



ธนาคารแห่งประเทศไทย
BANK OF THAILAND

BAHTNET Modernization

BOT Stakeholder Consultation Paper

เอกสารรับฟังความคิดเห็นต่อการพัฒนาระบบบาทเน็ตใหม่

July 2026

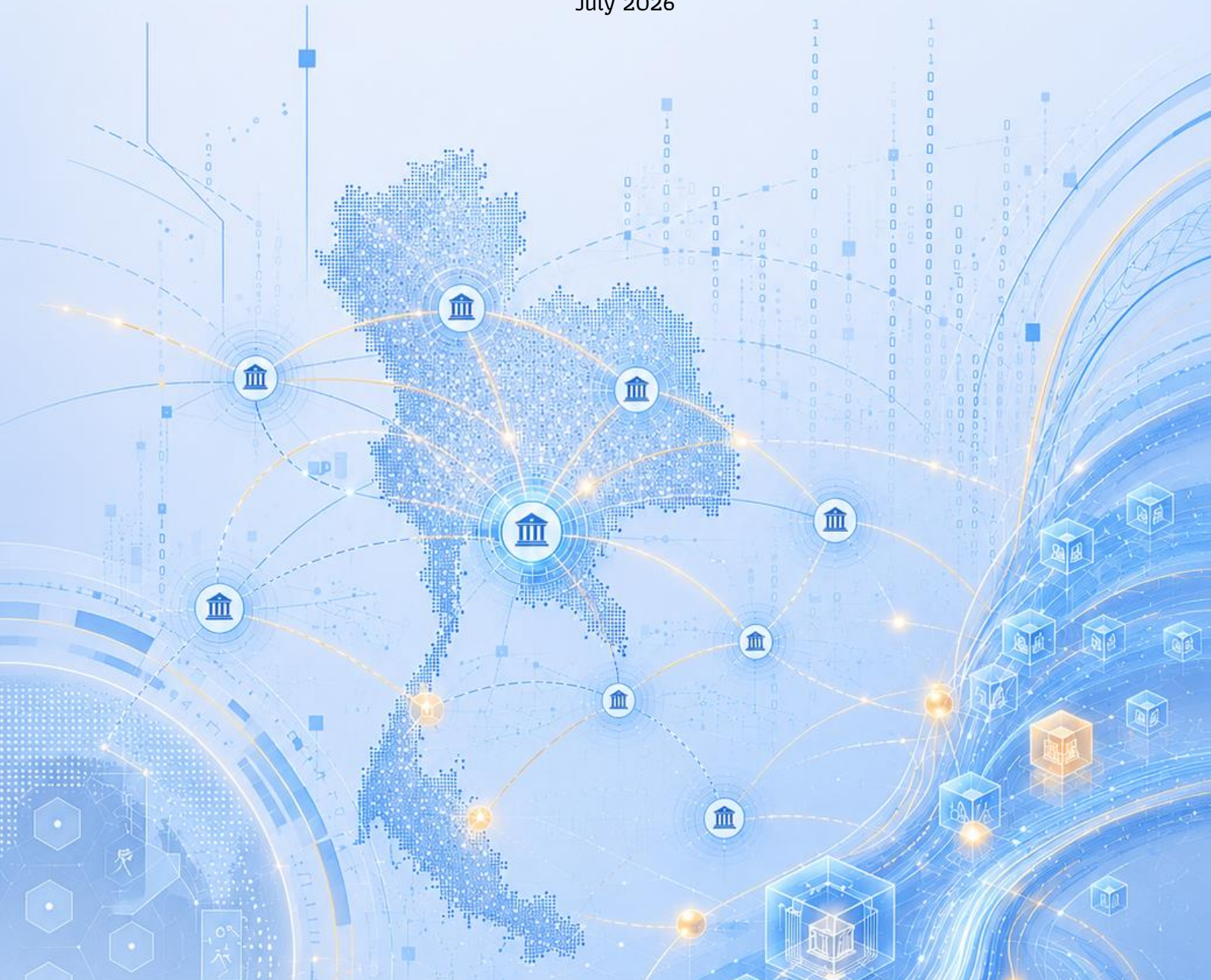


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Introduction

The Bank of Thailand [BOT], as part of its mandate to safeguard the stability and integrity of Thailand’s financial system, recognizes the profound impact of technological change, innovation, and evolving risk landscapes on the country’s payment and settlement infrastructure. These developments present major opportunities to enhance efficiency, resiliency, and access across the financial sector, but also introduce new forms of operational, cyber, and systemic risk if foundational infrastructures do not evolve in time.

In response to these developments, and consistent with the strategic direction set out in the Payment Directional Paper published in September 2025, BOT is advancing the modernization of BAHTNET, Thailand’s Real-Time Gross Settlement [RTGS] system, as a critical national priority.

BAHTNET is the core platform through which all high-value payments, financial market transactions, and interbank obligations settle in central bank money. To address growth in the volume, speed, and complexity of the country’s payment ecosystem—driven by near-continuous retail systems, rapid digital adoption, and expanding cross-border connectivity—BAHTNET must be modernized to remain resilient and efficient and to support future innovation.

To ensure that the modernization direction reflects both international best practice and the needs of the Thai financial community, the BOT has conducted preliminary discussions with domestic and international experts, policy committees, major financial institutions, and relevant public- and private-sector stakeholders. Insights from these engagements have shaped the initial design direction and have informed the strategic foundations of this consultation paper.

This consultation paper sets out the BOT’s initial views on the vision, strategy, and key design elements for the next generation of BAHTNET, which aim to ensure that:

1. Thailand’s settlement infrastructure is resilient and able to operate continuously in an increasingly digital and interconnected financial environment.

2. The financial sector benefits from enhanced efficiency, optimal liquidity management, and modernized settlement services that support innovation and competitiveness, while businesses and consumers benefit from faster, more flexible, and more transparent payment services.
3. The system remains future-ready, capable of supporting emerging forms of money—such as tokenization and wholesale CBDC—and regional and global payment integration.

The directions and functional enhancements proposed in this document represent preliminary concepts. To ensure that these ideas evolve appropriately and address the concrete needs of stakeholders, the BOT is seeking input on the strategic direction, as well as practical operational insight through the specific questions in each section of the paper. This input will be used to refine the strategic direction and shape the final BAHTNET Modernization Blueprint.

Stakeholders may submit their comments until **11 August 2026** via email to the Payment Infrastructure and Services Strategy and Development Department.

Email: bahtnet-modernization-bot@bot.or.th.

All feedback submitted on an individual basis will be treated as **confidential** and will not be attributed publicly. The BOT will summarize key themes and incorporate them into the refined Blueprint, which will be shared with the industry later in 2026.

The BOT hopes that this consultation will help stakeholders understand the vision and strategic direction of BAHTNET modernization and will foster close collaboration across all sectors as Thailand strengthens the settlement foundation required to support a resilient, innovative, and future-ready digital economy.

Executive Summary

In September 2025, the Bank of Thailand published the Payment Directional Paper, establishing the strategic direction and policy imperatives designed to deliver a payment system that will meet the evolving needs of Thailand's economy and its citizens. The paper describes three imperatives for achieving a modernized payment system: 1) Leveraging the existing infrastructure to deliver enhanced, data powered services for consumers and businesses; 2) Modernizing BAHTNET to ensure a resilient and effective settlement infrastructure for the future; and 3) Paving the way for the future with regulatory clarity and infrastructure that supports new forms of money and changing technologies.

A modernized BAHTNET – Thailand's Real-Time Gross Settlement [RTGS] system and the foundation of the country's financial infrastructure – was identified as critical for ongoing payment system stability and key to enabling the innovation envisioned by the other two imperatives. This paper continues the dialogue with industry that began with the Payment Directional Paper, advancing the imperative to modernize BAHTNET by inviting stakeholders to participate in a structured consultation on the blueprint for the future system.

This consultation paper presents the vision and strategic framework for the new BAHTNET, organized around eight strategic pillars. For each pillar, it describes the enhancements and design features being considered and the expected benefits and poses questions inviting stakeholder input.

The BAHTNET Modernization is one of the most consequential infrastructure investments in Thailand's financial history. The choices made now will shape the country's wholesale settlement architecture for the next 15 to 20 years, determining how Thailand participates in the evolving ASEAN regional payment ecosystem, supports digital financial innovation, and maintains the monetary integrity and financial stability the economy depends on.

1. The BAHTNET Modernization

1.1 The Policy Foundation

Thailand's payment landscape has transformed fundamentally over the past decade. Since PromptPay launched in 2017, mobile banking transaction volumes have grown 25 times over. PromptPay now processes up to 95 million transactions per day at peak, and cash withdrawals at ATMs have declined by more than a third. The retail payment infrastructure is transforming. The wholesale settlement infrastructure is not keeping pace.

The environment is also more demanding than it was a decade ago. Geopolitical events, the accelerating adoption of distributed ledger technology including new forms of money and artificial intelligence, and other emerging risks such as technology risk and financial crime risk generating fraud, all make the case for a more resilient, more capable settlement foundation.

The Payment Directional Paper is explicit on this point: BAHTNET must be upgraded. It mandates an uplifted technical foundation with enhanced business capabilities – including resilience and adaptability, interoperability with the broader payment ecosystem, and the capacity to support future payment innovations including tokenized money.

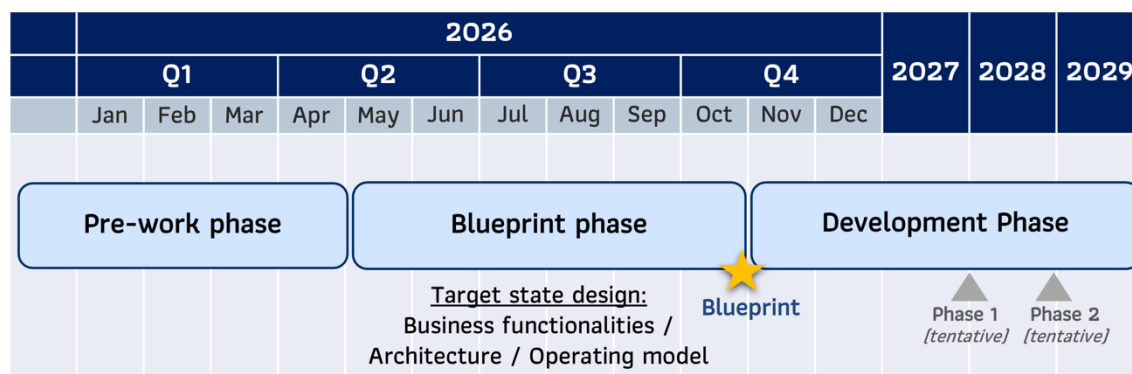
1.2 Why Modernization Is Important

Four realities create a near-term imperative for a more resilient, efficient and future-ready BAHTNET.

- The current BAHTNET architecture has served as the settlement infrastructure for over 30 years. It is tightly coupled, operates on a legacy technology stack, and carries a two-hour recovery time that is incompatible with current expectations for a critical RTGS infrastructure.
- The retail payment system has outgrown the wholesale settlement layer. PromptPay operates near-continuously. Obligations that clear after BAHTNET's operating window sit unsettled overnight, creating systemic exposure across all participants. The most advanced RTGS systems globally demonstrate a clear path forward – architecture built for continuous settlement, with operating hours extended progressively during an ecosystem transition to 24/7 operations.

- Today's critical settlement processes depend extensively on manual processes, creating significant operational risk and inefficiency across the end-to-end payment chain. Incorporating modern technology and established message standards into the RTGS ecosystem can reduce risks and costs for all participants.
- Distributed ledger technology (DLT) and tokenization have gained increasing attention due to their ability to embed automatic conditions into payment instructions. This enables the development of payment services that more seamlessly align with various transaction types, such as programmable payments or faster settlement of tokenized assets. The RTGS core supporting tokenized assets, programmable payment instruments, and wholesale CBDC is required.

1.3 The BAHTNET Modernization Development Timeline



The BAHTNET Modernization is a part of BAHTNET Next Generation which is a phased initiative running from 2024 through 2029, including three workstreams: the BAHTNET Refresh [completed], which stabilized the current system's infrastructure, and the BAHTNET API project [complete in 2026], which is establishing API-based local connectivity as the model for participant access, and this workstream, BAHTNET Modernization – the new RTGS core system – which is the third and most significant workstream: a comprehensive replacement of the settlement core, not an incremental upgrade. The Blueprint developed through this consultation will help define the business functionality, architecture, operating model, and implementation roadmap. Stakeholder input will help to ensure a Blueprint that is responsive to the needs of the industry and achieves the strategic objectives of the Modernization. The Blueprint outlining high-level design will be finalized and communicated by year-end and

implementation will proceed. BAHTNET participants will be regularly updated and consulted during implementation to provide input on detailed design requirements, policy issues and implementation timeframes.

2. Vision and Strategic Framework

2.1 The Vision

BAHTNET will be one of the world's leading future-ready RTGS systems, tailored to Thailand's context and aligned with global best practices.

Five attributes underpin this vision:

- **Sovereign** – full domestic control, with no critical dependency on any foreign network or single vendor.
- **Resilient** – architecturally designed to increase efficiency by process automation and to recover from disruption within minutes, not hours, with zero loss of settled transaction data.
- **Future-Ready** – modular architecture and modern technology that accommodates new forms of money and settlement.
- **Trusted Anchor** – settlement in central bank money as the foundation of Thailand's entire payment ecosystem.
- **Seamlessly Connected** – API connectivity and interoperability across domestic, regional, and global systems. Full adoption of rich data from ISO 20022 to empower data analytics and automation.

The phrase 'one of the world's leading' is grounded in a comparative analysis of the envisioned modernized BAHTNET against seven peer RTGS systems, including T2 [European Union], RT2 [United Kingdom], Lynx [Canada], Fedwire [United States], RENTAS [Malaysia], CHATS [Hong Kong], and MEPS+ [Singapore]. Benchmarking across 20 dimensions derived from the Principles for Financial Market Infrastructures [PFMI] shows that the modernized BAHTNET is designed to meet or exceed global standards across the vision's eight strategic pillars.

PILLAR	BAHTNET CURRENT CAPABILITIES	GLOBAL BEST PRACTICE
24/7 Availability	9/5 operating hours	24/7 continuous settlement by architecture 
Architecturally Resilient	- Multi-site active-standby with 2-hrs recovery - Not PQC ready	Active-active with isolated recovery environment 
Financially & Operationally Efficient	- Over-collateralized requirement - Inefficient LSM & unoptimized operation cost - Heavily manual process	- Fully automated collateral and LSM management at both bank and participant level - Highly automated processes 
ISO 20022 Native	- ISO 20022 adopted - Underutilized data	Scheme-mandated field enrichment with automated compliance validation 
Sovereign	Reliance on foreign network	Full operational independence from any foreign network, contractual exit rights across all vendor relationships 
Interoperable	Limited private connectivity	API-native connectivity with real-time orchestration across the ecosystem 
Data & AI Powered	Fixed & pre-scheduled reports	Governed AI tools continuously optimizing, detecting, and automating across system operation <i>No RTGS today supports this capability in production.</i>
Future Enabled	Settles traditional financial assets only fiat Thai baht	Synchronization-ready for atomic conditional settlement with external platforms  <i>Ready, but not live</i>

The new BAHTNET will represent the collective best features of the world's most progressive RTGS systems – 24/7, cutting edge resilience, AI-powered, optimized for efficiency, and design to support new asset and money. On several dimensions – notably continuous availability by architecture and AI-powered operations – no existing RTGS system yet achieves what BAHTNET plans to deliver.

The vision for the new BAHTNET will be achieved through a rigorous, multi-stage design process: in-depth research into global RTGS trends and emerging technologies; consideration of Thai, ASEAN and global financial system priorities and imperatives; benchmarking against peer systems; gap analysis against international standards such as PFMI; direct engagement with BAHTNET participants; and this stakeholder consultation. Design decisions will be guided by a commitment to system stability and resiliency foremost, and a desire to architect a system capable of supporting future needs as policy evolves and the market innovates. The new BAHTNET provides the settlement foundation to support innovation by participants and the broader ecosystem. The modernized BAHTNET described in this paper reflects a considered translation of strategic vision into specific functional capabilities.

2.2 Eight Strategic Pillars

The vision is delivered through eight strategic pillars that together define what the new BAHTNET will do and the standard it will achieve. Three priorities organize the pillars: resiliency as the non-negotiable foundation; efficiency as the quantifiable return on rebuilding the core; and future innovation as the strategic optionality the new architecture preserves.

Modern Resilient Settlement Core	Enhanced Efficiency & Services	Innovation Ready
24/7 Availability The new BAHTNET will be built for continuous settlement and allow flexibility to expand business hours based on policy decisions.	Financially & Operationally Efficient The new BAHTNET will deploy comprehensive liquidity saving mechanisms and automated collateral management to reduce liquidity demands and streamline operations. Automate everything possible – including deployment, testing, business & IT operations, and scaling – to reduce human error and improve consistency. Implement AI-led operations for productivity and efficiency.	Future Enabled The new BAHTNET will be ready to support new forms of money through modular architecture capable of accommodating tokenized asset settlement, multi-currency configurations, and programmable settlement without a core rebuild.
Architecturally Resilient The new BAHTNET will operate on an active-active multi-site architecture delivering less than 30 minutes recovery time, zero data loss on settled transactions, cyber-attack and post-quantum cryptographic resilience.	ISO 20022 Native The new BAHTNET will enhance ISO 20022 adoption to be its sole internal data model, enabling rich structured payment data that powers real-time supervisory insight, automated regulatory reporting, and straight-through processing.	

Sovereign The new BAHTNET will maintain full domestic control at every layer – settlement engine, data infrastructure through an API-native domestic channel, and connectivity – with documented vendor independence.	Data & AI Powered The new BAHTNET will transform supervisory and participant intelligence through real-time ISO 20022 data streaming, AI-driven anomaly detection and intraday liquidity forecasting.
Interoperable The new BAHTNET will be API-native and event-driven, enabling seamless connectivity across Thailand's domestic financial ecosystem, ASEAN regional linkages, and international settlement networks.	

A design anchored by these eight pillars will provide a resilient and flexible settlement infrastructure that delivers benefits to financial institution participants, businesses and consumers.

For financial institutions:

- The new BAHTNET will enable financial institutions to mitigate liquidity & settlement risk and also reduce costs through lower liquidity demands and operational efficiencies such as automated reporting, compliance checks and reduced exception handling.
- Enhanced services to customers, including longer service hours, richer payment data, and support for new forms of money and global commerce, can strengthen customer retention and create revenue opportunities.

As banks and other payment service providers begin to leverage new BAHTNET capabilities, **businesses and consumers** will enjoy:

- Enhanced cross-border payment services
- Greater flexibility to complete high-value transactions, e.g. real estate, supply chain, investments, etc. outside traditional business hours

- Access to payment information services that provide real-time insight and support straight-through processing.

Systemically, the **Thai financial system** will benefit from higher funds velocity and reduced credit risk associated with unsettled positions in retail payments and other financial markets. A modernized BAHTNET will deliver a strong return on investment and foundation for future financial system innovation.

Consultation Questions

Strategy 1. Please share any comments, concerns, or suggested enhancements related to the pillars and their prioritization, if any.

3. Pillar-by-Pillar Design

The following sections present the proposed design features and associated benefits and consultation questions. Where direction is established, questions focus on validating that direction and gathering implementation insight. Where design choices remain open, questions seek stakeholder perspective to inform our decision.

Modern Resilient Settlement Core

STRATEGY PILLAR: 24/7 AVAILABILITY

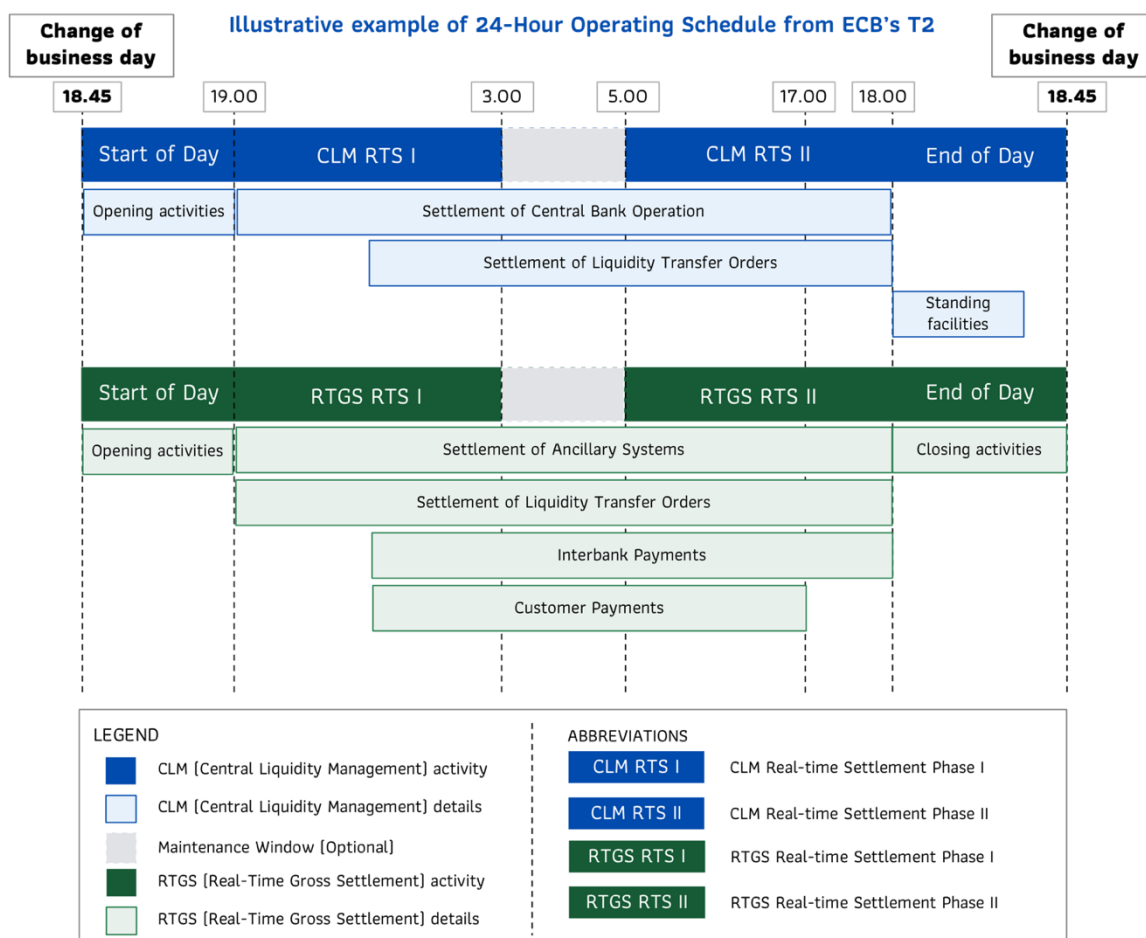
The new BAHTNET will enable continuous operation by architecture, allowing expansion of today's 9 hours per day, 5 days per week schedule and eliminating manual start- and end-of-day processes through automated reconciliation. The system will be built to support 24/7 operations from day one so that system redesign is not required in the future to achieve always-on settlement.

The expansion of operating windows, up to and including 24/7, will be established through policymaking and stakeholder consultation. The BOT envisions a staged transition to 24/7, with progressive expansion of operating hours that supports high-demand use cases and payment system priorities. System capabilities could also support participant-level operating hours expansion based on interest or demonstrated readiness. The transition strategy will consider availability of liquidity and collateral management systems, operational impact, and compliance requirements to help ensure a successful transition for all participants. In addition to a phased approach to expanding hours, the implementation of 24/7 will expand capabilities available in the overnight hours over time, starting with select services that address participants' high-priority use cases and gradually expanding to the full suite of services. For example, overnight hours could initially support additional retail settlement cycles and interbank transfers, then later expand to allow customer transfers. This consultation seeks input to identify the use case priorities and operational considerations that should inform the implementation plan for expanded hours.

The G20/Financial Stability Board [FSB] roadmap identifies the extension of RTGS operating hours as one of the 19 building blocks to enhance cross-border payments. There are three potential end states for extending operating hours of key payment systems, which are each potential stages of a BAHTNET operating hours expansion migration:

- End state 1: extended hours on current operating days
- End state 2: extension of operations to current non-operating days [weekends and public holidays]
- End state 3: extension of operating hours to 24/7 [or near 24/7]

The expansion of operating hours, to ultimately achieve 24/7 BAHTNET availability, will reduce risk and enable innovation for participants and the payment system overall, and align with the G20 2027 targets for faster, cheaper and more accessible cross-border payments.



Expanded BAHTNET settlement hours will support the following use cases and associated benefits:

- **Additional settlement cycles for retail payment systems:** elimination of overnight and public holiday settlement risk across PromptPay, roughly 7.8 billion THB per night, and other ancillary systems, removing systemic exposure and participant credit risk that grows with transaction volumes. Retail businesses can benefit from faster funds from evening and weekend sales.
- **Time-critical payments:** delivery of time-critical transactions, such as mortgage closing payments or crisis-related government payments and market stabilization, which occur outside traditional banking hours.
- **Cross-border payments:** support for initiation and settlement of cross-border payments [including non-resident transfers] at any time, without queuing until the system reopens. BIS-CPMI analysis of 62 RTGS systems across 82 jurisdictions found an effective global settlement overlap of just five hours per day, underscoring the material gap for cross-border integration.
- **Currency trades:** elimination of foreign exchange principal risk through PvP atomic settlement, i.e. the Baht leg of currency trades settles simultaneously with the foreign currency leg, which is made possible by expanding BAHTNET hours to align with the operating hours of counterpart foreign RTGS systems.
- **Treasury management transfers:** improved liquidity management and certainty for participants, in particular those operating regional treasury centers, who can square positions and access intraday settlement facilities at any time, reducing overnight funding costs and optimizing reserve management.
- **Securities trades:** synchronized settlement of capital market transactions, enabling foreign portfolio investors to settle the cash legs of securities trades aligned with their home market hours, eliminating pre-funding requirements and overnight counterparty exposure.

- **Tokenized asset settlement:** readiness for future financial innovation, including tokenized asset settlement and potential wholesale CBDC arrangements which require continuous RTGS availability as their operational backbone.

The BAHTNET designed for continuous settlement translates directly to higher funds velocity and economic growth, and positions Thailand as a competitive financial center and destination for foreign investment.

STRATEGY PILLAR: ARCHITECTURALLY RESILIENT

The new BAHTNET will leverage contemporary technology for maximum stability and resiliency, under normal conditions and in the case of extreme events and cyber scenarios. The system will be architected across multiple active sites with an isolated recovery environment separated from primary operations to prevent contagion. No single site failure will interrupt settlement. The architecture is designed to achieve system availability of at least 99.995% and the recovery time objective falls from two hours to under 30 minutes. The recovery point objective for settled transactions is zero – no settled payment will ever be lost or rolled back due to a technical failure. Aligned with the BIS financial system quantum-readiness roadmap, post-quantum cryptography will be built in from day one to ensure the system's cryptographic foundation remains secure as quantum computing matures and related risks increase. A published migration roadmap targeting 2030 completion will provide guidance for Thailand's financial system to collectively achieve readiness. AI-driven anomaly detection and behavioral profiling will generate predictive stress alerts, and circuit breaker controls with automated triggers will enable rapid containment without manual intervention in anomalous scenarios.

STRATEGY PILLAR: SOVEREIGN

The new BAHTNET will be fully sovereign, with the Bank of Thailand retaining complete operational control of the settlement engine, data infrastructure, participant connectivity, and governance framework. The BAHTNET API project, on target to complete this year, is building the API-native domestic connectivity that makes this possible. With completion of the full BAHTNET Modernization, all infrastructure will be located in Thailand under BOT's governance and built leveraging a vendor independence framework. Cryptographic sovereignty – national key management infrastructure, with no dependency on foreign cryptographic authorities – combined with the post-quantum framework will ensure long-term cryptographic independence.

STRATEGY PILLAR: INTEROPERABLE

The new BAHTNET will be API-native and event-driven at its connectivity layer, functioning as the orchestrating settlement hub for Thailand's payment ecosystem and supporting continuity of business payment flows across interconnected payment infrastructures. Every significant domestic financial market infrastructure will have a defined, real-time settlement relationship with BAHTNET. New connections will be activated when legal, operational, and data sovereignty prerequisites are met, and subject to policy oversight throughout. This interoperability-by-policy model prevents ad-hoc connectivity that creates risk while enabling Thailand to participate fully in the evolving ASEAN payment architecture and increasingly global payment system.

API-first ecosystem orchestration enables real-time streaming event notifications to participants and connected systems; settlement status, liquidity alerts, and queue updates flow continuously without batch cycles or manual triggers. The combination of 24/7 availability, ISO 20022 data richness and API connectivity, combined with a clear policy framework for connectivity, will support efficient onboarding of new FMIs in the future and enhance the effectiveness of the BAHTNET settlement connections that support current cross-border payment systems and pilot programs.

Consultation Questions

Core 1. To align with the G20/FSB roadmap, the new BAHTNET will be built to support 24/7 operations from day one by architecture, allowing expansion of today's 9 hours per day, 5 days per week schedule. The BOT envisions a staged transition to 24/7, with progressive expansion of operating hours. As input to design of a phased approach, what new business opportunities or benefits could your organization unlock with expanded BAHTNET operating hours? [Select all that apply and describe the relevant use cases and required operating hours for each.]

- ☐ More frequent settlement of retail payments, such as PromptPay, to eliminate overnight and public holiday settlement risk
- ☐ Settlement of cross-border payments [including non-resident transfers and cross-border payment linkages that may require extended settlement availability]
- ☐ Delivery of time-critical transactions outside traditional banking hours, such as government transaction support and market stabilization operations
- ☐ Support for Payment-versus-Payment [PvP] to eliminate foreign exchange risk
- ☐ Improved liquidity management
- ☐ Synchronized settlement of capital market transactions
- ☐ Tokenized asset settlement and potential wholesale CBDC arrangements
- ☐ Other [please specify]

Core 2. According to your answers in Core 1, what are the most significant internal changes your organization would need to make to support expanded settlement hours? [Select all that apply and explain your choices]

- ☐ Core banking system upgrades
- ☐ Treasury management system changes
- ☐ Staffing model and on-call arrangements
- ☐ Vendor support 24/7 availability
- ☐ Liquidity management policy and procedures
- ☐ Operating model
- ☐ Compliance processes [Regulations & Rules]
- ☐ Other [please specify]

Please explain your selections

Core 3. How much time would your organization require to be operationally ready for expanded BAHTNET operating hours?

- ☐ 12 months or less
- ☐ 13–18 months
- ☐ 19–24 months
- ☐ 24–36 months
- ☐ Other [please specify]

Please explain your selections

Core 4. What external factors [compliance, regulation, FMI dependency] concern you about expanding operating hours into the evening, overnight or weekends?

Core 5. As operating hours expand, how frequently would you like to see settlement of retail payment products? What factors would influence your interest in more frequent settlement, e.g. higher transaction limits, increasing volumes, etc.?

Core 6. How aware is your organization of the implications of post-quantum cryptography for your own systems and data?

☐ Very aware – we have an active post-quantum migration program targeting 2030 readiness

☐ Aware – we are monitoring developments but have not yet acted

☐ Somewhat aware – we understand the concept but have not assessed our exposure

☐ Not yet aware – this is new to us

Please explain your selections

Core 7. Do you have any comments or suggestions regarding the proposed architecturally resilient design for the new BAHTNET – including system availability targets, recovery objectives, active-active architecture, or AI-driven operational resilience capabilities? If yes, please explain.

Core 8. What concerns does your organization have regarding the proposed strategies for a modern resilient core settlement system, one that is 24/7 capable, architecturally resilient, sovereign, and interoperable?

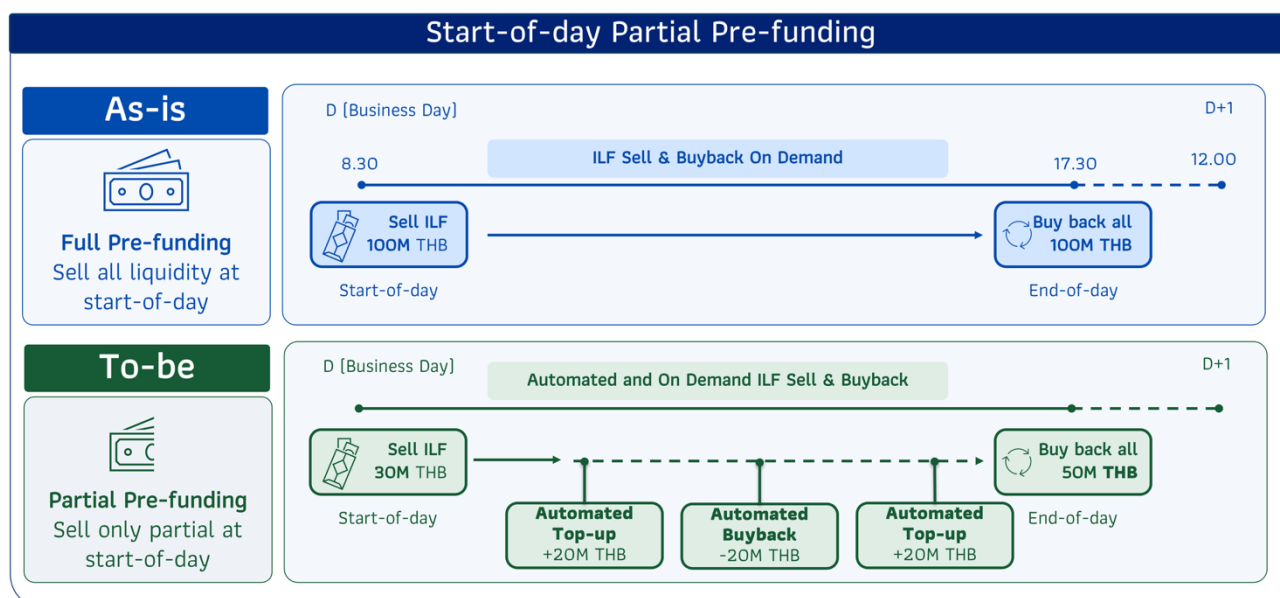
Enhanced Efficiency & Services

STRATEGY PILLAR: FINANCIALLY AND OPERATIONALLY EFFICIENT

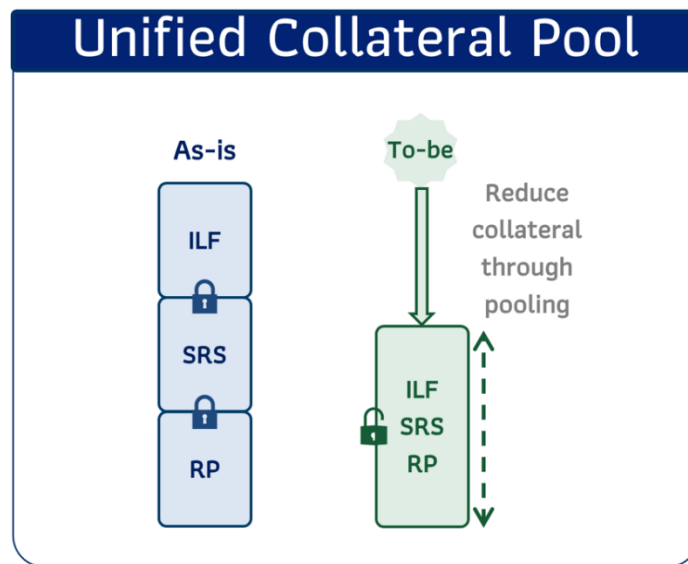
The new BAHTNET will deploy a comprehensive suite of liquidity-saving mechanisms (LSM) and collateral management features from day one. International evidence from comparable implementations indicates 15–25 percent reductions in aggregate intraday liquidity requirements: the Bank of England achieved approximately 20 percent reduction, the Bank of Japan 15 percent, and the Bank of Korea 20 percent. Applied to BAHTNET's current ILF facility, which averages 700 billion baht per day, this represents an illustrative 105–175 billion baht of collateralized liquidity freed for productive use. Considering that current ILF liquidity utilization is below 50 percent, it is not unreasonable to project an even higher liquidity savings for BAHTNET participants. Beyond the financial benefits, automated collateral management features would eliminate heavily manual start- and end-of-day processes to achieve operational efficiencies. The operational role of both participants and the Bank shifts from manual transaction management to real-time strategic monitoring.

Enhancements to collateral management could include:

- Start-of-day partial pre-funding with automated on-demand top-up as needed, replacing today's full pre-funding model.



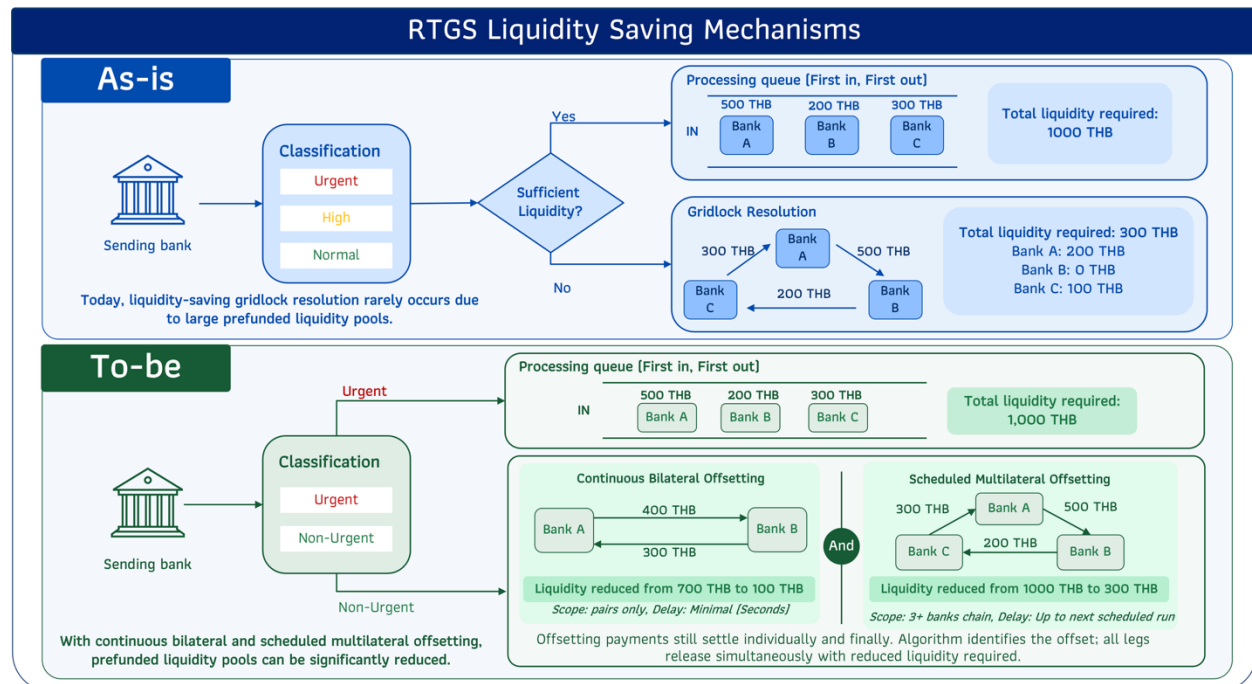
- Unified collateral pool combining ILF [Intraday Liquidity Facility], SRS [Securities Required for Settlement], and RP [Repurchase] with SRS coverage as first lien.



- Liquidity reservation buckets by purpose, allowing banks to dedicate reserves for retail settlement, securities, FX, Delivery versus Payment [DvP], and Payment versus Payment [PvP] thus preventing one settlement stream from preempting settlement of another.
- Increasing automation as interoperability and alignment of expanded hours with TSD advances, enabling substitution, top-up, release, and full lifecycle events to run without manual intervention.

Reductions in liquidity requirements could be achieved with liquidity-saving mechanisms to include:

- Continuous bilateral and scheduled multilateral payment offsetting, which reduces account balance fluctuations, intraday liquidity demands and gridlock.
- Optimized payment classification using simplified urgent/non-urgent designations, which allows participants to control the immediate settlement or assignment of payments to the queue.



- Sender limits, providing participants a way to manage their intraday cash flow rhythm without manually holding individual payments.
- Aggregated position view across affiliated accounts within a banking group, providing opportunities to time transactions across the group based on liquidity positions of each entity.

Operational efficiency will be enhanced through:

- The central scheduler, a real-time participant control panel providing each participant with live visibility and control over its intraday position, payment queues, reservation categories and liquidity actions through a single interface.
- AI-enabled intraday liquidity forecasting, generating predictive participant alerts for anticipated shortfalls.
- Process and reporting automation, enabled through a combination of richer, more structured data and AI, would be designed with participant input to address key operational pain points and resource drains. Examples of automation could include format compliance screening with real-time corrective guidance, AML/sanctions screening, end-

of-day report generation, regulatory reporting, and others consistent with participant-identified opportunities.

- More efficient onboarding and connectivity for new participants and future participant types, including appropriately authorized non-bank entities. Eligibility is determined by business purpose, operational, technical, and financial soundness, and risk management standards rather than by institutional type or competitive considerations. Tiered access models may be adopted where they are justified by risk and applied consistently across participants.

Consultation Questions

Efficiency 1. Modern liquidity-saving mechanism design has reduced intraday liquidity requirements by 15–25% in other markets. How significant would this level of savings be for your organization?

- ☐ Very significant – this would materially reduce our collateral and funding costs
- ☐ Significant – meaningful with measurable impact
- ☐ Moderately significant – welcome but not transformative for us
- ☐ Not significant for our organization

Please explain your selections

Efficiency 2. International experience shows most liquidity savings are realized through post-launch engagement on queue management and payment classification practices – not through implementation of the technology alone. How likely would your organization be to make the internal process and system changes needed to fully realize these efficiency benefits?

- ☐ Very likely to make the changes needed to achieve maximum benefit from new capabilities
- ☐ Fairly likely but efforts will be balanced against other priorities and may take time
- ☐ This would not be a near-term operational priority for us, but we would implement changes over time as the value becomes clearer.
- ☐ We don't view the liquidity savings opportunity as significant and would be unlikely to make internal changes unless required.

Please explain your selections

Efficiency 3. Which mechanisms if optimized would your organization find most valuable?

- ☐ Scheduled multilateral and/or continuous bilateral transaction offsetting to reduce liquidity fluctuations
- ☐ Transaction-level classification
- ☐ Sender limits
- ☐ Aggregated position view across affiliated accounts

Please explain your selections

Efficiency 4. Would liquidity reservations for specific settlement purposes have value for your organization? Why or why not? If yes, which categories would be important for your organization to ring-fence?

- ☐ Retail payments
- ☐ Securities
- ☐ FX

☐ DvP☐ PvP☐ Other; please list.

Please explain your selections

Efficiency 5. What are your organization's key pain points and exception handling challenges [e.g., operation processes, regulatory compliance, etc.] related to sending and receiving transactions?

Efficiency 6. What actions could Bank of Thailand take through policy changes or BAHTNET functionality to address the pain points and reduce the exception handling you noted in the previous question?

Efficiency 7. The Central Scheduler is proposed as a real-time participant control panel. What capabilities would be most valuable to your organization in such a tool?

- ☐ Hold and release of individual queued payments
- ☐ Manual promotion or demotion of individual payments in the queue
- ☐ Ability to assign or change classification of individual transactions as urgent or non-urgent
- ☐ Monitoring account balance in real time
- ☐ Monitoring and managing liquidity including reservation categories
- ☐ Managing sender limits for bilateral and multilateral netting
- ☐ Prescheduled payment settlement instructions
- ☐ Viewing queue depth and pending obligations
- ☐ Accessing a consolidated view of all of my organization's affiliated accounts

- ☐ AI-enabled account balance and liquidity requirements forecasts
- ☐ Transaction pattern reports and anomaly alerts
- ☐ Access to service-related information and communications
- ☐ Other; please list

Please explain your selections

STRATEGY PILLAR: ISO 20022 NATIVE

ISO 20022-native is not about adopting the standard at the interface, but about fully internalizing it as the end-to-end data model to unlock operational, compliance, and liquidity management benefits.

Today's RTGS systems typically use ISO 20022 at the interface level, while internal processing relies on proprietary data models, requiring multiple transformations. An ISO 20022-native RTGS adopts ISO 20022 as the end-to-end canonical data model across all processing layers. This eliminates data translation, preserves rich and structured payment information, and enables consistent validation and processing throughout the transaction lifecycle. To unlock the potential of an ISO 20022-native system, BOT will consult with domestic payment systems and global standards groups to align message formats to optimize interoperability and support participants in delivering enhanced services. As a result, a native implementation enables higher-quality AML and sanctions screening, near real-time regulatory reporting, improved liquidity optimization, faster corporate reconciliation through structured remittance data, and significantly reduced exception handling.

The new ISO 20022-native settlement engine will enable:

- Implementation of new field requirements that will deliver business value to participants.

- Rich business-rule validation at transaction submission, including compliance screening of structured data fields such as purpose codes, LEIs, and remittance information and, in cases of failure, real-time error codes and corrective guidance to participants.
- Automated AML and sanctions screening enabled through structured data e.g. LEI and purpose code data, supporting participant compliance and risk management and strengthening Thailand's regulatory standing.
- Enhanced fraud detection, powered by structured identity data [e.g. originator and beneficiaries, ultimate parties, agents, LEIs, tax IDs], purpose codes, remittance information, transaction references and end-to-end IDs. Widespread use of these fields will improve fraud screening, allow every hop of a transaction to be screened, support invoice cross-referencing, and strengthen identity verification and anomaly detection.
- Use of enriched data fields to facilitate tax collection, automate e-withholding tax processes, monitor cross-border capital flows and enhance the efficiency of customs processes and related cross-border trade flows, and increase transparency in government procurement transactions.
- Regulatory reporting as a by-product of settlement, eliminating the reconciliation gap between participant reporting and actual settled activity.
- High-fidelity audit trail, transaction traceability, and data lineage for every message, supporting regulatory assurance and enhancing transparency to track fraudulent cash flows, scam activities, and mule account movements
- Enhanced straight-through processing and supply chain automation for corporate customers, supporting automated invoice reconciliation and payment notifications across the payment chain.
- Native interoperability with RTGS systems around the globe, removing translation overhead at cross-border interfaces.

Consultation Questions

ISO 1. What business benefits do you see for your organization from richer, structured payment data throughout the payment chain – for compliance, analytics, corporate straight-through processing, and regulatory reporting?

- ☐ Rich business rule validation at submission, supporting and enforcing format compliance, which ensures beneficiaries receive messages that can be straight-through processed.
- ☐ Automated AML and sanction screening leveraging purpose code and LEI fields.
- ☐ Enhanced fraud detection, powered by structured identity data.
- ☐ Use of enriched data fields to facilitate tax activities, custom process, and transparency of government transaction.
- ☐ Streamlined regulatory reporting, enabled by high quality, real-time transaction data that reduces reconciliation demands.
- ☐ Audit trail, transaction traceability, supporting regulatory assurance and enhancing transparency to track fraudulent cash flows, scam activities, and mule account movements.
- ☐ Enhanced straight-through processing for participants and their customers, thanks to complete and structured data.
- ☐ Enhanced interoperability with RTGS systems around the globe, supporting compliance and efficiency for cross-border payments.
- ☐ Other, Please specify.

Please explain your selections

ISO 2. What message format rules or field-level mandates are needed to achieve business value, ensure consistent population of structured ISO 20022 fields across all participants or align with other payment system message formats?

- ☐ Purpose code: a code that specifies the underlying reason for a payment transaction, drawn from an external ISO 20022 code list.
- ☐ Legal entity identifier: a 20-character alphanumeric code that uniquely identifies the legal entity participating in a financial transaction.
- ☐ Structured debtor / creditor addresses: the postal address of the debtor [remitter] or creditor [beneficiary] expressed in structured form – meaning discrete fields rather than a free text field.
- ☐ Ultimate debtor and creditor fields: identify the originating party and final beneficiary of the funds; used when the debtor is acting as an intermediary [e.g., a payment service provider or treasury center paying on behalf of a subsidiary] or the creditor [e.g., a collecting bank or payment aggregator] is not the actual end-recipient.
- ☐ Structured remittance information: remittance information carried in structured form, typically using the creditor reference information field to convey an invoice number.
- ☐ Use of pacs.004 message for payment returns, consistent with the global ISO 20022 standard.
- ☐ Required Thai-language recipient name field to support customer name-matching.
- ☐ Other, Please specify.

Please explain your selections

ISO 3. Describe the operational impact and level of effort required to implement new message format rules and field mandates such as those noted in the previous question [ISO 2]?

ISO 4. To support richer structured payment data and improve straight-through processing,

- Are there third-party data sources for example NITMX, Revenue Department, Anti-Money Laundering Office, etc. that could support your ability to comply with message requirement or field mandates, if implemented? Please explain.
- Are there organizations/financial institutions that would benefit from utilizing BAHTNET data? Please explain.

ISO 5. To what extent are you leveraging ISO 20022 format to automate backroom operations such as reporting, compliance, and risk management or to deliver value added services to your client e.g., automated reconciliation, sanctions screening, liquidity reporting, or customer notifications?

ISO 6. What are the most significant barriers—cost, operational changes, customer impact, misalignment with other payment rails, etc.—your organization faces in realizing the full operational value of ISO 20022 structured data?

ISO 7. What customer-to-bank payment message formats are currently accepted by your bank? And approximately what percentage received through each format?

- ☐ Pre-define bank file template
- ☐ ERP-generated files
- ☐ ISO 20022 XML messages
- ☐ Other formats, Please specify.

Please explain your selections

STRATEGY PILLAR: DATA- AND AI-POWERED

The new BAHTNET will transform system and participant operational intelligence and efficiency through real-time data and governed AI tools to achieve enhanced fraud, risk and liquidity management. These AI capabilities will be developed and operated as part of the BAHTNET infrastructure by BOT. The system will deliver a live, continuously updated view of payment flows, participant liquidity positions, queue depths, and settlement progress. The resulting real-time, comprehensive view of systemic risk significantly enhances supervisory efforts to manage risk to the overall payment system. Critically, all AI capabilities will be fully auditable, explainable, and subject to human override. BOT will develop and retain full ownership of all models, training data, and parameters.

Enhancements to support systemic and participant fraud and risk management could include:

- Systemic risk analytics powered by AI, continuously monitoring liquidity stress, concentration risk, and participant interconnectedness.
- AI-driven anomaly detection and behavioral profiling through continuous monitoring of payment flows to identify unusual patterns in real time. Automated alerts communicate emerging problems before they escalate, reducing the frequency and severity of fraud and operational disruptions. Network-level intelligence on intended recipient accounts could be leveraged to prevent origination of fraudulent transactions.
- Automated regulatory reporting populated directly from ISO 20022 structured data, eliminating manual data collection and reconciliation.

Participant liquidity efficiency improves because intraday positions are visible and predictable, enabling proactive management. New reporting and capabilities could include:

- Real-time ISO 20022 cash management message streaming delivered through push channels to participants and supervisors, replacing pull-only periodic reporting.
- Participant self-service reporting with customizable dashboards, queue visibility, and intraday position analytics.
- AI-powered intraday liquidity forecasting and predictive alerts for anticipated shortfalls, enabling proactive rather than reactive management.

Consultation Questions

DATA&AI 1. Rank the following real-time data and AI-assisted insights in order of value to your organization. [Use a unique rank for each item, where 1 = highest value and 5 = lowest value]

- ☐ Liquidity forecasting
- ☐ Liquidity alerts
- ☐ Anomaly detection
- ☐ Regulatory reporting automation
- ☐ Fraud alerts
- ☐ Other, Please specify.

Please explain.

DATA&AI 2. What questions or concerns do you have regarding the plan to leverage AI for BAHTNET monitoring and reporting features including those referenced in DATA&AI 1?

Innovation Ready

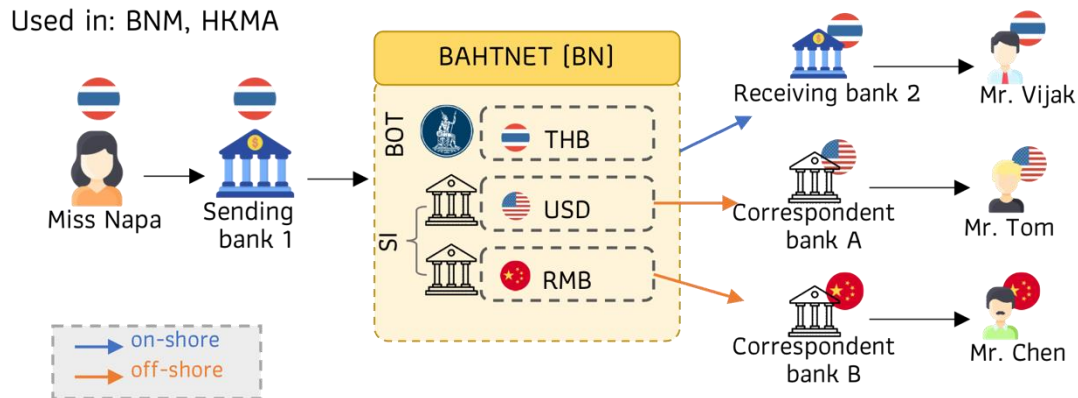
STRATEGY PILLAR: FUTURE-ENABLED

The new BAHTNET will be built with a modular architecture that can accommodate new forms of money and settlement without core engine replacement, reducing the long-term cost and speed-to-market of innovation. The design principle: the hardened settlement core is unchanged; composable capabilities at the periphery evolve continuously as the ecosystem develops. Thailand will be positioned as a regional leader in digital financial infrastructure, with BAHTNET ready to support Thai banks and fintechs as they build tokenized asset services and expand services across borders and currencies.

Multi-Currency and Cross-Border Transactions

Thailand's cross-border payment ambitions are among the most active in the ASEAN region, and each major initiative places distinct connectivity and settlement requirements on BAHTNET. At the retail level, Thailand is a founding participant in Project Nexus, the multilateral payment linkage connecting participating fast payment systems, facilitating real-time remittances. Nexus can provide real-time cross-border service by leveraging existing BAHTNET multilateral net settlement arrangements to distribute funds among Thai banks. Beyond these multilateral programs, bilateral payment linkages with neighboring central banks continue to expand, each with its own connectivity model and settlement arrangement.

Design of the new BAHTNET architecture is informed by the cross-border initiatives and experiments conducted to date, providing insight on the range of cross-border settlement models, as well as multi-currency settlement, that may be desired in the future. An expanded PvP framework with multi-currency capability would provide the settlement foundation for onshore and cross-border transactions, ensuring that both legs of a foreign currency exchange settle simultaneously and with finality, eliminating the settlement risk that exists when the two legs settle independently across different systems and time zones. For bilateral corridor arrangements and future connectivity models that have not yet been defined, the architecture could support configurable integration models – including parallel currency accounts, bilateral interlinks, and tokenized layer arrangements – so that new cross-border relationships can be activated through configuration.



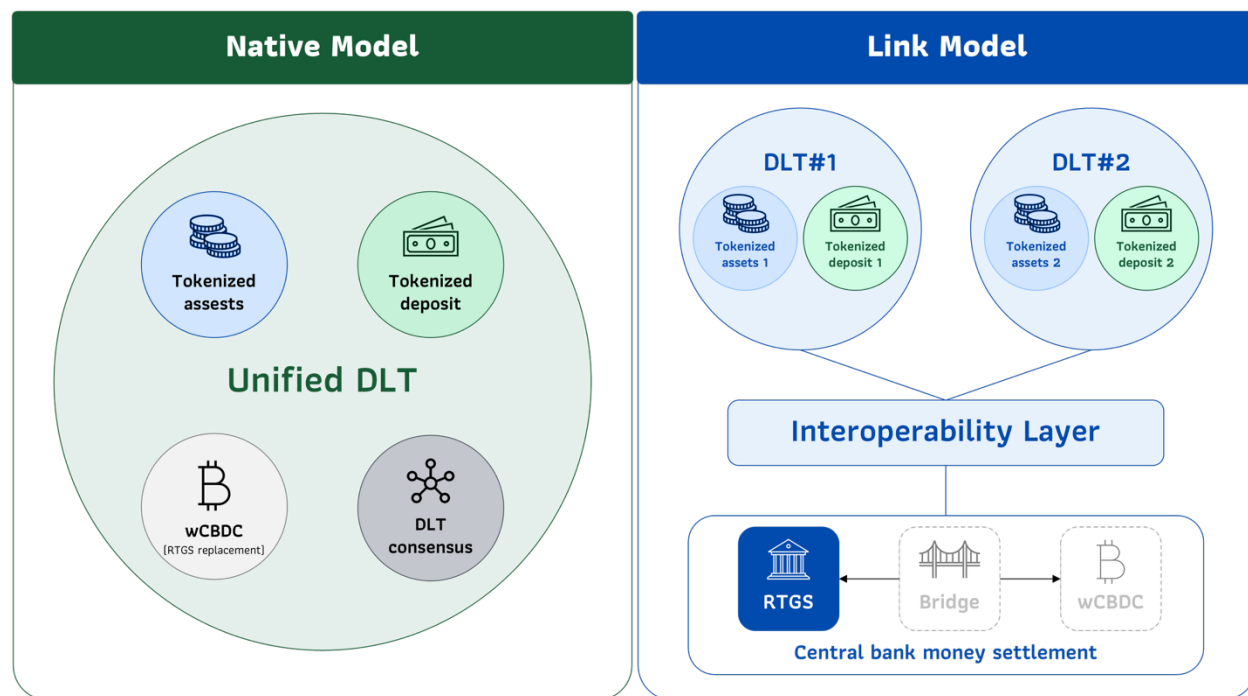
The model under consideration for multi-currency settlement is a centralized RTGS multi-currency platform operated directly by the BOT, with designated commercial banks acting as Settlement Institutions [SIs] for each supported currency, responsible for providing liquidity in the currencies they support within the platform. Under this model, participants would connect through a single gateway using existing connectivity channels and ISO 20022 message standards, enabling transactions across multiple currencies without requiring separate participant interfaces for each currency.

This model could improve cost efficiency and support a more competitive market structure by reducing the need for commercial banks to invest in and maintain separate systems as additional currencies are introduced. The model could also support instant Payment-versus-Payment [PvP] settlement for cross-currency transactions such as USD/RMB, reducing settlement risk and improving liquidity efficiency for participants. In addition, the architecture would provide a future-ready foundation capable of supporting evolving business needs and new use cases, including settlement involving tokenized assets in foreign currencies.

Tokenization

Tokenization converts rights to real-world assets – securities, bonds, deposits, and other instruments – into digital tokens that can be transferred and settled on distributed ledger platforms. When combined with programmable settlement logic, tokenized assets can be exchanged under conditions defined in code: delivery only occurs when payment occurs, funds release only when contractual conditions are met. Central banks and financial market infrastructures globally are actively building the infrastructure to support these capabilities, and Thailand has been a leader in testing various models and use cases.

The strategy for supporting settlement of tokenized assets in the new BAHTNET is informed by pilot program experience and stakeholder workshops that explored alternative models. Specifically, two models have been evaluated as possible options for BAHTNET:



Option 1: Native settlement of tokenized asset transactions within the unified DLT ledger

In this model – demonstrated through the very early phase of Project Inthanon in 2018 – BAHTNET establishes a DLT network that acts as the settlement venue, with cash and assets issued directly on-chain, enabling atomic settlement within a unified infrastructure. Tokenized asset platforms and participants wishing to settle transactions in central bank money would become participants in the BAHTNET ecosystem.

Option 2: Linked settlement across separate ledgers coordinated through an interoperability layer

This model keeps the RTGS settlement system intact, while supporting inter-ecosystem settlement with external tokenized asset platforms through an interoperability layer. Atomic settlement is achieved without either system needing to understand the other's logic. Project SAN provides a proof of concept for this model. This model provides flexibility to support various use cases such as domestic DvP and cross-border FX PVP.

Furthermore, an alternate wholesale CBDC settlement may coexist together with traditional RTGS settlement, leveraging a bridge mechanism to route transactions to the relevant ledger with BAHTNET participants benefitting from central bank money settlement in either traditional or digital currency.

The linked architecture option is viewed as the optimal approach for BAHTNET for a number of reasons. It will require less coordination, allow more flexibility with participants and tokenization ecosystems, and avoid the sovereignty challenges of sharing a unified ledger across jurisdictions, which would be required for cross-border transactions.

To support the linked architecture approach, BAHTNET would incorporate an interoperability layer to achieve atomic cross-ecosystem PvP settlement for tokenized money transactions and DvP settlement for tokenized assets.

Wholesale CBDC

A wholesale central bank digital currency is a digital form of central bank money issued and used exclusively between financial institutions for large-value settlement. Unlike retail CBDC, which would be accessible to the public, wholesale CBDC operates within existing settlement system infrastructure and is intended to improve the efficiency, programmability, and cross-border reach of interbank settlement. The case for wholesale CBDC is moving rapidly from concept to practice across the region.

The new BAHTNET design will support the option for domestic wholesale CBDC, preserving BAHTNET's role as the definitive THB settlement rail regardless of the form that central bank money takes. Activation would be a policy decision, taken in the context of domestic market readiness and the evolution of Thailand's tokenization ecosystem, with the architecture preserving full optionality on timing and scope.

Programmable Settlement

Programmable settlement refers to payment instructions that execute automatically once predefined conditions are met, rather than requiring a party to manually initiate the transfer at the correct moment. The conditions, timing, and recipient logic are encoded upfront, and execution then proceeds without further manual intervention once those conditions are

satisfied. This shifts settlement from a manually triggered, point-in-time action to a rules-based, self-executing process.

This capability has direct application to payment instruments and settlement workflows currently reliant on manual processing, physical instruments, or fixed-date triggers. Relevant use cases for BAHTNET modernization include:

- **Date-Conditional Payment Instructions:** Payment instruments that promise a fixed amount to a fixed payee on a fixed future date, such as promissory notes and post-dated cheques, can be encoded as programmable settlement instructions that execute automatically on the specified date. This provides a digital channel as an alternative to physical presentment [cheques] or manual maturity-date processing [promissory notes], reducing exposure to float risk, presentment delay, and dishonor.
- **Scheduled and Recurring Payments:** Loan repayments, lease installments, or other recurring obligations can be set up once and executed automatically on each due date, reducing missed-payment risk and operational overhead for both payer and payee.
- **Milestone or Event-Triggered Payments:** Payments contingent on the occurrence of a defined event, such as contract milestone confirmation, regulatory approval, or invoice due date, can be released automatically once the triggering condition is confirmed, without requiring a party to monitor and manually action the trigger.
- **Escrow-Style Conditional Release:** Funds can be held and released automatically upon satisfaction of agreed conditions, without requiring a third-party escrow agent to manually authorize release.

Across these use cases, the common principle is that BAHTNET participants define the condition and timing logic once, and settlement executes deterministically and automatically thereafter, improving certainty of settlement, reducing operational risk from manual processing errors or delays, and reducing reliance on physical or semi-manual instruments such as cheques.

Consultation Questions

Future 1. How and to what extent [reduced costs, faster settlement, reduced risk, better service, etc.] would your organization benefit from the ability to settle foreign currency transactions between Thai participants onshore? Please describe the nature [including which currencies] and approximate volume of such transactions and any strategic considerations that inform your view.

Future 2. Please explain the key factors that would support or hinder your participating in a domestic foreign currency settlement system.

Future 3. Do you support the proposal to incorporate multi-currency settlement into the BAHTNET core as describe above? If implemented, would your organization be interested in serving as a settlement institution [SI] and for what currency?

Future 4. Do you anticipate future use cases for tokenized assets, atomic settlement, programmable payments or multi-currency RTGS capability? If so, please describe.

Future 5. What BAHTNET capabilities would be required to support the use cases you noted?

Future 6. Over what timeframe do you anticipate your organization having operational use cases requiring tokenized asset settlement or programmable payment capability [DvP, PvP] through BAHTNET?

- ☐ Within 2 years
- ☐ 3–5 years
- ☐ 5–10 years
- ☐ Beyond 10 years
- ☐ We do not anticipate needing these capabilities

Please explain your selections

Future 7. The new BAHTNET would enable atomic settlement with external tokenized platforms through an interoperability layer. Does this proposed Link Model for settling tokenized assets address your anticipated use cases? Would these use cases be better supported by settlement in wCBDC? Please explain.

Future 8. Do you have tokenization use cases that would be better addressed by an alternative settlement model? If so, please explain the use case and indicate the model you believe would be most appropriate.

4. Shaping Thailand's Settlement Future

The BAHTNET Modernization is one of the most consequential infrastructure investments in Thailand's financial history. The choices made in this Blueprint phase will shape the country's wholesale settlement architecture for the next 15 to 20 years, determining how Thailand participates in the evolving ASEAN regional payment ecosystem, supports the growth of digital finance, and maintains the monetary integrity and financial stability the economy depends on.

Every payment in Thailand – retail or wholesale, domestic or cross-border – ultimately settles in central bank money through BAHTNET. Modernizing BAHTNET is not a technology project. It is an investment in the reliability, efficiency, and future-readiness of Thailand's monetary infrastructure. Designing the optimal system for the future requires the deep operational knowledge and strategic perspective that participants and stakeholders bring. Input gathered through this consultation will directly shape the Modernization Blueprint. We are committed to sharing how consultation feedback has informed design decisions and to maintaining an open dialogue throughout the implementation phase. This paper is the beginning of the collaborative process that will transform Thailand's settlement infrastructure.

Consultation Questions

Other 1. Please share any additional views or information that could help inform the BAHTNET Modernization Blueprint and implementation.

How to Respond

Submit written responses to the Bank of Thailand via email using **provided form** to the Payment Infrastructure and Services Strategy and Development Department at bahtnet-modernization-bot@bot.or.th.

11 August 2026

All submissions will be treated as confidential unless respondents explicitly consent to attribution.

Next Steps

Following the written consultation period, we will host workshops and meetings with participants across all stakeholder tiers to discuss responses and explore design questions in depth.

We expect to complete and share the BAHTNET Modernization Blueprint with industry by **year-end 2026**.

We look forward to your participation in shaping what comes next.