



In Vehicle Monitoring Systems (IVMS): *Driving Opportunity*

Edmonton September 8, 2010

Why IVMS?

- “IVMS makes good business sense and I strongly encourage all of our Contractors and Hauliers to implement IVMS, if they have not already.. It will contribute to the overall bottom line and I can't imagine doing business in the future with Contractors and Hauliers who have not implemented IVMS.”

Mike Watson: Shell Group Road Safety Manager

- Fleet Maintenance & Preservation- Visibility
 - Reduce Distances Driven
 - Optimize fleet usage
 - Handling of vehicles by drivers
 - Stringent Driving parameters for drivers
 - Asset tracking
- Financial Benefits
 - Monitor gas usage
 - Monitor idling time
 - Reduce vehicle misuse
- Driver Control and Monitoring
 - Company image and public perception
 - Contractor engagements and “setting the example”

Good corporate governance is summed up as involving “Fairness, accountability, responsibility and transparency...” (King, 2006)

Sustainable Development

Idling & Emissions

Generally, light vehicles use 17% of their fuel for idling. (Lovins, 2007)

Estimated that in 2025 cars and light trucks will burn 46% of US oil, causing enormous CO2 emissions. (Lovins, 2007)

Shell Canada: Idling: estimated 85 tons of CO2 emissions of monitored vehicles (~100) during Q3 and Q4 2009.

Cost to company ~CAD 75K gas and maintenance cost from idling. (Fraser Basin Council, 2006)

Monitoring and addressing all excessive idling with drivers.

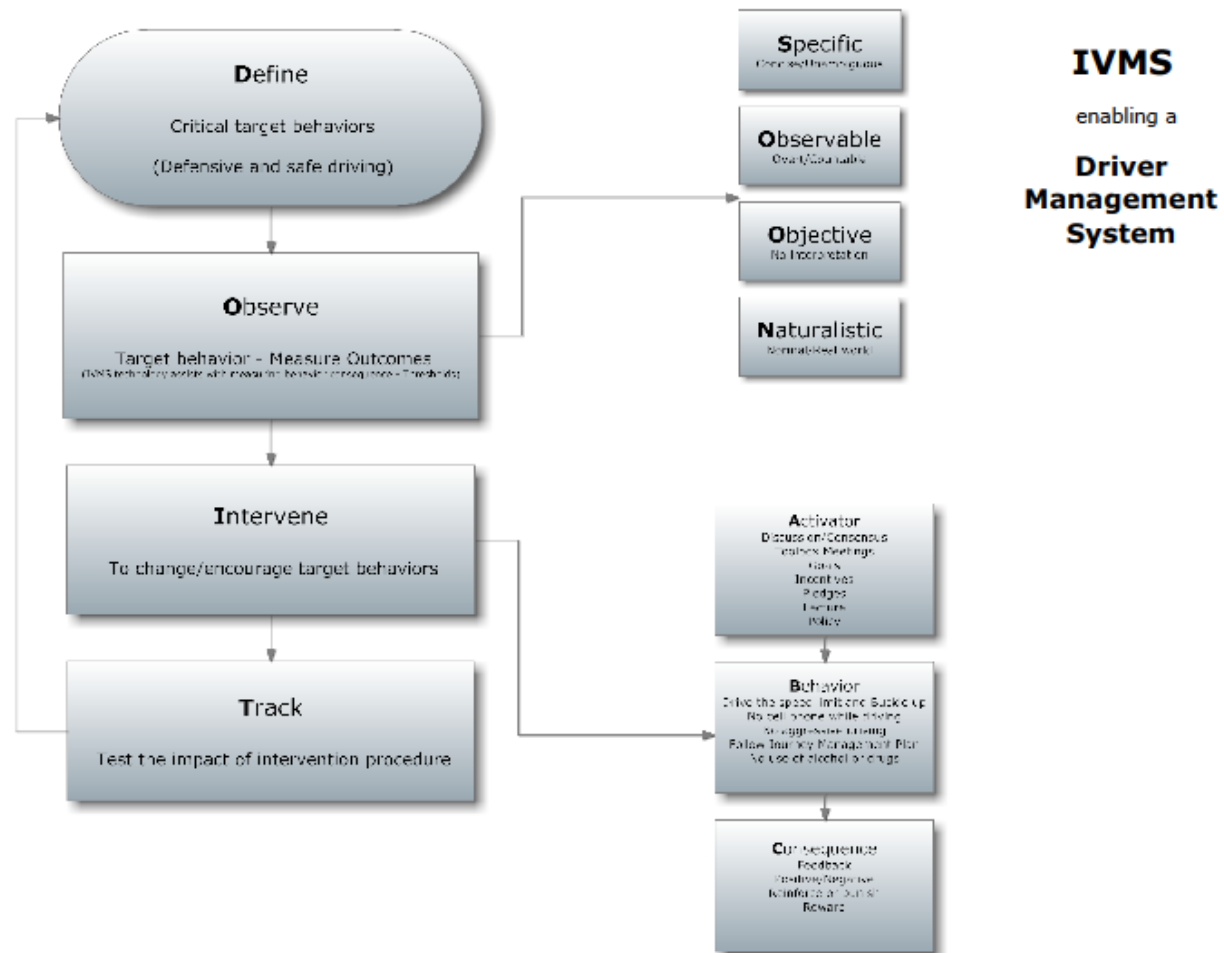
Recent initiative will calculate all idling time above 5 minutes from a vehicle to identify improvement opportunities and determine total emissions.

“Sustainability is the principle of ensuring that our actions today do not limit the range of economic, social and environmental options open to future generations.” (World Commission on Environment and Development, 2006)

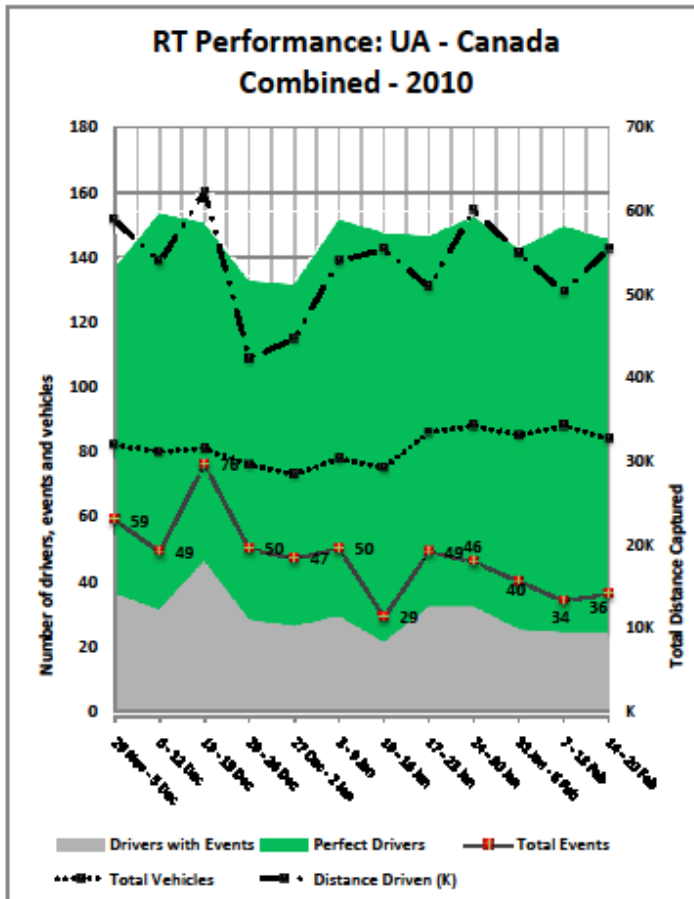
- Sensitive Areas
 - Work is conducted in the vicinity of sensitive communities.
 - Speed: Geo-fence reserve areas for lower speed.
 - Pedestrians: Warning buzzer for high-pedestrian areas.
 - Location data: Replay driver trips in event of conflict or accusations.
 - Behaviour: Improve driver behaviours and accommodate communities.
 - Local Content: Local businesses identified for installation training & support of hardware.

- Working alone alarming: Extended functionality of current IVMS equipment.
- Monitor and manage time of day driving occurs.
- Improve driver behaviour and safety on the road by monitoring and implementing an effective DMS. (Botzenhardt, 2007)

Driver Management System (DMS)



RT Performance Tracking: Graphs & Charts



14 - 20 Feb 2010

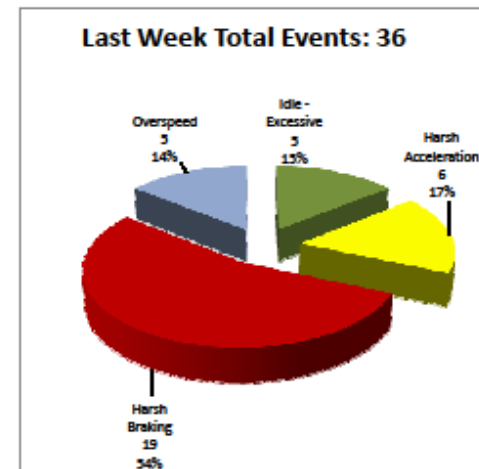
Scoring Matrix: 80%-100% (Green), 50%-79% (Yellow), 0%-49% (Red)

Road Safety Score
 (Driver percentage with no events) **83%**

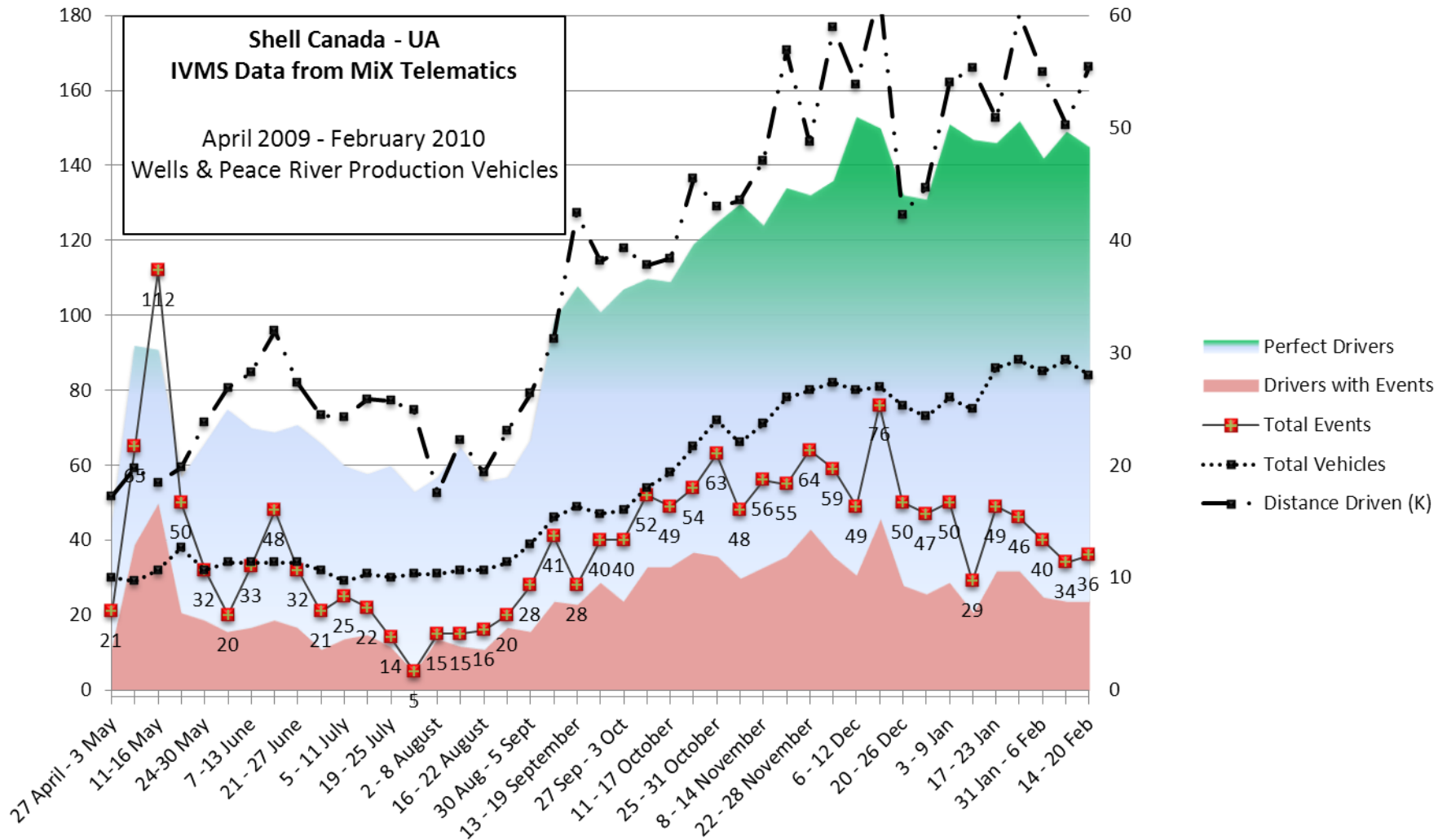
86	79	79	82	84
10 Jan - 16 Jan	17 Jan - 23 Jan	24 Jan - 30 Jan	31 Jan - 6 Feb	7 Feb - 13 Feb

Critical Event Factors & Observations:

Events distribution: Wells 23; PR Cold Production 6; and PR Thermal Production 5 events.



RT Performance Tracking: Graphs & Charts



IVMS and Shell HSE

- Driving is one of the high-risk activities in EP and approximately 2/3 of EP's recent fatalities are caused by road transport accidents. (Botzenhardt, 2007)
- In majority of journeys the driver is out on the road without a supervisor.
- Several scientific studies however show the significant effect on Road Safety when installing IVMS in vehicles to ensure compliance with set rules, in combination with an incentive program for positive driving behaviors. (Botzenhardt, 2007)
- Important part of managing risk in Road Transport activities.
- Included in TO-85 for Shell UA adoption.
- Included in contractor gap assessments.

Q & A

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