

European R&D in the Field of Secondary (or Passive) Safety

*From **Passive** to **Integrated** Safety Network*

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Helmond, The Netherlands**

www.passivesafety.com

Contents

- Passive Safety Network (1998 - 2008)
- Overview accomplishments
- Roadmaps and strategic research agenda
- Discussion and conclusions

Road Safety Strategies

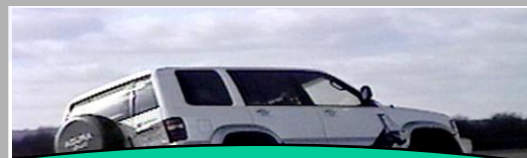
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Human

Vehicle

Environment

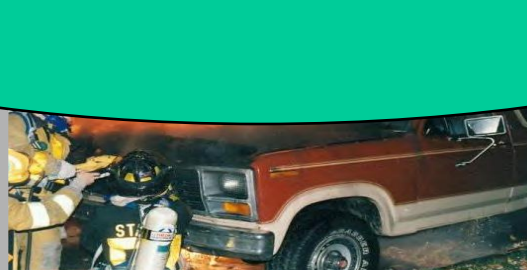
Pre-Event



Event



Post-Event



History Passive Safety Network (PSN)

4

1998 - 2002: Thematic network PSN (4th FWP)
Road to co-operation



2002 – 2004: Thematic network EVPSN2 (5th FWP)
From co-operation to integration



2004 – 2008: Network of Excellence APSN (6th FWP)
*Form integration to business:
a virtual institute*

Steps towards a Virtual Institute

Mobilisation of critical R&D mass in the field
of vehicle passive safety



Durable integrated European research programme



Creation of permanent, self-sustaining
organisation with legal status:

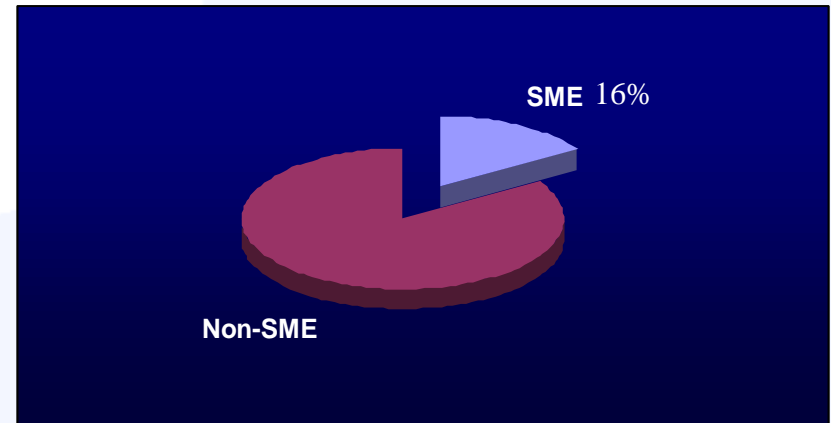
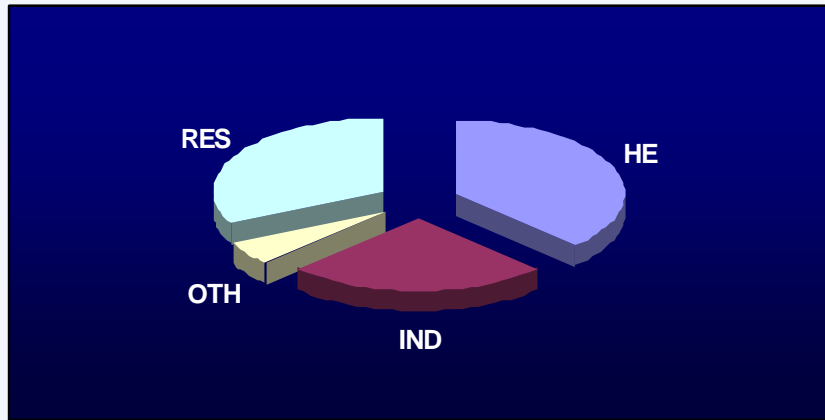
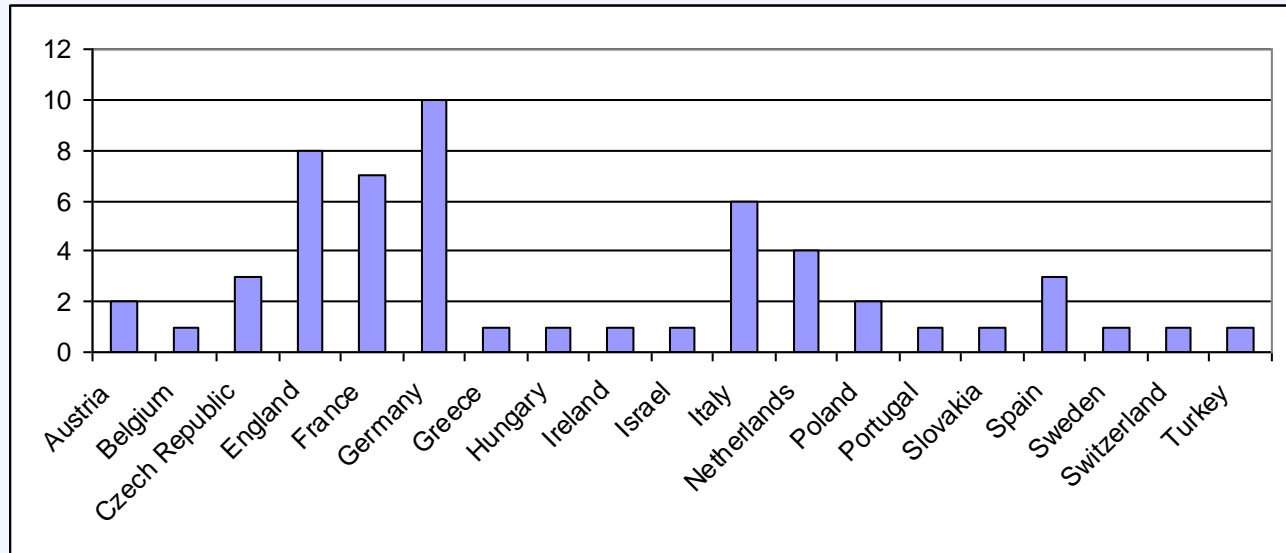
The Integrated Safety Network (ISN)

Objectives

- Integrate research activities
- Identify 'white spots' and initiate new RTD projects
- Facilitate technology transfer
- Accelerate dissemination, harmonisation and implementation of R&D results
- Contribute to future Vehicle Safety Strategy

Co-operation of > 50 partners

7



Main accomplishments

- Collaboration OEM's, suppliers, research organisations, universities, insurance companies and SME's
- > 19 new joint projects, > 50 workshops, > 40 state-of-the-art reports, 6 conferences, website + Intranet
- Links to stakeholders like EUCAR, EEVC, EARPA...
- Strategy, R&D roadmaps



European projects:

- | | | | |
|-----------|--------|-----------|-----------|
| • ADVANCE | VITES | FID | ECBOS |
| • PRISM | HUMOS2 | ROLLOVER | VC COMPAT |
| • PENDANT | RISER | WHIPLASH2 | CHILD |
| • MYMOSA | PISa | SIBER | APROSYS |

Projects

Virt. Testing: ADVANCE, VITES, HUMOS2

Crash dummies/biomechanics: FID, SIBER, WHIPLASH2

Crashworthiness: ECBOS, ROLLOVER, VC COMPAT, RISER

Accident analysis: PENDANT

Child safety: CHILD

Motorcycle safety: MYMOSA, PISa

Intelligent systems: PRISM

General: APROSYS

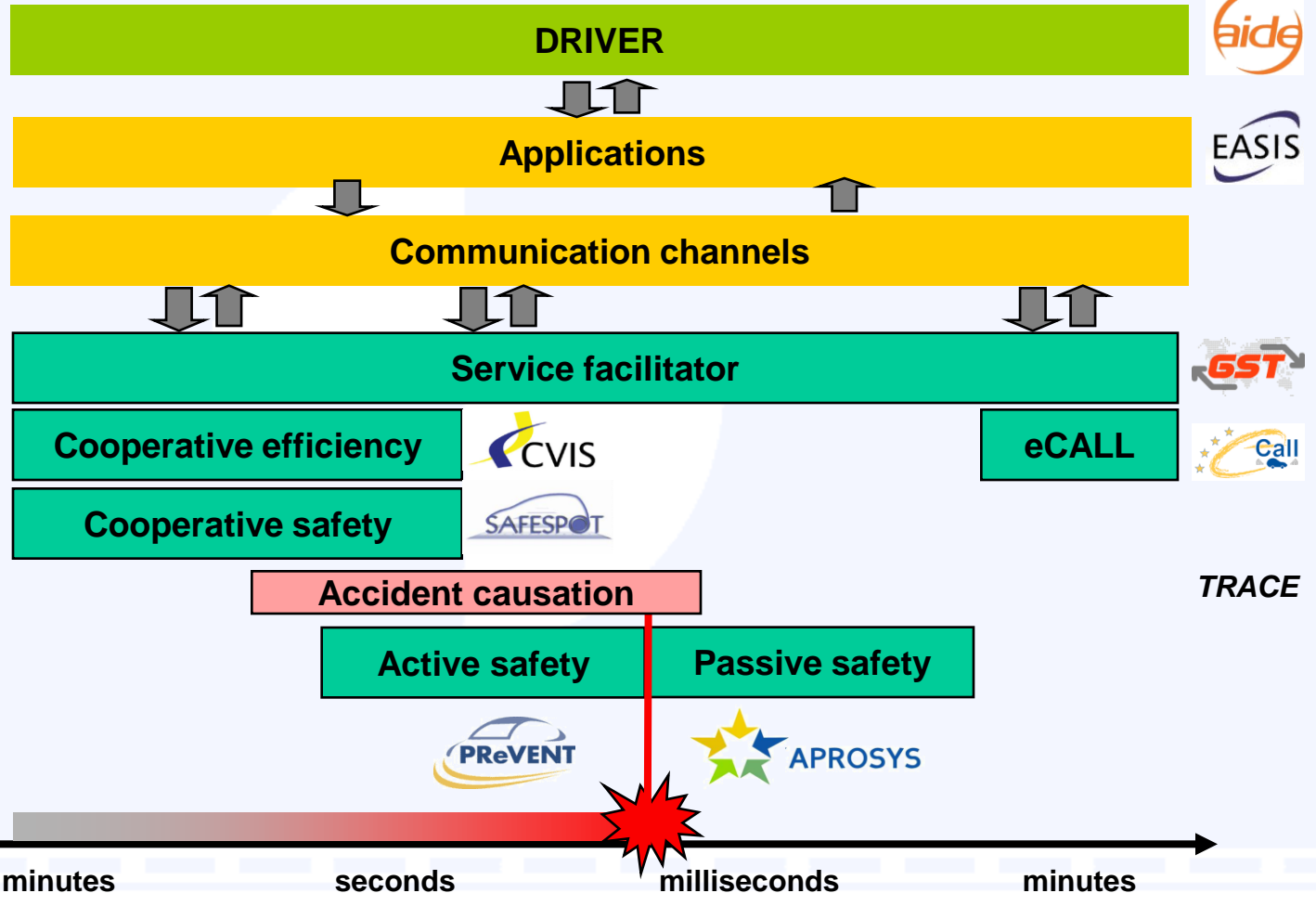
New KP7: CASPER, THORAX, INVITER, THOMO

APROSYS Advanced protection Systems (FP6)

- **Duration: 5 years: April 2004 – March 2009**
- **Total Budget: 30 Million Euro (EC funding 18 Million Euro)**
- **Basis consortium: Passive Safety Network**
- **Co-ordinated and closely linked with other safety projects initiated by EUCAR**
- **Main Partners: DaimlerChrysler, Renault, PSA, FIAT, Volkswagen, Toyota, Nissan, PDB, Piaggio, Siemens, TNO, CIDAUT, TRL, TUG, INRETS, FhG, Mecalog**



European Integrated Safety Program

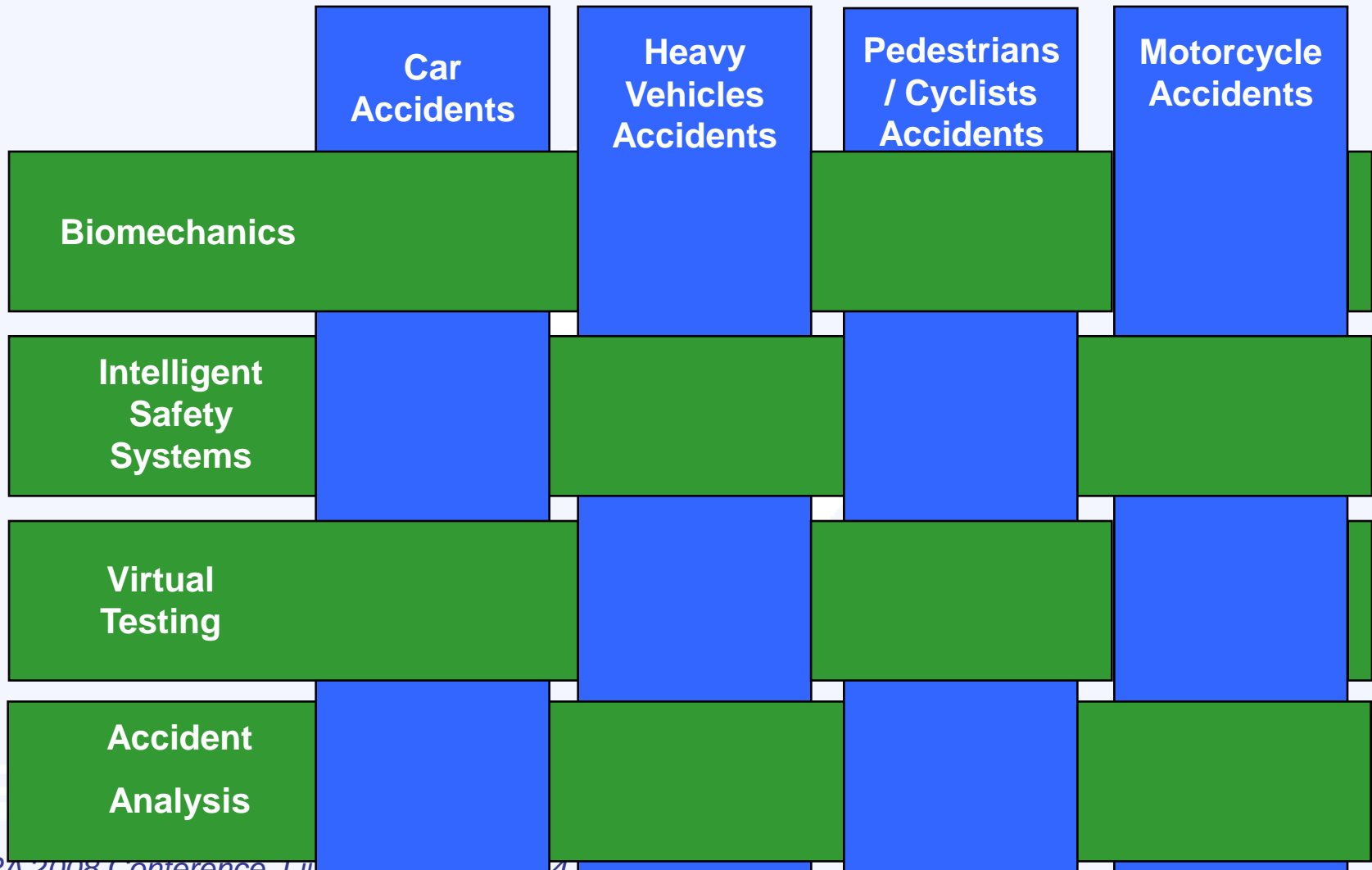


Vehicle - infrastructure

Vehicle - vehicle

Autonomous

Integrated Approach



Milestone plan APROSYS

04/2004

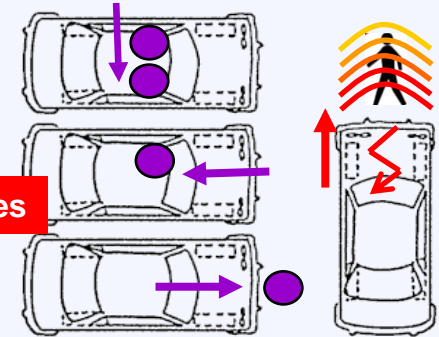
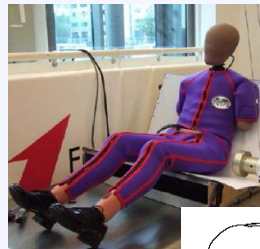
2005

2006

2007

2008

04/2009



WorldSID 5 female

Generic Car Models & Virtual Testing Tools

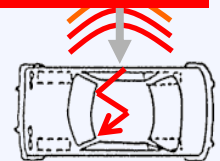
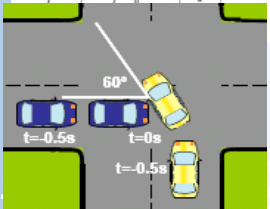
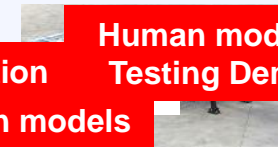
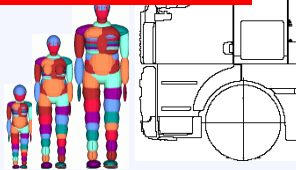
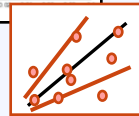
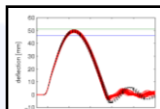
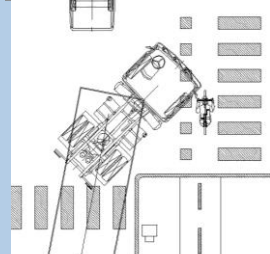
Truck design strategies

Motorcyclists protection

Human models & Virtual Testing Demonstrators

Improved human models

Heavy Vehicle Aggressivity Index



Accidentology

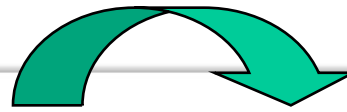
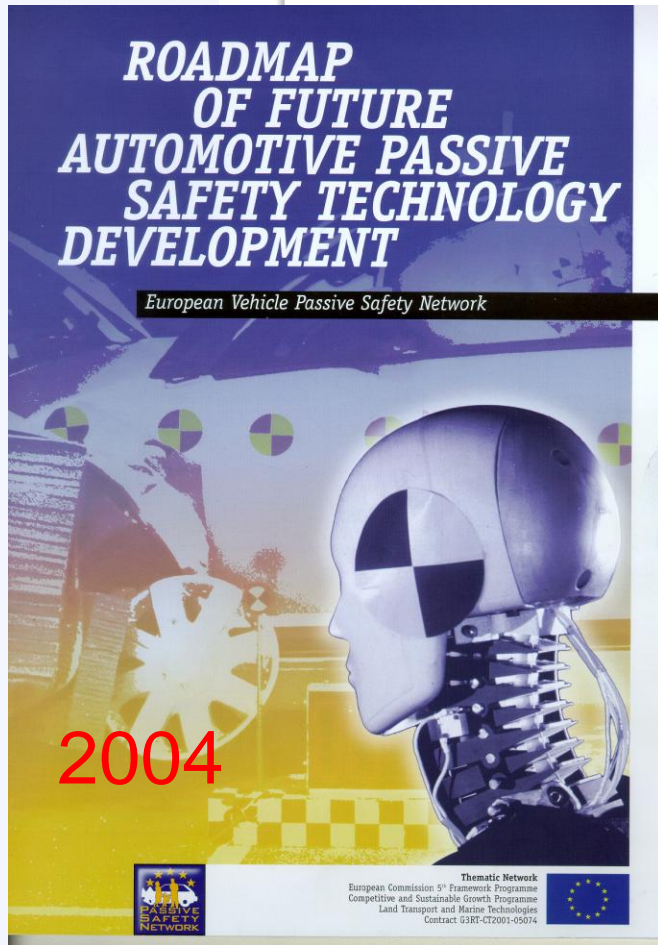
Advanced Side Impact S_y

Advanced European Side Impact pro

Road barrier to

Sho' impr

Advanced Safety System Assessment Methods

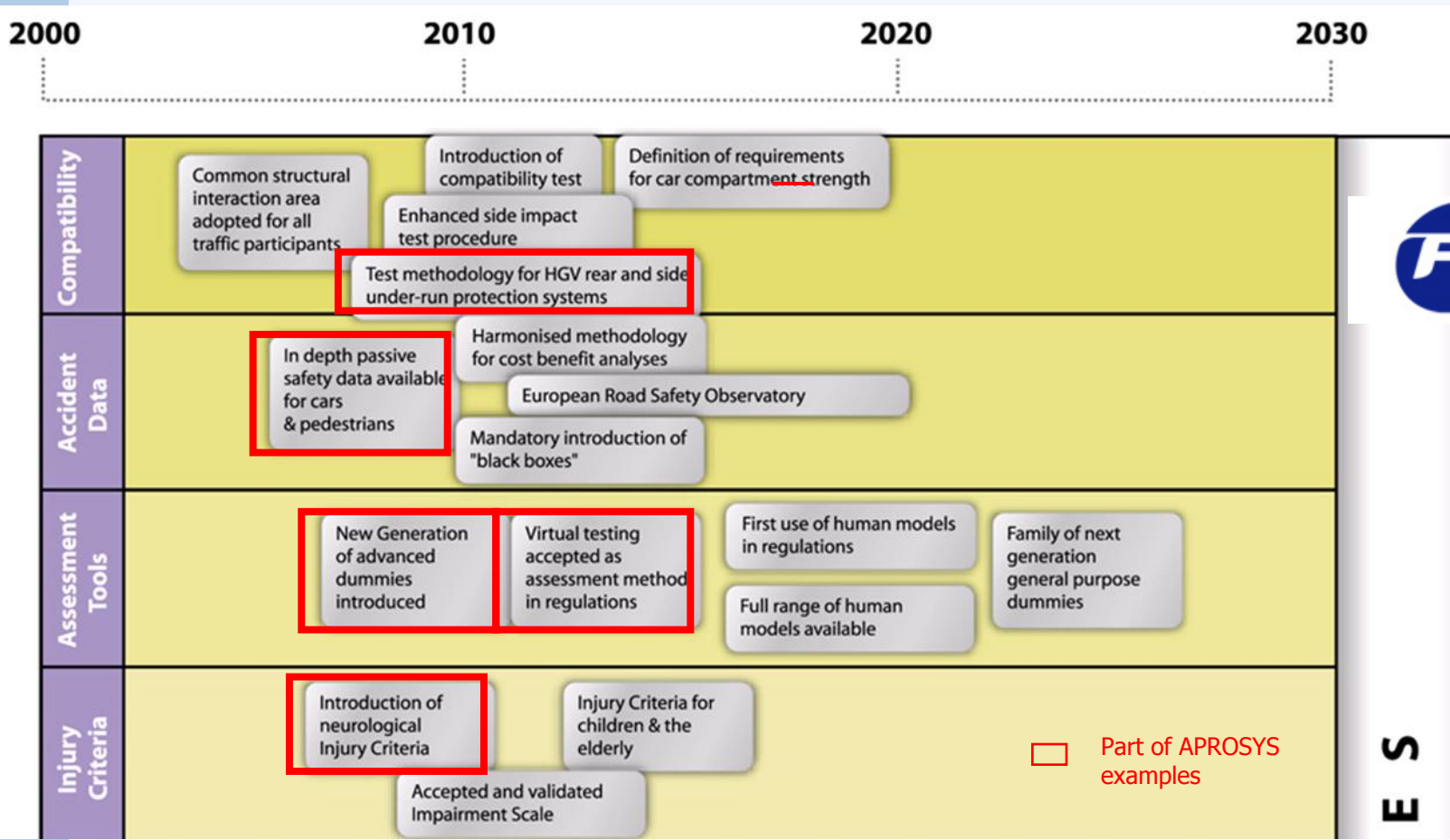


See: www.passivesafety.com

PSN Roadmap themes

		ACCIDENT TYPES						
		Front Impacts	Side Impacts	Rear Impacts	Rollover	Pedestrians	Motorcycles	Others
TECHNOLOGIES	Compatibility							
	Accident Data							
	Assessment Tools							
	Injury Criteria							
	Restraint							
	Integrated Safety							
	Materials							
	New Fuels							
	Post-crash							
	Infrastructure							

Some of the links with APROSYS



ES

Part of APROSYS examples

Priority items in Secondary Safety Research Action Plan (SSRAP)

The Human

1. Impact biomechanics

Vehicle technology

2. Compatibility

3. Restraint systems

4. Vehicle structures and materials

5. Integrated safety

Safety assessment

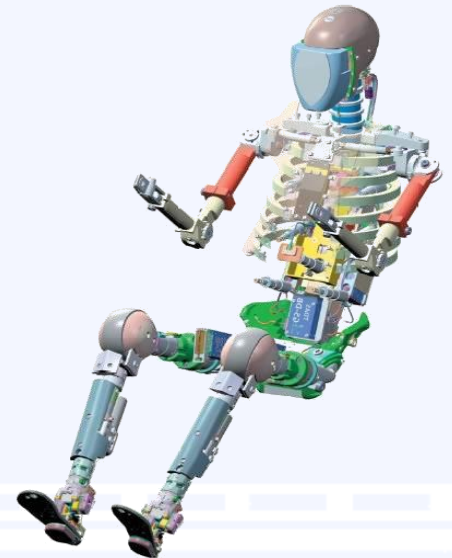
6. Accidentology

7. Test methods and tools

Road user groups

8. Motorcycles/mopeds

9. Pedestrians/cyclists



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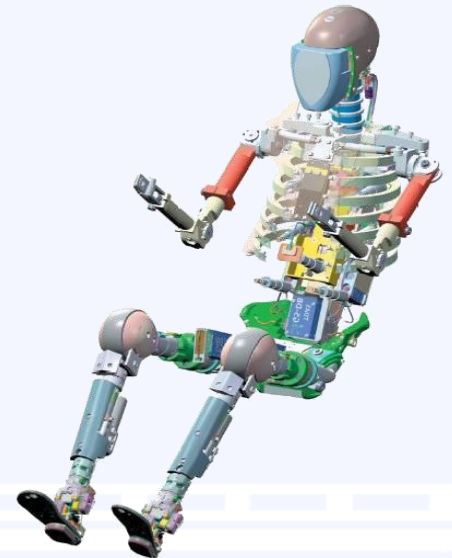
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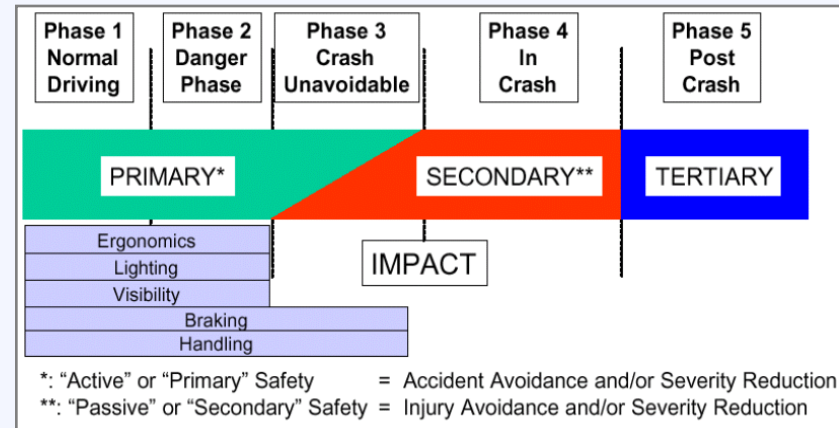
8. Motorcycles/mopeds

9. Pedestrians/cyclists



Integrated Safety in PSN roadmap and SSRAP

- Is recognized as probably the most important area for future R&D
- Will benefit all accident scenario's
- Allows for optimised injury mitigation in all crash modes and all road users and occupant sizes
- Concerns vehicle structure as well as restraint systems
- Sensor fusion and system dependability are major issues



ACEA safety model



Discussion and Conclusions

- ❑ **Important road casualty savings through new vehicle safety technologies**
- ❑ **Large potential integrated safety but also in more traditional passive safety measures**
- ❑ **Significant research is required to develop the technologies to deliver the savings (Roadmaps/SSRAP)**
- ❑ **Important area in secondary safety a.o. new test methods, virtual testing in regulation, vulnerable road users, compatibility, harmonized accidentology reseach, new injury criteria etc...**



Discussion and Conclusions (Cont.)

- ❑ **The Passive Safety Network will continue as an association but with a wider scope than secondary safety only:**

The Integrated Safety Network (ISN)

- ❑ **Industrial involvement is important**
- ❑ **Expand co-operation with other stakeholders like EUCAR, EARPA etc...**



Thank you for your attention!

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