Subgroup 3

"MITIGATION OF NEGATIVE IMPACTS DUE TO INCREASES IN FREIGHT"

Members of Subgroup3

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Mitigation of impacts – Part 1

by Pieter DE WINNE

1. Negative Impact of Freight Transport

1. Environmental Damage
2. Traffic Safety

2. How to Reduce Negative Impact

1. New Technology e.g. ITS, ICT, WIM etc…

   (Intelligent Transport System, Information Communication Technology, Weigh-in-motion)

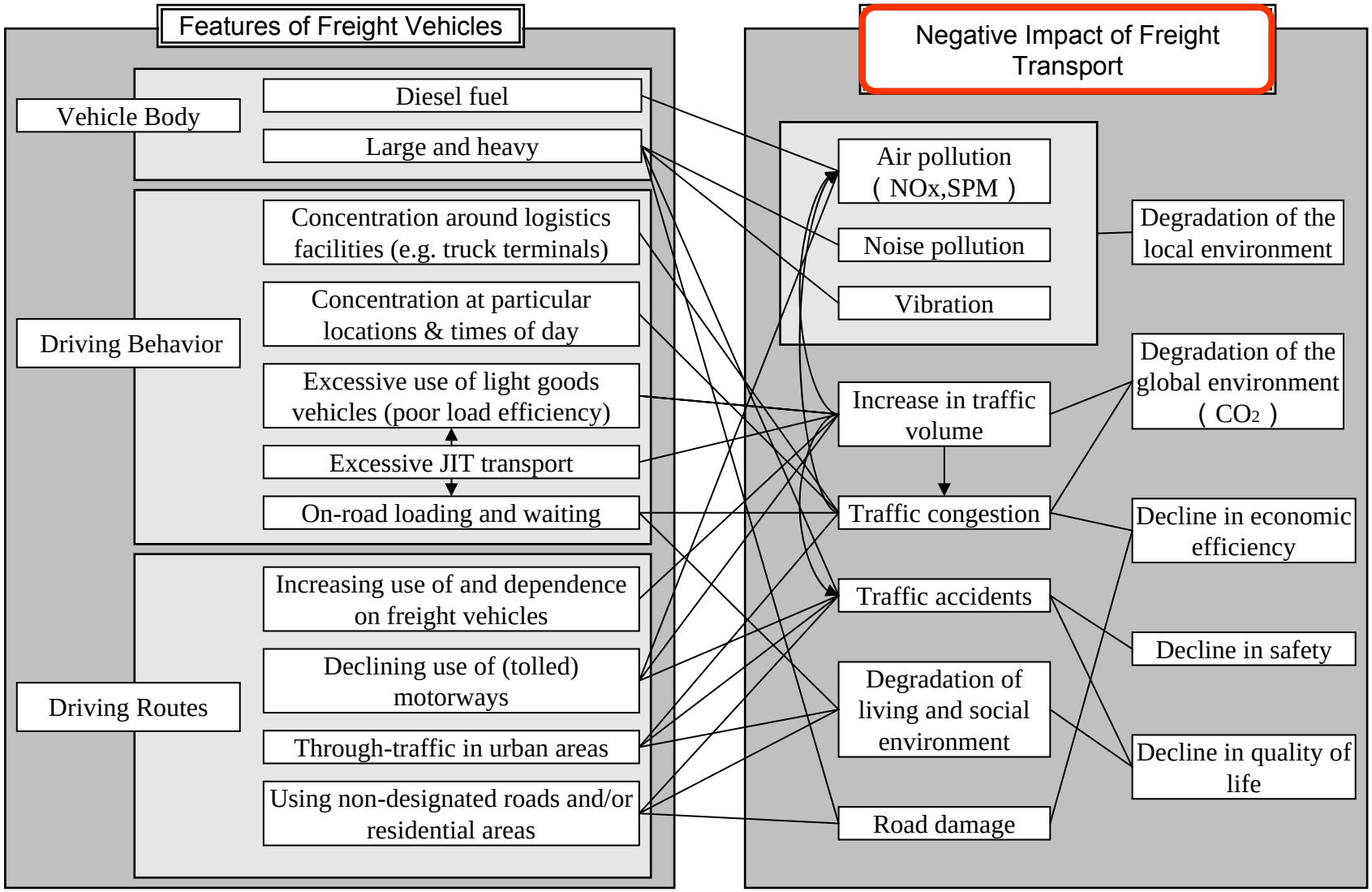
2. Freight Transport Management

4. Recommendations

1. Negative Impact of Freight Transport

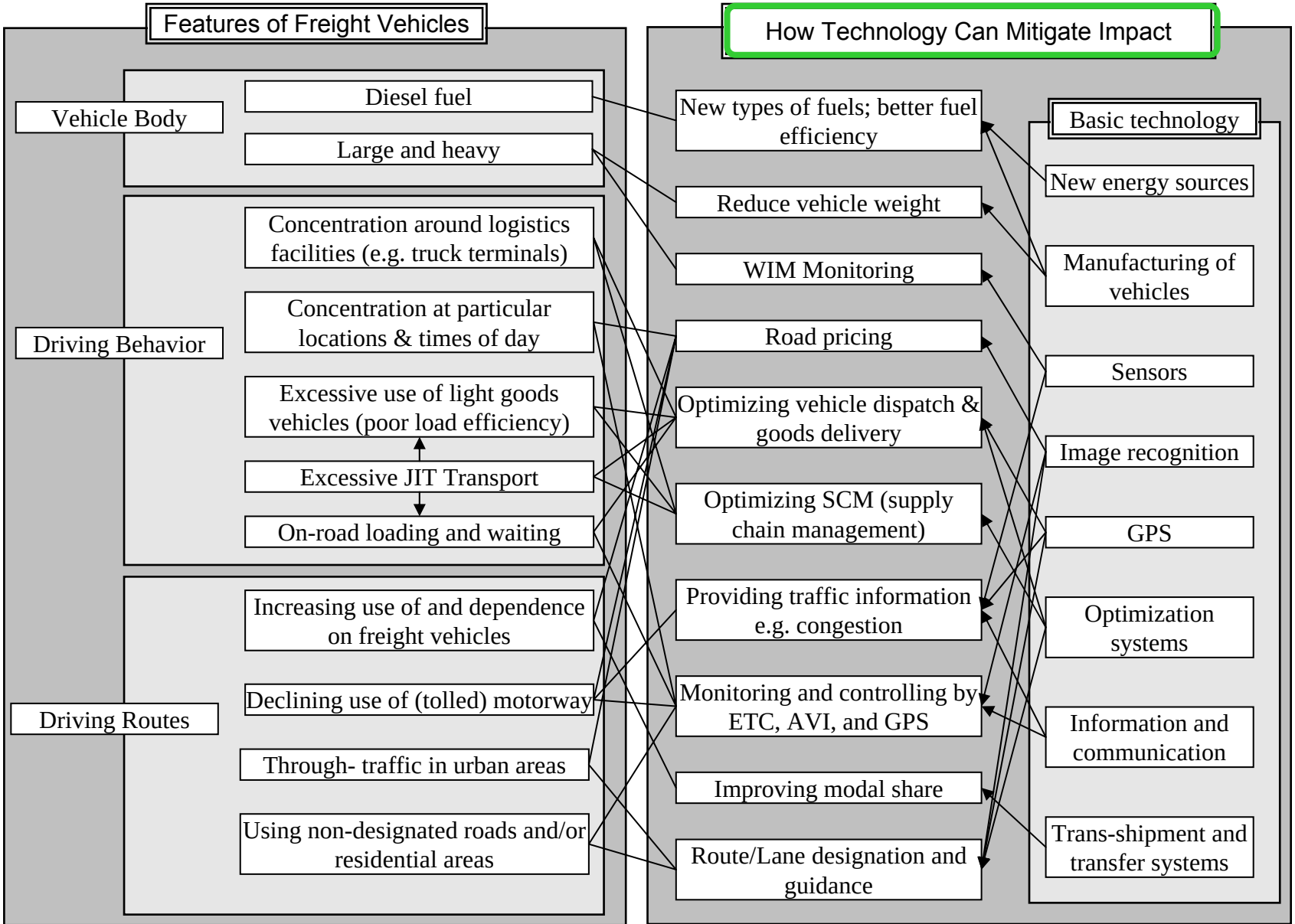
Why do freight vehicles negatively effect the environment and traffic safety?

Why is their impact greater than that of cars?



2. How to Reduce Negative Impacts

Management and Technology



2. How to Reduce Negative Impacts

Management and Technology

Innovative government policies : Road pricing

The Distance-related Heavy Vehicle Fee (HVF) in Switzerland

Fee	=	Distance travelled on Swiss roads	x	Highest authorised weight	x	Tariff depending on emission values

Swiss HVF is embedded in national transportation policy

1. Internalisation of external costs of freight transport

2. Financing the new railway tunnels

3. Keep rail goods transport competitive

– Limit the expected traffic increase when the national truck weight limit rises from 28t to 40t

55 000 Vehicles equipped with Swiss OBU

Display and covered Keyboard

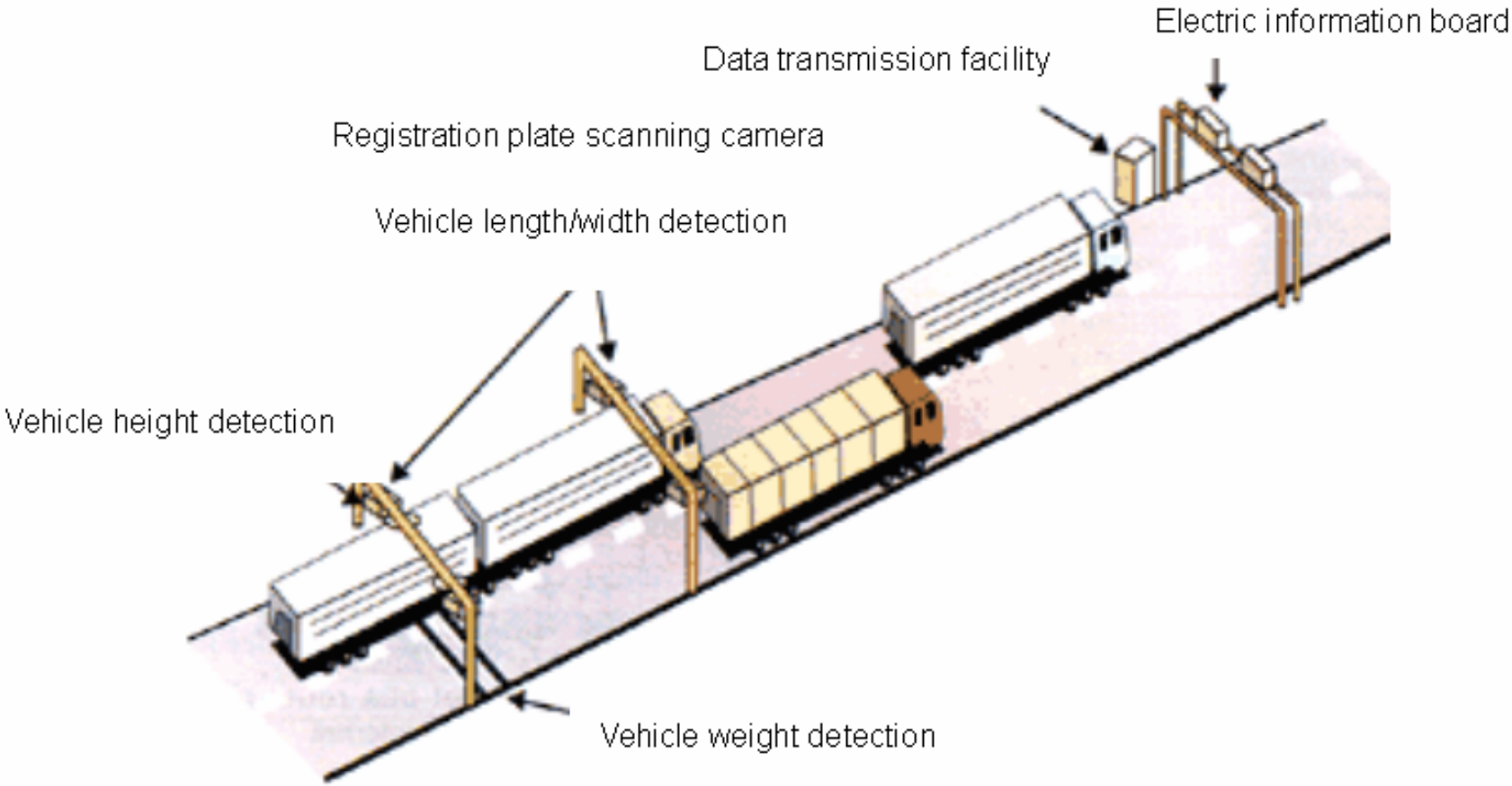
Outside Compliance Indicator Lights

2. How to Reduce Negative Impacts

Management and Technology

Innovative government policies : Weigh In Motion

The System of Automatic Measurement for Special Vehicles (oversize or over-weight vehicles) in Japan on the National Highway No.43 between Amagasaki City and Kobe City (Nada-ward) in Hyogo-prefecture.



2. How to Reduce Negative Impacts

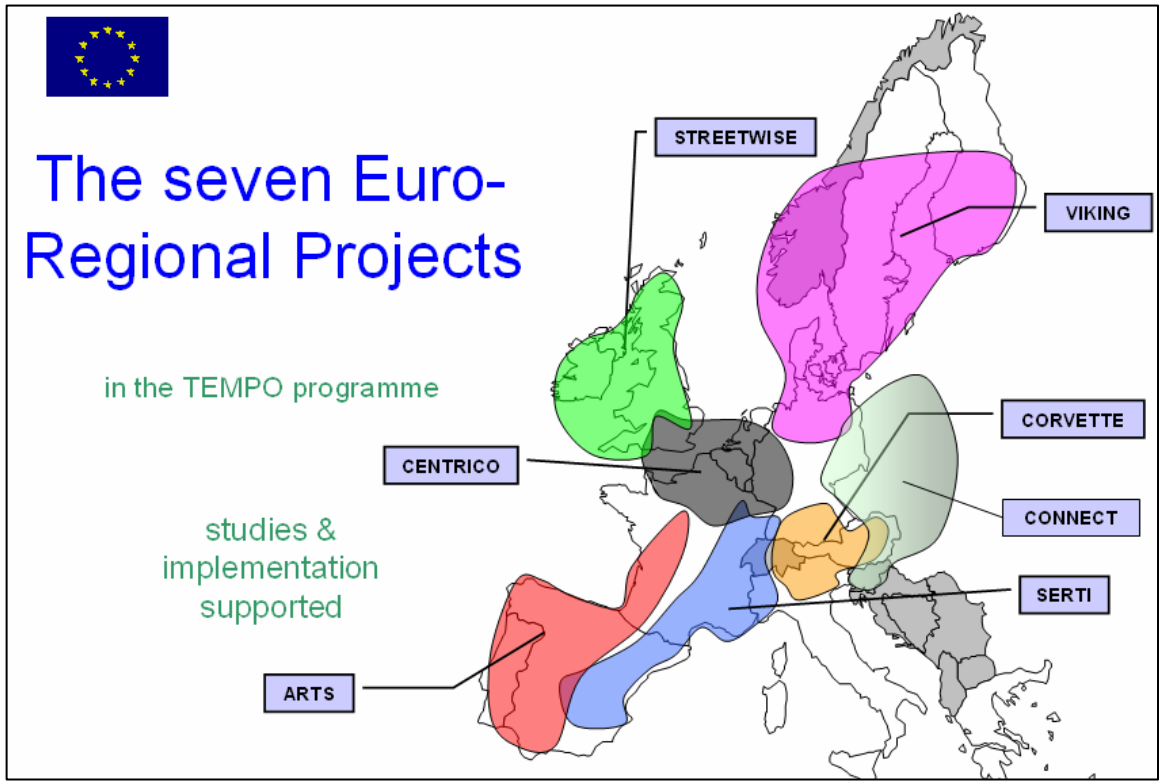
Management and Technology

Network management : Intelligent Transport Systems and Services (ITS) is the integration of information and communications technology with transport infrastructure, vehicles and users.

European research projects which receive funding from the European Commission

In 2001 the European Commission launched the TEMPO programme for Trans European intelligent transport systems projects. TEMPO is part of the Multi-Annual Indicative Programme (MIP) which was implemented from 2001-2006.

Extended work : the EASYWAY programme in the timeframe of 2007-2013



2. How to Reduce Negative Impacts

Management and Technology

Traffic management

Goal : to improve road capacity and to enhance road safety

Measures :

- Speed regulation by means of variable message signs
- Dynamically coordinated ramp metering systems
- Real-time information by variable maessage signs and radio broadcasts
- On-board information systems by global positioning satellites (GPS) and odometer sensors

Multi-modality

Different possible modes for freight transport:
air, road, rail, water, pipeline

2. How to Reduce Negative Impacts

Management and Technology

Vehicle engineering

In different fields : safety, pollution and energy saving

Safety measures :

- Anti-lock Braking Systems (ABS)
- Electronic Stability Programmes (ESP)
- Electronic Brake-force Distributors (EBD)
- Traction Control (TC)
- Side obstacle detection
- Lane-departure warnings
- Advanced cruise control and collision warning systems
- Experimental night vision systems
- Intelligent Speed Adaptation (ISA)

Power sources, pollution, energy saving and emissions :

- Alternative fuels : fuel cells, biofuels and hydrogen
- Electric vehicles and hybrid vehicle
- Vehicle weight : lightweight materials are aluminium and carbon fibre
- Catalysts have reduced engine pollutant emissions

3. Recommendations to Road Administrators

1. Reduction of air pollution: Supporting development of a lower emission vehicle.
2. Traffic noise: Improving roads (vehicles and pavements) and railways
3. The development of ITS systems : efforts on standardization are needed.
4. Promoting the progress in vehicle engineering to address safety, pollution and energy saving.
5. Improve human driving behavior : to achieve this a combination of enforcement actions and, simultaneously, information to the public is needed.