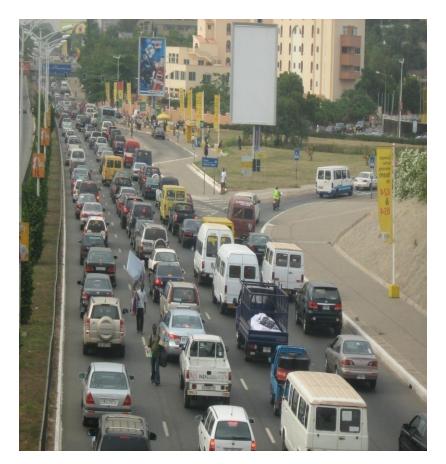
GAMA 2020 PUBLIC TRANSPORT VISION

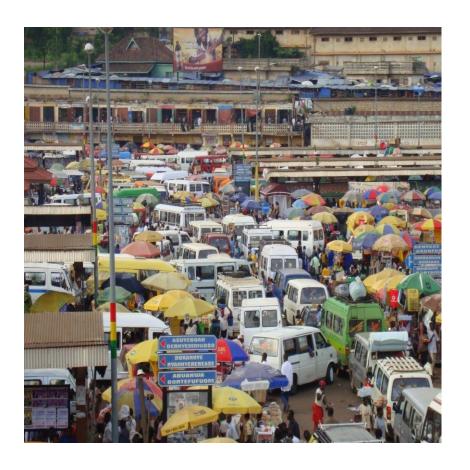
BACKGROUND INFORMATION

THE MOBILITY CHALLENGE MANIFESTED BY





CONGESTION





INADEQUATE INFRASTRUCTURE

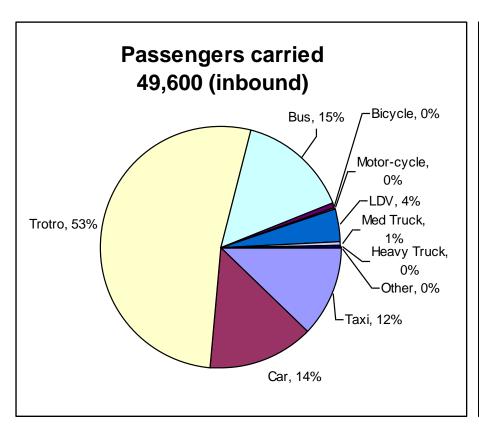


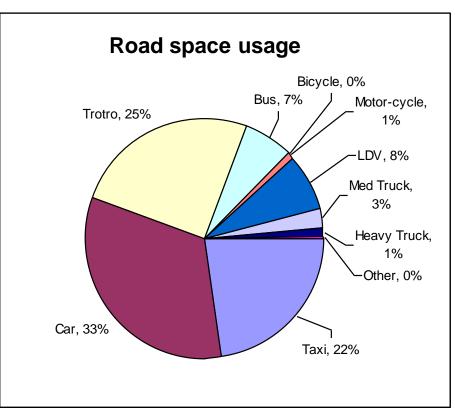
INDISCIPLINE

PRESCRIBED SOLUTION

Road Space Usage

Bus & Trotro Carry 70% of Person Trips but Utilize only 30% of Road Space

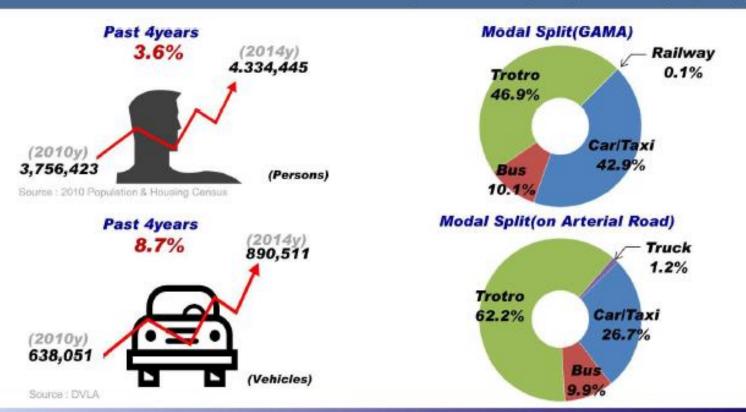




GAMA's Status (Based on 2014year)



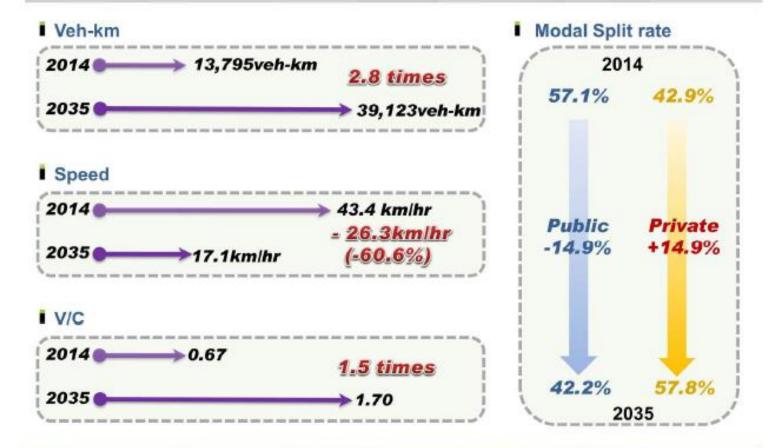
- Population: 4.33miilion · Area: 1,494km · Road: 7,592km
- Vehicles: 890,511
 Public transport: MMT(148), Trotro (11,195)

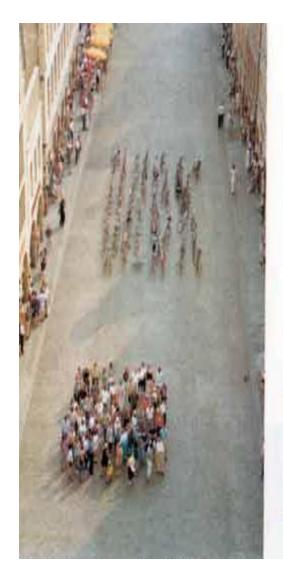


Summary of the traffic situation



Travel Demand Forecast









Government Policy

80% of all trips in the Urban Area should be done through public **Mass Transit Systems**

GOVERNMENT POLICY

ROLE OF GOVT

Government will Invest into urban transport systems by

- providing UPT infrastructure(policy objective 2)
- providing a decentralized institutional and regulatory framework (policy objective 5)
- empowering the private sector to invest into buses and transport service provision (policy objective 4)
- Integrating urban transportation within a strategic urban development framework(policy objective 3)

GOVERNMENT POLICY(CONT'D)

ROLE OF OPERATORS

Current Public Transport Operators will

- Reorganize into business entities to deliver UPT Services
- Comply with Government Regulation and Provide Higher Quality Service

FINANCIAL INSTITUTIONS

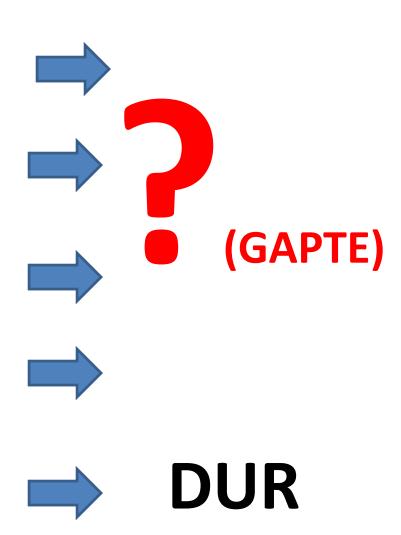
Financial Institutions will

 Provide financing for buses and service provision by operators

IMPLEMENTATION STRATEGY

- •A Regulatory Framework that provides a legal basis for the reorganization of the sector at the national level
- •Regulatory Institutions that have sufficient capability to plan, regulate, and guide the industry at the local level
- An Industry Structure that can compete and operate within the regulatory framework and attract investment
- A culture of Compliance with the regulatory framework, and commitment power to enforce
- Infrastructure and a suitable operating environment to support improved UPT services in Accra

IMPLEMENTING ENTITY



Major Network in Accra



- BUS PRIORITY MEASURES
- HIGH OCCUPANCY VEHICLES

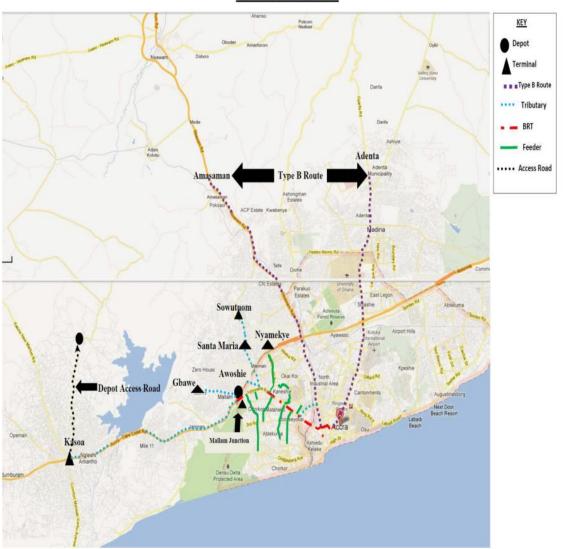
INFRASTRUCTURE

- DEDICATED
 TERMINALS
- DEDICATED BUS STOPS
- DEDICATED DEPOTS

THE GAMA NETWORK

CORRIDORS IDENTIFIED FOR DEVELOPMENT

BRT GENERAL LAYOUT



1. KASOA-CBD

5km segregated corridor 10 terminals 2 depots 16 stations 12 routes

Costs: approx.USD 107mio

2. ADENTA-TEMA STATION

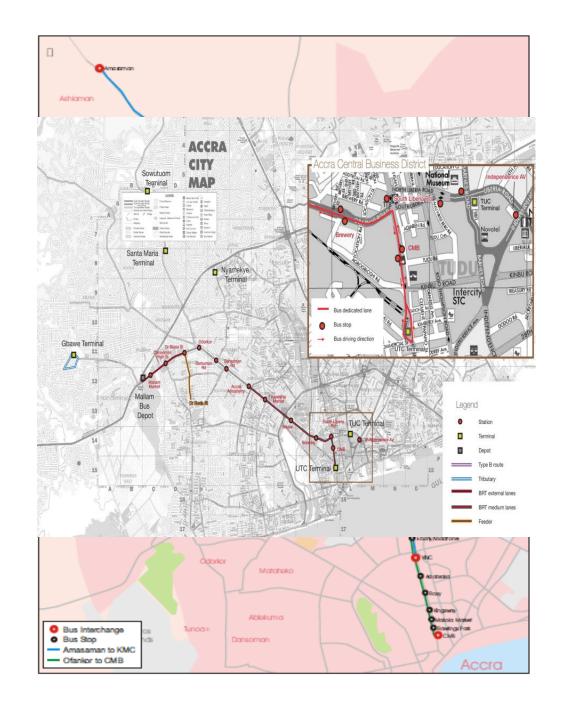
22km route 22 stops 3 terminals 1 depot 2 routes

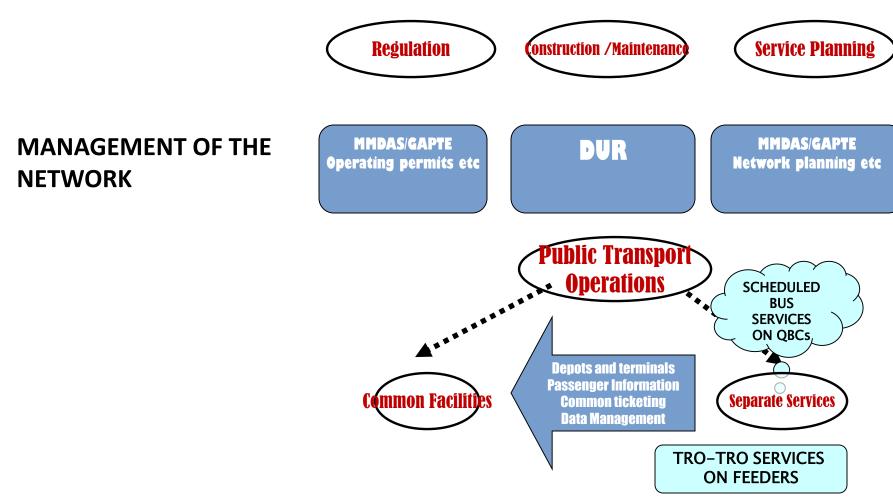
Costs: approx USD 25mio

3. AMASAMAN-CMB

20.3km route
42 stops
4 terminals
1 depot
3 routes

Costs: approx USD 14.3mio





SERVICES

Different roles for big buses, tro-tros and taxis in the network



HIGH QUALITY TRO-TROs /TAXIS ON FEEDERS/COLLECTORS

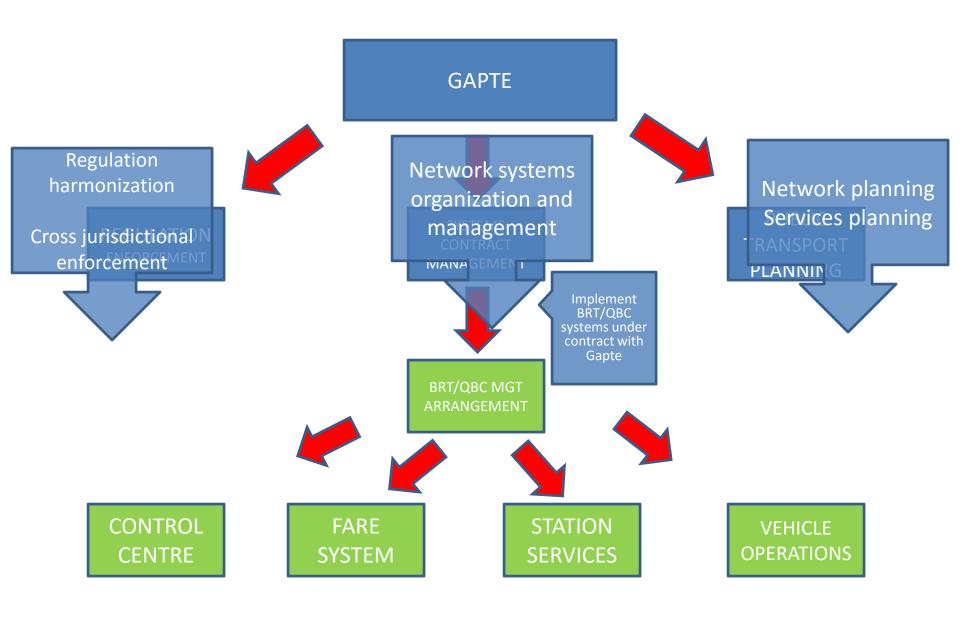


OPERATORS

CURRENT OPERATORS
TRANSFORMED INTO
OPERATING COMPANIES
DELIVERING SERVICES ON
THE QBCs.



GREATER ACCRA PASSENGER TRANSPORT EXECUTIVE (GAPTE)



GAPTE (created April 2014)

- G Greater
- A Accra
- P Passenger
- **T** Transport
- **E** Executive
- Inter-MMDA Co-ordinating Body for Public Transport in GAMA (Greater Accra Metropolitan Area)
- Harmonise all regulation of UPT services and enforcement,
- citywide network planning,
- manage integrated citywide operational projects (eg. BRT) and customer services (eg. ticketing, passenger information and conduct the UPT infrastructure planning in association with other mandated MDAs

ASSERTING THE INFLUENCE OF THE REGULATOR

- Bye-laws passed and operational in 2010 in conformance with Local Govt Act L.I. 1961
- Permit type A issued for normal Tro-tro/Taxi operator Entities and renewable yearly
- Permit issued only to operator entities not individuals
- ❖ Register of operators created with the permitting system
- Only permitted operators in register to benefit from the opportunities created by the reforms

Statistics on conformance and mitigation

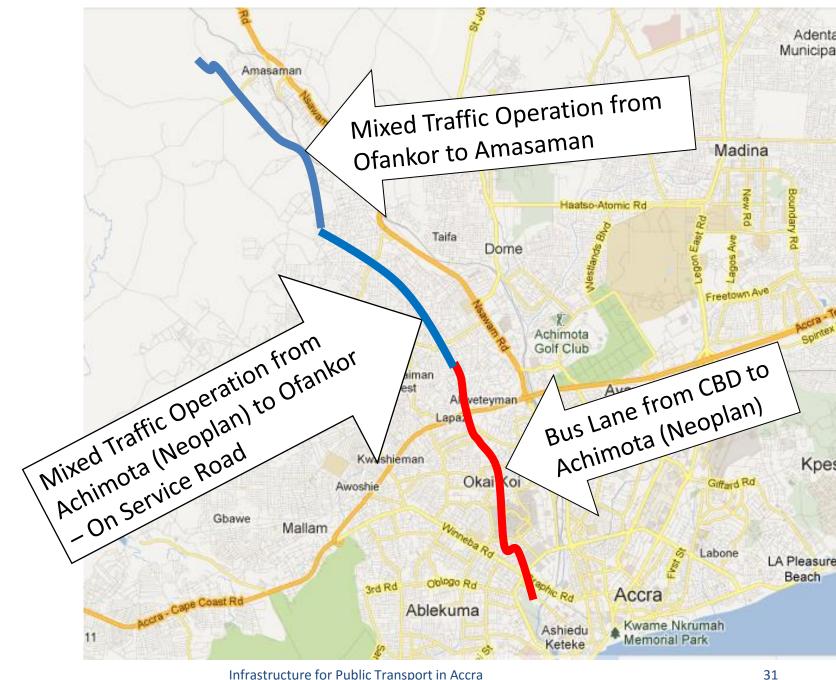
- ❖565 Tro-tro and Taxi entities from various Unions registered in GAMA MMDAs
- Comprising 20,935 drivers
- ❖39,816 registered vehicles
- 23 Affected Operators on Amasaman-Tudu (CMB) Corridor
- ❖57 imparted routes
- 75 imparted route operations

OBTAINING THE SUPPORT OF THE TRO-TRO UNIONS

- Design of the reform strategy includes the incorporation of current informal operators in service provision.
- All modes of carriage i.e. HOVs, Tro-Tros and taxis have role to play in service provision in the network
- OSC created in 2010 as forum for regular interaction with GPRTU, PROTOA, Cooperative and others in the informal sector
- ❖ MOU with OSC providing framework for reforms execution negotiated on 30th August 2013
- Three Operator Companies created in December 2013 from affected Operators in the corridor
- ❖ Route Service Contracts for services on the corridor negotiated with the three formal Operator Companies in June 2014
- Operator companies have been assisted with the procurement of conforming buses for the System
- Operator companies commenced bus services in December 2016

DESCRIPTION OF BUS PRIORITY AND INFRASTRUCTURE ON PILOT CORRIDOR

Pilot Type B Operational concept



Junction enhancement – 'queue jump'-







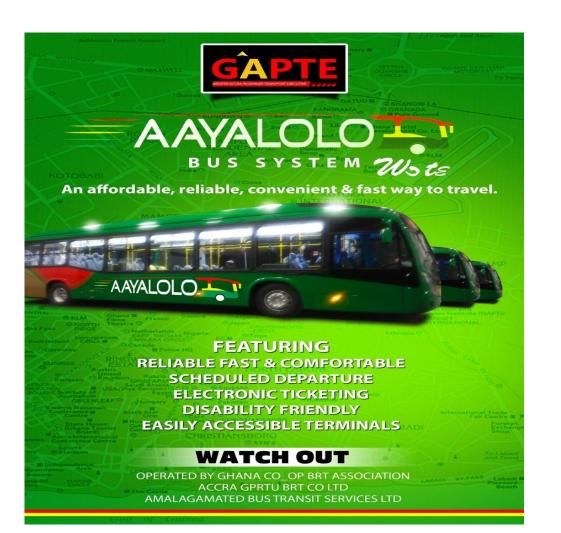
An affordable, reliable, convenient & fast way to travel.



FEATURING
RELIABLE FAST & COMFORTABLE
SCHEDULED DEPARTURE
ELECTRONIC TICKETING
DISABILITY FRIENDLY
EASILY ACCESSIBLE TERMINALS

WATCH OUT

OPERATED BY GHANA CO_OP BRT ASSOCIATION
ACCRA GPRTU BRT CO LTD
AMALAGAMATED BUS TRANSIT SERVICES LTD

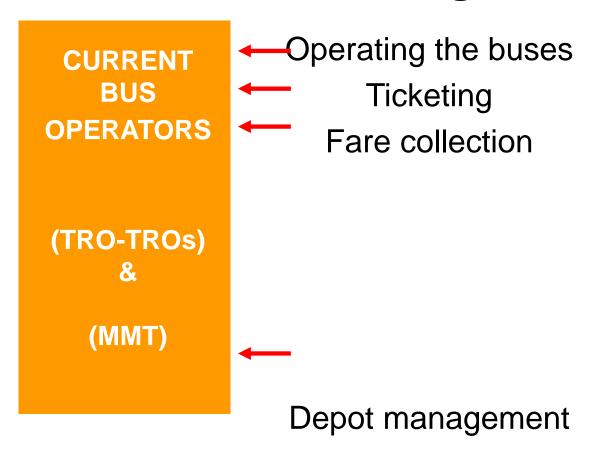


SERVICE PLAN FOR THE AMASAMAN-TUDU CORRIDOR

- Estimated Demand 2,400 passengers per hour
- Round trip time 110 mins (+10 min layover)
- Service Frequency 35 buses per hour
- Peak Vehicle Requirement 76 buses
- Fleet Requirement 85 buses

BUSINESS & CONTRACT STRUCTURE

Existing Model



GAPTE o/b MMDAs

BUSINESS & CONTRACT STRUCTURE

PILOT TYPE B Model

Operating the buses **Ticketing** Fare collection **GAPTE System Information** Pilot Type B o/b MMDAs Bus Marketing the service **COMPANIES** Bus stop maintenance Station management/Enforcement Depot management Depot owner **Contract Monitoring**

PILOT TYPE B: BUSINESS MODEL & INDUSTRY TRANSITION

BUSINESS & CONTRACT STRUCTURE

SERVICE DELIVERY AGREEMENT WITH

GAPTE

GAPTE

Control Centre Management

Fare collection monitoring

System Information

Contract Monitoring

Enforcement

Out-sourced

Fare System Contractor

Ticketing system & equipment

Fare collection

Ticket sales

Outsourced

Station Services Contractor

Access control

System Information

Station management

Cleaning

Security

NEGOTIATE

Vehicle Operator Contractor

Operating the buses

Depot management



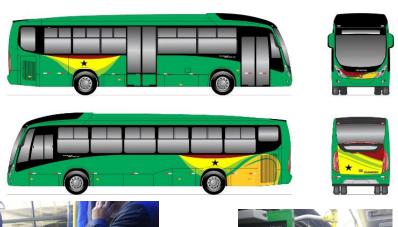


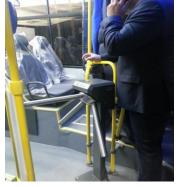


QUALITY BUSES

- HIGH CAPACITY
- DISABLE FRIENDLY
- ■ELECTRONIC TICKETING SYSTEM
- •AUTOMATIC VEHICLE LOCATION
- ■PASSENGER
 INFORMATION SYSTEM
- ■ON-BOARD VIDEO CAMERAS









GENERAL - CORRIDOR BUS TIMES

WEEKDAYS

_	First Bus from	Amasaman	Terminal	5 am
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- Last Bus from Amasaman Terminal8 pm
- First Bus from Tudu Terminal5:50 am
- Last Bus from Tudu Terminal8:50 pm

Frequency at Peak – Every 15 minutes Peak = 6am to 10am / 3pm to 7pm

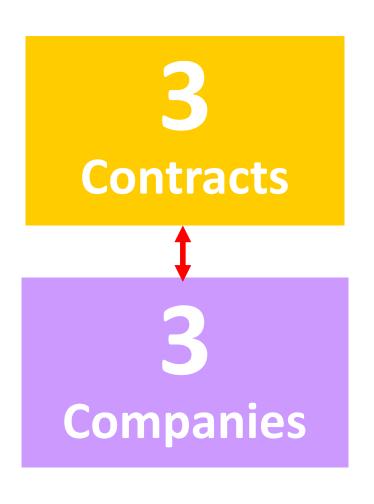
Frequency at Off Peak – Every 15 minutes

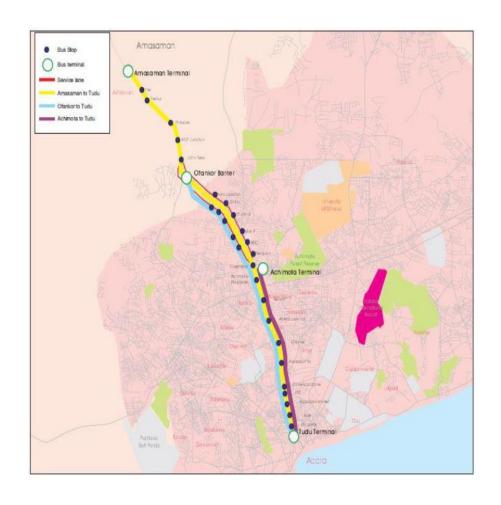
Off Peak = 5am to 6am / 10am to 3pm / 7pm to 10pm

WEEKENDS

Frequency at Weekends – Every 20 minutes

Amasaman Corridor Vehicle Operator Contracts





PILOT TYPE B: BUSINESS MODEL

DISTRIBUTION OF CONTRACTS



PRO TOA

CO-OP GRTC C

TRANSFORM

3

Pilot type B VEHICLE OPERATOR COMPANIES

85 buses

CHALLENGE

TRANSFORM

- Only 25% of business on corridor affected
- existing 77 affected operator entities transformed into 3 RSCs

SERVICE PROVISION

3 Operator companies created out of current tro-tro operator unions for services on the 3 designed routes

Amasaman to Tudu (Ghana Co-Operative Bus Rapid Transit Services LTD)

Semi-fast scheduled service taking Expressway

Serving end-to-end movements and the important interchanges at Achimota and Circle

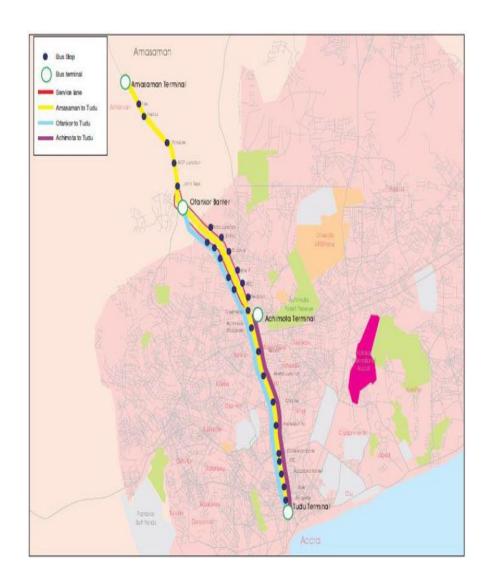
Ofankor to Tudu (Accra GPRTU Rapid Bus Services LTD)

Stopping scheduled service taking service lane

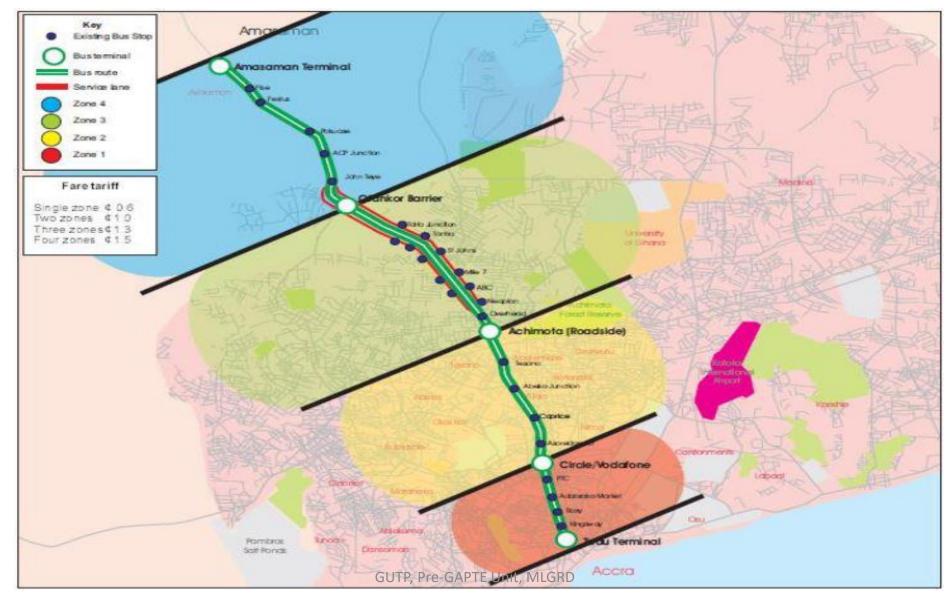
Serving intermediate demand between Ofankor and Achimota

Achimota to Tudu (Amalgamated Bus Rapid Transit Services LTD)

Serving as efficient 'shuttle' scheduled for the demand interchanging and originating from Achimota towards Central Accra



ZONAL FARE STRUCTURE

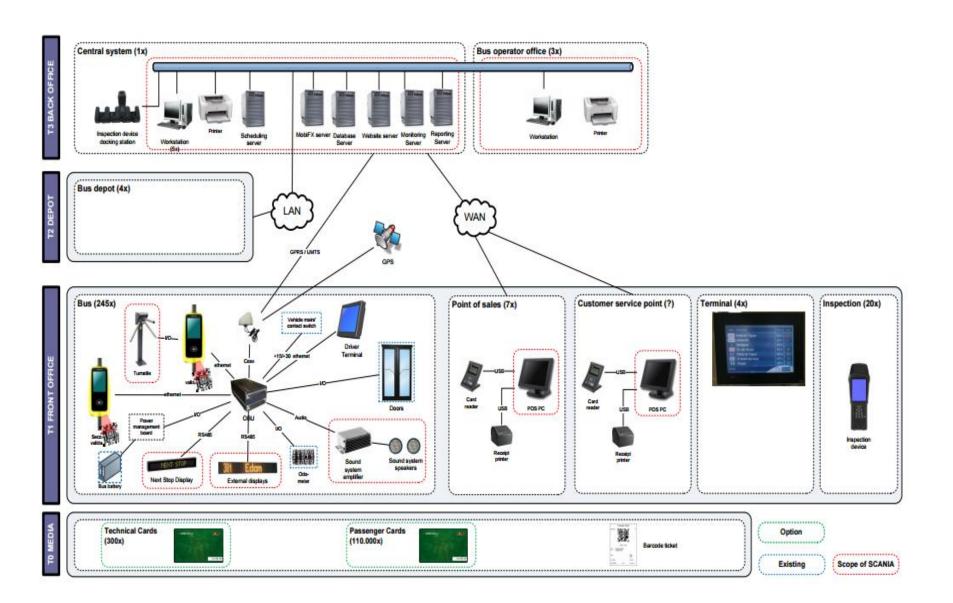


- The following fares are currently applicable in the system.
- Travel Within One zone GHS 1.15
- Travel Across Two Zones GHS 1.80
- Travel Across Three Zones GHS 2.00
- Travel Across Four Zones GHS 2.20

•

ITMS EMPLOYED

- Automatic Fare Collection System (AFC)
- · (Electronic Ticketing)
- Vehicle Fleet Management System (FMS)
 - Vehicle Follow up
 - Fuel Chart
 - Historical information
 - Vehicle scheduling
 - Location message triggers
 - Bus Monitoring
 - Vehicle schedule reporting
- User Information System (PIS)
 - Vehicle Displays
 - Voice Announcement





On-board validator

- High performance device suitable for installation in vehicles.
- Special cradle that is intended for mounting the validator in vehicles and facilitate pre-installation
- Simplified maintenance simple 'swap-out'
- Contactless read/write unit ISO14443 Type A/B
- EMV compliant
- Multiple external hardware interfaces in order to interface to other, external devices or systems.





AFC

On-board integration with the bus tripod gate



- At door entry
- Interface between the validator and the bus tripod gate
- Entrance controlled by the validator





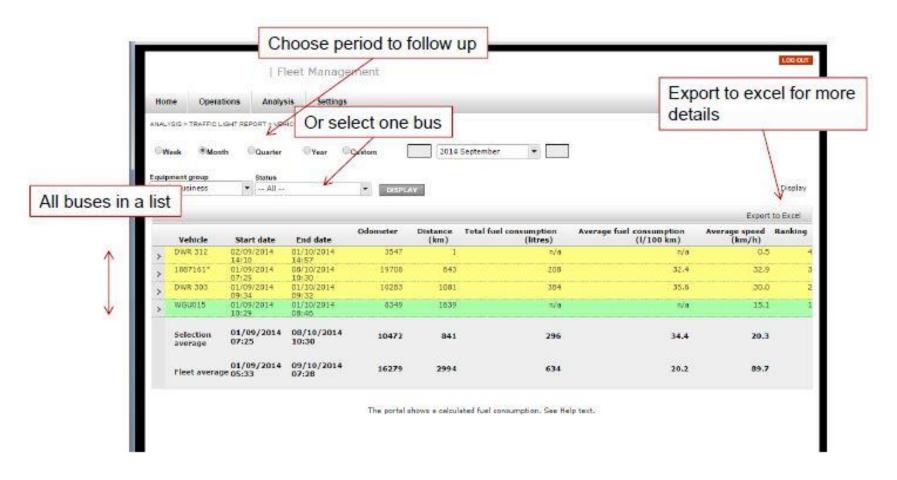
Validation in a zonal system







Vehicle follow up







Vehicle scheduling

The vehicle scheduling solution allows the creation and

Weblele acheclaling Thrate

definition of:

Periods

Stops

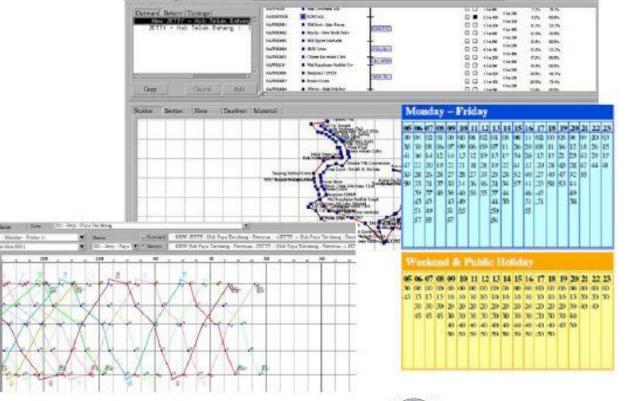
Distances

Routes and lines

Itineraries

Travel times

Timesheets







Vehicle Displays

- The on-board system steers
 - Next stop display
 - Outside front display
- The display content is automatically generated by the onboard system





GENERAL - CORRIDOR BUS TIMES

WEEKDAYS

First Bus from Amasaman Terminal5 am

Last Bus from Amasaman Terminal9 pm

First Bus from Tudu Terminal5:50 am

Last Bus from Tudu Terminal9:50 pm

Frequency at Peak – Every 15minutes

Peak = 6am to 10am / 3pm to 7pm

Frequency at Off Peak – Every 15 minutes

Off Peak = 5am to 6am / 10am to 3pm / 7pm to 10pm

WEEKENDS

Frequency at Weekends – Every 20 minutes

GUTP, Pre-GAPTE Unit, MLGRD

ROUTE STATISTICS

Estimated Route Demand

- Average Daily Passenger Demand 50,000 passenger trips per day
- Annual System Patronage 16,650,000 passenger
 trips per year

MEDIA COMMENTARY ABOUT SYSTEM

CONTROL CENTRE, BUS STOPS, TERMINALS AND DEPOT



