Education and Culture DG
Lifelong Learning Programme

KONFEDERACIJA SINDIKATOV JAVNEGA SEKTORJA SLOVENIJE
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WORK PACKAGE 3

National report
Linking EQF and European Higher Education Area in the Automotive Sector

PICTURE OF QUALIFICATIONS IN THE AUTOMOTIVE SECTOR IN SLOVENIA

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1. Sector dimensions

Data concerning employment arises from the Statistical Register of Employment (SRDAP).[1]

For analysing purposes we took into account two sectors that are related to the automotive sector: *(DM 34) Manufacture of motor vehicles and (G 50) Wholesale, retail, motor vehicle maintenance and repair.*[2]

[1] SRDAP covers persons in paid employment who have employment contracts and self-employed persons who have compulsory social insurance (pension, disability and health insurance, parental protection insurance and unemployment insurance). Persons working under copyright contracts, contracts for work/service and citizens of the Republic of Slovenia working in Slovenian enterprises, on construction sites, etc., abroad are not covered.

[2] *Standard Classification of Activities (NACE Rev. 1.1)*

Total number of persons in employment in year 2008 was **847067 persons**. The table below shows insights in automotive sector i.e. *manufacture of motor vehicles* that is divided into three *sub-sectors*: *manufacture of motor vehicle, manufacture of car bodies and manufacture of motor vehicle parts and equipment*.

Table 1 represent general insights into the number of employees in each sector according to different education attainments and by gender.

Table1: Persons in paid employment by sectors by education attainment and by gender, 2008

Education attainment / Persons in paid Employment		University	Colleges	4-year Secondary School	3-year Secondary School	2-year Lower Secondary School	Element. School	Unknown
Employ-ment in total	847067	147424	51833	249963	238596	16501	140167	2583
male	475568	62260	22043	125749	164503	9614	89638	1761
female	371499	85164	29790	124214	74093	6887	50529	822
SECTOR								
Manufac. of motor vehicles	2972	168	128	498	986	235	954	5
male	2315	108	99	382	829	200	693	4
female	657	60	29	114	157	35	261	1
SECTOR								
Manufac. of car bodies	1478	110	70	322	599	102	278	1
male	1189	67	50	270	521	81	199	1
female	289	43	20	52	78	17	79	0
SECTOR								
Manufat. of motor vehicle parts and equipment	5328	483	278	1234	1999	242	1092	0
male	3642	316	210	828	1511	144	633	0
female	1686	167	68	402	488	98	459	0

Source:
Statistical Office of the Republic of Slovenia-Statistical Register of Employment

Table 2 explains the percentage of persons in paid employment by three sub-sectors comparing to total persons in employment. Very small shares are evident in all sub-sectors and do not reach 1 %.

Table 2: Persons in paid employment by sectors and by education attainment, 2008

	Persons in paid Employment	%
Employment in total	**847067**	**100 %**
SECTOR		
Manufac. of motor vehicle	**2972**	**0.4 %**
SECTOR		
Manufacture of car bodies	**1478**	**0.2 %**
SECTOR		
Manufac. of motor vehicle parts and equipment	**5328**	**0.6 %**

Source: Statistical office of the Republic of Slovenia

Education attainments are instantly similar in all sub-sectors (***Table 3***). The proportion of persons in paid employment with 3-year secondary education is relatively large in all sub-sectors. There is a quite high share of employees who finished elementary school only. Employees with university degree and colleges reach small shares and do not exceed 10 % in each sub-sector observed.

Table 3: Percentage (%) of persons in paid employment by sectors and by education attainment, 2008

Education Attainment Persons in paid Employment		%	University	Colleges	4-year Secondary School	3-year Secondary School	2-year Lower Secondary School	Elemen t. School
Manufac. of motor vehicle	**2972**	**100 %**	**6 %**	**4 %**	**17**	**33**	**8**	**32**
Manufact. of car bodies	**1478**	**100 %**	**7 %**	**5 %**	**22**	**51**	**7**	**19**
Manufact. of car bodies	**5328**	**100 %**	**9 %**	**5 %**	**23**	**38**	**5**	**20**

Source: Statistical office of the Republic of Slovenia

Table 4 shows general insights in education attainment, gender and sub-sectors like Table 1 only that sector differs. In sector (50) w*holesale, retail, motor vehicle maintenance and repair* sector we identified three sub-sectors which are the following: *motor vehicle wholesale trade, motor vehicle maintenance and repair, motor vehicle spare parts and equipment trade.*

Table 4: *Persons in paid employment by sectors by education attainment and by gender, 2008*

Education attainment **Persons in paid Employment**		**University**	**Colleges**	**4-year Secondary School**	**3-year Secondary School**	**2-year Lower Secondary School**	**Element. School**	**Unknown**
Employ - ment in total	**847067**	**147424**	**51833**	**249963**	**238596**	**16501**	**140167**	**2583**
male	**475568**	**62260**	**22043**	**125749**	**164503**	**9614**	**89638**	**1761**
female	**371499**	**85164**	**29790**	**124214**	**74093**	**6887**	**50529**	**822**
SECTOR								
motor vehicle wholesale trade	**6103**	**580**	**344**	**2234**	**2515**	**20**	**407**	**3**
male	4788	314	216	1531	2364	17	343	3
female	1315	266	128	703	151	3	64	0
SECTOR								
motor vehicle maintenance and repair	**7170**	**172**	**125**	**1651**	**4306**	**37**	**818**	**61**
male	6171	81	75	1149	4057	34	715	60
female	99	91	50	502	249	3	103	1
SECTOR								
motor vehicle spare parts and equipment trade	**2116**	**124**	**107**	**835**	**840**	**6**	**200**	**2**
male	1650	66	61	599	748	5	169	2
female	466	58	46	236	92	3	31	0

Source: Statistical office of the Republic of Slovenia

Very small shares of persons in paid employment are evident in all sub-sectors of G w*holesale, retail, motor vehicle maintenance and repair* sector. Comparing to total employment not one sub-sector reaches the share of 1 %.

Table 5: % of persons in paid employment by sectors, 2008

	Persons in paid Employment	%
Employment in total	**847067**	**100 %**
SECTOR		
motor vehicle wholesale trade	**6103**	**0.7 %**
SECTOR		
motor vehicle maintenance and repair	**7170**	**0.8%**
SECTOR		
motor vehicle spare parts and equipment trade	**2116**	**0.2 %**

Source: Statistical office of the Republic of Slovenia

High share of employees with 3-year secondary education are prevalent in all sub-sectors. Comparing to *(DM 34) Manufacture of motor vehicles* sector, smaller percentages of employees with elementary education appears in *(G 50) Wholesale, retail, motor vehicle maintenance and repair* sector.

Small percentages are found at employees with university degree and colleges and are fewer than 10 %.

Table 6: Persons in paid employment by sectors and by education attainment, 2008

Education attainment Persons in paid Employment		University	Colleges	4-year Secondary School	3-year Secondary School	2-year Lower Secondary School	Element. School	Unknown
motor vehicle wholesale trade	**6103**	**100 %**	**9 %**	**6 %**	**37 %**	**41 %**	**0 %**	**7 %**
motor vehicle maintenance and repair	**7170**	**100 %**	**2 %**	**2 %**	**23 %**	**60 %**	**0 %**	**11 %**
motor vehicle spare parts and equipment trade	**2116**	**100 %**	**6 %**	**5 %**	**39 %**	**40 %**	**0 %**	**9 %**

Source: Statistical office of the Republic of Slovenia

Table 7 indicates the number of enterprises by size in both sectors. Micro enterprises from 0 to 9 employees are predominated and represent over 50 % of enterprises in each sectors.

Table 7: Number of enterprises by sectors and by size, 2007

No. of enterprises Sector	Total	Micro (0-9)	Small (10-49)	Medium-sized (50-249)	Large (250+
(DM 34) manufacture of motor vehicles	**105**	**57**	**22**	**17**	**9**
(G 50) *wholesale, retail, motor vehicle maintenance and repair*	**4005**	**3728**	**232**	**41**	**4**

Source: Statistical office of the Republic of Slovenia

Wholesale, retail, motor vehicle maintenance and repair ***s****ector* attained 3 times more income than *manufacture of motor vehicles sector* in year 2007 (***Table 8***).

Table 8: Total income by sectors, 2007

No. of enterprises Sector	Total Income (1000 EUR)
(DM 34) manufacture of motor vehicles	**2.511.019**
(G 50) *wholesale, retail, motor vehicle maintenance and repair*	**7.028.725**

2. EQF/NQF/SQF

Slovenia has not yet adopted a National Qualification Framework. In 2007 a working group was established, which should be responsible for NQF preparation, but it still didn't show results. In Slovenia the introduction of NQF is the responsibility of the Ministry of Labour, Family and Social Affairs. The other ministries involved are Ministry of Education and Sport and Ministry of Higher Education, Science and Technology.

In last three years the national debate on EQF was organised, dominantly by expert institutions like National institute for vocational education and training. With few exceptions there was no involvement of social partners. Public Services Trade Unions Confederation of Slovenia discussed the formal proposal for a European Qualification Framework (EQF) and stated that the *Establishment* of ***National Qualification Framework*** could not be subject only of expert groups. The stakeholder in qualification system, the trade unions and interested groups of public should be involved in designing and implementing NQF. The NQF should be adopted in national Parliament, after a debate with social partners in Socio-economic council.

The Law on Higher Education introduced 8 levels of qualifications, including degrees in the first and second Bologna cycle. The base for graduation was KLASIUS – the Education and training classification system.

Decree on the introduction and use of the education and training classification system (KLASIUS)

> *The Slovenian Government adopted the Decree on the introduction and use of the education and training classification system (KLASIUS), to be used as the obligatory national standard for the classification of activities and education results in official and other databases and in statistical surveys from 1 January 2007 on. KLASIUS was intensively introduced into the procedures of adopting and accrediting the education programmes, the keeping of administrative and other records, and into the national statistics, Klasius was prepared by SORS- Statistical office of the Republic of Slovenia. Klasius was declared Translation system for comparing qualifications with focus on learning outcomes.*

The KLASIUS Classification is not equal to the Slovenian NQF, but the conceptual relations will make the comparison with the KLASIUS categories and EQF categories for lifelong learning possible. With regard to the Inclusion of Slovenian expert institutions and social partners in the creation process of EQF, the comparison and conversion should fall lightly.
The alignment to the EQF has not yet been done, so no designing of the alignment process can be described apart from the level descriptors underneath, which respond to description of KLASIUS hence classification of types and resources aimed at educational activities/outcomes.

KLASIUS - Slovenian Classification of Education and Training

Klasius 1	Non-Compulsory Primary School Education
Klasius 2	Primary School Education
Klasius 3	Short-term Vocational Education
Klasius 4	Secondary Vocational Education
Klasius 5	Secondary General Education & Secondary Technical Education (Short cycle of the First Cycle)
Klasius 6	- 6/1 Post-Secondary Vocational Education - 6/2 Professional Type & Higher Education (1st cycle Bologna)
Klasius 7	Education at Master's Level (2nd cycle Bologna) & former University Graduate Education
Klasius 8	- 8/1 Former Master's Degree - 8/2 PhD KLASIUS

Each **vocational qualification** defined through an **Occupational Standard** contains parallel reference to the National Classification Framework.

In its current form Klasius system contains two subsystems:

- The first subsystem arranges activities and learning (training) results accordingly to the level (or sublevel) and some other characteristics specific for particular segment, level (or sublevel). It consists of the classification types and learning (training) results.

- The second subsystem arranges activities and learning (training) results accordingly to its subject/specific characteristic – content. It is composed of the classification of learning results of education and training.

Sectoral Qualifications Framework

Sectoral Qualifications Framework in the field of the Motor vehicle Maintenance and Repair has been established up to **qualification level 5 (KLASIUS)**. The occupational standard for a Higher VET Diploma (or 1 Bologna cycle) for Engineer in Car Mechatronics is still in preparation. There is currently an intensive discussion between the social partners. The Educational Programme and Training modules shall be prepared later.

KLASIUS[3]	**Qualification**	**Program of study (name of the course)**	**Type of education**	**EQF**
3	NPQ (career path)[4]	TYRE REPAIRER	National Professional Qualification[5]	2
4	School leaving certificate	CAR MECHATRONIC	Secondary vocational education	3
		VEHICLE BODY REPAIRER		3
5		TECHNICIAN FOR CAR MECHATRONICS	Vocational Technical Education	4
		TECHNICIAN FOR CAR MECHATRONICS	Technical Secondary Education	4
6/1	Higher VET diploma	INGENEER IN CAR MECHATRONICS (in development)	Higher vocational education	5

Note: The alignment to EQF is only experimental!

[3] Klasius represent classification (≠ qualification) system of education and training, which is one of the formal bases for building NQF.
[4] Considering that National Professional Qualification is classified as a vocational qualification (pretentiousness of work).
[5] The assessment and verification of NPQ is carried out by the committees at the appointed institution/organisation for the assessment and verification. The assessment and verification (certification) of NPQ is for adults only. Minimum age stands with 18 years. The exception for prior trial is possible, if candidate's apprenticeship or studentship expire and has relevant work experiences.

3. RELEVANT EDUCATIONAL PROFILES

3.1. SECONDARY VOCATIONAL EDUCATION IN SLOVENIA CONNECTED WITH AUTOMOTIVE SECTOR

Secondary Vocational Education in Slovenia is characterized by the following educational programmes:

1. Lower secondary programmes (short-term programmes)
2. Secondary vocational programmes
3. Secondary technical education and secondary general programmes
4. Two-year vocational-technical programmes
5. Post secondary vocational programmes

The national level in Slovenia is responsible for only 80 % of professional and vocational part of the curriculum (general part of curriculum is 100 %). 20 % of the curricula are opened curriculum which is defined by the social partners. In this way schools can offer contents that meet local needs of the companies in local area.

3.1. RELEVANT VOCATIONAL EDUCATIONAL PROFILES

Educational programmes related to the automotive sector are as follows:

1. Bodywork technician
2. Motor car mechanic
3. Car –service technician
4. Mechanical engineer

Car servicer and car body maker are part of 3-year vocational programmes. These programmes train students to take on occupations at the level of skilled workers, craft and service sector. General admission requirements for entering 3-year vocational programmes are successfully completed compulsory education programmes or successfully completed short-term vocational programmes.

3.1.1 BODYWORK TECHNICIAN

Slovene language: AVTOKAROSERIST
German language: Kfz-Karosseriebauer (Kraftfahrzeug-Karosseriebauer)

General part of education includes 985 hours of theoretical subjects (Slovene language, mathematics, foreign language, arts, natural science, social science and sport).

Professional part is consisted of four units:

1. Machinery
2. Motor vehicle basics
3. Car body works
4. Paintwork

Each unit is divided into modules with the following competences:

1. Machinery

Module 1
Use of technical and technological documentation
Use of ICT
Module 2
Use of different types of metal and non-metal materials
Module 3
Treatment and remodelling procedures of metal and non-metal materials
Know the tools, expedients and devices

2. Motor vehicle basics

Module1
Assemble and disassemble of motor vehicle systems, complexes, parts and devices
Assemble and disassemble of systems, complexes and parts in the field of tyres
Motor vehicle maintenance work
Module 2
Control check and fault finding (break system, exhaust system…)
Tyre replacement and repair
Module 3
Know the tools, expedients and devices in the field of electro-technique, electronics, digital
Technique and know its structure and function
Module 4
Control check and fault finding in electrical installation and security systems
Assemble of circuits with electric and electronic parts
Electric circuit protection electric and electronic units

3. Car body works

Module 1 Car body check Assemble and disassemble of car body parts Damage repair and fault removal **Module 2** Make, repair, and replace of car body parts **Module 3** Install of accessory parts **Module 4** Car body final works

4. Paintwork

Module 1 Surface treatment with mechanical and chemical methods Corrosion protection

Practical training is offered by the school and lasts 655 hours; 912 hours of practical training is provided by company as well.

3-year vocational programme is awarded **from 180 to 240 credit points[6].**

[6] Awarding of credit points of bodywork technician education programme is still in progress.

3.1.2 MOTOR CAR MECHANIC

Slovene language: AVTOSERVISER
German language: KFZ-MECHANIKER (KRAFTFAHRZEUG-MECHANIKER)

General part of education includes 985 hours of theoretical subjects (Slovene language, mathematics, foreign language, arts, natural science, social science and sport).

Professional part is consisted of five units divided into modules with the following competences:

1. Machinery

Module 1
Use of technical and technological documentation
Use of ICT
Module 2
Use of different types of metal and non-metal materials
Module 3
Treatment and remodelling procedures of metal and non-metal materials
Know the tools, expedients and devices

2. Petrol and diesel motor vehicle

Module 1
Engine maintenance
Module 2
Motor check
Module 3
Petrol and diesel motor vehicle assemble and disassemble
Module 4
Test and fault finding
Module 5
Engine testing

3. Vehicle electrical systems

Module 1
Device check
Module 2
Check and fault identification
Module 3
Test and fault finding
Module 4
Maintenance and repair of electric and electronic units, parts and fittings
Module 5
Bonding of circuits according to wiring diagrams

4. under body

Module 1 Break system check, basic maintenance Wheel assembly and disassembly **Module 2** Fault check Tyre replacement and repair **Module 3** Technical check in accordance with rules and regulations

Bodywork

Module 1 Bodywork checks and repair works **Module 2** Fault check and bodywork repair

Practical training is offered by school and lasts 655 hours; 912 hours of practical training is provided by company.

Educational programme is awarded from 180 to 240 credit points.[7]

[7] Allocation of credit points for motor car mechanic educational programme is in progress.

3.1.3 CAR SERVICE TECHNICIAN

Slovene language: AVTOSERVISNI TEHNIK
German language: Kfz-Servicetechniker

Car service technician is a two-year vocational-technical programme and represent an upgrade of vocational education programs. In this way, vocational school leavers can continue their education in the appropriate field and obtain a technical education qualification at the secondary school level corresponding to the educational standard of a 4-year technical school. A specific admission requirement for car service technician is successfully completed 3-year vocational programme: car mechanic, car body maker, toolmaker, car plumber…

Students acquire credit points, which have been determined for each programme unit, after the completion of all obligations foreseen for each programme unit (general subjects, professional modules, professional units, practical on-the-job training at the employer, free time/ extra-curricular activities) in the education programme. The credit points, which have been acquired, are recorded in the school documentation.

25 hours of students' work (learning activities) are awarded 1 credit point. Car service technician educational programme is awarded with 120 credit points.
In general part of the programme (general subjects) students achieve 60 credit points.

Professional modules are awarded 36 credit points and are as follows:

1. Power train
2. Motor vehicle under body
3. Electric and electronic systems
4. Car body repair and maintain
5. Economic operation and work organisation
6. Motor vehicle electronic systems
7. Engine diagnostic
8. Motor vehicle transmission
9. Motor vehicle break systems
10. Motor vehicle electric equipment
11. Car body equipment and electronics

Modules from 1 to 5 are obliged while the others are chosen. Students can choose three of them.

20 % of curricula is opened and adjusted to the company needs in the local area.
Practical training is organised at school (12 credit points) and in companies (4 credit points).

3.1.4 MECHANICAL ENGINEER

Slovene language: STROJNI INŽENIR
German language: Maschinenbauingenieur

The main characteristic of the 2 year post secondary vocational programmes is that are practical in orientation, and strongly tied to the world of work, performed at the employer. Practical training, however, cannot exceed one third of the whole programme. They can be enrolled in by students with a finished four-year vocational school, with the vocational matura. Candidates with a three-year vocational school and candidate with three years of work experience who have completed certain prescribed courses may also enrol.

Students who successfully complete the education programmes achieve competences as follows:

- Plan and organise the work in production processes
- Plan simple energy systems
- Take care for ecologic energy utilization
- Plan production automation of simple production process
- Organise and plan preventive maintaining works
- Plan costs and production process investment
- Conduct projects in the field of automation production processes
- Project the tool modelling processes
- Able to communicate in one foreign language
- Prepare technical documentation
- Analyse electric circuits
- Use proper materials for heat treatment and anticorrosion protection
- Use energy, material and time rationally

Educational programme is awarded 120 credit points and is composed of following modules:

Basic modules:
- Communication
- Mechanics
- Economic processes
- Technology

Elective modules
- Automation
- Power industry
- Tool construction and maintaining
- Production
- Maintenance
- Electro techniques
- Technical drawing
- Computer modelling

3.2 AWARDING NATIONAL VOCATIONAL QUALIFICATIONS

Recognition of non-formal learning in the school system is made possible by the Vocational and Technical Education Act (2006) while more detailed instructions on recognition are being prepared within the Rules on Accreditation in VET.

Students who haven't concluded a modular education programme in which they took part, but fulfilled the obligations of the individual module, which is equivalent to the extent of knowledge, determined in the catalogue of knowledge and skills for the acquisition of national vocational qualifications, could be recognised a national vocational qualification in accordance with provisions, that regulate awarding national vocational qualifications.

At present, motor car mechanic and car bodywork technician educational programmes enable to acquire national vocational qualifications.

EDUCATION	NATIONAL VOCATIONAL QUALIFICATIONS
Bodywork technician	**Varnisher**
	Car body painter
	Vulcanizer

EDUCATION	NATIONAL VOCATIONAL QUALIFICATIONS
Motor car mechanic	**Mechanic for tyres**

4. RELEVANT HIGHER EDUCATION

MECHANICAL ENGINEER-HIGHER PROFESSIONAL DEGREE
Faculty of mechanical Engineering

3-year study develops the following competences:

- Development and research of new technologies and processes.
- Development and design of equipment, mechanisms, engines and systems.
- Development and design of products and single component elements.
- Planning the technology in mechanical, electrical and similar industries as well as in other fields of industry.
- Testing materials as well as engine and mechanism components.
- Metrology (methods of measuring limits, fits and tolerances).
- Development and manufacture of automatised systems for every industrial line.
- Development and planning of systems and tools for work and transport.
- Development and planning of mechanisms, engines and systems for power and process industry.
- Software activities in mechanical engineering and other areas of industry.

4.1. Mechanical engineering linked with other studies

The robots, which are nowadays integrated in various production processes and systems, have to be designed in advance and manufactured by mechanical engineers. The electronic engineers add the control system; the software engineers add the system of programmed control; and finally the economists have to provide successful marketing for the complex interdisciplinary product.

4.2 Career opportunities after graduation

Engineers can pursue a career in every company, in all industries; where new products are developed and manufactured; where there is a need for scientific and technical knowledge, as well as design and production, testing of materials and design, maintaining engines and mechanisms, introducing and maintaining information and software activities, organizing production management and in many other technical and economic activities.

Other career opportunities:

- In power engineering, processing technology, transport and logistics, communal services.
- In education and research institutions.
- In service industries.
- In government and administrative bodies.
- In the army.
- In health care.

In Novo Mesto the Faculty of Industrial Engineering (FINI) is in the process of establishment. At first they plan to enlist students in only one programme: Automotive industry.