

TruckOn — Overhead Collision Prevention



TruckOn is a forward-looking 'proof-of-concept' project that demonstrates how emerging wireless vehicle communication technologies can prevent over-height truck collisions with tunnels, overpasses and enclosed bridges.

The Problem

Existing sophisticated warning systems such as electronic signs, water curtain displays and radio broadcasts fail to prevent collisions of over-height trucks with infrastructure. In NSW these accidents cost the Roads and Maritime Services millions per year. On Sydney's roads there is almost one incident a week causing significant traffic disruption.



Drivers ignoring warnings in Sydney Harbour Tunnel and M2 Motorway



Accidents in Sydney: Burwood and M5 Tunnel



Accidents in USA and China



The TruckOn approach is a 'complete' solution to a complex 'human factors' problem. It minimises the chance that human error, negligence or wilful behaviour will result in an accident. It achieves this by the following principles:

- Detect** *Detect the truck height. Don't rely on other information sources.*
We use a modern beam-break detector which wirelessly sends an over-height message to TruckOn 'Black Box' in the offending truck.
- Warn** *Delivered directly to the offending driver's cabin over the stereo. Not broadcast to others.*
'Black Box' warns driver over stereo and on a display.
- Track** *Track what action the driver takes. Alter warnings accordingly.*
'Black Box' uses GPS and local map to track the truck's speed and location.
- Intervene** *If warnings are ignored, apply the brakes and prevent a collision.*
'Black Box' reduces truck throttle and applies brakes gradually.
- Notify** *Notify the traffic authority if additional action is required.*
'Black Box' sends message via mobile phone communications.



A collaborative project.

TruckOn is part of NICTA's Infrastructure Transport and Logistics activities, which is developing cutting-edge solutions to real-world transport problems.

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