

eSafety WG Communications

Status Report V2X Communication

Uwe Daniel, Robert Bosch GmbH

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Introduction

The eSafety working group Communications

- was established in autumn 2005
- reports to the eSafety forum steering group
- focuses on:
 - standardisation
 - spectrum requirements
 - international cooperation
- members from industry, public sector, road and infrastructure operators

Introduction (2)

- WG-C works in close co-operation with COMeSafety and other EU projects (CVIS, COOPERS, GST, Safespot)
- two task forces address spectrum issues and standardisation
- international aspects are promoted by personal contacts and information exchange

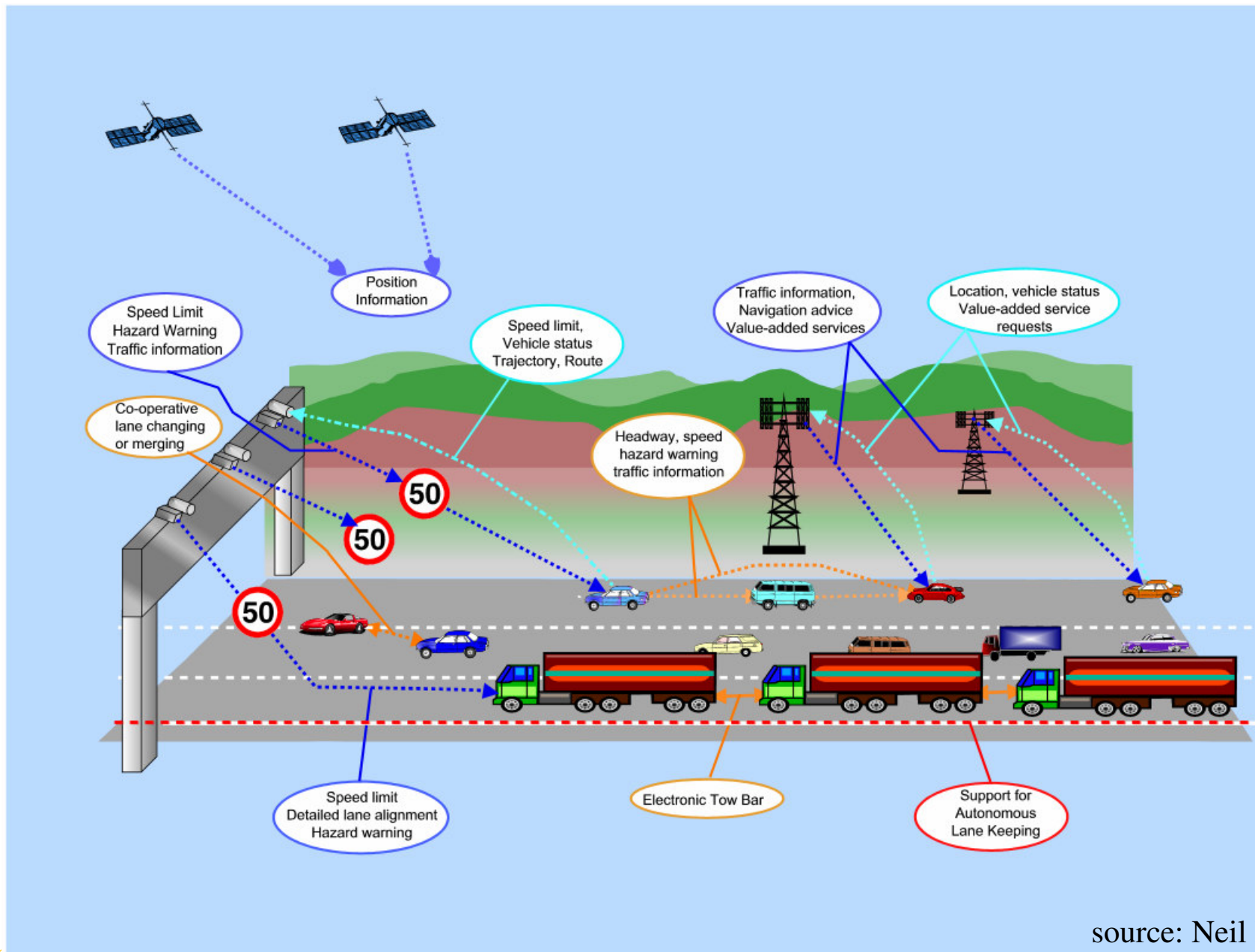
Why V2X communication?

- most severe accidents occur because
 - drivers misjudge the speed of oncoming traffic leading to left turn accidents (UK: right turn)
 - drivers misjudge situations at intersections or don't yield right of way, leading to side crashes
 - urban crossing traffic can only be noticed late due to buildings/obstacles
- and could be avoided by vehicle to vehicle communication or infrastructure based systems

Why V2X communication? (2)

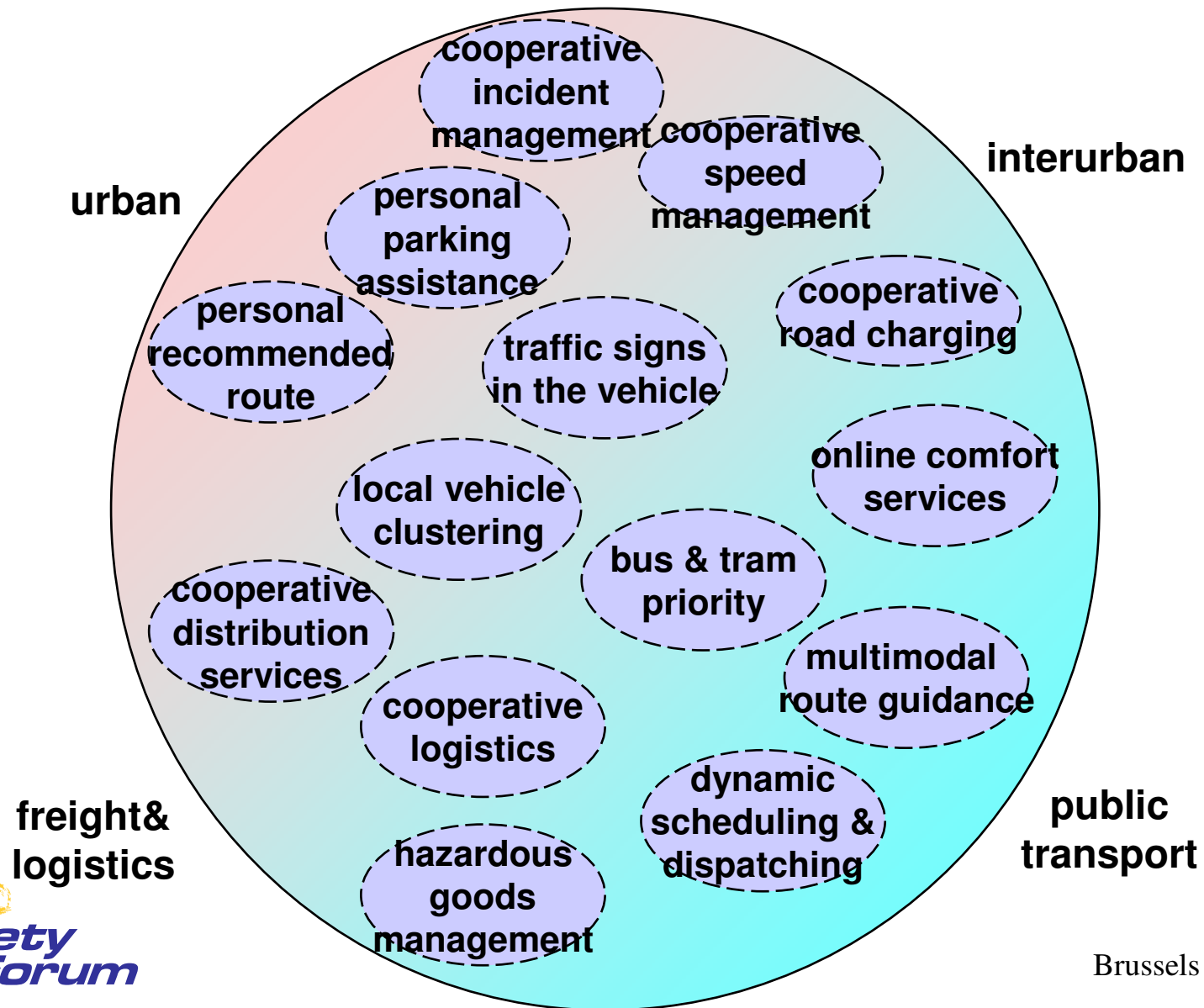
co-operative traffic using V2X communication
(including free to air traffic information broadcasts)

- increases road capacity
 - saves fuel
 - saves time
 - reduces emissions
 - increases revenue of road operators
- reduces the likelihood of congestions and accidents
 - thereby reducing maintenance costs of road infrastructure

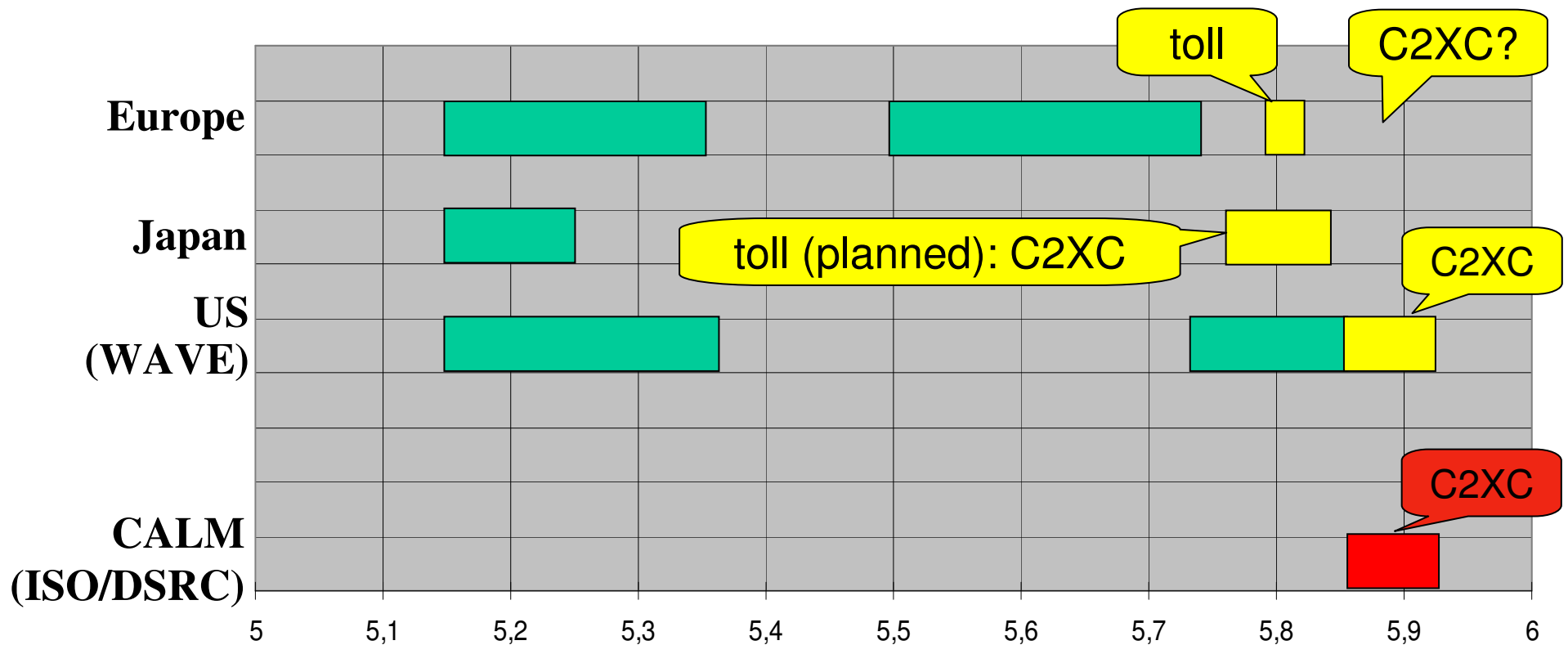


source: Neil Hoose

Possible CVIS applications



Spectrum



Lizence free W-LAN (802.11a)

Dedicated ITS (DSRC)

Requested (CALM):
Global ITS allocation 5.85-5.925



work status

- to push standards and spectrum allocation a list of applications with their bandwidth requirements is in preparation (from projects)
- three classes:
 - safety of life
 - safety critical
 - information/traffic management
- recommendations will be derived from it

Identifier	Application	Charcterisation					
		Mode		Bandwid h Demand kBit/s	Safety Relevance		
		C2 C	C2I		Saf ety of Life	Saf ety Crit ical	traff ic flo w etc
SWa3010H	Traffic Signal Violation Warning		x		x		
SWa3020H	Stop Sign Violation Warning		x		x		
NS6130N	Vehicle Sensing Alternative for Inductive Loop						
	Traffic Flow by Cooperative Traffic Light Management						x
NS6140N	Infrastructure based traffic management-probes						x
NS6150N	Green Light optimal speed advisory						x
SIn3150L	Stop Sign Movement Assistance		x			x	
SIn1110H	In-Vehicle Signage		x				x
SIM-TD-0006	In-Car Signage						x
SIM-TD-0007	Traffic Light Assistant / Warning						x
NS2180N	Centralised Traffic Optimization	x					x
NS2190N	Intelligent On-Ramp Metering		x				x
SIM-TD-0008	Traffic Flow Data Acquisition						x

Reminder

We need:

- a common set of standards
- protected spectrum (ideally with a worldwide, exclusive slot for safety critical applications with low bandwidth)
- a common European, if not worldwide market to overcome the threshold problem and to gain economies of scale

Challenges

- Standardisation
 - all components must have an exactly defined behavior to guarantee safety functions
- Spectrum Requirements
 - maximum delay times, QoS needed, free of charge
- Business Case
 - Threshold problem, dissemination
- International Harmonisation
 - economies of scale, international trade

Work Plan

Work plan of WG-C in 2007:

- draft recommendations 06/07
- discussion with eSafety Forum
- final report /
recommendations for commission 10/07

based on the list of applications!