1st IEEE International Symposium on Wireless Vehicular Communications

Ingrid Paulus
AUDI AG
Germany

Information Society and Media

Contents

Introduction

Why do we need C2x technologies?

- Safety
- Efficiency
- Ecology

What are the challenges?

Introduction

One Cannot Not Communicate

Paul Watzlawick 1921-2007

Introduction

The history of computers is actually quite simple. In the beginning there were no computers. Then there were computers. And then there were none again. Between the second and the third stage, they simply disappeared. They didn‘t go away completely. First they faded into the background. Then they actually merged with the background.

John Seely Brown

Introduction

Why can‘t we make them very small, make them of little wires, little elements – and by little, I mean little ...There is nothing that I can see in the physical laws that says the computer elements cannot be made enormously smaller than they are now.

Richard Feynman (1918 -1988)
in Engineering & Science 1960

Introduction

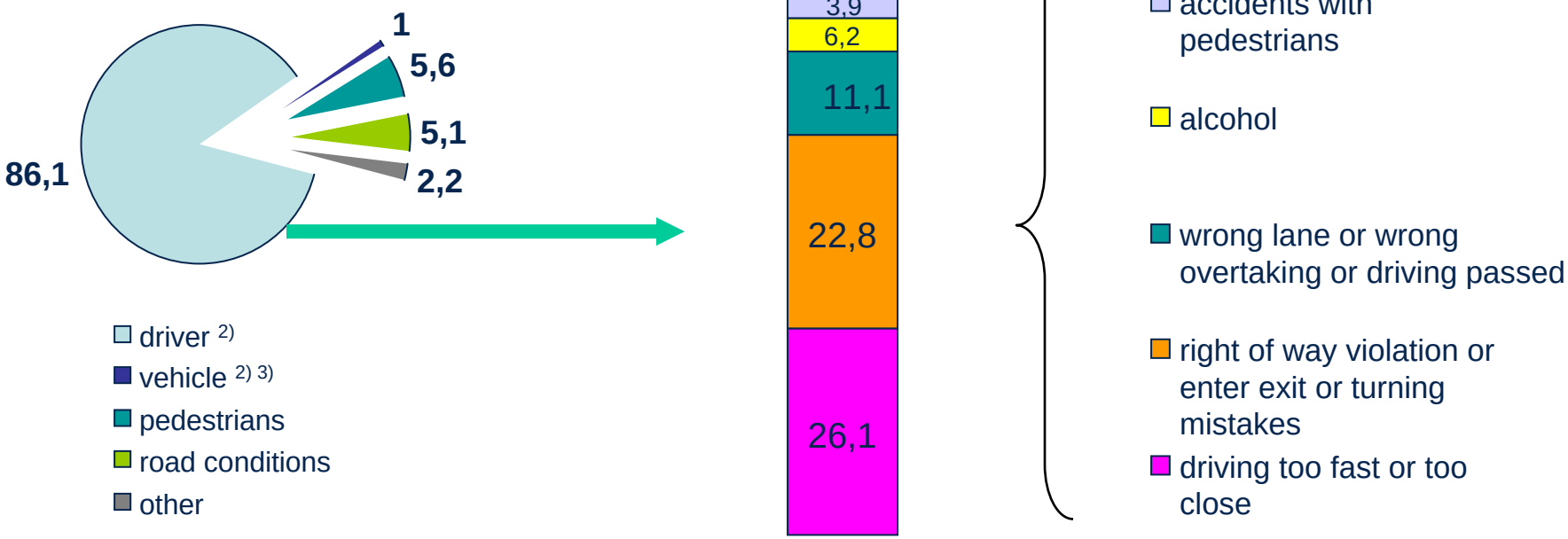
Machines that fit the human environment, instead of forcing humans to enter theirs, will make using a computer as refreshing as taking a walk in the woods.

The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.

Mark Weiser (1952-1999)
in Scientific American 1991

Safety

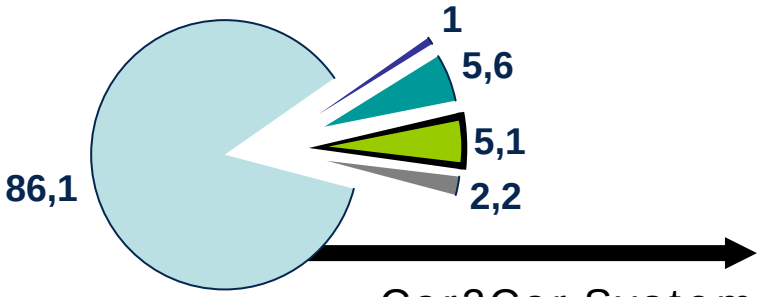
Traffic accidents - 2003
Reasons for accidents
with injured persons [1)]



Source: Verkehr in Zahlen 2003, Deutscher Verkehrs-Verlag
1) Cause of accident determined by the police 2) motor vehicles, motor cycles, bicycles and others 3) technical faults

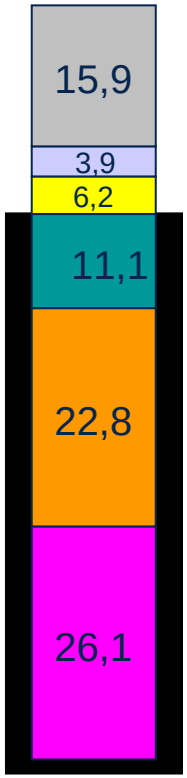
Safety

Traffic accidents - 2003
Reasons for accidents
with injured persons [1)]



Car2Car System helps

- driver [2)]
- vehicle [2) 3)]
- pedestrians
- road conditions
- other



- others
- accidents with pedestrians
- alcohol
- wrong lane or wrong overtaking or driving passed
- right of way violation or enter exit or turning mistakes
- driving too fast or too close

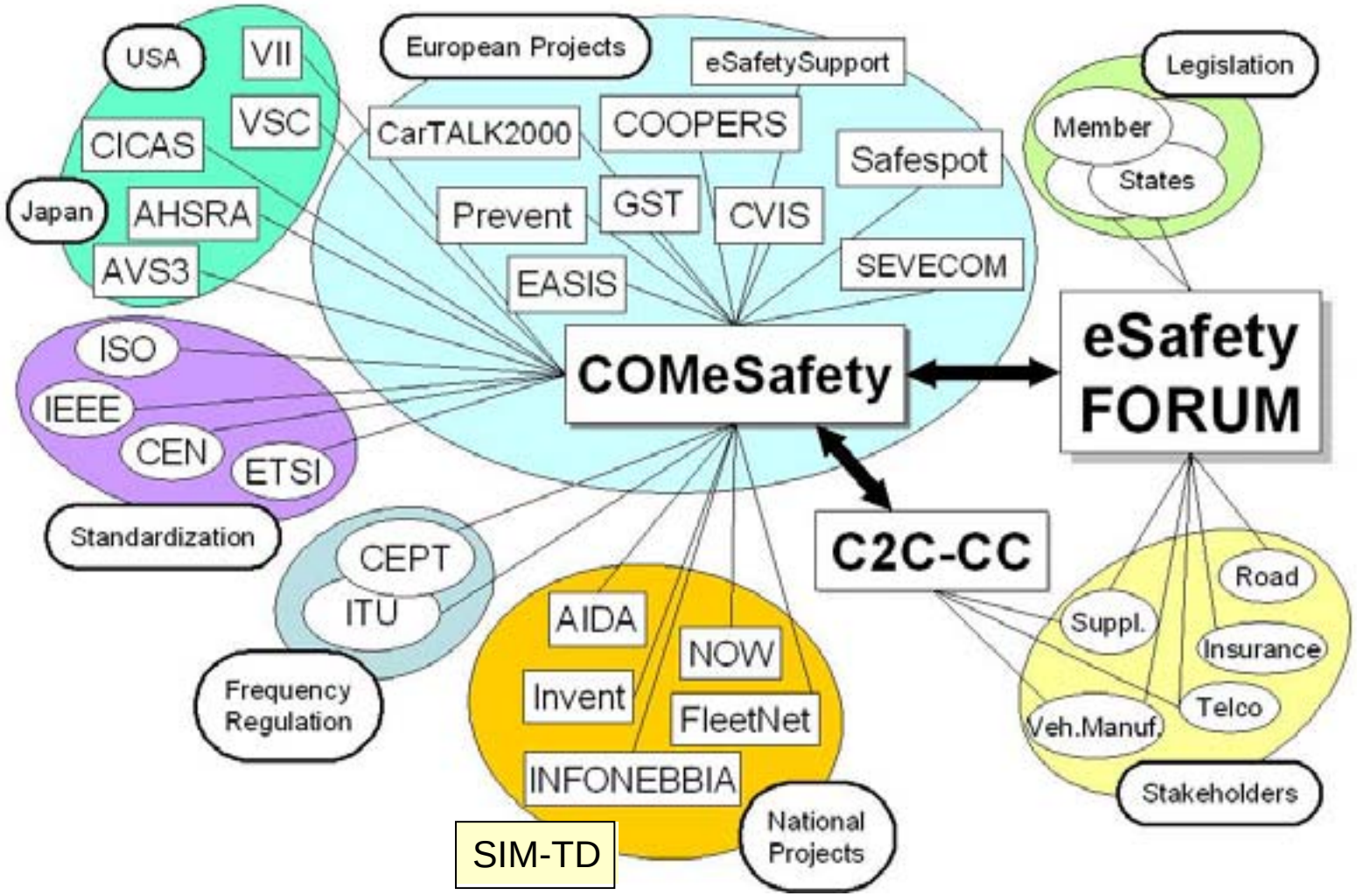
Source: Verkehr in Zahlen 2003, Deutscher Verkehrs-Verlag
1) Cause of accident determined by the police 2) motor vehicles, motor cycles, bicycles and others 3) technical faults

Safety

The European Commission initiated the eSafety Program

- Reduction of road fatalities by 50% up to 2010
- Improving the efficiency of road traffic
- Promoting intelligent Vehicle Safety Systems

Safety



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Project Goals

- Co-ordination and consolidation of research results and their implementation

- eSafety Forum support in standardisation and frequency allocation

- Worldwide harmonization

- Dissemination of results

The Consortium

The Car2Car Communication Consortium is a non-profit organisation initiated by European vehicle manufacturers

- open for suppliers, research organisations and other partners
- working on an open system supporting active safety applications as well as a broad range of information services

further information: www.car-2-car.org

VOLKSWAGEN AG

BMW Group

OPEL

FIAT

RENAULT

Audi

DAIMLERCHRYSLER

ihp innovations for high performance microelectronics

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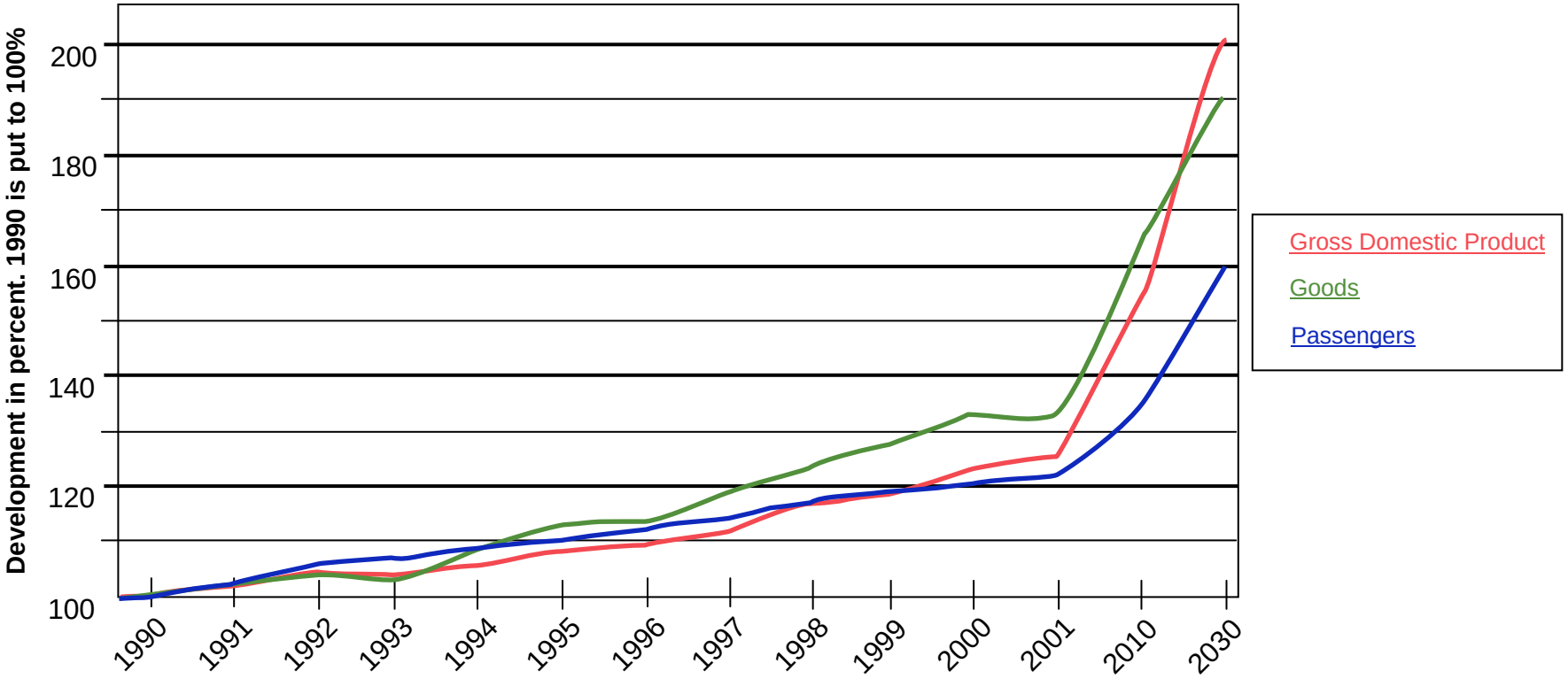
PHILIPS

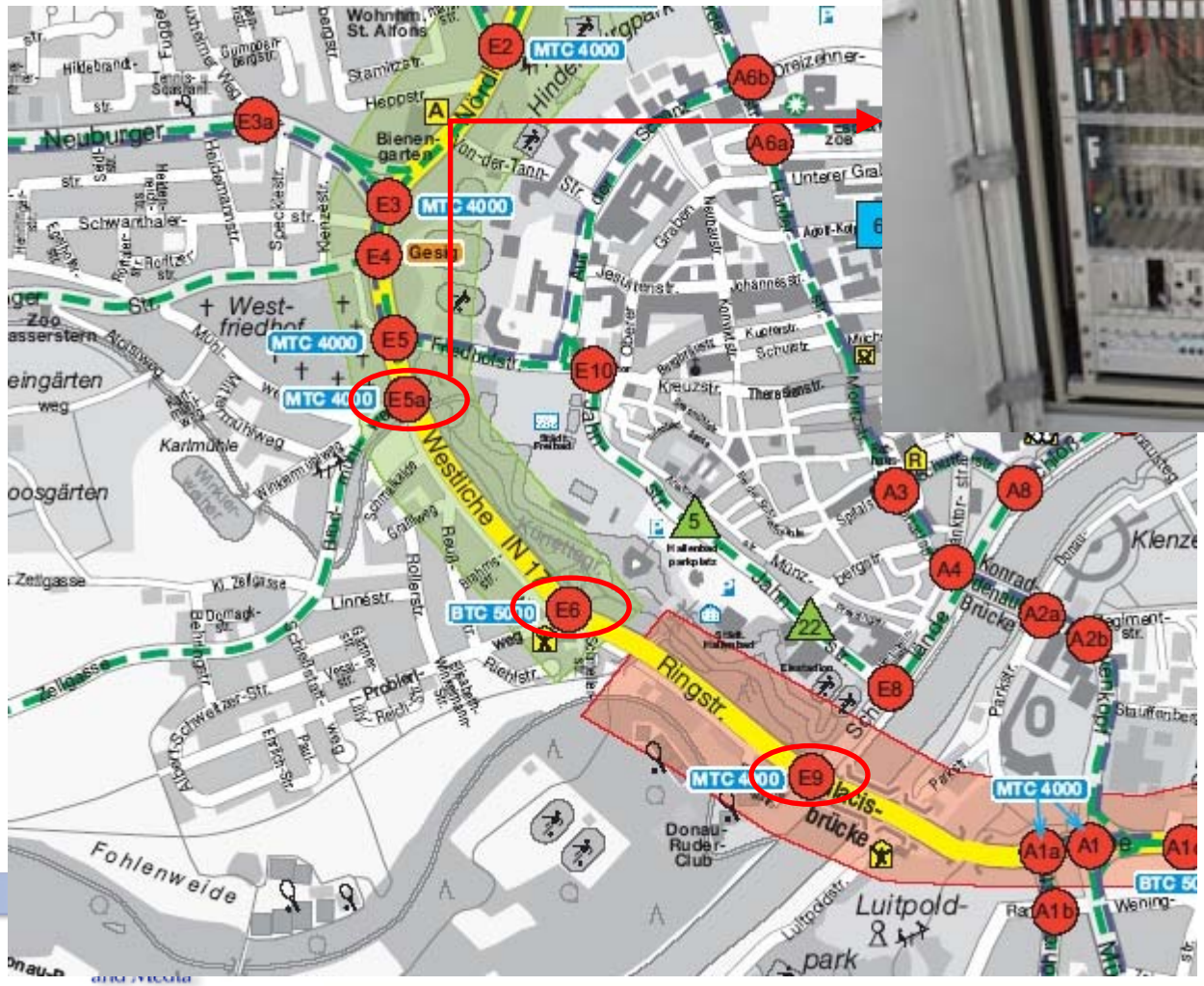
HONDA

Efficiency



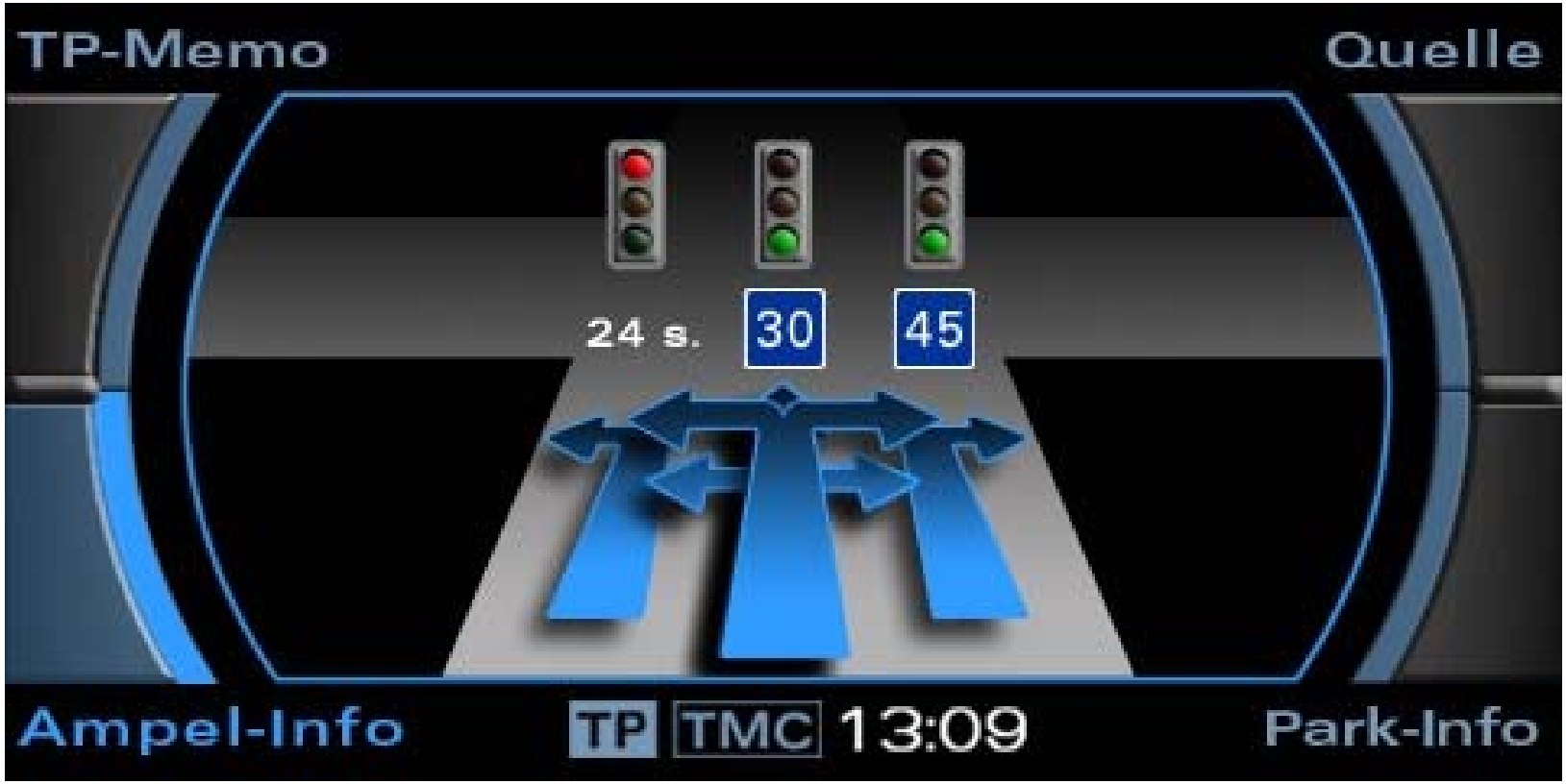
Source: 1990-2001: European Commission (EU-15), 2010,2030: DELPHI-Study (Future and Mobility)

Efficiency


E2
MTC 4000
E3a
E3
E4
E5
E5a
E6
E8
E9
E10
A
A6b
A6a
A3
A8
A4
A2a
A2b
A1a
A1
A1b
Westliche
Ringstr.
Donau-Ruder-Club
Luitpold-park
Fohlenweide
Karlmühle
West-friedhof
Neuburger
Klenze

Efficiency

Driver Information Display



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Ecology

	1950	2007	2050
World population (Billion)	2,5	6,6	9
Vehicles (Million)	50	800	2500
Urban population (%)	28	50	70
Man made CO2 (%)	5	22	40
oil in traffic (%)	20	60	80

Source: Patrick Oliva, Michelin

Ecology

Society
- Climate Change
- Gas prices
- CO_2-discussion

Legislation
- Fleet limit 130 g/km
- CO_2-taxation

Competition
- Measures
- Offers

Risks
- loss of sales
- product mix
- penalties
- competition
- rate of return
- loss of jobs

Challenges

C2X Stakeholder

European Union
27 Countries

National /Federal
Governments

City
Administration

Suppliers

Insurance
Companies

Others

Vehicle
Manufacturers

Customers

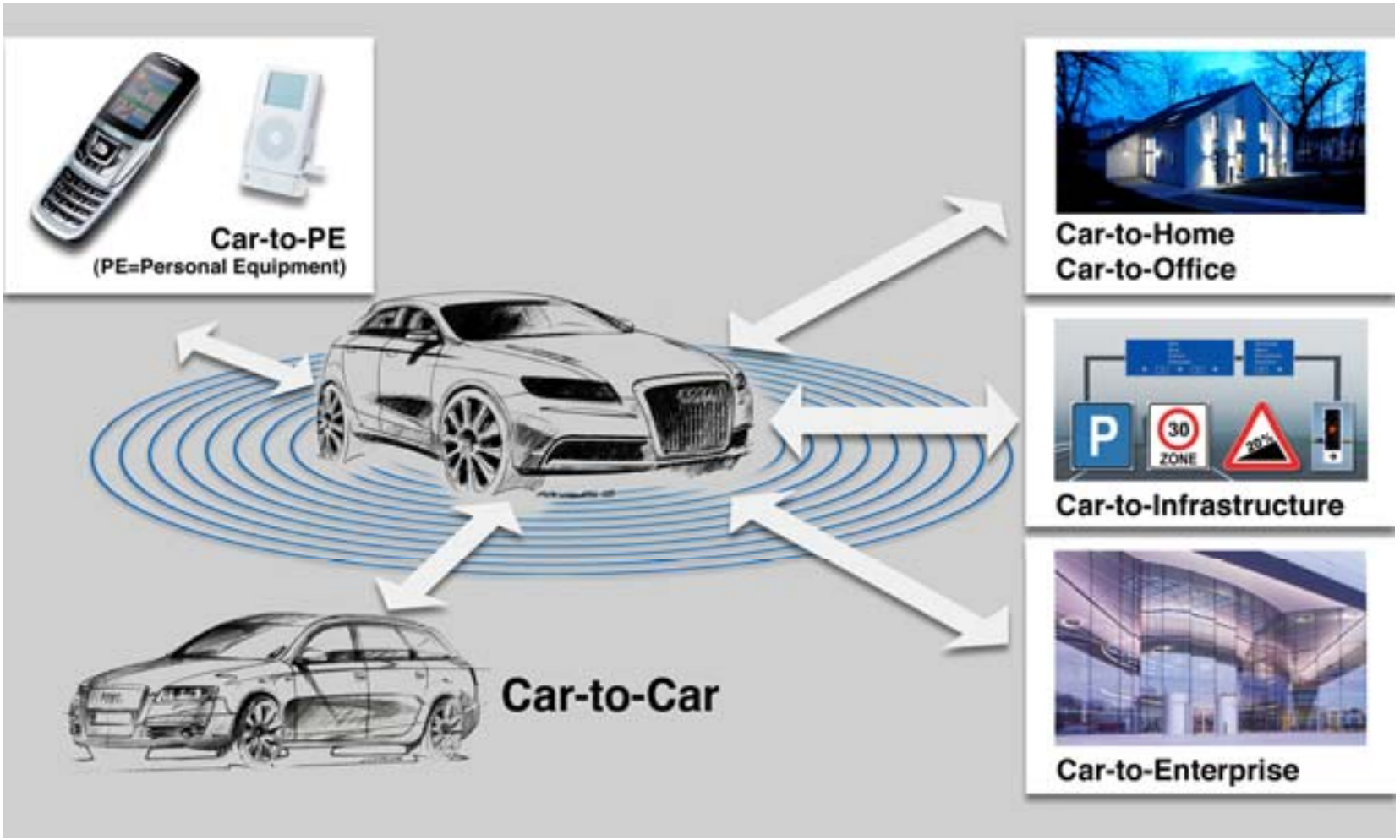
Private

Fleet

Business

Challenges

- Stakeholder Situation
- Market introduction and penetration
- Standardisation
- Frequency allocation
- Large scale field operation test
- Safety / Security
- Workload Management



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Thank you!

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