IPv6 and Innovation

Green ICT

Intelligent Transport Systems

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Green Protocol Working Group

Chaired by Geoff Lambert; an international collaboration of IPv6 related organisations and individuals identifying IPv6 based case studies from all geographies.
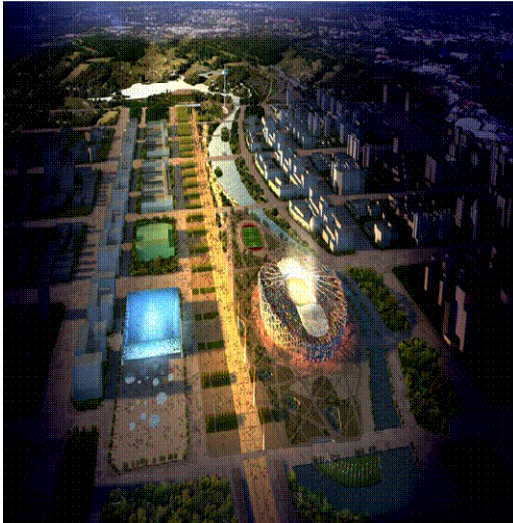
Founded in 2007, showcasing IPv6 based Green ICT, by example…

Beijing Olympic 2008 Main Stadium District
Lighting System Control by IPv6 Facility Manage & Control

Operated by Matsushita Electric Works (MEW)
http://www.mew.co.jp/e/corp/index.html

Lightening Management & Control
- Using IPv6 based Facility Networking
- Area Management System, i.e., not single facility but multiple facilities
- 1.4kmx2.4km with 18,000 lights
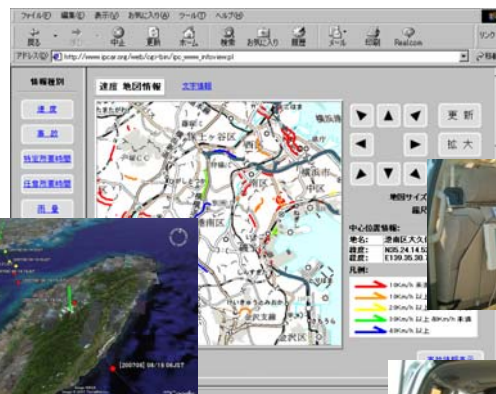- 340 IPv6-based control nodes
- 10% Energy saving
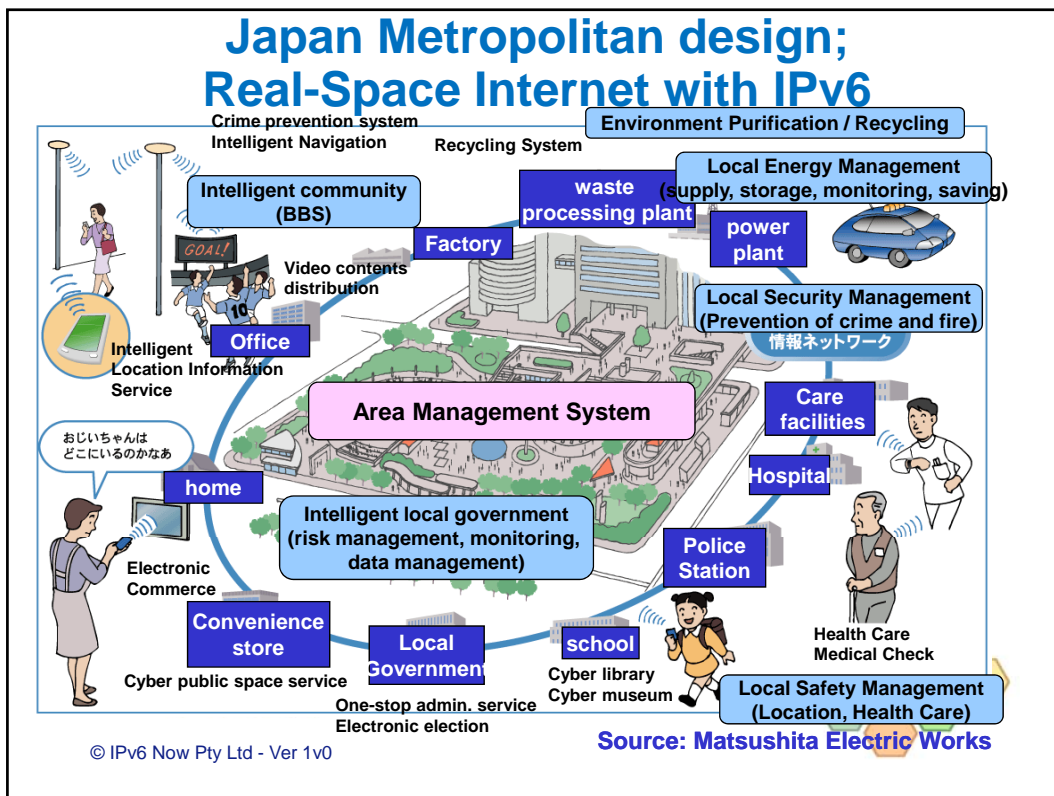

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"Live E!" Project
Sensor network for the earth

http://www.live-e.org/

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**Japan Metropolitan design;
Real-Space Internet with IPv6**

Crime prevention system
Intelligent Navigation

Recycling System

Environment Purification / Recycling

Intelligent community (BBS)

waste processing plant

Local Energy Management (supply, storage, monitoring, saving)

Factory

power plant

Video contents distribution

Local Security Management (Prevention of crime and fire)

情報ネットワーク

Office

Intelligent Location Information Service

Area Management System

Care facilities

おじいちゃんは
どこにいるのかなあ

home

Hospital

Intelligent local government (risk management, monitoring, data management)

Police Station

Electronic Commerce

Convenience store

Local Government

school

Cyber library
Cyber museum

Health Care
Medical Check

Cyber public space service

One-stop admin. service
Electronic election

Local Safety Management (Location, Health Care)

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Source: Matsushita Electric Works

IPv6 and Intelligent Transportation Systems

The role of VIC6

Automotive Manufacturing Sector

Phase 4

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VIC6

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VIC6 Seed Funding
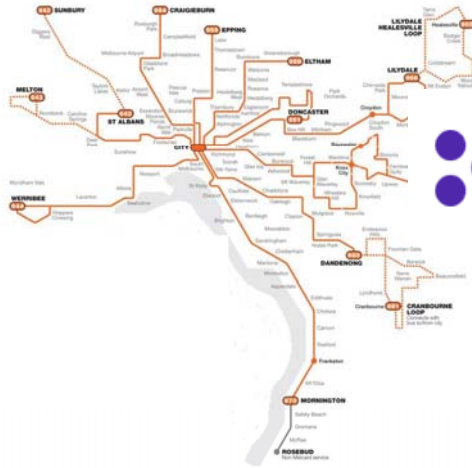
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VIC6 Sponsors

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IPv6 Testbed Objective

To provide an industry facility, in the form of an IPv6 testbed network, that will

- enable Victorian industry and commercial organisations to learn and test IPv6 implementation and integration processes and innovations

- with a view to deploying within their corporate structures and deploying in products, services and innovations.

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Industry benefits

- Maximum outreach allowing Victorian industry to
  - access cost savings and maximise efficiency improvements through use of IPv6
  - move to quickly adopt IPv6
  - gain maximum market share in the emerging international markets implementing IPv6
  - develop opportunities for innovation based on IPv6

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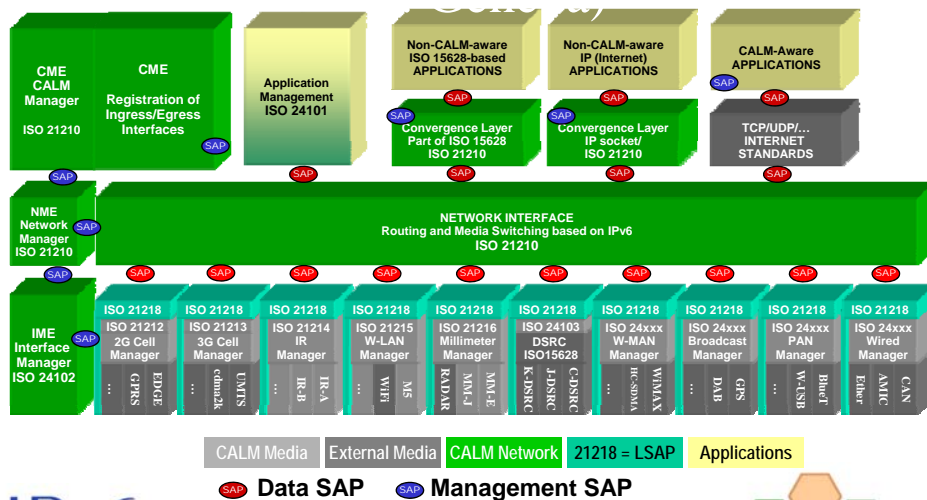
Who's doing automotive IPv6?

- Cisco, Audi, BMW, Renault, Toyota
- China, Japan, USA, Europe advanced ITS implementation are all IPv6 based
- DSRC standards, e.g., IEEE1609, 802.11P mandate IPv6
- ISO TC204 WG16 CALM is IPv6 based
- IETF MobileIPv6 (NEMO for Automotive Industries)

IPv6 Now

VIC6

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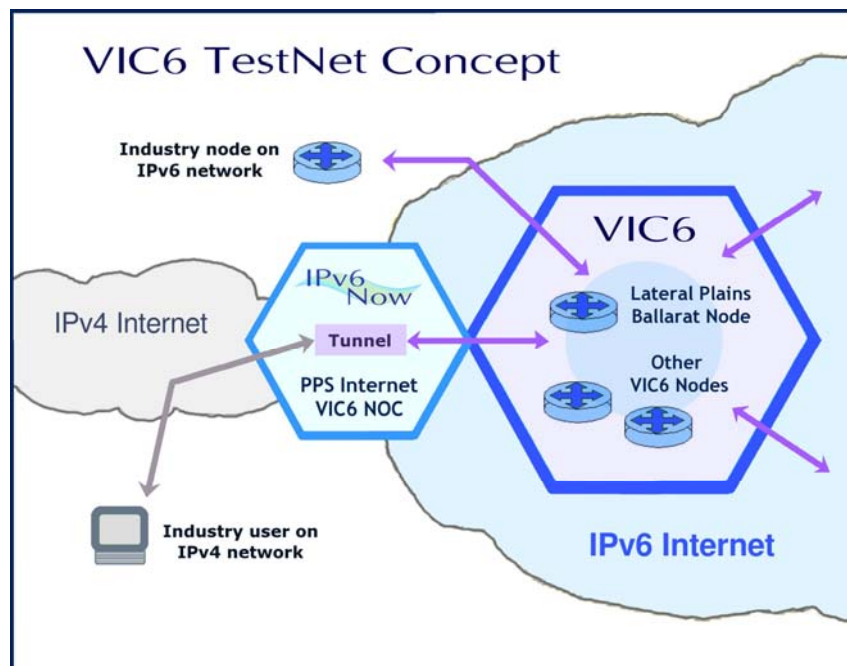# CALM System Architecture (21217)

VIC6 Project activities

- IPv6 capable testbed network
  - accessible from anywhere on the IPv4/v6 Internet
- Industry related activities
  - Skills development
  - Transition planning
  - Staging solutions
  - Innovation: product and process trial and development

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VIC6 TestNet Concept

(c) IPv6 Now Pty Ltd 2009

VIC6 Progress - Functions

- **Basic functionality**
  - Local IPv6 connectivity
  - dual stack operations & transition
  - Internet connection
  - applications capability
- **Interoperability**
- **Performance Management**
- **Certified Reference Environment**

IPv6 Now

VIC6

Simple Usage Examples

- See whether your OS is IPv6 aware
- See how your product or application handles IPv6
- Build a small network and see how your procedures stand up to IPv6
- Drop a router or other hardware into the racks and learn how to configure it for real
- Load your software and test on IPv6 Internet

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VIC6

Key Developments:
Phase 4: Auto Manufacturing

- VIC6 is in the process of consulting with the Victorian automotive manufacturing sector on its business needs in relation to IPv6.

- The ITS week of 16-20 November 2009 has seen a national focus of activity in Intelligent Transportation Systems.

- VIC6 was used in the AusRoads communiqué as an example of industry testbed activities

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Key Developments:
Phase 4: Auto Manufacturing

- VIC6 held its 1st industry consultation session Nov 2009 in Melbourne. More are planned in 2010

- Briefing and discussions held with the Federation of Automotive Parts Manufacturers (FAPM).

- VIC6 is engaging with AusRoads and Embedded Systems Australia; trials are being examined

- VIC6 has been accepted as part **AusDSRC** Industry Cluster activity
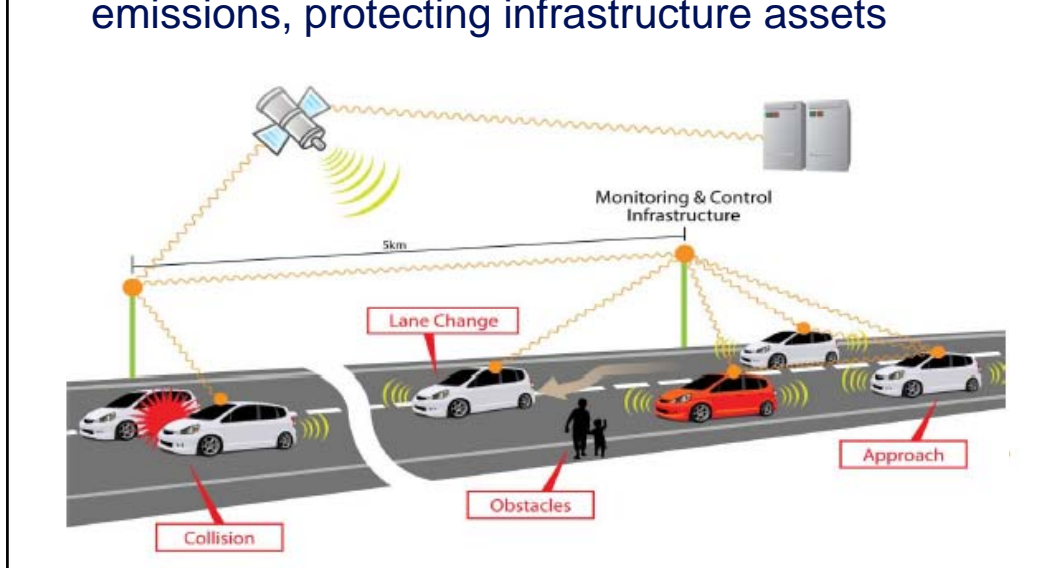
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Dedicated Short Range Comms

• V2V & V2I = Safer roads and intersections, reduce congestion, lower fuel consumption and emissions, protecting infrastructure assets

Dedicated Short Range Comms

New ITS initiatives being pursued

- OverHeight Vehicles Project (RTA/ESA/NICTA)

Well and truly stuck ... the truck under the bridge at Grafton. *Photo: Daryl Halliday*

Sydney Morning Herald: July 22, 2009

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New ITS initiatives being pursued

- European Grand Cooperative Driving Challenge - GCDC 2010 Australian Team

- Level Crossing Safety (AusRoads, VicRail)

- TestNet established nationally

- RFID Cluster and IPv6 Integration –
  e.g., Freight and Logistics focus

- International collaborations such as
  IPv6Ready.org, CVIC and other collaborations

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Some time in the not too distant future…

Questions?

➢www.vic6.net
www.aigroup.asn.au
www.ipv6now.com.au

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VIC6 Automotive Manufacturing Sector

Thank you.