The investigation of information ethical concerns pertaining to surveillance technologies: 
A case study on the electronic tolling systems in Gauteng.

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Introduction

The advancement of economic activities in Gauteng South Africa has resulted in the need for infrastructure advancements, such to cater for the daily requirements of civilians and industry role players. Moreover such advancements meant that there would be increased movement on national roads, which would require efficient management utilising world class Information Communication Technologies.
Key Concepts

- **Intelligent Transport System (ITS)**

  “Intelligent transport systems are technologies, applications and systems for accident warnings, reduction of driving workload, congestion avoidance and traffic management” (Konstantinos et al., 2012)

- **South African National Roads Agency SOC Limited (SANRAL)**

  SANRAL is the primary entity that is responsible for the management and improvement of national roads (SANRAL, 2012).
Key Concepts

◆ Surveillance Technologies (CCTV, VR: Vehicle Registration Systems)

Surveillance Technologies are referred to as the infrastructure that is used to monitor physical attributes and collect user information for control purposes (Wigan & Clarke, 2006)

◆ Electronic Tolling Collection (e-toll)

According to Ogden (2001) Electronic toll collection (ETC) involves the payment of a fee for the use of a section of a road where the identification of the vehicle and the subsequent financial transaction is undertaken electronically. Furthermore, it is an increasingly popular alternative to conventional cash-based tolling system
Issues

- Availability of direct regulation, policies and laws
- Privacy issues related to surveillance technologies specifically (e-toll gantries, cctv)
- Accessibility of information collected by the technologies
- Security of the information that is collected
Aim of the study

With reference to the information ethical issues of privacy, security, and access, this paper aims to analyse the controversial electronic tolling system which utilises automatic number plate recognition cameras to collect information and the cctv technology implemented across the national roads.
Concepts Relationship Model

Case Study
- Intelligent Transport System
- SANRAL
- GFIP & E-tolling
- i-TRAFFIC

Managing Stakeholders

Cycle

Surveillance

Information ethical concerns

Data Mining

Information

What

Who

When

Where

Why

How
Scenario Applications
International systems

United States of America (three laws non specific to e-toll) The USA has a number of laws that may be consulted when dealing with activities pertaining to the ETC:

- Telecommunications Act of 1996.
Internationally systems

- **Australia**

  - The Standards Australia (SA) (2000), an independent non-profit organisation that is primarily aimed at developing standards that are used in Australia Ogden (2000:131).

- Personal privacy practices for electronic tolling systems.
  - The policy is aimed at protecting the personal privacy of customers.
  - The standard consists of six propositions, regulating the collection and usage of customer’s personal information.
South African Acts, Laws, Policies

- Promotion of Access to Information Act, 2000 (Act No.2 of 2000) (PAIA)
- Protection of Personal Information Act, 2013 (Act No.4 of 2013)(POPI)
- Privacy Policy (related to citizens personal information, Surveillance not addressed)
  - SANRAL
  - i-TRAFFIC
Benefits of ITS

- high quality road network
- improved road safety and security
- Reduced vehicle operating costs
- “User pay” principle
- Predict demand and optimising capacity, assets, and infrastructure
- Improve the end-to-end experience for travellers
- Increase operational efficiency while reducing environmental impact

(IBM Corp, 2011:2; SANRAL, 2014)
Pitfalls of ITS

- The collection of positioning data, and the compilation of records related to individual travel behaviour and patterns of use
- The use of electronic tags which are dependent upon assigning unique identifiers
- Access to information by third parties
- The use of tags for surveillance
- Enforcement issues
- Data security
- Privacy policy

(Ogden, 2001)
Conclusion and Recommendations

- **Proposition 1.** Collection of information for intended purpose
- **Proposition 2.** Direct customer information collection with consent
- **Proposition 3.** Customer information and data accuracy: retention schedule

(Ogden, 2001)
Conclusion and Recommendations

Proposition 4. ETC information or data usage limited to intended purpose. Subject to customer approval and legal enforcements.

Proposition 5. Openness and public scrutiny of management of customers' and patrons' personal information and data.

Proposition 6. Anonymous ETC systems and Unique identifiers should be considered by operators.

(Ogden, 2001)
Conclusion

This research report aims to identify the data mining processes involved in the electronic tolling system. Furthermore, to determine what information is gathered, why the information is gathered, who manages the information, how they manage the information and when is this information discarded.
References


