Project Autoclusters

Outputs of WP4 – Innovative trends and main challenges in automotive industry in SEE

4.1 activity

2nd Period – October 2009 – March 2010

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WP4.1 OUTPUTS

- **WP4.1 Outputs**
- R&D Study
- R&D Database
- Recommendations
- WP activities 4.2, 4.3, 4.4

ACTIVITY 4.1

Analysis of the innovation capacities in PPs´countries/regions

2 MAIN OUTPUTS 4.1

1. Study on the main innovation trends and challenges and cooperation possibilities with R&D for automotive industry **(R&D Study)**

2. Database describing the innovation capacities potential in SEE accesible as web application **(R&D Database)**

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WP4.1 OUTPUTS

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What we have done in activity 4.1?

1. **Creation of Methodology** for WP4, Time Plan WP4.1, Matrix of responsible persons WP4.1
2. **Data mapping and identification** of R&D capacities for R&D Study and R&D Database (Questionairre-R&D Form for organizations)
3. Collecting information about the **main trends and challenges** in the world automotive industry, suppliers sector and local and regional automotive trends in PPs´countries/regions
4. **Communication with universities**, industrial companies, R&D institutes, suppliers, OEMs and other relevant organizations
5. **Communication between PPs** (Confcalls, e-mails, phonecalls)
6. Searching activities on internet about R&D trends and capacities
7. **Information processing** and preparing of the R&D Study scheme
8. Creation of **web R&D database** (continouos improvement)
9. Creation of **R&D Study**

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R&D STUDY

- WP4.1 Outputs
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Content of the R&D Study:

1. Major Trends in Automotive Industry
2. Automotive Industry in PPs´countries/regions in SEE
3. Recommendations

Source: Ultra–Low Carbon Vehicles in the UK

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R&D STUDY

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Automotive Industry is:

- ❑ the most important employer in compare with other industrial sectors,
- ❑ high automotive R&D expenditure per year (app. 20 bln.Eur),
- ❑ the most importatnt export sector,
- ❑ almost **300 automotive production and assembly plants in Europe.**

In PPs´ countries/regions there are 42 automotive production and assembly plants. Besides these plants we have identified next 12 local car producers.

Source: Daimler AG

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R&D STUDY

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Automotive Plants in:
(based on information from ACEA):

Hungary – 6
Bulgaria – 1
Italy – 20
Romania – 4
Serbia – 1
Slovenia – 1
Slovakia – 3
Austria - 6

42 plants

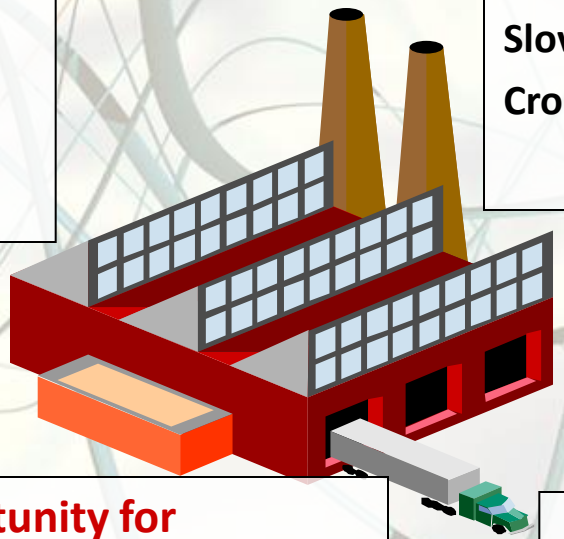
2 551 261 cars
in 2008 (3.62% of worldwide production)

+

Next Local car producers:

Bulgaria – 2
Romania – 1
Serbia – 4
Slovenia – 2
Slovakia – 2
Croatia - 1

12 plants



Big opportunity for next automotive development

54 plants

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R&D STUDY

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We consider that the most important trends in the actual situation in automotive industry are:

cost reduction – companies are looking for new locations for doing business with lower costs – there is opportunity for countries of SEE mainly in R&D area, possibility for realization of innovation at lower costs,

accelerating innovation cycles – companies have to bring new innovations in shorter times – opportunity for SEE countries for doing process improvement in manufacturing, innovation process etc., effective using of R&D capacities, building R&D and innovation capacities with high productivity,

development new technologies and products – mainly in environmental area - green innovations, new materials research, electronics, safety, new green cars (hybrids cars, electric cars,)

building of collaborative networks and clusters – reinforce cooperation between universities and industrial firms based on project cooperation, reinforce cooperation between countries in the whole Europe, initiatives of EUCAR: Collaborative Automotive R&D,

energy and environment – renewable energy sources, research in alternative fuels, development of environmental technologies, future scenarios in energetic.

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R&D STUDY

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Based on data mapping and identification of R&D capacities in PPs´ countries/regions in SEE we identified **212 R&D capacities** (without Austria) from October 2009 to half of February 2010, we have identified R&D capacities in:

Slovenia (85),
Slovakia (36),
Croatia (24)
Hungaria (20)
Romania (16)
Bulgaria (10)
Italy (2regions) (14)
Serbia (7)
Austria (51)

Source: Daimler AG

212 R&D capacities in 8 SEE countries/regions

But we think that in this geographic area **there are more R&D capacities** – we will continue in identification process of R&D capacities

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R&D STUDY

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Based on results from analysis we have created **8 basic types of R&D capacities**:

- **Science and Technology Park**
- **University Center –** working places and laboratories at universities
- **Centre of Excellence** – specialization of the center
- **Technological Development Center** – private centres which are operating near to production or assembly capacities mainly for support of production, improving and innovation of processes, product development and testing
- **Research Center/Institutions** – this type of centres is consisted mainly by local domestic centres or institutions which are focused on basic and applied research
- **Engineering Services Center** – centres focused on engineering, construction, designing services from early phase to virtual manufacturing phase, vehicle development services and prototyping
- **Testing Center** – centres with focus on testing for example: durability tests, corrosion tests, simulation tests, metrology tests and other
- **Innovation Center** – centres focused on new innovative solutions of products, production processes, systems, designing of testing laboratories, plant layouts, creating analytical documents, innovation intelligence.

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R&D STUDY

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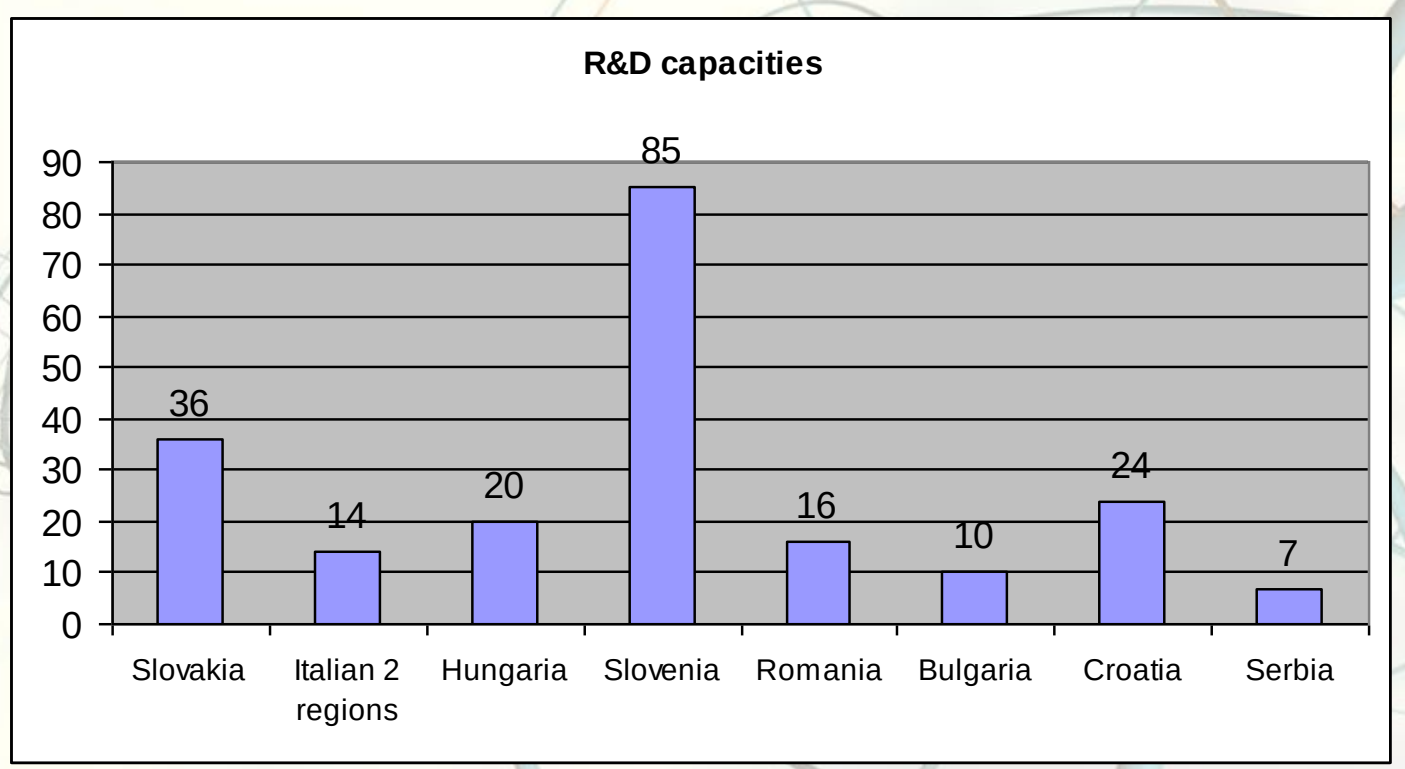
Analysis findings about R&D capacities



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R&D STUDY

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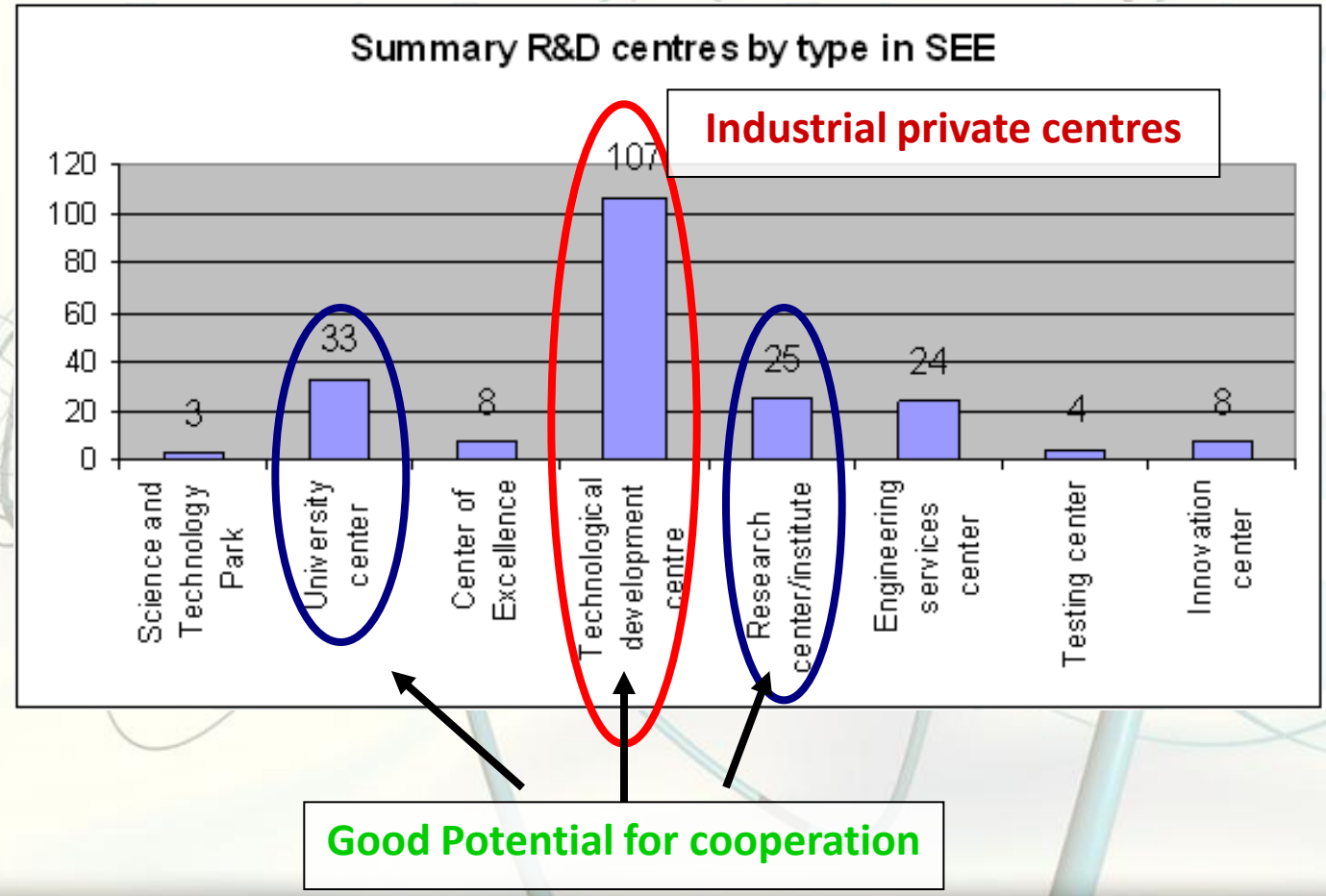

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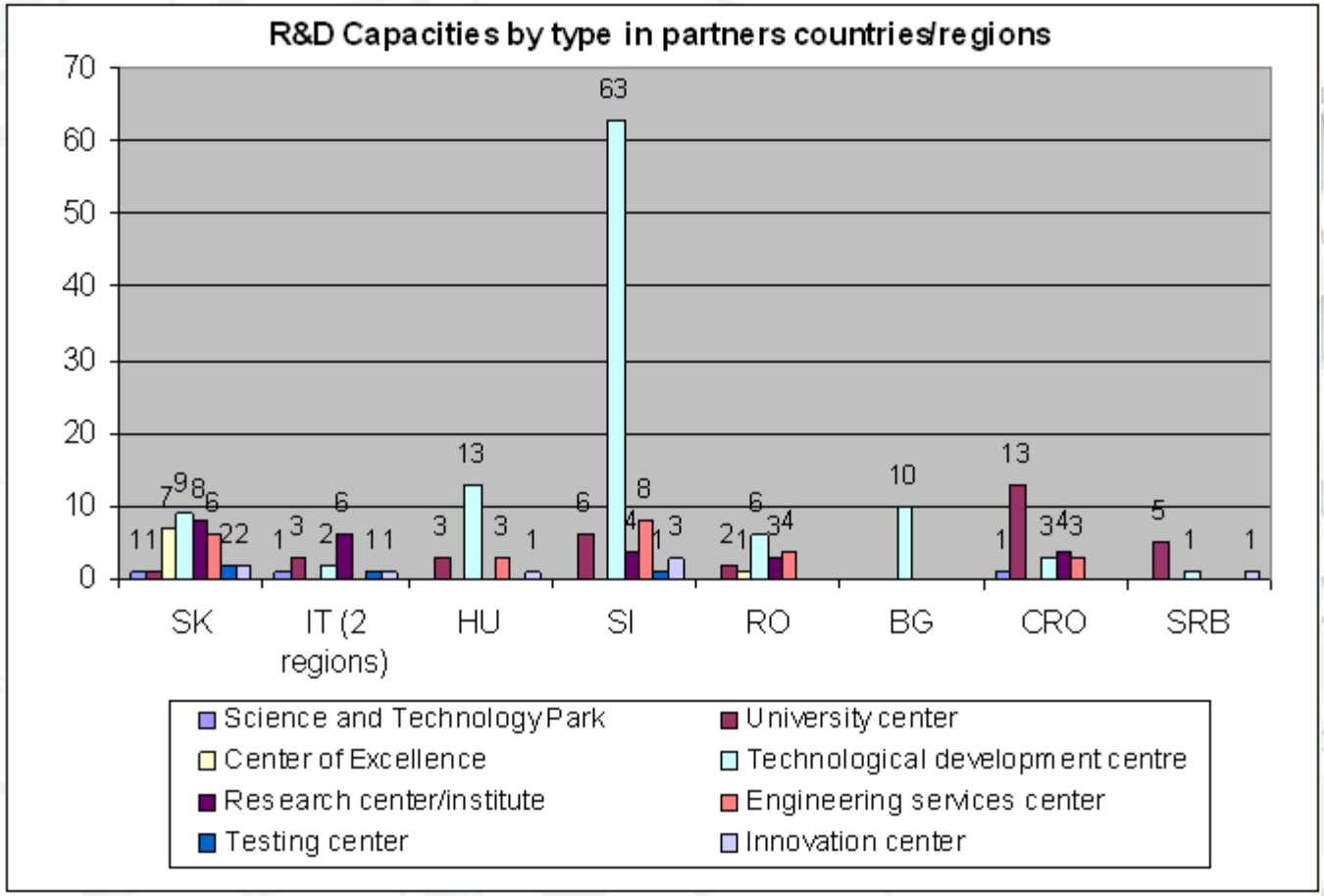

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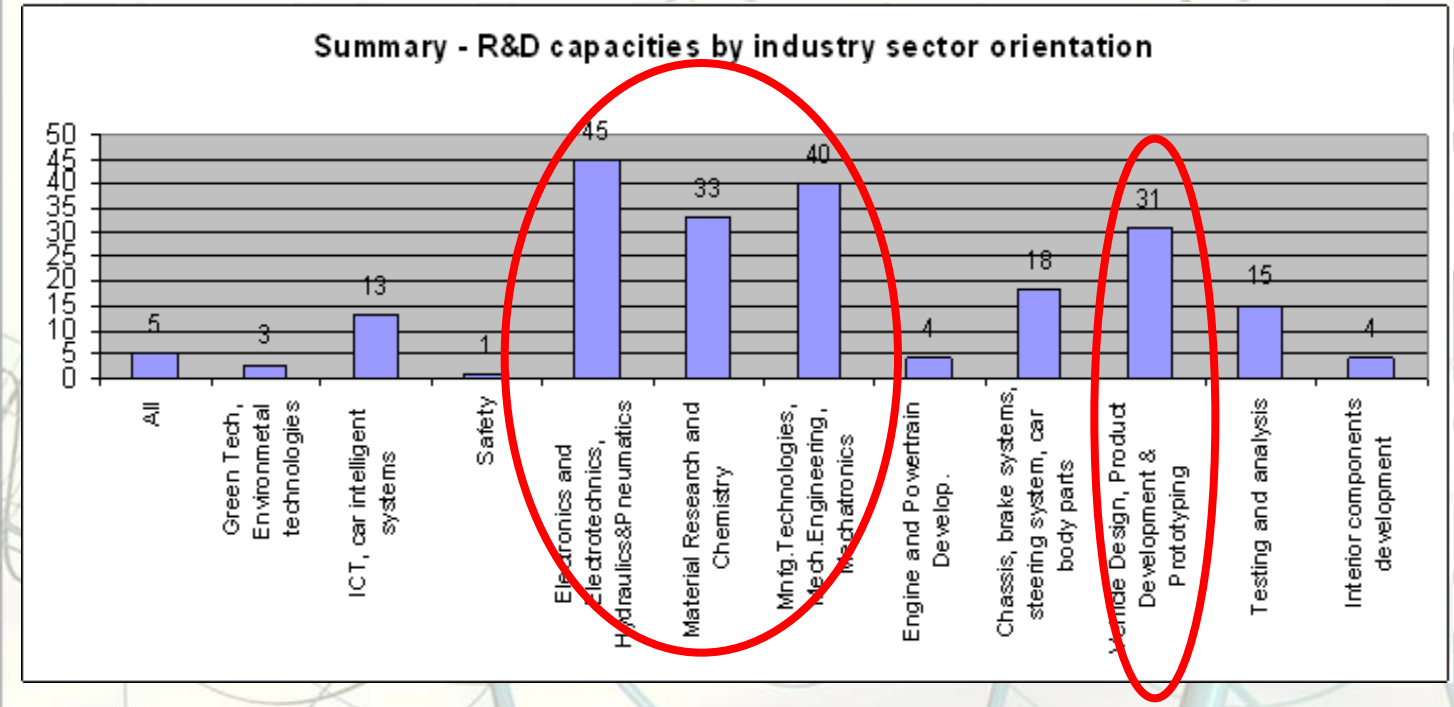

Actual Orientation of R&D Centres)

Electrotechnical and electronics industry

Material Research

Mechanical Engineering + Mnfg.technologies

Vehicle Design, Development+Prototyping

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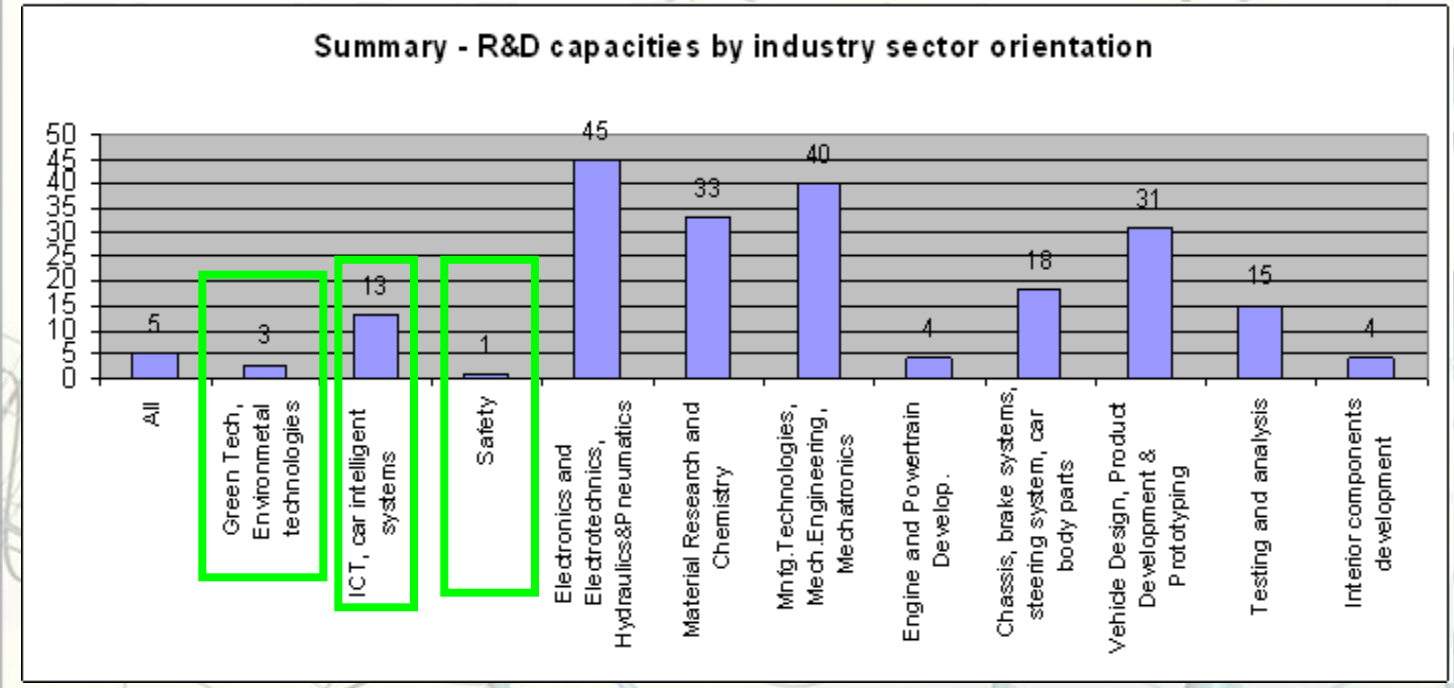
Analysis findings about R&D capacities



Missing types of R&D Centres)

Environmental and green technologies
ICT + car intelligent systems + softwares
Safety systems

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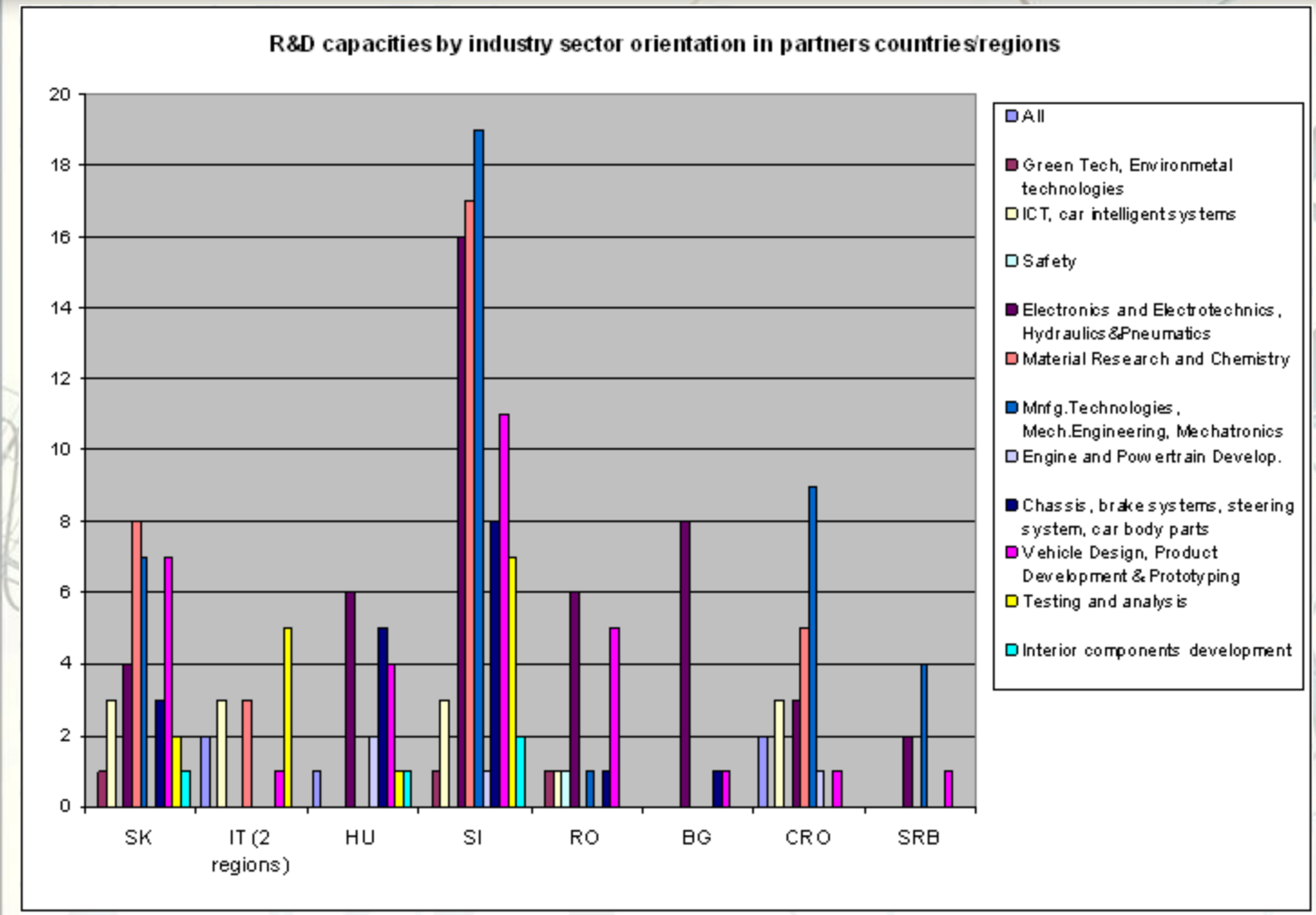

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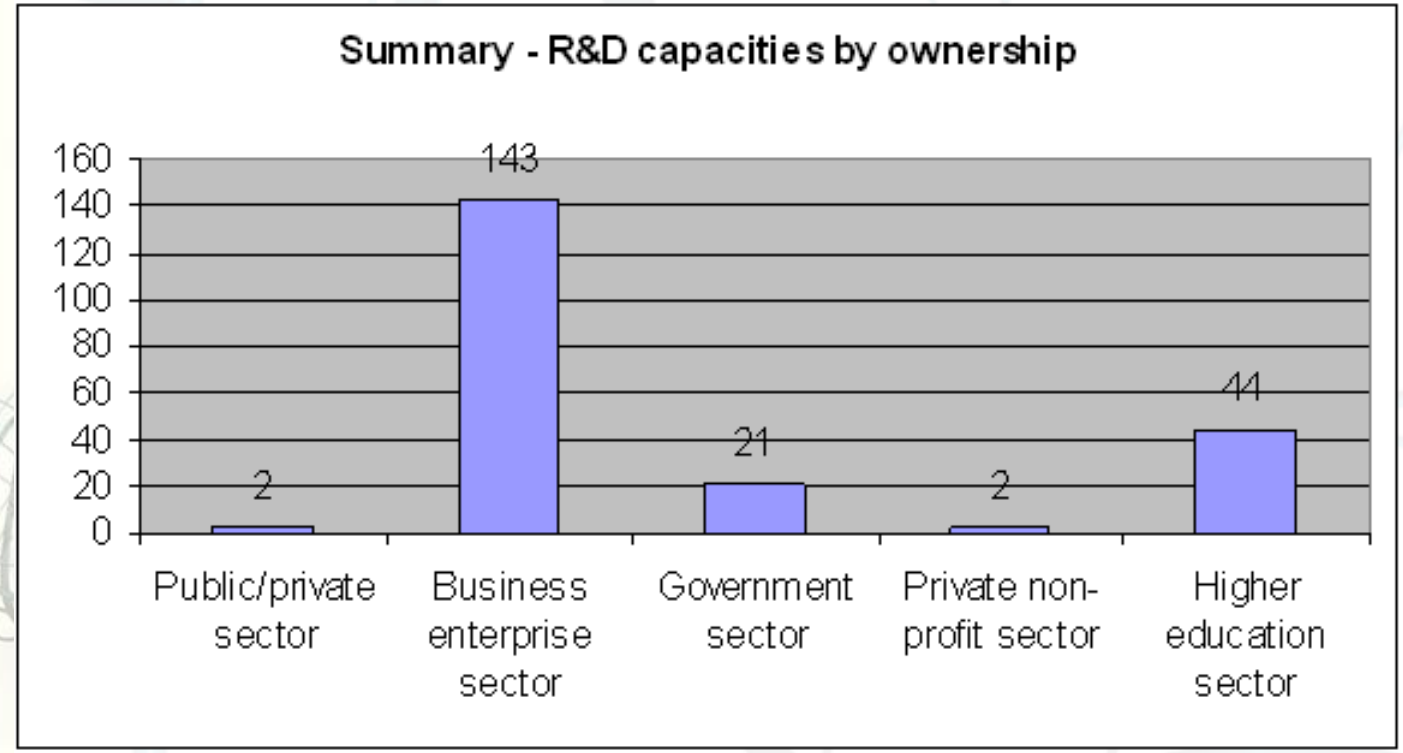

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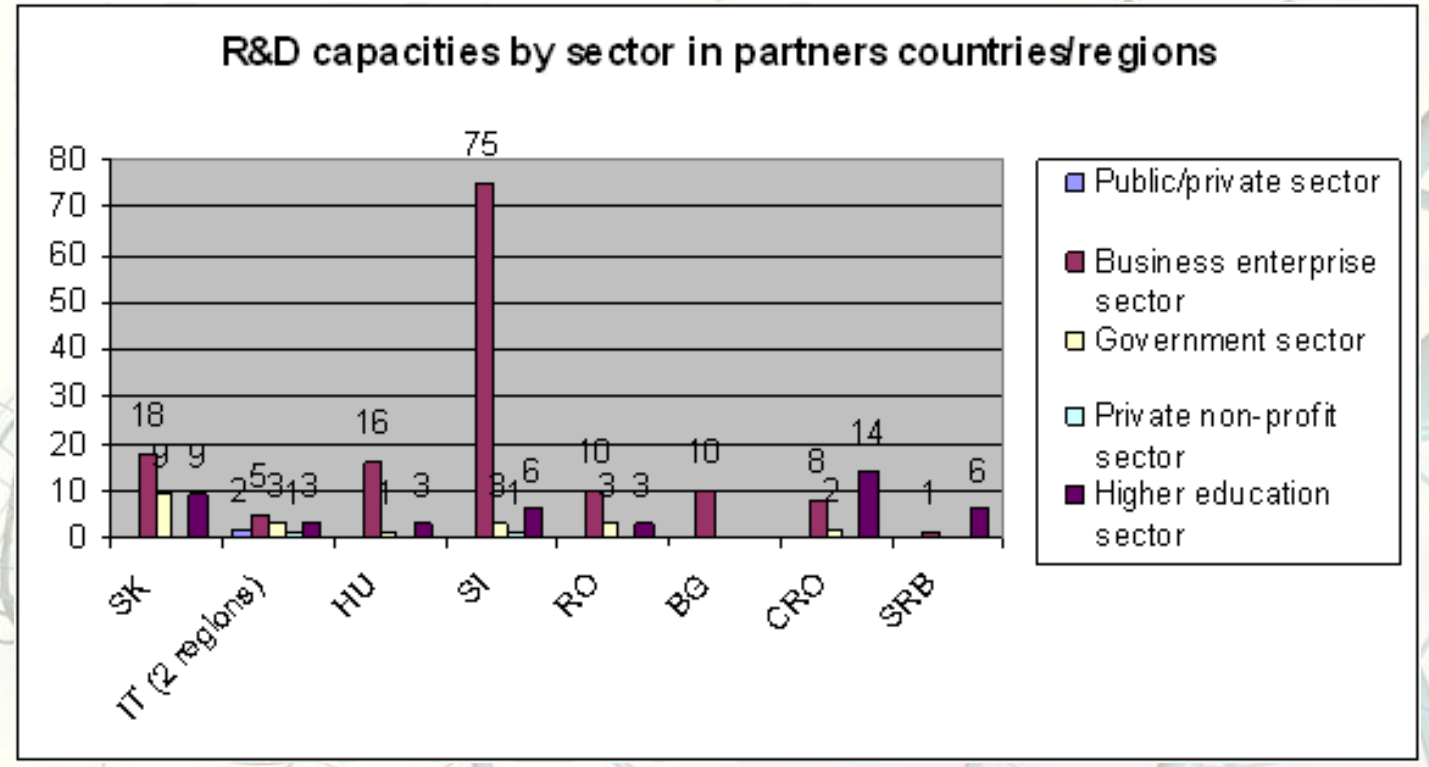

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R&D DATABASE

- WP4.1 Outputs
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R&D DATABASE

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www.autoclusters.eu

Slovakia

No.	Name of the institution	Location	Contact	Description
1.	**Johnson Controls Engineering Centre**	Súvoz 1, 911 32 Trenčín	Johnson Controls www.jci.com	Johnson Controls is building up one of the biggest technnology centers in Slovakia for developing automotive components, systems and modules. JCI is focused on product development interior design for all European car producers.

Italy

No.	Name of the institution	Location	Contact	Description
1.	**CRF - Centro Ricerche Fiat**	Strada Torino 50, 10043 Orbassano (TO)	CRF CENTRO RICERCHE FIAT www.crf.it	Centro Ricerche Fiat S.C.p.A. (CRF) was founded in 1976 as the Fiat Group's major source of expertise in innovation, research and development. CRF's objective is to use innovation as a strategic lever and to enhance the results of its work through the promotion, development and transfer of innovative content able to make products distinctive and competitive. CRF was awarded over 50 projects in the European Seventh Framework Programme 2007-2013, confirming its significant contribution to European research. Over the years, CRF has forged relationships with over 1,000 partners worldwide.

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RECOMMENDATIONS

- WP4.1 Outputs
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1. Cooperation

❑ **building innovation networks and innovation clusters** in SEE (our R&D database is the 1st step of creating connetions, cooperations and partnerships between OEM, SMEs, universities, R&D institutes, innovation centres and others in SEE),

❑need for **more participation of SEE R&D capacities in top European projects** – building close cooperation with western R&D organizations,

❑ looking for industrial areas with **unique special orientation of R&D capacities** in SEE (countries will need to look for own specific focus in which country is excellent and could to contribute to development of automotive industry),

❑contribution to **designing of new types of R&D&D centres** in close cooperation with western countries in terms of green cars,

❑ **development of partnerships** with focus on business, education, new technologies, networking, new industrial sectors,

❑ contribution to **development of new supplier chains in terms of green cars**,

❑ contribution to development of new business models,

❑ contribution **do development of new production and assembly capacities with focus on green cars and R&D activities,**

❑ need to build strong clusters and cluster networks such as tool for preparing phase for SMEs to **entrance to the global automotive supplier networks** and such as tool for building own R&D departments and centres

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RECOMMENDATIONS

- WP4.1 Outputs
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2. Focus on highly perspective research and development industrial sectors

- focus on **materials research** – **plastics, lighweight materials**, magnesium, aluminium, high-strength steel, fibre-reinforced materials, composites, nonmaterials and others,
- contribution to **development of ultra low cost cars and low cost cars**,
- contribution to development of vehicle aerodynamics,
- **development of car electronics and ICT**,
- development of safety and comfort standards
- contribution to **development of new car design**
- complete vehicle and component development and prototyping services (full range of automotive engineering services, virtual simulations)
- designing of **local and regional automotive R&D laboratories and testing centres**
- R&D with focus on **process improvement in manufacturing technologies** – innovation of processes (research in welding, pressing, assembly, painting technologies, robotics and automation)
- Strategic focus on **WORKSTATION Development** for Welding, assembly etc.

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RECOMMENDATIONS

3. Education

- **knowledge development in designing of R&D laboratories** and testing centres regarding world automotive firms and other related industrial sectors,
- looking for **new ways for more intensive cooperation** between universities, R&D institutions and industrial firms in area of process improvement, innovation of processes, manufacturing productivity and efficiency, development of innovation thinking and creativity, R&D activities, project activities…,
- education and information about specific characteristics of the **new technologies**,
- building of **new study programs**, **focus on new STRATEGIC AREAS LEARNING**: **in terms of green cars,** infrastructure, new structural changes, challenges and actual worldwide trends in automotive,
- **building learning networks** – shared learning could help with some of the barriers to learning that individual firms might face – this type of networks has primary purpose of increasing knowledge with characteristics (*Tidd, J. – Bessant, J., 2009*): they are formally established and defined, they have primary learning target (specific knowledge), others

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RECOMMENDATIONS

- WP4.1 Outputs
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4. Energy and Environment

- create **stronger environmental orientation** of R&D capacities in SEE (need for increasing R&D activities in environmental area)
- preparing **activities for using of green cars (research in traffic and transport system as a whole, research in environmental technologies, alternative fuels and innovation in powertrain, market implementation of innovation and other related areas)**
- contribution to **R&D in hybrid cars, electric cars, and other alternative powertrain, component innovations**
- contribution to **development of recharging infrastructure, development of country infrastructure for electric cars**
- contribution to **development of battery systems and recycling processes**
- contribution to **development of ecological manufacturing processes** (green painting processes, green manufacturing of vehicles and sub-systems, digital manufacturing, virtual engineering
- energy companies need to contribute to the R&D in **renewable energy sources** with aim zero-emission transportation

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WP ACTIVITIES 4.2, 4.3, 4.4

- WP4.1 Outputs
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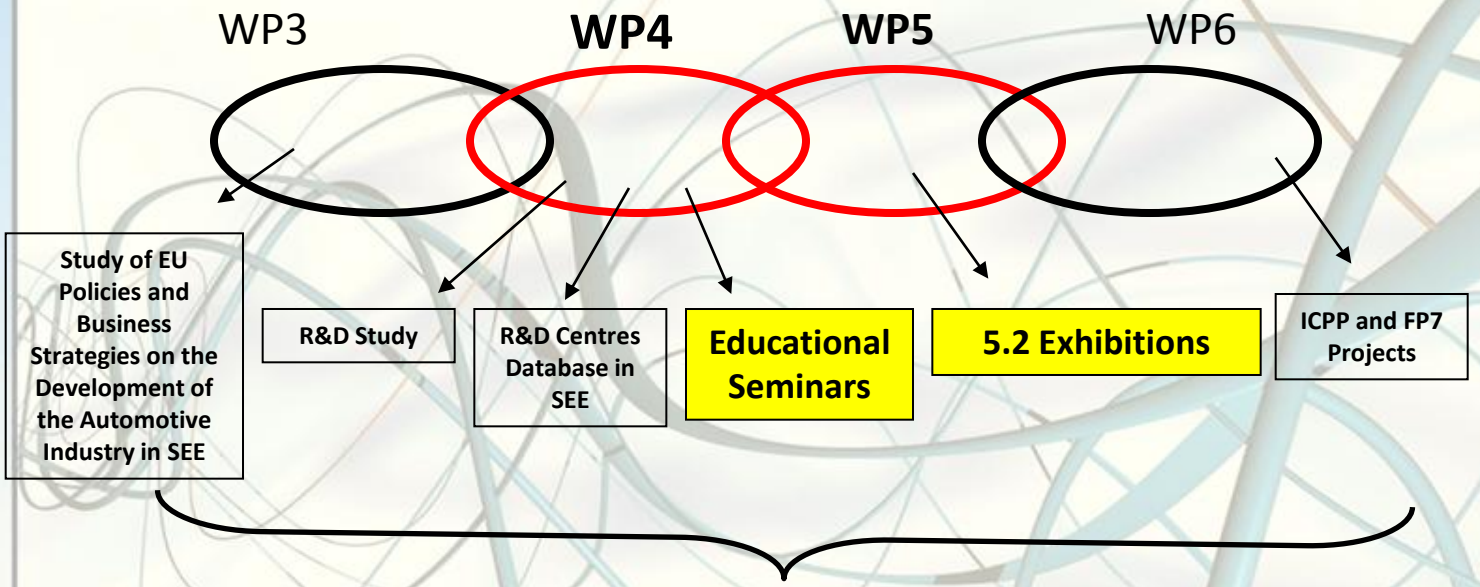
- **WP activities 4.2, 4.3, 4.4**

AUTOCLUSTERS PROJECT



- Promotion and dissemination of AUTOCLSUTERS projects results and R&D capacities in PPs countries/regions in SEE
- Support for cooperation between companies and universities and other R&D institutions from SEE

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WP ACTIVITIES 4.2, 4.3, 4.4

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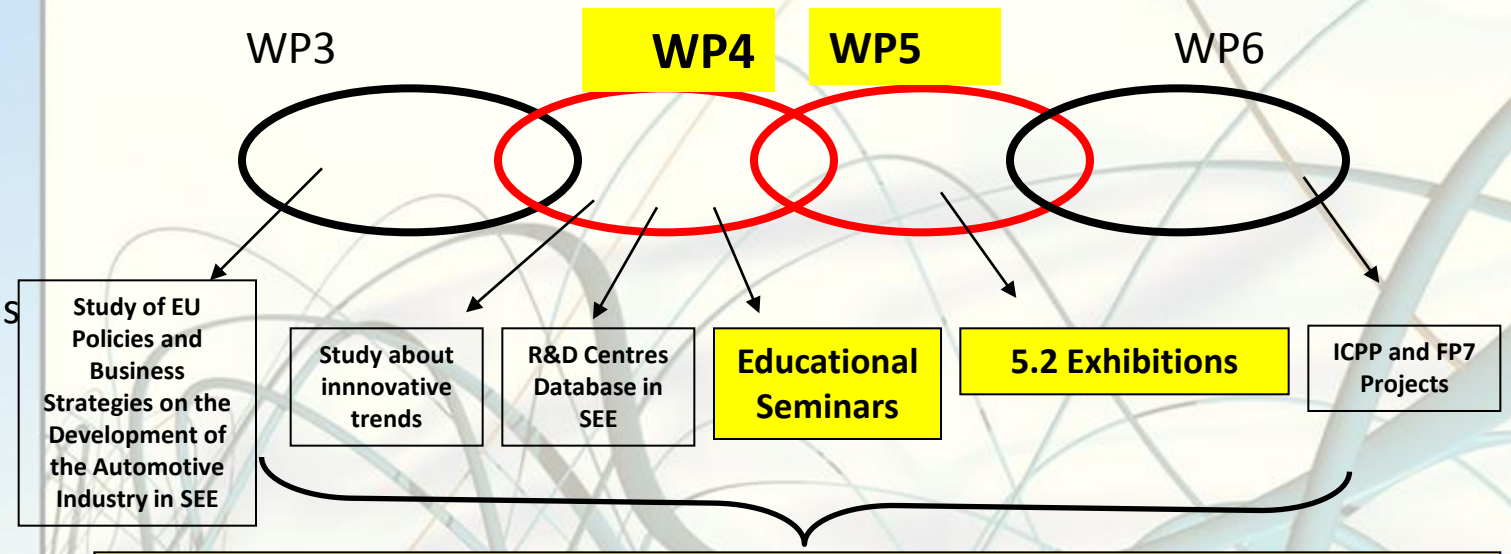

4.2 Educational seminars for internal staff in own organization by dissemination

4.3: National events – 2 educational seminars per each region: 10 partners regions (20 seminars) – responsible each PP

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WP ACTIVITIES 4.2, 4.3, 4.4

4.3 Activity: Educational Seminars in Slovakia

Autocluster Slovakia

Technical University of Košice

Faculty of Mechanical Engineering STU in Bratislava

Slovak Uni. of Technology in Bratislava

University of SS. Cyril and Methodius in Trnava

Faculty of Material Sciences and Technology in Trnava

Useful Presentations:

1. **Results of AUTOCLSUTERS project**
2. **Automotive industry up to 2020**
3. **Modern trends in hybrid and electric cars**

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WP ACTIVITIES 4.2, 4.3, 4.4

- WP4.1 Outputs
- R&D Study
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4.4 Activity realized by LP together with ERDF-PP3 which will dissemminate the project outputs outside E.U. (and outside the project area in Europe)

- LP is responsible for 2 seminars in 2 selected regions from non-partnering IPA or ENPI countries

National seminars 10 regions x 2 seminars = 20

plus

2 seminars in 2 selected IPAs or ENPI

- Number of all education seminars is 22 (24?)

Source: http://www.engin.umich.edu/newscenter/feature/autoresearch/gmumexhibit_1/gmumexhibit_1_print.jpg

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SUMMARY

- WP4.1 Outputs
- R&D Study
- R&D Database
- Recommendations
- **WP4.2, 4.3, 4.4**

- **WP4.1 Outputs:**

R&D Study - **done**

R&D Database – **done**

WP 4.2, 4.3, 4.4 –

FROM APRIL 2010 TO JULY 2010

WE ARE THERE

Year		2009										2010						
Months		mar	apr	may	jun	jul	aug	sep	oct	nov	dec	jan	feb	mar	apr	may	jun	jul
		3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7
		Project preparation			1st period			2nd period						3rd period				
WP 4: Innovative trends and main challenges in Automotive industry in SEE																		
Act 4.1	Analysis of the innovation cappacities																	
	Study realised																	
	Database describing the innovation cappacities potential in SEE																	
Act 4.2	Education and skills improvement of internal staff																	
	National events - 10 partners regions																	
Act 4.3	Education and skills improvement of stakeholders and other beneficiaries																	
	National events - 2 per each region																	
Act 4.4	Education and skills improvement of stakeholders in selected IPA and ENPI or other n																	
	National events - 2 selected regions in IPA or ENPI countries																	

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ACSEE
AUTOCLUSTERS
Automotive network for innovation

- WP4.1 Outputs
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Thank you for your attention!

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