

# Oversight Framework of Payment Systems in Thailand

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## BANK OF THAILAND

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## **1. Introduction**

Payment systems play a critical role in facilitating the continuous and secure functioning of the country's economic activities by supporting and handling financial transactions of the financial institutions, public sectors, private sectors, and general public, to enable them to function conveniently, quickly, and efficiently; which help fostering the functioning of economic activities and maintaining the financial stability of the country.

The Bank of Thailand (BOT) is responsible for the oversight of operators/service providers of the payment systems under the Payment Systems Act B.E. 2560 (2017) (Payment Systems Act). The Payment Systems Committee (PSC) is empowered to formulate policies relating to the payment systems under the BOT's purview and interbank clearing systems, including oversee the BOT's operations with respect to the establishment or supporting of the establishment of payment systems.

The BOT, therefore, established an "Oversight Framework of Payment Systems in Thailand" to adopt as the approach of the BOT for the oversight of the payment systems to promote safety and efficiency, to reduce risks in various aspects in accordance with international standards, to strengthen user confidence, and to promote competition among operators/service providers; which lead to the stability of the payment systems and overall financial systems.

## **2. Statutory Power**

By virtue of Section 7, Section 8 (6), Section 8 (10), Section 28/12 and Section 44 of the Bank of Thailand Act B.E. 2485 (1942) and additional amendments, the BOT carries on tasks, by which the PSC is empowered to formulate policies relating to the payment systems under the BOT's purview and interbank clearing systems, in order to maintain payment systems stability. In addition, by virtue of Section 7 and Section 24 of the Payment Systems Act, the BOT has the responsibilities to supervise and oversee the Highly Important Payment Systems, the Designated Payment Systems, and the Designated Payment Services; and is empowered to issue notifications prescribing regulations on supervision of the payment systems to ensure stability, safety, and efficiency.

## **3. Oversight Framework**

With respect to oversight of the payment systems, the BOT has defined scope and approach in the oversight to promote efficiency, safety and security, to ensure properly management of risks, and to continuously provide services under normal and emergency conditions, including to reduce systemic risks; as follows:

### 3.1 Oversight according to Payment Systems Act

The payment systems are divided into 3 main groups which are:

3.1.1) Highly Important Payment Systems are payment systems which are principal infrastructures of the country whose problems or disruptions would be likely to affect members of the system continually and broadly, and handle large value funds transfer or used for clearing or settlement between members. The Payment Systems Act prescribes that the payment systems the BOT establishes and operates, which are BAHTNET system (Bank of Thailand Automated High-value Transfer Network) and ICAS system (Imaged Cheque Clearing and Archive System), shall be designated as the Highly Important Payment Systems, and empowers the Minister of Finance with the advice of the BOT to issue notifications to additionally designate other payment systems.

In this regard, the Payment Systems Act includes legal provisions being essential to the stability of the payment systems; which are the protection of any funds transfer, clearing, or settlement, that has been made through the Highly Important Payment Systems before the time that the court has issued the order accepting the petition for business reorganization or the order for receivership of a member, which shall be considered final and shall not be revoked, reversed, modified, stopped or set aside (Payment finality) in order to prevent systemic risks.

3.1.2) Designated Payment Systems are payment systems which are the center or network between system users for handling funds transfer, clearing or settlement such as inter-institution funds transfer system, payment card network, settlement system; or any other payment systems which may affect public interests, public confidence, or stability and security of the payment systems. In this regard, the Minister of Finance with the advice of the BOT has the power to issue notifications prescribing types or characteristics of the Designated Payment Systems, which shall obtain a license in order to undertake the business.

3.1.3) Designated Payment Services are payment services which are used widely and have a widespread impact as follows 1) provision of credit card, debit card, or ATM card services 2) provision of electronic money services 3) provision of accepting electronic payment for and on behalf of others 4) provision of electronic money transfer services 5) other payment services which may have an impact on financial systems or public interests. In this regard, the Minister of Finance with the advice of the BOT has the power to issue notifications prescribing types or characteristics of the Designated Payment Services, which shall obtain a license. In the case of payment services being used within limited scope or having no widespread impact on the financial systems or public interests such as innovative payment services applying new technologies and being on service testing period. The Minister of Finance with the advice of the BOT has the power to issue notifications prescribing the Designated Payment Services which shall be registered with the BOT.

The Payment Systems Act empowers the BOT to issue notifications prescribing regulations on supervision of the payment systems by using a supervisory framework consisting of 5 areas approved by the PSC, in order to adopt as the approach for the supervision and oversight on 3 groups of payment systems, which are summarized as follows:

(1) Financial status: to ensure that operators/service providers have financial status that is stable and sufficient to continue providing services as a going concern under both normal and emergency conditions

(2) Governance: to ensure that the management and internal control are in accordance with good governance principles, including directors and executives have proper qualifications

(3) Risk management and security: to ensure that there are risk management relating to the payment systems such as systemic risk, settlement risk, and operational risk; including, the security of IT systems is maintained to ensure security, integrity, and availability.

(4) System user/consumer protection: to ensure that operators/service providers adequately disclose information related to services to users; such as fee being charged to users, safely protect user data privacy, and properly handle complaints, including the protection of users' money received in advance (float).

(5) Promotion of efficiency and competitiveness: to promote level of playing field for both domestic and oversea operators/service providers, to foster competitiveness, and to promote new innovations; which will increase efficiency and uplift the payment systems and payment services in Thailand.

In addition, the BOT has the power to conduct examination, to obtain relevant information, and to order for rectification of financial conditions or operations that may cause damage to public, violate or omit to comply with relevant regulations prescribed by the BOT. Moreover, the BOT will regularly analyze and monitor any payment systems that fall into the payment systems or payment services which shall obtain a license or register.

**Table 1: Summary of Classification of the Payment Systems and Oversight Expectation with respect to the Payment Systems Act**

Type of System	Highly Important Payment Systems	Designated Payment Systems	Designated Payment Services
Name of System	<ul style="list-style-type: none"> <li>▪ BAHTNET system</li> <li>▪ ICAS system</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inter-institution Fund Transfer System</li> <li>▪ Payment Card Network</li> <li>▪ Settlement System</li> <li>▪ Other payment systems that may have an impact on public interests, public</li> </ul>	<ul style="list-style-type: none"> <li>▪ provision of credit card, debit card, or ATM card services</li> <li>▪ provision of electronic money services</li> <li>▪ provision of accepting electronic payment for and</li> </ul>

Type of System	Highly Important Payment Systems	Designated Payment Systems	Designated Payment Services
		confidence, or stability and security of payment systems	on behalf of sellers, service providers, or creditors <ul style="list-style-type: none"> <li>▪ provision of electronic money transfer services</li> <li>▪ other payment services that may have an impact on financial systems or public interests.</li> </ul>
<b>Oversight Expectation</b>	<ul style="list-style-type: none"> <li>▪ Supervisory Framework 5 areas which are (1) Financial status (2) Governance (3) Risk management and security (4) System user protection (5) Promotion of efficiency and competitiveness</li> <li>▪ Emphasize on the principle of payment finality and default management to prevent systemic risk and impact in the case that members are subject to receivership or bankruptcy ordered by the court</li> </ul>	<ul style="list-style-type: none"> <li>▪ Supervisory Framework 5 areas which are (1) Financial status (2) Governance (3) Risk management and security (4) System user protection (5) Promotion of efficiency and competitiveness</li> </ul>	<ul style="list-style-type: none"> <li>▪ Supervisory Framework 5 areas which are (1) Financial status (2) Governance (3) Risk management and security (4) Consumer protection (5) Promotion of efficiency and competitiveness</li> </ul>

### 3.2 Oversight according to International Standards

The PSC approved the criteria for classification of the payment systems according to the level of importance, and the oversight framework for each group of payment systems to be overseen in accordance with international standards Principles for Financial Market Infrastructures (PFMI), which was issued by Committee on Payments and Market Infrastructures (CPMI) and International Organization of Securities Commissions (IOSCO) in April 2012. The criteria for classification of the payment systems in Thailand and the application of PFMI in the oversight are summarized as follows:

3.2.1) Systemically Important Payment System (SIPS) the criteria is adopted from the Bank for International Settlements (BIS)'s criteria in order to identify the payment systems that are classified as SIPS, which shall have one of the following criteria:

- Being the sole payment system in a jurisdiction or the principal system of the country; or
- Being a payment system that handles large-value payments; or
- Being a payment system that used to settle financial market transactions and used to effect settlement in other FMIs.

The payment system that is classified as SIPS according to the BIS's criteria is BAHTNET system operated by the BOT because it is the Financial Market Infrastructures (FMI) of the country which handles interbank large value funds transfer transactions, and uses for the settlement of financial market transactions and for the settlement of other FMIs. If there are system disruptions, it would be likely to have widespread and continuous impact to members of the systems (systemic risk), or have an impact on the stability and security of the payment systems. Therefore, it is necessary that the SIPS shall be subject to the oversight according to the PFMI for all principles relating to the payment systems (a total of 18 principles)

3.2.2) Retail Payment System the BOT will classify retail payment systems according to the level of importance and impacts on payment systems and public confidence, determining by using criteria as follows:

- Market penetration: measure by using the ratio of volume of transactions processed through the system to total volume of all payment transactions of the country, including both intra-bank and inter-bank payments.
- Aggregate financial risk: measure by using the value of payment transactions processed through the systems. If the value is high, a disruption of such system may cause problems to financial institutions and financial systems. Calculations derive from the ratio of value of payment transactions processed through the systems to the value of payment transactions processed through the country's large-value payment systems
- Risk of a domino effect: measure the risks that may potentially occur in the case that some financial institutions could not pay their obligations arising from being the members of the payment systems, and have an impact on other financial institutions that wait for liquidity resulting in systemic effect to financial institutions systems as a whole; measuring from the netting ratio which is the net clearing position to the transaction value of the systems.

In addition, in the case that any operators of payment systems operates many systems, such as inter-bank cash withdrawal systems via ATM (ATM pool) and bulk payment system, the classification will consider from the combined data of all systems because they are under the management of the same entity. In addition, the BOT will regularly analyze and monitor the data to determine and review the classification of retail payment systems. By using such criteria, the retail payment systems are classified into 3 groups according to the level of importance and impacts to financial systems and public confidence as follows:

(1) Systemically Important Retail Payment Systems (SIRPS) are infrastructures that handle inter-institution retail payments, whose problems or disruptions would be likely to affect members of the system continually and broadly, or may have an impact on the payment systems or financial systems of the country, including may affect public interests and public confidence. The retail payment systems are classified as SIRPS if they have the indicators being in accordance with all specified criteria, and they are subject to the oversight according to the PFMI for a total of 18 principles in the same manners as SIPS. Currently, there is no retail payment system in Thailand that is classified as SIRPS because none of the systems has the indicators that pass 3 criteria.

(2) Prominently Important Retail Payment Systems (PIRPS) are the retail payment systems that are critical for economic activities, whose disruptions or problems could have the potential to affect public interests and public confidence. The retail payment systems are classified as PIRPS if they have the indicators being in accordance with at least one criteria, and they are subject to the oversight according to the PFMI for a total of 14 principles by excluding the principles relating to financial risks because the value of transactions processed through the system is not as much as SIPS and the settlement is carried out in multilateral manners (Net settlement). Currently, there are 2 retail payment systems that are classified as PIRPS which are ICAS system operated by the BOT, and the ITMX system (Interbank Transaction Management and Exchange) which is interbank retail funds transfer systems, such as ATM pool, bulk payment system and PromptPay system, operated by the National Interbank Transaction Management and Exchange Co., Ltd. (NITMX).

(3) Other Retail Payment Systems (ORPS) are those that are not classified as SIRPS and PIRPS. The PFMI is applied in the oversight as deemed appropriate. The retail payment systems that are classified as the ORPS such as Payment Card Network because its volume and value of transactions, and net clearing positions do not fall into the defined criteria.

**Table 2: Summary of Classification of the Payment Systems and Oversight Expectation with respect to the international standards PFMI**

Type of System	SIPS	PIRPS	ORPS
Name of System	<ul style="list-style-type: none"> <li>▪ BAHTNET system</li> </ul>	<ul style="list-style-type: none"> <li>▪ ICAS system</li> <li>▪ ITMX system</li> </ul>	<ul style="list-style-type: none"> <li>▪ Other retail payment systems that are not classified as SIRPS and PIRPS such as the Payment Card Network</li> </ul>
Oversight Expectation	<ul style="list-style-type: none"> <li>▪ Apply the PFMI for all principles relating to the payment systems (18 principles) for the oversight</li> </ul>	<ul style="list-style-type: none"> <li>▪ Apply 14 principles of the PFMI for the oversight, by excluding the principles relating to financial risks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Apply PFMI for the oversight as deemed appropriate</li> </ul>

### 3.3 Oversight approach

The BOT is responsible for the oversight of operators/service providers of the payment systems according to the Payment Systems Act and International standards PFMI; meanwhile, it is also responsible for the operations of payment systems, namely BAHTNET system and ICAS system, which are the Highly Important Payment Systems under the Payment Systems Act. Therefore, the BOT has established a formalized internal organizational arrangement where the oversight and operation functions relating to the payment systems are separated into two departments, in order to prevent conflict of interests and to maintain effective oversight. Regarding the oversight of payment systems according to the Payment Systems Act and International standards PFMI, the BOT's oversight approach are as follows:

3.3.1) Continuous off-site monitoring to allow the BOT to monitor and oversee risk management and operations of operators/service providers of the payment systems, and to monitor the development of payment systems in order to obtain information to effectively determine and set policies. There are requirements for the operators/service providers of the payment systems to prepare reports according to forms, frequency, and time periods as prescribed by the BOT. In addition, there are also ad-hoc request for submissions of information as necessary. The summary of important reports are as follows:

(1) Reporting in the case of temporary service suspension or incidents or failures in providing services that have a widespread impact: the operators/service providers shall have in place systems or tools to give warnings on incidents, disruptions, or delays of the systems used for providing services, and notify the BOT which is the regulator and relevant stakeholders promptly.

(2) Audit findings report on IT systems and Audit findings report on internal control and risk management: the operators/service providers shall submit a copy of audit findings report to the BOT regularly every year. In the case that the BOT consider that such audit findings report contain inadequate information or ambiguous contents, the BOT may order the operators/service providers to appoint an external auditor to perform the audit and report the audit findings to the BOT.

(3) Self-assessment report against the PFMI (for only the operators that the PFMI is applied) the operators shall submit a copy of assessment report to the BOT regularly or at least every 2 years, and disclose the self-assessment according to the Disclosure Framework of the PFMI in order to ensure that the systems have risk management in line with international standards.

(4) Reporting payment statistics and data for the analysis, monitoring, and assessment of risks such as value and volume of transactions processed through the systems, and BCP testing result reports, etc. the operators/service providers shall prepare such reports and submit to the BOT according to the defined time period.

(5) Reporting on development plans and advance notification on material changes on the system such as changes in IT systems, participants, operating rules, etc. The operators/service providers shall report such information according to the regulations prescribed by the BOT for the purpose of assessment on potential risks and impacts.

In addition, the BOT regularly holds discussion meetings with relevant stakeholders from both public and private sectors, including exchanging information with relevant regulators from both domestic and overseas to gather information to conduct risk assessment completely and holistically.

3.3.2) Risk assessment is the analysis, monitoring, and assessment of relevant risks relating to the payment systems to measure the adequacy and appropriateness of risk management of operators/service providers; including consider potential impacts such as risk management on liquidity risk, settlement risk, operational risk, and systemic risk that one or many members of the systems may not be able to pay their obligations within the defined time period and have a systemic impact on other members by causing them not being able to pay their obligations, which will lead to damage to the payment systems and financial systems as a whole.

3.3.3) On-site examination the BOT have an annual audit plan to conduct examination on operations of operators/service providers. The risk assessment findings will be used to define the scope of examination and the issues of concern from each examinations will be used to prioritize issues according to risks and impacts. In addition, it will monitor issues of concerns or the implementation of recommendations/corrective actions from previous examinations. The BOT will focus on issues of concern that pose significant risks, the compliance with supervision requirements prescribed in the regulations, and the risk management against international standards.

In this regard, the BOT will inform the operators/service providers the examination findings by identifying issues of concerns or matters that need remedial actions, along with recommendations and steps to take corrective actions. The operators/service providers shall propose corrective actions, implementation plan, and timeline for the implementations of corrective actions for each issues and matters of concerns. In addition, the progress in implementing recommendations or taking corrective actions shall be reported to the BOT periodically.

3.3.4) Reporting to committee to maintain effective oversight of the payment systems and to ensure a clear and transparent arrangement in accordance with good governance principles, and to provide accurate and complete information that are essential for the PSC in carrying on tasks in formulating policies relating to the payment systems under the BOT's supervision. Therefore, the examination findings, results of oversight activities, and issues relating to critical risks are reported to the PSC regularly.

3.3.5) Standard adoption and regulation improvement the BOT will consider and adopt standards that will help reduce various risks relating to payment systems by issuing notifications, prescribing additional regulations, or amending regulations, or issuing guidelines to reduce existing risks, in accordance with the action framework approved by the PSC in order to develop the payment systems to have safety and security, to promote efficient and smooth operations, to have appropriate risk management, and to continuously provide services under both normal and emergency circumstances.

In addition to the above oversight approach, the BOT has also established other approach and procedures under relevant legislations such as the Payment Systems Act, procedures for rectification of the financial condition or operations, procedures for considering the imposition of administrative fine, etc.

#### **4. Co-operative Oversight**

The BOT, having a role as a regulator of the payment systems, cooperates with relevant authorities being responsible for the oversight of FMIs both domestically and internationally to share information relating to the oversight of linked or interdependent FMIs to ensure safety, security and efficiency, to have adequate risk management, to properly prevent systemic risks in the systems, and to be aligned with the international standards of PFMI with respect to the Responsibility E: Cooperation with other authorities. The scope for co-operative oversight was defined to cover arrangements of setting policies and development plans for the linked FMIs, management of critical risks, and arrangements for the case of systems being disrupted or having problems, which may affect the linked FMIs.

**4.1 Domestic Regulators** which are the Securities and Exchange Commission (SEC), who oversees the Central Securities Depositories (CSD), Securities Settlement Systems (SSS), and Central Counterparties (CCP).

**4.2 Regulators outside Thailand** which are Hong Kong Monetary Authority (HKMA), who oversees US Dollar Clearing House Automated Transfer System (USD CHATS), which has a linkage to the BAHTNET system (cross-border links) for the cross-border real time settlement with the mechanisms of Payment-versus-Payment (PvP) in order to mitigate the FX settlement risk for THB/USD transactions.

(Attachment 1)

**Notifications on Regulations for Supervision of Payment Systems  
under the Payment Systems Act B.E. 2560 (2017)**

**(1) Chapter 1 Highly Important Payment Systems**

- Regulations on Supervision for System Operator of the Highly Important Payment Systems
- Regulations on Supervision for Members of the Highly Important Payment Systems

**(2) Chapter 2 Designated Payment Systems**

- Regulations, Procedures and Conditions on Application for License to Undertake Designated Payment Systems Business
- Regulations on Supervision of the Designated Payment Systems Business

**(3) Chapter 3 Designated Payment Services**

- Regulations, Procedures and Conditions on Application for License and Registration to Undertake Designated Payment Services Business
- Regulations on Supervision of the Designated Payment Services Business
- Regulations on Electronic Money Services Business
- Regulations on Electronic Money Transfer Services Business
- Regulations on Business of Accepting Electronic Payment for and on behalf of Others
- Regulations on Supervision of Agents of the Business Providers of the Designated Payment Services

**(4) Others**

- Policies and Measures on Security of Information Technology Systems
- Services Relating to Debit Cards Issued and Used Domestically
- The Common Chip Card Standard for Debit Cards Issued and Used Domestically
- Regulations on Reporting Payment Information to the Bank of Thailand
- Appointment of Examiners under the Law Governing Payment Systems
- Format Specification for Examiner Identification Card under the Law Governing Payment Systems
- Format Specification for Examination Findings Report under the Law Governing Payment Systems

Link: [https://www.bot.or.th/English/PaymentSystems/PSA\\_Oversight/Pages/RelatedLaws.aspx](https://www.bot.or.th/English/PaymentSystems/PSA_Oversight/Pages/RelatedLaws.aspx)

Oversight of Payment Systems against Principle for Financial Market Infrastructures

Principles	Payment Systems		
	SIPS	SIRPS	PIRPS
1: Legal basis	●	●	●
2: Governance	●	●	●
3: Framework for the comprehensive management of risks	●	●	●
4: Credit risk	●	●	
5: Collateral	●	●	
6: Margin			
7: Liquidity risk	●	●	
8: Settlement finality	●	●	●
9: Money settlements	●	●	●
10: Physical deliveries			
11: Central securities depositories			
12: Exchange-of-value settlement systems	●	●	
13: Participant-default rules and procedures	●	●	●
14: Segregation and portability			
15: General business risk	●	●	●
16: Custody and investment risk	●	●	●
17: Operational risk	●	●	●
18: Access and participation requirements	●	●	●
19: Tiered participation arrangements	●	●	●
20: FMI links			
21: Efficiency and effectiveness	●	●	●
22: Communication procedures and standards	●	●	●
23: Disclosure of rules, key procedures, and market data	●	●	●
24: Disclosure of market data by trade repositories			
<b>Total</b>	<b>18 principles</b>	<b>18 principles</b>	<b>14 principles</b>

(Attachment 3)

**Relevant international standards on Principle for Financial Market Infrastructures**

- [Principles for financial market infrastructures](#) (April 2012)
- [Disclosure framework and Assessment methodology](#) (December 2012)
- Recovery of financial market infrastructures (October 2014)
- Cyber resilience in financial market infrastructures (November 2014)
- [Assessment methodology for the oversight expectations applicable to critical service providers](#) (December 2014)
- [Application of the Principles for financial market infrastructures to central bank FMIs](#) (August 2015)
- [Guidance on cyber resilience for financial market infrastructures](#) (June 2016)
- [Recovery of financial market infrastructures](#) (Revised July 2017)
- [Reducing the risk of wholesale payments fraud related to endpoint security](#) (May 2018)