

July 6, 2007

## **Template for the Self-Assessment Report on the Observance of the Recommendation for Securities Settlement Systems (Equities and Bonds)**

### **I. Introduction**

#### **General**

1. The system being assessed is the clearing and settlement system operated by Thailand Securities Depository Company Limited (TSD). The SEC, Thailand conducted this self-assessment in 2004, as part of the IOSCO Pilot Program, to assess observance level of the implementation, against the Assessment Methodology for CPSS-IOSCO Recommendations for Securities Settlement Systems. The information provided has recently been updated for securities settlement systems.

#### **Scope of the assessment**

2. The assessment covers both the securities traded on the Stock Exchange of Thailand (SET) and the government bonds traded over-the-counter (OTC), which are cleared and settled through the main clearing and settlement systems operated by the TSD.

3. There is no other entity that provides clearance and settlement services associated with these securities that are not covered by the assessment.

#### **Institutional and market structure**

4. Nine years after the 1997 financial crisis, the situation of the Thai securities market in 2006 is significantly different. An increasingly robust market environment has been driven primarily by several reform measures and conducive economic conditions. Government policies to stabilize economy helped improve domestic economic growth. Several large corporations and privatized state-enterprises entered the securities market to raise funds given the low mobilization costs and strong public confidence in economic growth.

#### Equity market

##### *The Stock Exchange of Thailand (SET)*

The SET is Thailand's only authorized secondary securities market. The SET was established by a specific law in 1974 and began trading operation on April 30, 1975, long before the SEC's coming into existence. As defined in the SEA, the SET's primary roles are to serve as a center for trading of listed securities, to provide essential systems needed to facilitate securities trading, and to undertake any businesses relating to the securities exchange; such as a clearinghouse, a securities depository center, a securities registrar, or similar activities as approved by the SEC. In 1998, the Market for Alternative Investment (MAI) was established as a business unit of the SET, with an objective to open up fund-raising opportunities for small and medium-sized enterprises (SMEs) as well as provide a greater range of investment alternatives for investors.

Trading on the SET has been fully computerized since April 1991. The trading system operated at the SET is the Automatic Order Matching system, which performs order-matching process according to price then time priority, without human intervention. In terms of the matching process, there are two procedures: continuous order matching and call market matching. Continuous order matching operates during the regular trading sessions. The call market system is utilized in calculating the opening and closing prices of a security at the opening and closing of the trading hours.

All trading transactions on the SET are cleared and settled within the third consecutive business day following the trading day (T+3). The clearing and settlement process is managed by Thailand Securities Depository Co., Ltd. (TSD), a wholly owned subsidiary of the SET.

At the end of April 2006, SET index closed at 679.84 points, down by 33.89 points or 4.75% lower than 2005 year-end. The annual turnover value for 2006 was recorded at US\$ 111 billion and an average daily turnover was US\$ 459 million. At the end of 2006, there were 476 companies listed on the SET and 42 companies on the MAI with the total market capitalization of US\$ 112 billion, which was about 51% of the GDP.

### Bond market

After the economic crisis, the Thai government issued a significant amount of bonds to fund budget deficit and finance the financial sector cleanup. At the end of 2006, the outstanding value of government bonds and bills was US\$ 41.45 billion (18.81% of GDP) and US\$ 6.43 billion (2.92% of the GDP), respectively. The most important issues of government bonds at present are loan bonds issued by the Ministry of Finance (MOF). Owing to the large issue size and trading volume as well as various maturities of those government bonds, the market can derive risk-free benchmarks, which are now available for maturities of up to 17 years. Apart from government loan bonds, the outstanding values of state-owned enterprise (SOE) bonds were US\$ 9.39 billion (4.26% of the GDP) and US\$ 4.46 billion (2.02% of the GDP) for government guaranteed and non-government guaranteed issues, respectively. As for state agency bonds, the outstanding value was US\$ 25.29 billion (11.48% of GDP). Most corporate bonds were issued domestically in private placement. Their outstanding value was US\$ 23.98 billion (10.89% of the GDP). The issuance of foreign bonds was comparatively not significant, with the outstanding value of only US\$ 454 million. (0.21% of the GDP)

As regard trading activities in the secondary bond market, the total trading value at 2006 year-end was recorded at US\$ 120 billion, with the average daily trading value of US\$ 496 million. Of the total, the value of the state agency bonds accounted for approximately 46% and the remaining was comprised mainly of T-bills, government, corporate and SOE bonds, which accounted for 35%, 15%, 2.1% and 1.9%, respectively. Inter-dealer trading transactions amounted to 30%. The remaining 70% was the transactions between dealers and their clients. Mutual funds were the major players on the clients' side, while active dealers were mainly the commercial banks.

#### *Thai Bond Market Association (ThaiBMA)*

Thailand's first organized secondary market for bonds was established in 1998 as the Thai Bond Dealing Centre (Thai BDC). Its origin can be traced back to 1994 when the Association of Securities Companies (ASCO), with encouragement from the SEC, formed a Bond Dealers Club (BDC) under its umbrella to bring about the organization and centralization to the bond market.

The BDC began providing trading services in November 1994. Although the kind of services provided was merely to facilitate trading negotiation process, and not that of a matching service, there was a possibility at the time that such activity could be interpreted to fall under the definition of an exchange. (A clarification of what constitutes an exchange came out much later). Therefore, the BDC was transformed its legal form to that of a licensed exchange under the name Thai BDC in April 1998, even though by that time there was very little activity on its trading platform. Trading service was eventually discontinued in May 1999.

In 2005, a major policy decision was made by the Steering Committee, chaired by the Minister of Finance and comprising policy makers and market participants, to transfer that platform to the SET. Settlement of government securities arranged on gross settlement basis

was migrated from the Bank of Thailand to Thailand Securities Depository (TSD) in May 2006 in accordance with Thailand's Bond Market Development Plan Phase II (2005 – 2014), making the TSD the single provider of securities settlement system in Thailand in addition to being a share depository center and clearinghouse. In September 2005, the Thai BDC was transformed into the Thai Bond Market Association (Thai BMA), performing the functions of an information center for the bond market, industry forum, bond pricing agency, as well as self-regulatory organization for industry professionals.

#### *Bond Electronic Exchange (BEX)*

The SET launched the Bond Electronic Exchange (BEX) in November 2003. Its main role is to support the development of Thailand's secondary bond market. The BEX aims to expand bond activities to smaller investors and to educate non-institutional investors of additional investment products. The SET allowed the BEX to include trading of both government and corporate issues in order to attract bond activities in retail and wholesale markets. The SET now operates bond trading on both exchange platform (AOM: Automatic Order Matching) and non-exchange platform (FIRST: Fixed Income and Related Securities Trading System), which was aimed to serve fixed income dealers and institutional investors.

At the end of the year 2006, the total outstanding size of all bonds listed on the BEX is US\$ 88 billion (40% of the GDP), 307.1% higher than the value at the 2005 year-end, resulting from the listing of 577 government bonds on the BEX during December. The total trading value was US\$7.23 million for the year 2006, and US\$2.37 million for the last quarter of 2006. Government bond trading through BEX is very low (0.00% of the total trading transactions, with only quotes and no execution), which can probably be assumed that most government bonds are traded through the OTC market with real-time gross settlement (RTGS).

#### Clearing and settlement system

The Thailand Securities Depository Co., Ltd. (TSD), a wholly owned subsidiary of the SET, is the only clearinghouse and central securities depository in Thailand.

The TSD is a central securities depository for government bonds, shares, debentures, investment units, warrants on shares, warrants on debentures, and warrants on investment units, Treasury notes, bills of exchange, other debt instruments issued by state agencies, transferable subscription rights, derivatives warrants and depository receipts. Its members include securities companies, commercial banks, custodian banks, finance companies, Bank of Thailand, and certain institutional investors such as insurance companies, financial institutional or juristic persons established by specific laws.

The TSD also assumes the function of securities registrar (maintaining the register of securities holders and administering distribution of dividend/interest/rights to the holders on record) for equity securities and corporate bonds. However, for government securities, the registrar function remains with the BoT.

In performing the clearing and settlement function for equities and bonds traded on the Bond Exchange (BEX), the TSD operates a multilateral netting settlement system where it acts as CCP. There are 2 types of clearing members, general members and associate members. General members assume full responsibility to the TSD in fulfilling delivery and payment obligations for themselves and their clients, including the associate members they sponsor. General members have to contribute to the clearing fund. Currently, securities companies are only general members. Associate members are other users of the settlement system such as custodian banks, which are allowed by the TSD to by-pass the general member in sending and receiving delivery and payment to and from the TSD. However, in the event that the associate member fails to perform its obligation, the general member sponsoring that associate member would automatically be responsible to the TSD. Associate

membership is open to securities companies, custodian banks, trustees, and certain institutional investors such as insurance companies, the Government Pension Fund and asset management companies.

The TSD operates an RTGS settlement system (without CCP) for corporate and government bonds traded over-the-counter as well as on the FIRSTS (a non-exchange, negotiated electronic trading platform operated by the SET).

The TSD set up a subsidiary, the Thailand Clearing House (TCH), in August 2004 to be a derivatives clearinghouse for the TFEX. It was envisaged at the time that in the future, the risk carrying vehicle / CCP function for securities settlement at the TSD could migrate to the TCH. The possibility is still being explored by the SET and TSD.

### **Description of regulatory structure and practices**

5. The Securities and Exchange Commission (SEC) is responsible for regulating securities businesses in Thailand. The SEC was established in 1992 under the Securities and Exchange Act B.E. 2535 (1992) (SEA). Pursuant to the SEA, the SEC is empowered to supervise and develop the primary and secondary markets of the country's capital market system as well as finance or securities related participants and institutions<sup>1</sup>. Its primary role is to formulate policies, rules and regulations regarding supervision, promotion, and development of securities businesses as well as other activities relating to securities businesses, securities exchanges, other organized securities trading centers, and entities related to securities businesses; including the issuance and offering of securities for sale to the public, the acquisition of securities for business takeovers, and the prevention of unfair securities trading practices.

To achieve the policy objectives laid down by the SEC, the Office of the Securities and Exchange Commission (the Office) was established upon enactment of the SEA as an independent government agency responsible for carrying out the tasks under the direction and guidance of the SEC.

The SEC is authorized by the SEA to be the oversight regulator of securities settlement systems. Under the present SEA, the SET Board has the authority to make policies requirements for its subsidiaries, including the TSD, subject to SEC approval. The SEC communicates its policy guidelines from time to time to the SET and TSD formally in writing and informally.

### **Information and methodology used for assessment**

6. Main sources of information used in making the assessment are written documents e.g. the answers to the key questions prepared by the TSD, and the SEC's Legal Department as well as discussions with the TSD, BOT, and SEC staffs who conduct on-site audits on the TSD.

7. The SEC, BOT and TSD had studied the Assessment Methodology for Recommendations for Security Settlement Systems (RSSS) thoroughly and together discussed the interpretation of key issues and questions in order to harmonize comprehension. The TSD then answered those key questions and presented their answers to the SEC. The SEC prepared the self-assessment based on the TSD's answers where relevant. Series of discussions and consultation among TSD, BOT, and SEC staffs also took place while the self-assessment was being conducted. To provide complete answers to the questions contained in the templates is very time-consuming and thus is the key factor limiting the assessment process.

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<sup>1</sup> The SEC oversees the following businesses: (1) Brokerage, Dealing, Underwriting (including derivatives brokerage and dealing) and Securities borrowing and lending (2) Investment advisory in securities and derivatives (3) Mutual fund management, Private fund management, Provident/ Pension fund management, Derivatives fund management, Venture capital fund management (4) Exchange (5) Clearinghouse (6) Depository center (7) Registrar.

## II. Assessment of Observance

### Executive summary of the recommendation by recommendation assessment

#### 8. Principal conclusions of the assessment

##### Legal risk

1. Legal framework The laws, regulations, rules and procedures and contractual provisions governing the operation of the TSD are clear and publicly accessible. There is clear and effective legal basis for enforceability of transactions, book entry transfers, and securities lending. Netting by novation and substitution is generally enforceable under the Thai bankruptcy law, with the exception of transactions that take place on the day that the court has ordered receivership. The SEA provides a legal basis for customer securities being held at the TSD, but there may be uncertainties in the case of intermediary's insolvency. Law amendment in this regard is in the process.

##### Pre-settlement risk

2. Trade confirmation: All trades between direct market participants are confirmed on T+0.

3. Settlement cycles: At 2006 year end, rolling settlement for equity stocks occurs on T+3 for 99.96% of net transactions (99.43% of net settlement value), and fails usually last only for 1 day. The settlement cycle for bonds occurs within T+2 for those traded on the BEX and depending on the agreement between clearing members for those traded on the OTC or FIRSTS. The benefits and costs of shorter settlement cycle have been evaluated.

4. Central counterparties: The TSD acts as a CCP for securities listed on the SET and generally uses netting arrangements by novation, The TSD has instituted risk controls sufficient to absorb shocks, and is backed up by its parent's resources.

5. Securities lending: There is infrastructure for securities lending and the Government Pension Fund (GPF) provides supply of securities to enhance SBL functioning.

##### Settlement risk

6. Central securities depositories: Immobilization and book entry transfers are achieved for the most active market participants.

7. Delivery versus payment (DVP): All transactions by direct participants of the TSD system are settled on a DVP basis.

8. Timing of settlement finality: Final settlement occurs at 2.15 pm of the settlement day for listed securities. For BEX-traded bonds, the finality occurs at 1.30 pm for those traded by AOM and at 10.00 am for those traded by put-through method. Government bonds traded in the OTC market are settled and delivered on DVP model 1 (Gross: Gross), by which the finality of transactions will be effective as soon as the seller has bonds and the buyer has funds. The TSD does not allow unilateral revocation of unsettled transfer instructions late in the settlement day.

9. CSD risk controls to address settlement failures: The TSD has adequate risk control procedures to address participants' failure to settle, including calling for full collateralization for exposures that exceed a predetermined limit. However, due to the lack of same-day buy-in facility, the TSD ends up permitting debit balances in equity stocks from time to time, but in a very small amount (0.02% of trading volume or 0.14% of netting value as of February, 2007), which is fully collateralized and marked to market daily until it is resolved. In the meantime, the TSD has attempted to minimize chances in which such equity debit balances will occur by enforcing securities borrowing for any securities in default from the suppliers (the Government Pension Fund acts as a lender of last resort) and enforcing buy-in

procedures on the next trading day (next day buy-in, same day settlement). Furthermore, the TSD is working on the possibility of amending its rules to enforce same day buy-in.

10. Cash settlement assets: The TSD uses 3 commercial banks as settlement agents. Exposures to settlement banks are concentrated. Their financial conditions are monitored and evaluated by the Bank of Thailand.

### **Operational risk**

11. Operational reliability The TSD's system is subject to audit by both the internal audit department of the SET and external audit from the PricewaterhouseCoopers and also has contingency plans and back-up facilities.

### **Custody risk**

12. Protection of customers' securities: There is stringent requirement for segregation of client assets, which provides protection from misuse by intermediary holding securities in custody and facilitates transfer of client assets as well as assists in orderly winding up in the event of insolvency. However, these arrangements are not specifically protected from the overriding provisions of bankruptcy law. Intermediaries are required to keep up-to-date and reconcile records of customer assets. They are subject to a capital adequacy requirement, mandatory internal audit and SEC inspection. Audit plans and compliance working papers are reviewed by the SEC during inspection.

### **Other issues**

13. Governance: The TSD is wholly owned by SET, and its major policies are reflected in SET notifications which are publicly available. TSD Board includes external experts, SET executives and SET board members (one elected by brokers and one appointed by the SEC). The TSD is subject to audit by SET's internal audit department.

14. Access: Access criteria are clear, objective, and publicly disclosed. The requirement that limits direct participants to firms located in Thailand is justified by the need to control risks arising from cross-border links, given the existing risk management system. There are clear conditions on termination of membership but there is no arrangement to facilitate the exit of members who no longer meet participation requirements.

15. Efficiency: The TSD regularly reviews its service levels and operational reliability, but procedures of controlling cost and pricing levels are arranged by the SET

16. Communication procedures and standards: The TSD system uses communication procedures that can be converted into the relevant international standards with considerable difficulty. However, the TSD has already subscribed to SWIFTNET and linked its system to those of the Bank of Thailand for communication on government bond settlement.

17. Transparency: The TSD makes clear disclosure to market participants about rules and regulations, rights, obligations, costs of participants, risks and steps taken to mitigate risks. The information is easily accessible on the website. TSD has completed the questionnaire set out in the CPSS/IOSCO disclosure framework and answered the key questions in this methodology.

18. Regulation and oversight: The SEC is authorized by the SEA to be the oversight regulator of securities settlement systems. Under the present SEA, the SET Board has the authority to make policies requirements for its subsidiaries, including the TSD, subject to SEC approval. The SEC communicates its policy guidelines from time to time to the SET and TSD formally in writing and informally. The SEC has already signed an MOU with the Bank of Thailand as an arrangement of cooperation to exchange information relevant to the oversight of securities settlement system, and there are also arrangements for cooperation with other regulators outside the country.

19. Risks in cross-border links: There is no cross-border link with other CSDs.

### **Actions proposed or ongoing to achieve full observance**

\*\* The Cabinet has approved the principle of the proposed draft amendment to the SEA to ensure that customer assets are protected against insolvency of intermediaries and clearing house and the SEC has the power to administer client asset in the event of firm's failure. The draft amendment is currently under consideration of the Council of State.

\*\* The Cabinet has approved the principle of the proposed amendment to the SEA to ensure that default procedures at the TSD, particularly the use of collateral or clearing fund, are protected from bankruptcy law. The draft amendment is currently under consideration of the Council of State.

\*\* The Cabinet has approved the principle of the proposed draft amendment to the SEA to ensure enforceability of securities transactions and netting in insolvency. The draft amendment is currently under consideration of the Council of State.

\*\* The TSD should follow through its plan to separate the legal entity that performs a securities clearing function from the legal entity that performs the depository function by transferring its securities clearing function from the TSD to its wholly-owned subsidiary, TCH, who currently performs a clearing function for derivatives trading.

\*\* The TSD must institute a same day buy-in facility and enforce a buy-in immediately upon participant's failure to deliver on settlement date.

\*\* The formal MOU with the Bank of Thailand should be finalized to enable a full exchange of information on prudential supervision of settlement banks and bank participants.

\*\*The TSD should follow through with its development of a new platform using the international standards of communication.

\*\* The Cabinet has approved the principle of proposed draft amendment to the SEA to give the SEC authority to regulate the TSD directly rather than indirectly through approval of SET decisions.

<b>Recommendation by recommendation assessment of observance</b>	
<b>Legal risk</b>	
<b>Recommendation 1: Legal framework</b> Securities settlement systems should have a well founded, clear and transparent legal basis in the relevant jurisdictions.	
Key questions	1. Are the laws, regulation, rules and procedures, and contractual provisions governing securities settlement arrangements public and readily accessible to system participants?
Answers to key questions	<p>1. <i>Access to laws and regulations</i> Yes. Equity and bond clearing and settlement system operated by Thailand Securities Depository Company Limited (TSD) is governed by the provisions of the following laws, rules and contractual statements.</p> <ul style="list-style-type: none"> <li>-The Civil and Commercial Code: (e.g. provisions governing juristic acts, obligations, contracts)</li> <li>-The Securities and Exchange Act B.E. 2535 (Sections 50-55,199, 224-228)</li> <li>-The Public Limited Company Act B.E. 2535</li> <li>-The notifications, rules, and regulations issued by the Stock Exchange of Thailand (SET), and the TSD</li> <li>-The agreement between members and the TSD as a clearinghouse.</li> <li>- BAHTNET Rules and Regulations B.E. 2549</li> <li>- The Bankruptcy Act. B.E. 2483</li> </ul> <p>Laws, regulations, and rules are available to all participants through the web sites of the Ministry of Commerce, SEC, BOT, SET and TSD.</p>
Key questions	<p>2. (i) Does the legal framework demonstrate a high degree of legal assurance that :</p> <ul style="list-style-type: none"> <li>(a) Transactions are enforceable?</li> <li>(b) Customers' assets are adequately protected (particularly against the insolvency of custodians and intermediaries)?</li> </ul> <p>(ii) Does the legal framework demonstrate a high degree of assurance that there is a clear and effective legal basis for</p> <ul style="list-style-type: none"> <li>(a) arrangements for the immobilization or dematerialization of securities and the transfer of securities by book entry?</li> <li>(b) Netting arrangements?</li> <li>(c) Securities lending arrangements (particularly the ability to obtain a securities interest in assets)?</li> <li>(d) Finality of settlement?</li> <li>(e) Arrangements for achieving delivery versus payment</li> </ul> <p>(iii) Has a court in the jurisdiction ever failed to uphold the legal basis of these activities/ arrangements? And if so, for what reasons?</p>
	<p>2. (i) (a) <i>Enforceability of transactions</i> Yes. All transactions in the clearing and settlement system are enforceable according to the principle of Thai law.</p> <p>(i) (b) <i>Customer asset protection</i></p>

	<p>Yes</p> <ul style="list-style-type: none"><li>- Section 225 of the SEA requires the depositor to prepare a list of securities holders where securities are deposited with the TSD. After the TSD has accepted the deposit of such securities, it may accept the transfer of such deposited securities into its own name and shall hold such securities for the depositor or for any customer who is the owner of such securities. In this regard, it is presumed by law that such deposited securities are held by the TSD on behalf of those persons as appeared in the list of names prepared by the depositor.</li><li>- Clause 5 of the Notification of the Board of Governors of the Stock Exchange of Thailand Re: Rules, Conditions and Procedures for Operation as a Clearing House, 2006 also requires a clearing house member to open securities depository accounts, with the account traded for itself separated from the account traded for its customers.</li><li>- Clauses 10, 12, 18 of the Notification of the Securities and Exchange Commission KorThor 4/2543 Re: Treatment of Customer Asset by a Securities Company, 2000 requires the securities company who accepts into its custody the assets of customers (i.e. cash, securities, other assets and rights associated with such property) to segregate the customers' assets from its own and specifically identify them as belonging to the customers. Furthermore, the securities company shall also prepare and keep account of the assets for each customer separately from the account of its own, in accordance with the conditions specified thereunder. The rules clearly prohibit the securities company from using customers' assets for the benefit of its own or others'.</li><li>- Thus, according to the aforesaid stipulation and requirements, therefore, the customers' assets should not be taken by the official receiver as the bankruptcy estate under Section 109 of the Bankruptcy Act B.E. 2483 when an intermediary or custodian become a debtor under receivership. It is apparent that customers' assets held and use in accordance with these laws and rules do not belong to the debtor or are in the possession or disposition of the debtor under circumstances which create the impression that the debtor is the owner of customers' assets. In addition, if the official receiver mistakenly seized the customers' assets which are in the possession of the insolvent intermediary or custodian, then the customers are entitled to make objections to the official receiver to release the assets pursuant to Section 158 of the Bankruptcy Act.</li><li>- However, the SEC has proposed the amendment to the SEA to ensure that customers' assets are promptly and adequately protected against insolvency of intermediaries and custodians and empowering the SEC to administer clients' assets in such event. The principle of the additional provision is the same as those of Section 43 of the Derivatives Act. B.E. 2546</li></ul> <p>2. (ii) (a) <i>Immobilization of securities</i></p> <p>Yes. Immobilization in the TSD's system has been arranged through the transfer of securities by book entry in accordance with Sections 225-228 of the SEA. Securities transferred into the name of the TSD shall be presumed to be securities held by the TSD on behalf of those persons whose name appear in the list prepared by the depositor.</p>
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(b) *Netting arrangements*

Yes. TSD will become the CCP after the trading is executed. Generally, such netting arrangement is enforceable under Sections 341-348 of the Civil and Commercial Code and Section 102 of the Bankruptcy Act B.E. 2483. However, since Section 102 of the Bankruptcy Act allows netting of obligations only if the cause of indebtedness incurred before the date of the receivership order, the TSD might not be able to net its obligations against the obligations of the insolvent participant that arise on that date.

- The SEC has proposed to amend the SEA on this issue to allow the TSD to net its obligations with the obligations of the insolvent participant for all transactions up to the date the court orders receivership by applying mutatis mutandis the provision of Section 84 of the Derivatives Act B.E.2546.

(c) *Securities lending arrangements*

Yes. Both securities borrowed and posted as collateral are outright transferred, not pledged. So, the legal title in securities borrowed is transferred from the lender to the borrower, and the legal title in collateral is transferred from the borrower to the lender. Transfer of legal title is required by SEC rule regarding securities lending and borrowing. (Notification of the Ministry of Finance Re: Prescription of Other Securities Related Businesses as Securities Business (As amended), Clause 9 of the Notification of the Securities and Exchange Commission No. KorDor. 29/2540 Re: Rules, Conditions and Procedures for Undertaking Securities Borrowing and Lending Business, 1997)

(d) *Finality of settlement*

Even if there is no explicit law for finality of funds transfer in the BAHTNET system but there is a high degree of assurance on the finality of payment in the BAHTNET system. (BOT Regulation on BAHTNET Services. B.E. 2549). Moreover, TSD's rule (Clause 27 of the Regulations of TSD regarding Operation as a Clearing House for Trading of Securities, 2006.) is also stated the finality of settlement in the clearing system. However, in accordance with Section 115 of the Bankruptcy Act, the court is empowered to reverse the debtor's transfer of asset during three months prior to an application to adjudicate him as bankrupt and thereafter if the court finds that the debtor transfers such asset with the intention to give undue preference to a creditor. Thus, in case the court orders receivership of a clearing house member or a settlement bank, the court may cancel the transfer of funds (and securities) made during that period if the official receiver is able to prove that the transfer has been made by the debtor with the intention to cause other creditors a disadvantage. Moreover, according to the Council of State's legal opinions, zero hour rule is not applicable in Thailand and the transaction is final and irrevocable when the payment is debited and credited across participants' accounts on a real-time basis as stipulated by the BAHTNET's rules and regulations.

- The SEC has proposed an amendment to the SEA to ensure the finality of fund transfers (and securities) where the court orders the receivership of a clearing house member, by applying mutatis mutandis the provision of Section 86 of the Derivatives Act B.E.2546.

	<p>(e) <i>Delivery versus payment (DVP)</i>                  Yes. Referring to the TSD's regulations, TSD must deliver securities to the clearing house member who has right to the delivery once TSD receives the payment and must make payment to the clearing member who has right to the payment once the securities are maintained in the designated account.</p> <p>2 (iii) <i>Challenges by court</i>                  No. There has never been a case in which the court has failed to uphold the legal basis of these activities.</p>
Key questions	3. Are the rules of the system and contracts between system participants enforceable notwithstanding the insolvency of a participant?
	<p>3. <i>Enforceability of rules and regulations in the event of bankruptcy</i>                  No. there are some uncertainties in case of insolvency of a participant as stated in 2(ii)(b), (d) However, the system has never exposed to such experience.</p>
Key questions	<p>4. (i) Is there a significant level of cross-border participation in the SSS? If so, please describe and answer to Question 4 (ii)                  (ii) Are other jurisdictions relevant for determining the adequacy of the legal framework? How has this been determined? Has the legal framework been evaluated for the other relevant jurisdictions? Are there conflict of laws issues and, if so, have they been addressed?</p>
	<p>4. (i) <i>Cross-border participation</i>                  N/A. There is no cross-border transaction in the SSS.</p> <p>(ii) <i>Conflict of law issues</i>                  N/A.</p>
<b>Pre-settlement risk</b>	
<p><b>Recommendation 2: Trade confirmation</b>                  Confirmation of trades between direct market participants should occur as soon as possible after trade execution, but no later than trade date (T+0). Where confirmation of trades by indirect market participants (such as institutional investors) is required, it should occur as soon as possible after trade execution, preferably on T+0, but no later than T+1.</p>	
Key questions	<p>1. (a) What percentage of trades between direct market participants is submitted to a trade confirmation system on the trade date (T+0)?                  (b) How soon after submission are problems communicated to the appropriate parties?</p>
Answers to key questions	<p>1. (a) <u>Equity, Bond</u>: A hundred percent of trades between direct market participants are submitted to a trade confirmation system on trade date.</p> <p>(b) If there are problems in the system, the problems will be immediately informed to the appropriate parties</p>
Key questions	2. Does the CSD require settlement instructions to be matched prior to settlement?

Answers to key questions	2. Yes. Trading transactions on the exchange will be matched automatically or put through. For <u>automatic matching</u> , the settlement instructions are matched at the same time of trade matching. For <u>put-through method</u> , the trades and settlement instructions are matched when confirmations are completed. Both types occur on trade date, which is prior to settlement period, T+3. The settlement instructions for government bonds traded on the OTC market are also required to be matched on the TSD system prior to settlement date as specified by the participants of each transaction.
Key questions	3. (a) Are there trade confirmation procedures that are capable of comparing trade information between direct and indirect market participants by T+1? (b) Is use of the system mandatory? (c) For what types of indirect market participants? (d) Of those trades involving indirect market participants for which confirmation is required, what percentage is confirmed by T+0, by T+1, by the contractual settlement date?
Answers to key questions	3. No. For <u>settlement of equities</u> , trade confirmations between direct and indirect participants are compared within the range of T+0 to T+3. Trade confirmations between direct and indirect market participants are not mandatory. (In general practice, direct participants will issue confirmation document within T+1) Direct market participants are brokerage firms while indirect market participants are custodian banks. If either of them does not confirm the settlement instructions, the TSD will settle such transactions through direct market participants directly. For <u>settlement of bonds</u> , there are two procedures involved. 1) Bond trading via AOM system on the BEX is settled by T+2 and the final settlement time is at 1.30 pm. Direct and indirect participants are similar to those of equity trade. 2) Bond trading via put through system on the FIRSTS or RTGS on the OTC, whereby counterparties are able to choose the settlement date and to assign the TSD to perform settlement tasks, shall be notified to the TSD via TSD PTI (Post Trade Integration) system within 180 days in advance. The TSD shall then settle the obligations by the final settlement time at 10 am for put-through and anytime for RTGS on the OTC. Participants are any TSD members, however, most are commercial banks.
<p><b>Recommendation 3: Settlement cycles</b> Rolling settlement should be adopted in all securities markets. Final settlement should occur no later than T+3. The benefits and costs of a settlement cycle shorter than T+3 should be evaluated.</p>	
Key questions	1. Are trades settled on a rolling basis of T+3 or shorter?
Answers to key questions	1. <u>Settlement cycles</u> Yes. Trades are settled on the rolling basis of T+3 for equities, T+2 for corporate bonds traded on the SET, and depending on the agreement between participants for government bonds traded on the OTC market which are mostly settled within T+2.
Key questions	2. (a) What percentage of trades (by number and value) fails to

	<p>settle on the contractual date?                  (b) What is the average duration of fails (by number and value)?</p>
<p>Answers to key questions</p>	<p>2.(a) <i>Failed trades and facilities to smooth the settlement process</i>                  For the year 2006 (twelve-month data of equity transactions), there are 1,120 transactions failed on T+3, or 0.0037% of trading transactions or 0.0456% of netting transactions. In terms of value of trades, settlement failure amounted to ₪ 3,991 million (US\$ 114 million), or 0.101% of trading value or 0.5750% of net settlement value.                  For the first three months of 2007, after the GPF (Government Pension Fund) became the lender of last resort for the system, the proportion of failed trades has lowered to 0.02% of trading value or 0.14% of netting value.</p> <p>(b) The average duration of fails in 2006 both by number and by value is one day. 82% of trading value or 81% of the number of failed transactions is settled within T+4. (This information is prior to the amendment to the TSD's rule toward the end of 2006 to enforce securities borrowing on default date T+3.)</p> <p>- There is no data of failure on bond settlement, and contractual date is not applied to non-listed government bonds.</p>
<p>Key questions</p>	<p>3. (a) Do market practices, regulations or SSS rules provide incentives for counterparties to settle their obligations on the contractual date?                  (b) What forms do these incentives take, for example are penalties assessed for failing to settle?                  (c) What steps, if any, are taken to mitigate the risks of fails?                  (d) Are fails required to be marked to market?                  (e) Are open positions required to be closed out at market prices if the duration of the fail exceeds a specified number of business days?                  (f) What entity or entities establish, monitor and enforce these requirements?</p>
<p>Answers to key questions</p>	<p>3. (a), (b) <i>Incentives to settle in due time</i>                  Yes. TSD rules require clearing members of all listed securities who fail to settle their obligations on the contractual date to contribute to the clearing fund in a greater amount than those who can settle on the contractual date. (In the regulation re: Compensation Fund for Clearing and Settlement of Securities, 2000, the monthly contribution rates are specified at 0.008%, 0.012% and 0.016% of net value of payment, depending on risk level of each clearing member.)</p> <p>(c) <i>Monitoring of fails</i>                  There are 2 steps for mitigating risks of fails.</p> <p>(1) The TSD uses settlement cap to monitor the ability to settle trades of each member. Settlement cap is defined as the maximum pending settlement value for 3 days, which has to be no more than 8 times of net capital level as required by the SEC. If the member has exposure higher than the limit, the TSD will call collateral in cash for the exceeding limit.</p> <p>(2) The TSD applies early warning system to predict possibility of members' causing damage to the system. The system calculates the loss probability of each member by using value-at-risk method.</p>

	<p>If any member has the loss probability more than 5% of confidence interval, such member is required to place collateral with the TSD. Another warning tool is called financial surveillance system which applies statistical tool to predict the financial status of members so that the TSD can assess their future financial status at the earlier stage.</p> <p>(d) Yes. The fails are required to be marked to the market, and the TSD will call collateral from clearing members in the amount of 130 percent of the value of securities in fails.</p> <p><i>(e) Closing of open positions</i>          Yes. The open positions are required to be closed out through securities borrowing and lending facility on T+3. If they cannot be closed by that time, a buy-in method on T+4 (one day after regular settlement date) is used, in which closing prices of the previous day plus 5 spreads or current best bid are used as buy-in prices, whichever is higher. If such security is not available for buy-in, the buy-in bids are allowed to linger on for up to 4 days with an addition of 2 spreads on the previous buy-in price or closing price of the previous day or current best bid, whichever is higher (until T+7). After that, if there is no offer, the defaulting member has to settle in cash together with some penalty fees.</p> <p>(f) The TSD is responsible to monitor and enforce these requirements.</p>
<p>Key questions</p>	<p>4. (a) If settlement is on an account period basis or on a rolling basis at T+3 or longer, have the benefits and costs of a rolling cycle or a shorter settlement cycle been evaluated? If so, by whom?</p> <p>(b) Has the evaluation been documented?</p> <p>(c) What was the conclusion?</p> <p>(d) Did the conclusion differ depending on the type of security?</p>
<p>Answers to key questions</p>	<p>4. <i>Analysis of shorter settlement cycles</i></p> <p>(a) The TSD hired a consultant to study on the feasibility of a shorter settlement cycle known as "STP Business Case Study", but the study does not evaluate the cost and benefit of the shorter cycle. However, in 2004, TSD conducted a self study and evaluate cost and benefit of certain STP case and concluded that shorter settlement cycle would benefit all participants as a whole. After the hearing process among its members, most of them agreed with this concept. Due to a limitation that all clients could not apply ATS (Automated Transferable System) at that time, the conditioned new clients to apply the ATS system were announce from November 2006 by SET support and would be enforced to all clients since April 2007 and such condition has been accomplished successfully. Meanwhile, TSD prioritized the PTI development to enhance efficiency of the back office system and will then push for the shortening of settlement cycle to be T+2 after the new system implementation is complete.</p> <p>(b),(c) The study has been documented, and the conclusion is that the straight-through processing would help reduce manual interventions and bring about shorter settlement cycle, which can result in a decrease in operational risk by approximately 15%.</p> <p>(d) The scope of study did not cover types of securities other than</p>

	stocks.
<p><b>Recommendation 4 : Central counterparties (CCPs)</b>  The benefits and costs of a CCP should be evaluated. Where such a mechanism is introduced, the CCP should rigorously control the risks it assumes.</p>	
Key questions	<p>1. (a) Has a CCP mechanism (or an indemnification arrangement) been introduced?  (b) If so, what types of securities and market participants are covered? If no such mechanism has been introduced, have the benefits and costs of such a mechanism been evaluated? If so, by who?  (c) Has the assessment been documented?  (d) What was the conclusion?</p>
Answers to key questions	<p>1. (a) Yes. The transaction matched at the SET is netted at the TSD, and then the TSD will substitute and act as counterparty to each member so that the TSD can guarantee that all of the obligations will be honored.</p> <p>(b) All securities listed on the SET and bonds traded on the BEX are cleared at the TSD. Clearing members comprise brokers, custodian banks, insurance companies, the Government Pension Fund (GPF), and asset management companies.</p> <p>(c) and (d) No.</p>
Key questions	<p>2. (a) What are the netting arrangements for a CCP (by novation or otherwise)?  (b) Do the netting arrangements have a sound and transparent legal basis?  (c) Is netting enforceable against the participants in insolvency?</p>
Answers to key questions	<p>2. (a) The netting arrangement for a CCP is done through novation.</p> <p>(b) Yes. Netting arrangements have a sound and transparent legal basis. Netting arrangement is enforceable under Sections 341-348 of the Civil and Commercial Code and Section 102 of the Bankruptcy Act B.E. 2483.</p> <p>(c) Yes, but not in all cases. If the netting has done on the date the court has placed order, it is not enforceable against the participants under the existing law. (Section 102 of the Bankruptcy Act allows netting of obligations only if the cause of indebtedness incurred before the date of the receivership order. The TSD might not be able to net its obligations against the obligations of the insolvent participant that arise on that date) However, the SEC has proposed to amend the SEA to allow the TSD to net its obligations with the obligations of the insolvent participant for all transactions up to the date the court has ordered receivership by applying mutatis mutandis the provision of Section 84 of the Derivatives Act. B.E. 2546</p>
Key questions	<p>3. (a) Does the CCP impose financial and operational standards for participation?  (b) How does the CCP manage its credit risk vis-à-vis participants?</p>

	<p>(c) Does it require participants to collateralize their exposures?          (d) How often are collateral requirements recomputed and collateral collected?          (e) How does the CCP manage its liquidity risk?          (f) Does the CCP have in place agreement permitting it to borrow against collateral?          (g) In assessing its credit and liquidity risk, does the CCP evaluate its ability to withstand the default of more than one of its participants?</p>
<p>Answers to key questions</p>	<p>3. (a) Yes. The TSD classifies its members into 2 categories as follows:          - <u>General member</u>: members that carry out the clearing and settlement of securities according to the securities trading data submitted by the trading arrangers to the clearing house, or the securities clearing and settlement data submitted by them to the clearing house, and are members of the clearing fund.          The TSD sets the requirements for general members as follows:          1) Being a juristic person licensed to conduct business in the category of securities brokerage or securities dealing, or other person as prescribed by SET Board of Governors;          2) Having a shareholders' equity of not less than Baht 150 million;          3) Having a net liquid capital according to the criteria prescribed by the SEC.          4) Being a securities depositor at a securities depository center as prescribed by the clearing house; and          5) Being a member of the fund established by the clearing house.</p> <p>- <u>Associate members</u>: members that carry out the clearing and settlement of securities according to the securities trading data or the securities clearing and settlement data submitted by them to the clearing house, and are not members of the clearing fund.          The TSD sets the requirements for associate members as follows:          1) Being a juristic person licensed to conduct business in the category of securities dealing, or a person who conducts the business as a securities custodian, a mutual fund supervisor, a debenture holders' representative or a securities broker, or the business of dealing in securities or underwriting of securities that are investment units, or an institutional investor as prescribed by the SEC, or a financial institution established by a specific law, or other persons as prescribed by SET Board of Governors;          2) Having a shareholder's equity of not less than Baht 150 million.          3) Being a securities depositor at a securities depository center as prescribed by the clearing house.</p> <p>(b) Operational standards of the participant (as broker) are supervised by the SEC in accordance with IOSCO Principles 21 and 23. The TSD also reviews operational performance of participants in their annual or financial reports.</p> <p>(c)- (d) Yes as follows.          1. Settlement cap shall not exceed 8 times of net capital. In case it exceeds such limit, a member shall reduce outstanding trading balance to remain as permitted within 120 days. During the resolving period, the TSD shall require a member to place collateral no less than the excess amount by 11 am of the day such excess incurs.</p>

	<p>2. Loss probability shall not exceed 5% in accordance with the specified calculating method. In case the loss probability exceeds such limit, the TSD shall require a member to place collateral at a specified amount by 11 am of the day such excess incurs.</p> <p>If a member fails to place collateral within the specified time period, the member is then subject to a fine by the TSD at 0.5% of the unplaced amount for one business day delay, 0.75% of the unplaced amount for more than one business day but less than two business day delay.</p> <p>(e) To manage liquidity risk of listed securities, the TSD has credit line from settlement bank, clearing fund collected from members, and reserve fund from SET to cover the failure in any settlement transaction. Certain reserve fund is able to cover overall market risk as determined by the stress test.</p> <p>(f) Yes. Pursuant to the TSD’s procedural regulations governing services relating to securities lending and borrowing, the TSD shall act on behalf of the borrower to borrow the securities against collateral.</p> <p>(g) Yes. The stress test has done by the TSD quarterly whereby the assumption is based on default value. Default probability is derived from real loss and expected loss of trading value and such default probability could be from more than one participant. Hence, the number of anticipated default members may vary.</p>
<p>Key questions</p>	<p>4. (a) Has a participant ever defaulted? If so, how did the CCP handle the default?          (b) What are the financial resources of the CCP?          (c) How does the CCP assess the adequacy of the size and liquidity of its financial resources?          (d) Does it require participants to contribute to a clearing and guarantee fund?          (e) Does the CCP have legally enforceable interest in or claims on the assets in the fund?          (f) Does the CCP have transparent and enforceable loss allocation rules?</p>
<p>Answers to key questions</p>	<p>4. (a) Yes. There was a default caused by participants in 1997 financial crisis. At that time, the TSD used clearing fund to handle the default of payment when the payment transfer of securities-cum-finance firms was prohibited for one day.</p> <p>(b), (c) The TSD has Baht 200 million of the share capital, around Baht 568 million of clearing fund (in Dec, 2006), and Baht 2,000 million of reserve fund from the SET. The liquidity of reserve fund has been provided. It has been in the forms of time deposits and promissory notes, which can be converted into cash immediately and within 1-2 days, respectively. The penalty is that the withdrawer will not get the interest on the deposit. The adequacy of reserve fund has been reviewed by internal audit and risk management department at the SET on a quarterly basis. The possibility and size of member default in relation to trading volume are the factors in assessing adequacy of the financial resources.</p>

	<p>(d) Yes. The general clearing member of TSD is divided into three different groups as for differentiate the rate of contribution to the clearing fund. The groups are classified as those with high, moderate, and normal risks. The more risk members have put into the system, the more contribution they are required to contribute to the clearing fund. There are four factors determining the levels of the rate: default of payment for securities, default of delivery of securities, the manner of placement of collateral for clearing and settlement, and the manner of trading which may cause potential risk exposure.</p> <p>(e) Yes. The TSD as a clearinghouse has an agreement with the clearing member to have interest in and claims on the assets in the fund when there is a member in default in accordance with SET regulations and TSD rules. (Clauses 30 and 31 of the Notification of the SET Board of Governors re: Rules, Conditions and Procedures for Operation as a Clearing House, 2006)</p> <p>(f) The loss allocation is prescribed in the TSD's regulations which are transparent and enforceable. It states that in the event of default of any fund member, the clearing fund will be paid out in the following order:</p> <ol style="list-style-type: none"> <li>1) Contribution to the fund by the defaulting fund member.</li> <li>2) Contribution to the fund by other fund members.</li> <li>3) Contribution to the fund by the SET.</li> </ol>
<p><b>Recommendation 5: Securities lending</b>          Securities lending and borrowing (or repurchase agreements and other economically equivalent transactions) should be encouraged as a method for expediting the settlement of securities transaction. Barriers that inhibit the practice of lending securities for this purpose should be removed.</p>	
<p>Key questions</p>	<p>1. Are markets or facilities for securities lending (or repurchase agreements and other economically equivalent transactions) clearly supported by legal, regulatory, accounting and tax systems?</p>
<p>Answers to key questions</p>	<p>1. <i>Institutional framework</i>          Yes. Legally, facilities for securities lending are supported by the Ministry of Finance notifications as well as ministerial regulations. Anyone, except the TSD, who intends to conduct the lending business shall apply for a license. Besides, a Royal Decree regarding tax issues in relation to the SBL transactions has been announced.</p> <p>The Institute of Certified Accountants and Auditors of Thailand (ICAAT) has issued an accounting guideline for the recording and disclosure of information on the securities lending transactions since August 2003. Such guideline is preliminarily based on two related international accounting standards set by International Accounting Standard Committee (IAS No. 39) and the US Financial Accounting Standards Board (FASB No.140).</p> <p>The transfer of securities lent and collateral pledged under the securities transaction has already got tax exemption. There is also a clear guideline for tax treatment on manufactured benefits arising from the SBL transactions.</p>

Key questions	<p>2. (a) Are there markets or facilities for securities lending (or repurchase agreements and other economically equivalent transactions)</p> <p>(b) If any, are they used as a method to expedite securities settlement?</p> <p>(c) How wide is the range of securities and participants involved in the markets?</p>
Answers to key questions	<p>2. <i>Automated securities lending facilities</i></p> <p>(a) The SEC has made arrangements including rules, regulations, and licensing scheme for SBL transactions in the OTC market. Eleven firms have obtained licenses to be intermediaries for SBL, and the TSD has provided facilities, such as the last resort of securities and it is also in the process of putting in place general SBL services.</p> <p>(b) Yes. The securities lending system is provided to expedite securities settlement. In case that the TSD acts as the last resort for SBL, the GPF is now served as a major securities supplier, who helps expedite securities settlement by lending securities to be delivered in default cases.</p> <p>(c) Securities lending and borrowing services can be found as follows:</p> <p>1) The TSD provides SBL service as a lender of last resort</p> <ul style="list-style-type: none"> <li>- Borrower: general members of the TSD, which are brokers.</li> <li>- Lender: must be a depository member of the TSD. Potential lenders are institutional investors, mutual funds, private funds and government pension fund</li> </ul> <p>(At the preliminary stage, the TSD prioritizes to lend securities for the case of default but it does not limit to any other cases)</p> <ul style="list-style-type: none"> <li>- Lending securities: unlimited</li> </ul> <p>The Government Pension Fund (GPF) has agreed to be a lender of last resort from February 1, 2007.</p> <p>2) The TSD provides general SBL services</p> <ul style="list-style-type: none"> <li>- Borrower, Lender: At present, it is limited to lend to general members only, due to the SEC's rules requiring that SBL licensees be newly established entities.</li> <li>- Lending securities: Securities to be borrowed for short sale is limited to securities in SET 50 only.</li> </ul> <p>3) General SBL licensees</p> <ul style="list-style-type: none"> <li>- There are 8 securities firms and 3 banks which act both as agents and principals for investors and 2 securities firms act only as principals for investors.</li> </ul>
Key questions	<p>3. (a) Do supervisors and overseers review risk management procedures for securities lending?</p> <p>(b) Do they have policies with respect to these activities?</p>
Answers to key questions	<p>3. <i>Supervision of risk management in securities lending</i></p> <p>(a) Yes. The SEC monitors risk management in providing SBL services. The SEC classifies SBL licenses into 2 types which are;</p> <ol style="list-style-type: none"> <li>1. Agent:</li> <li>2. Principal:</li> </ol> <p>Eligible applicants are commercial banks, finance companies, securities companies excluding mutual funds and those entities established under specific laws and permitted by the SEC. An</p>

	<p>applicant shall have the following qualifications.</p> <ol style="list-style-type: none"> <li>1. Maintaining capital and reserve as required by law</li> <li>2. Not having financial status that can potentially cause damage</li> <li>3. Having efficient management system</li> <li>4. Having efficient policies and measures for risk management and control that are approved by the SEC.</li> <li>5. Having efficient SBL operating system</li> </ol> <p>In addition, an SBL agent shall perform the following functions.</p> <ul style="list-style-type: none"> <li>- Act as a custodian, call margin from securities borrowers</li> <li>- Prepare follow-up system that monitors transferable benefits of the borrowed securities</li> <li>- Fairly allocate securities borrowing for each client</li> <li>- In case the agent is a custodian of client’s assets and wishes to borrow securities or lend client’s securities to other borrowers, written agreement from the client must be presented.</li> <li>- Segregate client’s SBL management function from its own.</li> </ul> <p>(b) Yes, policy measures with respect to risk management procedures in SBL undertaking are stated in the SEC’s notification. The SBL intermediaries, in providing SBL services either as agent or principal, have to analyze counterparty risk and obtain collateral from the borrowers. The SBL intermediaries must also have internal control and risk management system for SBL business in writing, which is approved by the board of directors. Level of risks involved in SBL transactions must be reported to its director. In case of acting as an agent of lender, the SBL intermediaries are required to maintain collateral from the borrowers for clients, and to have in place system to protect clients’ rights on lent securities. The SEC shall perform on-site examination on SBL functions undertaken by SBL licensees.</p>
<b>Settlement risk</b>	
<p><b>Recommendation 6: Central securities depositories (CSDs)</b> Securities should be immobilized or dematerialized and transferred by book entry in CSDs to the greatest extent possible.</p>	
Key questions	<ol style="list-style-type: none"> <li>1.(a) Are securities issued on a dematerialized basis or as a physical certificate? If the latter, are they immobilized in a CSD to facilitate settlement?</li> <li>(b) What percentage of securities issued domestically is either immobilized or dematerialized, and what is the trend?</li> <li>(c) Is the transfer of securities carried out by book entry or does it require any form of physical delivery?</li> </ol>
Answers to key questions	<ol style="list-style-type: none"> <li>1. <u>Dematerialization and immobilization</u> <ol style="list-style-type: none"> <li>(a) The TSD has provided immobilization for securities listed on the SET (securities can be issued in form of either script or scriptless depending on objectives of the issuer), and for non-listed government bonds.</li> <li>(b) Around 74 percent of listed securities and 70 percent of government bonds are immobilized, and the TSD has encouraged the issuer to immobilize listed securities in the first place so as to reduce the number of certificates and increase the transfer by book entry.</li> </ol> </li> </ol>

	(c) Transfer of securities can be by book entry or physical and securities holders can choose between these two ways. In terms of government bonds that BOT acts as the registrar, the titleholders can choose to hold bonds either in script or scriptless form unless there are any other conditions specified by the issuer.
Key questions	2. (a) Is there a lag between settlement and registration and what are the implications of the time lag for finality? (b) If the CSD is not the official registrar, does the transfer of securities in the CSD result in the transfer of securities in the official registrar?
Answers to key questions	2. <i>Transfer of title</i> (a), (b) No. There is no lag time of finality between settlement and registration of both equities and government bonds. The TSD, the SET's wholly - owned subsidiary, provides both settlement and registration services. The SEA treats the subsidiary owned at least 75% by the SET as the SET itself. Section 225 of the SEA presumes that the TSD holds securities for beneficial owners, and records changes when the transfers of securities occur between depositors. For government bonds, the BOT acts as the registrar while the TSD acts as the CSD. Any transfer of securities in the CSD will have no effect on the registration system at the BOT. On the closing date of the company's register, the TSD shall notify the registrar the accounts of all deposited securities and the name list of holders of such securities existed prior to the closing date.
<b>Recommendation 7 : Delivery versus payment (DVP)</b> CSDs should eliminate principal risk by linking securities transfers to funds transfers in a way that achieves delivery versus payment.	
Key questions	1.Does the technical, legal and contractual framework ensure that delivery of securities take place if, and only if, payment is received? If so, how?
Answers to key questions	1. <i>Technical framework</i> Yes. In practice and in TSD regulation, members are required to deliver securities or make payment in the amount shown in the netting report. If not, the TSD will suspend the transfer of securities or payment the members are supposed to receive. In case of gross settlement for bonds, finality of both delivery and payment will be at the same time and cannot be revoked. If the seller does not have enough bonds, the TSD will not send payment instruction to the BOT. Likewise, if the buyer does not have enough funds in the current account at the BOT, the BOT will not send instruction to the TSD. At day end, 5.00 pm, if there are any unsettled payment instructions, the BOT will flush the queue and send error message to notify the TSD for further process. For any delivery instruction without enough securities, the TSD will also flush the queue at day end.
Key questions	2. What proportion of trades between direct participants of the CSD (by value) is settled on a DVP basis?
Answers to key questions	2. All trades between direct participants of the CSD are settled on a DVP basis.

<p><b>Recommendation 8 : Timing of settlement finality</b>  Final settlement should occur no later than the end of the settlement day. Intraday or real-time finality should be provided where necessary to reduce risks.</p>	
Key questions	<p>1. (a) Does the CSD permit final settlement of securities transfers by the end of the settlement day?  (b) Is the timing of settlement finality clearly defined for transactions within the CSD and for transactions over a link to another CSD?</p>
Answers to key questions	<p>1. (a) Yes. In case of net clearing report, the TSD permits final settlement of securities transfers by the settlement time in T+3 for equity stocks and T+2 for bonds. In case of gross clearing report, the final settlement transfers of bonds shall occur by the settlement time in T+2 or as determined by bond clearing members.</p> <p>(b) While the payment system is not linked with the delivery system, the deadline to deliver listed securities is at 1.30 pm and the deadline to make payment is at 2 pm. Regarding government bonds trading in OTC market, TSD provides service for clearing and settlement from 9.00 am until 5.00 pm. The system does not allow the recipients to withdraw securities until payment is confirmed by the settlement bank or the BOT. Members can make use of securities and cash at the same time i.e. from 2.15 pm onwards. (please also see answer to key question 1. of Recommendation 7) Government bonds are settled on a gross basis (put-through method and OTC trade) while equities and government bonds traded on the BEX by AOM are net settled on designated time.</p> <p>- No. The TSD has not established a link to another CSD for securities settlement.</p>
Key questions	<p>2. (a) Does the CSD permit final settlement of DVP transfers on a continuous basis throughout the day or at certain designated time during the day?  (b) If the latter, at what times do transfers become final?  (c) Is there a need for intraday or real-time finality to reduce risks?  (d) Do central banks use the SSS in monetary policy operations or to collateralize intraday credit extensions in a payment system?  (e) Do active trading parties or CCPs have a need for intraday or real-time finality to manage their risks effectively?  (f) Is there a need for intraday or real-time finality to facilitate settlement through links to other CSDs?  (g) Is there a need for intraday finality to facilitate the smooth functioning of some markets (for example, repurchase agreement markets)?</p>
Answers to key questions	<p>2. (a), (b) The TSD permits final settlement of DVP transfers at 2.15 pm on settlement date for listed securities and on continuous basis throughout the day for non-listed government bonds.</p> <p>(c) Yes, for non-listed government bonds. The TSD uses real time gross settlement to eliminate credit risk. However, there is no need for intraday finality to manage risk for listed securities because the netting of transactions is at the end of the trading day (T) but the settlement is done on T+3 for equity stocks or T+2 for bonds on a</p>

	<p>rolling multilaterally netting basis. Buying a stock from a second party and selling it to a third party on T for settlement on the same day(T+3) results in a zero net balance whether it be transaction of a broker's own account or for its client.</p> <p>(d) The BOT uses the SSS in conducting monetary policies, for example, bilateral repos and primary dealers. In case of intraday credit extensions in BAHTNET system, the BOT maintains an omnibus account at the TSD and collateralization is operated under sub-books at the BOT.</p> <p>(e) No. From TSD's survey, there is no need for such finality.  (f) No. Because there is no link to other CSD.  (g) Yes. The BOT already achieved intraday facility in a daily operation.</p>
Key questions	<p>3. (a) Does the CSD prohibit the unilateral revocation of unsettled transfer instructions late in the settlement day?  (b) Does the CSD receive provisional transfers of securities from any other CSDs? If so, does it prohibit retransfer of these securities until they become final? If not, what would be the consequences of an unwind of such provisional transfers for the CSD's participants?</p>
Answers to key questions	<p>3. (a) Yes. The TSD does not allow the unilateral revocation of unsettled transfer instructions late in the settlement day.  (b) N.A. The TSD has no link with other CSD.</p>
<p><b>Recommendation 9: CSD risk controls to address participants' failure to settle</b>  CSDs that extend intraday credit to participants, including CSDs that operate net settlement systems, should institute risk controls that, at a minimum, ensure timely settlement in the event that the participant with the largest payment obligation is unable to settle. The most reliable set of controls is a combination of collateral requirements and limits.</p>	
Key questions	<p>1.(a) Does the CSD ensure that timely settlement can be completed in the event of an inability to settle by the participant with the largest obligation? If so, how?  (b) Are the credit exposures of the CSD fully collateralized? If not, what measures are in place to address risks stemming from granting uncollateralized credit?  (c) Are limits imposed on credit extensions by the CSD?  (d) Does the CSD have sufficient liquidity resources to ensure timely settlement?</p>
Answers to key questions	<p>1. (a) Yes. The TSD ensure timely net settlement by using the credit line from settlement bank to handle the default of payment, and borrowing process and then buy-in process to handle the default of listed securities. Moreover, the clearing fund and reserve fund from the SET are also provided when necessary.</p> <p>(b) The TSD only calls for collateral fully when the member's exposure exceeds the limit (Settlement cap in excess of 8 times net capital) and the outstanding balances of each member are marked to market daily.</p> <p>(c) Yes. The TSD limits the credit extension of each member to not more than 8 times of each member's net capital value.</p>

	(d) Yes. The TSD has sufficient liquidity resources to ensure timely settlement. (Please see Rec. 4, answers to question no.4.)
Key questions	2. Does the CSD permit overdraft or debit balances in securities?
Answers to key questions	2. The TSD permits debit balances in equities. However, the amount has been very small, i.e. 0.1% of trading value or 0.57% of netting value or 0.05% of netting transactions in 2006. The TSD has tried to minimize debit balances of equities and with the GPF agreeing to act as the last resort lender since February 2007, the amount of debit balance has declined to 0.02% of trading value or 0.14% of netting value as of Feb 28, 2007. Buyers of securities have chances of not receiving the purchased securities and shall await SBL or buy-in process.(Please also see Rec.3, answer to question no.2)
Key questions	3. (a) Does the CSD evaluate the probability of multiple failures? (b) Can settlement be completed in that event? If not, has the CSD evaluated the cost of ensuring settlement in the event of multiple failures?
Answers to key questions	3. (a), (b) Yes. Since early 2005 the TSD has conducted the stress test on a quarterly basis to ensure the settlement completion and has studied on the probability of multiple failures. A system to detect failures is being developed by its IT department. A stress test is run by assuming 99% confidence level.
<p><b>Recommendation 10: Cash settlement assets</b>  Assets used to settle the ultimate payment obligations arising from securities transactions should carry little or no credit or liquidity risk. If central bank money is not used, steps must be taken to protect CSD members from potential losses and liquidity pressures arising from the failure of the cash settlement agent whose assets are used for that purpose.</p>	
Key question	1. (a) Is the settlement agent the central bank that issues the currency? (b) If the central bank is setting in a foreign currency, what steps has it taken as settlement agent to ensure that the settlement assets pose little or no credit or liquidity risk? (c) If the central bank is not used, what steps have been taken to protect CSD members from failure of the cash settlement agent? (d) Is the CSD itself organized a limited purpose bank? (e) Does it strictly limit any risks associated with non-settlement activities?
Answers to key questions	1. (a) <u>Multi-tiered structure</u> The BOT issues the currency but does not act as a settlement agent. Payment for securities transactions are settled in Thai baht via current accounts at the BOT. Non-bank institutions are not permitted to be a member of the system. Settlement agents for equities are commercial banks. Market participants which are commercial banks can directly settle through BAHTNET system operated by the Bank of Thailand whereas other market participants settle through settlement banks. To prevent risk from settlement bank failure, the government policy regarding financial institution loan guarantees protection of CSD members from failure of settlement banks.

	<p>(b) N/A.</p> <p>(c) The TSD diversifies risk from failure of cash settlement agents by using credit line from three settlement banks. The selected settlement banks are top 5 Thai commercial banks with solid financial position and are under the BOT's supervision. The BOT shall notify the SEC immediately once it finds out that any settlement banks undergo financial difficulties. The SEC shall further inform the TSD for any significant matters that may affect the role of certain settlement banks.</p> <p>(d) No. The TSD is not organized as a limited purpose bank.</p> <p>(e) No.</p>
<p>Key question</p>	<p>2. (a) Are settlement banks subject to prudential supervision by government authorities?          (b) Who determines which institutions can be used as settlement institutions?          (c) What are the criteria?          (d) If multiple settlement institutions can be used in principle, how many are used in practice?          (e) How concentrated are payment flows?          (f) On an average day, what percentage of total payments is credited to accounts at the institution that accounts for the largest share of payment flows?          (g) What is the financial condition of that institution (for example, its capital ratios and its credit ratings)?          (h) Are the concentration of exposures and the financial condition of the settlement banks monitored and evaluated? If so, by whom?</p>
<p>Answers to key questions</p>	<p>2. <u>Settlement bank risk</u></p> <p>(a) Yes. Settlement banks are subject to prudential supervision by the Bank of Thailand as commercial banks.</p> <p>(b) - (c) The criteria the TSD has taken into account to choose the settlement banks are:</p> <ul style="list-style-type: none"> <li>* financial status, and widespread services of the banks</li> <li>* number of participants who open account with the banks</li> <li>* linkage of systems between the bank and the TSD</li> <li>* capacity of the bank to adjust to the TSD's requirements.</li> </ul> <p>(d) –(g) There are 3 settlement banks used (which are top 5 banks in Thailand) TSD concerns the concentration of exposure through each bank used, so the percentage of payment flow from the TSD to each settlement bank is around 65, 25, and 10 percent.</p> <p>(h) The TSD is responsible for monitoring concentration of exposures, and the Bank of Thailand monitors and evaluates financial condition of settlement banks. Moreover, the TSD's selected settlement banks are top 5 Thai commercial banks with solid financial position and are under supervision of the Bank of Thailand (BOT). An MOU signed between the SEC and BOT states that the BOT shall inform the SEC once it finds out that settlement</p>

	banks undergo financial difficulties. (Detailed provision of the MOU is being worked out between the two agencies.) The SEC is able to further inform the TSD and TCH (derivatives clearinghouse) for any significant matters that may affect the role of certain settlement banks.
Key question	3. How quickly can recipients use the proceeds of securities settlements? On the same day? Intraday?
Answers to key questions	3. Participants can use money received on the settlement date. (securities company shall receive money by 2 am of T+3 and shall transfer to clients via ATS on the same day)
Key question	4. Does the payment system used for interbank transfers among settlement banks observe CPSIPS?
Answers to key questions	4. Yes. Among settlement banks, the BOT uses BAHTNET as a payment system for interbank transfers. The BAHTNET system mostly follows CPSIPS. Some applications deviate from what the CPSIPS states, but those are not significant and do not impact the principle in CPSIPS. The system therefore largely observes CPSIPS.
<b>Operational risk</b>	
<b>Recommendation 11: Operational reliability</b>	
Sources of operational risk arising in the clearing and settlement process should be identified and minimized through the development of appropriate systems, controls and procedures. Systems should be reliable and secure, and have adequate, scalable capacity. Contingency plans and backup facilities should be established to allow for timely recovery of operations and completion of the settlement process.	
Key questions	1. Does the system operator have a process for identifying and managing its operational risks?
Answers to key questions	1. <u>Identification and managing of operational risk</u> Yes. The TSD has a process for identifying and managing its operational risks. Each department is responsible for evaluating the operational risks of its own and reporting to the risk management department of the SET to evaluate the existing measures to be able to cover those risks and impose other measures to ensure the integrity of the system. Moreover, there are operational manuals for clearing and settlement system, registration system, and risk management system provided.
Key questions	2. (a) Does the system operator have contingency plans and backup facilities for the failure of key systems, and are these tested and reviewed regularly with participants taking part? (b) Do contingency plans ensure at a minimum that the status of all transactions at the time of the disruption can be identified with certainty in a timely manner? (c) How long does it take to recover operations through backup systems? (d) Do the procedures provide for preservation of all transaction data? (e) How does the system operator ensure the integrity of messages?

<p>Answers to key questions</p>	<p>2. <u>Contingency plans and back up facilities</u></p> <p>(a) Yes. The TSD has contingency plans and backup facilities for failure of the system. The TSD has stated in its policy that it review the Business Continuity Plan (BCP) and run a system test with its members at least one a year, choosing the test participants from their significant risk level to the clearing system. According to the BCP, qualified and skilled officers are clearly specified to be responsible. Potential events that may affect clearing and settlement system or cause denial of access are as follows.</p> <ul style="list-style-type: none"> <li>• force majeure and contingent losses;</li> <li>• situations which might jeopardize the staff or customers</li> <li>• circumstances arise from the governmental policy or regulatory bodies which affect either the members’ settlement obligations or the clearinghouse’s normal operations</li> <li>• system failure;</li> </ul> <p>(b), (c) Yes. Data in the clearing and settlement system is backed up every 30 minutes while other data such as that in the registration and risk management systems is backed up every day. Status of all transactions in the past 30 minutes can be retrieved. It takes half an hour to recover operations through the backup system. From the last system test on March 2006, the BCP was successfully implemented and information recovery was accomplished within two hours.</p> <p><u>Protection of data communication</u></p> <p>(d),(e) Messages recorded and transferred in the system are highly protected. Only authorized persons can enter into the database. IT internal audit unit is responsible to review IT risk including the integrity of messages.</p>
<p>Key questions</p>	<p>3. (a) Are operational reliability issues reviewed regularly by senior management, including review by persons not responsible for the relevant operations?</p> <p>(b) Are periodic external audits of the IT (information technology) system conducted?</p> <p>(c) Is there an independent internal audit function and does it review operational risk controls?</p>
<p>Answers to key questions</p>	<p>3. <u>Audits</u></p> <p>Yes. Operational reliability issues are reviewed by the internal audit department of the SET and external auditor from time to time. Each department is responsible for evaluating the operational risk of its own. The internal audit department of the SET then conducts a review again by risk-based audit. The audit report on the TSD will be sent to TSD management and board and up to the Board of the SET. Moreover, there is an external audit team from PricewaterhouseCoopers who is responsible for conducting an audit and review on overall procedural risks of the TSD.</p>
<p>Key questions</p>	<p>4. (a) How many times during the last year has a key system failed?</p> <p>(b) What is the most common cause of failures?</p> <p>(c) How long did it take to resume processing?</p> <p>(d) How much transaction data, if any, was lost?</p> <p>(e) Does the system operator have capacity plans for key systems</p>

	and are key systems tested periodically to determine if they can handle stress volume?
Answers to key questions	<p>4. <i>Availability and scalability</i></p> <p>The key systems have no failure during 2004-2006.</p> <ul style="list-style-type: none"> <li>- System capacity has been checked by computer every day.</li> </ul> <p>The capacity has been utilized around 60% of the total current capacity. The TSD reviews risks involved in its computerized system once a year and it is in the process of developing the new system (Post Trade Integration), which can bring about an increase in its efficiency and capacity. This new system is expected to be launched in Q3 of 2007.</p>
<b>Custody risk</b>	
<b>Recommendation 12 : Protection of customers' securities</b>	
Entities holding securities in custody should employ accounting practices and safekeeping procedures that fully protect customers' securities. It is essential that customers' securities be protected against the claims of a custodian's creditors.	
Key questions	<p>1.(a) What arrangements are used to protect customers' securities from theft, loss or misuse and to ensure that they will not become subject to claims of the custodian's creditors (for example, are segregation, insurance or compensation schemes used)?</p> <p>(b) Are those arrangements based upon specific laws and regulations?</p> <p>(c) In the event of the custodian's insolvency, do those arrangements enable customers' positions to be moved by a receiver to a solvent intermediary?</p>
Answers to key questions	<p>1. <i>Legal protection of customer assets</i></p> <p>(a), (b) The SEC imposes rules regarding the safekeeping of customers' assets of the intermediaries under Section 98(3) of the SEA. The intermediaries who are also members of the TSD must segregate customers' assets from its own as prescribed in the regulations and rules issued by the SEC and SET to prevent misuse of customers' asset held by intermediaries and claims of custodian's creditors in the event of insolvency.</p> <p>(c) It is apparent that customer assets held and used, in accordance with this law and rules, do not belong to the debtor and is not in the possession or disposition of the debtor under circumstances which create the impression that the debtor is the owner of the customer assets. In addition, if the official receiver mistakenly seizes the customer assets which are in the possession of the insolvent securities company or custodian, then the customer is entitled to make objection to the official receiver to release the assets pursuant to Section 158 of the Bankruptcy Act. If the customer wishes to remove his position to another solvent intermediary, he can terminate the agency contract with the insolvent intermediary and arrange a new one with the solvent intermediary.</p>
Key questions	<p>2. (a) How often do the entities holding securities in custody reconcile their records?</p> <p>(b) Are the entities holding securities in custody subject to mandatory internal or external audit, or both, to determine if there are sufficient securities to satisfy customer claims?</p>

Answers to key questions	2. (a) Securities companies holding securities in custody under scriptless system with the TSD shall reconcile and update book entry of their clients including trading volume and value at the end of each trading day. In the mean time, physical securities held in their records shall be reconciled at least once a month according to the SEC regulation. (SEC regulation no. KorThor.4/2543) (b) The intermediaries are required to do internal audit to ensure sufficiency of securities to satisfy customer claims and the SEC performs on-site examination on market intermediaries periodically.
Key questions	3. (a) Are the entities holding securities in custody subject to prudential supervision or regulation? (b) Do regulatory reviews examine the procedures and internal controls used in the safekeeping of securities?
Answers to key questions	3. <u>Supervision and regulation</u> (a) Yes. The intermediaries who hold client securities in custody must have registered capital of at least Baht 100 million, and maintain net capital ratio at the level required by the SEC. (SEC regulation no. KorThor.4/2543) (b) Yes. The procedures and internal controls used in safekeeping of securities are parts of the SEC's routine inspection.
<b>Recommendation 13 : Governance</b> Governance arrangements for CSDs and CCPs should be designed to fulfill public interest requirements and to promote the objectives of owners and users.	
Key questions	1. (a) What are the governance arrangements of the CSD or CCP? (b) What information is publicly available regarding the system, its ownership and its board and management structure, and the process by which major decisions are taken and management made accountable?
Answers to key questions	1. <u>Internal governance arrangements</u> (a) The SET as a parent company has issued notifications which reflect all major policies required of the TSD. The TSD shall define its own rules and procedural regulations within the scope of the SET's notifications. Management is responsible for the TSD's operation to be in line with the policy set out by the SET board.  (b) The information regarding clearing system, ownership, board and management structure is available on web site and annual reports of the TSD while the process by which major decisions are taken is not available.
Key questions	2. (a) Are the system's public interest, financial and other objectives clearly articulated and public? (b) What are they? (c) Do the systems objectives reflect the needs of users as well as owners? (d) How is the public interest taken into account? (e) Can the system's participants or the public influence the system's decision-making process? (f) How are major decisions communicated to owners and users?
Answers to key questions	2. Yes. The TSD's vision, financial status, new services, and other

	<p>information relating to public interest have been clearly articulated and made public through its web site, annual reports, newsletter, and brochure. The TSD's vision is "Developing and promoting an efficient and internationally acclaimed post-securities trading service center for Thai capital market." Customer satisfaction index has been arranged yearly by surveying all the customers and owners. Information from the survey is used to develop strategy and systems in response to customers' and owner's interest. All major decisions are communicated to owners and users via annual reports, newsletter, and web site.</p>
Key questions	<p>3. What steps are taken to ensure that management has the incentives and skills need to achieve the system's objectives and is accountable for its performance?</p>
Answers to key questions	<p>3. Core competency of management in each function including risk management and legislation is defined clearly to ensure that the management has skills needed to achieve the system's objectives and is accountable for its performance.</p>
Key questions	<p>4. (a) How is the composition of the board determined? (b) What steps are taken to ensure that board members have the necessary skills, and represent or take into account in their deliberations the full range of shareholder and user interest as well as the public interest?</p>
Answers to key questions	<p>4. (a),(b) The board of directors of the SET determines the composition of board of the TSD. There are 11 persons in the board which comprises chairman of the SET board, president and vice president of the SET, president of the TSD, two directors of the SET board (one elected by SET members, another one appointed by the SEC), and five external experts from customers/users such as fund managers or related government organizations such as the Bank of Thailand. In addition, TSD board members are required to join several seminars and internal trainings regularly.</p>
<b>Other issues</b>	
<p><b>Recommendation 14 : Access</b> CSDs and CCPs should have objective and publicly disclosed criteria for participation that permit fair and open access.</p>	
Key questions	<p>1. Are access rules/ criteria objective and clearly disclosed to all potential applicants?</p>
Answers to key questions	<p>1. Yes. The access rules/criteria are objective and clearly disclosed to all potential applicants on web site and in publications as provided by the SET and TSD.</p>
Key questions	<p>2.(a) Are the same rules applied regardless of the identity, type and location of the applicant? If not, what variations apply and why? (b) Can differential restrictions on access to the system be justified in terms of the need to limit risks to the system operator or to other users?</p>
Answers to key questions	<p>2. (a) Yes. The same rules are applied to all participants regardless of the identity and type of the applicant.</p>

	(b) Yes. The requirement that the direct participant must be located in Thailand is justified by the need to limit risks to the system operator regarding cross-border links.
Key questions	3. (a) Under what conditions can participants terminate their membership? (b) What arrangements does the system have in place to facilitate the exit of members who no longer meet the participation requirements? (c) Are these arrangements public disclosed?
Answers to key questions	3. <i>Exit criteria</i> The TSD defines cases for termination or temporary suspension of membership as follows: (Clauses 12-14 of TSD rule re: Rules, Conditions and Procedures for Operation as a Clearing House, 2006) 1. Being broker or dealer whose license has been revoked 2. Fail to contribute money into the clearing fund or other fees as prescribed by the TSD 3. Fail to comply with risk management process as defined by the TSD as follows: 3.1 Fail to submit financial statements to the TSD 3.2 Fail to maintain shareholders' equity or net liquid capital as prescribed by the SEC. 3.3 Fail to limit settlement cap at 8 times of NCR 3.4 Fail to control loss probability within 5% 3.5 Fail to place collateral or place collateral in full, or the TSD Is unable to enforce the collateral adequately within the period specified. 4. Unable to comply with rules, regulations, conditions prescribed by the TSD or SET. 5. Having the operation of financial condition that might be detrimental to the clearing and settlement of securities among the clearinghouse members. 6. Members having resigned by submitting a letter of resignation to the TSD.  (b), (c) There are steps in place to facilitate the exit of members who no longer meet the requirements. Members who request to terminate or are ordered to terminate their membership must complete all of their obligations before they leave the system. The conditions for termination or temporary suspension of membership are publicly available on the web site in both Thai and English language.
<b>Recommendation 15 : Efficiency</b> While maintaining safe and secure operations, securities settlement systems should be cost-effective in meeting the requirements of users.	
Key questions	1. (a) Does the system operator have in place procedures to control costs (for example), by benchmarking its costs and charges against other systems that provide a similar service and to analyze the reasons for significant differences)? (b) Does the system operator have in place procedures to regularly review its pricing levels against its costs of operation?
Answers to key questions	1. <i>Budgetary process, Pricing structure, Benchmarking</i> The TSD's parent entity, the SET, collects fees from its member

	brokers which are comparable to other exchanges in the region. TSD members are not required to pay clearing fee but they are required to pay transaction fee to the SET, which is benchmarked periodically against other countries in the region considering market condition and competition.
Key questions	2. (a) Does the system operator regularly review its service levels, including by regularly surveying its users? (b) Does the system operator have in place procedures to regularly review operational reliability, including its capacity levels against projected demand?
Answers to key questions	2. <i>Reviewing service levels, Operational reliability and capacity levels</i> Yes. The service levels have been reviewed annually by surveying users and owners (IT of SET). Feedback from participants is taken into account in creating customer satisfaction index, which helps the TSD to measure satisfaction of its participants. The TSD has procedures to review operational reliability including adequacy of its capacity.
<b>Recommendation 16 : Communication procedures and standards</b> Securities settlement systems should use or accommodate the relevant international communication procedures and standards in order to facilitate efficient settlement of cross-border transactions.	
Key questions	1. Does the securities settlement system use international communication procedures or standards or is it able to easily convert domestic procedures and standards in the relevant international communication procedures and standards for cross-border securities transactions?
Answers to key questions	1. <i>International standards</i> The TSD uses domestic communication procedures for securities listed on the SET that can be converted into international standards with considerable difficulty. However, the TSD has already subscribed to SWIFTNET for communication on government bond settlement and linked its system to those of the Bank of Thailand. It is in the process of developing a new settlement platform (to be launched in Q3, 2007) using the international standards of communication.
<b>Recommendation 17 : Transparency</b> CSD and CCPs should provide market participants with sufficient information for them to identify and evaluate accurately the risks and costs associated with using the CSD or CCP services.	
Key questions	1. (a) Does the CSD or CCP make clear disclosures to market participants about its rules, regulations, relevant laws, governance procedures, risk, steps taken to mitigate risks, the rights and obligations of participants and the cost of participating in the system?
Answers to key questions	1. <i>Availability or rules, regulations etc.</i> Yes. The TSD makes clear disclosures on rules and regulations, rights, obligations, and cost of participation in the system, risks, steps taken to mitigate risks, and governance procedures through both its web site and official document circulations.

Key questions	2. (a) Has the system completed and disclosed the questionnaire set out in the CPSS/ IOSCO disclosure framework or the answers to the key questions set out in this assessment methodology? (b) Have the authorities responsible for regulation and oversight publicly disclosed their answers to the key questions regarding implementation of the recommendations?
Answers to key questions	2. <i>CPSS/IOSCO Disclosure framework</i> The TSD has completed the questionnaire set out in the CPSS/IOSCO disclosure framework and answered the key questions in this methodology.
Key questions	3. How is this information made available? In what language or languages? In what form?
Answers to key questions	3. The information as stated in 1. is made available via publication and web site in both Thai and English.
Key questions	4. (a) What steps are taken by the CSD or CCP to ensure that the disclosures are complete and accurate? (b) Are there regular reviews to ensure they remain current?
Answers to key questions	4. Each department has responsibility to update the disclosure relating to its tasks. The business development department is responsible for reviewing the disclosures posted on web site to keep them complete and accurate at all times.
<p><b>Recommendation 18 : Regulation and oversight</b> Securities settlement systems should be subject to transparent and effective regulation and oversight. Central banks and securities regulators should cooperate with each other and with other relevant authorities.</p>	
Key questions	1. How is the system regulated/ overseen? Describe the laws that authorize and govern the systems operation, the applicable regulatory bodies and their respective authority concerning the system's operation?
Answers to key questions	1. <i>Entities involved in the oversight/supervision</i> Under the SEA, the system is subject to regulation and oversight by the SEC. The SEC has the power <ul style="list-style-type: none"> <li>- to grant license to the clearinghouse (Section 219),</li> <li>- to determine rules applied to the clearinghouse (Section 223),</li> <li>- to approve clearinghouse rules (Section 224),</li> <li>- to order the clearinghouse to do any act or omit to do any act to safeguard against the damage which may cause to the public (Section 186 (2)).</li> </ul> Due to the fact that TSD is SET's subsidiary, which SET was established prior to the SEA, the abovementioned authority cannot be fully applied in TSD case. The SEC supervisory power on TSD is limited for TSD's management sanction and is rather moral persuasive and indirect by exercising the power through the SET board. There have been several audits by the SEC on the performance of the TSD with the emphasis on its functions that may pose risks to the system. When the SEC sees any activities of the TSD that poses risks to the system or shows lack of risk management in any areas of its functions, the SEC will convey the message either informally or formally to the TSD and SET Board of Directors to take actions as appropriate and report the

	remedial actions to the SEC. After the CPSS-IOSCO Recommendations for SSSs are published, the SEC uses them as part of guidelines for its regulation and oversight of the TSD.
Key questions	2. (a) Are the responsibilities of the securities regulator, central bank and where relevant, banking supervisor clearly defined with respect to securities settlement systems? (b) Are their roles and major policies disclosed publicly? (c) Are they written in plain language so that they can be fully understood by designers, operators and participants of securities settlement systems, and other relevant parties?
Answers to key questions	2. <i>Roles, responsibilities and resources</i> The SEA authorizes the SEC to oversee the securities settlement systems. The SEC communicates its policy guidelines to the SET and TSD from time to time.
Key questions	3. (a) What is the regulatory and oversight framework based on? (b) Is it a statute-based approach where specific tasks, responsibilities and powers are assigned to specific public authorities? Or a non-statute-based approach? (c) Do the securities regulator and the central bank have experienced staff, proper resources and funding to carry out regulatory and oversight functions effectively?
Answers to key questions	3. (a) The regulatory and oversight framework is based on the SEA where specific tasks, responsibilities and powers are assigned to the SEC. (b) Regulatory framework is a statute-based approach. (c) Yes. The SEC has 421 staff, 23% of which achieve degrees in finance, 17% in accountancy and the rest in laws and economics. The SEC also has sufficient funding for its operation, with funds generated from industry fees it sets and collects. In case of a budgetary shortfall, the SEC has a permanent endowment that may be used.
Key questions	4. (a) Is there a framework for cooperation between the securities regulator and the central bank, such as for the exchange of information and views on securities settlement systems? (b) Is there such a framework for cooperation with relevant authorities both within and outside the country?
Answers to key questions	4. <i>Cooperation between relevant authorities</i> (a) Yes. The MOU between the SEC and the Bank of Thailand has been signed as an arrangement of communication and cooperation to address financial disruption and to share information on prudential supervision of settlement banks and financial institutions in the settlement system. (b) Yes. There is a framework for cooperation with the regulators outside the country such as Hong Kong, Malaysia, Australia, and Taiwan, etc.

<p><b>Recommendation 19 : Risks in cross-border links</b>  CSD that establish links to settle cross-border trades should design and operate such links to reduce effectively the risks associates with cross-border settlements.</p>	
Key questions	1. (a) What kinds of links are in operation (see explanatory note)? (b) Has the CSD done a risk analysis of the design of the link and the financial and operational integrity of the linked CSD?
Answers to key questions	1. <i>Type of links</i> N/A
Key questions	2. (a) How is the DVP achieved? (b) Does the link permit provisional transfers of securities across the link? If so, is the retransfer of these securities prohibited until the first transfer is final?
Answers to key questions	2. <i>Delivery versus payment</i> N/A.
Key questions	3. (a) If the CSD extends credit to a linked CSD, are credit extensions to the linked CSD fully secured and subject to limits? (b) Are risk controls and liquidity resources adequate to address liquidity risks posed by the link?
Answers to key questions	3. <i>Risk analysis</i> N/A.