

**INTERNATIONAL SEMINAR ON SUSTAINABLE ROAD  
FINANCING  
AND INVESTMENT**

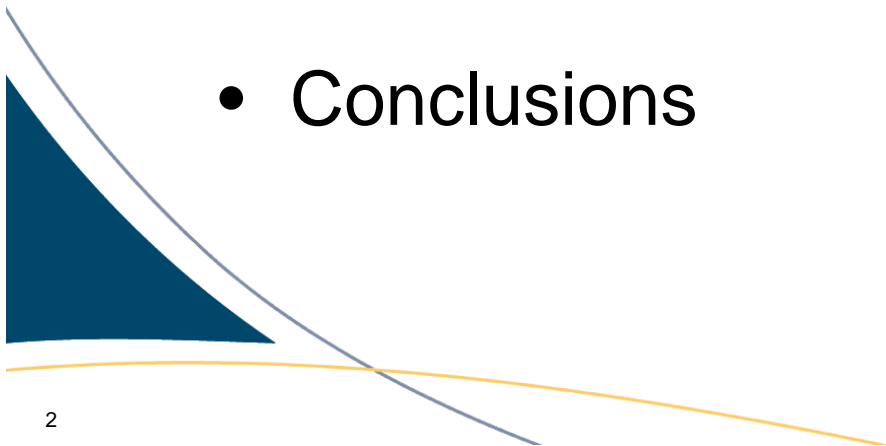
**THE HARMONISATION OF CROSS-  
BORDER ROAD USER CHARGES IN  
THE SADC REGION**

**Paul Lombard  
16 April 2007**

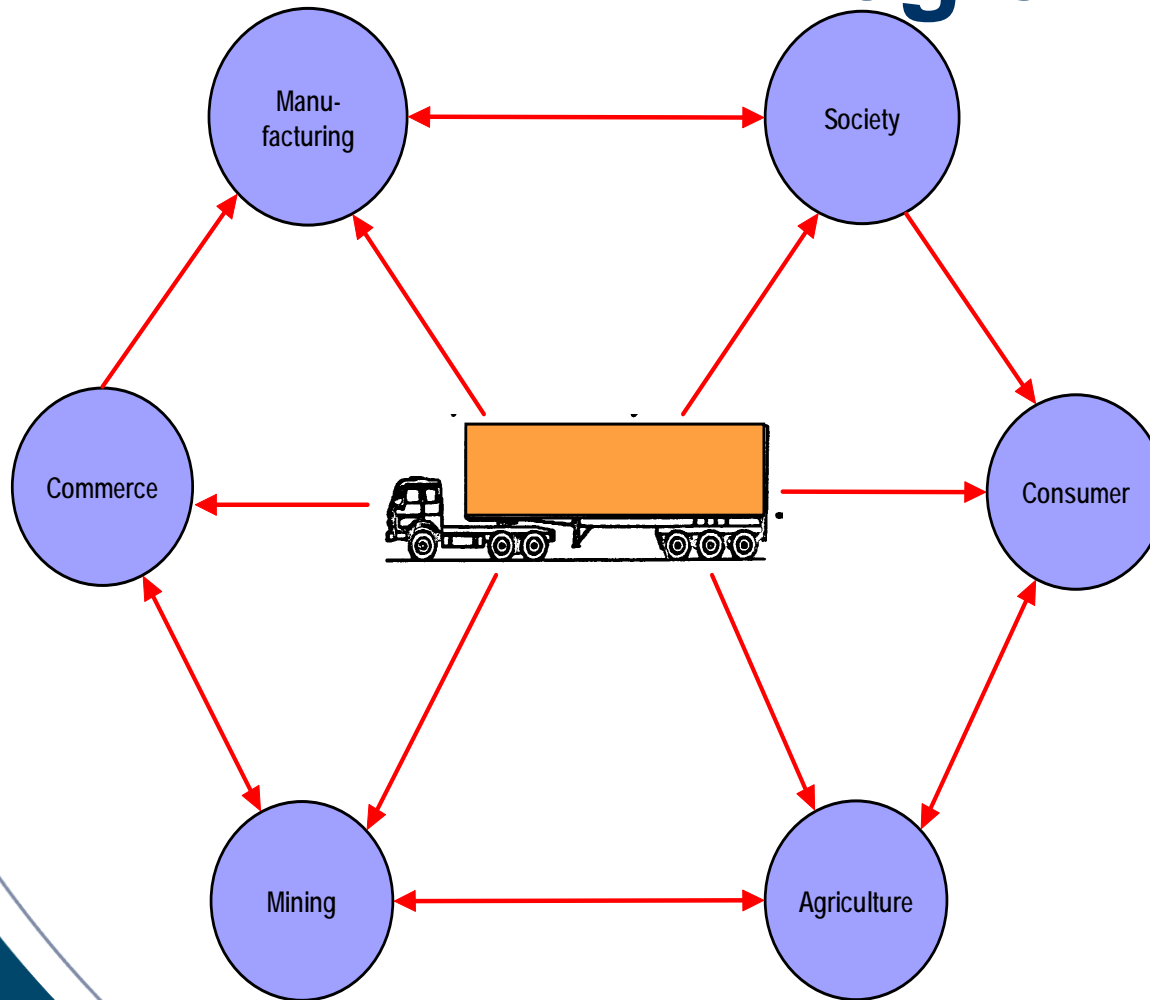


# Outline

- Background to harmonization of RUC
- Previous work and present study
- Extent of Network considered
- Status of Harmonization of RUCs
- Proposed charges
- Solutions for Collection of Charges
- Conclusions



# Role of Road Transport in SADC Region



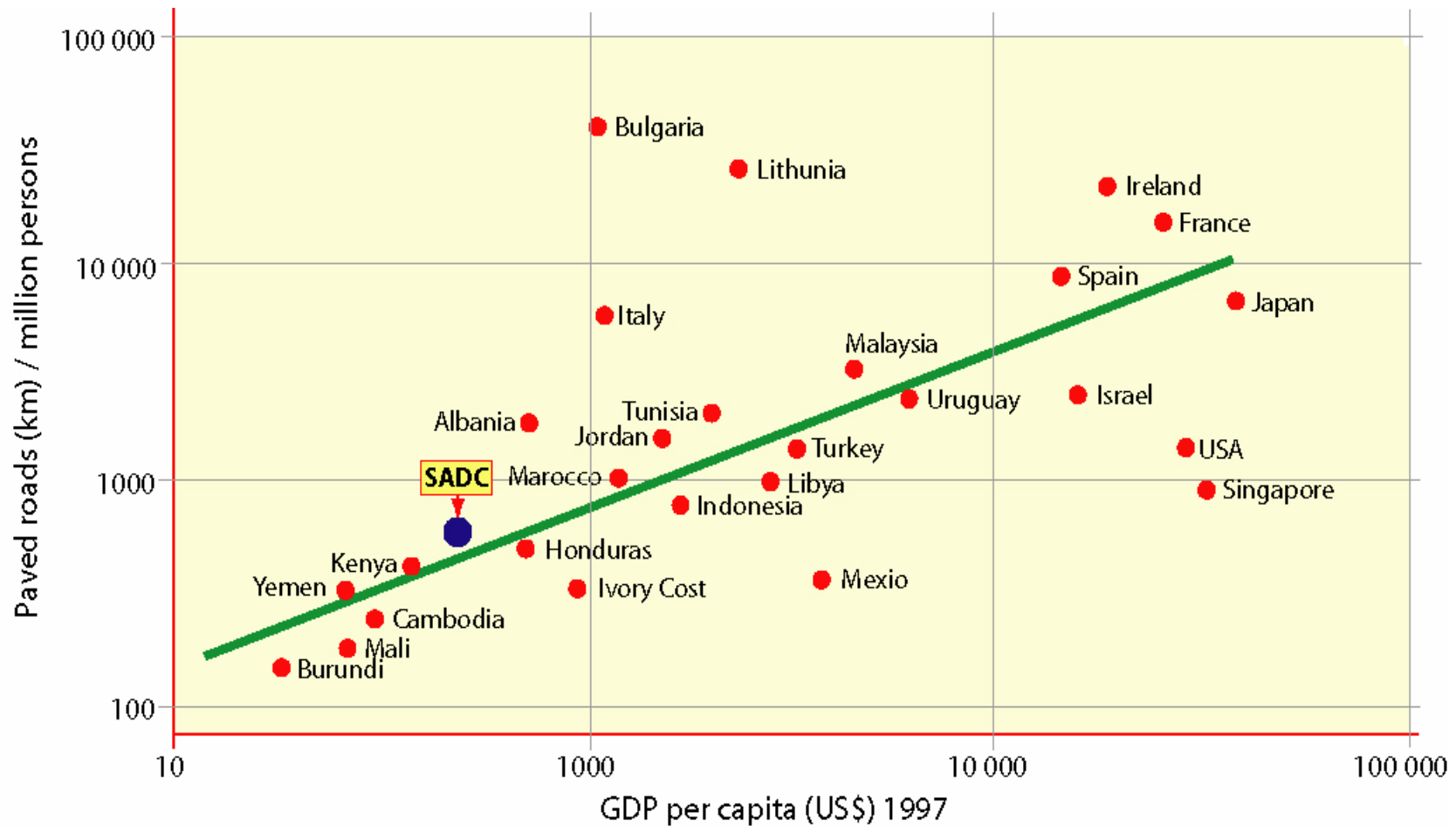
**The Road Transport Web**

- Dominant mode of transport (>80%)
- Essential to the growth of economy
- Impact on road infrastructure
- Need to optimise operations

# State of SADC Roads

Main Road Type	Road Condition (Weighted Average)		
	Good	Fair	Poor
Paved	49	36	15
Unpaved	38	31	31

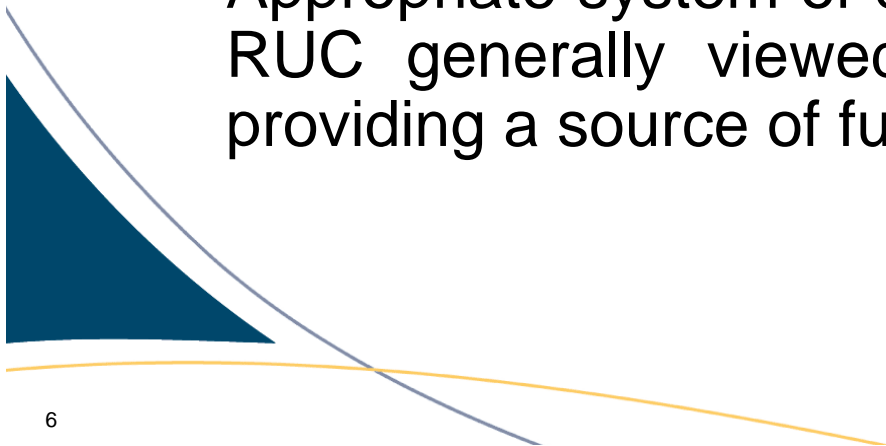
# Impact of Poor Roads on Economic Development



*“You can always tell the state of a country’s economy by looking at the state of its roads”*

# Critical Importance of Adequate Funding for Road Maintenance

- Investment in road infrastructure expected to decline with major increase in road maintenance
- Lack of road maintenance has been major contributory factor in deterioration of SADC road network
- Adequate funding of road maintenance critically important for safeguarding investments in road infrastructure
- Appropriate system of cost recovery through levying of a RUC generally viewed as an efficient instrument for providing a source of funding for road maintenance

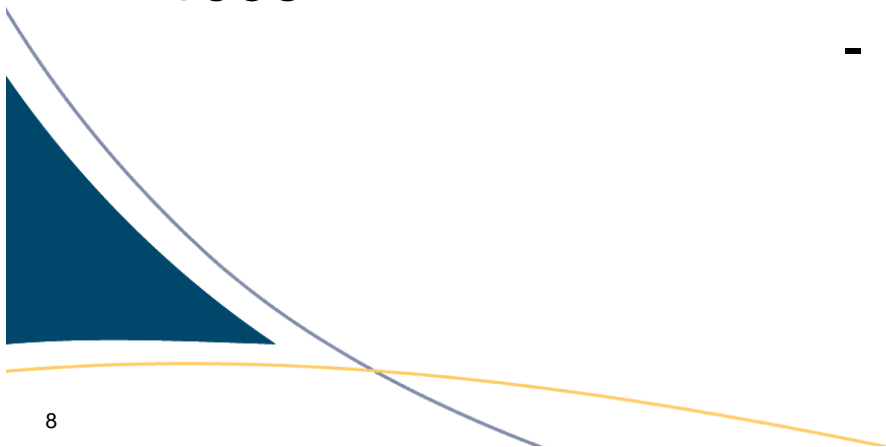


# SADC Protocol on Transport, Communications and Meteorology

- **Article 4.5 commits Member States to develop and implement cohesive and definitive *road funding policies* that will ensure adequate, sustainable, appropriate, transparent and dedicated road funding, with funds spent on roads, as well the promotion of harmonized national road user charging systems;**
- **Article 4.6 commits Member States to implement *harmonized cross-border road user charging systems* which shall be regularly reviewed, improved and supplemented through improved research and data.**

# Overview Of Previous Studies

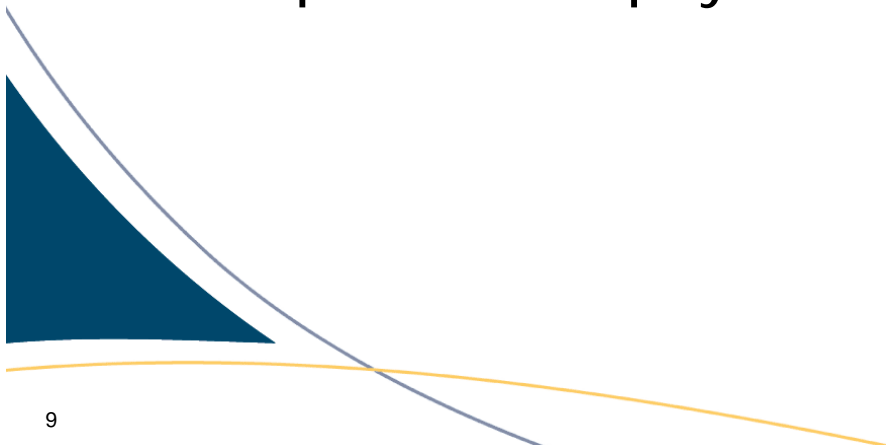
- Mid-late 1980s
  - Nordic consultants
  - fairly qualitative
- Early 1990s
  - PTA driven
- 1993
  - SATCC/PTA
- 1994
  - SACU
- 1995
  - SATCC/PTA/SACU
  - reconciliation of previous studies





# Principles of SATCC/PTA/SACU RUC Study

- Non-discrimination
- Equity
- Transparency
- Foreign Operators to pay in host country
- Operators to pay for use of network

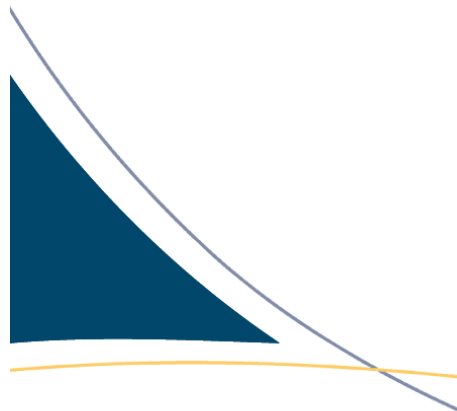
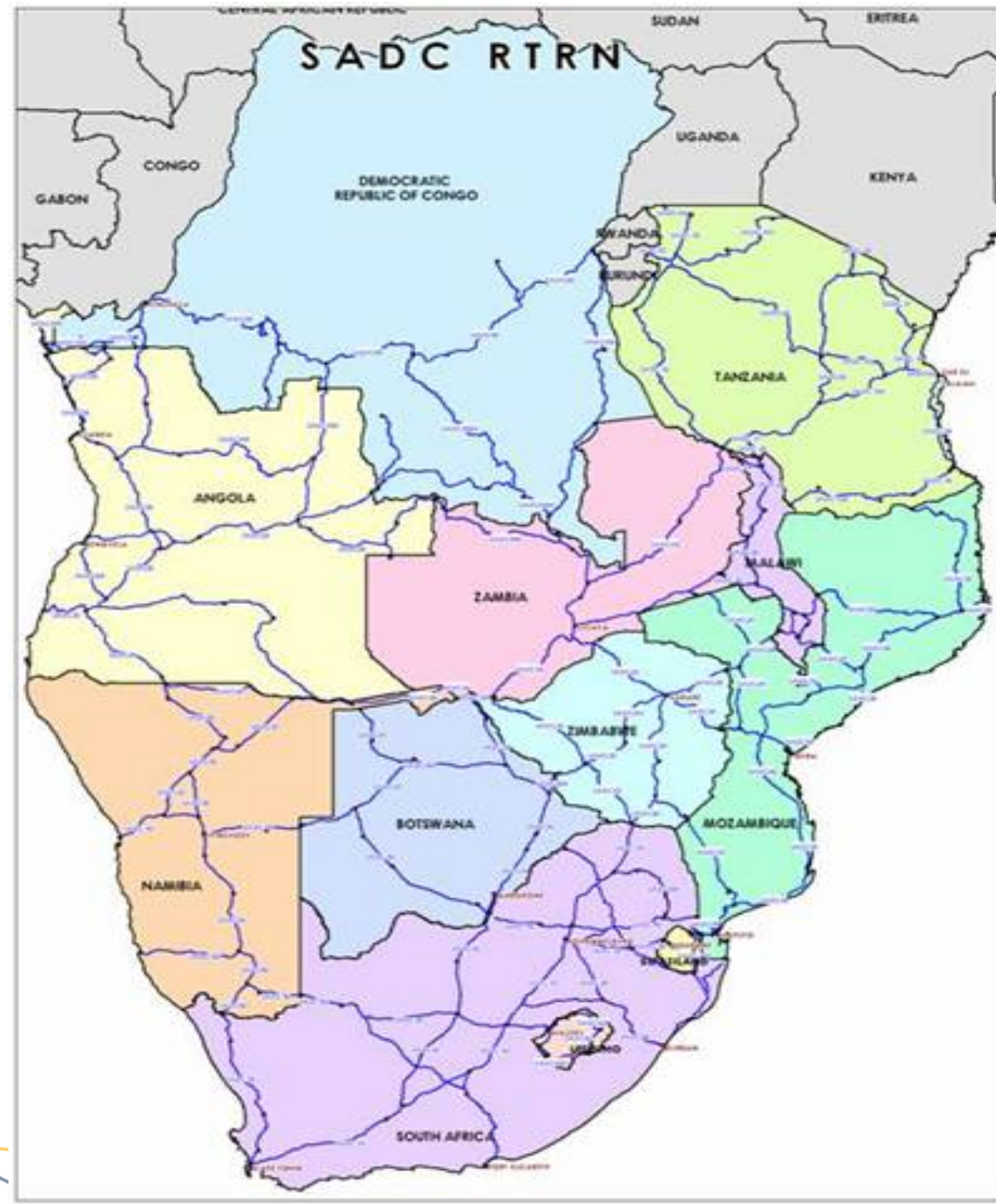


# Study Objectives

- Data collection - all charges payable by road users in the SADC Member States
- Identify and analyse alternative technical solutions to collecting the RUC
- Preparation of Draft MoU
- Preparation of a regional implementation plan

DRAFT REPORT STAGE

# Extent Of The Network Considered

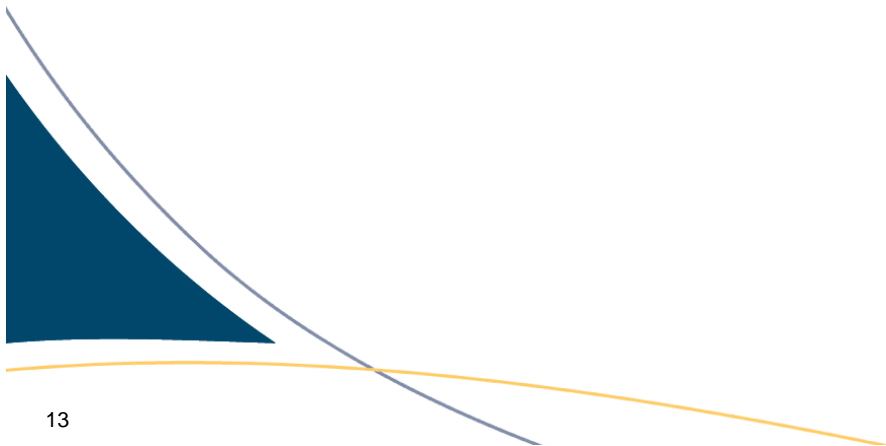


# Extent Of The Network Considered

Country	Extent of the Network Considered (km)			
	Country Visits	SADC 1998	Difference	% Difference
Angola	7,096.00	8,215.00	(1,119.00)	-13.6%
Botswana	2,831.70	2,847.00	(15.30)	-0.5%
DR Congo	8,370.00	8,370.00	-	0.0%
Lesotho	1,075.09	942.00	133.09	14.1%
Malawi	1,400.00	1,800.00	(400.00)	-22.2%
Mozambique	5,692.00	5,407.00	285.00	5.3%
Namibia	3,748.54	4,580.00	(831.46)	-18.2%
South Africa	10,458.22	7,470.00	2,988.22	40.0%
Swaziland	440.97	326.00	114.97	35.3%
Tanzania	6,866.33	7,384.00	(517.67)	-7.0%
Zambia	2,968.00	5,355.00	(2,387.00)	-44.6%
Zimbabwe	2,848.00	3,232.00	(384.00)	-11.9%
<b>TOTAL</b>	<b>53,794.86</b>	<b>55,928.00</b>	<b>(2,133.15)</b>	<b>-3.8%</b>

# Status Of Harmonization Of RUCs In Region

- Review done of all charges in each member state within context of definition of RUCs
- Focus placed on charges payable by vehicle operators when
  - entering a country; and
  - making use of the road network

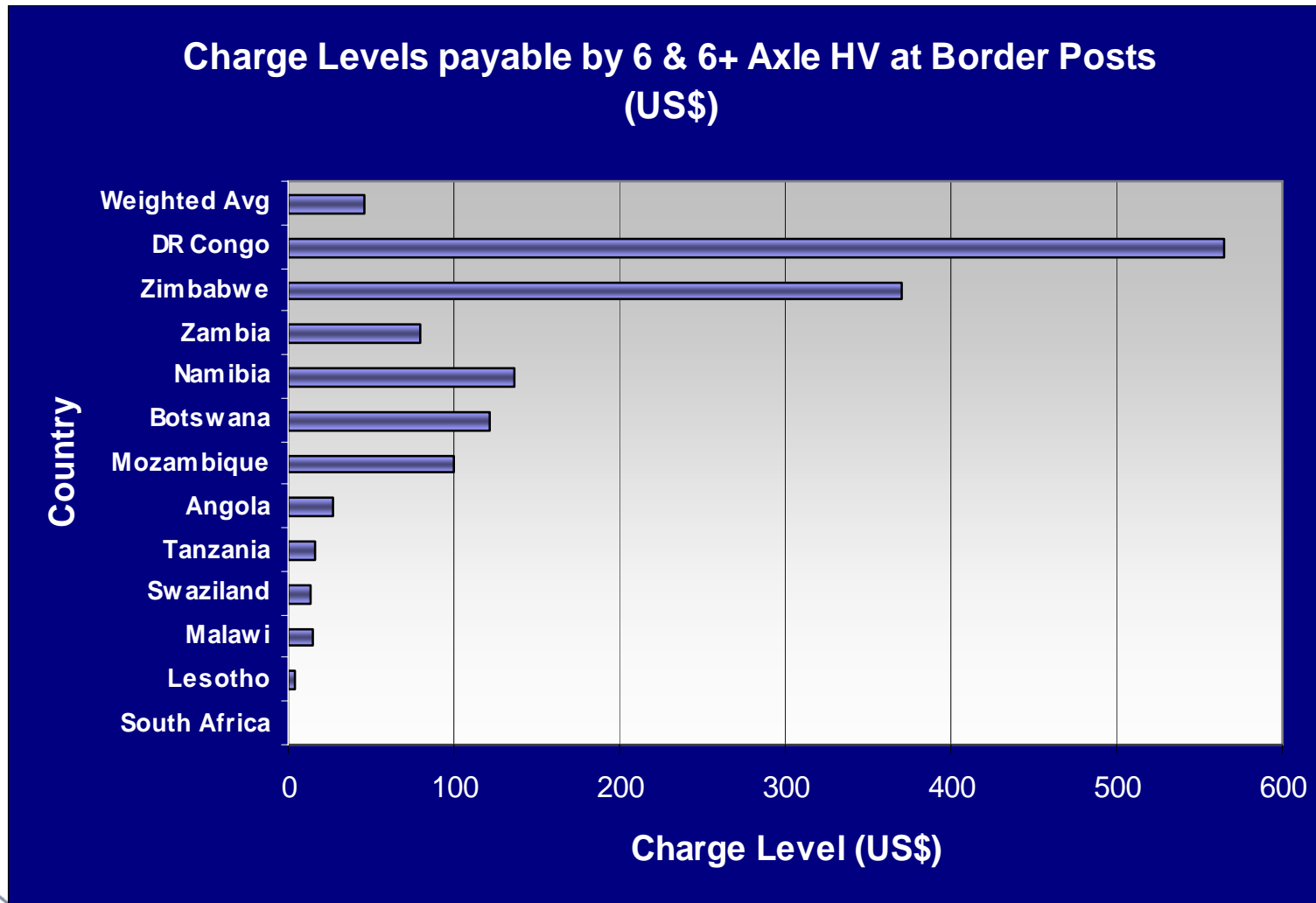


# Charges Considered

RUC Category	Charge Type	Country											
		Ang	Bot	DRC	Les	Mal	Moz	Na m	SA	Swazi	Tan	Zam	Zim
Compulsory Access Fee	Transit Charges/Fees/Tolls	X				X	X			X	X	X	X
	Foreign Vehicle Permit Fees										X		
	Cross-Border Charges							X					
	Road Transport Permit Fees		X										
	Entry Card Fees			X									
	Insurance Fees			X									
	Container Fees			X									
	Fumigation Fees			X									
	Toll Fees			X									
	Road Tollgate Fees				X								
	Carbon Taxes											X	X
Surveillance Fees			X										
Domestic Fees	Annual Vehicle License Fees	Excluded for Cost Recovery Purposes											
Other Fees	Fuel Levies		X		X	X	X	X			X	X	X
	Fuel Taxes			X					X	X			
	Tolls						X		X				



# Comparison of Charges payable at Border Posts (6 & 6+ Axle)



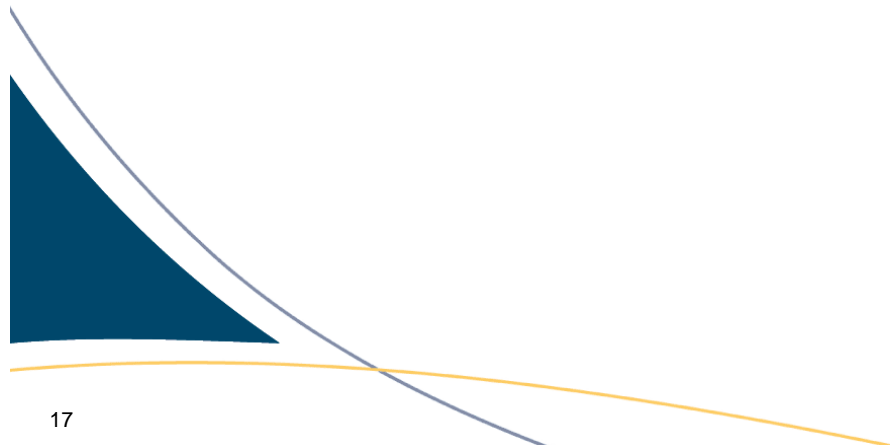
# Comparison of Charges payable at Border Posts (cont'd)

Country	Charge (US\$)					Weighted Average
	LV	BUS	2-3 HV	4-5 HV	6 & 6+	
South Africa	0.00	0.00	0.00	0.00	0.00	0.00
Lesotho	0.81	2.42	2.42	4.03	4.03	1.39
Malawi	0.00	6.00	8.00	15.00	15.00	1.96
Swaziland	8.06	12.90	12.90	12.90	12.90	8.82
Tanzania	20.00	6.00	16.00	16.00	16.00	18.02
Angola	14.53	26.83	26.83	26.83	26.83	19.60
Mozambique	0.00	0.00	100.00	100.00	100.00	23.62
Botswana	9.19	33.09	36.76	71.69	121.32	25.85
Namibia	14.97	42.74	43.47	106.39	136.34	29.91
Zambia	35.07	75.13	76.13	80.13	80.13	50.50
Zimbabwe	142.00	365.94	367.81	370.00	370.00	206.32
DR Congo	255.00	265.00	565.00	565.00	565.00	280.00
<b>Weighted Average</b>	<b>8.54</b>	<b>33.98</b>	<b>37.20</b>	<b>17.95</b>	<b>46.49</b>	<b>13.57</b>



# Types of Charges Payable at Border Posts

Transit Charge Levied	Ang	Bot	DRC	Les	Mal	Moz	Nam	SA	Swazi	Tan	Zam	Zim
Fixed Fee per Entry	X	X	X	X		X	X		X	X		
Distance based					X						X	X
No Charge								X				



# Proposed Charges Based On Cost Responsibility Levels

Country	Proposed Charge Levels (US\$/100km)				
	LV	BUS	2-3 HV	4-5 HV	6 & 6+ HV
Angola	1.57	9.61	15.06	22.91	29.88
Botswana	0.21	1.78	2.34	4.02	5.62
DR Congo	6.21	30.13	55.28	75.80	91.96
Lesotho	0.32	1.90	3.11	4.59	5.86
Malawi	0.47	3.57	4.75	8.11	11.32
Mozambique	0.44	3.10	4.52	7.21	9.67
Namibia	0.38	2.76	3.80	6.34	8.73
South Africa	0.16	0.94	1.50	2.26	2.92
Swaziland	0.13	0.89	1.29	2.08	2.80
Tanzania	0.30	1.81	2.82	4.32	5.67
Zambia	0.12	0.93	1.28	2.13	2.93
Zimbabwe	0.13	0.83	1.26	1.97	2.61
<b>Average</b>	<b>0.24</b>	<b>1.56</b>	<b>2.61</b>	<b>3.27</b>	<b>4.27</b>

# Solutions For Collection Of Charges

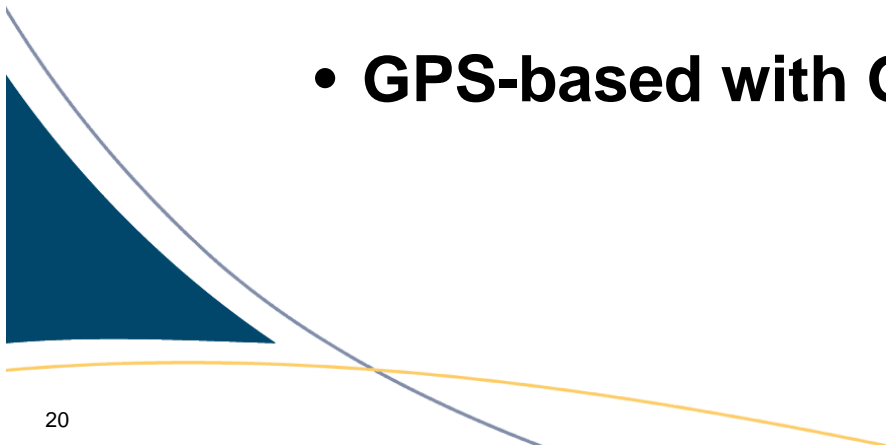
- Measurement methods
- Payment methods
- Collection methods



# Measurement Methods

## Types of measurement methods

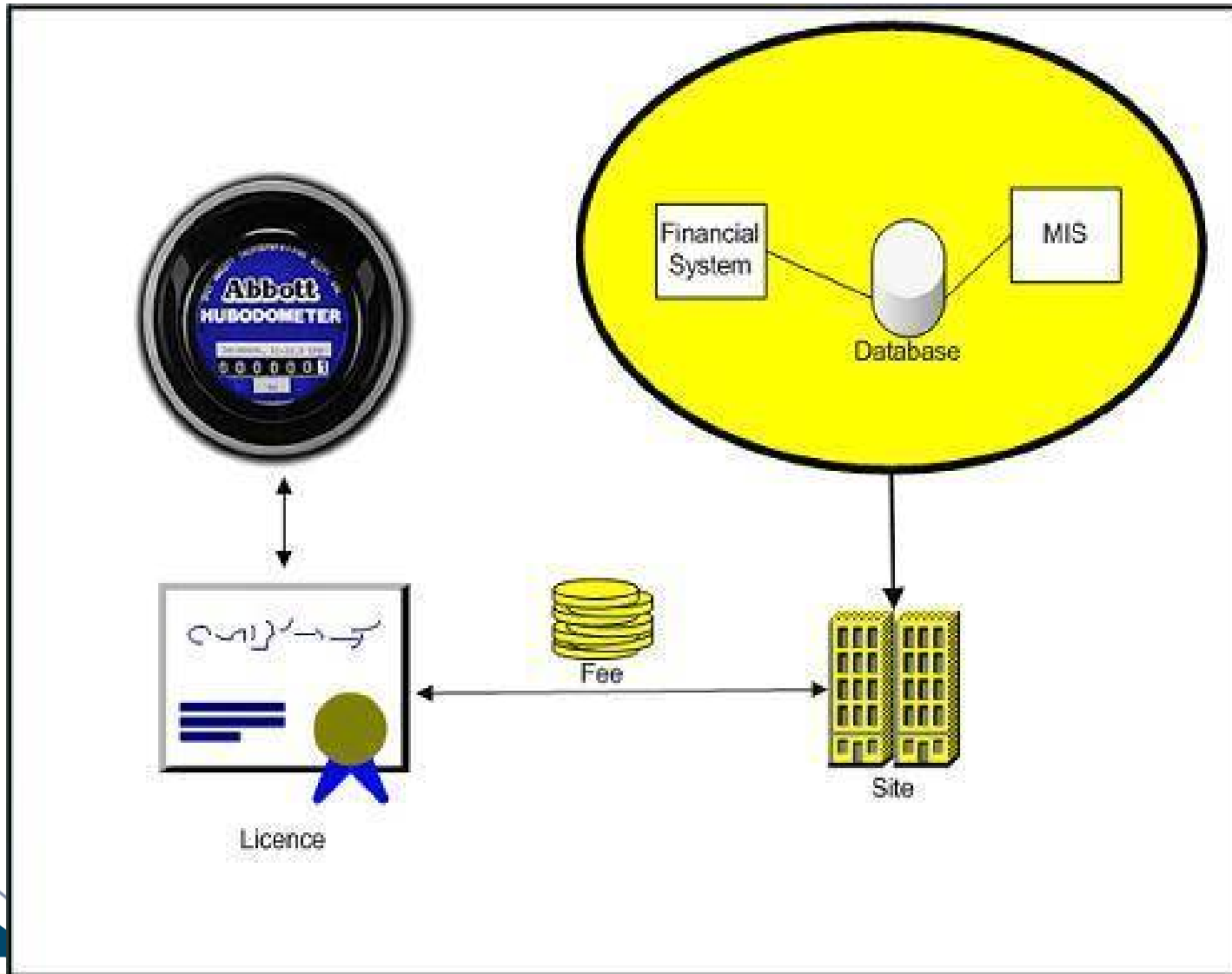
- **Simplified System**
- **Hub odometer**
- **Transponders / Route tracers / Electronic Number Plates**
- **GPS-based with GSM/RF technology**



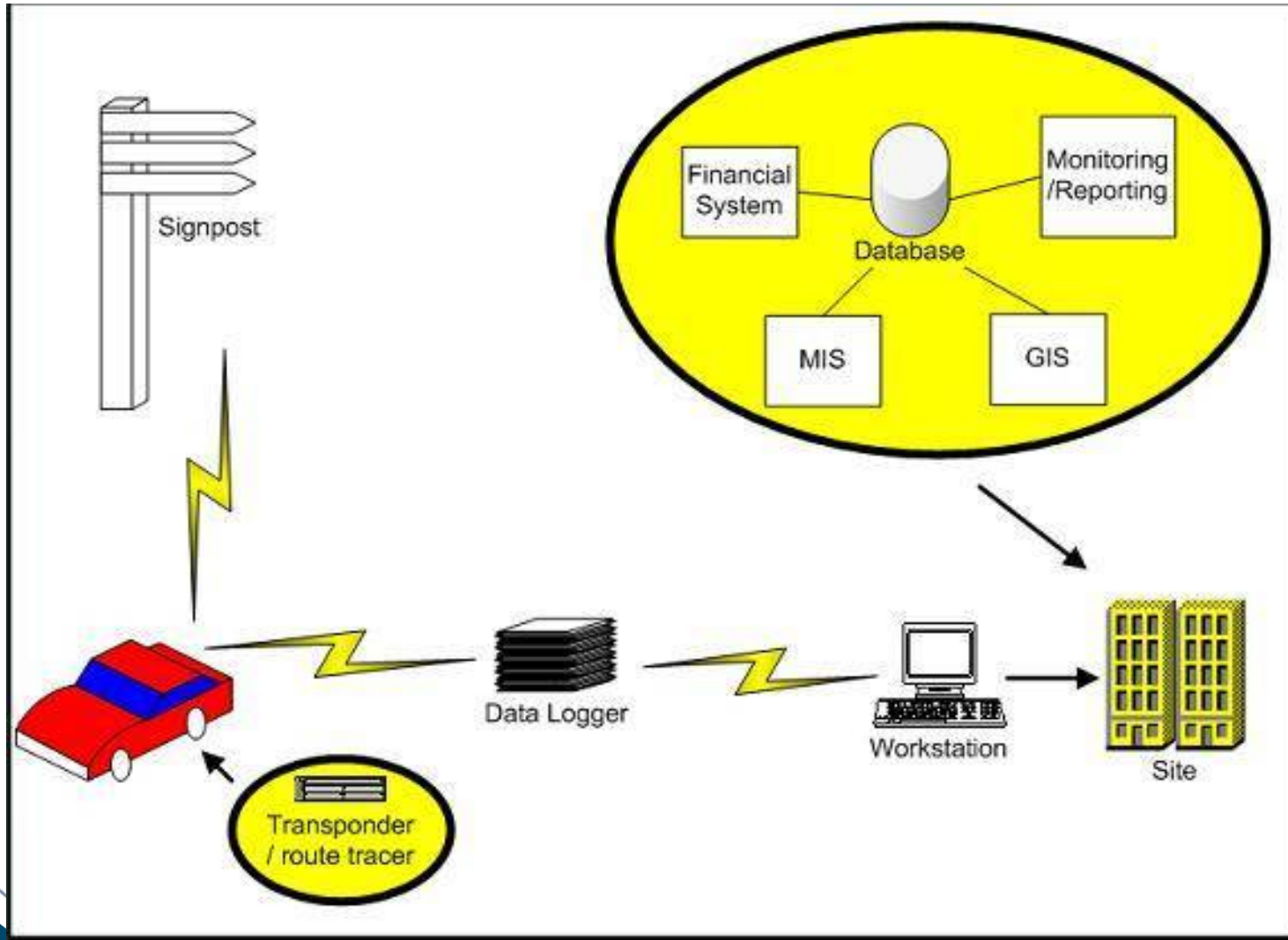
# Simplified System

- **Initially a flat fee system to start off, then WDC system**
- **Distances based on**
  - **destinations stated on waybills for heavy goods vehicles**
  - **stated destination of vehicle operator for light and passenger vehicles**
- **Zambia and Zimbabwe make use of schedule stating the routes or origins and destinations, distances and corresponding charge levels**

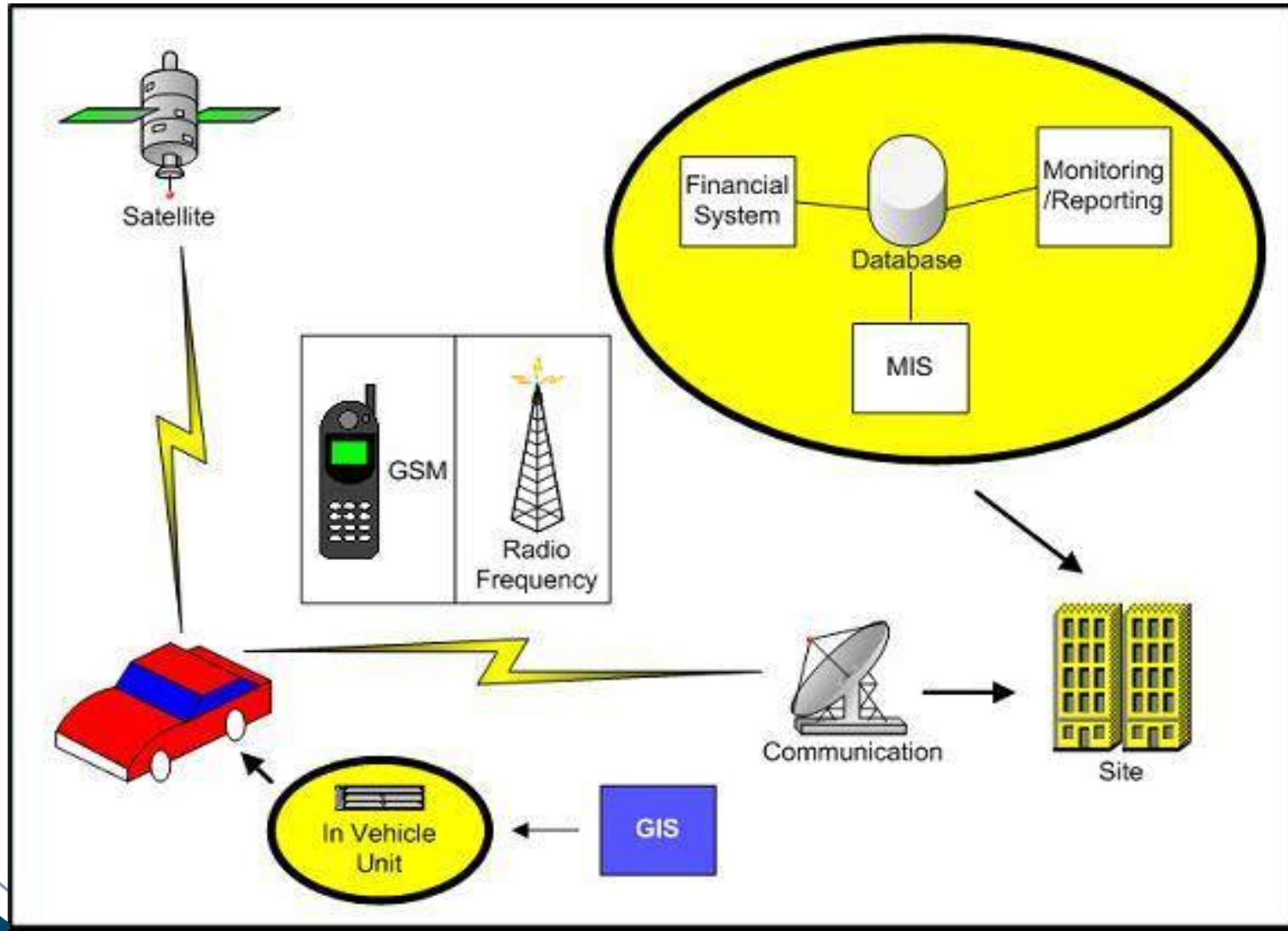
# HUB Odometer



# Transponders / Route Tracers / Electronic Number Plates



# GPS-based with GSM/RF Technology





# GPS-based with GSM/RF Technology (cont'd)

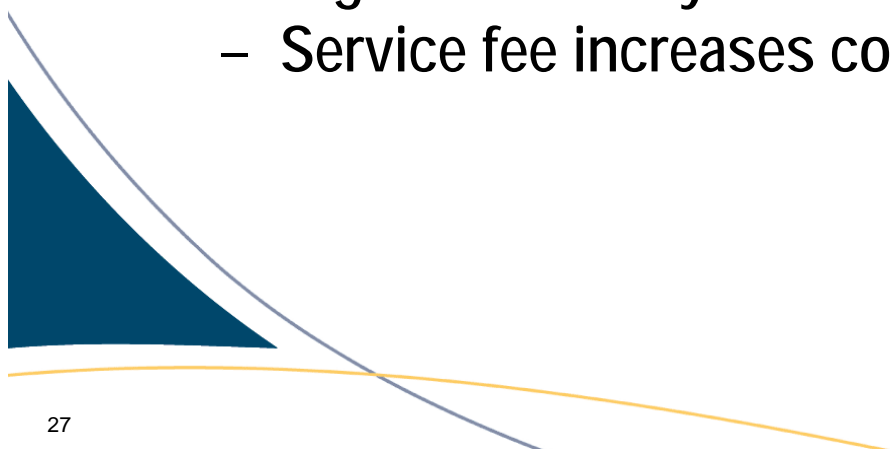
- Consists of unit installed in vehicle
- Uses satellites to determine its coordinates
- Distance traveled calculated and communicated to central database through utilisation of GIS component
- Compared to other systems, advantages outweigh disadvantages
  - Technology = current and used in similar systems such as tracking and call and dispatch systems
- Factors affecting reliability:
  - GPS system accuracy
  - Signal acquisition (influenced by mountains, clouds, trees etc.)
  - Signal loss and reacquisition

# Payment Methods

- Cash
  - possible revenue leakage
  - security concerns
- Debit cards or credit cards
  - Point of sale (POS) terminals and manual imprinting facilities needed
  - Risk of credit card fraud
- Coupons
  - User friendly system
  - Operated satisfactorily and efficiently between Malawi, Mozambique and Zimbabwe (1984 to 1992)
  - Evasion and pilferage minimised
  - Demise of system primarily due to political rather than economic considerations

# Collection Methods

- By Government Department
  - Not user friendly and robust
- By designated Commercial Bank
  - Issue coupons to transit transport operators
  - Remit collected revenue to account designated by receiving government
- Outsourcing to private company
  - Namibia
  - Higher Efficiency
  - Service fee increases cost



# Evaluation of Approaches

- Country by country approach proposed at this stage
- Over longer term towards more harmonised method of collection
- Each country responsible for implementing system
- Charges adjusted annually to reflect
  - changes in road use
  - currency fluctuations



# Draft MoU On Harmonization Of Cross-Border Road User Charges

- Article 1: Definitions
- Article 2: Principles for harmonization of road user charges
- Article 3: Harmonization
- Article 4: Regional network of cross-border road user charging systems
- Article 5: Regional performance audits
- Article 6: Combating corruption
- Article 7: Exchange of information and public awareness
- Article 8: National consultative and co-ordinating structures
- Article 9: Regional Cross-Border Road User Charging Association
- Article 10: Regional implementation target dates
- Article 11: Consultation
- Article 12: Signature, ratification and accession

# Regional Implementation

REGIONAL IMPLEMENTATION PLAN FOR THE HARMONIZATION OF RUCs IN THE SADC REGION												
Months:	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	
Activity												
1	Submission of Draft Report	●										
2	Review of Draft Report and Comments	←	→									
3	Regional Workshop		●									
4	Final Report		●									
5	Reach Agreement on consolidation and level of charges		←	→	→	→						
6	Agree and sign MoU					←	→	→				
7	Regional Cross-Border Road User Charges Collection Association								←	→		
8	Develop detailed implementation plan per country								←	→	→	
	- Ratification of MoU with constitutional Procedures											
	- Publishing of MoU in Government Gazette											
	- Drafting and publishing of charge level schedules											
	- Development of a collection system											
9	Deposit Instrument of Ratification								●			
10	Transmit Copies of Instrument of Ratification								●			
11	Commence implementation										●	

# Conclusion

- Revision of the RTRN
  - Significant differences in extent of RTRN between 1997
    - especially South Africa and Zambia
    - In DR Congo - RTRN only in southern area
  - Proposed to review RTRN – ASANRA initiative
- Consolidation of types of charge payable at the border posts
  - Significant number of charges payable upon entry to border posts
  - Need to consolidate charges
- Proposed Transit Charges
  - Transit charges to be levied based on distance traveled instead of fixed entry fee
- Implement harmonised System in all continental member states