### 27th ASEAN+3 Bond Market Forum (ABMF) Meeting

**And Relevant Meetings**

**1-2 February 2018**

Conference Hall, 1st Floor

Cambodia Securities Exchange, Phnom Penh, Cambodia

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**DAY 1 – 1 February**

<table>
<thead>
<tr>
<th>TIME</th>
<th>PROGRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 – 09:00</td>
<td>Registration</td>
</tr>
<tr>
<td>09:00 – 09:10</td>
<td>Welcome Remarks by CSX</td>
</tr>
<tr>
<td>09:10 – 09:20</td>
<td>Opening Remarks by ADB</td>
</tr>
<tr>
<td>09:20 – 09:25</td>
<td>Opening of SF1 by Mr. Koji Ito, Sub Forum 1 Chair</td>
</tr>
<tr>
<td>09:25 – 09:35</td>
<td>Keynote Address by H.E. Mr. Sou Socheat, Director General, SECC Cambodia (SECC) on the publication of Bond Market Guide for Cambodia</td>
</tr>
<tr>
<td>09:35 – 10:30</td>
<td>Session 1: Cambodia Capital Market Development and Future Plans by SECC, and CSX</td>
</tr>
<tr>
<td>10:30 – 10:45</td>
<td>Session 2: Update of ASEAN+3 Bond Market Guides by ADB Secretariat</td>
</tr>
<tr>
<td>10:45 – 11:00</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>11:00 – 11:45</td>
<td>Session 3: Introduction to Credit Guarantee and Investment Facility (CGIF) and Its Roles in Supporting Bond Market Development by CGIF</td>
</tr>
<tr>
<td>11:45 – 12:30</td>
<td>Session 4: Promotion of Local Currency Denominated Green Bonds for Infrastructure Development by ADB</td>
</tr>
<tr>
<td>12:30 – 14:00</td>
<td>Lunch</td>
</tr>
<tr>
<td>14:00 – 14:45</td>
<td>Session 5: Collective Investment Scheme: Its Roles in Supporting Capital Market Development and Infrastructure Investment by Stock Exchange of Thailand</td>
</tr>
<tr>
<td>14:45 – 15:15</td>
<td>Session 6: Progress of Working Group on Information Platform by ABO team</td>
</tr>
</tbody>
</table>
## 27th ASEAN+3 Bond Market Forum (ABMF)

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:15 – 15:30</td>
<td><strong>Session 7: AMBIF Taxation Study</strong> by ADB Secretariat</td>
</tr>
<tr>
<td>15:45 – 16:00</td>
<td><strong>Coffee Break</strong></td>
</tr>
<tr>
<td>16:00 – 16:15</td>
<td><strong>Session 8: Update on ASEAN+3 Multi-Currency Bond Issuance Framework and Outcomes of Market Visits</strong> by ADB Secretariat</td>
</tr>
<tr>
<td>16:15 – 16:25</td>
<td><strong>Session 10: Wrap-up</strong> by ADB Secretariat</td>
</tr>
<tr>
<td>16:25 – 16:30</td>
<td><strong>Closing Remarks by Mr. Koji Ito, Sub Forum 1 Chair</strong></td>
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### DAY 2 – 2 February

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>08:30 – 09:00</td>
<td>ABMF Sub Forum 2 (SF2) Meeting</td>
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<tr>
<td>09:00 – 09:10</td>
<td><strong>Registration</strong></td>
</tr>
<tr>
<td>09:10 – 10:10</td>
<td><strong>Opening Remarks by Mr. Seung-Kwon Lee, SF2 Chair</strong></td>
</tr>
<tr>
<td>09:10 – 10:10</td>
<td><strong>Session 1: Update on the Account Structure Survey</strong> by ADB Secretariat and NTT Data as International Expert</td>
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<tr>
<td></td>
<td>- Key findings of market visits in the Philippines and Indonesia</td>
</tr>
<tr>
<td>10:10 – 10:40</td>
<td><strong>Session 2: Update on the payment and settlement system upgrade in Myanmar</strong> by ADB consultant</td>
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<td>10:40 – 11:00</td>
<td><strong>Coffee break</strong></td>
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<tr>
<td>11:00 – 11:50</td>
<td><strong>Session 3: The Importance of ISO20022 and its interoperability with FinTech in Securities and Payment Business Processes</strong> by SWIFT</td>
</tr>
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<td>11:50 – 12:00</td>
<td><strong>Session 4: Wrap-up</strong> by ADB Secretariat</td>
</tr>
<tr>
<td>12:00 – 12:10</td>
<td><strong>Closing Remarks by Mr. Seung-Kwon Lee, SF2 Chair</strong></td>
</tr>
<tr>
<td>12:10 – 13:30</td>
<td><strong>Lunch</strong></td>
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</table>
DAY 2: Session 1

Update on the Account Structure Survey
Recent Market Visits to:

- The Philippines (October 9-10 & 12, 2017)
- Indonesia (November 14-17, 2017)
Introduction

Figure 1: Flow of Interest and Withholding Tax Payment (Overview)

Topics:
1. By whom and how interest is paid?
2. Who deducts and pays withholding tax?
3. How investor information is collected (especially information on nonresidents)?

Table:
<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>(1)</td>
<td>By whom and how interest is paid?</td>
</tr>
<tr>
<td>(2)</td>
<td>Who deducts and pays withholding tax?</td>
</tr>
<tr>
<td>(3)</td>
<td>How investor information is collected (especially information on nonresidents)?</td>
</tr>
</tbody>
</table>

Figure:

- **Nonresident Investor**
- **(Intermediary)**
- **Global Custodian**
- **(Overseas)**
- **(Domestic)**
- **Resident Investor**
- **Custodian (Participant in Book-entry System)**
- **CSD**
- **Paying Agent**
- **Withholding Agent**

Agenda:

1. Payment Flow
2. Account Structure
3. Investor Information

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Fig. 2: Government Bonds (PH)

- **Paying Agent (PA):** Bureau of Treasury
- **CSD:** Bureau of Treasury
- **Withholding Agent:** Bureau of Treasury
- **(Tax calculation:)** PDTC
- **Interest Payment by PA:** Net (Tax deducted)

**Nonresident Investor**

**Global Custodian**

**Custodian (Participant in Book-entry System)**

**Resident Investor**

**Withholding Agent**

- **Interest Payment**
- **Withholding Tax**
- **Investor Information**

Legend:
- PH
- (Overseas)
- (Domestic)
- Tax
- Net (Tax deducted)

(Source: ABMF International Expert (Based on Information Provided by Bureau of Treasury [BTr] and Philippine Depository & Trust Corp. [PDTC]).)
Payment Flow

Figure 3: Corporate Bonds (PH)

Paying Agent (PA): Issuer’s Bank
CSD: PDTC
Withholding Agent: Issuer’s Bank
(Tax calculation: PDTC)
Interest Payment by PA: Net (Tax deducted)

Resident Investor

(Intermediary)

Nonresident Investor

(Overseas)

(Intermediary)

Global Custodian

(Domestic)

Custodian (Participant in Book-entry System)

Tax Office

Tax

Net (Tax deducted)

Issuer’s Bank (Paying Agent)

PDTC (CSD)

Interest Payment

Withholding Tax

Investor Information

Withholding Agent: Issuer’s Bank
(Tax calculation: PDTC)

Interest Payment by PA: Net (Tax deducted)

(Source) ABMF International Expert (Based on Information Provided by Philippine Depository & Trust Corp. [PDTC]).

Payment Flow

Figure 4: Multi-Layer Holding Structure (ID)

Government Bonds

Bank Indonesia (BI)

Corporate Bonds

KSEI

Brokers

Custodians

Investors

KSEI acts as Sub-registry for government bonds and CSD for corporate bonds.

(Source) ABMF International Expert (Based on Information Provided by PT Kustodian Sentral Efek Indonesia [KSEI]).
Payment Flow

Figure 5: Government Bonds (ID)

- **Paying Agent (PA):** Bank Indonesia
- **CSD:** Bank Indonesia
- **Withholding Agent:** KSEI/Custodian
- **Interest Payment by PA:** Gross (Tax inclusive)

- **Nonresident Investor**
- **Global Custodian**

- **Resident Investor**

**Tax Office**

- **Withholding Agent**
- **Net (Tax deducted)**

- **KSEI/Custodian (Participant in Book-entry System)**

(Overseas)

(Domestic)

(Source) ABMF International Expert (Based on Information Provided by Bank Indonesia [BI] and PT Kustodian Sentral Efek Indonesia [KSEI]).

Payment Flow

Figure 6: Corporate Bonds (ID)

- **Paying Agent (PA):** Issuer’s Bank
- **CSD:** KSEI
- **Withholding Agent:** KSEI
- **Interest Payment by PA:** Gross (Tax inclusive)

- **Nonresident Investor**
- **Global Custodian**

- **Resident Investor**

**Tax Office**

- **Withholding Agent**
- **Net (Tax deducted)**

- **Custodian (Participant in Book-entry System)**

(Overseas)

(Domestic)

(From) ABMF International Expert (Based on Information Provided by PT Kustodian Sentral Efek Indonesia [KSEI]).
### Table 1: Taxes on Bonds (PH & ID)

<table>
<thead>
<tr>
<th>Type</th>
<th>Classification</th>
<th>PH Rate</th>
<th>ID Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Withholding Tax</td>
<td>Residents (Individuals/Corporates)</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nonresidents (Individuals)</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nonresidents (Corporates)</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Withholding Tax</td>
<td>Residents (Individuals/Corporates)</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nonresidents (Individuals/Corporates)</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mutual Funds (Up to 2020/Thereafter)</td>
<td>5%/10%</td>
<td></td>
</tr>
<tr>
<td>Capital Gains Tax</td>
<td></td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Stamp Duty</td>
<td>(Physical securities only)</td>
<td>IDR 6,000</td>
<td></td>
</tr>
</tbody>
</table>

Countries with Which the Philippines and Indonesia Have Concluded Double Taxation Treaties (DTTs)

<table>
<thead>
<tr>
<th>Country</th>
<th>PH</th>
<th>ID</th>
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<tr>
<td>Brunei</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>China</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Hong Kong, China</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Indonesia</td>
<td>●</td>
<td>—</td>
</tr>
<tr>
<td>Japan</td>
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<td>●</td>
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<td>Korea</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Malaysia</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Philippines</td>
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<td>●</td>
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<td>Singapore</td>
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<td>●</td>
</tr>
<tr>
<td>Thailand</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Vietnam</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

(Source) PH: Bureau of Internal Revenue; ID: Directorate General of Taxation.

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**Agenda**

1. Payment Flow
2. Account Structure
3. Investor Information

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*Investors in those economies enjoy a reduced tax rate of 10-15 percent, if conditions are met.*
Account Structure

Figure 7: Accounts for Government Bonds and Corporate Bonds (PH)

- Nonresident Investor B (Individual)
- Nonresident Investor C (Corporate)
- (Overseas)
- (Domestic)
- Custodian X
- Global Custodian B
- Resident Investor A
- Customer Account
- Custodian X's Account
- Custodian Y

(Overseas)
(Domestic)

Customer Account is segregated by withholding tax rate.

(Source) ABMF International Expert (Based on Information Provided by Bureau of Treasury [BTr] and Philippine Depository & Trust Corp. [PDTC]).

Account Structure

Figure 8: Accounts for Corporate Bonds (ID)

- Nonresident Investor B
- Nonresident Investor C
- (Overseas)
- (Domestic)
- Custodian X
- Global Custodian B
- Resident Investor A
- Customer Account
- Custodian X's Account
- Custodian Y

Main Account
Sub-account (Resident Investor A)
Sub-account (Global Custodian B)

KSEI (CSD)

Customer Account is segregated by withholding tax rate.

(Source) ABMF International Expert (Based on Information Provided by PT Kustodian Sentral Efek Indonesia [KSEI]).
Account Structure

Figure 9: Accounts for Government Bonds (ID)

(Account Structure Diagram)

(Source) ABMF International Expert (Based on Information Provided by Bank Indonesia [BI] and PT Kustodian Sentral Efek Indonesia [KSEI]).

Agenda

1. Payment Flow
2. Account Structure
3. Investor Information
**Investor Information**

**Figure 10: Two Angles on Collection of Investor Information**

**[Main Purpose]**

<table>
<thead>
<tr>
<th><strong>Taxation</strong></th>
<th><strong>KYC</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Collecting information to submit it to tax authority (via CSD etc.).</td>
<td>Collecting information to submit it to KYC authority.</td>
</tr>
</tbody>
</table>

**[Timing]**

<table>
<thead>
<tr>
<th><strong>Account Opening</strong></th>
<th><strong>In Intervals</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>[One-time]</td>
<td>[Recurring]</td>
</tr>
<tr>
<td>Collecting information when an investor opens an account with a domestic custodian/intermediary.</td>
<td>Updating information on a regular/irregular basis.</td>
</tr>
</tbody>
</table>

**Investor Information**

**Figure 11: How Investor Information Is Collected in PH and ID**

**PH**

<table>
<thead>
<tr>
<th><strong>Account Opening</strong></th>
<th><strong>In Intervals</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>[One-time]</td>
<td>[Recurring]</td>
</tr>
<tr>
<td>Taxation</td>
<td></td>
</tr>
<tr>
<td>KYC</td>
<td></td>
</tr>
<tr>
<td>Information to CSD</td>
<td>Information to BSP</td>
</tr>
<tr>
<td>Information to CSD (COR* etc.)</td>
<td>Custodian self-check</td>
</tr>
</tbody>
</table>

**ID**

<table>
<thead>
<tr>
<th><strong>Account Opening</strong></th>
<th><strong>In Intervals</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>[One-time]</td>
<td>[Recurring]</td>
</tr>
<tr>
<td>Taxation</td>
<td></td>
</tr>
<tr>
<td>KYC</td>
<td></td>
</tr>
<tr>
<td>Creation of Single Investor Identification (SID)</td>
<td>Occasional update of SID information</td>
</tr>
</tbody>
</table>

**Notes:**
- PH: Public Heath
- ID: Identity
- COR: Certificate of Residency
- DGT: Directorate General of Taxation
- **: DGT: Directorate General of Taxation

**FAQ:**
- "Who is the investor?"
- "What are his/her characteristics?"
- "Does the nonresident investor really reside out of the country?"
Figure 12: Information Flow to CSD for Taxation (PH)

1. **Investor Identification**
   - Information Request from Custodian
   - Documents collected by PH custodian in its own format.
   - Information collected based on (1) PH Treasury (BTr) and PH custodian’s internal requirements (through its own network such as branch network and embassies, if possible).
   - (For nonresidents)
   - Paper-based documents (market practice) or its scanned image.
   - Global Custodian
   - Information on the basis of 4.0.0.0.0.0.0.
   - Paper-based documents for individuals, name, address, ID, nationality, and birth date included; for corporate, certification of incorporation and information of company registry included.

2. **Submission of Form to BTr/PDTC**
   - (Domestic)
   - Paper-based documents; Name, address, ID, nationality, and birth date included; for corporate, certification of incorporation and information of company registry included.

3. **Custodian (Participant in Book-entry System)**
   - Request for Information Submission
   - Investor Information

4. **CSD (BTr / PDTC)**
   - (Overseas)
   - Information on the basis of 4.0.0.0.0.0.0.
   - Paper-based documents or a document, subject to occasional on-site compliance check by BTr/PDTC.

Figure 14: Information Flow to BSP for KYC (PH)

1. **Investor Identification**
   - Information Request from Custodian
   - Information collected by Global Custodian
   - Necessary documents (incl. English translation) to be prepared by GC.
   - (For nonresidents)
   - Nonresident information obtained from PH custodian’s global network (or in case of state-owned banks, embassies in Manila).

2. **Investor Certification**
   - Information checked by PH custodian and stored in its own database in accordance with Anti-Money Laundering Act (AMLA).
   - KYC information regularly checked by PH custodian.
   - (For nonresidents)
   - Nonresident information obtained from PH custodian’s global network (or in case of state-owned banks, embassies in Manila).

3. **Submission of documents to BSP**
   - Paper-based documents or a document, subject to occasional on-site compliance check by BSP.

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Investor Information

Table 2: Example of Nonresident’s Data Collected by Custodian (PH)

- Company type
- Nature of business/industry
- Purpose and reason for opening an account or establishing a business relationship
- Country of registration and head office location, if different
- Name of parent company (if any)
- Geographic location(s)
- Countries where major business is carried out
- Expected source of funds in account
- Country of fund origin
- Expected account turnover per annum and number of transactions
- Date of establishment
- Date business commenced
- Number of staff (local/in other areas)
- Annual sales/revenue
- Years of experience in business
- Major types of transaction and percentage of usage (remittance/check/cash/others)
- Reason(s) for setting up account in the Philippines [For nonresident account only]
- The proportion of capital in the form of Bearer Shares
- Account with other banks
- Whether the shares in the company beneficially are owned by persons other than registered owner

Investor Information

Figure 14: SID Format (ID)

(Source) PT Kustodian Sentral Efek Indonesia (KSEI).
### Figure 15: Creation of SID at Account Opening (ID)

1. **Request for account opening**
   - Information submitted from investor to local Custodian (Participant having an account with KSEI) along with necessary physical documents.
   - Information checked by local Custodian and its e-data sent to KSEI.

2. **SID creation**
   - SID created by KSEI and delivered via local Custodian (and other intermediary, if any) to investor.
   - SID and investor information stored in KSEI’s SID Database for shared use by authorities.

---

### Table 3: Data Required for SID Application (Individual Client) (ID)

<table>
<thead>
<tr>
<th>No.</th>
<th>Item (if not specified will be collected)</th>
<th>M</th>
<th>O</th>
<th>C</th>
</tr>
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<td>1</td>
<td>Investor Type</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Investor Category</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Member Code</td>
<td>M</td>
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<td></td>
</tr>
<tr>
<td>4</td>
<td>Client/Securities Sub-account Code</td>
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<td></td>
</tr>
<tr>
<td>5</td>
<td>Fore Name</td>
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</tr>
<tr>
<td>6</td>
<td>Middle Name</td>
<td>O</td>
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<td></td>
</tr>
<tr>
<td>7</td>
<td>Family (Raiy) Name</td>
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<td></td>
</tr>
<tr>
<td>8</td>
<td>Tax ID</td>
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<tr>
<td>9</td>
<td>Citizenship</td>
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<td>10</td>
<td>Number of KTP (Resident Identity Card)</td>
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<td>11</td>
<td>KTP Expiry Date</td>
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<td>NPWP (Tax Payer Identification Number)</td>
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<td>Place of Birth</td>
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<td>Place of Birth (2)</td>
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<td>Residential Address</td>
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* M: Mandatory, O: Optional, C: Conditional

(Source) PT Kustodian Sentral Efek Indonesia (KSEI).
### Investor Information

#### Table 4: Data Required for SID Application (Institutional Client/Participant) (ID)

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(Note) There are six kinds of datasets depending on the type of investor.

(Source) PT Kustodian Sentral Efek Indonesia (KSEI).

#### Table 5: DGT Forms (ID)

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An applicable DGT Form (DGT-1 or DGT-2) is required to be submitted by the investor before tax events (e.g., interest payment) for the investor to enjoy DTT tax benefits.

A submitted Form is valid until (1) the end of the year (i.e., the end of ID fiscal year) or (2) the end of validity of the foreign authorization, whichever is the earlier. As a result, there may be cases where a nonresident needs to mail a physical form several times a year.

Information to Be Provided (Example of DGT-1)

**Part I: Income Recipient**
- Tax ID Number, Name, Address, Contact Number, Email

**Part II: Certification by the Income Recipient**
- Name, Signature, Place/Date, Capacity in Which Acting, etc.

**Part III: Certification by Competent Authority or Authorized Tax Office of the Country of Residence**
- Related information (Name, Capacity, Place/Date, etc.), Official Seal (If Any)*, etc.

**Part IV: Certification by Indonesia Withholding Agent**
- Tax ID Number, Name, Address, Contact Number, Email

**Part V: To Be Completed if the Income Recipient Is an Individual**
- Name, Date of Birth, Address, Answers to 6 Questions

**Part VI: To Be Completed if the Income Recipient Is a Nonresident**
- Country of Registration/Incorporation, Country Where Management Resides, Address of Head Office, Address of offices in Indonesia (If Any), Answers to 5 Questions

**Part VII: To Be Completed if the Income Earned Are Dividend, Interest, or Royalty**
- Answers to 5 Questions (e.g., “The entity is acting as an agent, nominee or conduit (Y/N).”)

**Part VIII: Income Earned from Indonesia in Respect to Which Relief Is Claimed**
- Answers to Questions Regarding (1) Dividend, Interest, or Royalties (Type, Amount of Income, Amount/Rate of Withholding Tax); (2) income from Rendering Services; or (3) Other Type of Income

(Source) Directorate General of Taxation.
Investor Information

Figure 16: Creation of Nonresidents’ SID (ID)

- Nonresident Investor
- Global Custodian
- Participant in Book-entry System
- KSEI (CSD)

Nonresident Investor’s Account → Global Custodian’s Account → Participant’s Account

ID

Account Opening → Investor Information → SID Creation

Tax rate: 10-15% (Whether submitted)

Nonresident investors may not dare to obtain an SID as there is no incentive for them to do so from taxation point of view.

(Source: ABMF International Expert (Based on Information Provided by PT Kustodian Sentral Efek Indonesia [KSEI]).

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Conclusion

Figure 17: Key Findings

Streamlining procedures and market practices:

- Commonly important
  - Especially avoiding physical paper as evidence and moving to more digital form.
  - Investors consider uncertainty in procedure and prolonged/cumbersome administration process to be a heavy burden, as they make the calculation of the final return difficult.
  - Streamlining procedures and market practices would, not only reduce the burden on market participants, but also improve market attractiveness.

Market practices and acceptance of digital form:

- Each market has its own procedures and market practices.
- As a result, concrete measures to be taken are different.
- Thorough analysis of each market is indispensable to write out a proper prescription.
DAY 2: Session 2

Update on the payment and settlement system upgrade in Myanmar
Outline of FMI Enhancement
(preliminary draft)

February 2018

This document is prepared only for discussion purpose at the 27th ABMF in Phnom Penh. Views expressed here are those of the presenter and do not necessarily reflect any official view of CBM, JICA, or any other organizations.

JICA CBM Expert Team
Taiji Inui
Naoto Mukai, and
Hiroshi Kawabata

Contents

1. Basic policy and concept
2. Outline of FMI enhancement
3. Specific functions and features
4. Back-up and disaster recovery facility
5. Conclusions
1. Basic policy and concept

New CBM-NET to be;
(1) user-friendly payment and settlement system for financial institutions in Myanmar
(2) central bank business infrastructure for financial markets in Myanmar
(3) Financial market infrastructure (FMI) with interoperability connecting other FMIs globally and fostering market activities in ASEAN and ASEAN+3 in the future
(4) one of the best payment and settlement infrastructures globally; and
(5) compliant with Principles for Financial Market Infrastructures (PFMI)

New CBM-NET will;
(1) fully utilize the state of the art technologies
(2) adopt international standards in particular ISO20022
(3) respect domestic market practices in Myanmar financial markets when it is beneficial for the participants, and
(4) provide secure and reliable services to participants

2. Outline of FMI Enhancement

(1) CBM-NET is the high value payment system (HVPS) providing final settlement of Myanmar kyat (MMK).
   ➢ Funds transfer service (FTS) with real time gross settlement (RTGS)
(2) CBM-NET is the central securities depository (CSD) for Myanmar government bond
   ➢ Book-entry system for T-bond/bill
(3) CBM-NET provides collateral and credit management service with intraday overdraft facility.
(4) CBM-NET will provide retail payment services such as automated clearing house (ACH) with both bulk retail payment and rapid retail payment and check truncation system, etc.
Financial market infrastructures and related systems (possible generic model for central banks)

Note: there are differences economy by economy, central bank by central bank, and CSD by CSD.
This is just a possible case and preliminary draft which needs to be improved and revised.

Types of payments and businesses including processing systems and way of settlement (tentative)

1. CBM transactions: deposit/withdrawal of banknote and check/bill etc.
2. T-bond/bill transactions: cash leg of DVP including SPDC
3. Interbank transactions: funds transfer between participants
4. CCT: funds transfer for customers, queued with LSF
5. Rapid retail payment: almost real time payment between customer accounts
6. ACH bulk payment: payment such as payroll, utility, pension, etc.
7. Cheque truncation: conversion of physical cheque to electronic image and digital data
8. MCH: Physical cheque clearing and settlement
9. ATM transactions
10. Card/POS transactions
11. Transactions between PSPs including mobile payment

Possible Payment and Settlement Functions for CBM-NET

1. CBM transactions for deposit/withdrawal of banknote and check/bill
   ➢ Considering the nature of the businesses, deposit/withdrawal of banknotes and checks/bills are to be settled directly using current account in CBM-NET.

2. Cash leg of DVP settlement of T-bond/bill transaction
   ➢ Considering that T-bonds/bills are not liquid, cash leg of DVP settlement is not supposed to be waiting in a queue. As such, the cash leg needs to be settled directly using current account in CBM-NET.

3. Interbank transactions (bank transfers)
   ➢ Interbank transactions are subcategorized into two types, which are transactions without queuing or transaction with queuing for liquidity saving features (LSF). Urgent transactions are settled directly at RTGS account. Also, in order to settle bank transfers with minimum liquidity (less balance in the accounts), RTGS with LSF will be used. When there is not sufficient amount of balance in the account, the transaction needs to wait in a queue. The queued transactions may be settled by bilateral offsetting and/or multilateral offsetting.

4. Customer credit transfers (CCT)
   ➢ In order to settle customer transfers with minimum liquidity (less balance in the account), RTGS with LSF will be used for CCTs, too. When there is not sufficient amount of balance in the account, the transaction needs to wait in a queue same with the interbank transactions with queuing for LSF. The queued transactions may also be settled by bilateral offsetting and/or multilateral offsetting.

5. Rapid retail payment transactions
   ➢ Rapid retail payment transactions will be processed by switching the transactions to receiving banks in a real time base. Payment messages can be sent real time basis to receiving banks. The messages are switched to receiving bank instantly and cleared using clearing accounts. Cleared balances will be settled by designated time net settlement (DTNS).

6. ACH bulk payments
   ➢ ACH bulk payments are processed by switching the transactions to receiving banks. Bulk payments for payroll, utility, pension payments, etc. will be processed and can be sent and received by file transfer. Future dated transaction can also be handled. The messages are switched to receiving bank and cleared. Cleared balances are settled by DTNS.

7. Cheque truncation transactions
   ➢ Physical cheques are converted to electronic images and digital data. Electronic images are sent to issuing banks. Digital data are cleared and their net positions are settled by current accounts as DTNS.

8. Mechanized clearing house (MCH)
   ➢ Physical cheques are cleared and net positions of participant banks are settled at a cut off time (DTNS which is same as current procedure).
Possible Payment and Settlement Functions for CBM-NET

9. ATM transactions
   ➢ Net position of participant banks are calculated by MPU and settled using current accounts of CBM-NET (same as current procedure adopted for ATM transactions through MPU).

10. Card/POS transactions
    ➢ Net position of participant banks are calculated by MPU and settled using current accounts of CBM-NET (same as current procedure adopted for ATM transactions through MPU).

11. Transactions between PSPs including mobile payment
    ➢ Net position of participant banks are settled at a cut off time (to be considered).

3. Specific functions and features

   (1) Direct connections with participant core-banking systems (CBS) using widely accepted technologies and international standards to have better interoperability
       ➢ Straight through processing (STP) with participants

   (2) Adoption of international standards ISO20022

   (3) Liquidity saving features (LSF) adopting queuing and offsetting

   (4) Simultaneous processing and DVP and collateralization (SPDC)

   (5) Automated clearing house (ACH) functions such as (i) bulk retail payment and (ii) rapid (instant) retail payment with capability to enhance new payment instruments

   (6) User-friendly user interfaces such as alert and dashboard functions
(1) Direct connections of CBM-NET with participant core-banking systems (CBS)

In order to implement straight through processing (STP) between CBM-NET and CBS of participants, standards and communication protocols widely accepted globally (in particular ASEAN and ASEAN+3) with better interoperability having characteristics such as extensibility, neutrality, and independence are adopted.

Following international standards are adopted to secure interoperability between CBM-NET and financial institutions (FIs).

- ISO 20022 for message standard (to be explained later)
- ISO 9362 (BICFI) for financial institution identification
- ISO 6166 (ISIN) for securities numbering
- ISO 3166-1 for country code, and
- ISO 4217 for currency code

Note: BICFI: Business Identifier Code for Financial Institution, ISIN: International Securities Identification Number,

(2) Adoption of international standards ISO20022

In order to implement straight through processing (STP) between CBM-NET and CBS of participants, standards and communication protocols widely accepted globally (in particular ASEAN and ASEAN+3) with better interoperability having characteristics such as extensibility, neutrality, and independence are adopted.
(3) Liquidity saving features (LSF) adopting queuing and offsetting

- LSF will process Payment Instruction Message which designated to settle by LSF mode.
- LSF settlement will be conducted on RTGS (current) account.

Either of RTGS Mode or LSF Mode will be indicated for each instruction.

Message (RTGS Mode)

Queue1
Queue2
Queue3

Message (LSF Mode)

- LSF (Liquidity Saving Feature)

Event driven:
1) A new payment instruction submitted
2) RTGS a/c balance increased
3) Top que changed (settled, cancel…)

Time driven:
- If settlement is not successful:
  - Remove causative queue and retry until settlement succeed or reach maximum retry number

Continuous offset and calculate Net position

- RTGS (Current) a/c

*(All type of settlement such as RTGS or LFS (BLOS, MLOS) will be processed one by one. Waiting settlement will be held (not be rejected).*

source: JICA, MRI, and Promontory

(4) Simultaneous Processing of DVP and Collateralization (SPDC)

The six processes from (i) to (vi) are processed simultaneously, which saves liquidity for settlement significantly.
(4) Simultaneous Processing of DVP and Collateralization (SPDC)

- SPDC (Simultaneous Processing of DVP and Collateralization), which has been introduced among especially developed countries, is a kind of functions for saving the settlement liquidity to buy T-bond.
- SPDC worked efficiently and effectively when the global financial crisis happened around 2008. More specifically, the financial market which had FMI with this application didn’t have serious liquidity shortage and stayed relatively calm without financial problems of brokers and banks.
- Later, other financial markets such as European and Hong Kong markets are trying to implement this kind of application to have better liquidity saving facility.
- This will also contribute to foster secondary market of T-bond/bill.

- SPDC allows T-bond buyer to provide T-bond/bill that will be received from T-bond seller as collateral for an intraday overdraft from CBM and simultaneously use the funds drawn to pay the seller.

SPDC is useful tool for FIs to process DVP with less settlement liquidity.

source: JICA, MRI, and Promontory

(5) Automated Clearing House (ACH)

Facilitating automated clearing house (ACH) functions such as
(i) bulk retail payment (BRP) for such as payroll, pension, tax, utility payment, and so on.
(ii) rapid (instant) retail payment (RRP) with capability to enhance new payment instruments
Rapid retail payment with bulk payment services

1. A company can send bulk payment data such as a file containing payroll data to a sending bank. The sending bank calculate the total amount of the payroll messages and debit the amount from the account of the company opened in the sending bank. The sending bank sends the file to CBM. CBM saves the file containing credit instruction messages to individual employees of the company until the processing day. On the processing day, the individual messages are switched to receiving banks as well as recorded to clearing accounts to calculate the balances in a real time basis. The participants (the banks) can retrieve their own balances including message items in a real time basis from CBM-NET terminals and know their possible positions. Receiving banks credit the salary amounts to individual the company’s employees’ accounts opened in the receiving banks instantly. At a certain cut-off time specified by CBM, the net balances of the clearing accounts are settled by CBM-NET FTS (designated net settlement). Risk management measures are implemented in line with other measures for the settlement of netted balances from MCH and MPU.

2. A company can send rich data such as trade data with ISO 20022 (XML) format to sending bank together with payment data. The sending bank processes the data with same way explained above.

3. Individual persons can remit money instantly to a person who hold an account in a receiving bank. The message sent from sending bank to CBM is to be processed instantly. The message is switched to the receiving bank in which the payee opens account as well as recorded to clearing accounts for designated net settlement at the cut-off time. In case of future dated payment, the message is to be saved in CBM-NET until the specified processing day.

4. Financial institutions can get same services with companies and individual persons as well as on behalf of them.

5. Payment service providers can be connected with the sending banks and receiving banks in order to process their messages including new types of payment instruments. Detailed interface needs to be discussed during design phase.
(6) User-friendly user interfaces such as alert and dashboard functions

(i) User-friendly alert function provides warning or information to both CBM and FIs for their transactional data monitoring.

(ii) Dashboard function displays operational data and financial data using charts and graphs for easy glance to both CBM and FIs.

(iii) Interfaces with other applications will also be implemented.

4. Back-up and disaster recovery facility

(1) Hot standby facility is implemented at the main site.

(2) Realtime (asynchronous) remote backup facility will be implemented at remote site about 300 km from the main site.

(3) Targeted Recovery Point Objective (RPO) and Recovery Time Objective (RTO) will be as follows.

   (i) RPO: Near-zero (This may vary depending on the quality of network connection)

   (ii) RTO: 2 hours (The more precise RTO will be examined after the verification of recovery procedures.)
5. Conclusions and acknowledgements

Completing definition of user requirements for CBM-NET enhancement project, it is expected that the project will start from fiscal 2018 and production operation of new CBM-NET will start in 2020. The new CBM-NET will be one of the most advanced payment and settlement infrastructures providing full fledged services. It is also recommended that deep and liquid financial markets including sound market practices be developed by utilizing the market infrastructures.

Taking this opportunity, JICA CBM Experts would like to express their heartfelt gratitude to CBM top management Governor U Kyaw Kyaw Maung, former Deputy Governors U Maung Maung Win and U Set Aung (currently Deputy Ministers of Ministry of Planning and Finance), and Deputy Governor U Bo Bo Nge for their instructions leading the project. Also, Director Generals Daw Than Than Swe and Daw Mying Mying Kyi for their managing the project to be successful. CBM officers have been cooperating with JICA CBM Experts.

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Thank you

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This PowerPoint slides are made solely for discussion purposes. Views expressed are those of the JICA
CBM Expert Team and do not necessarily reflect any official view of CBM, JICA, or any other organizations.
DAY 2: Session 3

The Importance of ISO20022 and its interoperability with FinTech in Securities and Payment Business Processes
ABMF
Day 2: Session 3

January 2018

Agenda

(1) Business Standards & ISO 20022

(2) The ISO 20022 migration study

(3) Open Banking, APIs and ISO 20022

(4) Business Standards and DLT
“Whatever the technology, in multi-party networked business, participants need to agree on the meaning and content of shared data, business processes, roles and responsibilities. This is the domain of business standards”.
What are these business standards?

business datamodel

business processes

The ISO 20022 migration study
ISO 20022 migration drivers

- **Payments**, need for a consistent end-to-end experience
  - PMI migrations in major markets
    - Fed and TCH (2022), HKMA (2019); BoE/CHAPS (2022); Target2 (2021 big-bang); EURO1 (date tbc)
    - USD, EUR, GBP, JPY, CHF, RMB … HVPS will be ISO 20022 by 2022
    - Specification work underway – questions about cross-border interoperability
  - Instant payments using ISO 20022:
    - US (TCH), GB (FPS migration), EU (SCTINST: TIPS, RT1, Equens, STET), AU, SG, CA, DK, SE, …
  - Compliance: growing concerns re- data transparency
    - Granularity and length of party elements; travel rule; support for ‘ultimate’ parties

- **Securities**, ISO 20022 growing in some market thanks to T2S, CSDs, Investment Funds
  - Some requests for multi-party ISO 20022 e.g. for IM/BD <-> Global Custodian <-> Local Custodian; CSD <-> CSD
  - But overall fewer immediate drivers than for payments

- **Industry demand**, ISO 20022 now requested by GTBs
  - Considered strategic, future-facing

Scope and deliverables

**Scope**

- **Across business areas**
  - Payments, securities, treasury, trade
- **Migration approach and considerations:**
  - Migration strategy – phasing – timescale – tools and community support,
  - Community readiness,
  - Market practice and interoperability with MIs,
  - SWIFT readiness – platform (footprint, messaging), technology, business model.

**Deliverables and timeline**

- **Consultation phase** (consultation paper and community feedback): starting Q2 2018
- **Final recommendation and report:** 2H 2018
Considered approach

1. Migration strategy
   - Timeline per business domain & phased approach, several options being analysed

2. Analysis per business domain
   - Readiness and demand of key MIs and their community, including drivers and business justification for migration
   - Market practice requirements
   - Processes to reproduce/ re think (e.g. cancellation process in MT)?

3. SWIFT to assist the community in terms of:
   - Coexistence support
     • Market practice usage guidelines
     • Translation specifications and implementation
   - Maintenance and release management
     • MT vs. ISO 20022 process

Consultation process

- Consultation paper
- Final report and recommendations

Preparation (draft migration plan, analysis ..)
  Informal consultation

2018

External consultation (survey)

Gather and analyse feedback
Upcoming major migrations

Platform Renewal

1. ECB ~ November 2021
   - Merge T2/T2S
   - Follow HVPS+
   - Aim for Rich format
2. BoE ~ 2022 – 2023
   - Together with deep infrastructure renewal
   - Align domestic PMIs
   - Follow HVPS+
   - Aim for Rich format
3. SARB ~ TBC
   - Together with system refresh
   - Align domestic PMIs

Interoperability

1. HKMA ~ 2019 - 2020
   - Enable interoperability with FPS
   - Aim for Like for like
2. FED ~ 2023
   - Enable interoperability with other PMIs
   - Big bang - Clean-up legacy first
   - Waved - Migrate to like for like
   - Big bang - Implement enhancements

HVPS+
Building common practices for ISO 20022 implementation for High Value

- Created in April 2016
- 13 MIs – 7 Banks
- Based on work conducted by HVP (Like for Like)
- Guidelines available for Core Payments messages (6 messages)
- 4 Subgroups:
  - Interoperability (PACS.008 ~ready)
  - Liquidity Management
  - Reporting
  - Interbank Direct Debit (done)

Guidelines publicly available: https://www2.swift.com/mystandards
RBA discussion

Migration aspects overview

- Get all participants up to speed ahead of the migration execution: training, activities, testing, …
- Agree on the approach to on-board the community: wave, planning, communication
- Find the right balance between HVPS+ and domestic needs
- Engage community on plans, phase and migration choices
- Use a standards documentation tool to broadcast information, changes and enable participants to adapt
- Agree on the approach to on-board the community: wave, planning, communication
- Get all participants up to speed ahead of the migration execution: training, activities, testing, …
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Open Banking, APIs and ISO 20022
Open Banking, APIs and ISO 20022

• ‘Open Banking’ refers to the convergence of technology and regulation that will make the financial industry more open and more competitive

• the Open Banking Order, was launched in the UK by the Competition and Markets Authority (CMA)
  
  • This order aims to stimulate competition, standardise technical and functional delivery models and ensure compliance and harmonisation through open collaboration.

  • UK Open Banking represent significant business and technical challenges for the industry. Effectively break the lock that retail banks hold on customer current accounts by requiring banks to offer API access to account balance and payment initiation services to authorised third parties.

Open Banking, APIs and ISO 20022

• Regulatory changes taking effect in the banking sector in the near future will require the traditional players to change their mind-set from a closed model to an open but secure one.

• Rather than being focused and concerned about their own profitability around open APIs, banks need to be asking how firms and counterparties attached to their platform will benefit from the interaction.
  
  • Short term plans to profit from open APIs may prohibit the development of an entire ecosystem which can be more profitable in the near future.

  • For long-term benefits, banks should not see open APIs as a burden but as an opportunity to enhance connectivity with the customer and the rest of the industry.
Open Banking, APIs and ISO 20022

- API standardisation is important if open banking initiatives are to deliver on their promise of improved efficiency and fair competition.

- Ensure that APIs capture data that is compatible with back-office and downstream processes, otherwise the risk grows that data will be misinterpreted or corrupted as it flows through the financial system.

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### Open Banking, APIs and ISO 20022

<table>
<thead>
<tr>
<th>Messaging</th>
<th>API</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture</td>
<td>Enter information set flows between all participants.</td>
</tr>
<tr>
<td>Interaction style</td>
<td>Point-to-point asynchronous messaging.</td>
</tr>
<tr>
<td>Type of message</td>
<td>Messages cover many use cases and apply for different rates</td>
</tr>
<tr>
<td>Development and maintenance</td>
<td>Robust development requiring predefined, process maintenance cycles</td>
</tr>
<tr>
<td>Types of services and applications</td>
<td>Highly automated back office applications</td>
</tr>
<tr>
<td>Data format</td>
<td>Proprietary or extensible Markup Language (eXtensible Markup Language (XML)), JavaScript Object Notation (JSON), OpenAPI</td>
</tr>
</tbody>
</table>

So how can an API developer take advantage of ISO 20022 to facilitate interoperability? That is, reuse the common business semantic definitions that exist in the standard in an API context, without incurring the aspects of the standard that are more suited to messaging?
ISO 20022 APIs: Standards Angle

- **Enhanced ISO 20022 models** (with API specific features such as state diagrams)
- **Standard JSON Schema specification** (currently still in draft)
- **New target implementation specs (such as Swagger)?**

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Business Standards & DLT
A different paradigm: messaging versus DLT

**Messaging** – information is shared using point-to-point messages

**DLT** – information is shared using a shared ledger that all participants can consult

What can we re-use from existing standards?

**Reference Data Codes**
- Currency, Country, BIC, MIC, LEI, ISIN, etc.

**ISO 20022**
- Business semantics and business processes
ISO 20022 architecture and re-use

<table>
<thead>
<tr>
<th>Iso 20022 as a messaging standard</th>
<th>Business / Conceptual</th>
<th>Logical</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>The logical message layer enhances the business layer for semantic definitions</td>
<td>Defines financial concepts, e.g., &quot;Credit Transfer&quot; and business processes</td>
<td>Defines e.g. credit transfer messages, to serve the business process</td>
<td>Defines physical syntax, e.g. XML</td>
</tr>
</tbody>
</table>

Standards for DLT
The logical DLT implementation re-uses business concepts to ensure interoperability with messaging

Business / Conceptual
Defines financial concepts, e.g., "Credit Transfer" and business processes

Logical
A "logical" implementation - defines data and behaviour based on new paradigm assumptions

Physical
A physical implementation using e.g. Hyperledger, Ethereum

What is still missing?

- Smart Contract behaviour (DLT business process)
- Roles and Responsibilities adapted to DLT
- Mature and stable target implementation technology
TC 307 - Blockchain and distributed ledger technologies

• **Working Group created**
  - ISO/TC307 NWIP1: Terminology

• **Study groups created**
  - ISO/TC 307 SG 1 Reference Architecture, taxonomy and ontology
  - ISO/TC 307/SG 2 Use Cases
  - ISO/TC 307/SG 3 Security and Privacy
  - ISO/TC 307/SG 4 Identity
  - ISO/TC 307/SG 5 Smart Contracts

TC 307 - Blockchain and distributed ledger technologies

• **Liaisons to TC307**
  - ISO/IEC JTC 1/SC 22 *Programming languages, their environments and system software interfaces*
  - ISO/IEC JTC 1/SC 27 *IT Security Techniques*
  - ISO/IEC JTC 1/SC 37 *Biometrics*
  - ISO/IEC JTC 1/SC 40 *IT Service Management and IT Governance*
  - ISO/TC 46 *Information and Documentation*
  - ISO/TC 68 *Financial Services*
  - ISO/TC 215 *Health Informatics*
  - ISO/PC 308 *Chain of Custody*
  - ISO/TC 309 *Governance of Organisations*
TC 307 - Blockchain and distributed ledger technologies

• Liaisons from TC307 to

  • ISO/IEC JTC 1 Information Technology – Laura Lindsay
  • ISO/IEC JTC 1/SC 27 IT Security Techniques - Shinichiro Matsuo, Pietu Pohjalainen
  • ISO/IEC JTC 1/SC 32 Data management and interchange
  • ISO/IEC JTC 1/SC 38 Cloud Computing and Distributed Platforms – Brian Shepherd, Toshihiro Suzuki
  • ISO/IEC JTC 1/SC 40 IT Service Management and IT Governance - Peter Sze
  • ISO/IEC JTC 1/SC 41 Internet of Things and related technologies – Mike Edwards
  • ISO/TC 46 Information and documentation – Victoria Lemieux
  • ISO/TC 68 Financial services – Mark Ebeling, Jan Noppen, Caroline Thomas
  • ISO/TC 262 Risk management
  • ISO/TC 292 Security and resilience – Nick Addison
  • ISO/PC 295 Audit data collection
  • ISO/PC 308 Chain of custody – Nick Addison
  • ISO/TC 309 Governance of Organisations – Sian Jones

Bringing it all together …
Consider the traditional ‘four corner’ payments model

Well, it changes…
and it changes even more...

and it doesn’t stop changing...
but the business standards remain the same…

If you want to know more…
