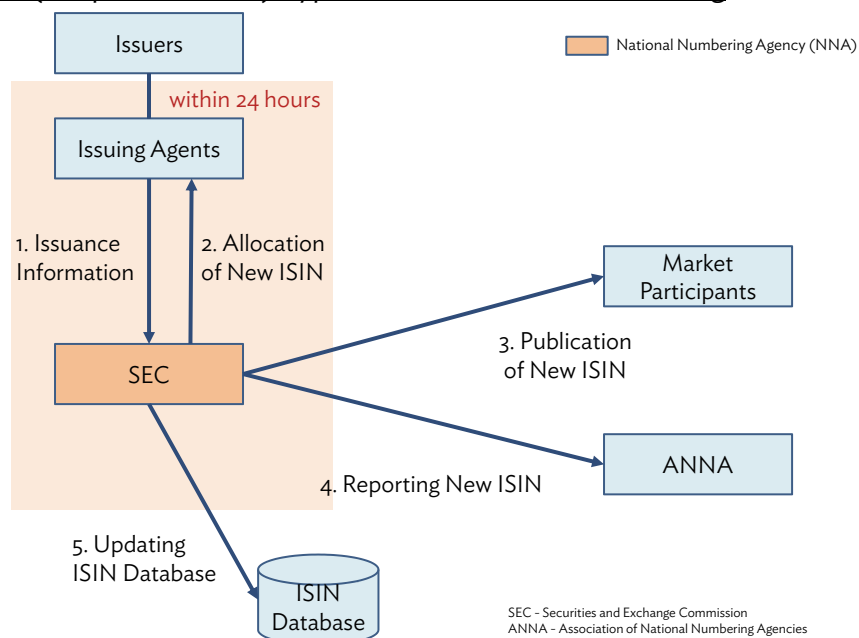
1. BTr sends issuance information to SEC.
2. SEC as NNA allocates ISIN within 24 hours.
3. SEC announces new ISIN to market participants through exchange and SEC website.
4. SEC reports new ISIN to ANNA.
5. SEC updates ISIN database.

Note

- For registered securities, ISIN shall be allocated once registration is approved.
- For exempt securities/ transactions, prior ISIN allocation shall be a requirement for listing in an exchange.

ISIN = International Securities Identification Number, PH = Philippines.

PH: (Corporate Bond) Typical Flow of Bonds Numbering



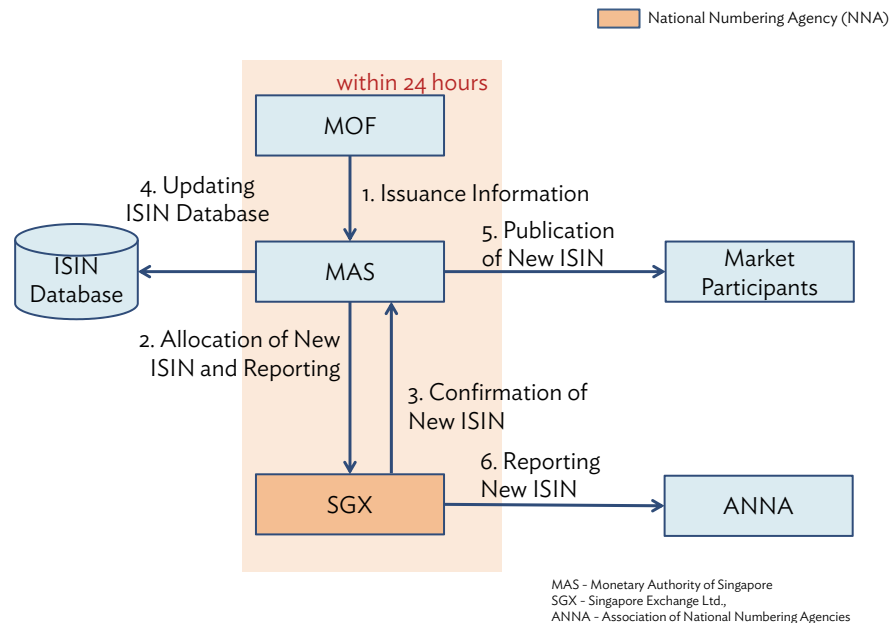
PH: (Corporate Bond) Typical Flow of Bonds Numbering

1. Issuing agent sends issuance information to SEC.
2. SEC as NNA allocates ISIN within 24 hours.
3. SEC announces new ISIN to market participants through exchange and SEC website.
4. SEC reports new ISIN to ANNA.
5. SEC updates ISIN database.

Note

- For registered securities, ISIN shall be allocated once registration is approved.
- For exempt securities/ transactions, prior ISIN allocation shall be a requirement for listing in an exchange.

SG: (Government Bond) Typical Flow of Bonds Numbering



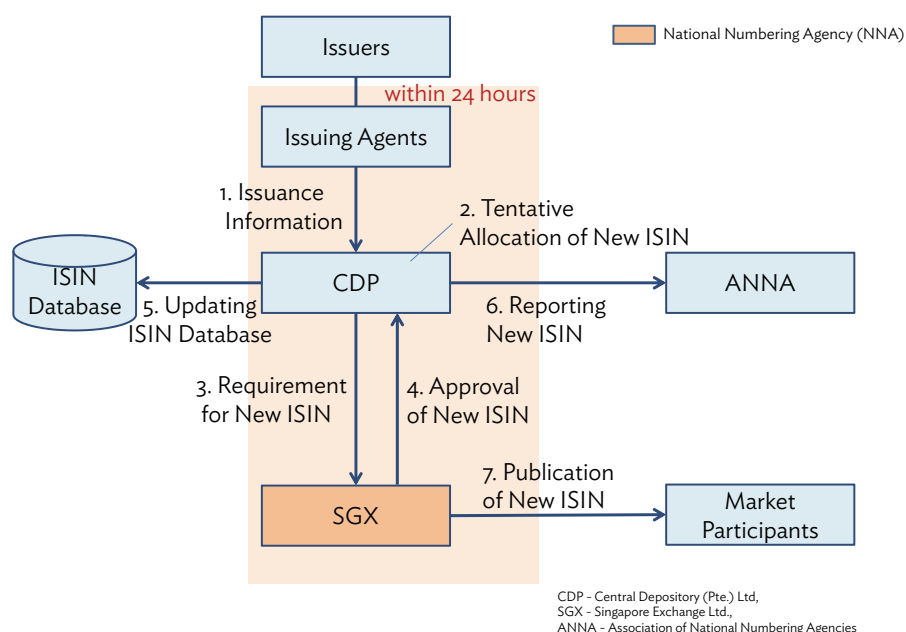
SG: (Government Bond) Typical Flow of Bonds Numbering

1. MOF sends issuance information to MAS.
2. MAS allocates new ISIN and report to SGX within 24 hours.
3. SGX confirms ISIN.
4. MAS updates ISIN database.
5. MAS posts a daily ISIN file on the MAS website.
6. SGX submits to ANNA a monthly report about ISIN.

Note

- ISIN (ISO 6166) is used in conjunction with place of trade and country to uniquely identify an instrument. BIC (ISO 9362) will be made compulsory. SGX plans to improve this further to add CFI (Classification of Financial Instruments: ISO 10962) to supplement ISIN.

SG: (Corporate Bond) Typical Flow of Bonds Numbering



SG: (Corporate Bond) Typical Flow of Bonds Numbering

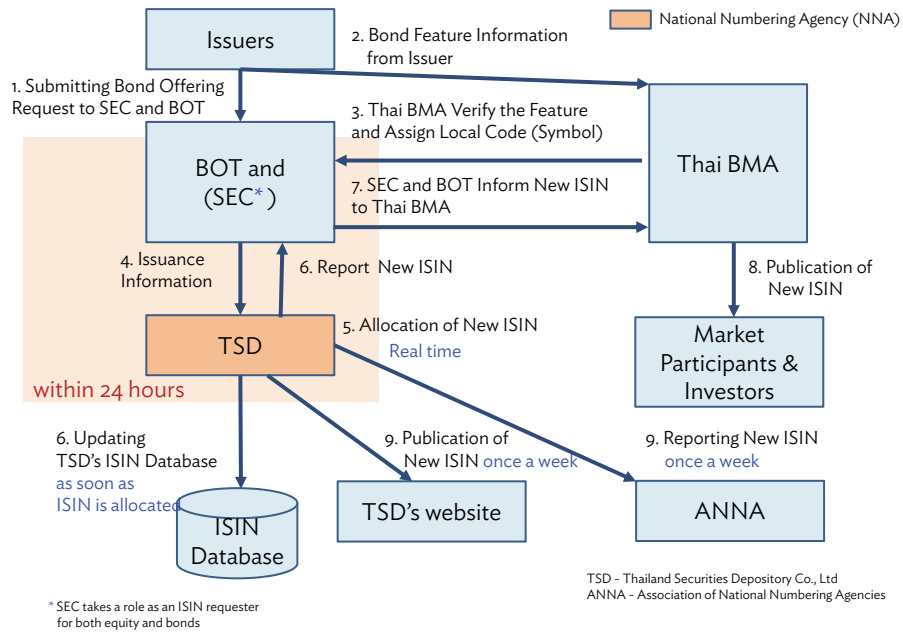
1. Issuing agent sends issuance information to CDP.
2. CDP tentatively allocates new ISIN.
3. CDP requests new ISIN to SGX.
4. SGX approves ISIN within 24 hours.
5. CDP updates ISIN database.
6. CDP submits to ANNA a monthly report about ISIN.
7. SGX posts a daily ISIN file on the SGX website.

Note

- ISIN (ISO 6166) is used in conjunction with place of trade and country to uniquely identify an instrument. BIC (ISO 9362) will be made compulsory. SGX plans to improve this further to add CFI (Classification of Financial Instruments: ISO 10962) to supplement ISIN.

ISIN = International Securities Identification Number, SG = Singapore.

TH: (Government Bond) Typical Flow of Allocation of ISIN

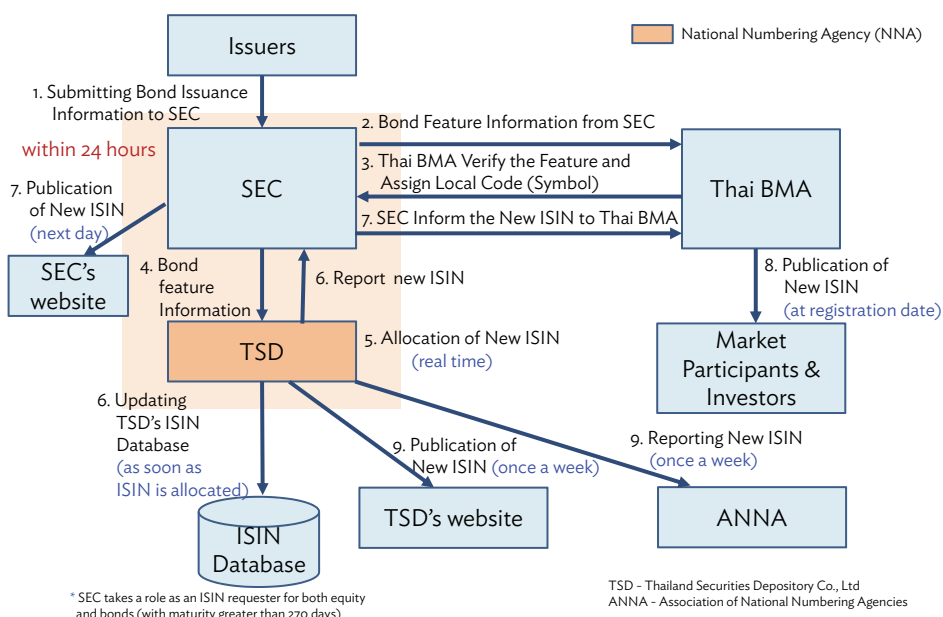


TH: (Government Bond) Typical Flow of Bonds Numbering

1. Issuer submits bond offering request form to SEC and BOT.
2. Issuer submits bond feature information to Thai BMA.
3. After verifying the information, Thai BMA assigns local bond code (symbol) and informs it to SEC and BOT.
4. SEC and BOT forward bond issuance information to TSD.
5. TSD allocates ISIN as soon as it receives bond feature information from SEC or BOT.
6. TSD reports new ISIN to SEC and BOT and updates TSD's ISIN database.
7. SEC and BOT inform new ISIN to Thai BMA.
8. Thai BMA publishes new ISIN including bond feature information to its website as well as informs it to market participants and investors.
9. TSD reports new ISIN to ANNA and publishes on its website once a week.

BMA = Bond Market Association, BOT = Ban of Thailand, SEC = Security and Exchange Commission, ISIN = International Securities Identification Number, TH = Thailand.

TH: (Corporate Bond) Typical Flow of Allocation of ISIN

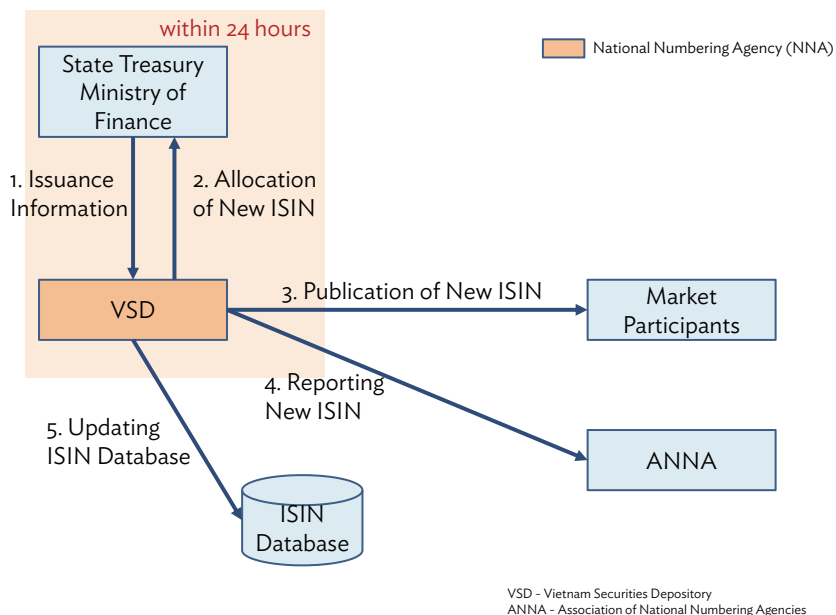


TH: (Corporate Bond) Typical Flow of Bonds Numbering

1. Issuer submits bond issuance information to SEC.
2. SEC sends bond feature information to Thai BMA.
3. After verifying the information, Thai BMA assigns local bond code (symbol) and informs it to SEC.
4. SEC forwards bond feature to TSD.
5. TSD allocates ISIN as soon as receiving bond feature information from SEC.
6. TSD reports new ISIN to SEC and updates TSD's ISIN database as soon as new ISIN is allocated.
7. SEC informs new ISIN to Thai BMA and publishes it on SEC's website (next day after receiving new ISIN).
8. Thai BMA publishes new ISIN (at registration date) including bond feature information to its website as well as informs it to market participants and investors.
9. TSD reports new ISIN to ANNA and publishes it on its website once a week.

BMA = Bond Market Association, BOT = Ban of Thailand, SEC = Security and Exchange Commission, ISIN = International Securities Identification Number, TH = Thailand.

VN: (Government Bond) Typical Flow of Bonds Numbering



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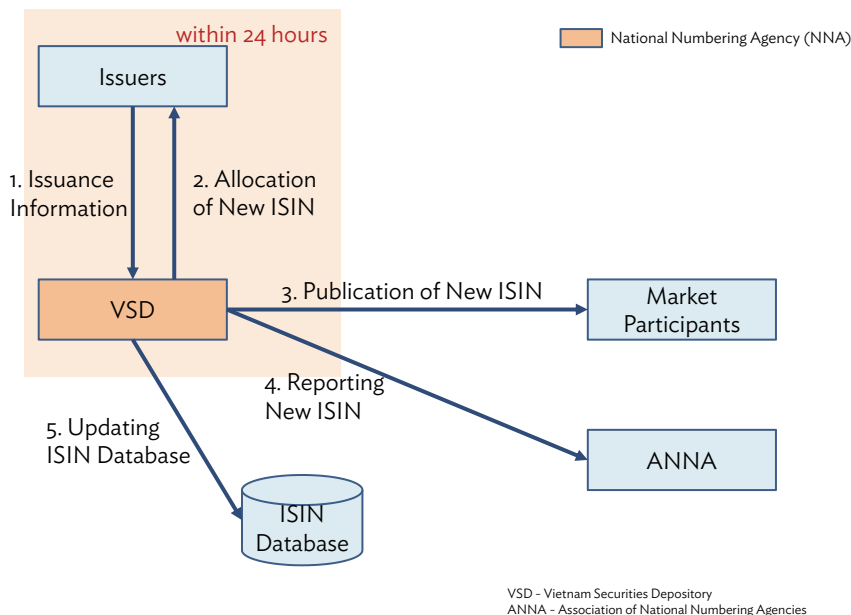
1. State Treasury Ministry of Finance sends issuance information to VSD.
2. VSD allocates ISIN within 24 hours.
3. VSD sends a written notice to the two exchanges and VSD's members and posts ISIN on VSD website.
4. VSD reports new ISIN to ANNA.
5. VSD updates ISIN database.

Notes

- It takes 1 day for issuing new bond code from issuance information to updating code database. Detailed information:
T day: day of bond offering
T+1: VSD registers, allocates bond codes (local code and ISIN) and updates into the database
T+2: day of bond issuance
- Information of ISIN is uploaded onto VSD website for investors and market participants' reference. For specific information on ISIN allocation, investors could refer to the guideline on securities code allocation issued with Decision 149/QĐ-VSD dated 21 August 2012 by VSD.

ISIN = International Securities Identification Number, VN = Viet Nam.

VN: (Corporate Bond) Typical Flow of Bonds Numbering



VN: (Corporate Bond) Typical Flow of Bonds Numbering

1. Issuer sends issuance information to VSD.
2. VSD allocates ISIN within 24 hours.
3. VSD sends a written notice to the two exchanges and VSD's members and posts ISIN on VSD website.
4. VSD reports new ISIN to ANNA.
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Notes

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Harmonization and Standardization of Bond Market Infrastructures in ASEAN+3

ASEAN+3 Bond Market Forum Sub-Forum 2 Phase 3 Report

This report is an outcome of Phase 3 discussions under the ASEAN+3 Bond Market Forum Sub-Forum 2, which have focused on making bond market infrastructures in the region more inter-operable through the harmonization of transaction flows, standardization of messaging items, and implementation of international standards. Most markets in the region will have commenced these harmonization and standardization efforts by 2020, thus taking a significant step toward the integration of ASEAN+3 bond markets.

About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to the majority of the world's poor. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

