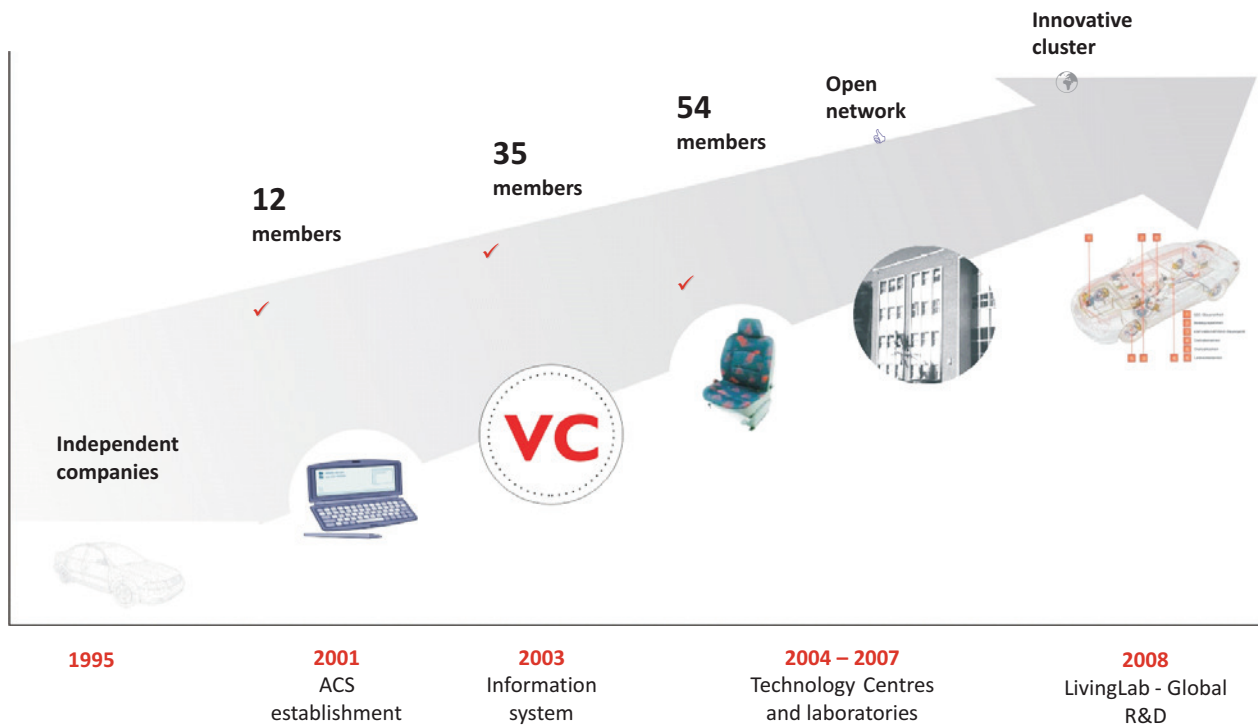


To create a network connection, the main goal of which would be efficient use of individual and **common competence**.

AUTOMOTIVE CLUSTER OF SLOVENIA

Facts about Automotive Cluster of Slovenia

In order to increase especially nonmaterial factors of development in automotive suppliers industry the **Automotive cluster of Slovenia (ACS)** was established in **2001**. It has **63** members, **57** are industrial companies and **6** research and development organizations and institutions.



ACS is an economic interest association of Slovenian automotive industry suppliers. It joins producers of automotive components in Slovenian metal working, mechanical, electrical and electronics, chemical, rubber, textile and transport equipment industries, as well as partners from R&D institutions and other services in the supply chains that create and deliver products and services for the automotive industry.

The goal is to become a regional innovatory system whose main task is to encourage the co-operation between companies and other institutions with the intention of developing, expanding and using new knowledge.

AUTOMOTIVE CLUSTER OF SLOVENIA

ACS'activities

ACS represents its members' interests, promotes them especially to automotive producers (house fairs, business conferences,...) ACS plays an important role at encouraging research and development of products and systems of higher added value. ACS accelerates the common members' performance to improve the quality of products and business, ACS gathers information about the events in automotive industry and it also establishes, develops and maintains the informational, educational and research and development infrastructure to meet members' needs.

Cluster's areas of business

- establishing, developing and maintaining infrastructure conditions for operations
- encouraging and assisting in the establishment of links and cooperation between members in all fields
- developing and implementing ACS strategies
- ensuring access to common information, basic and specialized knowledge and communicating this information to members
- representing and promoting interests of ACS locally and abroad, especially at vehicle producers and system suppliers
- monitoring and implementing agreed norms and rules of the ACS
- monitoring fundamental, legal and economic issues and proposing appropriate measures
- joint efforts of the members aimed at improving their products
- joint efforts of the members aimed at improving business in development, manufacturing, quality and organization.
- internationalization and approaching to new emerging markets

ACS members have 18.600 employees, from that 2.000 registered researchers.

Sales of ACS members in 2007 exceeds 4 billion EUR, 75% of which comes from the export of goods and services to the EU and the rest of the world.

AUTOMOTIVE CLUSTER OF SLOVENIA

Projects

In the recent years the cluster as well as some groups of members have been carrying out major national and international development projects (themselves or as partners); the most prominent are:

Within the framework of ACS a strategically important project has been carried out: **“The polycentric technological centre as an international innovation system of Slovenian automotive suppliers industry”** and it has received funds from the Ministry of Economy through structural funds. The project began as a result of the discovery that the situation of Slovenian automotive suppliers can only be improved by common investments and by cooperation between the economic and academic spheres. The polycentric technological centre's basic strategic and developmental orientation is profitable growth of sales and added value, gaining new buyers, promotion and common marketing, innovation processes, qualified suppliers, developmental infrastructure, information structure and basic knowledge.

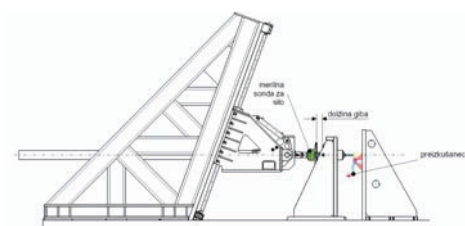
Technology centre for materials



Technology centre for mechatronics



Technology centre for crash testes



AUTOMOTIVE CLUSTER OF SLOVENIA

Projects

ACS is also one of the founders of the national technological platform for vehicles, roads and traffic. As the first national platform within the framework of EU TP ERTRAC it will be given special attention and support since it is a pilot project. The technological platform is based on ERTRAC model but it covers the field of energy and fuels, automotive producers, suppliers to automotive industry, users, research and development organisations, road infrastructure, intelligent transport systems, representatives of governmental and EU organisations, cities/towns and regions and also offers providers and service providers. The activities of all the partners involved are focused on the development and business opportunities within the framework of four pillars:

- Mobility, transport and roads
- Environment, energy and natural resources
- Traffic safety and general safety
- Planning and production systems

“NEAC Network of European Automotive Competence” is a project that is co financed from the European fund INTERREG IIIIC. It includes organizations that connect automotive industry suppliers in ten European regions. The goals of NEAC project are: to establish communication among partners from different regions, to create a map of regional organizations that connect automotive industry suppliers, to evaluate and present competences and competitive advantages of automotive industry suppliers from individual regions and to find out factors that influence the competition of individual regions.

Project **TCAS Transnational Clustering in Automotive Sector**. Clusters in the automotive sector have proved to be a successful framework for suppliers to respond to high cost and innovation pressure. The focus of TCAS is therefore on facilitating the exchange of experiences and best practices among European automotive clusters in order to strengthen their performance, creating a transnational cooperation platform and opening up new European business perspectives for the cluster enterprises. In order to develop a best practice strategy on automotive clustering whilst also taking into account existing differences, the project consortium includes some of the most advanced and successful European automotive clusters set to facilitate the exchange of experiences and best practices. Project is financed by program Europe INNOVA within 6 FP program.

ACS has been very intensely establishing contacts with other similar clusters and institutions in Europe and worldwide, they are members of CLEPA, the European association of automotive suppliers and they cooperate on numerous international projects of clustering and associating. ACS is very active in the states of the former Yugoslavia where it has been reviving automotive and suppliers' activities; it can represent an important suppliers “pool” for Slovenian companies in the future. For this purpose a project **“The development of suppliers' net ACS in Serbia”** was organized where it was stated that the main goal is to develop a quality suppliers' net of companies, development institutions and support organizations in South-Eastern Europe for the needs of Slovenian automotive suppliers as a strategically important part of Slovenian economy. Raising the region's innovation and competition will strengthen the competition of Slovenian suppliers and therefore the Slovenian government will support the project with the funds from UNIDO program.

SENAI - The Network-Project **„SENAI South-East-European Network of Automotive Industry“** was handed in from the ACStyria Autocluster GmbH in cooperation with fourteen partners from Austria, Slovenia, Croatia and Serbia at the Austrian Research Promotion Agency. The main aim of the project was to establish a sustainable, cross-border automotive network, in order to strengthen the south-east-European automotive region and to develop a counterbalance to growing the market in China.

AUTOMOTIVE CLUSTER OF SLOVENIA

Projects

Optimising the logistics ways within the framework of ACS members has been carried out as a pilot project within the framework of CORELOG. The project **CORELOG (COordinated REgional LOGistics)** is an international research project that has been carried out within the framework of the INTERREG III B CADSES program. The purpose of the CORELOG project is to firstly analyze logistic currents in the cooperating countries and to suggest measures to rationalize them. In Slovenia, as a subject of detailed research within the framework of CORELOG the companies that are ACS members were chosen especially because the extent of ACS logistics activities is high and important enough and also because the members are organized in the cluster shape which enables easier coordination of activities of the project. The result will be the establishment of a common information portal that will make it possible to order transport in an uncomplicated way and also to optimize transport services among all the cooperating production companies and transporters (an increased critical mass that enables a higher number of optimal solutions). The consequences are that transport becomes more economical and reaches better quality.

AUTO IN - Boost Automotive SMEs Participation in FP7 is a Specific Support Action funded by the European Commission within the VII framework programme for RTD. AUTO-IN project is articulated around a network of 5 clusters, created from a technological need.

MAGFORGE - Magnesium Forged Component for Structural Lightweight Transport Applications Goal of the project is a tailored and cost-effective technology for the design and manufacture of magnesium parts produced by (closed-die) forging. To this aim, research and technological development work is required in several areas.

AUTOCLUSTERS - The International Cooperative Network of educational and Research Institution with Subcontractors and Other Bodies Active in Automotive Industry; The Project brings together Universities, R&D institutions, SMEs support facilities from EU-15, NMS as well as IPA to prepare and create the first automotive network in SEE. The second level clustering activities proposed by the project are strictly oriented on the activities, which are improving the innovation capacities in the region and improve technology and know-how transfer improving the innovation circle.

COIN- COllaboration and INteroperability for networked enterprises is an integrated project in the European Commission Seventh Framework Programme. The mission of the Coin IP is to study, design, develop and prototype an open, self-adaptive, generic ICT integrated solution to support the above 2020 vision, starting from notable existing research results in the field of Enterprise Interoperability and Enterprise Collaboration.

STAR NET Transport - European Network to Support the Sustainable Surface Transport SMEs - The aim of the project is to be the first step towards the development of a consolidated structure to support the participation of European SMEs in Sustainable Surface Transport activities, building on the knowledge, tools and services developed within some of the most relevant FP6-SUSTDEV support actions over the recent years and in future FP7-SST-SSAs projects.

6 qualification certification programs have been introduced from which the most important are: »**Project management in Automotive Industry**« and »**ACS School of Quality**«

The European Commission has awarded the first Europe INNOVA Cluster Manager Award to Dusan Busen of the Slovenian Automotive Cluster. Convinced of the importance of the entrepreneurial and professional skills involved in managing innovation successfully, the Commission chose to officially recognize excellence in cluster management.



AUTOMOTIVE CLUSTER OF SLOVENIA

Synergetic effects to improve R&D activities

In order to acquire the necessary resources for research activities, it is important that the synergetic effects of vertical and horizontal integrations (integrations between companies, knowledge bearers, etc) are fully utilized. Our success is therefore strongly connected with knowledge and competences management and integration.

Even though the convergence of technologies introduced the development of multiple forms of cooperation and integration (irrespective of distances, geographical position, etc.) which became mobile, personalised and virtual, the development of knowledge and values in local networking competence systems still remains the first priority. It is with this fact in mind that the ACS is determined to provide an environment that is going to be a catalyst and a driving-force of joint R&D processes in all of the ACS members as well as in all other interested companies and institutions. An environment that will generate new ideas through processes of research and interconnectivity. This will result in new important technologies, functions and products.

Our analysis and specific development activities indicate our strong ability to be a trustworthy and reliable partner in all three major fields in the automotive industry: comfort, safety and mobility. That is why our main products will be mechatronic modules that include component parts from engineering industry, electro industry and electronics, plastic manufacturers and software developers. There is also a demand for suppliers of component parts that require a large amount of technological, tool manufacturing and automation skills and knowledge (special/precise tools, exhaust system parts, etc.) - the latter (i.e. automation skills/knowledge) being the most important compensative factor in annulment of a relatively higher price of labour force compared to the Eastern Europe or Asia.

The ACS already started 18 joint developmental and 4 technological projects. There are at least 3 companies and 1 R&D organisation involved in each of them. The majority of these projects are already finished, while others are in their advanced stage. The installation of technological zinc-nickel production line in Iskra ISD is an example of a technological project. The core of the project is a surface protection technology that is a novelty in Slovenia.

Of course our focus is not just in the present time, but also aimed at the future. In the ACS Research & technology council (the consultative committee of ACS management) we regularly monitor new project initiatives as well as guide ambitions of individual ACS members. At this moment we have 30 new joint R&D projects with aggregate value of over 80 million Euros, which will be started shortly. Regarding this matter, we also expect support from the European Union and the Slovenian government.

AUTOMOTIVE CLUSTER OF SLOVENIA

What about the future

The successful implementation of all R&D projects is a long lasting process that requires a large amount of cooperation and it may last for years before its goals are fully accomplished. As mentioned before, beside single R&D projects and their goals, a great deal of attention must also be given to the establishment of strong horizontal and vertical as well as physical and intellectual integrations, bearing in mind the specific characteristics of individual environments and in accordance with the principle of partnership and concentration. In this way R&D projects will have an additional positive impact on the ACS as well as on other spheres and areas.

This is also the best way to improve our competitiveness model:

To build an appropriate infrastructure and thus enable proper working conditions, inflow and the development of creative experts from the automotive industry field.

To create conditions for the ACS to become a global actor in the field of new products and technologies as well as for the increase of competitiveness based on specialization and innovative skills.

The establishment of an environment for the development of technologically oriented providers of knowledge in the region.

To create knowledge and competences in the field of mobility, security and comfort.

The establishment of cooperative network that will be based on strong developmental partners, education and international cooperation.

AUTOMOTIVE CLUSTER OF SLOVENIA

Slovenian Automotive Living Lab (SALL)

Appropriate infrastructure, which is without any restraints at the disposal of all members (projects partners), is vital for successful implementation and completion of R&D projects or in other words to improve our competitiveness model. In the past years, the ACS made large investments in the infrastructural modernization within the projects and we plan to continue this activity also in the future. In accordance with EU trends we will establish the “LivingLab” in Slovenia that will satisfy the needs of the automotive industry. In the “LivingLab” we see an innovative environment where “the world of knowledge” and “the world of industry” meet and thus create new ideas for products with the highest added value.

Slovenian Automotive Living Lab will be the central R&D and communication point between manufacturers, suppliers, research organisations and the government with innovative infrastructure support for Slovenian automotive industry. Like the future of the automobile, which is based on the separate development of each part including our parts, the progress of the Slovenian Automotive Living Lab also depends on continual development and co-operation among the members.

Main customers of Slovenian automotive suppliers industry are OEM customer BMW, VW, Audi, Ford, PSA, Mercedes, DC, MAN, Renault, Opel, SAAB, New Holland and system suppliers MAGNA Steyr, VALEO, Visteon, TRW, Bosch, Brose.

MEMBERS

Main groups of products

Passenger compartment and electronics in passenger compartment
Supports, screw jack, parking brake, pedal box
Interior equipment
Brake Tubes
Exterior equipment, body lighting equipment
Door systems, sun window, rear mirrors, joint seals
Exhaust systems
Coach - superstructure
Openings, wings, hood
Windows wiping and washing
Cooling system
Seats and parts thereof
Security & steering system
Tires and wheels
Breaking system
Engine and gearbox components
Colors and paintings
Assembly and upgrades for commercial vehicles (including buses and trucks)
CNC, spot welding, processing and assembly equipment
Progressive, transfer and other tools for automotive industry
Research, testing and other developmental services

Key technologies

Development processes and dynamics of the means of transport industry
Cutting and remodeling of sheet metal (laser system)
New materials and new technological procedures
Casting and pressure casting of color metals
Stamping
CAD - CAM, CIM, CAE
Surface protection
Mechatronics
Mechanical processing
Microelectronics
Technologies for the production of electric machines (coiling, etc.)
Development of human resources
Assembly, robotisation, flexible automatisisation
TQM
Measurement and control procedures and processes
Harmonized environmental development
Manufacture of tools and thermal processing

MEMBERS

a

AKA PCB d.o.o.

SS Printed circuit boards on all standard laminates; Lead free ready, Aluminium base material; STH Silver Trough Hole Printing; Silver jumpers; Carbon conductive pastes; PCB assembly SMT, TH, manual.

ALPMETAL & CO d.o.o.

All types of casts from aluminium, zamak alloy and plastics are made according to the client's demands. Casts and products always meet the client's demand according to the form, solidity, type of the material and colour.

AREX d.o.o.

Plastics and metal products for automotive industry.

c

CAD CAM Lab d.o.o.

CAD/CAM/CAE software tools for electronics and mechanical systems design, distributes electronic components and development tools, offers development and production services.

Cimos, avtomobilska industrija d.d.

Development and production of different systems (pedal boxes, hand brakes, gearshift mechanism, hinges, intake and exhaust manifolds, flywheels, engine-, pump- and alternator mountings, turbocompressor parts, ...)

d

DIFA d.o.o.

Casting parts of Zn and Al, mechanically and galvanically treated parts made by injecting moulding of plastics

DOMEL d.d.

Electromotors production and sales for automotive use: DC PM Commutator permanent magnet motors, BLDC Brushless motors or motor parts, Stepper motors-actuators, Components for motors, Tools for motor parts.

e

ELVEZ d.o.o.

Cable harnesses and cable confection for automotive industry, various power cords, injection moulded plastic parts for the automotive, electric and machine industry, assembling of various complexes and links.

EMO - ORODJARNA d.o.o.

Progressive and transfer tools for automotive industry.

MEMBERS

e

EMO-TECH d.o.o. Šempeter

Tools for sheet metal recasting, welding, control, measuring and other devices automation of industrial plants and machines, processing machine services.

ETIGUM d.o.o.

Plastic filters for automotive industry, valve stem seals, motor head seals for car engines, silicon caps for car front lights.

g

GORENJE ORODJARNA d.o.o.

Sheet Metal Tools, Injection Moulds, Styrofoam Tools.

h

HELLA SATURNUS SLOVENIJA d.o.o.

Lightning equipment for OEM's vehicle and Aftermarket world wide. Products: headlamps, foglamps and rear lamps of vehicles.

HELIOS TBLUS Količevo d.o.o.

Finishes for car industry: cataphoresis, sealers, single and two-layer coatings, clearcoats.

HIDRIA AET d.o.o.

Flywheel magnetos, oxide ceramics, diesel heater components.

HIDRIA ROTOMATIKA d.o.o.

Special and capacitor electric motors, die - cast rotors, die - cast parts, fine blanked parts, lamination, fans and impellers.

i

Iskra Avtoelektrika d.d.

Starter motors, alternators, DC commutator motors, BLPM - brushless permanent magnet motors, AC induction motors, electronic controllers, switches, ignition coils, cold forged metal parts, aluminium castings, plastic components, tools, special machines and devices.

Iskra EMS d.o.o.

Switches (pressure, push, wipp switches), headlamp leveling system, automobile interiors lighting, plastic components

Iskra ISD d.o.o.

Parts made by injecting moulding of plastics, turned parts and electroplating, die cast parts made of aluminium alloys

MEMBERS

i

Iskra Mehanizmi d.d.

Small synchronous and stepping motors, automotive components: mirror and headlight regulators and other actuators, lamp supports and sockets, hydraulic switches, valves and BILED display systems.

Iskra TELA d.d.

Chromium, nickel, zinc, silver, copper, tin and gold electroplating service on steel, copper and brass.

j

JOHNSON CONTROLS-NTU, d.o.o.

Cutting and sewing, polyurethane foaming, assembly of conventional small parts, TEM 10, pour in place of small.

k

KGL, d.o.o.

Stamping: bearing ring (inner, outer), parts for electromotor, alternators and starters; assembling parts for trains, parts for motorbikes, cylinders for small engines, parts for cars (parts for pedals, holders etc.); turning: parts for turbochargers, parts for electromotor, alternators and starters; machining: supports, distance plates, cylinders for small engines.

Kovinoplastika Lož d.d.

R&D capabilities on the tooling for sheet metal forming and die Casting, Assembling Machines, Assembly Machines, production of stamping components, die-casting components.

KOLEKTOR LIV d.o.o.

Vacuum cleaners and accessories water cisterns and armatures, sanitary and sink traps, plastic pipes and co-operative services for the automotive industry.

m

MAGNETI Ljubljana d.d.

Anisotropic and isotropic metallic magnets, heat treatment of high-alloy steels in vacuums, non magnetic iron based sinter parts, Engineering in metallurgic equipment, metric techniques for the assessment of magnetic measurements and equipment for magnetizing and demagnetising.

MLM d.d.

Metal-based consumables, primarily sanitary fittings and radiators with all supporting elements. Trademarks: Armal, Alutec, Baker.

MOTOMAN ROBOTEC d.o.o.

ARC welding, spot welding, tig welding, handling, palletising, deburring, grinding, polishing, assembling, sealing, measuring, plasma cutting, water jet cutting.

MEMBERS

p

PLAMA - PUR d.d.

Automotive - polyether and polyester rolls for glue and flame lamination, polyether rolls for impregnation, blocks for cutting for car seat cushions, sealing foams, Bedding and upholstered furniture - blocks, rolls, shaped foam products, mattresses, Other segments - rebound foam (blocks, rolls, shaped products), cleaning sponges.

Plamtex d.o.o.

Injection moulding plastics parts and tools.

Polycom Škofja Loka d.o.o

Plastic parts for car industry.

PRESEK d.o.o.

Various load - bearing and connecting parts, reinforcements and supports, housings, spacers, clips, washers, braces, other various small metal parts.

PREVENT GLOBAL d.d.

Car seat covers, foam products (moulded, cutted, integrated), plastic parts for the car interior and exterior, car modules (armrests), brake systems, laminating (textile and leather); threads and tapes.

r

RESISTEC UPR d.o.o. & Co.k.d.

Wire wound resistors.

RIKO d.o.o.

Engineering of metallurgical processes, of machining in automotive and other industries, of metal forming processes, of thermal hardening and heating processing, of welding procedures and equipment, of surface protection processing, of assembly systems, of measuring procedures and testing methods and engineering in production of plastic products.

s

SEP d.o.o.

WS-HL Washer bottles, AC Air ducts, Nozzles, Connectors, Blow moulding.

SILIKO d.o.o.

Construction and manufacture of tools for jetting rubber and Production of rubber products, combination of metal&rubber and combination of plastic&rubber products.

Štore Steel d.o.o.

Processing of steel for automotive industry

MEMBERS

t

TAB d.d.

Starter batteries, industrial batteries.

TALUM d.d.

Foundry alloys, extrusion billets, slugs and discs, evaporators, width and narrow strip.

TBP d.d. Lenart

Bowden cables - wire mechanisms for cable (bowden cables for hand - brake cable; bowden cables for opening motor cap).

TCG UNITECH Lth-ol d.o.o.

Break components, safety components, steering components, drive components, engine components, pumps.

TECOS - Slovenian Tool and Die Development Center

Optimization of plastic products and technology optimization of sheet products and tools manufacturing.

TESNILA GK d.o.o.

Production of rubber products, combination of metal & rubber.

Teve varnost elektronika d.o.o. Kisovec

Planning and executing technical safety in objects, that are exposed to explosive gases, vapours of inflammable liquids and to flammable dust (chemical industry, pharmaceutical industry, polishing plants, dangerous liquid storages, refineries, separations, etc.).

TKG d.o.o., Ljubljana

Classical stamping which is made by excentric pressing machines; Special technology is the expression for fine stamping or with other words stamping without air; We can produce also very complicated products with the technology of forming in more steps (max. 12 steps); With the forming technology of the wire we can produce different rings, clamps, some types of springs and also some products for packing; Produces screws of small sizes ranging from 2 to 6 mm in diameter with the use of the most up-to-date technology of cold forming; Special Screws.

TOVARNA VOZIL MARIBOR d.o.o.

Buses, trucks, tractors

TPV d.d.

Brake tubes forming, seat frames assembly, seat Bowden upholstery mechanism and metal components assembly, surface protection, metal sheets, bars and tubes welding, steel and aluminium sheet forming.

TREVES d.o.o.

Thermoformed floor carpets, thermoformed side protection, polymer and felt sound insulators.

MEMBERS

t

TT Okroglica d.d.

Automotive products (car seat covers, headrests, and other owdenr): thermo-adhesive linings-pads laminated with PU-foam, linings - pads laminated with polyurethane foam, self-adhesive linings-pads, commission lamination.

u

UNIOR d.d.

Connecting rods for cars and trucks, landing-gear and steering parts, camshafts, oscilation tubes, parts for control mechanisms, gearbox forks, valves for petrochemical industry, joint forks and other parts for the vehicle industry, forgings for hand tools of all kinds, including wrenches, pliers, hammers etc.

UNIVERSITY OF LJUBLJANA - FACULTY OF ELECTRICAL ENGINEERING

Microsystems design with integrated sensors, scene object recognition, automotive starters and generators development, discrete sensors development.

UNIVERSITY OF LJUBLJANA - FACULTY OF MECHANICAL ENGINEERING, LABORATORY FOR STRUCTURE EVALUATION

Development evaluation of structures and participation in the development of metal and plastic parts and sets - car components.

UNIVERSITY OF LJUBLJANA - FACULTY OF NATURAL SCIENCES AND ENGINEERING

Introduction of ecologically sound materials and technologies development of shape memory AlCuNi alloys research and development of materials for turbocompressors optimization of thermochemical treatment of steel semiproducts for the automotive industry.

UNIVERSITY OF MARIBOR - FACULTY OF ELECTRONIC ENGINEERING AND COMPUTER SCIENCE

Research and development of magnetic sets, reciprocating engines, systems of energy electronics, adjustment and control.

UNIVERSITY OF MARIBOR - FACULTY OF MECHANICAL ENGINEERING

Research and participation in the development of automobile industry products (bowden cables, springs and latches, batteries).

v

Var d.o.o.

Sheet metal forming tools, injections moulds tools, stamping parts, injection moulding plastics parts.

VARKAR d.o.o.

Firefighting vehicles, firefighting and other types of bodies on different chassis of cars, bulletproof cars for money transport.

MEMBERS

V

VEYANCE TECHNOLOGIES EUROPE, DRUŽBA ZA PROIZVODNJO GUMENIH TEHNIČNIH IZDELKOV, d.o.o.

Power transmission rubber products, air springs, autohoses .