

World Bank Fast Payments Toolkit

RAAST | 2021

Case Study: Pakistan

Payment Instruments



Credit
Transfer



E - Money

Use Cases/Services



Bulk
Payments



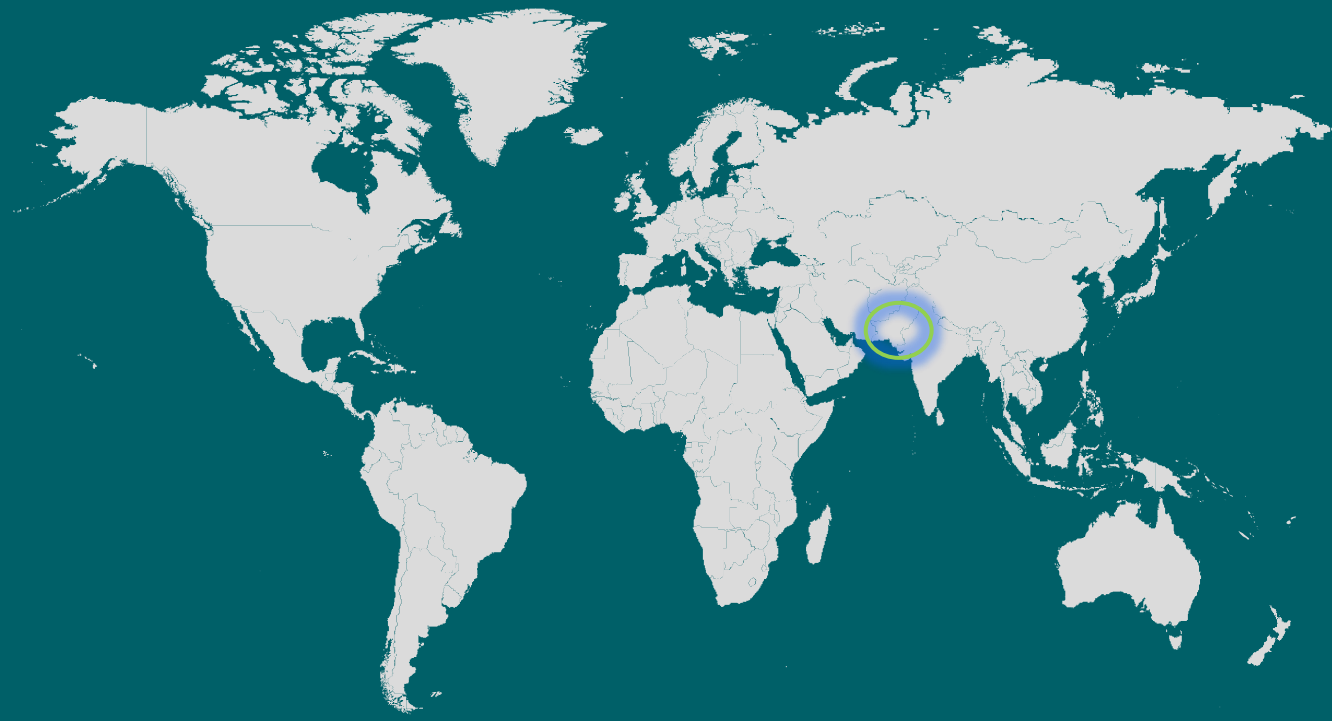
Merchant
Payments



Person-to-
Person (P2P)
Payments



Request To Pay



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Glossary of terms

S. No.	Term	Definition
1	GDP	Gross Domestic Product at current price
2	Income Category	Classification as per World Bank based on Gross National Income (GNI) per capita
3	CPMI	Committee on Payments and Market Infrastructure
4	FPS	As per CPMI, fast payment System is defined as payments in which the transmission of the payment message and the availability of final funds to the payee occur in real time or near-real time and on as near to a 24-hour and 7-day (24/7) basis as possible
5	Oversight	Regulating or governing body supervising the payments system
6	Operator	Institutions responsible for the operation of the payment system
7	Alias	Alternative to bank account numbers for increased customers' convenience. For example, mobile number, national identification number
8	Access Channels	Modes used by customer to initiate transaction on FPS. For e.g., branch, internet, mobile
9	Individual Payment Type	Person to person (P2P) – Payment between individuals for non-business purposes
10	Business Payment Type	Person to Business (P2B) – Payment from an individual to a business entity Business to Person (B2P) – Payment from a business entity to an individual Business to Business (B2B) – Payment between two business entities
11	Government Payment Type	Person/Business to Government (P/B2G) – Payment from person/Business to a government institution Government to Person/Business (G2P/B) – Payment from government institution to a person or business entity
12	Credit transfers	Credit transfers are payment instruments based on payment orders or possibly sequences of payment orders made for the purpose of placing funds at the disposal of the payee
13	Direct Debits	Direct debits are payment instruments in which the transaction is pre-authorized and funds are blocked in account for a debit to be initiated at a future date. In direct debits, payer's account is debited on execution of mandate by merchant or payee
14	e-Wallets	e-Wallets are payments instruments in which prepaid value is stored electronically, which represents the liability of e-money issuers and which is denominated in a currency backed by the financial authorities in a particular jurisdiction

Abbreviations

S.No.	Term	Expanded form
1	CAS	Centralised Addressing Scheme
2	CDC	Central Depository Company
3	CSM	Clearing and Settlement Mechanism
4	GoP	Government of Pakistan
5	PRISM	Pakistan Real-time Inter-bank Settlement Mechanism which is Pakistan's RTGS (Real Time Gross Settlement) system
6	PSD	Payment Systems Department
7	PSO	Payment System Operator
8	PSP	Payment Services Provider
9	SBP	State Bank of Pakistan

Select country parameters



GDP
USD 263 billion



Income Category
Lower-Middle



Population
221 million



Access to mobile phone*
80%



Access to internet*
25%



Bank account*
21%



Branches per 100,000 adults
10.41



Made or received digital payment in last 1 year*
18%



Received government wages or transfer in account*
4%

Source: GDP and Population: World Bank – 2019, Income Category: World Bank – June 2019

Currency Exchange Rate 1 USD = 1.35 S\$ <2018 Average, World Bank>

Others – World Bank 2017

* For age >15 years

How to read this report

- This **deep dive report** relates to Pakistan
- It has been developed based on **primary interviews** with key stakeholders such as **regulators, operators** and **service providers** in the system as well as by leveraging **secondary sources**
- Key secondary sources include **public documentation e.g., the website of State Bank of Pakistan** along with their publications
- The table below presents a legend to assist readers as they navigate through different sections of the report

Legend



The first slide of every section includes a chapter summary to provide readers with an overview of the section contents



The green box with the adjacent icon indicates **section/sub-section summary across** the report. Reader may choose to read through this for a **high-level overview on the selected topic**

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A. Executive Summary

Summary

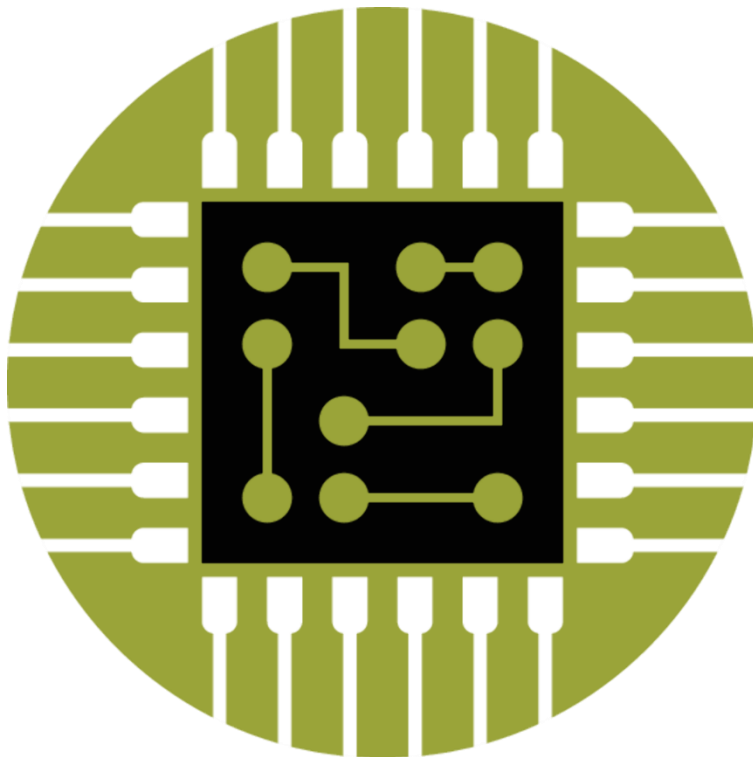
Payment systems have evolved significantly in Pakistan over the last decade driven by the development of new payment instruments, digital payment infrastructure and consumer needs. Pakistan has made significant advances in moving from paper-based instruments to digital instruments, despite this Pakistan still lags in volumes and values of digital payments per capita compared to its peers. With a population of approximately 220 million people, of which more than 60% are under 30 years old, and the COVID-19 pandemic's impact on the way consumers are inclined to pay for goods and services, Pakistan has an environment ready for the digital transformation that State Bank of Pakistan (SBP) and the Government of Pakistan (GoP) envision.

The current low volume of digital transactions in the country, could be attributed to a number of factors including low banking penetration, lack of trust and awareness of digital payment methods, limited interoperability, difficult accessibility and high cost of transactions.

On the 1st November 2019 the Governor of SBP launched the National Payment Systems Strategy which aims to promote financial stability and financial inclusion. A key element of the strategy is the realization of the new Fast Payment System in Pakistan, RAAST (or "Direct Way") aims to improve the payment infrastructure with the objectives of further developing digital financial services, reducing reliance on cash, and driving financial inclusion. RAAST will be a core component of Pakistan's payment infrastructure and will enable individuals, businesses, and government entities to make any payment digitally in a simple, fast, low-cost, and secure manner.

RAAST project is an on-going collaboration between Karndaz and the State Bank of Pakistan. Pakistan's Fast Payment System will facilitate retail payment by bringing innovative and efficient processes into the market. RAAST key characteristics are:

- Real time payments
- Interoperability framework
- ISO 20022 messaging standard
- API for simpler integration
- Smart addressing/Alias services
- Advanced payment types
- Transaction analytics for fraud management



RAAST is Pakistan's first fully interoperable fast payment system and it **enables end-to-end digital payments among individuals, businesses and government entities in a simple, fast, low-cost, and secure manner** whilst at the same time providing cheap and universal access to all players in the financial industry including banks and fintechs.

Key Advice from the FPS Journey

1 Real Time Payments

RAAST is Pakistan's first fast payment system that is fully interoperable and will enable end-to-end digital payments among individuals, businesses and government entities in near real time.

It will be used to settle small-value retail payments in real time whilst at the same time provide cheap and universal access to all players in the financial industry, including banks and FinTechs, thereby fostering innovation and competition.

2 Interoperability

RAAST is a fully interoperable digital payments platform and ecosystem, and it fosters innovation by providing players in the market the opportunity to introduce easy to use, safe and efficient payment products and services at a low cost.

Based on the ISO 20022 global message standard for payments, it will support interoperability locally, regionally and internationally.

3 ISO 20022

RAAST has adopted ISO 20022 as its messaging standard and aims to stay as close as possible to the defined standard.

4 APIs for simpler integration

RAAST provides APIs to Participants and designated government entities to make integration with RAAST simpler.

5 Smart Addressing/Alias services

CAS is the **centrally hosted smart addressing system** for RAAST that enables a user to send payments using an easy to remember alias linked to an underlying bank account number.

CAS **will support mobile numbers** initially but will support **email addresses, national IDs** and eventually **free text** as more use cases are implemented.

6 Guaranteed Settlement

Participants in RAAST are also settlement members in PRISM and reserve funds in PRISM, the RTGS, by transferring the funds from the Settlement Account into their Reserve Account. The Participant can then set a limit/debit cap in RAAST subject to the balance in the Reserve Account. In this way the total exposure of the Participant in RAAST is collateralized in PRISM.

- Each country has unique needs, and the analysis of those drives the use cases implementation and prioritization. In Pakistan, the Bulk Payments module was launched first with the disbursement of dividends, followed by of government payments like wages, social grants.
- To follow a phased implementation approach based on the analysis of the country needs and use cases identified to adjust the deployment depending on early feedback
- To achieve interoperability across channels and payment instruments to foster innovation, to level the playing field, and to unlock the envisaged opportunities and benefits of the Fast Payment System.
- To implement FPS in accordance with international standards and best practice guidelines, such as ISO 20022, balancing the need to stay as close to the international standards as possible whilst tailoring it to the local needs.
- To focus on onboarding of participants to ensure seamless integration with the FPS platform and thus the ultimate success of the solution.
- To setup easy-to-use complaint and dispute resolution mechanisms and a robust stable infrastructure that fosters trust in its usage.
- To implement training programs for end users aimed at increasing the financial literacy.

B. Detailed Report

1. Overview

Chapter sections:

- 1.1. Background
- 1.2. Objectives
- 1.3. System Development and Key Timelines

Chapter Summary:

- The SBP Governor launched the SBP's National Payment Strategy in November 2019 with the **overarching objectives of enhancing financial stability toward bolstering economic growth and driving financial inclusion** in Pakistan.
- The RAAST system is a core component of Pakistan's payment infrastructure and the first major step toward implementing the NPS.
- RAAST is Pakistan's first fast payment system that is fully interoperable and will enable end-to-end digital payments among individuals, businesses and government entities in near real time. It will be used to settle small-value retail payments in real time whilst at the same time provide cheap and universal access to all players in the financial industry, including banks and FinTechs, thereby fostering innovation and competition.
- The RAAST project is an on-going collaboration between the SBP and Karandaaz Pakistan and is funded by the Bill and Melinda Gates Foundation.
- CMA was appointed as the technical implementation partner for the RAAST system.
- The RAAST system will be rolled out in 3 phases. Other than that, there were 2 pre-project phases (Design and Procurement & Mobilisation), followed by implementation. As part of the first release, the bulk payments component was launched in January 2021 and went live with the disbursements of dividends use case. The other use cases to go live are government payments (e.g., salaries to government employees, pension, social grants) being facilitated across the new RAAST platform. P2P and Merchant payments will be rolled out as part of the subsequent phases with the project completion expected during 2022.



1.1. Background



- **Market heavily reliant on paper-based payment instruments**
- **SBP's NPS Strategy launched on 1st Nov 2019** with the objectives of further developing digital financial services to foster innovation, **reduce the reliance on cash, and drive financial inclusion** in Pakistan
- **RAAST** is a core enabling component in achieving the strategy
- The development of RAAST is driven by the **SBP in collaboration with the Bill & Melinda Gates foundation and Karandaaz Pakistan**
- By digitizing G2P cash transfers, up to **3.4 million adults can become recipients of digital payments**

Pakistan has made significant advances towards digitizing payments over the last decade, with a number of payment systems and payment schemes active in the country, that have contributed to a significant increase in the use of digital payments in Pakistan. Despite these achievements, Pakistan is still heavily reliant on cash and cheques as the preferred payment methods for goods and services. Cash is perceived to be the safest, easiest and most widely accepted form of payment. Currently approximately 50% of Pakistan's population is unbanked, of which the largest portion is women of which only 18% are banked.

SBP Governor, **launched the National Payment Systems (NPS) Strategy on the 1st November 2019**, as part of the government and SBP's broader strategic agenda of digitization and increasing financial inclusion in the country. The NPS Strategy has the **overarching objectives of enhancing financial stability toward economic growth and driving financial inclusion**. Key aspects of the NPS Strategy include improving the payment infrastructure e.g., with the implementation of the new RAAST system, with the objectives of further developing digital financial services, reducing reliance on cash, and driving financial inclusion.

RAAST is Pakistan's new fast payment system that will enable end-to-end digital payments among individuals, businesses and government entities in a simple, fast, low-cost, and secure manner

Although Pakistan has a number of payment systems available such as **PRISM (Pakistan's RTGS for large-value payments)** and **1Link (inter-bank funds transfers)**, **RAAST is Pakistan's first fully interoperable fast payment system that will enable end-to-end digital payments among individuals, businesses and government entities in a simple, fast, low-cost, and secure manner**. At the same time, RAAST is designed to providing cheap and universal access to all financial industry players including banks and fintechs.

RAAST (or "Direct Way") was **initiated by the SBP with the support of the Bill and Melinda Gates foundation and Karandaaz Pakistan**. RAAST is based on international best practises and standards, meanwhile being tailored to meet the needs of Pakistan. Part of the tailoring process was to perform a thorough review of the existing payments' ecosystem and the realities of the prevailing payment habits.

RAAST launch took place in January 2021 with the bulk payments module being the first function enabled. This function supports government payments, which have been identified as a key, embedding a large volume recurring payments' streams (salaries, pensions and other government payments), and **CDC dividend payments as second use case**. Moreover, by digitizing G2P cash transfers, up to **3.4 million adults stand to become recipients of digital payments though RAAST**, in direct support of the financial inclusion objective. In the next phases, P2P payments will be implemented including the Request to Pay initiation mode, and the alternative beneficiary identification using aliases ("smart addressing"). In Phase 3, payments for micro and small business owners or merchants will be digitized, enabling them to meet their payment obligations efficiently in a safe and secure manner.

1.2. Objectives



- Migrating to efficient digital payments intends to **boost Pakistan's GDP by an estimated 7%** by 2025, leading to an **additional 4 million jobs**, which would result in \$263 billion of additional deposits and a potential spend increase of \$36 billion
- RAAST system's mission is to deliver a **modern and robust payments infrastructure** that will provide an **equitable and stable digital financial system** enabling every individual and business to make any payments digitally in a simple, fast, low-cost, and secure manner

The main objectives are to **enable the Pakistani digital economy**, and following the introduction of RAAST, to **reduce the use of cash and cheques** over five years by increasing the use of digital payments. Toward this objectives, a safe, efficient, interoperable and affordable payment system will allow individuals, businesses and the government to make payments seamlessly.

Vision

The **broader strategic agenda** of the government in Pakistan and the SBP is the **digitization of the economy**, in order to enhance financial stability, **boosting economic growth** and **drive financial inclusion**.

- As part of the NPS Strategy, SBP aims to improve the payment infrastructure to further develop digital financial services, reduce reliance on cash, and drive financial inclusion in Pakistan. By migrating to efficient digital payments, the SBP **intends to boost Pakistan's GDP by an estimated 7% by 2025**, leading to an additional 4 million jobs which results in \$263 billion of additional deposits and a potential spend increase of \$36 billion.

As a **key enabling component**, the **RAAST system's mission is to deliver a modern and robust payments infrastructure** that will **transform the reach, security, speed, quality of, and trust** in digital payments available to individuals and institutions in Pakistan. It will provide an **equitable and stable digital financial system** for a high-volume, low-value payment system. It will enable every individual and businesses to make any payments digitally in a simple, fast, low-cost, and secure manner.

Strategic Objectives

- **Promote the use of digital payments** in Pakistan, thereby **reducing the use of non-digital channels**, by:
 - Making **payment services universally accessible** to all segments of society.
 - Introduce **innovative payment methods** to increase the acceptance and use of digital payments. This will be done by increasing financial literacy and sharing the benefits of digital payments and improving the ease of use.
 - Provide a platform to enable government payments & receipts electronically thereby reducing the inefficiencies in the current system.
- Create a fully **interoperable digital payments platform and ecosystem** that **foster innovation**, by providing players in the market the opportunity to **introduce easy to use, safe and efficient payment products and services at a low cost**.
- Provide a **secure and safe system** that complies with relevant security standards and international best practices, providing the SBP with enhanced **capability for oversight, monitoring and management of risks, and regulatory controls**.

Key characteristics to achieve

Instantaneous Payments

Interoperability

Affordability

Universal Access & Ease of Use

Reliability and Safety

Enhanced Monitoring & Oversight

1.3. System Development and Key Timelines



The SBP initiated the RAAST project as the first major step toward implementing the NPS strategy launched in November 2019. The first phase was launched in January 2021, with bulk Payments for dividend payments being the first use case, followed by the go live of government payments. The RAAST design and solution is based on a thorough review of the market realities, the prevailing payment habits of people in Pakistan, and as well on international best practises and standards. CMA was selected as the partner to help SBP making RAAST a reality.

Infrastructure Setup – Key Decisions

- The SBP defined the objectives, value proposition, business requirements, priorities of the use cases to address, and designed the technical architecture for RAAST. To minimize the inherent risks in building and deploying complex payment solutions of this nature, SBP opted to procure a trusted and proven solution. The outcome of a two-stage procurement process was the CMA appointment as the implementation partner of the new RAAST system. The CMA’s application is an off-the shelf product that has been implemented in several countries.
- A significant amount of effort has been put into onboarding of participants, as is evidenced by the industry engagement sessions throughout the implementation (explaining the high-level business requirements, technical requirements, testing required and quality criteria that participants must meet), to ensure seamless integration to the RAAST platform.
- Training of the end user will be important to increase the financial literacy of the underserved segment of the population, as well as provision of an easy-to-use complaint and dispute resolution mechanism.

Development Process

- The RAAST project has been driven and managed by the SBP in collaboration with Karandaaz Pakistan and with support from World Bank.
- The CMA off the shelf solution chosen required customization to meet all the requirements of Pakistan (e.g., a web portal to enable easy submission of bulk payments and additional integrity and security checks).
- The RAAST system has been rolled out in 5 phases of which the first 2 have been pre-project phases (Design and Procurement & Mobilisation) followed by the implementation of the solution in phases 3, 4 and 5 (implementation phases) in accordance with the priorities identified.
- As part of the first release in the 3rd Phase, the Bulk Payments component was launched in Jan 2021 and went live with the disbursements of dividends. The next use case to go live will see other government payments (e.g., salaries to government employees, pension, social grants) being facilitated across the Raast platform.
- The 4th Phase saw the roll out of P2P functionality including the Central Addressing Scheme (CAS) and request to pay.
- The 5th phase will digitize payments of micro and small business owners or merchants and will enable them to meet their obligations more efficiently (faster, safer and cheaper).

Development Cost & Implementation Timelines

Implementation Time

Apr 2018 to Sept 2018: Phase 1 - RAAST Design:

Defined the objectives and value proposition, developed the business requirements and identified priority use cases.

Designed the technical architecture

Oct 2018 to Dec 2019: Phase 2 - Procurement and project mobilisation

Appointed CMA as the technical implementation partner

Mobilisation of the project

Jan 2020 to Nov 2022: Phases 3 to 5 - System development and roll-out

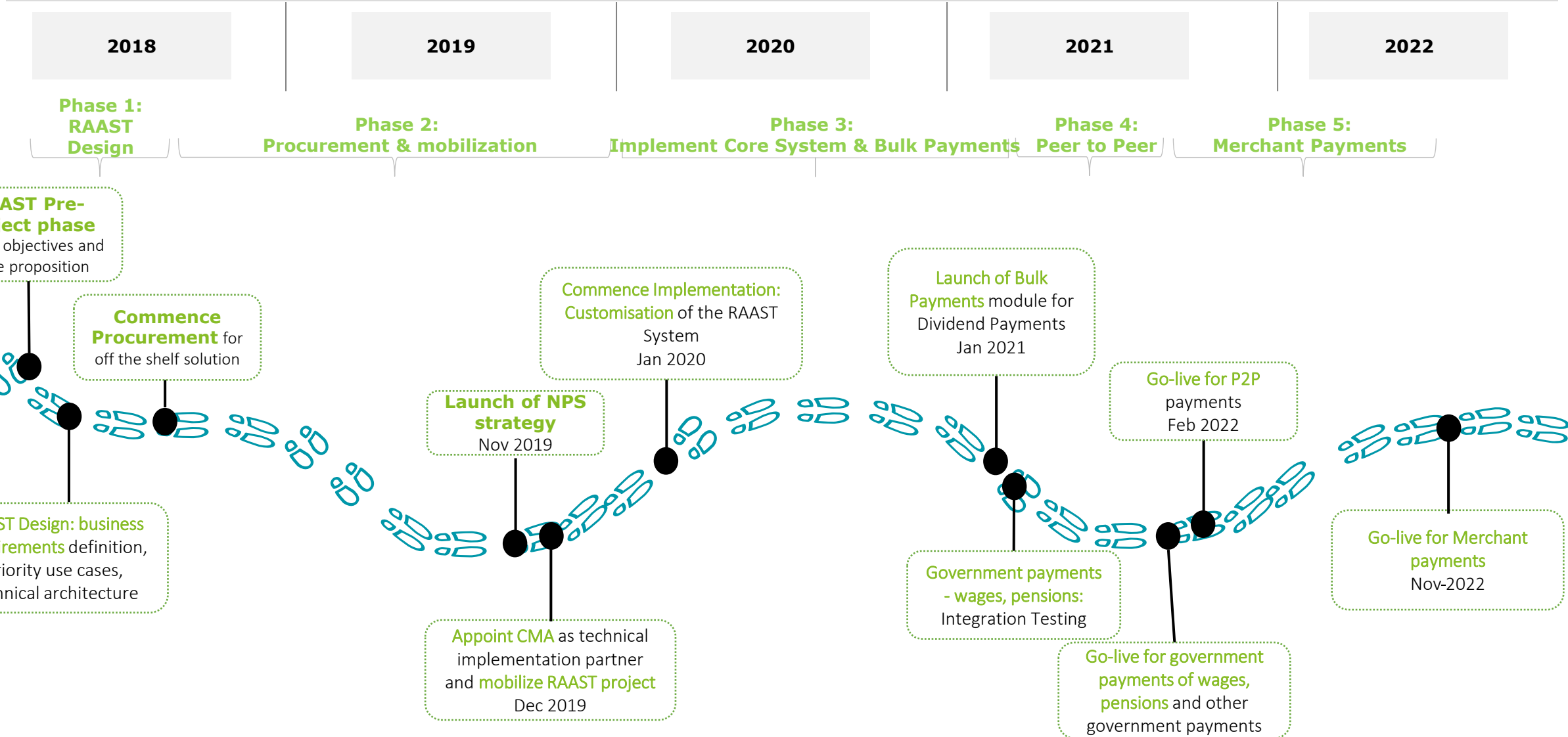
Jan 2021: Phase 3 – Core system & Bulk Payments: Dividend Payments in Jan 2021 and will be followed by other G2P payments in near future

Feb 2022: Phase 4 – P2P payments including smart addressing and request to pay

Nov-2022: Phase 5 – P2M Payments

1.3. Key Timelines

Key Timelines



2. Business and Operating Model

Chapter sections:

- 2.1. FPS Structure
- 2.2. Architecture
- 2.2. Participants
- 2.3. Payment Instruments and Transaction Types
- 2.4. Aliases and Access Channels
- 2.5 Scheme Pricing and Fee Structure
- 2.6 Use Cases



Chapter Summary:

- **SBP is the owner, operator and regulator** of the RAAST system. As the operator the SBP is responsible for the day-to-day operations of the system.
- RAAST will provide the core capabilities required for fast flexible payments thereby laying the foundation on top of which participants can build innovative products and services.
- RAAST will have **smart addressing/alias capabilities** built in making use of email, mobile, national IDs and free text as means of sending payments.
- **Clearing happens in the RAAST** system and settlement takes place in in PRISM (the RTGS), where it is guaranteed through the reservation/earmarking of liquidity, the credit that is then extended for clearing in the RAAST system is subject to the limit set.
- Banks and non-banks will have access to the RAAST system. Banks are direct participants of RAAST and non-banks can participate as indirect participants through a sponsored model (i.e., as a sub participant or indirect participants).
- Digital Financial services in Pakistan are licensed and regulated under the following regulations:
 - SBP Act, 1956
 - Banking Companies Ordinance, 1862
 - Microfinance Institutions Ordinance, 2001
 - Payment Systems & EFT Act, 2007
 - Rules for Payment System Operator/Payment Services Provider, 2014
 - Rules for Electronic Money Institutions (EMIs), 2019
- Participants sign a Participation Agreement and must comply with the RAAST operating system rules before joining.

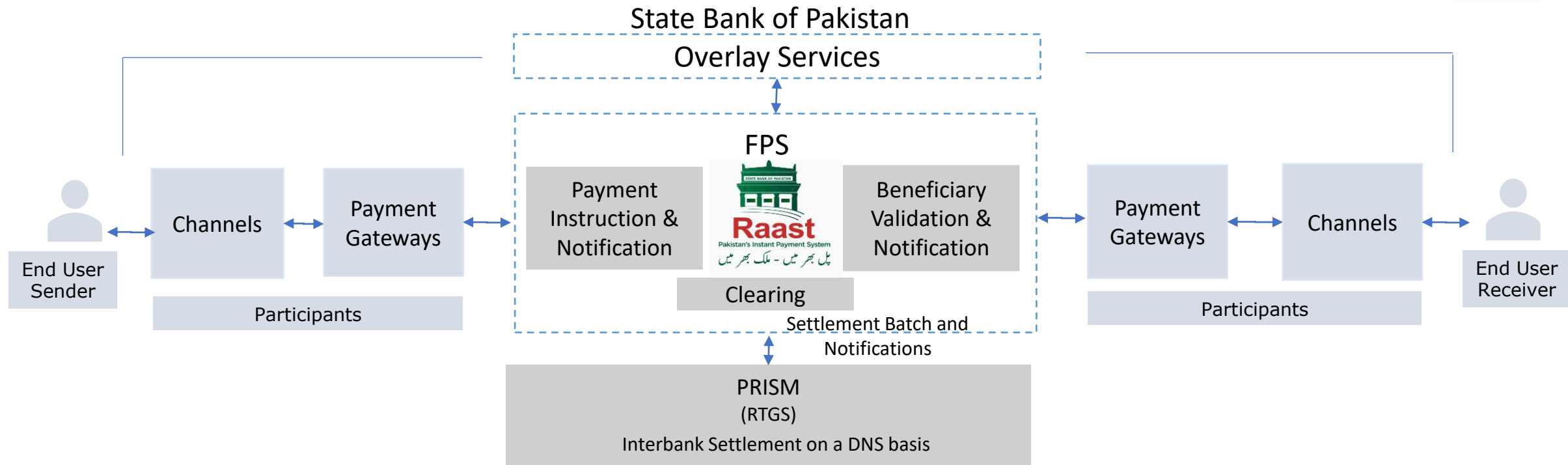
2.1. FPS Structure



State Bank of Pakistan is the Owner, Operator and Regulator of the RAAST system. Once participants and consumers have gained confidence in the system, SBP might create a separate entity to operate the system.

Regulator	Operator	Participants	CSM
<p align="center">State Bank of Pakistan PSD Oversight</p> <p>Responsible for ensuring the safety and stability of the financial system. Performs supervision and oversight of the financial systems, schemes and participants.</p>	<p align="center">State Bank of Pakistan PSD Operations</p> <p>Responsible for day-to-day operations of RAAST. Defines the operating rules that participants must adhere to.</p>	<p align="center">Banks and non-banks</p> <p>Bank and non-banks are allowed to access the RAAST system as either a direct or indirect participant.</p>	<p align="center">Various</p> <p>SBP owns and operates the RTGS (PRISM). 1Link is a fully licensed PSO/PSP that owns and operates the interbank retail payment system.</p>
<ul style="list-style-type: none"> SBP has been mandated with ensuring the safety and stability of the financial system under the State Bank of Pakistan Act 1956, the Payment Systems & EFT Act 2007, the Banking Companies Ordinance 1962, the Microfinance Institutions Ordinance 2001, and the Foreign Exchange Regulation Act, 1947. SBP issued various regulatory instructions and guidelines in line with international best practice which prescribe the standards and conduct that regulated entities must adhere to. SBP issued the operational rules for the designated clearing and settlement systems. SBP performs both on-site and off-site supervision. 	<ul style="list-style-type: none"> SBP is the operator of the new RAAST system. The operations of RAAST is subject to the Banking Companies Ordinance 1862, Rules for Payment System Operator/ Payment Services Provider ,2014 and the State Bank of Pakistan Act, 1956. SBP defines and issues the operating rules for participation in RAAST. The operating rules define the minimum business, technical, availability and security requirements for participation. As Operator it enters into agreements with the Participants of RAAST. 	<ul style="list-style-type: none"> Banks are licensed under the Banking Companies Ordinance 1962, the Microfinance Institutions Ordinance 2001, and can provide full financial services. Non-Banks are EMLs and are regulated under the Rules for Electronic Money Institutions (EMIs) 2019 and can provide payment products and services. However, they are not allowed direct access to RAAST but should have an agreement with a direct participant (Bank or microfinance bank). Participants should comply with the operating rules of the relevant payment system and scheme in which they participate. Have to enter into the Participant Agreements with the PSB as PSO. 	<ul style="list-style-type: none"> PRISM is Pakistan’s RTGS system and is operated by SBP under the auspices of the PS&EFT Act, 2007. <ul style="list-style-type: none"> PRISM is connected to RAAST and is used to reserve funds and extend limits in RAAST to guarantee settlement. 1Link is a fully licensed PSO/PSP owned by 11 banks and is regulated under the Rules for Payment System Operator/ Payment Services Provider, 2014. <ul style="list-style-type: none"> 1Link clears the Card Payments, provides interbank funds transfers for participating banks capped at PKR 1 mil and a bill payment system. Existing PSO/PSPs will be required to integrate with RAAST. CDC links to RAAST for dividend payments.

2.2. Architecture



- RAAST is a **core component of Pakistan's payment infrastructure** and provides FPS capabilities **fully interoperable across channels and payments streams**.
- SBP that currently owns and operates Pakistan's RTGS system (PRISM) owns and operates the RAAST system.
- RAAST provides for the **clearing of low-value payments in near real time**.
- **Clearing happens in the RAAST system** subject to limits collateralized in PRISM. **Settlement** is managed in **PRISM** on a deferred net settlement basis via multiple settlement cycles during the business day.
- The prefunded model reduces the liquidity and settlement risk.
- **Participants connect to RAAST across an MPLS VPN network** via 2 different Internet Service Providers.

- End users can access RAAST based services via different **channels** including **Internet, Mobile, Phone, Branches and via Agent arrangements**.
- It caters for bulk/batches of payments and individual payments.
- Other features include a Centralised Addressing System (CAS) that **provides smart addressing services** (e.g., email/phone number), an **API gateway** for simpler integration and transaction analytics for **proactive oversight and risk management**.
- The system is available **24x7x365** for payments.
- The system is based on **ISO20022** message formats that is the international standard for financial messaging.
- RAAST provides the platform on top of which a number of **overlay services** and products can be developed e.g., **Request to Pay**.

2.3. Participants



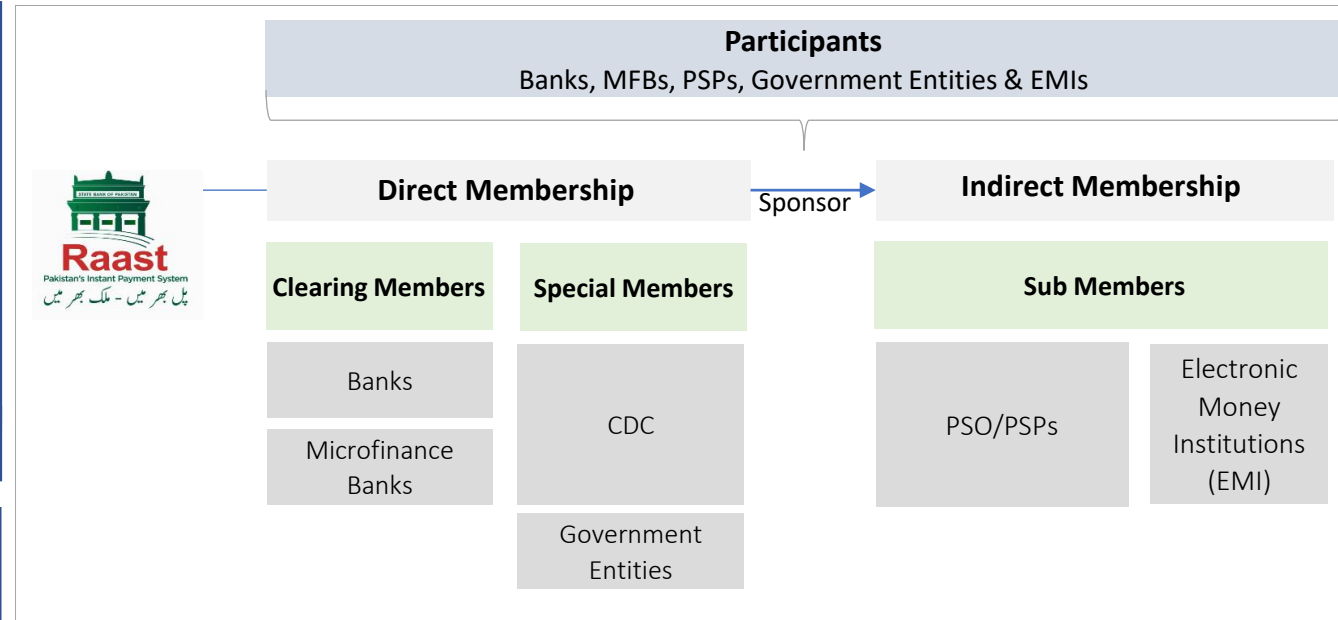
Public entities, Banks and Non-Banks can have access to the RAAST system. Banks can be direct participants and Non-banks can have indirect access via the direct participants.

PSPs/PSOs

- Provide Payment Systems related services like electronic payment gateway, payment scheme, clearing house, ATM Switch, POS Gateway, E-Commerce Gateway.
- Can make agreements with Banks, FIs and other PSOs and PSPs Merchants, e-commerce service providers for the provision of services under the operating rules.

Government Entities

Pay dividends, wages, pensions, social grants, tax.



Banks and MFBs

- Provide full range of financial services
- Are direct participants of RAAST
- Are also participants in PRISM
- Sponsor indirect participants e.g. EMIs

EMIs

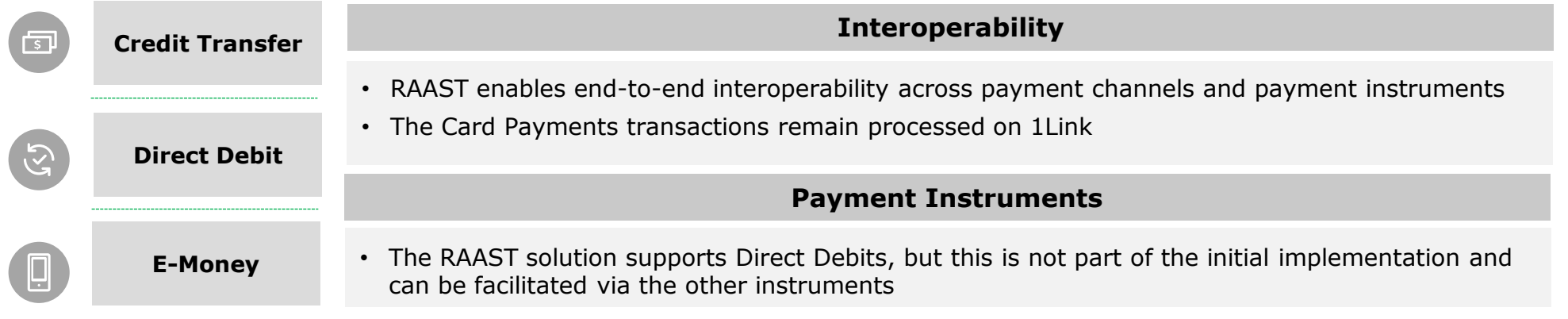
- EMIs are entities that offer digital payment instruments e.g. wallets, prepaid cards, and contactless payment instruments
- Products and services must be fully interoperable and secure

Regulatory and Participation Considerations

- **Banks are licensed** under the **Banking Companies Ordinance 1962**, the **Microfinance Institutions Ordinance 2001** and can provide **full financial services**.
- **Non-Banks are licensed as EMIs** and are regulated under the **Rules for Electronic Money Institutions (EMIs), 2019**. They can **provide payment products and services**.
- **Direct members** have to enter into a **Participant Agreement** with SBP as the operator to participate in RAAST and must comply with the operating rules of the scheme in which they participate. Direct Members should meet specified technical connectivity requirements, meet minimum resilience and security requirements and have Fraud and AML/CFT detection controls and capabilities in place.
- Banks, Microfinance Banks can access RAAST as Direct Members and Government Entities can access RAAST as Special Members whereas EMIs will have to have an arrangement with a direct member via which they will have access to RAAST.
- Participants that are not Settlement Members in PRISM must have an arrangement with a Settlement/Direct Member to effect settlement in PRISM.
- The direct member is responsible to ensure that their sponsored participants complies with the required regulatory aspects as well as all the operating rules prescribed by the operator (e.g., Liquidity, KYC and AML/CFT requirements).

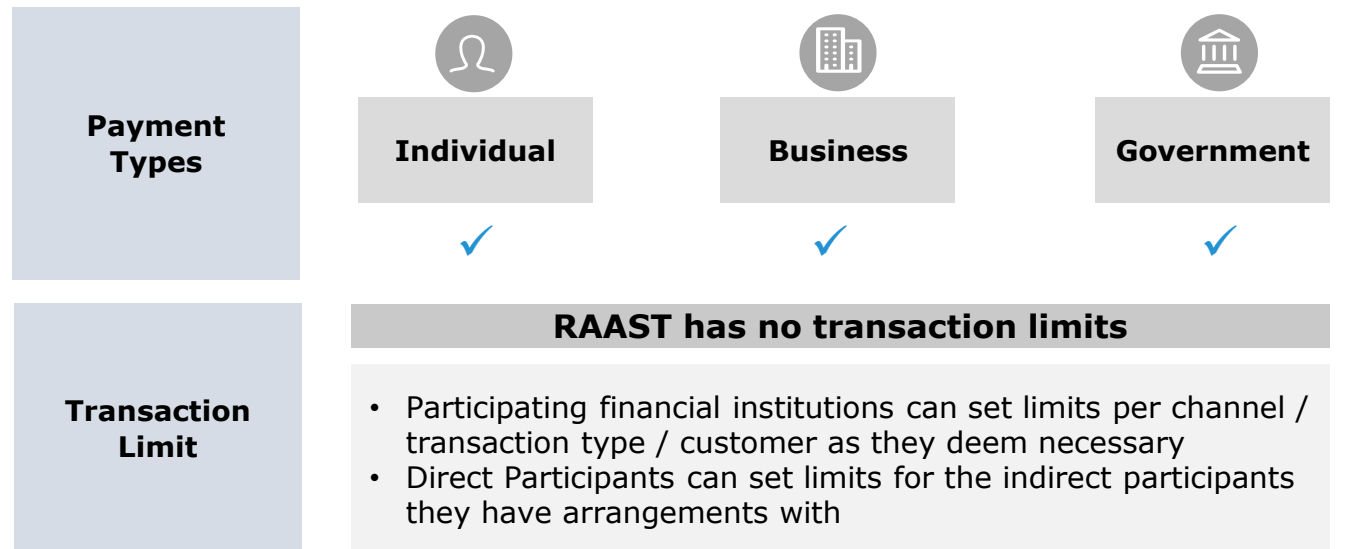
2.4. Payment Instruments and Transaction Types

Payment Instruments Supported

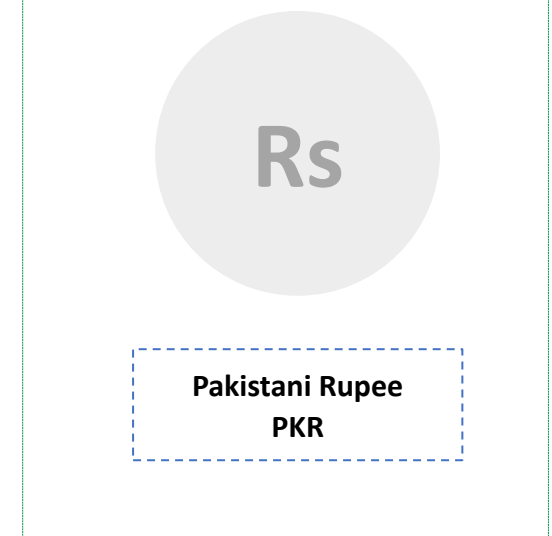


- RAAST has **no transaction limits** set, as it will facilitate the clearing of bulk payment batches which could include larger value payments.
- Although there are no transaction limits, there are **overall limits** in RAAST, these are equivalent to the liquidity the Participant has **earmarked in PRISM for RAAST clearing**. This provision guarantees the settlement in PRISM.

Payment Type and Transaction Limit



Transaction Currency



2.5. Raast ID & Channels



RAAST enables convenient, easy to use payment facilities with a easy-to-remember ID using **smart addressing capabilities**, provided via the **Centralized Addressing System (CAS) component**, thereby enabling users to send payments without knowing or having to input the account number of the beneficiary.

Raast IDs (Aliases)



Mobile Number



Email Future



National ID (CNIC) - Future



Free Text Future

- CAS is the **centrally hosted smart addressing scheme** for RAAST, it enables a user to send payments without having to know the beneficiary's account number (thus using an alias Raast ID such as a mobile number or email address etc.). CAS **will initially support only mobile numbers** but will support **email addresses, national IDs** and eventually **free text**.
- A Raast ID is **linked to a single bank account** that meets the IBAN standards. Initially a bank account can only be linked to one Raast ID, but this will be potentially expanded to support a wider set of combinations.
- No duplicates are allowed, and CAS support an expiration date on a Raast Id after which the ID becomes invalid.
- A user will register to use CAS via the different banking apps.
- RAAST participants (the account holding institution i.e., banks and microfinance banks) are responsible for registering, deregistering, maintaining and querying customer and Raast IDs information. They are also responsible for getting the customers consent to use their data and complying with the KYC requirements before registering the customer on CAS.
- The service supports "Title fetch"/"known as" capabilities displaying the payee's name to the payer after which the payer confirms the payees account name. This reduces the risk of payments being paid to the wrong payee.

Access Channels



Internet Banking



Mobile Banking/Apps



QR Codes (Future)



Telephone



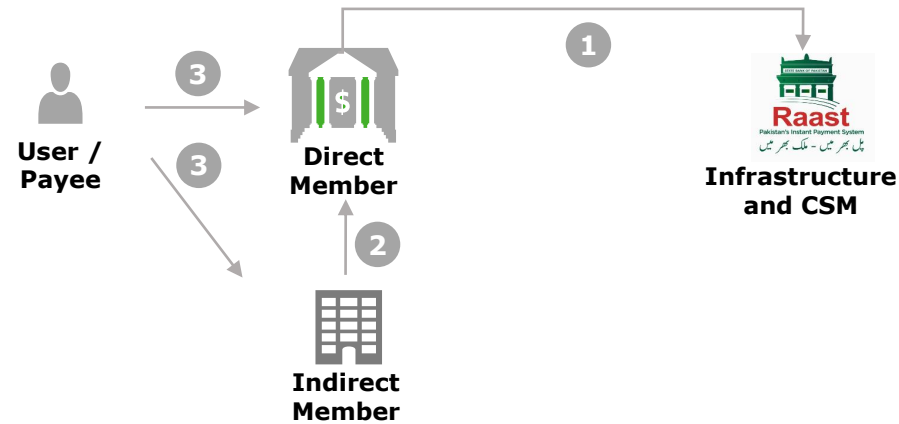
Branches

- RAAST aims to provide **universal easy access to all Pakistanis** in support of the financial inclusion objective, toward this end individuals and businesses will be able to **access the services via internet banking, mobile banking applications, telephones and in branches**. In addition, the RAAST services can be **accessed using the agent network** that has been established in Pakistan to facilitate access to financial services in remote areas.
- RAAST will support QR Codes as part of the P2B use case that will be implemented in phase 3. RAAST QR Code standards is based on EMVCo Standards.

2.6. Scheme Pricing and Fee Structure



In support of the financial inclusion objective, SBP aims to **initially** make the services available to the end user for **free**. Therefore, during the first implementation phases SBP won't charge the Participants any usage fees for RAAST. Fees could be introduced at a later stage.



1 Fees charged by RAAST

- RAAST is fully funded by the Bill and Melinda Gates Foundation. Based on this and the objective of fostering user adoption and affordability, SBP has decided that it will not charge any fees for usage of RAAST initially.
- Direct members will pay a nominal fee for using the MPLS VPN.
- Members will be responsible for the fees and charges associated with their Internet Service Provider.
- In the longer term SBP have could charge Participants for usage of RAAST and these fees can include a registration fee, participation fee, processing fees, interchange fees.
- SBP will levy penalties for non-compliance to system operating rules and regulations.
- When implemented, fees and charges will automatically be recovered on a monthly basis.

2 Fee charged by Direct Participants

- Direct Participants can decide to charge their sponsored Participants a fee (e.g., management fee) for providing the access to RAAST and the associated connectivity, management of their positions, liquidity and transactions.
- This could make more expensive for EMIs to provide products and services to end users.

3 Fee charged to users/payee

- Initially SBPs objective is to make the services available to the end user for free.
- Later, subject to oversight by the SBP, fees might be introduced.

2.7. Use Cases / Services

1 Bulk / Batch Payments

- Bulk/Batch payments (e.g., dividend disbursements from the SBP CDC) was the first use case to go live in January 2021.
- The service is expanded during in 2021, the government is using RAAST to make wage payments to government employees, pension payments, social grants, tax and other government payments.

Payment Instruments

Bank Account

Access Channels



Internet



APIs

2 Request to Pay

- This service would allow vendors and businesses to send notifications to consumers to request payments. It consists of 2 steps:
 - Retailers/Online sellers or other businesses send a message to the consumer to request payment for a service or product.
 - The Payer/buyer receives the messages requesting payment via the access channel e.g., mobile phone and can choose to pay in full or in part or decline payment.

Payment Instruments

Bank Account, e-Wallets

Access Channels



Mobile



*QR



Internet/
Non mobile

3 Merchant Payments

- During phase 3, RAAST will enable payments to micro and small business owners, and merchants' payments, thereby enabling businesses to efficiently meet their obligations.

Payment Instruments

Bank Account, e-Wallets

Access Channels



Mobile



*QR



Internet/
Non mobile

4 Future Scheduled Payments

- Participants are able to leverage the core capabilities to provide users with "scheduled"/future dated recurring payments with customer pre-authorization.
- Recurring payments could also be catered for via the Request to Pay service.

Payment Instruments

Bank Account

Access Channels



Mobile



Internet/
Non mobile

3. User Adoption



Chapter Summary:

- Pakistan electronic transactions performance has been low for several reasons including low banking penetration, lack of trust and awareness of digital payment methods, limited interoperability, difficult accessibility and high cost of transactions. Digital payments only account for 0.2% of Pakistan's ~100 billion transactions today, whereas the share of digital transactions in peer countries ranges from 1.5% to 7%.
- Pakistan has a population of 221 million with only 50% of the population being banked of which only 18% of women are banked. In addition, 60% of Pakistan's population is under 30 years of age.
- Pakistan financial and social environment is ready to take advantage of GoP and SBP's vision of digitising the economy and more specifically payments.
- Since its launch, **80% of dividend disbursement payments related to CDC have migrated to RAAST**, with a huge increase in adoption. The implementation of G2P cash transfers via RAAST during 2021 is projected to address up to **3.4 million adults, who can become recipients of digital payments**

3. User Adoption



Since the go live of the bulk payment module in January 2021, **80% of payments** related to **CSD dividend disbursements** have migrated to the RAAST system.

RAAST User Adoption

- A significant amount of effort has been put into onboarding of participants, as is evidenced by the industry engagement sessions throughout the implementation (explaining the high-level business requirements, technical requirements, testing required and quality criteria that participants must meet), to ensure seamless integration to the RAAST platform.
- Since its launch in January 2021, **30 of the 36 Banks** are participants in RAAST, with other participants in various stages of approval in line with the roll-out of RAAST.
- Since its launch, **80% of dividend disbursement payments related to CDC have migrated to RAAST**, with a huge increase in adoption. The implementation of G2P cash transfers via RAAST during 2021 is projected to address up to **3.4 million adults, who can become recipients of digital payments**.
- As the new use cases are introduced, the key **drivers of adoption are affordability, accessibility, training of the end user and trust in the safety and security of the RAAST system:**
 - Affordability as SBP is making the services available at a very low or no cost to the end user
 - Providing easy access to the RAAST services including to the population in remote areas
 - Training of the end user will be important to increase the financial literacy of the underserved segment of the population
 - Fostering trust in the safety and security of using RAAST services to encourage the users of paper-based instruments (including cash) to use digital payment methods instead

Digital payment evolution

Pakistan digital transactions performance has been low for several reasons including low banking penetration, lack of trust and awareness of digital payment methods, limited interoperability, difficult accessibility and high cost of transactions.

Pakistan has shown a significant increase in the volume and value of digital payments from 2016 to 2020

- The number of **E-Banking Transactions** have increased from **543 Million in 2016 to 1,183 Million in 2021** with an increase in Value (PKR) from **43,000 Billion in 2016 to 86,482 billion in 2021**
- The value (PKR) of **Mobile Banking transactions** have increased from **113 Billion in 2016 to 4,915 Billion in 2021**
- The value (PKR) of **Internet Banking Transactions** have increased from **881 Billion to 5,661 Billion in 2021**

4. Technical Details and Payment Process

Chapter sections:

- 4.1. Technical Details | Messaging Format and QR Codes
- 4.2. Technical Details | APIs, Customer Authentication and Tokenization
- 4.3. Payment Process (Customer Registration, Transaction Fulfilment, Liquidity Management and Settlement)



Source: SBP | NPS Strategy - Nov 2019 | SBP Website | Interviews | Press Releases

Chapter Summary:

- RAAST has adopted the **ISO 20022 messaging standard**.
- Initially, RAAST will **provide limited API capability**, only licensed banking institutions and designated government entities will have access to these APIs.
- The security requirements include **multi-factor authentication that must be implemented across all access channels**. At least 2 factor authentication and in certain cases biometric verification is required.
- The payment process includes one-time customer registration, payer-payee transaction fulfilment and inter bank settlement.
- The transactions are **cleared in the RAAST, the system settles in PRISM on a deferred Net Settlement basis** at predefined intervals.
- **Settlement is guaranteed** as Participants are required to **reserve funds in PRISM to cover their exposures in RAAST**. A limit is extended to the Participant in RAAST subject to the amount of funds reserved.
- **Direct Participants** have access to an **Intra-day Liquidity Facility (ILF)** in PRISM in the event they require additional liquidity to meet their daily settlement obligations.

4.1. Technical Details | initiation technology & Customer Authentication



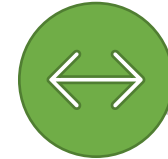
RAAST has **adopted ISO 20022** messaging standard. **APIs are available** to licensed **banking institutions and designated government entities**.



Messaging Format

ISO 20022

- RAAST has adopted the ISO 20022 messaging standard and will maintain its specification as close as possible to the defined standard, to ensure interoperability locally and in future internationally.
- The ISO 20022 messaging standard is a flexible global standard for financial messaging that provides capabilities for the capturing and transmission of rich and complete transaction data, in a structured and consistent way, thereby facilitating interoperability.
- Benefits for the RAAST system by adopting the ISO 20022 standard include:
 - ISO 20022 facilitates automation and straight through processing and makes end-to-end reconciliation easier.
 - It supports the objective of SBP to implement analytics and pro-active fraud monitoring and management.
 - ISO 20022 will also enable enhanced supervision and oversight as its organized data structure enable easy data collection and analysis.
- ISO 20022 rich data capability will support B2B providing the ability to include documents with a payment transfer.



APIs

RAAST will be API enabled

- RAAST will be API enabled to make integration with the system easy. This will facilitate interoperability and the development of new products and services by market participants.
- Licensed banks, designated government institutions, EMLs and Non-banks can access RAAST via APIs.
- The APIs will be aligned with the ISO 20022 standard.
- APIs for the Bulk Payments Module provides for submission of payment, beneficiary verification, status query, end-to-end tracking information on where an instruction is.
- Although APIs are not available to other 3rd party institutions in RAAST, some participants have the ability to develop APIs and are providing APIs to 3rd Parties.

4.1. Technical Details | initiation technology & Customer Authentication



Multi-factor authentication must be implemented across all access channels and in certain cases biometric verification is required.



Initiation technology (QR Code)

Based on EMVCo standard for Payment Systems

- QR codes are going to be rolled out as part of the P2B use case planned for mid 2022.
- RAAST is basing its QR Code framework on the EMVCo Standard for Payment Systems.



Customer Authentication

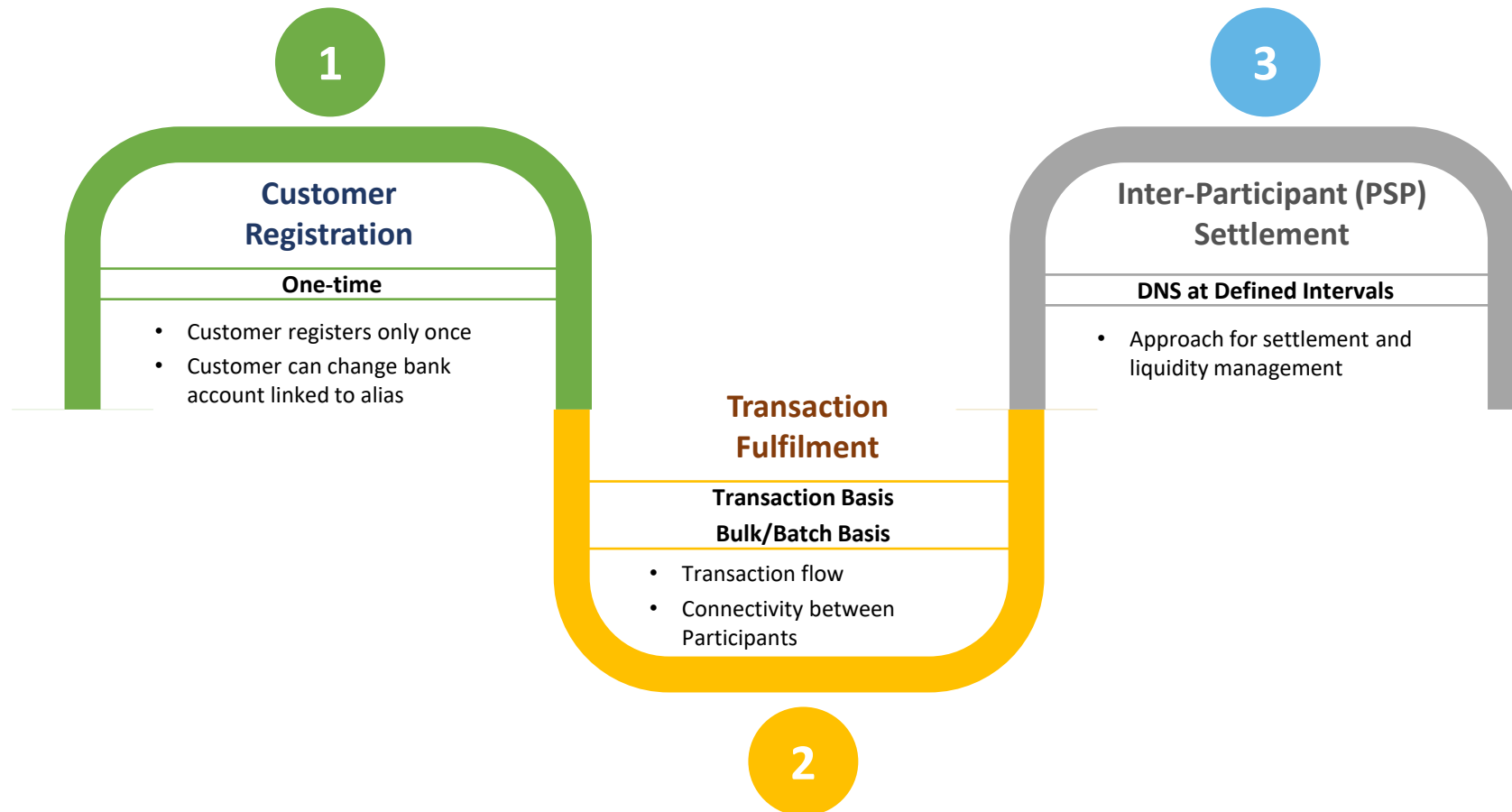
Multi-factor authentication

- SBP specifies the regulatory and security requirements that participants must comply with. Moreover, RAAST system rules are designed to ensure security and foster the trust in the RAAST system.
- These security requirements include multi-factor authentication that must be implemented across all access channels. At the very least 2 factor authentication must be implemented, in certain cases (e.g., cash withdrawal over a certain amount by e-money holders) biometric verification is required.
- In addition, customer authentication via mobile phone verifies the validity of an end user using the IMEI, so to ensure that stolen mobiles are not used to access the system.

4.2. Payment Process



The steps in the payment process include the one-time registration, payer-payee transaction fulfilment and interparticipant settlement. Various aspects of these steps are covered in the ensuing pages.



4.2. Payment Process | Customer Registration



User **registers** an alias **via their preferred channel**, such as the **bank branches, mobile banking or internet banking**, by selecting the type of Raast ID and linking it to the required account. Raast IDs supported are mobile phone number, email and in the future CNIC and free text.

- Initially CAS supports **one-to-one mode of account registration**, this allows a customer to register a single Raast ID and link it to only one account. No duplicates are allowed. User may change the bank account that an alias is linked to. Conversely, the user can change the account that an alias is linked to.
- CAS supports the **expiration of aliases**.

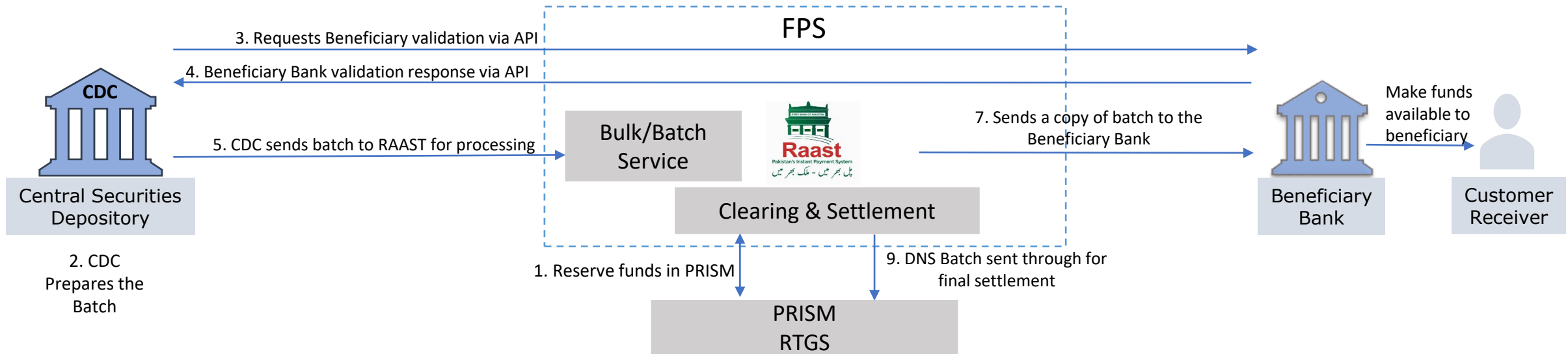
User Registration

- The Customer initiates the registration process via the Onboarding Institution where their account is held using his/her preferred channel e.g. Banking App, Branch or Internet Banking.
- The customer registration/onboarding process includes registration of customer data, aliases and account number.
- In order to make the registration process easier, the system allows registration of Customer details, Alias and Account in a **one-step procedure via a single API call**.
- The Onboarding Institution must **get the Customer's consent to use their data** and complete the **KYC process** before registering a Customer. The KYC process is managed outside the RAAST system, by collecting and verifying the relevant information before registering the customer in CAS. The registration request contains the details of the alias including Alias type, and Alias start and expiration dates. The Onboarding Institution can only maintain the information of their own customers.
- Account registration process includes registration of account number, account type and account currency with a link to the account holding institution.

4.2. Payment Process | Transaction Fulfilment - Bulk/Batch



RAAST allows CDC and other designated government entities to submit batches to RAAST. This process increases the efficiency with which these payments are disbursed and gives the beneficiaries access to those funds in near real time.



1. CDC earmarks liquidity by transferring it to the Reserve Account in PRISM. A credit limit is then automatically created for CDC in the RAAST settlement account.

Batch submission

2. CDC prepares the data/batches for the value date, per receiving institution.
3. CDC requests the receiving bank to validate the batch via API.
4. Beneficiary Institution replies via API with a file containing rejected instructions. If the file is empty, all instructions are assumed to have been successfully validated.
5. CDC releases the batch to RAAST for processing.

RAAST processing

6. RAAST validates the batch including that a check of the batch total against the available limit. If successful CDC Position account is debited, Bank Position account is credited.
7. RAAST sends a copy of the batch to Participant – to post funds on End Customer accounts at Banks' CBS.

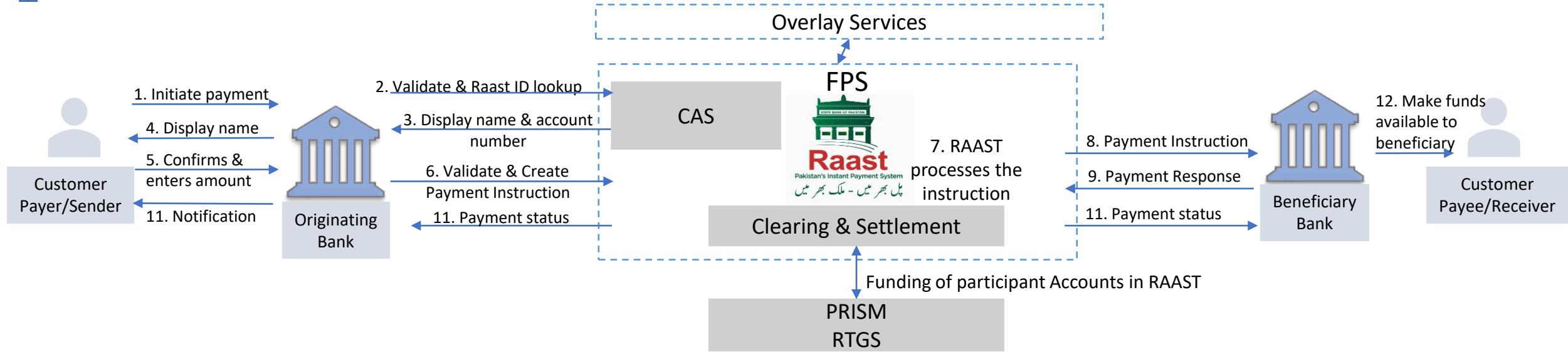
End of session

8. Reconciliation reports are sent by RAAST to the CDC and Beneficiary Banks.
8. At the end of the clearing session the figures are consolidated and the netted figures are sent through as a net settlement batch to PRISM for final Settlement.
9. Positions in RAAST are reset for the next clearing session.

4.2. Payment Process | Transaction Fulfilment



RAAST allows customers of a participant to make payments from their account to that of a customer at another participant, making the funds immediately available in the account of the payee. The process takes seconds to complete.



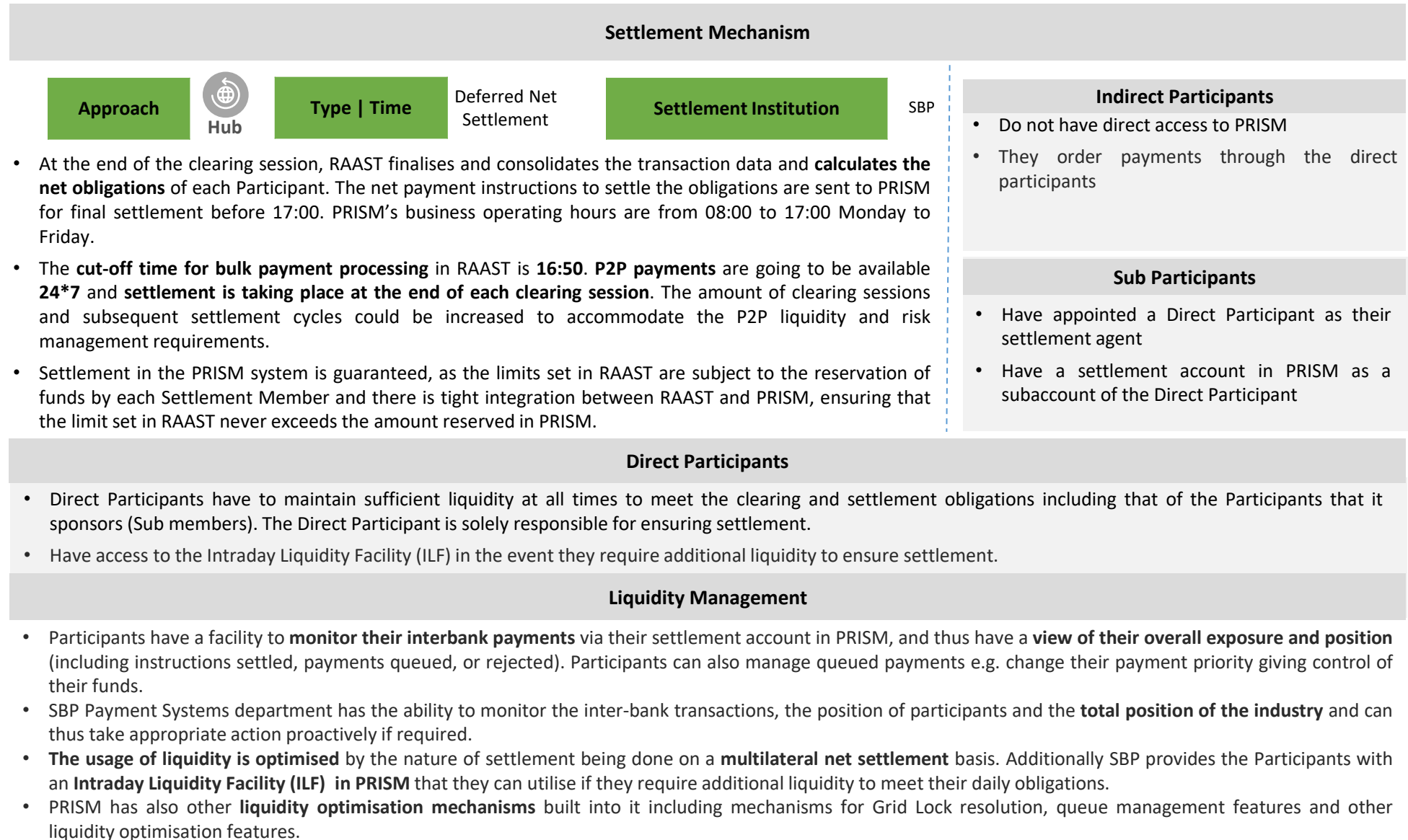
1. Customer initiates the payment.
2. The Originating Bank the performs validation and does a lookup on CAS using the alias
3. CAS replies with the account list. The Originating Bank then stores the account list.
4. The Bank and the payee's name are displayed to the Payer/sender. Due to security reasons the following information is shown: [First Name] [First Letter of the Last Name] – [Bank Identification].
5. The payer then selects the Bank and the Name of the receiver, enters the amount and initiates the payment.
6. Originating Bank performs validation (incl. limit checks, AML etc.), reserves the funds and creates the payment instruction with the IBAN and submits the payment instruction to RAAST for processing.

7. RAAST validates the payment instruction, reserves the funds, send the payment to the Beneficiary Bank. The validation includes: Message formats, Beneficiary Bank, Security and integrity checks, Transaction type code & Limits.
8. RAAST sends the payment instructions to the Beneficiary Bank that then verifies the payment including beneficiary/ receiver account.
9. Beneficiary Bank sends payment status response (positive/negative) back to RAAST.
10. RAAST debits the Originating Bank and credits the Beneficiary position accounts.
11. RAAST sends the payment status sent to both Originating Bank and the Beneficiary Bank
12. Beneficiary Bank credits Payee and sends a notification to the Payee.
13. Originating Bank debits Payer and sends a notification to the Payer.
14. At the end of the Clearing Session the net positions are calculated, and the net settlement batch of instructions are sent to PRISM for final settlement.

4.2. Payment Process | Inter-Participant (PSP) Settlement



- The settlement takes place in **PRISM** on a **Deferred Net Settlement** basis
- RAAST performs **2 clearing cycles per day**. At the end of each cycle the net settlement batch is sent to PRISM for final and irrevocable settlement
- In future, more settlement cycles could be introduced
- The **cut-off for bulk processing is at 16:50** so that final settlement can take place in PRISM before it closes at 17:00
- PRISM supports **Direct Participants, Sub-Participant and Indirect Participants**



5. Governance Framework

Chapter sections:

- 5.1. Legal and Regulatory Aspects
- 5.2. Risk Management
- 5.3. Dispute Resolution



Source: SBP | NPS Strategy - Nov 2019 | SBP Website | Interviews

Chapter Summary:

- The legal framework provides the SBP with an explicit mandate to regulate the payment and settlement systems in Pakistan.
- Under the **legal framework**, the SBP has been entrusted with necessary powers and mandate to regulate and supervise the activities of banks, development finance institutions, microfinance banks and foreign exchange companies under the following laws and ordinances: the State Bank of Pakistan Act, 1956, the Banking Companies Ordinance, 1962, Microfinance Institutions Ordinance, 2001 and the Foreign Exchange Regulation Act, 1947.
- The legal and regulatory framework covers the detection and deterrence of money laundering and financing of terrorism activities.
- The SBP fulfils multiple roles, including that of regulator and operator of payment systems.
- The SBP is the owner and operator of RAAST, as such it will have to comply, among others, with the PS&EFT Act 2007, the Rules for Payment System Operator/Payment Services Providers 2014 and cyber resilience guidelines.
- The SBP as the Operator of RAAST is defining the operating rules for participation in RAAST and enters into agreements with the participants.
- RAAST is having a complaints and dispute resolution system, which will include the technology solution, procedures for dispute resolution and well as the guidelines and service levels.

5.1 Legal, Regulatory and Governance Aspects (1/3)



The SBP is mandated to safeguard the soundness and safety of the financial system and have created a legal and regulatory framework to give effect to its mandate.

Under the SBP Act of 1956, SBP is **mandated to safeguard the soundness and stability of the financial system**. In order to achieve this mandate, the SBP has created an effective legal and regulatory framework. The **regulatory framework comprises a set of policies, guidelines, prudential standards and associated processes**.

Under the **legal framework**, the SBP has been entrusted with necessary powers to regulate and supervise the activities of all Participants in the payment system under the following laws and ordinances:

- the **State Bank of Pakistan Act of 1956**: Defines the **governance and management structure of the SBP** and the **business activities** of the SBP.
- The **Banking Companies Ordinance of 1962**: Defines the regulations, business activities of Banking Corporations, their obligations and the powers that have been afforded SBP to license, regulate and supervise Banks.
- Microfinance Institutions Ordinance of 2001: Defines the regulations, business activities of Microfinance institutions, their obligations and the powers that have been afforded SBP to license, regulate and supervise them.
- The PS & EFT Act of 2007: Gives the SBP the powers to regulate the payment system, nominate 1 or more clearing houses and gives SBP the right to oversee them. It also gives PRISM and RAAST legal finality of payments.
- Rules for Payment System Operator/Payment Services Providers of 2014.
- Rules for Electronic Money Institutions (EMIs) of 2019.

Under the auspices of this legal and regulatory framework, the SBP licenses new Commercial and Microfinance Banks (Local and international branches), PSOs and PSPs, and EMIs. Moreover, a comprehensive regulatory framework on Branchless Banking is in place which aims to promote access to finance on sustainable basis. SBP issues different sets of Prudential Regulations and policies, which prescribe the minimum standards for risk management, capital adequacy requirements (in line with the Basel Accord), corporate governance and operational requirements. SBP also issues AML/CFT regulations in line with international standards and best practises.

The PS & EFT Act 2007 also provides the **legal certainty** for clearing and settlement system defining **finality and irrevocability**.

Institutional and Governance Framework

Legal Framework

SBP Act 1956
Payment System & EFT Act 2007

Regulator and Overseer

SBP is the Regulator and overseer of RAAST

Owner and Operator

SBP

5.1 Legal, Regulatory and Governance Aspects (2/3)



The SBP has been given the responsibility of regulating and overseeing payment systems in Pakistan and as such the Oversight Division in the Payment System department in SBP will be regulate and oversee the operations of RAAST.

Institutional and Governance Framework

Legal Framework

SBP Act 1956
Payment System & EFT Act 2007

Regulator and Overseer

SBP is the Regulator and overseer of RAAST

Owner and Operator

SBP

Oversight and Supervision

- The roles and responsibilities of the State Bank of Pakistan in payment systems are mainly **governed by the Payment Systems & Electronic Fund Transfer Act 2007**. The **SBP Oversight Division of the Payment Systems Department** has been entrusted to oversee and regulate payment systems in Pakistan.
- SBP has the power to issue rules, guidelines, circulars, by-laws, standards or directions. Inter alia, the **SBP is responsible** for:
 - Managing **Systemic Risk**
 - **Promoting monetary stability and a sound financial structure**
 - **Protecting the interest of the public** including market conditions and behaviour
 - **Ensuring the safety, integrity, efficiency or reliability** of the Designated Payment System or Designated Payment Instrument including security and operating standards and infrastructure arrangements
 - **Protecting the interests of the current and future Participants** of the Designated Payment System or users of the Designated Payment
- The SBP has published a **Supervisory Regime** that defines the statutory framework, objectives and the process for Supervision.
- Oversight is performed by a **combination of onsite inspection and offsite supervision**. The onsite inspection is regarded as the most critical supervisory tool, employed by the SBP to have a good understanding of an institution's business, identify potential risks that may impact institution's reputation, safety, and soundness and to assess the suitability of various supervisory actions. An on-site assessment may be a full scope inspection. Limited/ focused review or thematic and SBP may also be periodically carried over to assesses Information Systems and overseas operations of the financial institutions. SBP assesses the financial institutions on the basis of **CAMELS methodology**. This methodology involves analysis of **Capital, Asset Quality, Management, Earnings, Liquidity and System & Controls**.

5.1 Legal, Regulatory and Governance Aspects (3/3)



SBP is the owner and operator of RAAST and as such is subject to the same legal and operational requirements as PSOs.

Institutional and Governance Framework

Legal Framework

SBP Act 1956
Payment System & EFT Act 2007

Regulator and Overseer

SBP is the Regulator and overseer of RAAST

Owner and Operator

SBP

SBP is currently the owner and operator of Pakistan's RTGS system PRISM and is going to be the **owner and operator of RAAST**.

As the Operator of RAAST (thus in the role of PSOs and PSPs), it will be **subject to oversight and supervision by the SBP Payment Systems Department's Oversight Division**. RAAST will have to comply with the Payment Systems & EFT Act 2007, Rules for Payment System Operator / Payment Services Provider 2014, where applicable the relevant provisions of AML Act 2010, Foreign Exchange Regulations Act (FERA) 1947, and other related instructions issued by SBP in its regulator and overseer capacity.

Under the rules for PSOs and PSPs, the SBP as operator will be required ensure that **proper governance** is implemented including that:

- Policies, procedures and controls are in place and approved by their Board of Directors
- Organizational structure supports the operations of RAAST with appropriate segregation of organizational functions and duties and the structure is approved by its Board of Directors
- Is in place adequate staffing and resourcing arrangements, and that the staff are technically qualified and experienced in the relevant field of business
- Proper documented contracts and agreements pertaining to the critical functions to run the business are maintained
- Properly equipped and maintained facilities to house Technology and Processing Systems within Pakistan are present
- Their systems are audited by approved audit firms
- Dispute resolution requirements ensure adequate levels of consumer protection, including the complaint redressal mechanism and associated service levels

The PSO rules and defines the requirements around processing, clearing and settlement of transactions. It defines the Risk Management, Security and confidentiality requirements that must be complied with.

As the Owner and Operator of RAAST, **SBP will define and issue the operating rules for participation in RAAST and enters into agreements with the Participants of RAAST**.

The operating rules defines the **minimum business, technical, availability and security requirements for participation in RAAST**.

5.2 Risk Management (1/2)



Final and irrevocable settlement underpinned by a **sound legal and regulatory framework**. Limits in RAAST are **collateralized** in PRISM.

Legal and Regulatory	<ul style="list-style-type: none"> Once a payment has been processed in RAAST and the notification is sent to the Payer and Payee’s institution the payment is deemed to be final and irrevocable, as defined in the RAAST system rules and underpinned by the Payment Systems & EFT Act 2007.
Fraud Risk Monitoring and Management Solution	<ul style="list-style-type: none"> RAAST will offer enhanced data and fraud protection capabilities. These include an analytics, fraud detection and management solutions that are implemented as part of the RAAST roll out. Participants need to ensure that adequate fraud risk monitoring and management tools have been implemented. They are obligated to monitor and flag fraudulent transactions and must coordinate with the SBP and other Participants to handle such transactions. A Participant is also required to deregister an alias or suspend an account if it is reasonably suspects that it is being used for fraudulent activities. As part of the payment process flow the Payer Bank is expected to automatically perform fraud and AML checks as part of its validation process. The payer initiates a payment and confirms the payee before a payment instruction is sent for processing, thus reducing the risk of fraudsters being able to send unauthorized payments.
KYC / AML	<ul style="list-style-type: none"> SBP have issued AML/CFT regulations and guidelines in line with international standards and best practises. All institutions are required to perform AML/CFT checks, deploy automated transaction monitoring systems to proactively monitor transactions, and are obligated flag and block suspicious transactions. Before onboarding Customers, institutions are required to complete the KYC process for Customer. Institutions are required to perform additional due diligence checks on clients with a high-risk profile.
Credit & Liquidity Risk	<ul style="list-style-type: none"> To mitigate credit and liquidity risks, limits in RAAST are collateralized in the PRISM system. Participants are required to reserve/earmark funds in PRISM by transferring funds into their Reserve Account. A limit/debit cap can then be set in RAAST (either manually or automatically), subject to the balance in the Reserve Account for clearing of payments. At the end of the clearing session, once settlement in PRISM has been confirmed as final, the positions in RAAST are reset to zero for the next clearing cycle. PRISM and RAAST are tightly integrated for this purpose and any changes to the limits in RAAST by a Participant is checked against PRISM and visa versa. Settlement Participants must ensure that they have sufficient liquidity available in PRISM to meet their daily clearing and settlement obligations, and can avail themselves of the ILF facility, in the event they need additional liquidity intraday to meet their obligations. In RAAST the net obligations for Participants (multilateral netting) are calculated and payment instructions created for the net obligations, these are then sent to PRISM for final interbank settlement. This approach inherently reduces the amount of liquidity needed to settle.

5.2 Risk Management (2/2)



Institutions a subject to **continuous supervision and oversight**.

Operational

- **Participants have to meet predefined criteria at a business and technical level**, as described in the RAAST System Rules, in addition they are **subject to continuous oversight**. This includes undergoing **rigorous testing before being admitted** to participate in the system.
- SBP as operator for RAAST and Participants are required to have in place **business continuity arrangements at a business and infrastructure level**. Business continuity **exercises** are conducted **at an industry level, typically once every quarter**.
- The entire system is **actively monitored** and managed at a business (positions of participants and industry as a whole) and technical level (at a network, infrastructure and application), to ensure that the overall health of the system and the interfaces is satisfactory.

Cybersecurity

- The SBP and Participants are required to have in place **comprehensive information security policies, standards, practices, measures and controls** to:
 - **ensure confidentiality, integrity and availability of information/data processed** or held to deliver RAAST services to Bank Customers
 - maintain the confidence of the general public in RAAST in particular and electronic payments in general, to support of the broader strategy of digitizing payments and the economy
- All payment information in transmission must be **secured end-to-end using PKI encryption**.
- **Message delivery must be guaranteed**, messages must be tamper-proof and it is not supported message **repudiation**.
- Strong access controls, including multi-factor authentication is implemented across all channels.
- Security is implemented across all levels of the system including network, infrastructure, application, to prevent unauthorized access.
- All users that interact with the system (employees of SBP, customers, participants) are authenticated and their activities are logged in a central database.

5.3 Customer Complaints and dispute resolution



RAAST will have a dedicated robust participant complaints and dispute resolution system built into it for handling disputes between member banks. SBP prescribes several measures for PSPs and Participants to ensure an effective resolution of customer complaints.

Interbank Dispute Management

- RAAST will have a dedicated dispute resolution facility for participants to register, track, escalate and store history of resolution of complaints/grievances.
- Complaints received from the customers and system participants can be uploaded to the Dispute Management Module of RAAST and the status can be monitored using the unique reference number.
- A Participant can initiate a dispute using the web interface.
- The API for participants supports basic functions for dispute management including:
 - Registering new disputes
 - Monitoring of registered disputes and post additional details and replies
 - Disputes and linked payments status tracking
 - Confirmation and resolving disputes
 - Escalation disputes for arbitrage
- The Dispute Management module supports the following (but not limited) dispute categories:
 - Request for transaction return – allows participant to request return of processed transaction
 - Request to provide transaction information — allows Participant to request additional information about processed transaction like related documents or other information
 - Request for transaction reverse – allows participant to request reverse of processed transaction
 - Good faith request – allows Participant to request for return or reverse of the transaction even if the transaction is out of the predefined timeframe for dispute creation

Reversal process and dispute resolution

- The receiver of the dispute (Respondent) can request additional explanation/documents from the Initiator.
- In the event that a corrective payment is required, it is initiated directly from within the Dispute module.
- If the Initiator doesn't agree with Respondent resolution, he can send dispute for arbitration.
- After this step the dispute becomes visible to SBP arbiter. Disputes cannot be re-opened by any side (Initiator, Respondent, SBP arbiter).
- A dispute can also be escalated in the event that the resolution is overdue or if the Participants are not able to resolve the dispute by themselves.
- The SBP as arbiter will have access disputes that are overdue or escalated via the web interface.
- SBP arbiter perform actions required for dispute resolution (outside RAAST in alignment with RAAST system rules). After dispute is resolved the SBP arbiter can close the Dispute.

Customer Complaints

- SBP has defined **standards for the protection of the customers Payment Systems & EFT Act 2007**.
- SBP require that banks and PSOs have full customer complaint and dispute resolutions systems with the associated processes in place.
- Minimum criteria are prescribed and the SBP is driving the implementation in line with its requirement and have given the Participants a deadline to implement it.

6. Clearing & Settlement Mechanism

Chapter sections:

- 6.1. CSM



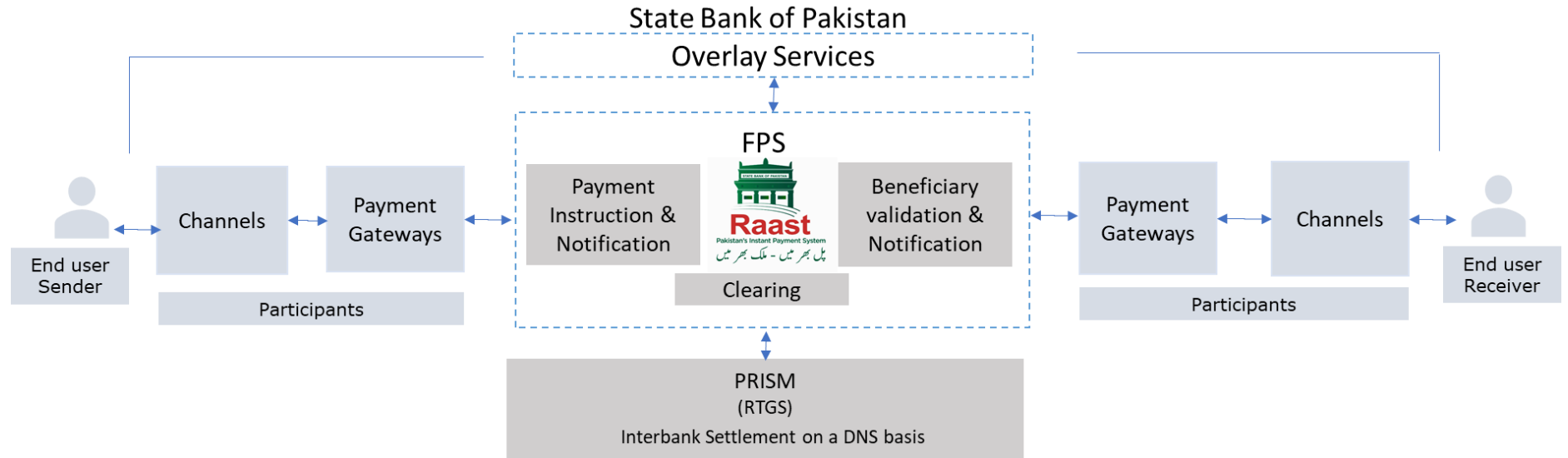
Chapter Summary:

- SBP is the owner and Operator of the RTGS System (PRISM = Pakistan's Real Time Interbank Settlement Mechanism).
- The RTGS in Pakistan has been named as Pakistan Real-time Interbank Settlement Mechanism (PRISM) and it provides a central platform for the final and irrevocable settlement of large-value interbank funds transfers, Government Securities, retail clearing and customer transfers (over a certain minimum amount limit).
- PRISM was launched in July 2008
- At present there are 51 Direct Participants of PRISM comprising of Commercial Banks, Development Financial Institutions, Micro-Finance Banks and Central Depository Company (CDC).
- PRISM system Operating Rules (2018) were issued to provide a level-playing field for the participants.

6.1. CSM Structure



- **RAAST clears low value payments in near real time and these are settled in PRISM on a Deferred Net Settlement Basis.**
- Direct Participants are also participants in PRISM and **reserve funds** in PRISM by **transferring funds from their settlement account into their reserve account.**
- Participants must make sure they have enough liquidity (cash and collateral) in the RTGS to meet their obligations.



- The RTGS in Pakistan has been named as Pakistan Real-time Interbank Settlement Mechanism (PRISM) and it provides a central platform for the final and irrevocable settlement of large-value interbank funds transfers, Government Securities, retail clearing and customer transfers (over a certain minimum amount limit).
- RAAST clears low value payments in near real-time and these are settled in PRISM on a Deferred Net Settlement Basis.
- Direct Participants are participants in PRISM. They reserve funds for RAAST settlement by transferring the funds from their Settlement Account into their Reserve Account. The Participant can set a limit in the RAAST Account subject to the balance in the Reserve Account. The Participant must ensure that it has enough funds to cover its obligations and those of its sponsored Participants/sub-members. This approach reduces credit and liquidity risks.
- Clearing is done in multiple sessions/cycles per day (currently 2 – May 2021). At the end of the clearing session RAAST calculates the net obligations of the Participants and prepares the net settlement batch. The net settlement batch is sent to PRISM to perform the final settlement.
- Once RAAST is notified that the settlement was successful, the Position in RAAST is reset to zero. SBP provides an Intraday Liquidity Facility (ILF) that participants can use to get additional liquidity when they need it to meet their obligations.