

SANRAL



ACCOUNT BASED TICKETING (ABT)

PRESENTATION OVERVIEW

1. State of Public Transport on SA
2. Public Transport Problem Statement
3. Integrated Public Transport Network
4. ABT Conceptual Overview
5. Account Based Ticketing Solution
6. Stakeholder Functions and Responsibilities
7. Benefits of ABT
8. Context of ABT Solution
9. ABT Roleplayer Functions
10. Conclusions

1. STATE OF PUBLIC TRANSPORT IN SOUTH AFRICA

- Public transport plays a significant role in the social and economic development of SA.
- A direct influence on quality of life of many citizens.
- No of commuters reliant on public transport is expanding, and significant investment is earmarked by Government to improve and modernize public transport services.
- Government has embarked on a program to transform services into an integrated mass rapid transit network.
- Strategic initiatives are aimed at transforming public transport services to be more customer-centric.
- All stakeholders should cooperate to achieve common goals such as cash displacement and an ***integrated public transport network of services***



2. PUBLIC TRANSPORT PROBLEM STATEMENT

- Cash is a problem for commuters and operators
- Administration and management of collection of cash fares, with the concomitant security issues makes fare collection onerous.
- For a cash replacement Automatic Fare Collection system the acceptance infrastructure must be ubiquitous in order to be as attractive as cash.
- Subsidy allocation and accountability is difficult.
- Authorities and Operators are looking at ways to improve fare collection to meet a number of objectives, amongst others:
 - ✓ eliminate the use of cash
 - ✓ reduce operating costs
 - ✓ improve fare collection efficiency
 - ✓ introduce an open loop fare collection system and to facilitate the introduction of an Integrated Fare Management solution.



3. INTERGRATED PUBLIC TRANSPORT SOLUTION

Account Based Ticketing provides a pragmatic approach by government to optimize the use of existing public transport services and infrastructure to benefit the road user.

In Account Based Ticketing (ABT) all transactions are validated and processed in the Back Office, meaning the right to travel is managed in Back Office and ticket or Fare Media is a token or identifier that is linked to the mobility account.

Account based prepaid fare collection product for AFC

- ✓ Card holder has a prepaid Mobility Account at the TCH.
- ✓ Fare collection transaction is a claim on the prepaid deposit held at the TCH.
- ✓ The card holder is anonymous but can elect to register a personalised account.
- ✓ NO additional cost to the road user.
- ✓ A fully auditable system.



transport

Department:
Transport
REPUBLIC OF SOUTH AFRICA

4. ABT CONCEPTUAL OVERVIEW



“True” ABT is:

- A Ticketless way to travel, by tapping or scanning a secure token
- The token linked to an account in the back office
- Any value or information on the account is stored in the back office only (Back Office centric solution)
- The fare is charged to the commuter post the journey
- The traditional transport travel card does not have any value stored on the card chip but acts as identification of the traveller only
- Validators do not write any data on fare media
- Validations lists
- System constantly up to date



DOT ABT:

- Is a Ticketless way to travel
- The token is linked to an account in the back office
- Stores information in the back office and also keeps some information on the card (to overcome potential offline scenarios)
- Utilises NDOT Central back office (hosted by SANRAL) – immediate interoperability across Operators
- Transport Operator keep its own AFC back office
- Based on CIPURSE open standards as published by the (OSPT) Alliance



5. ACCOUNT BASED TICKETING (ABT) SOLUTION

- The NDOT endorsed system facilitated by SANRAL is an Account Based System that allows for the implementation of an ‘Open-loop’ solution
 - ✓ No vendor or technology lock-in
 - ✓ Back Office centric account hosting and transaction processing service with the added feature of carrying the balance open to spend on the card allowing for operation in areas with no network connectivity.
- Provides a cost effective solution for PTOs and greater degree of convenience for passengers than ‘Closed-loop’ and cash-based ticketing systems.
- All transactions are validated and processed at the Operator’s AFC system and submitted to the TCH for processing as a claim on the card holder’s prepaid account
 - ✓ The right to travel is managed by the prepaid balance available and the Fare Media is a unique identifier that is linked to the commuter’s prepaid account

5. SYSTEM SOLUTION

- SANRAL has a sophisticated back-office system to manage the collection of e-tolls that is fully auditable and been operational for over 10 years with multiple redundancies.
- This system consists of **account hosting** and **transaction processing** functionality at the Transaction Clearing House (TCH) that has the capacity to process millions of transactions per day (4 million to 20 million)
- At the Operator's AFC Level, CIPURSE™ fare media is designed to function offline and sync automatically when the card is tapped online.
- The above integration and implementation will be governed by a Public Transport Agreement with KPI's to ensure service delivery and a detailed audit trail of all transactions and revenue collected.

6. NDOT ABT STAKEHOLDER FUNCTIONS AND RESPONSIBILITIES

1. Fare Media Issuers

PTOs

- By choice
- Dependent on fare media in circulation issued by other issuers

Third party issuers

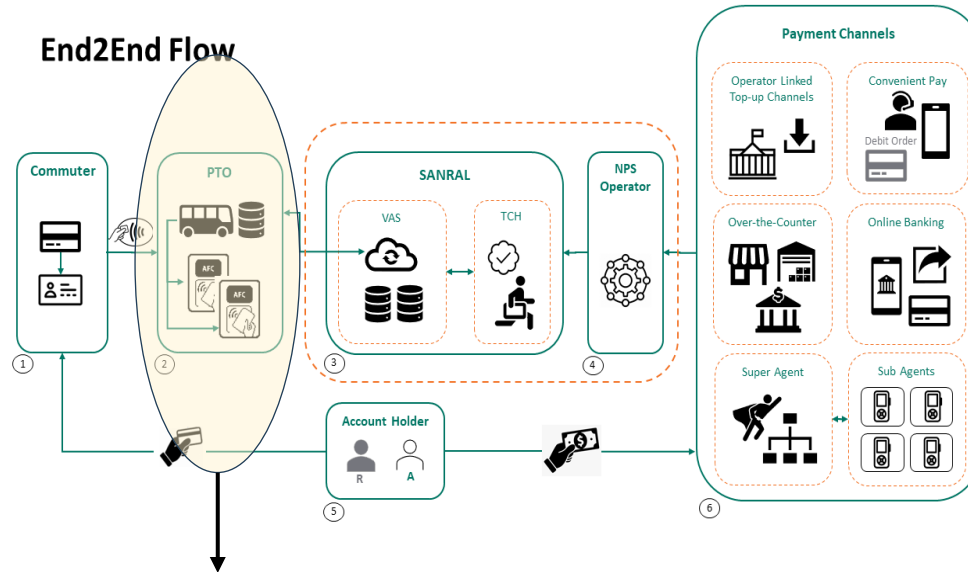
- Retailers
- Large business
- Government
- Clubs and Associations
- Reward and Loyalty programs

2. Public Transport Operator

Complete AFC System

- Readers/Validators
 - Station gates
 - Busses
- AFC back office
 - Application software
 - Fare structures & rules
 - Validation list download & distribution
 - Transaction collection and transfer to the TCH
 - Settlement reconciliation
 - Data communication systems

End2End Flow



5. AFC System

- Procured by PTO
- Fares and fare structures set by PTO

3. Transaction Clearing House

Account Hosting

- Mobility Accounts

Transaction Processing

- Receive transactions from PTOs
- Receive transactions from top up agents
- Process all transactions against Mobility Accounts
- Settle PTOs for transactions submitted
- Receive settlement for top ups from Agents

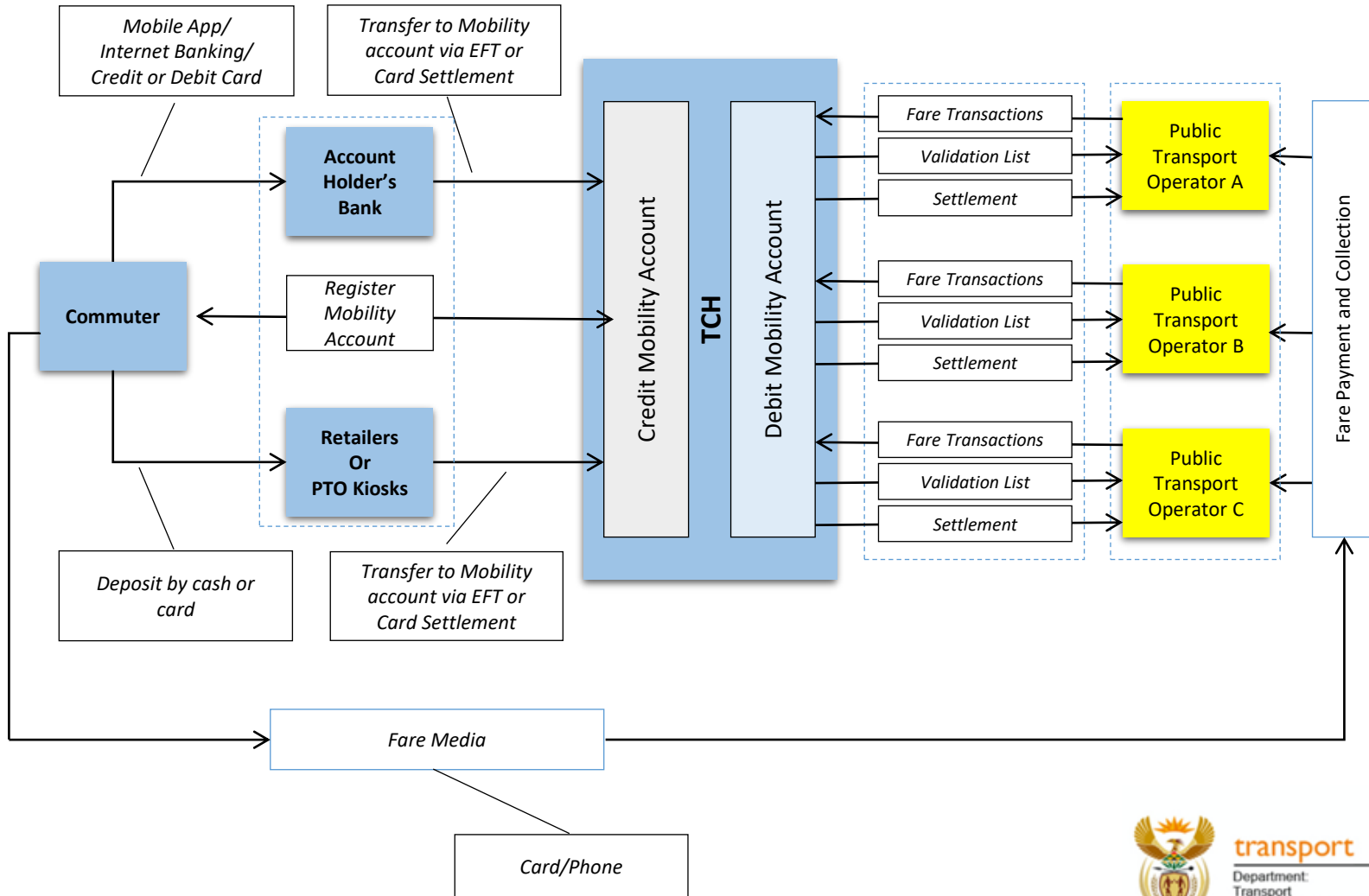
4. Payment Channels

Appointed Agents

- Accept payments and transfer to TCH for credit to Mobility Accounts
 - PTOs
 - Retailers
 - Spaza shops
 - Informal traders
 - Fare media issuers
- Settlement of transactions submitted to TCH

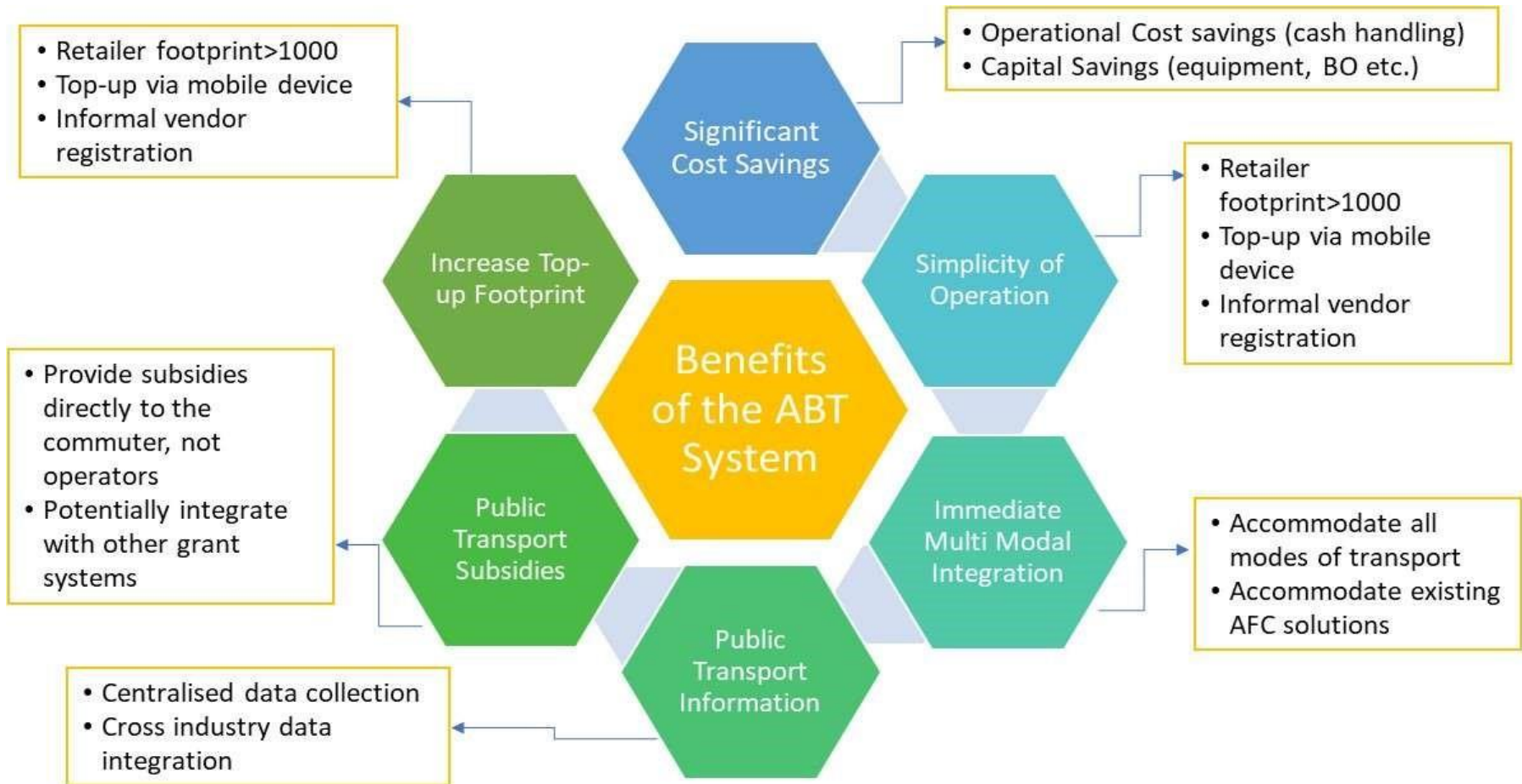
THE ABT SOLUTION IS NOT AN AFC SOLUTION

7. CONTEXT OF THE NDOT ABT SOLUTION



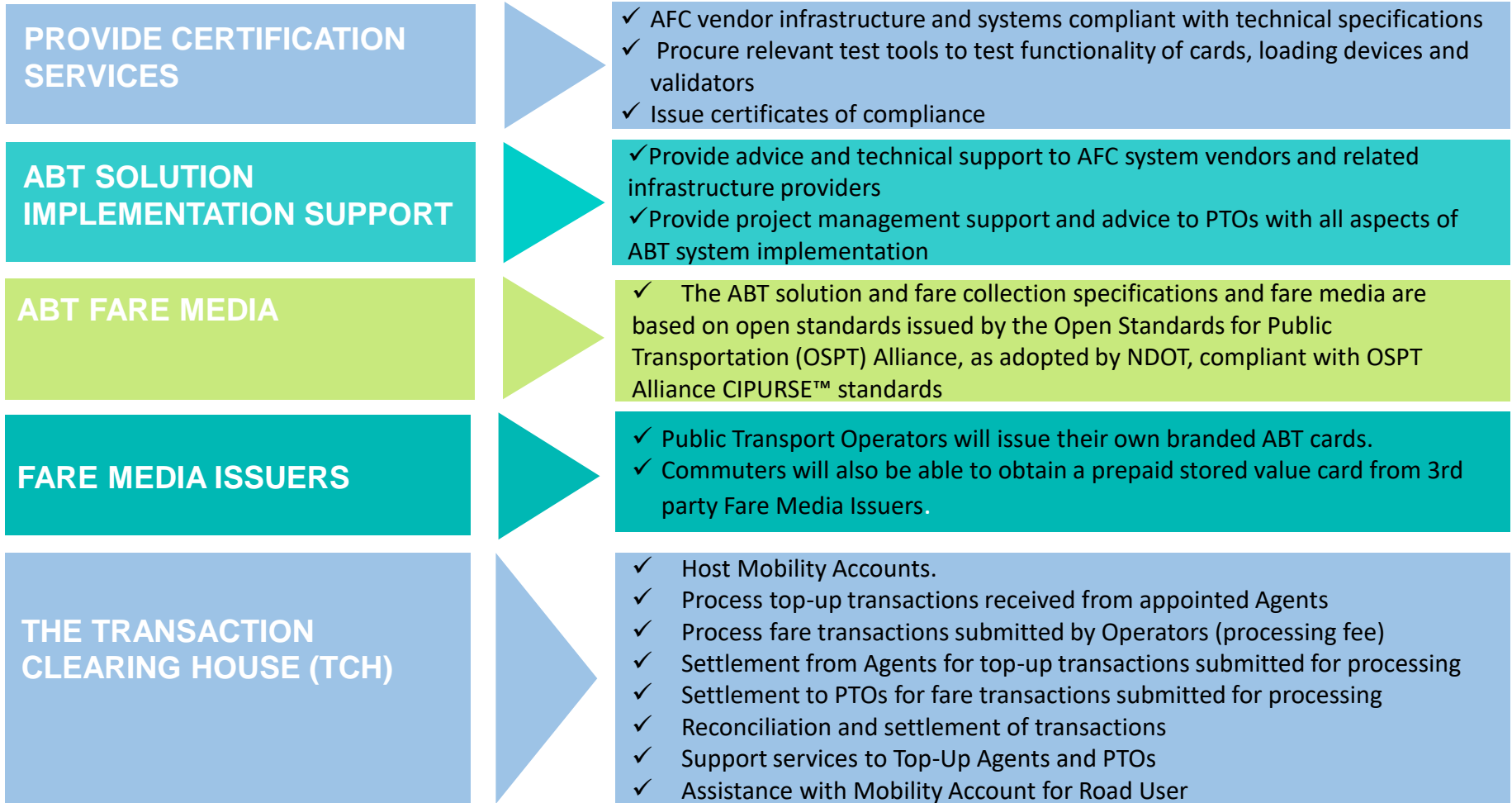


8. BENEFITS OF THE ACCOUNT BASED TICKETING SYSTEM



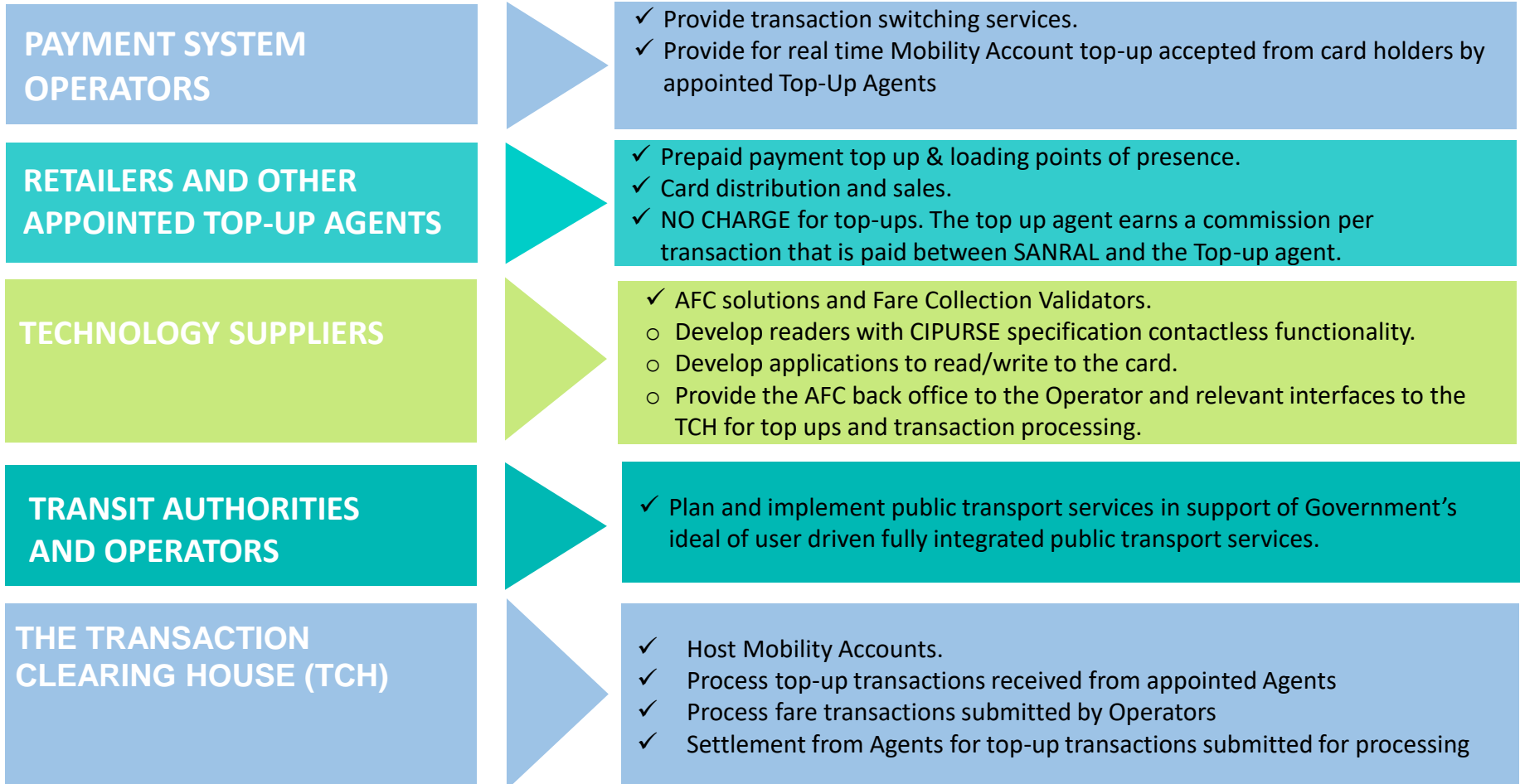


9.1 ABT ROLEPLAYER FUNCTIONS





9.2 ABT ROLEPLAYER FUNCTIONS



INTEGRATED FARE MANAGEMENT

- **Fare Media Integration**
 - Acceptance and interoperability of fare media across all services
 - Already achieved with the ABT solution and Technical Specifications
- **Fare Structure Integration**
 - Fare calculations consistently applied across all Operators
 - Innovative and flexible fare structures
- **Fare Integration**
 - Single payment for a trip that may be provided by more than one Operator
 - Revenue sharing and apportionment of fares based on actual service provided
- **Data Integration**
 - Usage data for operational and strategic planning



10. CONCLUSIONS

ADMINISTRATION

- NDOT and SANRAL will sign initially MOA's and thereafter PTO Agreements with strict service levels.
- Identify routes and PTO's for Pilots -
- Current pilots with Rustenburg and, Polokwane.
- Further engagements in various stages of planning and development with Municipalities, Provinces and Prasa.

PTO SUPPORT

- Integration of the AFC to SANRAL system will be done by SANRAL at no additional cost.
- SANRAL hosts the accounts at no cost to the PTO except a processing fee.
- Assist PTOs with framework for tender document for ABT compliant AFC system.
- Draft Project Implementation Plans

LEGAL

- AFC Regulations are in process to be amended to accept this solution.
- ABT will be mandatory and will include a period for migration from legacy systems.

WAY FORWARD

- FAQ question booklet is being finalized.
- Interaction with Bus operators can be undertaken,
- and further questions can be submitted for clarity.
- ABT Project Team is always available to assist.