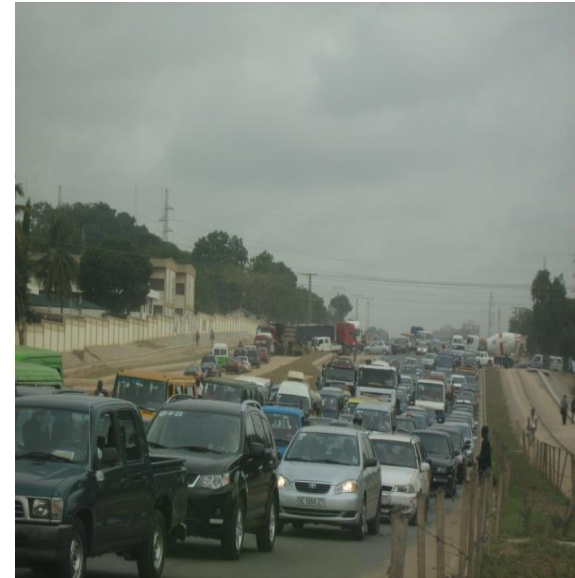


GAMA 2020 PUBLIC TRANSPORT VISION

BACKGROUND INFORMATION

THE MOBILITY CHALLENGE

MANIFESTED BY



CONGESTION



INADEQUATE INFRASTRUCTURE



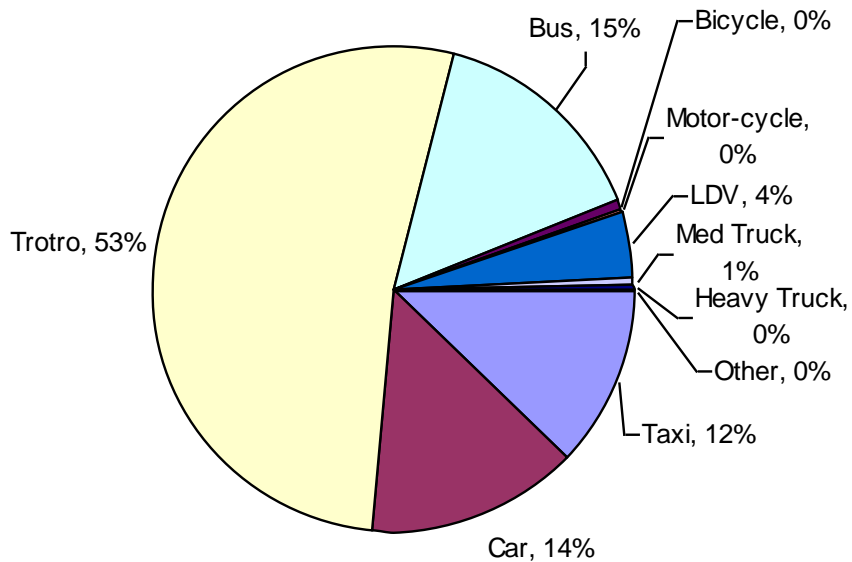
INDISCIPLINE

PRESCRIBED SOLUTION

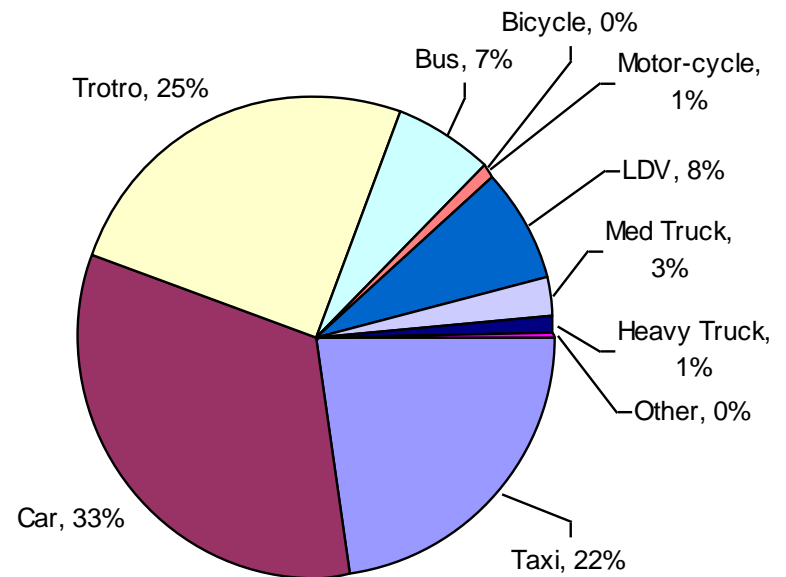
Road Space Usage

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

**Passengers carried
49,600 (inbound)**



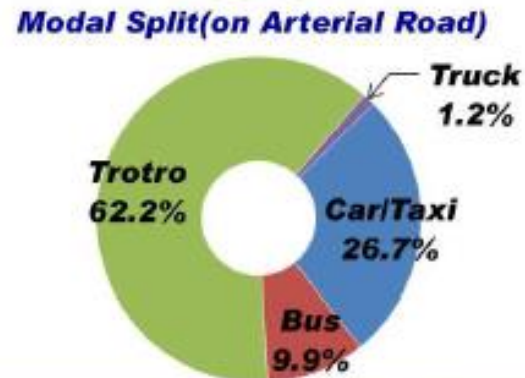
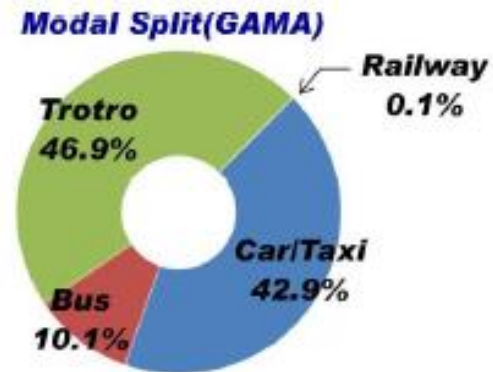
Road space usage



GAMA's Status (Based on 2014year)



- Population : 4.33million
- Area : 1,494km²
- Road : 7,592km
- Vehicles : 890,511
- Public transport : MMT(148), Trotro (11,195)



Summary of the traffic situation



Travel Demand Forecast

Veh-km



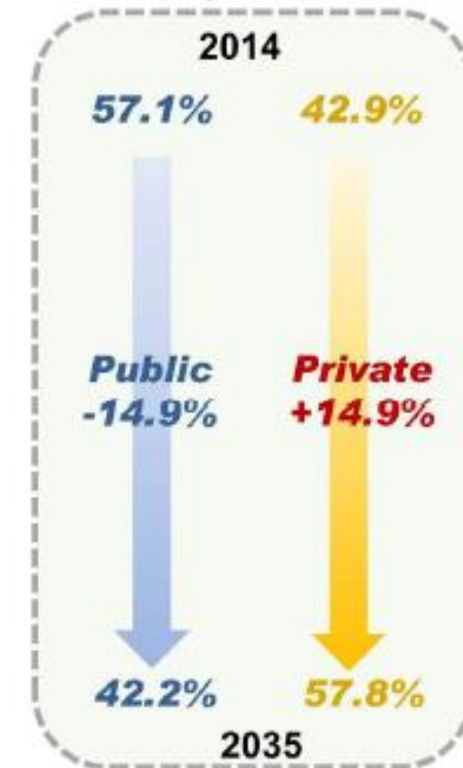
Speed



V/C



Modal Split rate





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

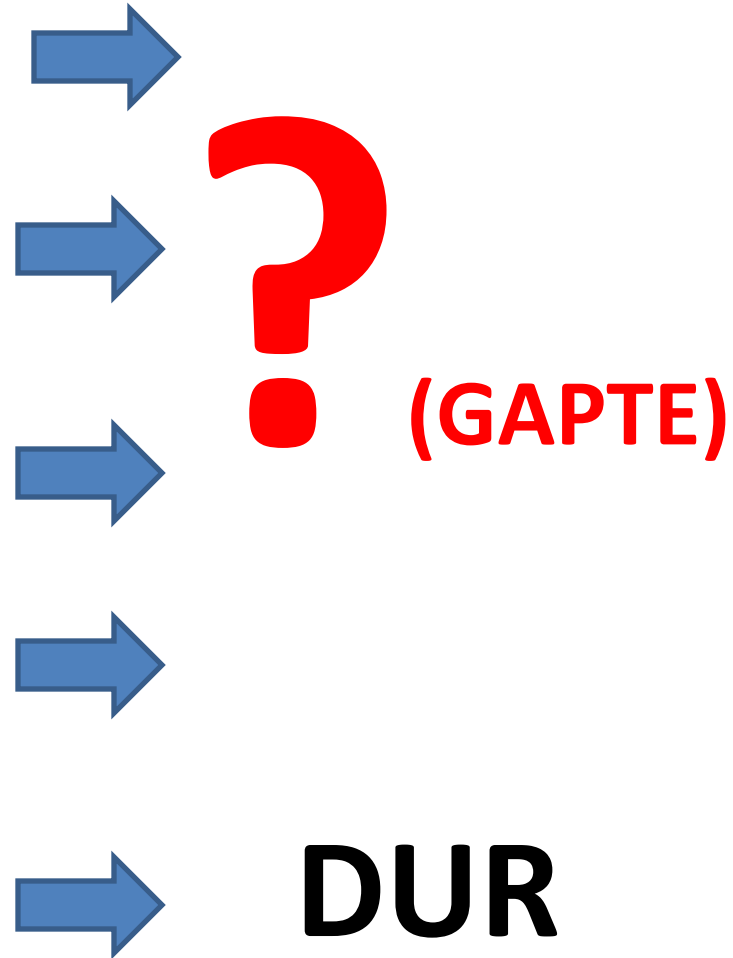
Financial
Institutions will

- Provide financing for buses and service provision by operators

IMPLEMENTATION STRATEGY

- A Regulatory Framework that provides a legal basis for the re-organization 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



**VISION OF
PUBLIC
TRANSPORT IN
GAMA BY 2020**

INFRASTRUCTURE

- **BUS PRIORITY
MEASURES**
- **HIGH OCCUPANCY
VEHICLES**
- **DEDICATED
TERMINALS**
- **DEDICATED BUS
STOPS**
- **DEDICATED DEPOTS**

Major Network in Accra



VISION OF PUBLIC TRANSPORT IN GAMA BY 2020

1. KASOA-CBD

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

Costs: approx.USD 107mio

2. ADENTA-TEMA STATION

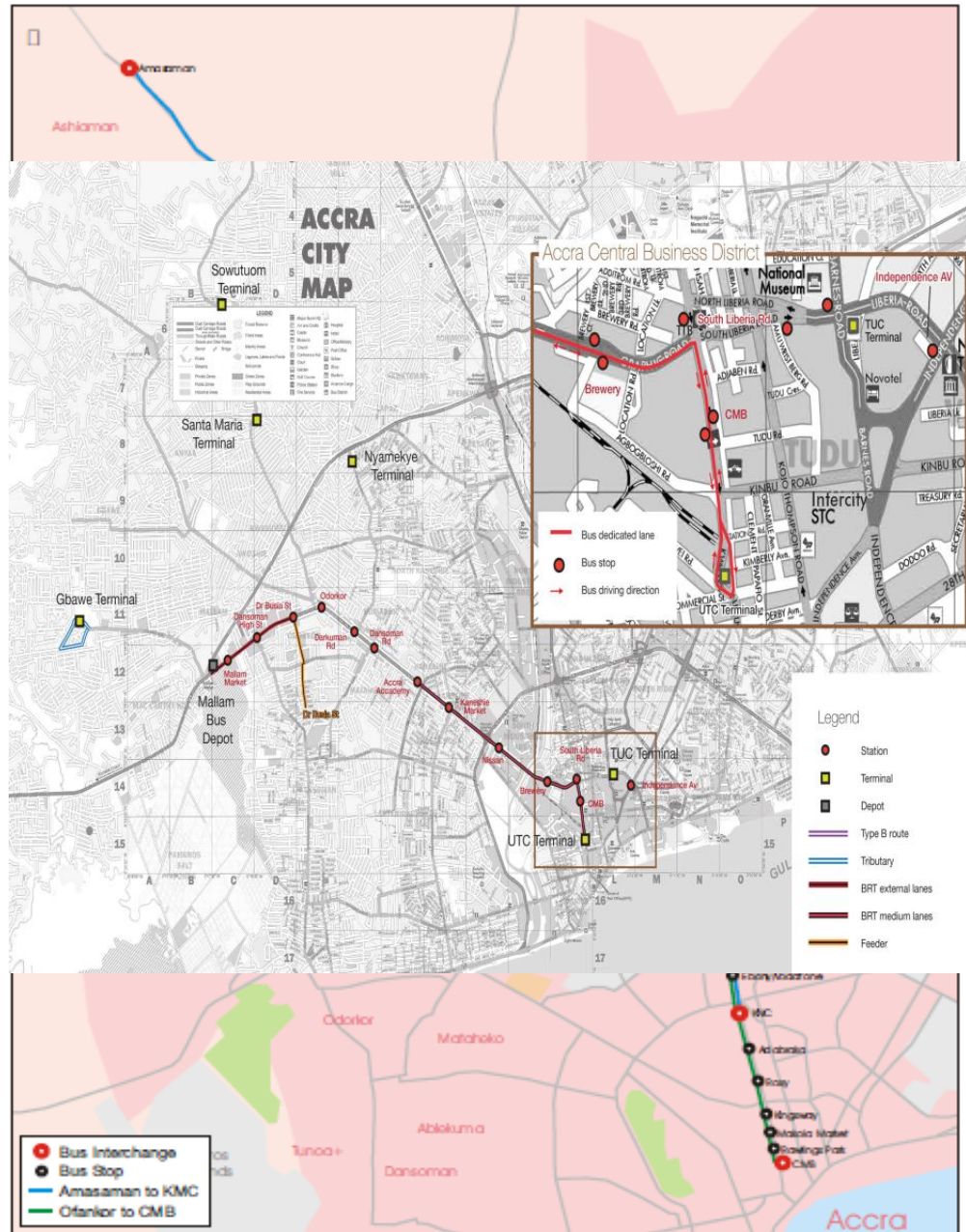
22km route
 22 stops
 3 terminals
 1 depot
 2 routes

Costs: approx USD 25mio

3. AMASAMAN- CMB

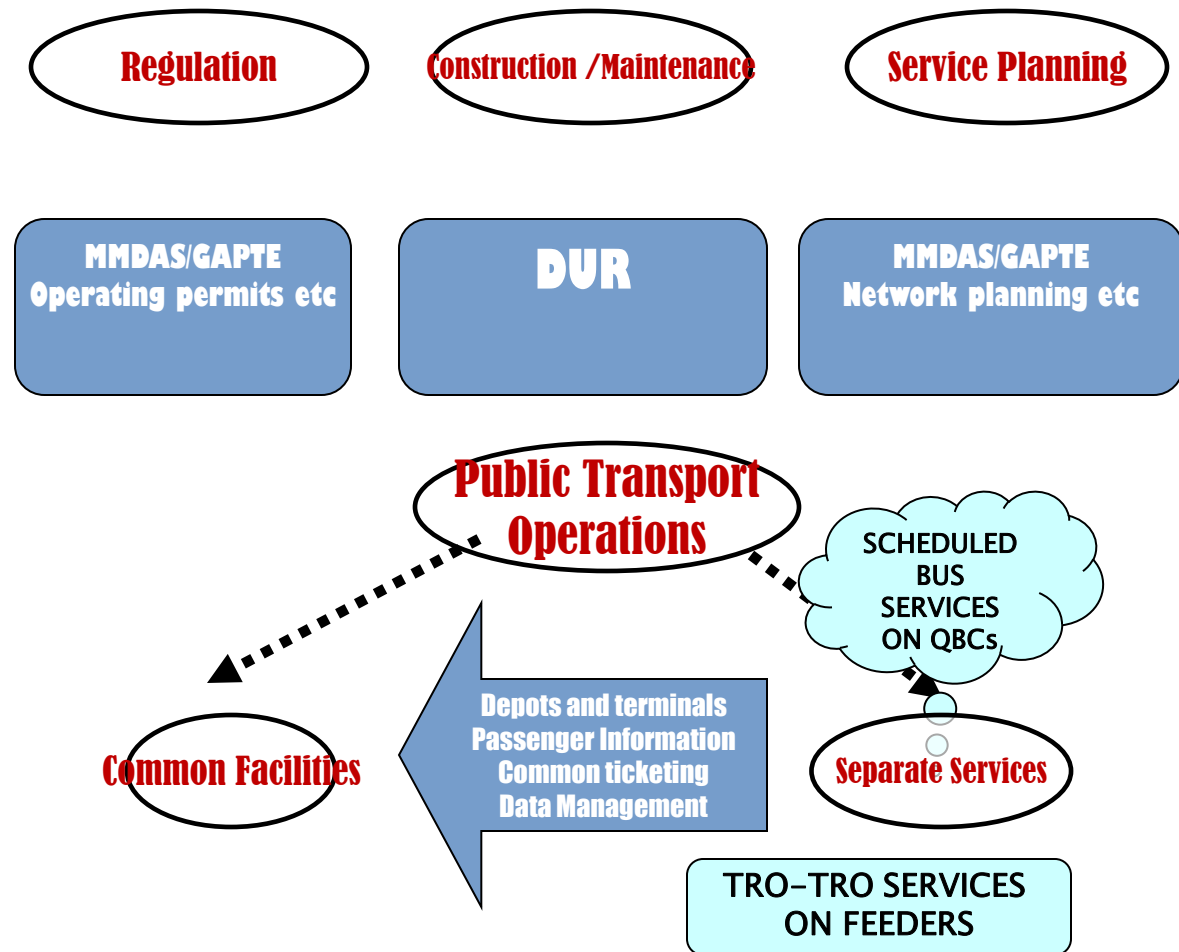
20.3km route
 42 stops
 4 terminals
 1 depot
 3 routes

Costs: approx USD 14.3mio



VISION OF PUBLIC TRANSPORT IN GAMA BY 2020

MANAGEMENT OF THE NETWORK



VISION OF PUBLIC TRANSPORT IN GAMA BY 2020

SERVICES

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

SCHEDULED SERVICES USING BIG BUSES ON CORRIDORS



HIGH QUALITY TRO-TROs / TAXIS ON FEEDERS/COLLECTORS



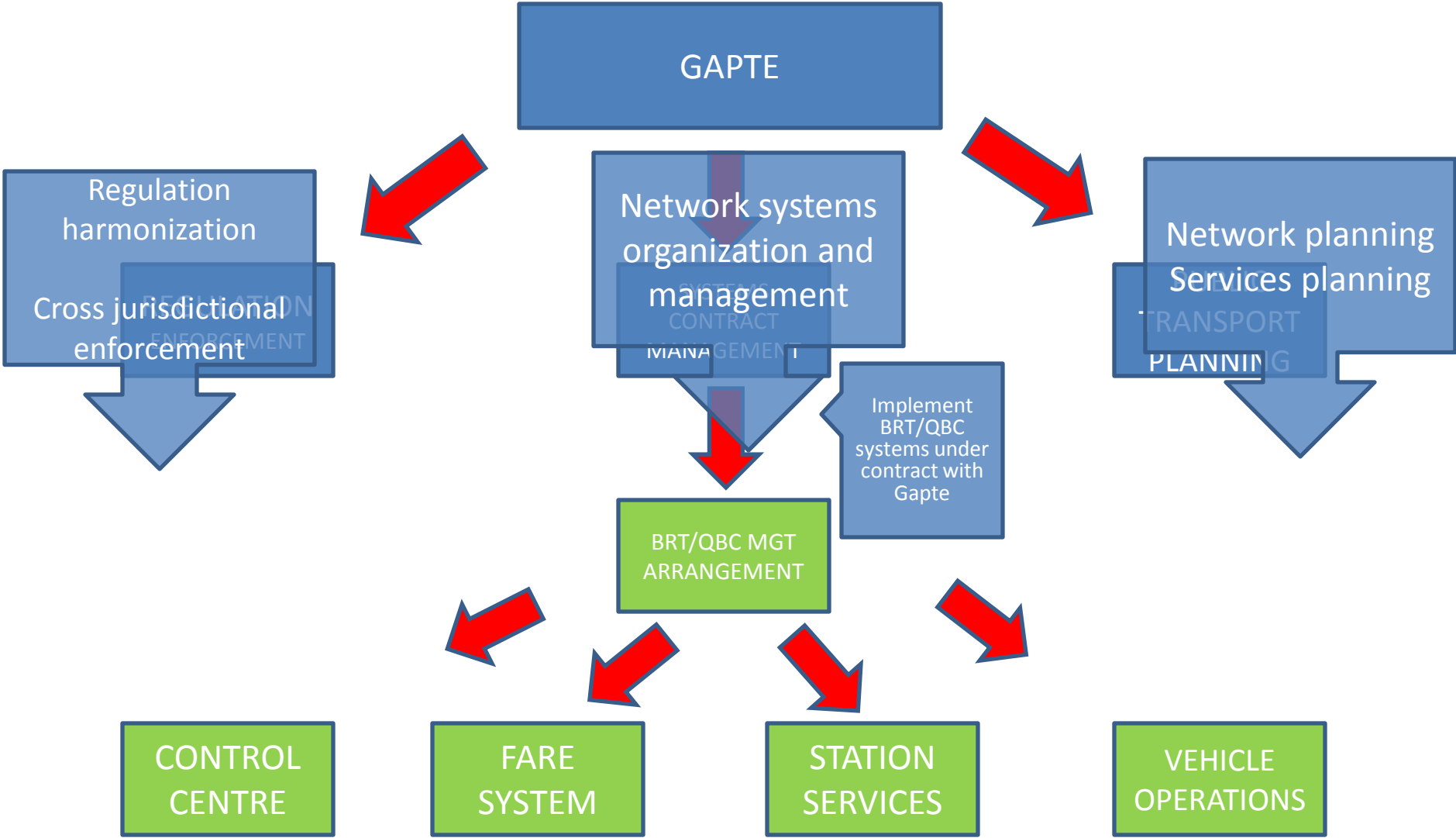
VISION OF PUBLIC TRANSPORT IN GAMA BY 2020

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 impacted routes
- ❖ 75 impacted 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

Status of Implementation of Pilot Type B Bus System

Pilot Type B Operational concept



Junction enhancement – ‘queue jump’-



New Town Rd Jnct.



AAYALOLO

BUS SYSTEM *Wɔtɛ...*

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



AAYALOLO

BUS SYSTEM *Waste*

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



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

WATCH OUT

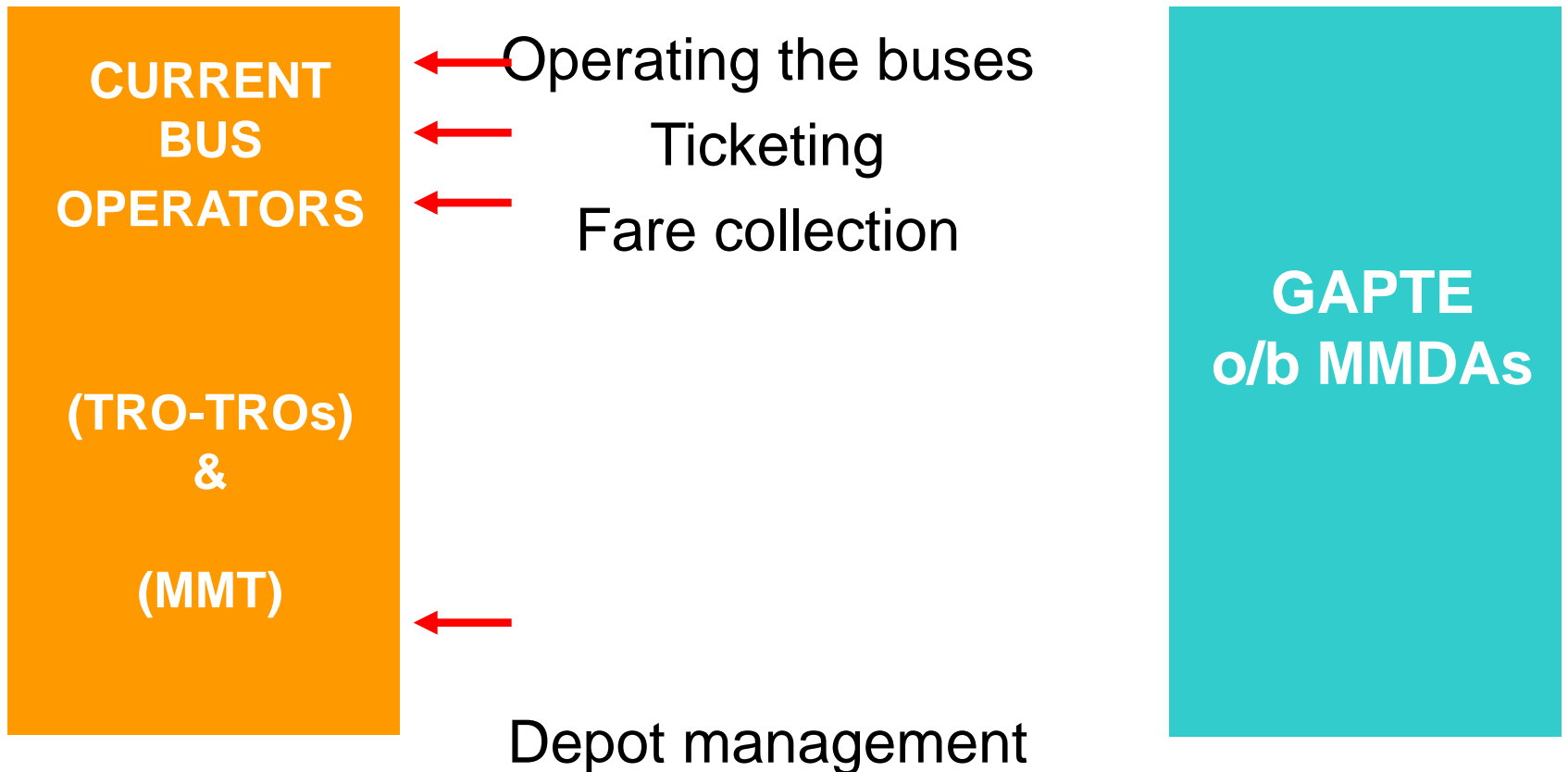
OPERATED BY GHANA CO-OP BRT ASSOCIATION
ACCRA GPTU BRT CO LTD
AMALGAMATED BUS TRANSIT SERVICES LTD

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

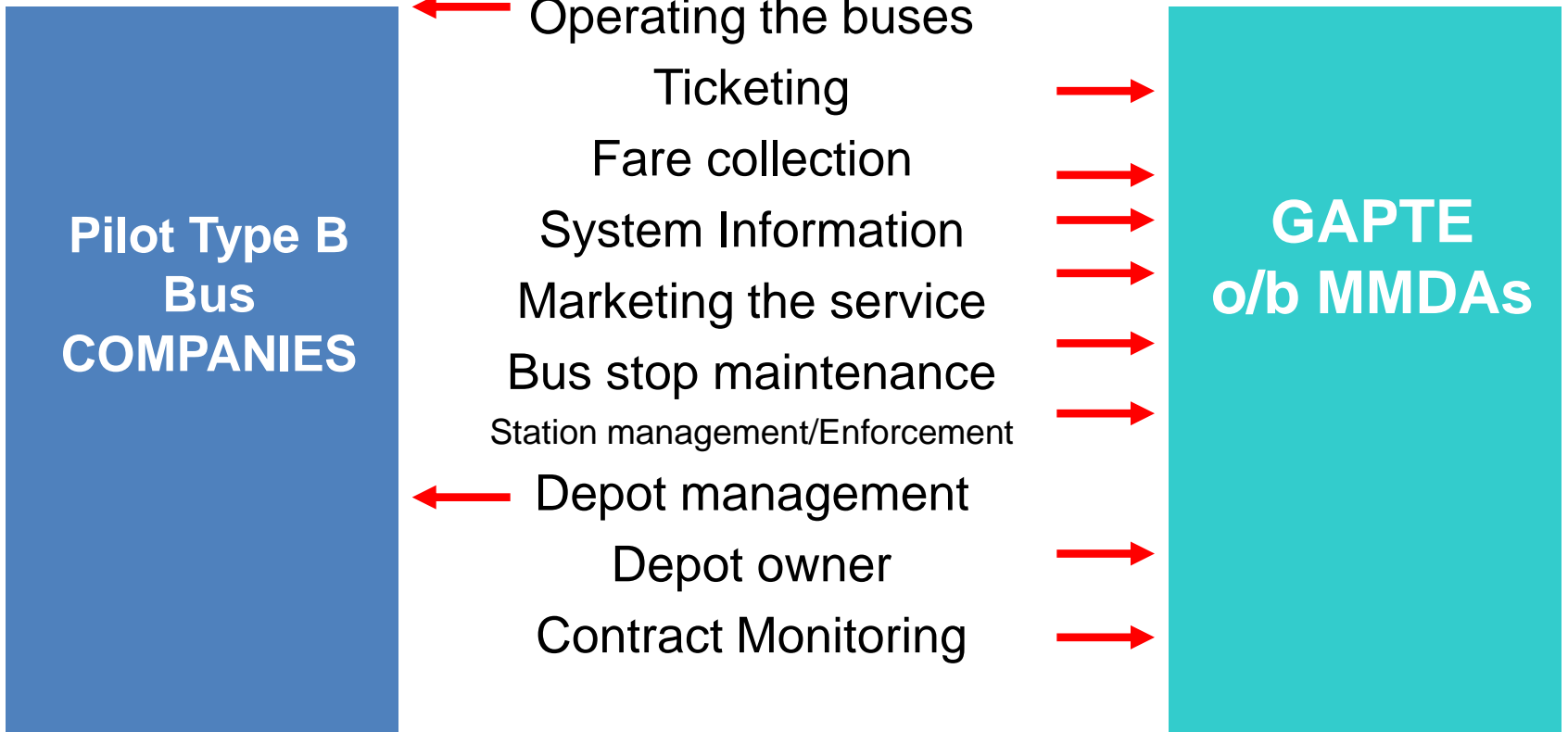
BUSINESS & CONTRACT STRUCTURE

Existing Model



BUSINESS & CONTRACT STRUCTURE

PILOT TYPE B Model



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

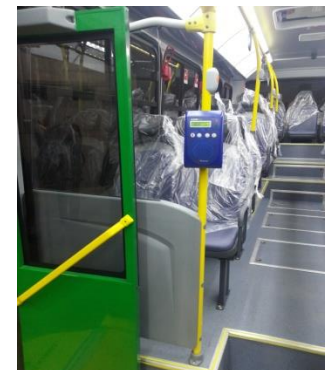
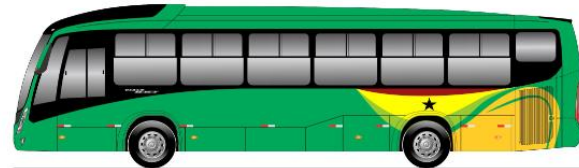
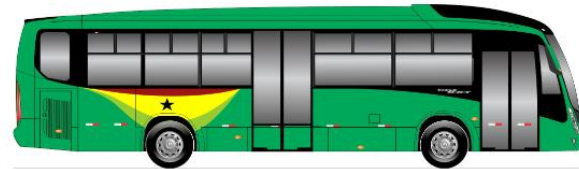
Vehicle Operator Contractor

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
- Last Bus from Amasaman Terminal 8 pm
- First Bus from Tudu Terminal 5:50 am
- Last Bus from Tudu Terminal 8:50 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

PILOT TYPE B : BUSINESS MODEL & INDUSTRY TRANSITION

Amasaman Corridor Vehicle Operator Contracts

3
Contracts



3
Companies



PILOT TYPE B : BUSINESS MODEL
& INDUSTRY TRANSITION

DISTRIBUTION OF CONTRACTS

**GPR
TU**

**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)

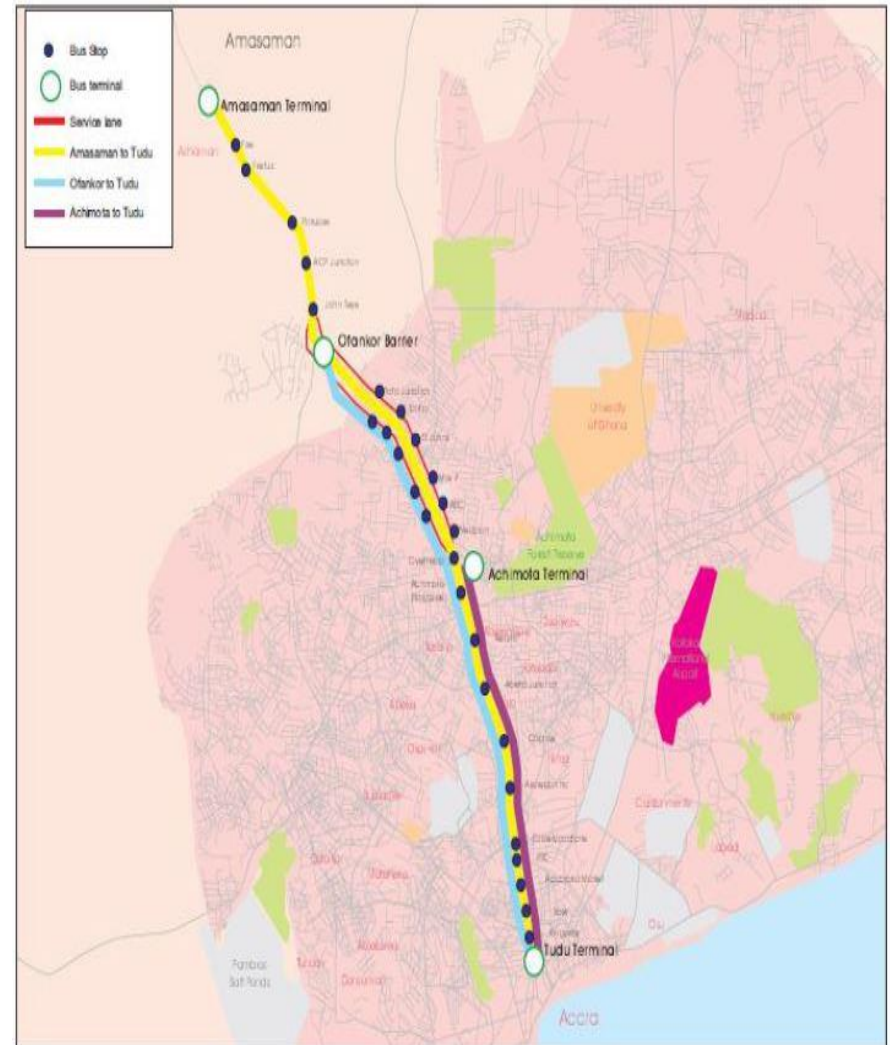
Semi-fast scheduled service taking Expressway
Serving end-to-end movements and the important interchanges at Achimota and Circle

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

Choose period to follow up

Or select one bus

Export to excel for more details

All buses in a list

LOG OUT

Fleet Management

Home Operations Analysis Settings

ANALYSIS > TRAFFIC LIGHT REPORT > VEHICLE

Week Month Quarter Year Custom

2014 September

Equipment group: business Status: -- All --

DISPLAY

Vehicle	Start date	End date	Odometer	Distance (km)	Total fuel consumption (litres)	Average fuel consumption (l/100 km)	Average speed (km/h)	Ranking
> DWR 312	02/09/2014 14:10	01/10/2014 14:57	3547	1	n/a	n/a	0.5	4
> 1687161*	01/09/2014 07:25	08/10/2014 10:30	19708	643	206	32.4	32.9	3
> DWR 303	01/09/2014 09:34	01/10/2014 09:32	10263	1001	304	35.6	30.0	2
> WGU015	01/09/2014 10:29	01/10/2014 08:46	6349	1639	n/a	n/a	15.1	1
Selection average	01/09/2014 07:25	08/10/2014 10:30	10472	841	296	34.4	29.3	
Fleet average	01/09/2014 05:33	09/10/2014 07:38	16279	2994	634	20.2	89.7	

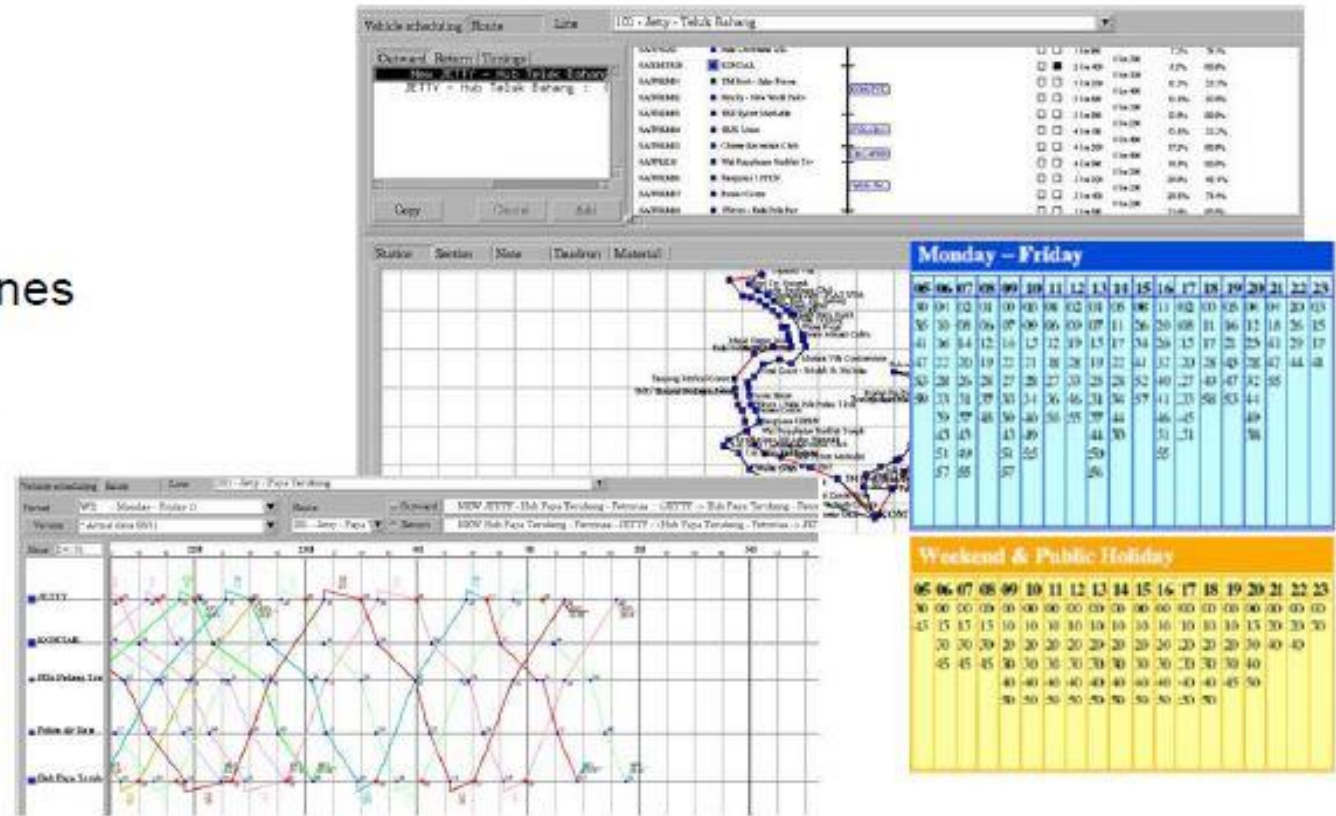
Export to Excel

The portal shows a calculated fuel consumption. See Help text.

Vehicle scheduling

- The vehicle scheduling solution allows the creation and 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 on-board system



GENERAL - CORRIDOR BUS TIMES

- **WEEKDAYS**

- **First Bus** from Amasaman Terminal 5 am
- **Last Bus** from Amasaman Terminal 9 pm
- **First Bus** from Tudu Terminal 5:50 am
- **Last Bus** from Tudu Terminal 9:50 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

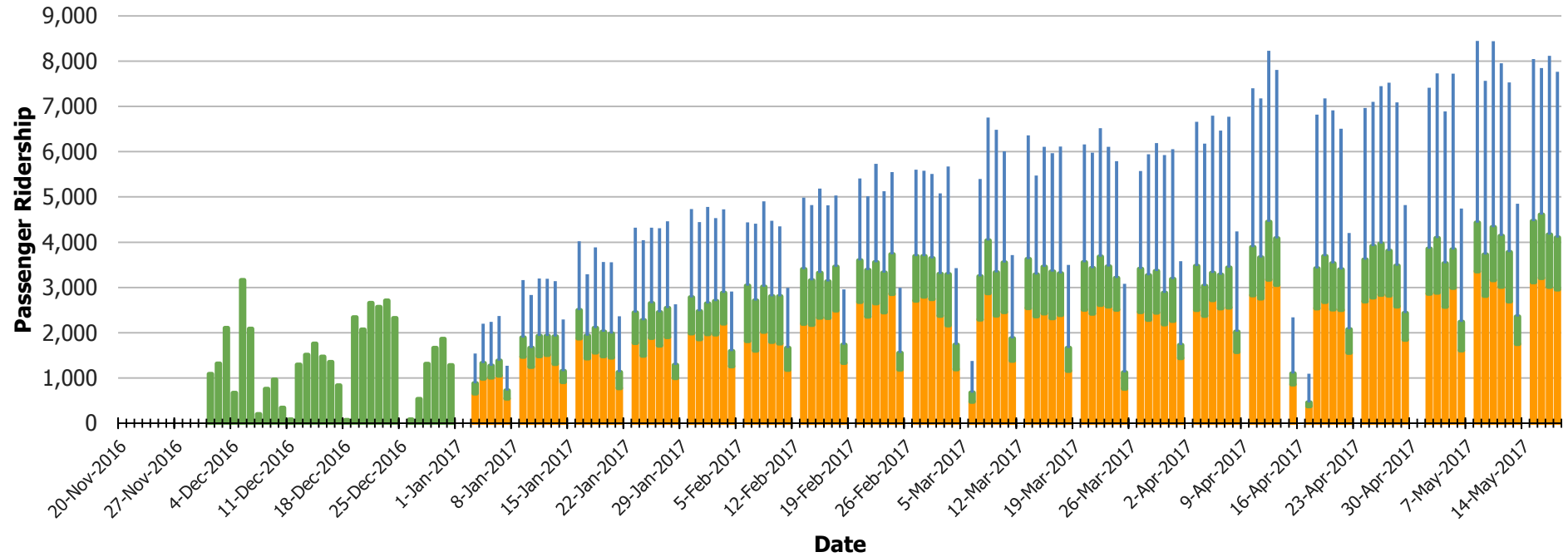
ROUTE STATISTICS

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

RIDERSHIP TO DATE

Aayalolo Ridership Chart

Route AT2: TUDU - OFANKOR Route AT3: TUDU - ACHIMOTA Route AT1: TUDU - AMASAMAN







MEDIA COMMENTARY ABOUT SYSTEM

CONTROL CENTRE, BUS STOPS,
TERMINALS AND DEPOT