

Smart Transport Infrastructure Technology



Welcome by - Neville Stevens AO, Chairman of NICTA



Why are we here ?

- Smart Infrastructure is coming – the sooner the better
- We chose to concentrate on smart transport infrastructure for today
- ICT drives Smart Infrastructure
- Research drives ICT innovation



BUT

- Cannot do research in a vacuum
 - It takes a long time to get from lab to traction
 - Planners need to plan for technological advances
- The better the research, the better the ICT the better the smart infrastructure

Benefits of Smart Infrastructure



- Extend useful life
 - Reduce capital and operating expenses
- Improve efficiency of old and new infrastructure
 - positive GDP impact, defer capital works
- Reduce energy consumption & emissions
- Improve safety by detecting hazards
 - save lives, reduce disruption
- Protects infrastructure from damage
 - malicious or accidental

How does Smart Infrastructure work?

- Smart Infrastructure knows:
 - How it is performing
 - How to improve its performance
 - How to manage the way it is used more effectively
 - How to protect itself from accidental or malicious damage
 - communicates to and from its users
- Smart infrastructure is enabled by
 - devices like built-in sensors which monitor soundness & performance of bridges, tunnels, power lines and so on
 - controls such as automated traffic signals & speed limits
 - wireless and broadband communications (NBN), sophisticated video analysis, GPS technologies, optimisation and powerful computers.



- Current ICT cannot handle the size and complexity of systems needed to make Australia's infrastructure smart
 - Current sensors are too power hungry and expensive
 - Will need to manage hundreds of millions of new sensors
 - Vast amounts of real-time data to analyse
- R&D drives ICT advances for improved infrastructure performance
 - Lower power, different types of sensors
 - Secure, trustworthy, faster communications
 - Interpret huge amounts of data
 - Optimise large, dynamic, complex systems

What is Smart Infrastructure ?



What isn't Smart Infrastructure ?



4 dead, 79 injured, 20 missing after dozens of vehicles plummet into river

Minneapolis – St Paul Interstate 35 W Built 1967



Outline for Today



- Setting the scene
- Brief description of some of the technologies that are being applied to smart infrastructure
- Some case studies
- Breakouts and brainstorming
- Goals for today
 - Contacts made across sectors raising awareness of problems and opportunities
 - Identify Smart Infrastructure priorities
 - Identify Future Smart Transport Infrastructure projects which may involve government, industry and research
 - Identify next steps

Nominations for the Federal Smart Infrastructure Awards Close 16 May