



IBM Cognos Forum

Ignite knowledge, ideas, connections

No Stopping with Queensland Motorways, IBM & Cognos 8

Sue Caelers

Project Director

Free Flow Tolling Project

Richard Green

Managing Director

CatapultBI



Information Management

Cognos.
software

No Stopping with Queensland Motorways

- Who are Queensland Motorways?
- Free-Flow Tolling
- The Free-Flow Tolling Project
- About Catapult BI
- Enterprise Information System Project
- Free-Flow Tolling and Cognos

Who are Queensland Motorways?

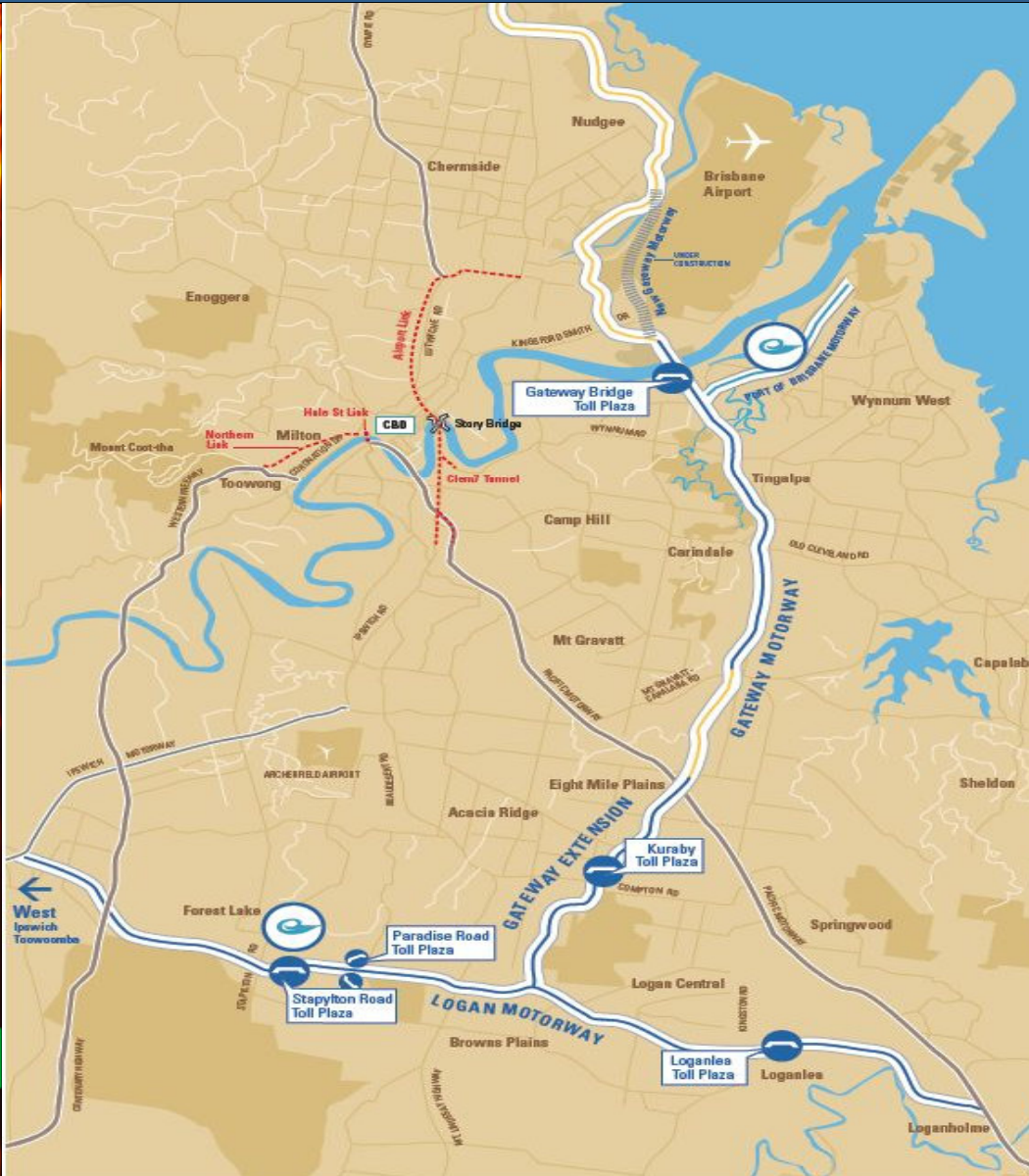
- Queensland Motorways Limited (QML) is an unlisted public “Corporations Act” company whose single shareholder is the Queensland Government.
- The Company has a franchise agreement with the Queensland Government to own and operate toll roads across south east Queensland.
- Queensland Motorways has been in operation for more than 20 years.

Who are Queensland Motorways?

Progressive tolling
infrastructure
development
company



Our Road Network



- 61 km road network
- Over 76 million motorists a year
- Over 200,000 motorists a day
- Over 100,000 a day on Gateway

Who are Queensland Motorways?



- Progressive tolling infrastructure development company
- Deliver, own and operate road and bridge infrastructure

Our Projects



1986 - Gateway Bridge

1987 - Logan Mwy

1988 - Sunshine Mwy

1997 - Logan Mwy (upgrade)
- Gateway Extension Mwy

2002 - Port of Brisbane Mwy

2007 - Paradise Road

2009 - Free-flow tolling

2011 - Expected completion
Gateway Upgrade Project

Gateway Upgrade Project



- \$1.88b
- Largest bridge & road project in Qld history
- Construct 2nd Gateway bridge
- Upgrade 12km motorway south of bridge
- Construct 7km new motorway north
- Refurbish existing bridge

Gateway Upgrade Project



Sep Portion B – north of bridge to Nudgee Road opened 18 July

New Gateway bridge due for completion mid-2010

Refurb existing bridge due mid 2011

Who are Queensland Motorways?



- Progressive tolling infrastructure development company
- Deliver, own and operate road and bridge infrastructure
- Deliver innovative transport technology solutions

Intelligent Transport Systems

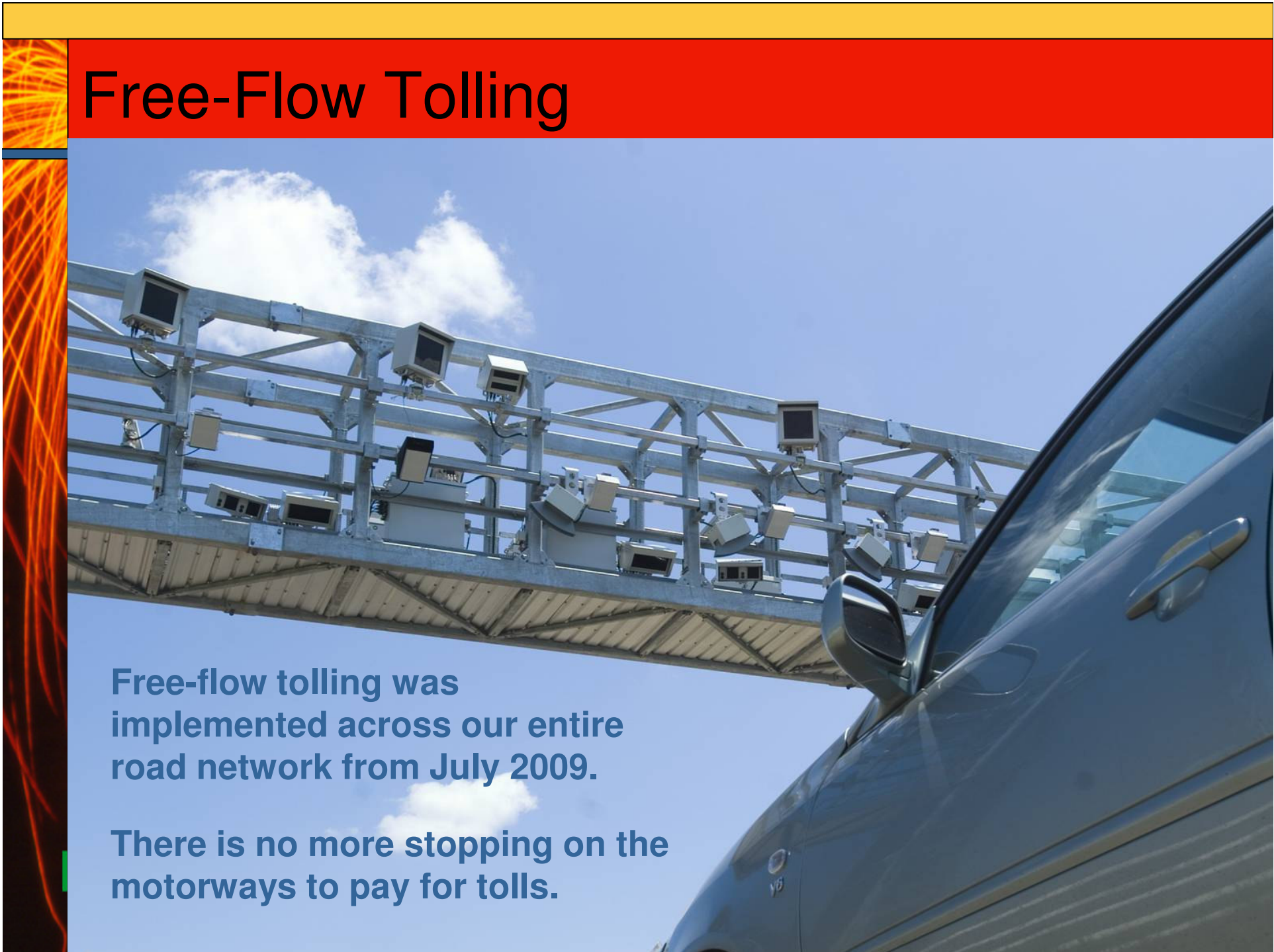


- Planned on GUP & Logan Mwy
- Traffic sensors
- Closed-circuit television cameras (CCTV)
- Variable speed signs
- Estimated travel time signage
- On-ramp metering
- Weigh-in motion detectors

Free-Flow Tolling

Free-flow tolling was implemented across our entire road network from July 2009.

There is no more stopping on the motorways to pay for tolls.



With full free-flow tolling, the toll plazas will no longer act as a “stopping or slowing” mechanism for traffic.



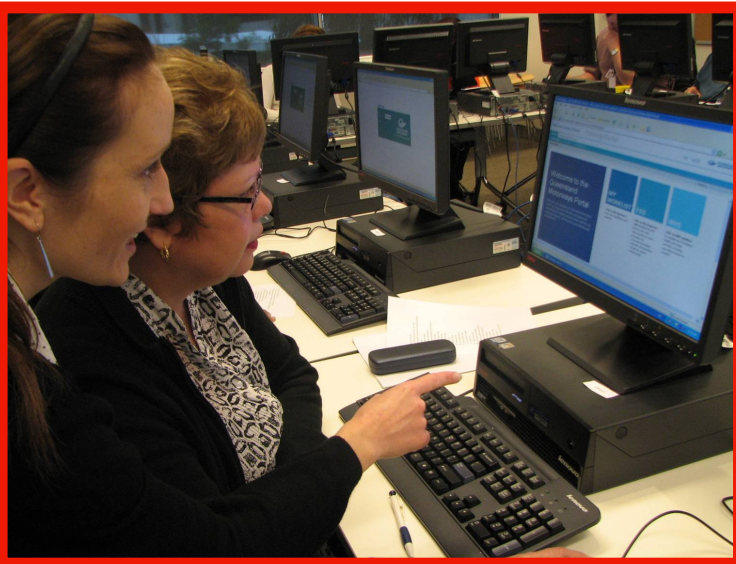
Our Toll Collectors



- Free-flow tolling will see an end to the role of toll collector
- Extensive consultation has taken place
- No forced redundancies for permanent toll collectors

Free-Flow Tolling Project

- Commenced early 2007
- 3 key delivery areas
 - Central System - IBM
 - Roadside – Thales/Vitronic
 - Civil Works – Logan Alliance



Civil Works – Interchange Upgrades



Civil Works – Interchange Upgrades



Roadside System - gantries



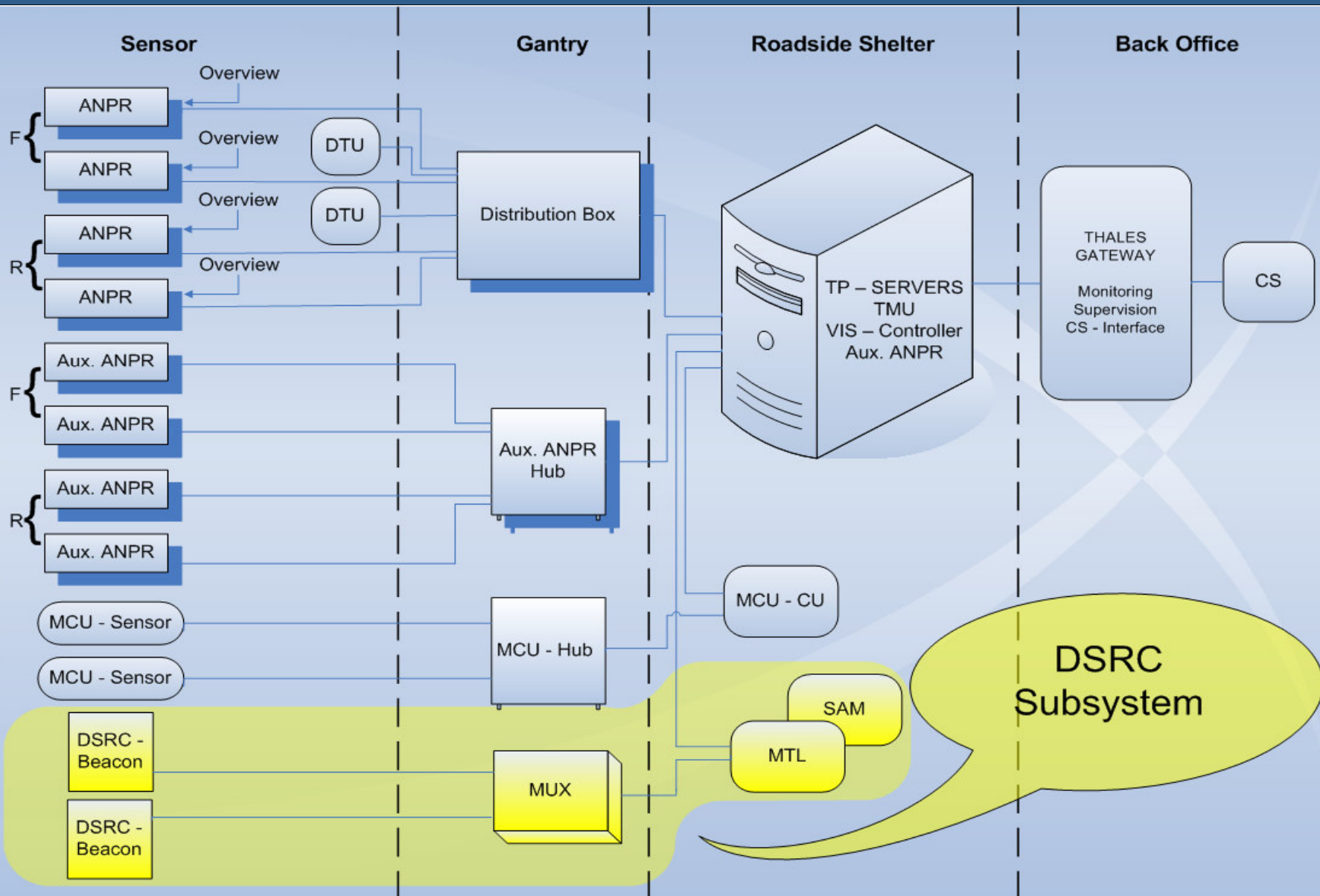
How does free-flow tolling work?



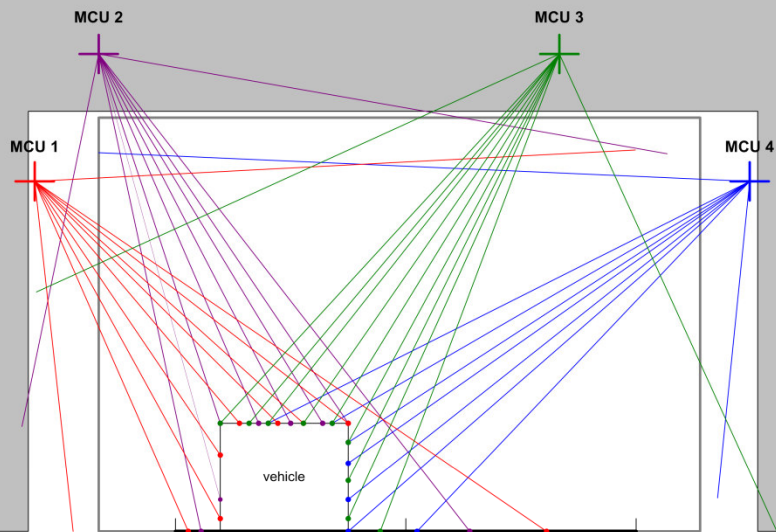
Overhead steel gantries will carry free-flow tolling equipment and systems which ...

- Read tags
- Capture images
- Read number plates

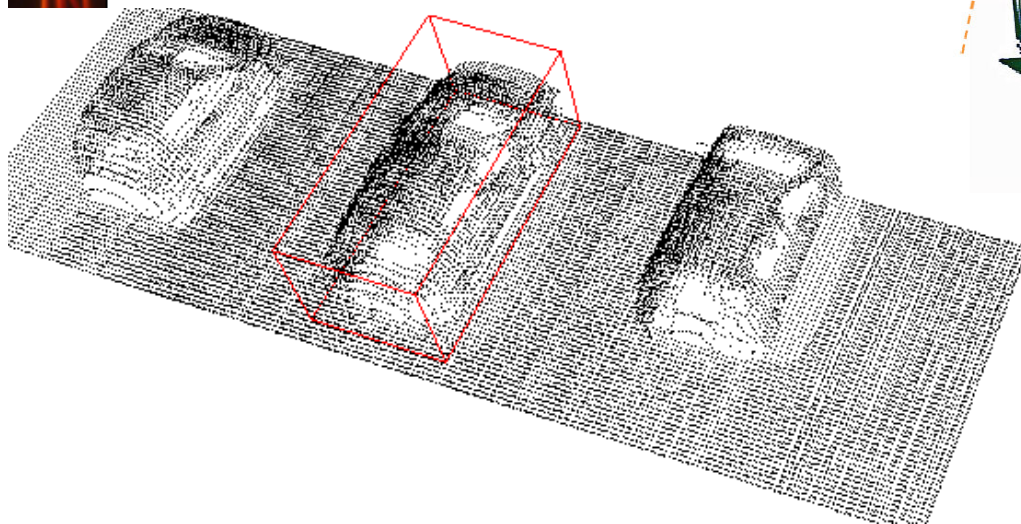
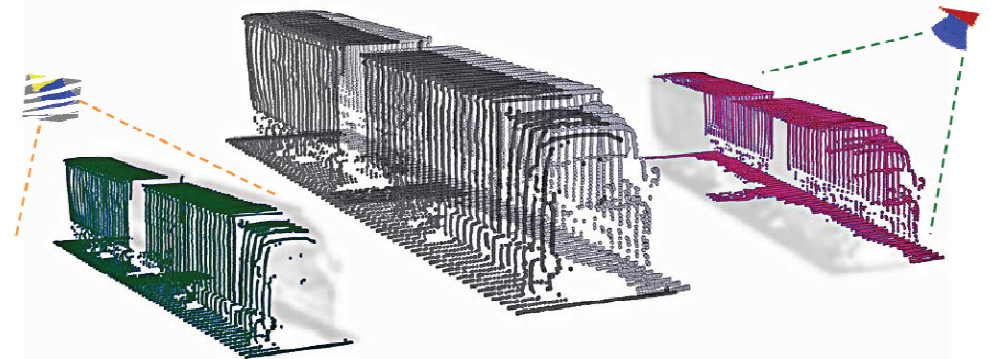
Roadside System – architecture



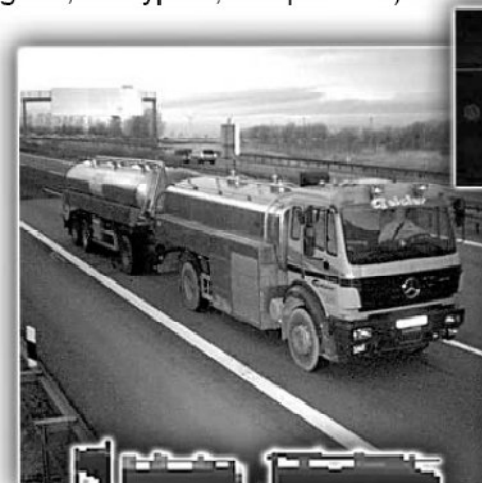
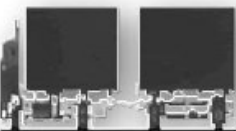
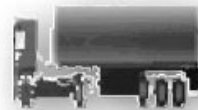
Roadside System - classification



1. 3D data acquisition
2. Vehicle separation
3. Data representation
4. Feature extraction
5. Feature evaluation



Roadside System - classification



Roadside System – classification

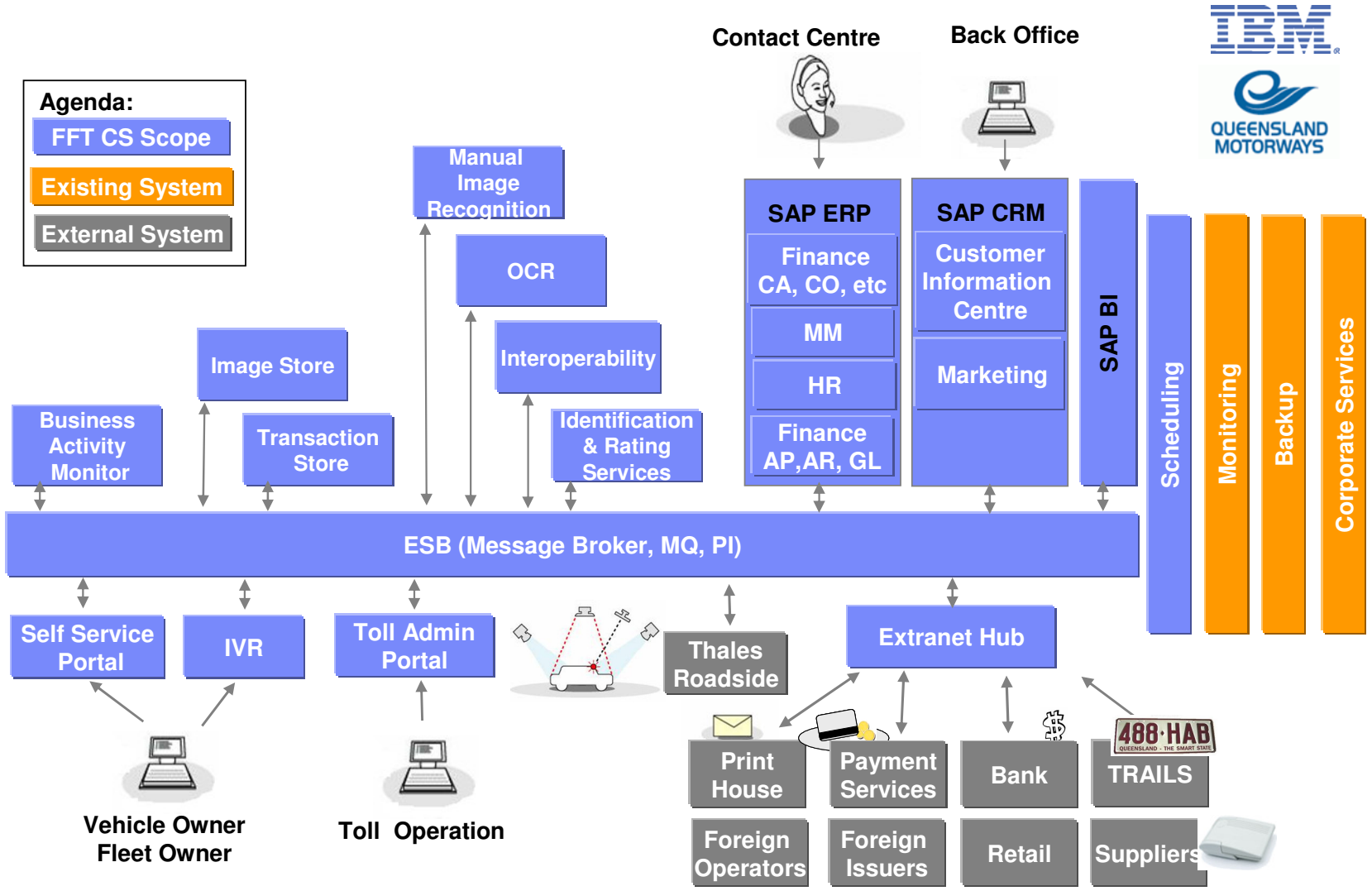


Extract from the system data:

- Lane: 1
- Trailer: Not present
- Number of Axles: 2

Central System - architecture

- Agenda:**
- FFT CS Scope
 - Existing System
 - External System



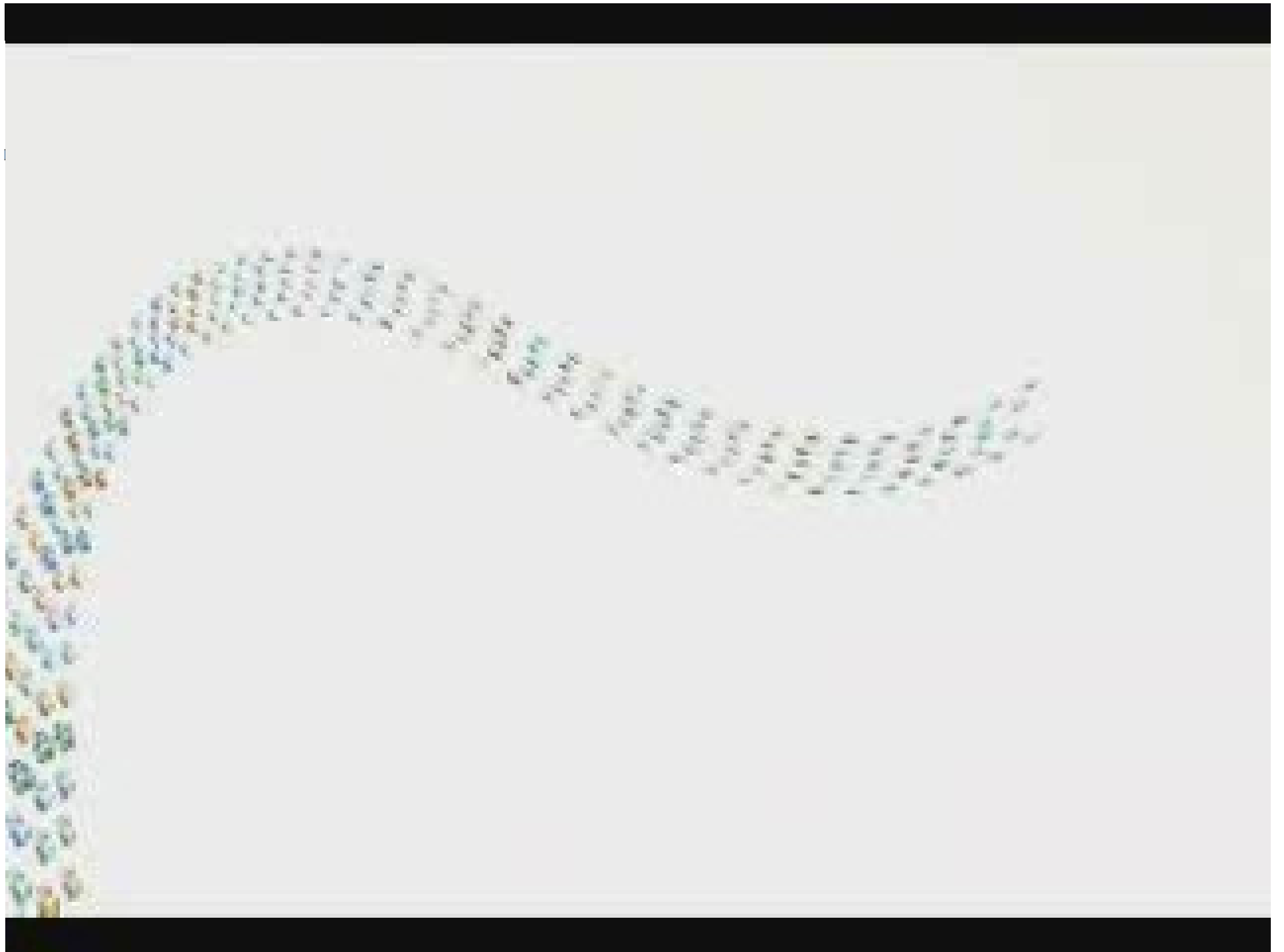
Technology Strategy

- Accurate vehicle detection, identification and classification
- Adaptable to changing tolling principles – smart roadside technology, business rules in the central system
- Service oriented architecture, open standards
- Single point of truth



CATAPULT BI

Richard Green
Founder & Managing Director



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SECONDS

About Catapult BI

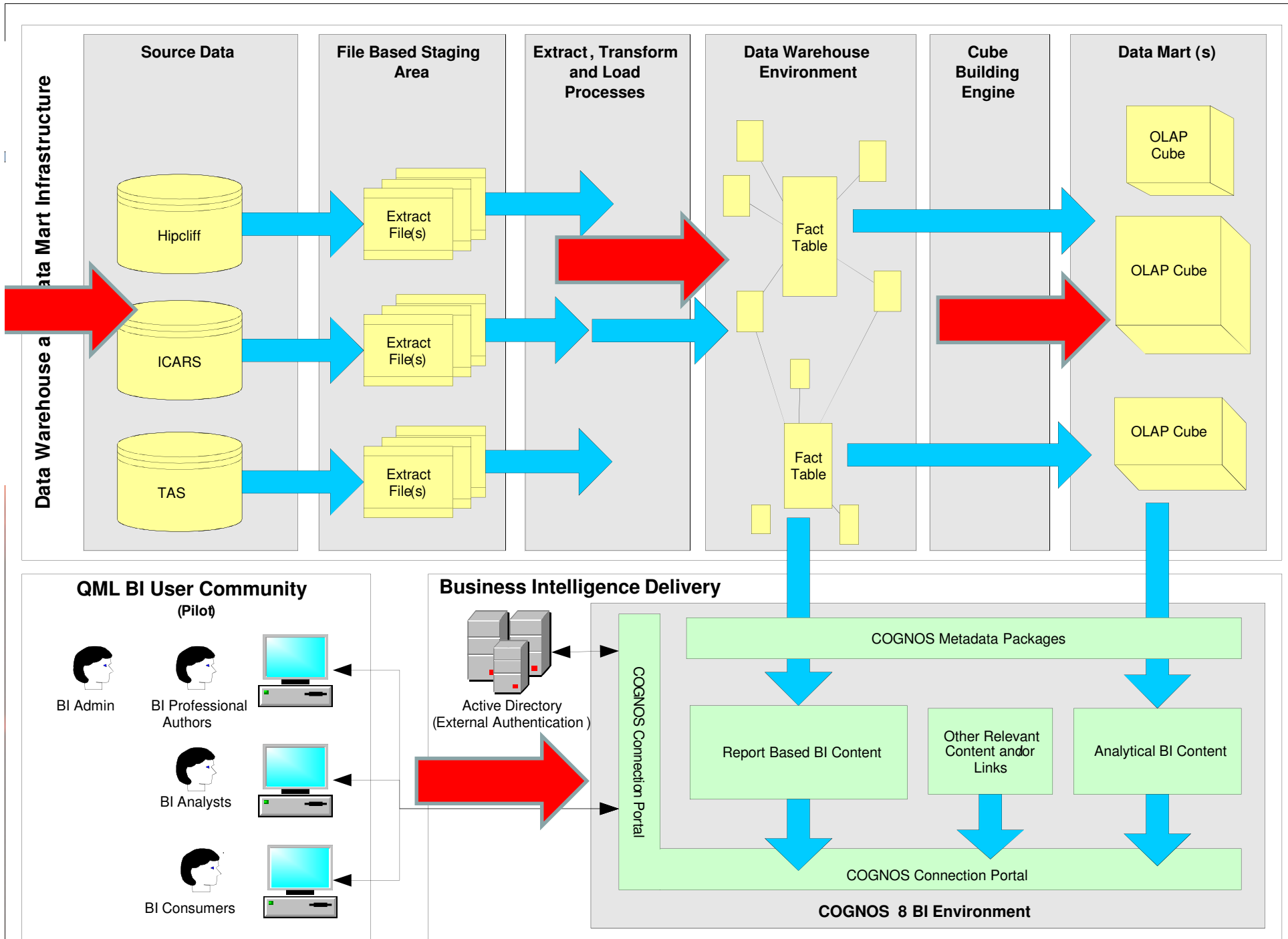
- Specialising in BI and Data Warehousing
- Strong business, risk and ROI focus
- Large corporate & Government customer base
- Gold sponsor – 2009 Cognos Asia Pacific Forum
- 2008 Cognos Partner of the Year (Qld/NT)

Before Free Flow Tolling there was:

Enterprise Information System (EIS) Project

Pilot Project – 2007

- Decoupled from source systems
- Highly flexible extract, transform and load
- Traffic Statistics and Transponder Sales
- SQL Server 2005 and Cognos 8 BI



Pre Free Flow challenges

Data Integrity

- Late arriving data
- Data integrity reports
- DESIGN to MANAGE
- Different “definitions”

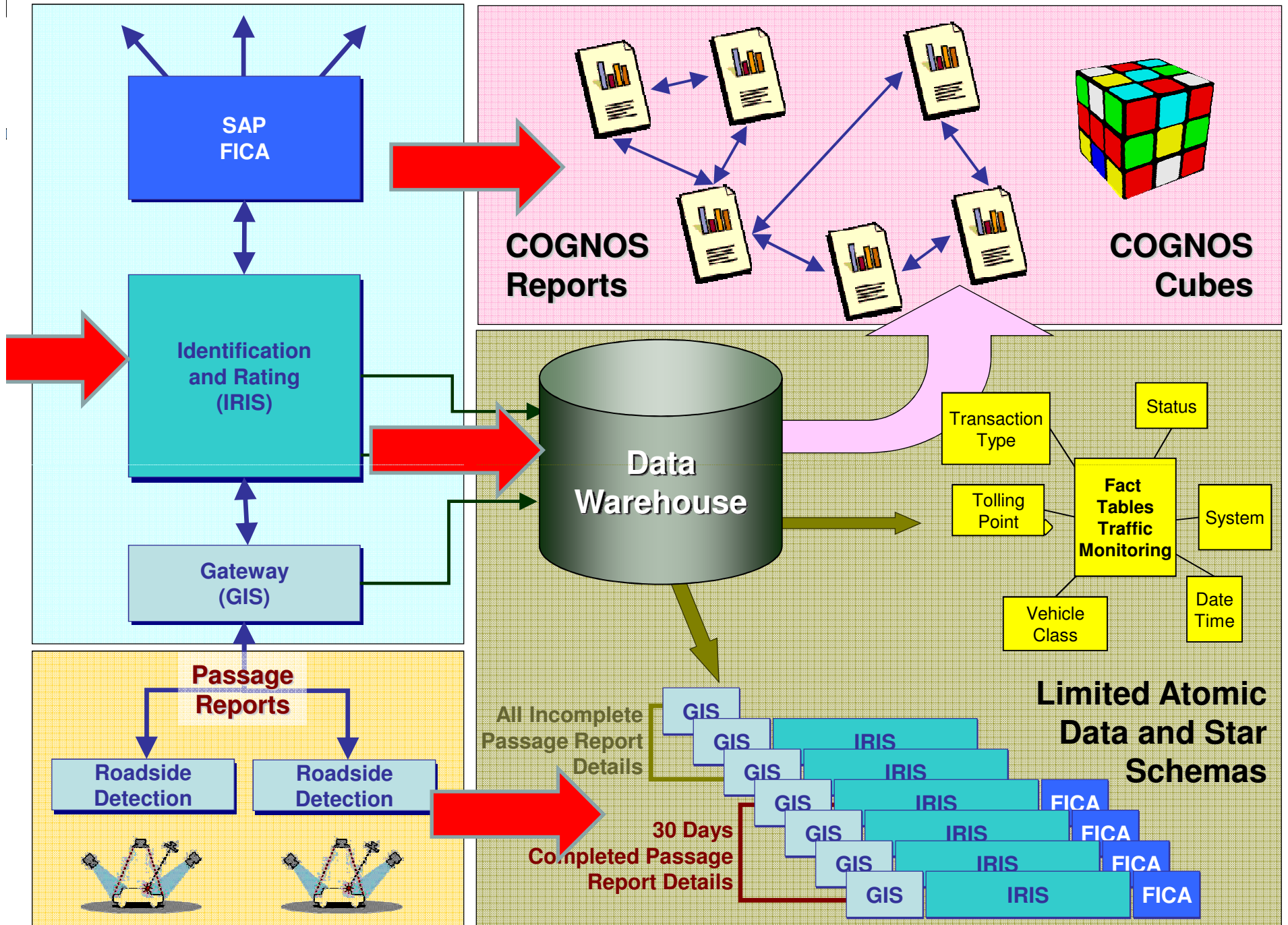
Source Systems

- Black box
- Investigative skills

And then there was Free Flow Tolling

Free-Flow Tolling and Cognos

- Monitoring of what goes in and out of each system
- Traffic Statistics + history from earlier phases
- Generated reports to display summarised data flow and exceptions



Free Flow BI Challenges

- Complex operational system analysis required to extract data
- Complex data processing to ensure data integrity
- Requirements elicitation processes
- 3 week transition period
- Small team in a very large project



BENEFITS

ROI



RISK



Questions?

