



*PROTECTRAIL (242270) - The Railway-Industry Partnership  
for Integrated Security of Rail Transport*

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# Future Design for Security

## Sub Project 6



# Objective

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- Description of the long term evolution of the future railway security system
  - As a result of various influence factors and their mutual interactions
  - Inclusion of Political, Economical, Social-cultural aspects, besides the Technological aspects
  - Uncertainty is important and leads to more than one possible future
- No changes to DOW



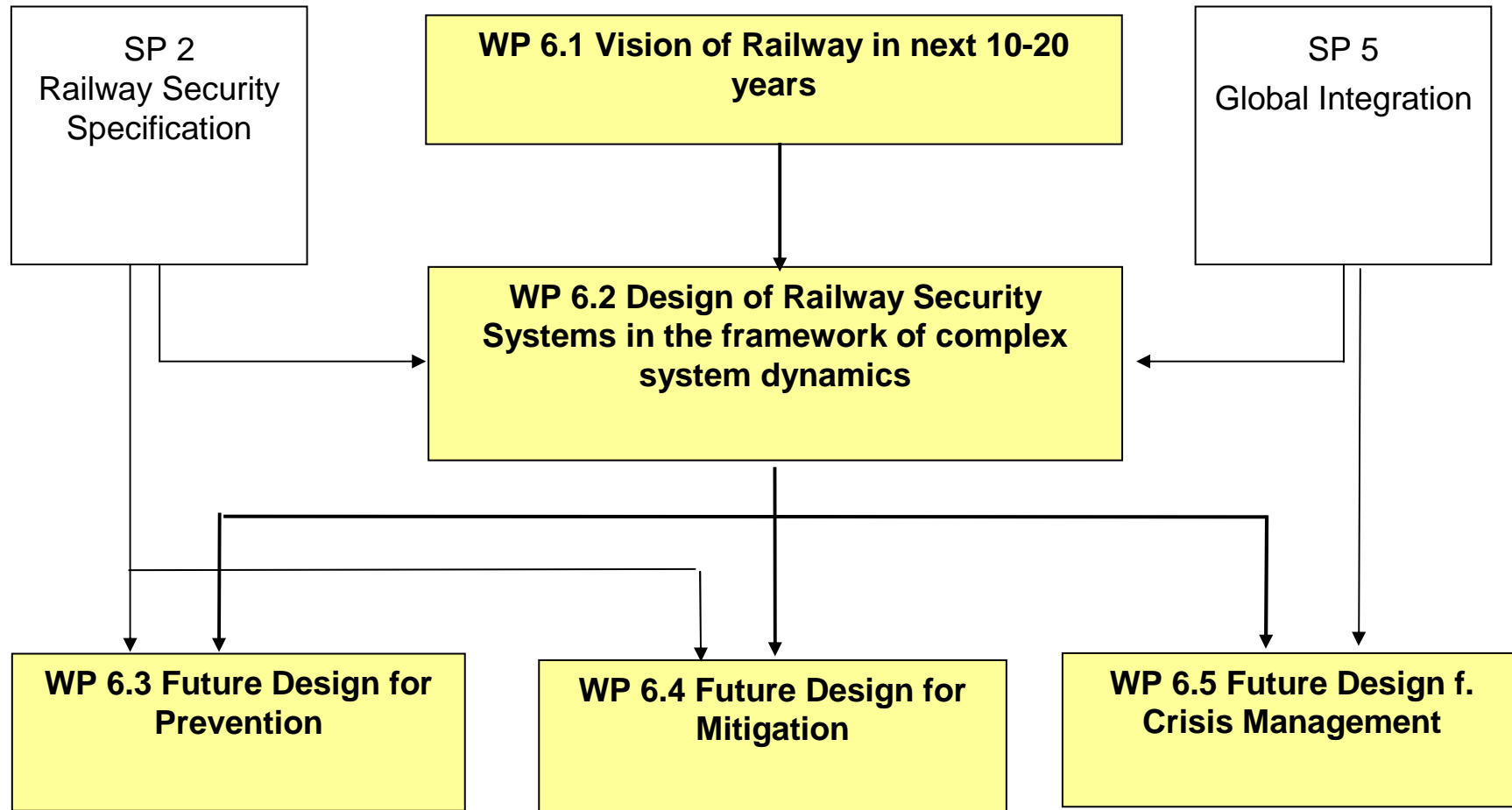
# Output

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- A software based foresight system to imagine alternative long term developments in railway security up to a range of 20 years
- Overview on how different national security concepts and practices can be merged together to provide an implementation roadmap towards a unified solution for railway security in Europe



# SP6 within PROTECTRAIL





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### **WP 6.1 Vision of Railway in next 10-20 years**

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**UIC** ALS ASTS MOR Sarad

#### **Deliverable (Report)**

Vision of the main rail sector stakeholders in Europe for the next 10-20 years

#### **Keywords:**

- political environment
- economical environment
- social environment
- traveling cost
- technologies
- future demands
- operational requirements
- public and private security
- consequences of open markets
- relationships between authorities and business
- traffic volume (passengers, freight, short and long distances)
- European dimension.



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**WP 6.2 Modeling Railway Security System**

**SARAD ALS ASTS Ductis ED MOR T3S TNO UIC**

**Deliverables**

1. Description of the evolution model, influence factors, their mutual interactions and resulting scenarios.
2. Software to generate the system model

**Keywords:**

- relevant influence factors their estimated future development
- mutual interactions between influence factors
- modeling possible system evolution using several methods (for example: Bayes networks, Neural Nets, Fuzzy Logic)

The WP 6.1 delivers input to WP 6.2



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**WP 6.3 Future Design for Prevention**

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**SARAD** ASTS Ductis ED ISL MOR T3S

**Deliverable (Report)**

Description of possible new techniques and organisational processes reducing vulnerabilities and increasing threat detection capability. Recommendations of new design criteria for preventive protection of railway infrastructure

**Keywords:**

- Mainstreams of future technologies and processes
- Design concepts improving prevention
- Future Threats and Countermeasures



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**WP 6.4 Future Design for Mitigation**

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TNO Ductis ISL Sarad

**Deliverable (Report)**

Report on how design, materials, technologies or tools could be selected and deployed in the system to reduce consequences of attacks or accidents.

**Keywords:**

- Mainstreams of future technologies and processes
- Design concepts improving mitigation





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**WP 6.5 Future Design for Crisis Management**

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Ductis ALS ED Sarad SSI T3S

**Deliverable (Report)**

Effective and efficient measure to increase capability of crisis management.

**Keywords:**

- Future communication interfaces
- Increasing reaction capabilities
- regional disparities
- Scenario based estimation of measures after railway attacks.



# Time schedule

ProtectRail: Time Schedule		2010				2011												2012												2013												2014	
WP	Work Package	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
6.1	Vision (20 years)																																										
6.2	System Modelling																																										
6.3	Prevention																																										
6.4	Migation																																										
6.5	Crisis Managem.																																										
	Workshop (2 days)																																										
	Workshop (1 day)																																										
	Milestone 6																																										
	Steering Board																																										
	Techn. Coordination																																										



# Partners

		ALS	ASTS	Ductis	ED	ISL	MOR	Sarad	SSI	TNO	T3S	UIC	Sum
6.1	Vision 10-20 years	2	2				3	2				<u>3</u>	12
6.2	System Modelling	3,5	3	1	1		3	<u>20</u>		6	1	1	39,5
6.3	Prevention		2	1	1	1	1	<u>9</u>			1		16
6.4	Mitigation			1		1		3		<u>12</u>			17
6.5	Crisis Management	0,5		<u>6</u>	1			2	2,5		3		15
		<b>6</b>	<b>7</b>	<b>9</b>	<b>3</b>	<b>2</b>	<b>7</b>	<b>36</b>	<b>2,5</b>	<b>18</b>	<b>5</b>	<b>4</b>	<b>99,5</b>