

- ▶ Mitigating the impacts of Covid-19 in the World of Work in Montenegro:

Action Plan for the interoperability of selected information systems and databases bearing on the governance of the labour market in Montenegro



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This report has been prepared by an inter-institutional working group convened by the Ministry of Economic Development. The following institutions have contributed ideas and suggestions:

The Employment Agency of Montenegro, the Centre for Social Work (Ministry of Finance and Social Security), the Revenue Administration of Montenegro, the Ministry of the Interior, the Administration for Inspection Affairs (the Labour Inspectorate), the Agency for Protection of Competition, the Ministry of Public Administration, Digital Society and Media, the Fund for Pension and Disability Insurance and the Ministry of Education, Science, Culture and Sports.

The total cost of the Action Plan is 1.250.000 EUR. Tentative costing for each activity has been developed but not yet presented to the Working Group.

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► Abbreviations

Abbreviation	Meaning
MFSS	Ministry of Finance and Social Security
MED	Ministry of Economic Development
MESCS	Ministry of Education, Science, Culture and Sports
MPA	Ministry of Public Administration, Digital Society and Media
MI	Ministry of the Interior
MJ	Ministry of Justice
EAM	Employment Agency of Montenegro
MONSTAT	Statistical Office of Montenegro
RAM	Revenue Administration of Montenegro
APC	Agency for Protection of Competition
GSB	Government Service Bus
CSS	Centre for Social Security
CSPA	Cadastre and State Property Administration
AIA	Administration for Inspection Affairs
MQF	Montenegrin Qualifications Framework
UOM	Union of Municipalities of Montenegro
UCG	University of Montenegro
UDG	University of Donja Gorica
UM	Mediterranean University
AUB	The University "Adriatic" Bar

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Executive summary – Interoperability

In 2021, Montenegro began two important transitions, one related to the establishment of a new coalition government which marks the first transfer of powers in 30 years, and one related to designing and implementing policies and strategies to overcome the negative effects of the Covid-19 pandemic.

The Government of Montenegro has reiterated the need to review and re-engineer existing institutional capacities, particularly within the Ministry of Economic Development and the Employment Agency, to implement changes in employment and labour market policies. The experience of other economies suggests that it is possible, with sufficient political will and adequate technical knowledge, to transform institutions and create efficient policy delivery mechanisms within a short time span to promote and support effective labour market governance. This in turn promotes fairness and the realization of fundamental rights at work for all citizens.

An Inter-Institutional Working Group set up by the Ministry of Economic Development prepared an Action Plan for the interoperability of selected information systems and databases bearing on the governance of the labour market in Montenegro. This interoperability is **intended to help the Government to meet the closing benchmarks related to Chapter XIX of the acquis**, whereby the Employment Agency of Montenegro (EAM) has to achieve higher efficiency and improve its administrative processes. A seamless flow and exchange of relevant information are paramount to increasing the efficiency of a number of Montenegrin institutions with responsibilities related to labour market governance. Improved operations and efficiency gains would ensure that ‘no one is left behind’ or excluded by the system, particularly in a context in which the impact of the pandemic may have created new vulnerabilities even among those who were not necessarily at risk of poverty and social exclusion before the crisis.

This e-Report provides an analysis of processes and technical issues related to connecting data and information systems through the Integrated Information System for Electronic Data Exchange – Government Service Bus (GSB). The GSB was developed within the Ministry of Public Administration, Digital Society and Media, with a view to enabling simpler and automated data exchange between institutions, that is, the registers and administrative data they manage, where there is a legal basis for this exchange¹. The Report discusses the existing gaps **under the four dimensions of interoperability** (legal, organizational, semantic, and technical) and proposes concrete, time-bound interventions under three Strategic Objectives: i) increasing the quality of EAM services aimed at end-users; ii) establishing or upgrading external interoperability with institutions that manage base-registers that are relevant to the EAM business processes; and iii) strengthening the legislative framework and developing systems that indirectly provide support to EAM business processes.

¹ The legal basis for the exchange of data from multiple government registers through the GSB is found in Article 19 of the Law on Electronic Government (“Official Gazette of Montenegro”, No. 72/2019), which came into effect on 3 June 2020

1. Introduction

In order to meet the closing benchmarks related to Chapter XIX of the acquis, the Employment Agency of Montenegro (EAM) has to achieve higher efficiency and improve its administrative processes. A seamless flow and exchange of relevant information is paramount the increasing the efficiency of several Montenegrin institutions with responsibilities related to labour market governance. Improved operations and efficiency gains would ensure that 'no one is left behind' or excluded by the system, particularly in a context in which the impact of the pandemic may have created new vulnerabilities even among those who were not necessarily at risk of poverty and social exclusion before the crisis.

The project "Mitigating the impacts of Covid-19 in the World of Work in Montenegro", funded by the United Kingdom's Good Governance Fund (GGF) and implemented with the technical assistance of the International Labour Organization (ILO), has prepared an analysis of preconditions and an Action Plan for the realizing the of interoperability of information systems and registers among institutions that have a bearing on the good governance of the labour market in Montenegro. These include (i) the Employment Agency of Montenegro (EAM), (ii) the Centre for Social Work under the purview of the Ministry of Finance and Social Security, (iii) the Revenue Administration of Montenegro, (iv) the Ministry the of Interior, (v) the Ministry of Justice, (vi) the Administration for Inspection Affairs (the Labour Inspectorate) (LI), (vii) the Agency for Protection of Competition, (viii) the Ministry of Public Administration, Digital Society and Media and (ix) the Ministry of Education, Science, Culture and Sports.

2. Objective of the report

The report provides an analysis of processes and technical issues related to the possibility of connecting data and information systems through the Integrated Information System for Electronic Data Exchange – Government Service Bus (GSB). The GSB was developed within the Ministry of Public Administration, Digital Society and Media, with a view to enabling simpler and automated data exchange between institutions - that is, the registers and administrative data they manage - where there is a legal basis for this exchange. The legal basis for the electronic exchange of data from multiple government registers through the GSB is found in Article 19 of the Law on Electronic Government ("Official Gazette of Montenegro", No. 72/2019), which came into effect on 3 June 2020.

The National Interoperability Framework (NIF), established in 2019, defines guidelines for more intensive data exchange among institutions. It prescribes ways to overcome organisational², technical³,

² Organizational interoperability refers to the way in which public administrations align their business processes, responsibilities and expectations to achieve commonly agreed and mutually beneficial goals. In practice, organizational interoperability means documenting and integrating or aligning business processes and relevant information. Organizational interoperability also aims to meet the requirements of the user community by making services available, easily identifiable, accessible and user-focused.

³ Technical interoperability covers interface specifications, interconnection services, data integration services, data presentation and exchange, and secure communication protocols. A major obstacle to interoperability arises from legacy systems. Historically, applications and information systems in public administration were developed in a bottom-up fashion, in an effort to solve domain-specific, local problems. This resulted in fragmented ICT islands that are difficult to interoperate.

semantic⁴ and legal⁵ challenges in the field of data exchange. The biggest challenge is achieving the legal interoperability, which results in institutions operating under different legal frameworks, policies and strategies being able to work together. This requires that legislation does not block the exchange of data between institutions, and that there are clear agreements about how to deal with differences in legislation across institutions, including the option of putting new legislation in place.

Legal challenges can be overcome through the legal interoperability agreements signed between corresponding institutions. However, not all institutions present at the Working Group agreed on this option, as the agreement itself would not be sufficient for some institutions. This requires a different approach in the form of changing specific laws. Regarding the other aspects of interoperability, legal agreements may be supplemented by other types of agreements, such as level of service agreements, support, administrative procedures and contact-points details (organisational interoperability), as well as agreements at the semantic and technical levels of interoperability⁶.

The NIF is aligned with the European Interoperability Framework (EIF) which has been put in place in March 2017.

⁴ Semantic interoperability ensures that the precise format and meaning of exchanged data and information is preserved and understood throughout exchanges between parties; in other words, “what is sent is what is understood”. In the NIF, semantic interoperability covers both semantic and syntactic aspects: (i) the semantic aspect refers to the meaning of data elements and the relations between them. It includes developing vocabularies and schemata to describe data exchanges, and ensures that data elements are understood in the same way by all communicating parties; (ii) the syntactic aspect refers to describing the exact format of the information to be exchanged in terms of grammar and format.

⁵ Legal interoperability covers the broader environment of laws, policies, procedures and cooperation agreements needed to allow the seamless exchange of information between different institutions.

⁶ National Interoperability Framework (NIF); <https://mju.gov.me/ResourceManager/FileDownload.aspx?rid=398232&rType=2&file=Nacionalni%20okvir%20interoperabilnosti%202019.pdf>

3. Institutions involved

Key sources of data in this process include the following institutions with the registers they manage:

1. Revenue Administration of Montenegro

- ▶ Central Register of Insured Persons and Contribution Payment Obligors (CROO);
- ▶ Central Register of Legal Entities (CRPS).

2. Ministry of the Interior

- ▶ Central Population Register (CRS);
- ▶ Register of permits for temporary stays and work for foreigners (register of work permits);
- ▶ Register of permits for temporary stay and work for foreigners, in accordance of specific laws (refugees, asylum seekers, and so on).

3. Administration for Inspection Affairs (Labour Inspectorate)

- ▶ Records of irregularities in the field of employment and labour relations;
- ▶ Records of misdemeanour proceedings instigated during the course of inspections.

4. Ministry of Finance and Social Security (Centres for Social Work)

- ▶ Information on social benefits (ISSS);
- ▶ Information on activation of workers (ISSS).

5. Ministry of Education, Science, Culture and Sports

- ▶ Data on qualifications obtained of all levels (MEIS);
- ▶ Register of recognition of foreign educational qualifications.

6. Ministry of Justice

- ▶ Register of fines and misdemeanour records.

7. Agency for Protection of Competition

- ▶ Register of Government active labour market policy measures.

8. Ministry of Public Administration, Digital Society and Media

- ▶ Integrated information system for electronic data exchange (GSB).

9. Employment Agency of Montenegro

- ▶ Records of Unemployed Persons (ENL);
- ▶ Record of benefits paid by EAM on the basis of unemployment.

Some of these institutions are already connected with regard to the registers they manage. This will be described in detail in the chapter "Analysis of the current level of interoperability between the institutions involved", while for others this process is still pending.

4. Analysis of functionalities of the IT system of the Employment Agency of Montenegro's (EAM)

The EAM information system consists of the main application Register of the Unemployed (ENL) and 10 other applications for special business processes in EAM, which are based on the same database (Microsoft SQL Server 2008 R2). The ENL is used to record the employment mediation process, which has its legal basis in the Law on Mediation in Employment and Rights during Unemployment ("Official Gazette of Montenegro", No. 024/19).

The ENL is a desktop application for the Windows operating system, built using the Visual Basic 6.0 programming language; the database is MS SQL Server 2008 R2. Communication with external systems (outside the EAM) takes place using the VB.net web service. It was put into operation in 2003. It consists of twelve modules; six of them are subjects of the interoperability plan:

1. General - personal data of the person registering with EAM
2. Motivation - data regarding the level of motivation of the person registered in the ENL
3. Professional information
4. Other factors
5. Rights
6. Mediation

4.1. General – personal data of the person registering with EAM

- ▶ Unique Citizen Number
- ▶ Name
- ▶ Surname
- ▶ DOB
- ▶ Place of birth
- ▶ Municipality of birth
- ▶ State of Birth
- ▶ Marital status
- ▶ Municipality of residence
- ▶ Place of residence
- ▶ Address (street and number)
- ▶ Apartment number
- ▶ Telephone
- ▶ Cell phone
- ▶ E-mail
- ▶ Municipality of Previous Residence

1. Opšte	2. Motivacija	3. Profesija	4. Ostali faktori	5. Prava	6. Zapošljavanje	7. Javljanje	8. Posredovanje	9. Status	10. Aktivnosti	11. Plan	12. Poruke
Organizacija za zapošljavanje: P3 Herceg Novi - Biro rada Herceg Novi 5700 Šifra savjetodavca: Lučić Zoran 385					Intervju: Osnovno zanimanje: Pomoćnik pekara 200502	Pol: Ž	Korisnik prava: Invalid? Ne Radni staž? Ima				
1. Lični podaci											
1.1. Matični broj: 0608983735027 1.2. Prezime: ABAZI 1.3. Ime: ALEKSANDRA 1.4. Datum rođenja: 06/08/1983 1.8. Pol: M <input type="radio"/> Ž <input checked="" type="radio"/> 1.5. Mjesto rođenja: Niš 729361 1.6. Opština rođenja: Niš 70858 1.7. Država rođenja: SRBIJA 8911 1.9. Bračno stanje: Oženjen/Udata 2 1.10. Opština prebivališta: HERCEG NOVI 20192 1.11. Mjesto prebivališta: Igalo 212105 1.12. Ulica i broj: DRENOVIK BB 1.13. Broj stana: 11 1.14. Telefon: 1.15. Mobilni: 068/602-085 1.16. e-mail: 1.17. Opština prethodnog prebivališta:											

Source: Screenshots provided by EAM

Most of the above data is contained in a data set made available by the Ministry of Interior to other institutions through GSB, via a web service called "Service of Persons". Thus, there is a possibility of automatic data retrieval onto ENL by entering the unique citizen number of the person who wants to register with EAM.

RECOMMENDATION 1: Data exchange will be established as soon as the EAM meets all technical requirements for data retrieval from external sources. The content of the web service "Service of Persons" is as follows:

SERVICE OF PERSONS

Information on data contained in the register "Service of Persons", which also correspond to the ENL data

- ▶ Unique Citizen Number
- ▶ Surname of the person (in Latin alphabet)
- ▶ Father's name (in Latin alphabet)
- ▶ Maiden name (in Latin alphabet)
- ▶ Gender
- ▶ DOB
- ▶ State of birth
- ▶ City of birth for persons born abroad, or municipality of birth for persons born in MNE

- Place of birth for persons born in Montenegro
- Citizenship
- Municipality of permanent (temporary) residence of the person
- Place of permanent (temporary) residence of the person
- Address of permanent (temporary) residence of the person
- House number of permanent (temporary) residence of the person

The following data may be missing from an EAM perspective and can be entered manually by the counsellor:

- Telephone number
- Cell phone number
- E-mail
- Municipality of previous residence

4.2. Motivation - data regarding motivation of the person registered in ENL

- Date of first registration
- Years of work experience
- Registration number of the work book
- Triage of the unemployed person
- Father's name
- Surname
- Work-professional and economic motivation for employment

1. Opšte | 2. Motivacija | 3. Profesija | 4. Ostali faktori | 5. Prava | 6. Zapošljavanje | 7. Javljanje | 8. Posredovanje | 9. Status | 10. Aktivnosti | 11. Plan | 12. Poruke

2. Ostali podaci o licu

2.1. Datum prve prijave na evidenciju: 26/01/2006

2.2. Radni staž: 01/04/14

2.3. Registarski broj radne knjižice: 2929

2.14. Trijaža nezaposlenog lica

Uslovno zapošljiva lica

2

2.15. Očevo ime: MUHAREM

2.16. Djev. prezime: ABAZI

Radno-profesionalna i ekonomska motivacija za zaposlenje

2.10. Ne traži posao... | 2.14. Specifične karakteristike

2.5. Zaposlenje | 2.6. Radni odnos | 2.7. Radno vrijeme | 2.8. Van prebivališta | 2.9. Stručno osposobljavanje | 2.11. Pozitivna diskriminacija

Šifra	Naziv šifre prihvatanja zaposlenja
<input type="checkbox"/> 0	Nije uneseno
<input type="checkbox"/> 1	Bez ikakvih uslova
<input checked="" type="checkbox"/> 2	Postavlja uslove
<input type="checkbox"/> 3	Zapošljiv samo pod posebnim uslovima
<input type="checkbox"/> 4	Radi na crno
<input type="checkbox"/> 5	Poljoprivredni proizvođač
<input type="checkbox"/> 6	Iz zdravstvenih razloga
<input type="checkbox"/> 7	Na školovanju
<input type="checkbox"/> 8	Koristi socijalnu zaštitu
<input type="checkbox"/> 9	Iz ostalih razloga

Source: Screenshots provided by EAM

Regarding this dataset, information concerning "Father's name and surname" is included in the "Service of Person" web-service, and may be retrieved from there.

4.3. Professional information

This part of the system records data on occupation; educational qualifications are recorded, but also data on special skills that the candidate possesses and interest in active labour market policies.

Consideration should be given to linking this part of the application with the data registers at the Ministry of Education, Science, Culture and Sports, namely the register of acquired qualifications at all levels (MEIS) and the register of recognition of foreign educational documents.

A particular challenge in this segment is the fact that a unique national framework of the qualifications that can be acquired in Montenegro, which would be used by all institutions, has not yet been fully established, although qualifications frameworks have been adopted by the Qualifications Council for the majority of sectors. The National Classification of Education corresponds to the International Standard Classification of Education ISCED 2011 (at least the first four out of six digits), and databases in the Ministry of Education, Science, Culture and Sports use FRASCATI, which can be an obstacle when trying to link and map these records. Additionally, at the time of writing, there was no single, integrated register of higher education diplomas from all three universities in Montenegro. Separate records are kept at each of them, which creates difficulties in obtaining data and making it available through GSB.

1. Opšte 2. Motivacija 3. Profesija 4. Ostali faktori 5. Prava 6. Zapošljavanje 7. Javljanje 8. Posredovanje 9. Status 10. Aktivnosti 11. Plan 12. Poruke

3. Zanimanja

	Šifra	Zanimanje	Tip zanimanja	Iskustvo	Stož	SSS	Škola	Ocjena
1	200502	Pomoćnik pekara	1 - Osnovna	00/00/00	00/05/04	II	108 - Završena osnovna škola ...	4.00
2	206400	Rukovalac robom - pomoćni prodavac (II SSS i PK)	2 - Steceno u radnom o...	00/00/00	00/03/00	II	108 - Završena osnovna škola ...	4.00
3	209640	Pomoćni ženski frizer	2 - Steceno u radnom o...	00/00/00	00/00/00	II	108 - Završena osnovna škola ...	
4	506455	Trgovачki putnik	2 - Steceno u radnom o...	00/00/00	00/00/00	V		
5	616453	Komercijalista	2 - Steceno u radnom o...	00/00/00	00/00/00	VI-1		
6	104502	Čistac prostorija	2 - Steceno u radnom o...	00/00/00	00/00/00	I	108 - Završena osnovna škola ...	
7	206511	Pripremač namirnica	2 - Steceno u radnom o...	00/00/00	00/00/00	II		

5. Posebna znanja koja već posjeduje

	Šifra	Posebno znanje	Diploma?
1	6938	Početni kurs poznavanja r...	da
2	8207	Psihološki seminar o vještin...	da

Zainteresovanost za učešće u programima APZ

	Tip	Zanimanje/posebno znanje	Plan	Obrazlož
1	Stručno osposobljavanje	206506 Pripremač pica	03/03/2015 2912/11	pica majst
2	Sezonsko zapošljavanje			radila bi :
3	Stručno osposobljavanje	206506 Pripremač pica	09/09/2009 2912/7	pica majst
4	Sticanje posebnih znanja	6939 Napredni kurs poznavanja rada n...		pica majst
5	Stručno osposobljavanje	206506 Pripremač pica	31/03/2009 2912/6	pica majst
6	Stručno osposobljavanje	206506 Pripremač pica	29/12/2008 2912/5	pica majst
7	Stručno osposobljavanje	206506 Pripremač pica	24/03/2008 2912/4	pica majst
8	Sticanje posebnih znanja	6938 Početni kurs poznavanja rada na ...	19/09/2007 2912/3	uslov za
9	Sticanje posebnih znanja	5602 Vozački ispit za "B" kategoriju		treba joj
10	Stručno osposobljavanje	206506 Pripremač pica		pica majst

Source: Screenshots provided by EAM

4.4. Other factors

In this part of the application, other factors relevant to the mediation process are defined. Special emphasis is given to the segment “Work activation of recipients of family financial assistance”. These are beneficiaries of social protection schemes, who are considered able to perform work by the Centres for Social Work and thus are passed on to the EAM for job mediation.

Source: Screenshots provided by EAM

The Centres for Social Work and the Employment Agency of Montenegro initiated the exchange of data regarding the procedure of work activation through a web service called “swis_wac” in the second half of 2020. A technical description of the service is given below.

Web service in relation to work activation: swis_wac

Inquiry:

(changeBenStatusType)	
⑧ jmbg	string
⑧ registered	boolean
⑧ employed	boolean
⑧ refusedEmployment	boolean
⑧ refusedPrequalification	boolean
⑧ userAccessCode	string

The inquiry to the web service in this case sends data submitted by the Employment Agency regarding work activation to the Centres for Social Work:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:swis="http://swisws.sntcg.com/swiswac/">
  <soapenv:Header/>
  <soapenv:Body>
    <swis:changeBenStatus
      jmbg="jmbg_korisnika"
      registered="true/false"
      employed=" true/false"
      refusedEmployment=" true/false"
      refusedPrequalification=" true/false"
      userAccessCode="zzz_uac" />
  </soapenv:Body>
</soapenv:Envelope>
```

Within the inquiry the following parameters are sent by the Employment Agency:

- ▶ **jmbg="jmbg_korisnika"** – this is the unique citizen number (13-digits) that identifies a single beneficiary
- ▶ **registered="true/false"** – data that describes whether the beneficiary is registered at the EAM
- ▶ **employed=" true/false"** – data that describes whether the beneficiary is employed
- ▶ **refusedEmployment=" true/false"** – data that describes whether the beneficiary has refused employment
- ▶ **refusedPrequalification=" true/false"** – data that describes whether the beneficiary has refused requalification
- ▶ **userAccessCode="zzz_uac"** – access code of the webservice user that provides their unique identification in logs.

Response:

(changeBenStatusResponseType)		
zzzResponse	string	

A successful response returns only one **zzzResponse** parameter with the text "OK", which means that the data has been saved correctly.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <ns2:changeBenStatusResponse zzzResponse="OK" xmlns:ns2="http://swisws.sntcg.com/swiswac/" />
  </soap:Body>
</soap:Envelope>
```

RECOMMENDATION 2: Given that this exchange was established directly between the two institutions (CSW and EAM), the Working Group has recommended that the exchange be implemented through GSB.

Also, several other web services have been established between these two institutions, including one developed on the part of EAM, which invites the web-service at the Centres for Social Work to check whether a person is currently on the records of EAM.

4.5. Rights

This part of the application records the rights of beneficiaries during unemployment, including the right to unemployment benefit, one-time financial compensation, reimbursement of transport costs during education and training, and inclusion in other measures aimed at increasing employment⁷.

Source: Screenshots provided by EAM

⁷ The sources of this data were originally marked as the Pension and Disability Insurance Fund (FPIO) and the Health Insurance Fund (HIF), but all data relevant to EAM, concerning these rights, are now available within the Central Register of Insured Persons and Obligors (CROO) managed by the Revenue Administration.

ATTRIBUTE	DESCRIPTION
ID number	ID number of legal entities
Full/short name	Name of legal entity
Address of headquarters	Address of legal entity's headquarters
Address of main place of business of legal entity	Address of main place of business of legal entity
Name of authority	Registration data for legal entity
Date of registration	Registration data for legal entity
Number of registration file	Registration data for legal entity
Form of organization	Form of organization of legal entity
Type of ownership	Type of ownership of legal entity
Activity code	Activity code of legal entity
Authorized person	Authorized person of physical/ legal person
Bank account	Bank account of the physical/ legal entity
Unique Citizen Number	Unique citizen number for physical person
Surname and name	Surname and name of physical person
Address of permanent/ temporary residence	Address of permanent/ temporary residence of physical person
Name of one parent	Name of one parent of physical person
Maiden name	Maiden name of physical person
DOB	Date of birth of physical person
Place of birth	Place of birth of physical person
Municipality of birth	Municipality of birth of physical person

State of birth	State of birth of physical person
Sex	
Citizenship	
Activity	Description and code of activity of physical person
Municipality of employment	Registration of insured person for pension and disability insurance
Grounds for insurance	Registration of insured person for pension and disability insurance/health insurance
Working hours	Registration of insured person for pension and disability insurance
Special data about insurance	Registration of insured person for pension and disability insurance
Grounds to end insurance	Registration of insured person for pension and disability insurance/health insurance
Date of insurance/end of insurance	Registration of insured person for pension and disability insurance/ health insurance
Family members	Data on family members who hold health insurance derived from the insured person
Name of facility	
Address of facility	
Description and code of activity	
Type of facility	
Name of authority	
Registration number	
Date of registration/end of registration of facility	

Data on legal entities, such as companies that employ individuals from the EAM database, are contained in the Central register of legal entities (CRPS), which has also been made available by the Revenue Administration through GSB. The majority of this dataset is available through web services which are already developed, and can be improved in case of interest in the part of other institutions. The full list of attributes in CRPS is given in the following table:

Name of economic entity	Full name of economic entity under which it is registered
Registration number	Number obtained by economic entity at registration
TIN	Unique tax identification number of the legal or physical person for all types of tax
Official mail address	City, street and number
Date of registration	Day, month and year of data entry into the official records of CRPS
Date of deletion	Day, month and year of data deletion from the CRPS database
Date of data change	Day, month and year of data amendments in the CRPS database
Founder	Transfer of shares between founders, adding new founders
CEO	Compulsory member of society
Authorized representative	Person authorized to represent the entity
Member of Board of Directors	Collective body of the entity that is not compulsory
President of the Board of Directors	Person (member) elected by other members of the board of directors
Secretary	Person who acts as the executive officer of the board of directors
Auditor	Compulsory body of the shareholding company
Partner	Person performing the activity in order to earn profit
Limited partner	Person held liable in the entity up to the amount of their investment
General partner	Person held liable in the entity without limitation

Calling the **GetCurrentInsurance** method provides information on the current insurance status of a person (it can be 0 or more). If there is an **InsurancePIOBegin** for a person with a particular provider, and the value for **insurancePIOEnd** is null, the person has an active pension and disability insurance (PIO) with that provider. If there is a value for **InsurancePIOEnd**, namely, it is not null, then the person does not have active PIO insurance with that provider. The analogue approach applies to HIF (health insurance fund) insurance.

There are also cases when a person has multiple active insurances at the same time (either PIO or HIF). The most common causes are:

- the person is not insured full-time, 40 hours a week, with one employer, but with several;
- the person is in dispute with the previous payer who will not / does not want / cannot deregister them from insurance, and the person is already exercising rights with the current payer;
- pensioners who are also employed (receive HIF insurance from the Pension and Disability Insurance Fund, and pension and disability insurance from the employer);
- messy data in the database.

Combinations of parallel insurances are numerous.

Data obtained by calling **GetCurrentInsurance** method contain:

- Name
- Surname
- Unique citizen number

List of insurances, whereas the following data exists for every insurance type:

- Pension and disability insurance (PIO) – start date
- Basis for pension and disability insurance – code
- Grounds for pension and disability insurance – description
- Health insurance (FZO) – start date
- Basis for health insurance – code
- Grounds for health insurance – description
- Pension and disability insurance – end date
- Grounds to end pension and disability insurance – code
- Basis to end pension and disability insurance – description
- Health insurance – start date
- Grounds to end health insurance – code
- Basis to end health insurance – description
- Working hours – number of hours
- Municipality of employment
- Insurance provider
- TIN
- Name
- Long name / surname
- Status
- Type of organization
- Form of property
- Status of taxpayer
- Activity
- Insurance provider – seat
 - ▷ Contact - telephone
 - ▷ Contact - mobile phone

- ▷ Contact – fax
- ▷ Contact – email
- ▷ Address – street and number
- ▷ Address – city
- ▷ Address – municipality
- ▷ Address – state
- ▶ Insurance provider – main place of business
 - ▷ Contact – telephone
 - ▷ Contact – mobile phone
 - ▷ Contact – fax
 - ▷ Contact – email
 - ▷ Address – street and number
 - ▷ Address – city
 - ▷ Address – municipality
 - ▷ Address – state
- ▶ Insurance provider – authorized persons
 - ▷ Authorized person – unique citizen number
 - ▷ Authorized person – name
 - ▷ Authorized person – surname
- ▶ Insurance provider – responsible persons
 - ▷ Responsible person – unique citizen number
 - ▷ Responsible person – name
 - ▷ Responsible person – surname

Calling the **GetInsurances** method provides data on the insurance status of a person for a given period (it can be 0 or more), according to the same structure as previously stated for the **GetCurrentInsurance** method, with the difference that **GetInsurances** returns not only current data on personal insurance, but also historical data since the records have existed.

The CRPS register could be a source of employment data recorded in the ENL (data about employers).

1. Opšte	2. Motivacija	3. Profesija	4. Ostali faktori	5. Prava	6. Zapošljavanje	7. Javljanje	8. Posredovanje	9. Status	10. Aktivnosti	11. Plan	12. Poruke
Zapošljavanje											
	Poslodavac	Opština	Zanimanje	RO	Početak	Kraj	Način z...	Radni staž	Razl. pres.		
1	"Stelborg"	HERCEG NOVI	Rukovalac robom - pomoćni prodavac (II...	7	2003/09/01	2003/11/30	3	00/03/00	35		
2	TOTEM SUR	HERCEG NOVI	Servir	2	2004/03/16	2004/06/08	3	00/02/23	35		
3	NAUTILUS DOO	HERCEG NOVI	Točilac pića	7	2005/05/01	2005/07/31	3	00/03/00	35		
4	MERCATOR-MEX DOO	PODGORICA	Pomoćnik pekara	2	2008/07/21	2008/12/22	4	00/05/02	35		
5	VELODER DOO	HERCEG NOVI	Pekar	7	2016/06/20	2016/09/05	4	00/02/17	35		
6	MMS VLASNIK MILKA KVRGIĆ H...	HERCEG NOVI	Pomoćnik pekara	7	2018/07/01	2018/07/02	4	00/00/02	1		
7	MERCATOR-CG DOO PODGOR...	HERCEG NOVI	Rukovalac robom - pomoćni prodavac (II...	7	2019/06/05		3	00/00/00			
8	"MERCATOR-CG" D.O.O. POD...	HERCEG NOVI	Rukovalac robom - pomoćni prodavac (II...	2	2019/10/01		3	00/00/00			
9	HDL LAKOVIĆ	HERCEG NOVI	Prodavac (III SSS i KV)	2	2020/02/03		3	00/00/00			
10	"DOMAĆA RADINOST" - HERC...	HERCEG NOVI	Rukovalac robom - pomoćni prodavac (II...	7	2020/07/01		3	00/00/00			

Source: Screenshots provided by EAM

4.6. Mediation

This part of the system keeps records on activities and actions for individual clients for the purpose of employment mediation (the part called “Participation in active labour market policy programmes”). EAM counsellors fill in the data collected through the interviews with the candidate. At each contact they complement the data, including personal or joint observations about the possibility of accepting a certain type of job. This data is submitted through the form “Individual Employment Plan”, which at the time of writing is being reviewed. This opens up space for yet another piece of the puzzle to be added to internal interoperability.

The screenshot shows a web-based form for 'Radna aktivacija korisnika MO'. The form has a header with four tabs: 'Razlozi otežanog zaposlenja', 'Status lica sa invaliditetom', 'Profesionalna rehabilitacija', and 'Članovi zajedničkog domaćinstva'. Below these tabs is a section for 'Radna aktivacija korisnika MO'. This section contains a table with columns: 'Početak', 'Prestanak', 'RA Sporazum', 'Motivisanost', 'UMAPZ', 'UAVZ', 'Poseban zahtjev?', 'Opis pose...', and 'Usklađivanje aktivnos...'. Below this table is a section for 'Aktivnosti u koje je lice uključeno tokom realizacije Plana radne aktivacije' with columns: 'Aktivnost', 'Rok za početak', 'Početak', 'Prestanak', and 'Napomena'. The form also has a sidebar with labels 'Komunikacija sa MPSS' and 'Radna aktivacija'.

Source: Screenshots provided by EAM

5. Analysis of other systems used by EAM

In addition to the ENL, EAM uses 10 other applications for special business processes, of which eight are web-oriented. This is a mix of several generations of software, based on unsupported and deprecated legacy Microsoft technology stack technologies. Most of them are based on ASP 2.0, and for communication with other institutions (outside the EAM) use SOAP protocols. These EAM applications are:

1. Records of job vacancies;
2. Records of job vacancies with mediation based on an instruction/order;
3. Application for cash benefits;
4. The application for monitoring Vocational Training and Preparation (SOP). This application covers active labour market policy measures such as retraining, additional education, acquisition of special knowledge, vocational training and public works, while other ALMP programmes (lending, information seminars, labour fund and job creation) are managed, although in modified form, only within the ENL application. The ENL application is coupled with the SOP application;
5. Wage subsidies **(there is no electronic database, but the records are kept manually in MS Excel);**
6. Professional training programme for higher education graduates (there is no link to the portal www.euprava.me where employers advertise available jobs, **but the application is filled in manually in EAM and entered in the application by the employees);**
7. Application for the programme for continuous stimulation of employment – loans for self-employment. This application is not connected to the other applications in EAM due to technical limitations, as it was put into operation in 1999 and was based on MS Access;
8. Application for financial monitoring of programmes for continuous employment stimulation. This application is not connected to the other applications in EAM due to technical limitations, and is based on MS Access;
9. Application for the records of economic entities that are beneficiaries of state aid programmes. This application is connected to other EAM applications; however, the reporting functions are insufficient, given that it is not possible to extract a company's history of use of active labour market programmes, or what effects the participation in the programme had on the records of unemployed persons;
10. Application for monitoring the self-employment grant programme (Oracle Forms and Reports), in operation since 2019, is connected one-way with ENL. At the time of writing, the construction of Phase 2 of the application was underway;
11. Application for statistics and reporting. This is a tool for pre-defined custom reports (there are about 700-800 reports, but many of them are redundant), made using data from all applications mentioned previously. Each report is based on information provided by the SQL Server Stored Procedure stored in the database. The solution provides a suitable user interface for selecting a desired report. The resulting dataset can be exported to Excel format, and there is a graphical representation of data.

RECOMMENDATION 3: The EAM should build an advanced web-based system for all these business processes, based on microservice REST / SOAP architecture, such as to support the electronic sending/receiving of requests in the form of structured messages, exchanged via web services. That system would replace the work of ten individual applications, especially those that have technical limitations for connecting and exchanging data.

RECOMMENDATION 4: Records that are relevant and currently held manually should be digitalized.

RECOMMENDATION 5: The application for records of economic entities that are beneficiaries of state aid programmes should be improved, particularly with respect to reporting, in view of the application of the legislation on state aid⁸ and in order to obtain better data for the monitoring and evaluation of the results of the programmes.

6. Other systems relevant for EAM business processes

During the work on this analysis, other institutions were identified with information systems and legal frameworks that impact the EAM's business processes:

1. web-portal www.euprava.me
2. Ministry of Finance and Social Security
3. Statistical Office of Montenegro
4. Administration for Protection of Personal Data (Law on Protection of Personal Data)
5. Academia:
 - University of Montenegro
 - University of Donja Gorica
 - Mediterranean University
 - The University "Adriatik" Bar
6. Information-communication network in the Ministry of Public Administration

⁸ Law on State Aid Control 2018.pdf (azzk.me)

7. Analysis of the existing degree of interoperability between the institutions involved

In accordance with the Law on Electronic Government ("Official Gazette of Montenegro", No. 72/2019), the Ministry of Public Administration, Digital Society and Media keeps the Register of Registers and Information Systems (Meta-Register) which are kept by the authorities in accordance with special regulations, and which constitute basic registers for certain typologies of data, such as data on citizens, data on economic entities, data on physical space/territory, and other data necessary in the process of full interoperability of registers.

One of the basic systems necessary for the successful implementation of data exchange between key registers is the system for electronic data exchange between authorities (GSB). The GSB is the link between a single network and system infrastructure that the information system of public administration rests upon, and technologically divergent application solutions that exist in different authorities, which ensures the exchange of data between multiple systems, regardless of the compatibility of the their systems. The GSB is hosted on five virtual machines, while an identical test environment is run on five smaller-capacity virtual machines.

The external interoperability of the EAM system - this primarily refers to the ENL application - should allow ENL, through the GSB, to take relevant data from the base registers of other authorities, at different time intervals, and with them automatically populate databases that are the basis of business processes in EAM. This exchange is established through a web service with a digital certificate to authenticate the servers that exchange data.

RECOMMENDATION 6: The EAM should also establish an exchange through GSB with the following:

- ▶ Central Population Register (iCRS), available through GSB, for general data on persons registering with EAM;
- ▶ Central Register of Insured Persons and Obligors (CROO), available through GSB, for data on insured persons with all accompanying insurance details, as well as their employers;
- ▶ Central Register of Legal Entities (CRPS), available through GSB, for data on employers;
- ▶ The information system of social welfare (the Social Card), information on social benefits, available through GSB, but there is no exchange of data between MFSS and EAM, because there is an established direct exchange of data (peer-to-peer) between MFSS and EAM;
- ▶ The information system of social welfare, information on work activation, available through GSB, but there is no exchange of data between MFSS and EAM, because there is an established direct exchange of data (peer-to-peer) between MFSS and EAM;
- ▶ Education Information System of Montenegro (MEIS), data on acquired qualifications of all levels, available through GSB;
- ▶ The Register of Recognition of Foreign Educational Documents, according to the information available at the time of writing, is not available through GSB;
- ▶ The Register of Government Active Employment Policy Measures, according to the information available at the time of writing, is not available through GSB;
- ▶ The Register of Permits for Temporary Residence and Work for Foreigners (Register of Work Permits), available through GSB;

- ▶ The Register of Government Active Employment Policy Measures, according to the information available at the time of writing, is not available through GSB;
- ▶ The Register of Permits for Temporary Residence and Work for Foreigners (Register of Work Permits), available through GSB;
- ▶ The Register of permits for temporary stay and work for foreigners, in accordance with specific laws (refugees, asylum seekers, etc.), available through GSB;
- ▶ The Register of fines and misdemeanour records, available through GSB.

Furthermore, a link should be established with these records/databases, which are not available through GSB at the time of writing:

- ▶ Records of irregularities in the field of employment and labour relations;
- ▶ Records of misdemeanour proceedings initiated during inspections, according to the information available at the time of writing, are not available through GSB;

8. Summary of main recommendations

The EAM information ecosystem should be technologically modern, web-oriented, integrated, and synchronized with the Agency's business processes and workflow. In this context, the recommendations are as follows:

1. Realize technical and functional improvements of the ENL application and the eight special, web-oriented applications used by EAM, with a view to integrating them;
2. rebuild the applications for implementation and financial monitoring of active labour market programmes, including self-employment, the programme for continuous stimulation of employment and - self-employment loans, and integrate them into the new EAM information ecosystem;
3. Rebuild the application "Wage Subsidies", and integrate it with the other applications to manage ALMPs, through the EAM information ecosystem;
4. Design migration procedures, which include:
 - a. Identification of migrating systems and data (names of database, tables and attributes, keys, data types and allowed value ranges),
 - b. Definition of "source-to-target" dictionary,
 - c. specify the scope, content and dynamics of data migration from existing systems to the new version of the EAM system,
 - d. Analyse duplicates and missing values, whether caused by systemic failures or human error,
 - e. Analyse inconsistencies in historical data (either from the aspect of discrepancies in different sources or lengths of time series available for ETL);
5. Increase the degree of interoperability with the registers of institutions outside the EAM system, and through GSB:
 - a. Implement the changes required by the by-law in order to link to the GSB and retrieve data from registers already offered through GSB (in the first phase, as far as possible, introduce the retrieval of data on persons from CRS and data on insurance of persons and employers from CROO and CRPS),
 - b. Identify and implement the steps for connecting and retrieving data from registers that are not currently offered through GSB.

9. Interoperability Action Plan

The action plan for improving the interoperability of selected information systems and registers: the Employment Bureau of Montenegro, the Ministry of Finance and Social Welfare, the Directorate for Inspection Affairs, the Revenue Administration, the Pension Fund, the Central Population Register and Registers from the Ministry of Education, Science, Culture and Sports. It defines strategic and operational goals that need to be met, as well as activities that need to be implemented, in order to raise the quality of ZZZCG services to a higher level, find ways to respond faster and more efficiently to labour market challenges (such as COVID- 19), and create preconditions for strengthening the influence of ZZZCG on the policies of the Government of Montenegro.

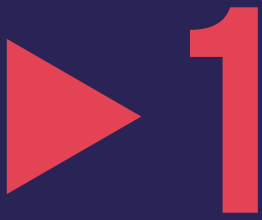
The action plan for improving interoperability (hereinafter: the Action Plan) identifies three strategic objectives:

- ▶ **Strategic objective 1 - Improving the quality of EAM services aimed at end-users.** This objective contains the following specific objectives:
 - ▶ Development of brand-new or complete reengineering of current EAM's information system;
 - ▶ Improvement of business routines and legislative framework with the aim of providing better services;
 - ▶ Preparatory activities for establishing integration with EURES (available only for EU/EEA countries);
- ▶ **Strategic objective 2 - Establishment or upgrade of external interoperability with institutions that manage base registers, which are of interest for the business processes of Employment Agency of Montenegro.** This objective contains the following specific objectives:
 - ▶ Establish full interoperability with the Central Population Register (iCRS), the Register of work permits and the Register of permits for temporary stay and work for foreigners, in accordance with the relevant laws (refugees, asylum seekers, and so on);
 - ▶ Establish full interoperability with the Central Register of Insured and Taxpayers (CROO) and the Central Register of Business Entities (CRPS) in the Revenue Administration;
 - ▶ Establish full interoperability with the Social Security Information System (ISSS) in the Ministry of Finance and Social Security;
 - ▶ Establish full interoperability with the Education Information System of Montenegro (MEIS) in the Ministry of Education, Science, Culture and Sports;
 - ▶ Establish full interoperability with the IS State Aid Inventory, including the Covid-19 State Aid Register and the De minimis Support Register;
 - ▶ Establish full interoperability with the Unified Inspection Information System (JIIS) in the Directorate for Inspection Affairs (AIA);
- ▶ **Strategic objective 3 - Strengthening legislative framework and development of systems that indirectly provide support to business processes of EAM.** This objective contains the following specific objectives:
 - ▶ Establish of unified national framework for qualifications which can be obtained in Montenegro;
 - ▶ Establish address registry for Montenegro;
 - ▶ Establish of central repository of people with qualifications between levels VI and VIII.

The action plan has been for a period of three years and can be revised. Revision is performed on the basis of the findings and recommendations of the Working Group for the development of the Action plans of the respective systems and registers.

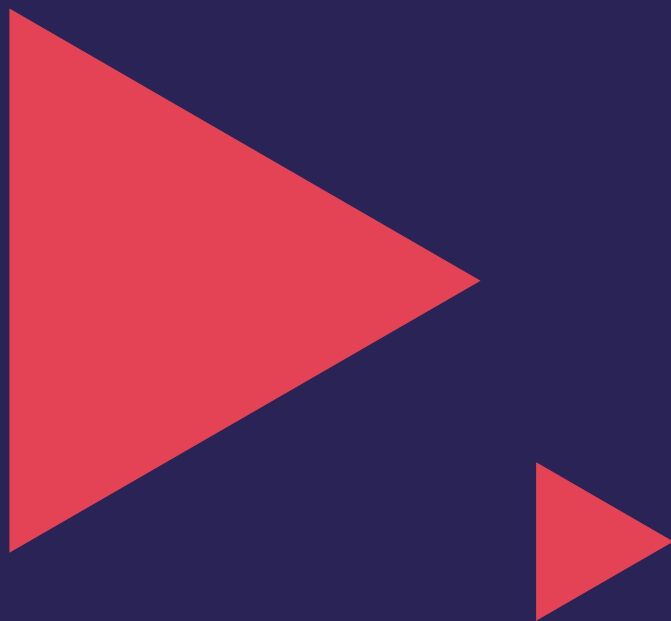
10. Monitoring of Action Plan implementation

In order to ensure complete implementation of obligations in accordance with the defined competencies and deadlines, the implementation of the Action Plan will be monitored at regular monthly meetings of the Operational Team for the monitoring of Action Plan implementation, which will be formed by the Ministry of Economic Development. The report on the implementation of the Action Plan will be prepared on an annual basis (next release: May 2021 (for the past 12 months)) and submitted to the Government for introduction and adoption.



Strategic Objective:

Increasing the quality of EAM services aimed at end-users



STRATEGIC OBJECTIVE no. 1		Improve quality of EAM services aimed at end-users				
Specific objective no. 1		Development of brand-new or complete reengineering of current EAM's information system				
Performance indicator a)	Technical improvement of current EAM's information system	Initial state		Target goal at the end of implementation of the action plan		
		Current EAM's information system, as described above, is based on a mixture of legacy technologies, and needs to be refactored if EAM wants to meet business needs in the twenty-first century		Modern EAM's information system that can support new functionalities and business needs		
		Initial state		Target goal at the end of implementation of the action plan		
	Qualified civil servants who can provide services through new EAM's information system, and key performance indicators that can be evaluated	Currently, EAM's civil servants know parts (modules) of the information system that are related to their daily jobs. There is no performance measurement system		EAM's civil servants who work with clients, as well as the others in the back office, who are well trained for providing services through new refactored EAM's information system, with clearly defined key performance indicators (KPIs).		
Activity related to implementation of specific objective no. 1		Performance indicator	Institutions in charge	Start date – end date	Amount	Funding
1.1. Analysis of EAM's business processes, as well as comparative analysis of EU best practices in this area, with the purpose of		GAP analysis finished	EAM, MED	April - December 2022	--	Budget or support of international
		Plan for the reorganization of processes with functional and non-functional				

improvement and refactoring current processes	requirements finished				partners
	Legal framework improved in accordance with plan for reorganization of processes				
1.2 Development of Terms of Reference (ToR) for project for reengineering current or development of new EAM's information systems	ToR finished	EAM, MED	Q3 2021	--	Budget or support of international partners
	Public procurement process finished				
1.3. Reengineering of current EAM's information system or development of new one, which includes design, coding, testing, preparing documentation and putting in production	Project and development plan finished	EAM, MED	October 2021 - December 2022	--	Budget or support of international partners
	Source-to-target dictionary finished				
	Coding of the system finished				
	Unit and regression tests finished				
	Data migration finished				
	System put into production				
	Project documentation and user manuals finished				
	Trainings finished according to plan				
1.4. Establishing SLA and maintenance agreements for the new EAM's information system	Maintenance and SLA contracts signed	EAM, MED	December 2022 -	--	Budget or support of international partners
1.5. Establishing Performance Measurement system with	Key performance indicators model developed	EAM, MED	October 2022 - October 2023		Budget or support of

the aim of reducing "bottle necks" in EAM	Electronic system for performance evaluation developed with the business intelligence modules for advanced reporting and notifications				international partners
Specific objective no. 2	Improvement of business routines and legislative framework with the aim of providing better services				
Performance indicator a)	Initial state	Target goal at the end of implementation of the action plan			
Improvement of business routines with the aim of providing better services	Current business routines insist on physical presence of end-users in the EAM	Physical presence of end-users minimized by establishing online registration in the Register of the Unemployed (ENL), and for the employers, registration in the records of job vacancies			
Performance indicator b)	Initial state	Target goal at the end of implementation of the action plan			
Improvement of legislative framework	Current legal framework strongly supports physical presence of end-users in the EAM	Improved legal framework which supports online communication with the end-users (through web-portals, customer-care asystems, call-centres, etc.)			
Activity related to implementation of specific objective no. 2	Performance indicator	Institutions in charge	Start date – end date	Amount	Funding
2.1. Analysis of business routines in the EAM and development of improvement plan pertaining to	Improvement plan finished	EAM, MED	April - July 2021	--	Budget or support of

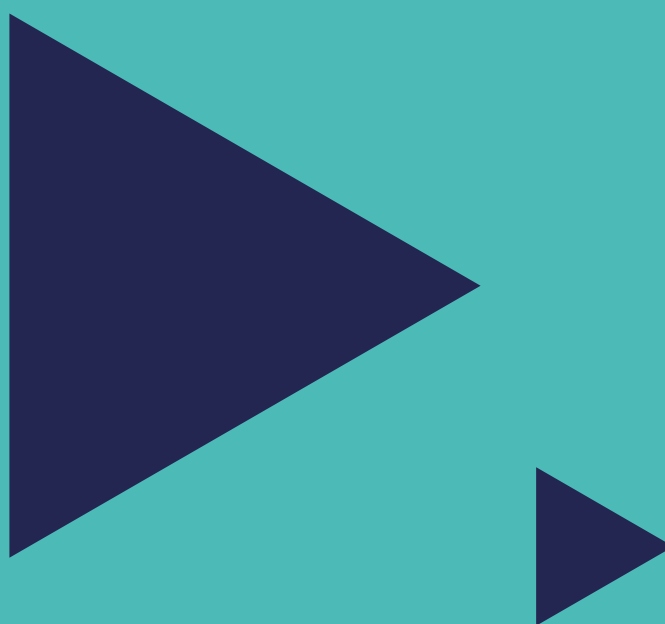
reducing the physical presence of end-users in the EAM buildings					international partners
2.2. Implementation of aforementioned improvement plan	Improvement plan implemented	EAM, MED	July 2021 - July 2022	--	Budget or support of international partners
2.3. Adjustment of legislative framework with the aim of supporting business routines improvements	Electronic identification and electronic signature law and the national ID with full enforcement	EAM, MED	July 2021 - December 2022	--	Budget or support of international partners
	The Parliament has adopted a new intermediary and rights during the unemployment law, which grants the possibility of online contact with end-users				
Specific objective no. 3	Preparatory activities for establishing integration with EURES (available only for EU/EEA countries);				
Performance indicator a)	Initial state		Target goal at the end of implementation of the action plan		
Full integration between EAM and EURES	No integration between these systems		Full integration between EAM and EURES established		

Activity related to implementation of specific objective no. 3	Performance indicator	Institutions in charge	Start date – end date	Amount	Funding
3.1. Implementation of preparatory activities for establishing integration with EURES	Completed equipment procurement and implementation of technical preconditions for integration	EAM, MED	--	--	Budget or support of international partners
3.2. Development of web portal for online registration of unemployed persons to the Register of the Unemployed (ENL), and for the employers, registration in the Records of job vacancies	Web-portal developed	EAM, MED	March - December 2021	--	Budget or support of international partners
3.3 Establishing full integration between EAM and EURES	Data mapping in accordance with EURES standards finished	EAM	--	--	Budget or support of international partners
	Web-service for sending data to EURES developed				
	Acceptance of and publishing the data on the EURES web-portal				



Strategic Objective:

Establishment or upgrade of external interoperability with institutions that manage base registers, which are of interest for the business processes of the Employment Agency of Montenegro



STRATEGIC OBJECTIVE no. 2	Establishment or upgrade of external interoperability with institutions that manage base registers, which are of interest for the business processes of the Employment Agency of Montenegro
Specific objective no. 1	Establishment of full interoperability with the Central Population Register (iCRS), Register of work permits and Register of permits for temporary stay and work for foreigners, in accordance of specific laws (refugees, asylum seekers, etc.) at the Ministry of the Interior
Performance indicator a)	<div>Initial state</div> <div>Target goal at the end of implementation of the action plan</div>
Establishment of full interoperability with the listed registers	No interoperability has been established with the registers of the Ministry of the Interior
Activity related to implementation of specific objective no. 1	Establishment of full interoperability with the listed registers
1.1. Implementation of the administrative procedure for access to GSB and collection of data by EAM	Performance indicator
	<div>Fulfillment of requirements of the Ordinance on technical conditions and security standards for access to the unified system for electronic data exchange</div> <div>Fulfillment of conditions of the Regulation on management type and other issues of importance for the functioning of GSB</div>
	<div>Institutions in charge</div> <div>Start date – end date</div> <div>Amount</div> <div>Funding</div>
	<div>EAM, MED, MI, MPA</div> <div>April - December 2022</div> <div>--</div> <div>Budget or support of international partners</div>

1.2. Definition of the legal basis of data collection by EAM	The legal basis for data collection from the register of the Ministry of Interior has been defined	EAM, MED, MI, MPA	April - December 2022	--	Budget or support of international partners
	Memorandum of understanding (MOU) has been signed, defining data retrieval between two institutions (if no legal basis has been defined in the existing legal framework)				
1.3. Development of a service for data reception by EAM	Web-service developed according to the defined specification	EAM, MED, MI, MPA	April-June 2021	--	Budget or support of international partners
1.4. Mapping of noisy data, deduplication of data and cleaning of the existing database according to the data coming from the registers of the Ministry of Interior	Database of registered persons in EAM cleaned	EAM, MED	July 2021 – December 2022	--	Budget or support of international partners
1.5. For all persons who register in the ENL by physically coming to EAM after the establishment of the data exchange, change the application process so that personal data are retrieved via the web service by entering the JMB.	Improvements in the business practice of EAM	EAM, MED	July 2021 – continuously	--	Budget or support of international partners

Establishment of full interoperability with the Central Register of Insured and Taxpayers (CROO) and the Central Register of Business Entities (CRPS) in the Revenue Administration						
Specific objective no. 2	Initial state	Target goal at the end of implementation of the action plan				
Performance indicator a)	Initial state	Target goal at the end of implementation of the action plan				
Establishment of full interoperability with the listed registers	No interoperability has been established between EAM and the Revenue Administration and the data is collected by EAM	Full interoperability established with the Registers of the Revenue Administration via GSB				
Activity related to implementation of specific objective no. 2	Performance indicator	Institutions in charge	Start date - end date	Amount	Funding	
2.1. Because the institutions already exchange the required data, EAM should submit applications for data retrieval through GSB, stating the legal basis for retrieval	Legal basis for data collection from RAM registers sent through GSB	EAM, MED, MFSS, RAM, MPA	April - June 2021	--	Budget or support of	
2.2. Customization of services by EAM for data reception via GSB	Adapted web service that is already in use	EAM, MED, MFSS, RAM, MPA	April - June 2021	--	Budget or support of international partners	
2.3. Adaptation of the existing database in EAM with regard to the manner of data storage in the CRPS register, with an extension for the branch attributes	Improved structure of the EAM database	EAM, MED, MFSS, RAM, MPA	July 2021 - December 2021	--	Budget or support of international partners	

2.4 For all legal entities that apply for vacancies after data exchange has been established, change the application process so that, by entering the PIB number, the data on the legal entity are withdrawn via the web service	Improvements in the business practice of EAM	EAM, MED, MFSS, RAM, MPA	December 2022 –	--	Budget or support of international partners
Specific objective no. 3	Establishment of full interoperability with the Social Security Information System (ISSS) in the Ministry of Finance and Social Security				
Performance indicator a)	Initial state	Target goal at the end of implementation of the action plan			
Establishment of full interoperability with the listed registers	No interoperability has been established between EAM and MFSS and the data is collected via developed web service	Full interoperability established with the Ministry of Finance and Social Security via GSB			
Activity related to implementation of specific objective no. 3	Performance indicator	Institutions in charge	Start date – end date	Amount	Funding
3.1. Implementation of the administrative procedure for access to GSB and collection of data by EAM	Fulfilment of requirements of the Ordinance on technical conditions and security standards for access to the unified system for electronic data exchange	MED, EAM, MFSS, CSS, MPA	April - June 2021	--	Budget or support of international partners
	Fulfilment of conditions from the Regulation on management type and other issues of importance for the functioning of GSB				

3.2. Because the institutions already exchange the required data, EAM should submit applications for data retrieval through GSB, stating the legal basis for retrieval	Legal basis for data retrieval from UP registers sent through GSB	MED, EAM, MFSS, CSS, MPA	April - June 2021	--	Budget or support of international partners
3.3. Customization of services by EAM for data reception via GSB	Adapted web service that is already in use	MED, EAM, MFSS, CSS, MPA	April - June 2021	--	Budget or support of international partners
Specific objective no. 4					
Establishment of full interoperability with the Education Information System of Montenegro (MEIS) in the Ministry of Education, Science, Culture and Sports					
Performance indicator a)	Initial state		Target goal at the end of implementation of the action plan		
Establishment of full interoperability with the listed registers	No interoperability has been established with the registers of the Ministry of Education, Science, Culture and Sports		Full interoperability has been established with the Ministry of Education, Science, Culture and Sports		
Performance indicator b)	Initial state		Target goal at the end of implementation of the action plan		
Connection with the central repository of students and persons with acquired qualifications from levels VI to VIII (where possible)	Currently, there is no central repository of students and graduates in MESCS, but the development of one is planned		Establishment of full interoperability with the central repository of students and graduates (once built) in order to perform predictive analyses of arising labour market needs at the graduation of each generation of students		

Activity related to implementation of specific objective no. 4	Performance indicator	Institutions in charge	Start date – end date	Amount	Funding
4.1. Development of an appropriate web service by MESCS that would offer data on the acquired level of education through GSB	Web service developed and data offered through GSB	MESCS, MPA, MED, EAM	April - June 2021	--	Budget or support of
4.2. Development of an appropriate web service by MESCS that would offer the data on the recognition of foreign educational documents through GSB	Web service developed and data offered through GSB	MESCS, MPA, MED, EAM	April - December 2021	--	Budget or support of international partners
4.3. Definition of the legal basis for data retrieval from the MESCS registers by EAM	Definition of legal basis for data collection from the MESCS registers with amendment of existing regulations and adoption by Parliament	MED, EAM, MESCS, MPA	April 2021 – December 2022	--	Budget or support of international partners
	Memorandum of understanding (MOU) signed, defining the retrieval of data between the two institutions (if it is not feasible to change the existing legal framework within the set deadline, or for any other reasons)				

4.4. Development of services by EAM for data reception from the listed registers	Web service developed according to specifications	MED, EAM, MPA	July 2021 - February 2022	--	Budget or support of international partners
4.5. Mapping of noisy data, deduplication of data and cleaning of the existing database according to the data coming from the registers of MESCS	Cleaning of database of registered persons in EAM, in terms of the level of acquired education or recognition of foreign educational documents	EAM, MED	February 2022 - July 2022	--	Budget or support of international partners
4.6. For all persons who register in the ENL by physically coming to EAM after the establishment of the data exchange, change the application process so that the data on the level of acquired education and foreign educational document are retrieved via the web service by entering the JMB.	Improvements in the business practice of EAM	MED, EAM	December 2022 -	--	Budget or support of international partners

Establishment of full interoperability with the IS State Aid Inventory, including the Covid-19 State Aid Register and the De minimis Support Register						
Specific objective no. 5	Performance indicator a)	Initial state	Target goal at the end of implementation of the action plan			
Establishment of full interoperability with the listed information system		No interoperability has been established with the IS State Aid Inventory, including the Covid-19 State Aid Register and the De minimis Support Register	Full interoperability established with the registers of AZZK			
Activity related to implementation of specific objective no. 5	Performance indicator	Institutions in charge	Start date – end date	Amount	Funding	
5.1. Development of an appropriate web service by AZZK that offers data on state aid to legal entities through GSB	Web-service developed and data offered through GSB	AZZK, MPA, MED, EAM	January - June 2022	--	Budget or support of international partners	
5.2. Definition of the legal basis for data retrieval from the AZZK registers by EAM	Definition of legal basis for data collection from the MESCS registers with amendment of existing regulations and adoption by the Parliament	AZZK, MED, EAM, MPA	April - December 2022	--	Budget or support of international partners	
	Memorandum of understanding (MOU) signed, defining the retrieval of data between the two institutions (if it is not feasible to change the existing legal framework within the set deadline, or for any other reasons)					

5.3. Development of services by EAM for data reception from the listed registers	Web service developed according to the defined specification	AZZK, MED, EAM, MPA	July - October 2022	--	Budget or support of international partners
5.4. Mapping of noisy data, deduplication of data and cleaning of the existing database according to the data coming from the registers of AZZK, with regard to employers who are beneficiaries of active measures of the Government's employment policy	Cleaning of database of legal entities in EAM, with regard to the usage of state aid	MED, EAM, MPA	July 2021 - February 2022	--	Budget or support of international partners
5.5. For all legal entities that apply for vacancies after the established data exchange, change the application process so that by entering the PIB number, the data on the use of state aid can be withdrawn via the web service	Improvements in the business practice of EAM	AZZK, MED, EAM, MPA	January 2023 -	--	Budget or support of international partners
Establishment of full interoperability with the Unified Inspection Information System (JIIS) in the Directorate for Inspection Affairs (AIA)					
Performance indicator a)	Initial state	Target goal at the end of implementation of the action plan			
Establishment of full	No interoperability has been established with the JIIS	Establishment of full interoperability with AIA			

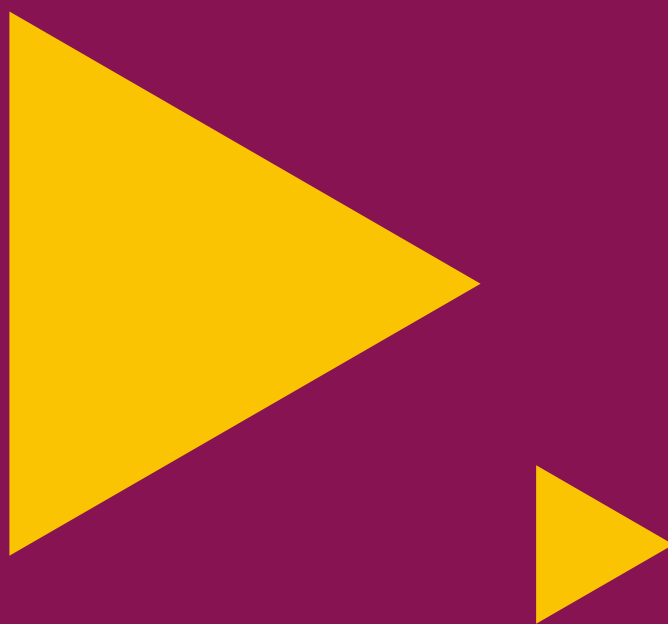
interoperability with the listed information system	registers in order to collect information on irregularities in the field of employment and labour relations, as well as misdemeanour proceedings initiated during inspections				
Activity related to implementation of specific objective no. 6	Performance indicator	Institutions in charge	Start date - End date	Amount	Funding
6.1. Development of an appropriate web service by AIA that would offer the data on irregularities in the field of employment and data on misdemeanour proceedings initiated against legal entities through GSB	Web service developed and data offered through GSB	AIA, MPA, MED, EAM	January - June 2022	--	Budget or support of international partners
6.2. Definition of the legal basis for data retrieval from the JIIS system by EAM	Definition of legal basis for data collection from the AIA registers with amendment of existing regulations and adoption by the Parliament	AIA, MPA, MED, EAM	January - December 2022	--	Budget or support of international partners
	Memorandum of understanding (MOU) signed, defining the retrieval of data between the two institutions (if it is not feasible to change the existing legal framework within the set deadline, or for any other reasons)				

6.3. Development of services by EAM for data reception from the listed registers	Web-service developed according to the defined specification	AIA, MPA, MED, EAM	July - December 2022	--	Budget or support of international partners
6.4. Extension of the EAM database for storage of the data coming from JIIS	Improved database of legal entities in EAM	AIA, MPA, MED, EAM	October 2022 - January 2023	--	Budget or support of international partners
6.5. For all legal entities that apply for vacancies after data exchange has been established, change the application process so that by entering the PIB number, the data from the AIA domain are also withdrawn.	Improvements in the business practice of EAM	AIA, MPA, MED, EAM	January 2023 -	--	Budget or support of international partners

▶ 3

Strategic Objective:

Strengthening of legislative framework and development of systems that indirectly support business processes of EAM



STRATEGIC OBJECTIVE no. 3	Strengthening of legislative framework and development of systems that indirectly support business processes of EAM					
Specific objective no. 1	Establishment of unified national framework for qualifications that can be obtained in Montenegro					
Performance indicator a)	Initial state	Target goal at the end of implementation of the action plan				
Establishment of unified national framework for qualifications that can be obtained in Montenegro	At the moment, no unified national framework of qualifications has been fully established, although a majority of sectors have identified and adopted qualification frameworks (classifications of qualifications). Institutions use different classifications - ISCED 2011, FRASCATI and others	Establishment of unified national framework for qualifications that can be obtained in Montenegro. All institutions are obliged to use the framework				
Activity related to implementation of specific objective no. 1	Performance indicator	Institutions in charge	Start date – end date	Amount	Funding	
1.1. Definition of qualifications framework (classification of qualifications) for all sectors of qualifications, in accordance with Montenegrin qualifications framework	Definition and adoption of qualifications frameworks (classification of qualifications) for each of the 15 sectors of the Montenegrin qualifications framework	MESCS, Council for qualifications	January 2022	--	Budget or support of international partners	
1.2. Publishing of established qualifications frameworks for all qualifications sectors on a website of the Montenegrin qualifications framework	Adoption of qualifications frameworks for all sectors, published on a website of the Montenegrin qualifications framework (www.cko.edu.me)	MESCS	February 2022n	--	Budget or support of international partners	

1.3. Connecting of MQF registry with information system of MEIS	MQF and MEIS connected	MESCS	March - July 2022	--	Budget or support of international partners
Establishing of address registry of Montenegro					
Performance indicator a)	Initial state	Target goal at the end of implementation of the action plan			
Establishing of address registry of Montenegro	At the moment, there is no unified address registry and institutions use different, internally developed registries of the Statistical Office of Montenegro - MONSTAT, the Postal Services of Montenegro, Administration for the Land Registry and Properties and others	Institutions in charge	Start date - end date	Amount	Funding
Activity related to implementation of specific objective no. 3	Working group formed and plan passed	ALRP, UMM	June 2021	--	Budget or support of international partners
2.1. Formation of working group tasked with adopting a plan for inserting data in address registry of Montenegro (put in production)	Data inserted in the address registry of Montenegro	ALRP, UMM	September 2021 - February 2023	--	Budget or support of international partners
2.2. Work on insertion of data in the address registry of Montenegro					

Specific objective no. 3	Establishing of central repository of people with qualifications between levels VI and VIII					
Performance indicator a)	Initial state	Target goal at the end of implementation of the action plan				
Establishment of central registry of graduate students	At the moment, there is no such central registry and universities track these students independently		Establishment of central registry of students with qualifications between levels VI and VIII			
Activity related to implementation of specific objective no. 3	Performance indicator	Institutions in charge	Start date – end date	Amount	Funding	
3.1. Formation of working group tasked with initiating and adopting plan for establishing central registry of students with qualifications between levels VI and VIII	Working group formed and plan passed	MESCS, EAM, MONSTAT, MPA, representatives from all four Montenegrin universities	June 2021	--	Budget or support of	
	Developed specification of the registry	MESCS, EAM, MONSTAT, MPA, representatives from all four Montenegrin universities	July 2021 - February 2022	--	Budget or support of international partners	
3.2. Work on specification of central registry of students with qualifications between levels VI and VIII	Passing of legislative framework for information exchange about students, emphasizing restrictions regarding data privacy					

3.3. Development of unified information system for data collection and advanced reporting about students with qualifications between levels VI and VIII.	Development of information system	MESCS, EAM, MONSTAT, MPA, representatives from all four Montenegrin universities	March 2022 - May 2023	--	Budget or support of international partners
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ANNEX

1. Methodology

Several methodological tools will be used for the implementation of the abovementioned analysis, as follows:

1.1. Interviews with representatives of the institutions involved

These interviews are aimed at obtaining as detailed information as possible about business processes in the institutions with which the analysis is concerned, emphasizing the Employment Agency of Montenegro as a destination institution that collects data from other involved entities.

Also, interviews with the technical staff of the authorities involved should result in technical definitions of existing systems, including the technical basis of the system, databases, then the structures of tables and attributes to be exchanged, data types and permitted value ranges. This is followed by descriptions of upgrade potential, data sharing capabilities via web services, and recommendations for improvement.

1.2. Analysis of available documentation

The institutions agreed to send available user instructions, terms of reference and technical documentation for the purpose of a comprehensive analysis of the current situation and development of recommendations for the establishment and improvement of interoperability.

1.3. Analysis of supporting documents

Analysis of minutes from the working group meetings, interviews with contact persons in institutions, telephone interviews, observations received from system users, e-mail correspondence and others, in order to obtain a complete picture of the systems included in the analysis.

► **Notes**

This report has been prepared by an inter-institutional working group convened by the Ministry of Economic Development. The following institutions have contributed ideas and suggestions:

The Employment Agency of Montenegro, the Centre for Social Work (Ministry of Finance and Social Security), the Revenue Administration of Montenegro, the Ministry of the Interior, the Administration for Inspection Affairs (the Labour Inspectorate), the Agency for Protection of Competition, the Ministry of Public Administration, Digital Society and Media, the Fund for Pension and Disability Insurance and the Ministry of Education, Science, Culture and Sports.

The total cost of the Action Plan is 1.250.000 EUR. Tentative costing for each activity has been developed but not yet presented to the Working Group.



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