Standard Summary Project Fiche – IPA centralised programmes
Project fiche: 13

1. Basic information
1.1 CRIS Number: 2010/022-154
1.2 Title: Achieving highest safety and technical quality of construction
1.3 ELARG Statistical code: 03.01 – free movement of goods
1.4 Location: Montenegro

Implementing arrangements:

1.5 Contracting Authority
Delegation of the European Union to Montenegro

1.6 Implementing Agency:
N.A.

1.7 Beneficiary (including details of project manager):
Ministry for spatial planning and environment
Department for civil engineering
Deputy minister
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Financing:
1.8 Overall cost:
770 000 € (seven hundred seventy thousand Euros)

1.9 EU contribution:
700 000 € (seven hundred thousand Euros)

1.10 Final date for contracting:
Two years from the date of the conclusion of the Financing Agreement

1.11 Final date for execution of contracts:
Two years from the final date for contracting

1.12 Final date for disbursements:
One year from the final date of execution.

2. Overall Objective and Project Purpose

2.1 Overall Objective:

The overall objective of this project is achieving highest safety and technical quality of Montenegrin construction.

2.2 Project purpose:

To create prerequisites for the harmonization of national regulations and standards for structural analysis and design with the regulations and standards of EU and for building capacities for their successful adoption, implementation and use.

2.3 Link with AP/NPAA/

The January 2007 European Partnership document emphasizes the need of establishing a legal and institutional set-up in the field of standardization, market surveillance, certification, metrology, accreditation and conformity assessment in order to create conditions favourable to trade. It envisages develop standardization, particularly through the adoption of the European standards. The European partnership document foresees the adoption of the European standards through short-term and middle-term priorities.

On the basis of the Stabilization and Association Agreement signed between the European Communities and their Member States and the Republic of Montenegro in March 2007, responsibilities have been taken, *inter alia,* concerning harmonization of existing legislation in Montenegro with the European Community legislation and its effective implementation, whereby Montenegro will seek to ensure gradual harmonization of its existing laws and future legislation with the *acquis communautaire* and adequate implementation and enforcement of existing and future legislation.

Harmonization is expected to start on the date of signing of the Stabilization and Association Agreement, and will gradually extend to all elements of the *acquis* by the end of a five-year transition period.

In the part of the Stabilization and Association Agreement relating to standardization, metrology, accreditation and conformity assessment, in Article 77, it is expected that Montenegro will take the necessary measures to gradually achieve compliance with technical regulations of the Community and European standardization, metrology, accreditation and procedures for conformity assessment.

In accordance with Article 77, paragraph one of the Stabilization and Association Agreement, (Title IV, Approximation of Laws, Law Enforcement and Competition Rules) Montenegro should ensure gradual harmonization of its existing laws and future legislation with the *acquis communautaire* and ensure adequate implementation of existing and future legislation. Montenegro should take measures to gradually achieve compliance with technical regulations and standards of the European Community and European standardization, metrology, accreditation and screening.

To achieve the above goals, the Parties to the Stabilization and Association Agreement shall seek to:

- promote the use of Community technical regulations, European standards and conformity assessment procedures;
- provide assistance to fostering the development of quality infrastructure: standardisation, metrology, accreditation and conformity assessment;
- promote the participation of Montenegro in the work of organisations related to standards, conformity assessment, metrology and similar functions (e.g. European Committee for Standardisation, European Committee for Electro technical Standardisation, European Telecommunications Standards Institute, European cooperation for Accreditation, European Cooperation in Legal Metrology, European Organisation of Metrology);
- where appropriate, conclude an Agreement on Conformity Assessment and Acceptance of Industrial Products once the legislative framework and the procedures of Montenegro is sufficiently aligned on that of the Community and appropriate expertise is available.

2.4 Link with MIPD

Multi-annual indicative planning document 2009-2011 (2.3.1.3. Priority line 3 – Capacity for taking over responsibilities which derive from the membership) attaches great importance to legislation in the field of internal market and its implementation, including that concerning the free movement of goods (standardization, conformity assessment, metrology, accreditation, market surveillance, and consumer protection);

2.5 Link with National Development Plan

Not applicable

2.6 Link with national/ sectoral investment plans

National Program for Integration of Montenegro into the EU (NPI) for the period of 2008-2012 presents detailed activity plan to prepare Montenegro for taking over responsibilities which derive from the EU membership to the year 2012. The Sector for construction in the Ministry for economic development of that time was engaged in preparing the section 3.1.3.21 of the National Program for integration of Montenegro into the EU for the period of 2008-2012 related to the free movement of goods - construction products.

The draft Strategy for the development of civil engineering by the year 2020, envisages the adoption of European standards (Eurocodes) and rulebooks with the mandatory application by the end of the year 2014.
Strategy has defined seven strategic orientations, standards and regulations in the construction industry are covered through the first and third strategic orientation. First strategic orientation, Integration of Montenegro into the EU and sustainable development, the development of civil engineering is presented as an integral part of the process of EU integration and sustainable development of Montenegro. This commitment stems not only from the fact that the strategic orientation of economic policy of Montenegro is joining the EU system, but also the new economic environment to be established, in which the civil engineering needs to act in the near and the wider environment.

Through the third strategic orientation (technical regulations as a basis for quality systems in civil engineering) proposal system of quality construction in civil engineering that is based on technical regulations and standards that enable easier and simpler movement of services and materials in world trade. Standardization involves establishing a basic institutional framework for tracking and control of the process. This segment is provided for the adoption of the Eurocodes whose application in EU and EFTA Member Stats will start in 2010.

3. Description of project

3.1 Background and justification:

Service sector, especially tourism, financial intermediation and **real estate** remained the main driver of growth, producing 70% of gross value added (GVA). Montenegro has, following its acquisition of independence on 3rd July 2006, continued to use the standards in the field of civil engineering that are based on 'JUS' standards (Yugoslavian standards-YUS) from the year 1981, which are inherited from the previous common state. Namely, the current Rulebook on the basis of which calculations of buildings on the seismic effects are performed (1981-1990) is the Rulebook on technical standards for construction of high buildings in seismic area (Official Gazette of the FRY, no. 31/81, 49/82, 29/83, 21/88, 52/90).

In the middle of 90s of the past century, although our former state union (Serbia and Montenegro) had not been a member of CEN (the European Committee for Standardization), our civil engineers, especially constructors in this period, under conditions of sanctions of the United Nations, tried to follow the efforts of Europe on adoption of ENV Eurocodes (Version of Eurocodes published by CEN as a pre-standard for subsequent conversion into European Norm -EN). In the First Symposium on the Eurocodes for construction in Belgrade, 10 years ago, the constructors decided to accept the Eurocodes for construction as our future national standards.

The earthquake which occurred on April 15, 1979 and reached IX grade on the Mercalli intensity scale, caused catastrophic destruction along the entire Montenegrin coastline, in a length of over 100 km. Given the present risks and the fact that Montenegro is located in an area with high seismicity (the larger part of its territory is situated in a zone with intensity of IX on the Mercalli scale, which is characteristic for earthquakes with ruinous effect), it is necessary to introduce new seismic design standards - the Eurocode 8. This will allow to update the estimation of seismic hazard and to implement the highest available construction technology for seismic risk mitigation. As a consequence, the seismic safety of the new and existing civil and engineering structures will increase significantly, and therefore - human lives and property will be better protected.

Reasons for adoption of the Eurocodes in Montenegro are: political, economical and technical. Political, because it fulfils one of the conditions for EU membership. This will create conditions for free movement of products, services, capital and workers. Economical, because it will facilitate the access of Montenegrin businesses to the enlarged European market of 27 countries with 500 million potential customers. Technical reasons arise from the need for replacement of the outdated regulations and standards, which especially comes into play in this period of intensive construction, when many significant buildings are constructed and many foreign investors are investing. The Eurocodes are a world-class state-of-the art design standards which are built on best European practice, expertise and research

achievements. They provide for the highest technical quality and safety in construction design.

The Eurocodes are a set of 10 European standards that contain common rules for structural design. The Eurocodes cover in a comprehensive manner all principal construction materials (concrete, steel, timber, masonry and aluminium), all major fields of structural engineering (basis of structural design, loading, fire, geo-techniques, earthquake, etc) and a wide range of types of structures and products (buildings, bridges, towers and masts, silos, etc). Publication of all 58 parts of the Eurocodes was completed in May 2007. Implementation of most parts is scheduled for 2010.

The Eurocodes serve as reference documents recognised by authorities of the Member States of the EU and the European Free Trade Association for the following purposes:

- as a means to prove compliance of buildings and civil engineering works with the Essential Requirements of the Construction Products Directive (Council Directive 89/106/EEC), particularly Essential Requirement 1: Mechanical resistance and stability and part of Essential Requirement 2: Safety in case of fire.
- as a basis for specifying contracts for public construction works and related engineering services. This relates to the Directive on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts (Directive 2004/18/EC of the European Parliament and of the Council).
- as a framework for drawing up harmonised technical specifications for construction products (harmonised European Standards and European Technical Approvals).

The Eurocodes establish a set of common technical rules for the design of construction works. However, the determination of safety level of construction works including aspects of durability and economy remains within the competence of the implementing country. National choice is provided by the Eurocodes with sets of recommended values, classes, symbols and alternative methods to be used as nationally determined parameters (NDPs). The NDPs take into account differences in geographical, geological or climatic conditions (e.g. wind, snow, isotherms and seismic maps); allow the implementing countries to decide the level of safety. The NDPs of individual countries shall be included in the national annexes to each Eurocode part.

To adopt each of the 58 Eurocodes parts, National Authorities and National Standards Bodies are requested by CEN to:

- translate the Eurocode part in authorised national language(s) or to adopt in one of the three official CEN languages,
- set the nationally determined parameters to be applied on their territory
- publish the national standard transposing the Eurocode Part and the national annex,
- adapt their national provisions so that the Eurocode part can be used on their territory,
- withdraw all conflicting national standards,

Eurocodes contain approximately 5000 pages of technical text, whose translation into national language is a huge task and requires not only linguistic, but also high level technical expertise because of the need of introduction of new technical terms into national technical vocabulary. Moreover, Eurocodes contain about 1500 nationally determined parameters. Some of them have recommended by CEN values which can be accepted after an expert discussion at national level. The rest of the nationally determined parameters, and especially those related to the local geographical, geological or climatic conditions (e.g. wind, snow, isotherms and

seismic maps) and to the safety level (e.g. the partial safety factors) should be laid down to allow the application of the Eurocodes in Montenegro.

Besides, the experience of the EU Member States has shown that the successful implementation of the Eurocodes into construction practice requires a shared effort and close collaboration of all stakeholders, including: National Authorities, National Standards Body, Technical and Professional Associations, Academia and the Construction Industry. National implementation programme should be elaborated and the tasks of all stakeholders should be defined in order to address the following issues:

- awareness campaign on the importance of the Eurocodes and on the benefits emanating from their use,
- technical matters and impact on the profession, researchers and academia,
- transfer of knowledge from Eurocode experts to national trainers, and from the national trainers to the profession and students,
- Well-timed availability of guidance material.

All the above tasks require investment of considerable financial resources and efforts. Therefore, it is very important to get expert support and synergy from the experience of the countries, which already adopted and implemented the Eurocodes and to implement it with a thorough and careful planning of the needed actions.

The Sector for construction, in the Ministry for spatial planning and environment, having observed the issues: obligations undertaken by signing the Stabilization and Association Agreement, need to replace the outdated standards, intensive construction, growth of real estate trade and pursuit of Montenegro to become a member of the EU, saw the need for gradual harmonization of national regulations and standards for structural analysis and design with the regulations and standards of the EU and for creation of favourable conditions for their implementation.

The Government of Montenegro has already undertaken certain steps to improve the current situation by establishing the Institute for Standardization and Accreditation Bodies. Montenegro is affiliate member of CEN, participates to its work and has authorised access to all CEN standards. This membership is a good prerequisite for the successful performance of the tasks planned in the project.

Comparative studies between the Eurocodes technical rules and the Montenegrin standards for design of reinforced concrete structures, masonry structures, bridges, and seismic design have been performed in the Faculty of civil engineering in Podgorica. They show that no single Eurocode can be embedded into the Montenegrin standardisation environment for structural design due to the considerable difference of the safety factors. That is why implementation of all Eurocodes parts in thematic packages should be sought, as stipulated in Guidance Paper L[1].

By realization of this project the detailed action plan for adoption and implementation of the Eurocodes in Montenegro would be determined. Having in mind the high seismicity of

[1] European Commission - Guidance Paper L (concerning the CPD – 89/106/EEC) Application and Use of Eurocodes

Montenegro, special attention will be paid to the preparation for adopting Eurocode 8 (the Eurocode for seismic design). Expert assistance will be sought in the pilot project for preparation of a national annex to the Eurocodes – the national annex to Eurocode 8 part 1 "Design of structures for earthquake resistance - General rules, seismic actions and rules for buildings". This is the main part of Eurocode 8 which specifies the seismic actions and the rules for seismic design of buildings. In this pilot project the results of the NATO Science for Peace and Security project "Harmonization of Seismic Hazard Maps for the Western Balkans Countries" will be implemented for determination of seismic actions. The project, whose final aim is producing a seismic map of the Western Balkans consistent with the requirements of Eurocode 8, was launched in October 2007 and the final results are expected in the summer of 2010.

Main stakeholders of this project are: the Ministry for spatial planning and environment, the Institute for Standardization, the Engineering Chamber of Montenegro, the Faculty of civil engineering in Podgorica, Faculty of architecture in Podgorica, the Ministry of Interior and Public Administration, the Seismological Survey, NGOs (Montenegrin Association for earth seismic engineering and Association of constructors of Montenegro), the Chamber of Economy, the Hydro-Meteorological Institute, the Geological Institute, and the Centre for Eco-Toxicology.

3.2 Assessment of project impact, catalytic effect, sustainability and cross border impact

The pilot project for preparation of national annex to Eurocode 8 part 1 will lay the foundation for increasing the seismic safety of the civil and engineering structures, and respectively – for enhanced protection of human lives and property.

Being part of the European standardisation and conformity assessment system, the Eurocodes are reference documents for construction products and structural design. The implementation of the Eurocodes will:

- enable manufacturers to comply with European legislation;
- provide a common and transparent basis for fair competition in the enlarged construction market;
- facilitate the exchange of construction and engineering services;
- facilitate the free movement of structural materials, products, components and kits;
- reduce border bureaucracy and the cost of multiple testing and certification.

The Eurocodes are the most up-to-date codes of practice which will improve quality of products and services, and will create new job opportunities in the Montenegrin construction sector. The new standardization environment will generate catalytic effects on the successful market uptake of high quality products, services and innovation and will thus strengthen the competitive advantage of the Montenegrin construction industry. The adoption of the Eurocodes will boost the scientific, industrial and technical cooperation between Montenegro and the EU Member States since the use of the Eurocodes allows the preparation of common design aids and software, and provides a common basis for research and development.

The Eurocodes suite is the principle contributor to the safety of citizens in the built environment, on the basis of the best possible scientific advice. Designs according to Eurocodes provide increased reliability and economy of civil structures, which fosters the sustainable use of natural resources.

The use of the Eurocodes helps to protect citizens from sub-standard products and is a tool for the cross-border harmonisation of safety levels in construction. Moreover, exchange of views, expertise and data with the neighbouring countries which are interested in, or are in the process of adoption of the Eurocodes should foster regional networking in preparation of the translations of the Eurocodes parts, and in preparation of wind, snow, isotherms and seismic maps.

The project is well embedded into the institutional structure in Montenegro. In fact, the Ministry for spatial planning and environment of Montenegro is the institution responsible for the preparation of technical basis for drafting laws and other regulations in the field of civil engineering, adjustment of national legislation with EU legislation in the field of civil engineering, and standardization and conformity assessment in the field of civil engineering.

The Institute for Standardization of Montenegro provides the basis for drafting regulations, establishing infrastructure of advisory and technical bodies (technical committees) engaged on works of Montenegrin standardization and provides compatibility of Montenegrin standards and related documents with European and international standards and related documents

The newly created working group for monitoring and implementation of the adopted programs will be in the responsibility of the Ministry for spatial planning and environment, which will continue to work on harmonization of all the regulations and standards in the field of civil engineering with European regulations and their full application.

Moreover, by means of adopting the program a basis for further policy of adoption of other standards and legislation in construction will be created.

In the pilot project on the national annex to Eurocode 8 the results of the NATO Science for Peace and Security project “Harmonization of Seismic Hazard Maps for the Western Balkans Countries” will be implemented.

3.3 Results and measurable indicators:

There are three main results of this project:
(1) action plan for adoption of the Eurocodes;
(2) action plan for implementation of the Eurocodes;
(3) national annex to Eurocode 8 part 1.

Measurable qualitative and quantitative indicators used to assess the achievement of results:

Result (1):

(i) the action plan for adoption of the Eurocodes officially adopted by the Montenegrin Government in 12 months from the beginning of the implementation of the project;
(ii) the action plan is used as the basis for the development of further actions and project proposals for the adoption of the Eurocodes;
(iii) provision of IT equipment for elaboration of the nationally determined parameters to all Eurocodes in 18 months from the beginning of the implementation of the project.

Result (2):

(i) the action plan for implementation of the Eurocodes officially adopted by the Montenegrin Government in 18 months from the beginning of the implementation of the project;

(ii) the Program is used as the basis for education and training on the Eurocodes.

Result (3):

(i) national annex to Eurocode 8 part 1 prepared and agreed with all relevant stakeholders in 18 months from the beginning of the implementation of the project;

(ii) the national annex to Eurocode 8 part 1 is used as an example for preparation of the national annexes to the rest of the parts of the Eurocodes after 18 months from the beginning of the implementation of the project.

3.4 Activities:

Activities related to result (1) "Action plan for adoption of the Eurocodes" include:

1.1 timeline for preparation of national annexes to the different Eurocode parts providing to introduce in the first place the Eurocodes packages relevant to the most wide-spread structures in Montenegro;

1.2 determination of the methods to estimate or suggestion for the most appropriate values, of the nationally determined parameters to all Eurocodes;

1.3 definition of list of IT equipment (specialised software and computers) to be purchased by the Ministry for spatial planning and environment for elaboration of the nationally determined parameters to all Eurocodes;

1.4 concept for establishing regional networking in translation of the Eurocodes parts;

1.5 concept for establishing regional cooperation in preparation of wind, snow, and isotherms maps;

1.6 roadmap for adaptation of the Montenegrin legislative framework for construction to allow the use of the Eurocodes;

1.7 provision of the IT equipment (specialised software and computers) determined by Activity 1.1 for elaboration of the nationally determined parameters to all Eurocodes.

Activities related to result (2) "Elaboration of action plan for implementation of the Eurocodes" include:

2.1 definition of the list for training material for continuous professional development to be prepared/adopted and provision of good practice examples, including: information leaflets on the implementation of the EN Eurocodes, designer handbooks and manuals, guidelines with worked examples (e.g. of common types of buildings and bridges), training and design software;

2.2 definition of concept for university programme of studies on the Eurocodes and provision of good practice examples for: lecturers' notes, information leaflets on the implementation of the EN Eurocodes, guidelines with worked examples, training software;

2.3 planning and application to TAIEX for seminar on training the Montenegrin Eurocodes trainers;

2.4 elaboration of plan for intensive training of the Montenegrin construction professionals.

Activities related to result (3) “National annex to Eurocode 8 part “Design of structures for earthquake resistance - General rules, seismic actions and rules for buildings”, include:

3.1 determination of those nationally determined parameters of Eurocode 8 where specific for Montenegro values obligatory have to be introduced, and estimation of these parameters;

3.2 incorporation of results from the NATO Science for Peace and Security project “Harmonization of Seismic Hazard Maps for the Western Balkans Countries” for determination of the seismic actions (e.g. seismic map, response spectra, etc.);

3.3 elaboration of the text of the national annex in Montenegrin language.

3.5 Conditionality and sequencing:

The project is subject to the following pre-conditions:

- establishing of Montenegrin Steering Committee with representatives of the following stakeholders: the Ministry for spatial planning and environment, the Institute for Standardization, the Engineering Chamber of Montenegro, the Faculty of civil engineering in Podgorica, Faculty of architecture in Podgorica, the Ministry of Interior, the Seismological Survey.
- provided national co-financing;
- the English version of the EN Eurocodes standards provided by the Institute for Standardization to the Montenegrin participants in the project;
- creation of 12 working groups of the Montenegrin participants: 11 groups mirroring the CEN Technical Committee 250, Sub-Committees (CEN TC250/SCs) on EN 1990 to EN 1999, the Horizontal Groups on bridge and fire design, and one group on training and education (see Annex III for more details);
- availability of the results from the NATO Science for Peace and Security project “Harmonization of Seismic Hazard Maps for the Western Balkans Countries” for incorporation in the national annex;
- availability of sufficient staff of the Ministry for spatial planning and environment for implementing the activities (see Annex III).

3.6 Linked activities

No other projects related to the same subject are registered at the moment.

3.7 Lessons learned

With the objective to increase awareness and to promote training in the use of the Eurocodes, the European Commission is facilitating:

- regional training workshops to support the New Member States and Candidate Countries;
- publication of awareness material (leaflets, booklets, etc.);
- collection and classification of manuals, design aids, etc.;
- exchange of information and guidance material between Member States.

These opportunities will be used extensively in the work on the project.

4. Indicative Budget (amounts in €)

		SOURCES OF FUNDING										
Amounts net of VAT	TOTAL COST	EU CONTRIBUTION				NATIONAL PUBLIC CONTRIBUTION					PRIVATE	
Activities		Total	%	IB	INV	Total	%	Central	Regional	IFIs	Total	%
contract 1 (twinning –IPA)	700.000	700.000	100	700.000								
contract 2 (supply – NC)	70.000					70.000	100	70.000				
TOTAL	770.000	700.000	90.9			70.000	9.1					

5. Indicative Implementation Schedule (periods broken down per quarter)

Contracts	Start of Tendering	Signature of contract	Project Completion
Contract 1: IPA Twinning	Q3 2010	Q2 2011	Q4 2012
Contract 2: NC Supply	Q1 2012	Q2 2012	Q3 2012

6. Cross cutting issues

6.1 Equal Opportunity

According Law on Gender Equality, State administration bodies, local administration bodies, public institutions, public enterprises and legal persons with public authority (hereinafter: organs), in all phases of planning, adopting and implementing decisions, and carrying out the activities, are obliged to assess and evaluate the impact of those decisions and activities upon the position of women and men, with the aim of achieving gender equality.

6.2 Environment

Designs according to Eurocodes provide increased safety and economy of construction works, which is relevant to sustainable use of natural resources. Also, the increased reliability of structures to withstand major natural and technological hazards will protect the environment from pollution and will reduce dramatically the need of demolition of structures and the respective amount of garbage to be tackled.

6.3 Minorities

The projects shall take into account the specific needs of ethnic communities, in particular Roma, who are generally considered to be the most marginalised ethnic in the region and those asylum seekers belonging to specific minorities or ethnic groups in their state of origin. The implementation of the Eurocodes will contribute the economic growth that is a precondition to create a society with greater social cohesion and less exclusion.

ANNEX 1: Logical framework matrix in standard format

LOGICAL FRAMEWORK PLANNING MATRIX FOR Project			
Achieving highest safety and technical quality of construction		Contracting period expires 2 years after the signature of the Financing Agreement	Disbursement period expires one year after the final date for execution of the contract
		Total budget: **770.000€**	IPA budget : **700.000€**
PROJECT DESCRIPTION	**OBJECTIVELY VERIFIABLE INDICATORS**	**MEANS OF VERIFICATION**	**ASSUMPTIONS**
Overall objective: Achieving highest safety and technical quality of Montenegrin construction	- Adoption of the Eurocodes will provide the basis needed for harmonization of existing legislation in Montenegro in construction with the *acquis communautaire* as regards the Construction Products Directive (Directive 89/106/EEC) and the Directive on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts (Directive 2004/18/EC). - By the end of the year 2014, 80% of national provisions and standards from the area of civil engineering will comply with EU provisions and standards. This is a precondition for abolishment of technical barriers to trade between Montenegro and the EU	- Commission's Progress Reports and other documents related to accession, - Official gazette, - Report of the Sector for monitoring and development of civil engineering in Montenegro within the Ministry for spatial planning and environment, - Reports of competent institutions (the Ministry for spatial planning and environment, and Institute for Standardisation) on publication of standards and provisions in the field of civil engineering.	

	and EFTA Member States. - Replacement of the outdated national standards for structural analysis and start designing with the most up-to-date standards in the world, which provide highest safety and technical quality.		
Project purpose: To create prerequisites for the harmonization of national regulations and standards for structural analysis and design with the regulations and standards of EU and for building capacities for their successful adoption, implementation and use.	- Montenegrin working groups mirroring the CEN Technical Committee 250 Sub-Committees have capacity (methodology, IT tools and the example of the national annex of the pilot project) to start preparation of the national annexes to all Eurocode parts. - Gradual adoption of the Eurocodes packages tailored to their relevance to the to the most wide-spread structural types in Montenegro; - Montenegrin trainers of professionals and University professors have capacity (plans, teaching and promotion material, good practice examples and had training) to start preparation of courses and guidelines on Eurocodes in Montenegrin language and to transfer their knowledge to local professionals and students. - First Eurocodes part (Eurocode	- EC progress report - Official gazette - Report of the Group for monitoring and implementation on the program for adopting the Eurocodes, primarily Eurocode 8. - Reports of competent institutions (the Ministry for spatial planning and environment, and the Institute for Standardisation) on publication of Eurocode 8 Part 1 as national EN standard.	- Commitment of non-institutional actors (university, business entities in design and construction, inspections and supervisory bodies) to work on preparation of the national annexes to all Eurocode parts. - Commitment of the institutions in charge of standardisation in construction (the Ministry for spatial planning and environment, the Ministry of Interior and Public Administration, and the Institute for Standardization) for the adoption of European standards in the field of structural design. - Commitment of non-institutional actors (university, business entities) to perform

	8 Part 1) is ready for publication as national EN Standard and serves as a good practice example for preparation of the rest of the national annexes.		teaching and promotion of the Eurocodes. - Availability of translation in Montenegrin (Serbian) language of Eurocode 8 Part 1 for its publication as national EN standard.
Results: 1. Approved action plan for adoption of the Eurocodes 2. IT equipment and methodology for elaboration of the nationally determined parameters to all Eurocodes is provided in 18 months from the beginning of the implementation of the project 3. Approved action plan for implementation of the Eurocodes. 4. National annex to Eurocode 8 part 1 prepared in Montenegrin language.	- 12 months from the beginning of the project the action plan for the adoption of the Eurocodes is officially approved by the Montenegrin Government; - Availability of the IT equipment for elaboration of the nationally determined parameters to all Eurocodes 18 months from the beginning of the project. - 18 months from the beginning of the project the action plan for the implementation of the Eurocodes is officially approved by the Montenegrin Government; - National annex to Eurocode 8 part 1 prepared in Montenegrin language is available after 18 months from the beginning of the project. It serves for the publication of the national EN standard on this part. Also, it will serve as an example for preparation of the remaining national annexes; - TAIEX seminar for training the	- Report of an external expert on the quality of elaborated action plan for adoption of the Eurocodes; - Report of an external expert on the quality of elaborated action plan for implementation of the Eurocodes; - Official notes on acceptance of the two action planes; - Report of an external expert on assessment of the national annex to Eurocode 8 part 1; - Official gazette; - EC progress report; - Report of project coordinator for the organized seminar; - Evaluation sheets on the seminar filled in by participants.	- Commitment of non-institutional actors (university, business entities in design and construction, inspections and supervisory bodies) to work on preparation of the national annexes to all Eurocode parts. - Commitment of the institutions in charge of standardisation in construction (the Ministry for spatial planning and environment, the Ministry of Interior and Public Administration, and the Institute for Standardization) for the adoption of European standards in the field of structural design. - Commitment of non-institutional actors (university, business entities) to perform

	national trainers is performed in 18 months from the beginning of the project.		teaching and promotion of Eurocodes. - Availability of the results from the NATO Science for Peace and Security project "Harmonization of Seismic Hazard Maps for the Western Balkans Countries" to be incorporated in the national annex.
Activities 1.1 timeline for preparation of national annexes to the different Eurocode parts providing to introduce in the first place the Eurocodes packages relevant to the most wide-spread structures in Montenegro; 1.2 determination of the methods to estimate or suggestion for the most appropriate values, of the nationally determined parameters to all Eurocodes; 1.3 definition of list of IT equipment (specialised software and computers) to be purchased by the Ministry for spatial planning and environment for elaboration of the nationally determined parameters to all Eurocodes;	**Means:** Twinning (activities 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3) Procurement of equipment - supply contract (activity 1.7)	**Costs:** Total: € 770,000 IPA funding: € 700,000 National contribution: € 70,000	**Assumptions:** - Availability of experts; - Good cooperation between all Stakeholders.

1.4 concept for establishing regional networking in translation of the Eurocodes parts; 1.5 concept for establishing regional cooperation in preparation of wind, snow, and isotherms maps; 1.6 roadmap for adaptation of the Montenegrin legislative framework for construction to allow the use of the Eurocodes. 1.7 provision of the IT equipment (specialised software and computers) determined by Activity 1.1 for elaboration of the nationally determined parameters to all Eurocodes; 2.1 definition of the list for training material for continuous professional development to be prepared/adopted and provision of good practice examples, including: information leaflets on the implementation of the EN Eurocodes, designer handbooks and manuals, guidelines with worked examples (e.g. of common types of buildings and bridges), training and design software;			

2.2 definition of concept for university programme of studies on the Eurocodes and provision of good practice examples for: lecturers' notes, information leaflets on the implementation of the EN Eurocodes, guidelines with worked examples, training software; 2.3 planning and application to TAIEX for seminar on training the Montenegrin Eurocodes trainers; 2.4 elaboration of plan for intensive training of the Montenegrin construction professionals; 3.1 determination of those nationally determined parameters of Eurocode 8 where specific for Montenegro values obligatory have to be introduced, and estimation of these parameters; 3.2 incorporation of results from the NATO Science for Peace and Security project "Harmonization of Seismic Hazard Maps for the Western Balkans Countries" for determination of the seismic actions (e.g. seismic map, response spectra, etc.);			

3.3 elaboration of the text of the national annex in Montenegrin language.			

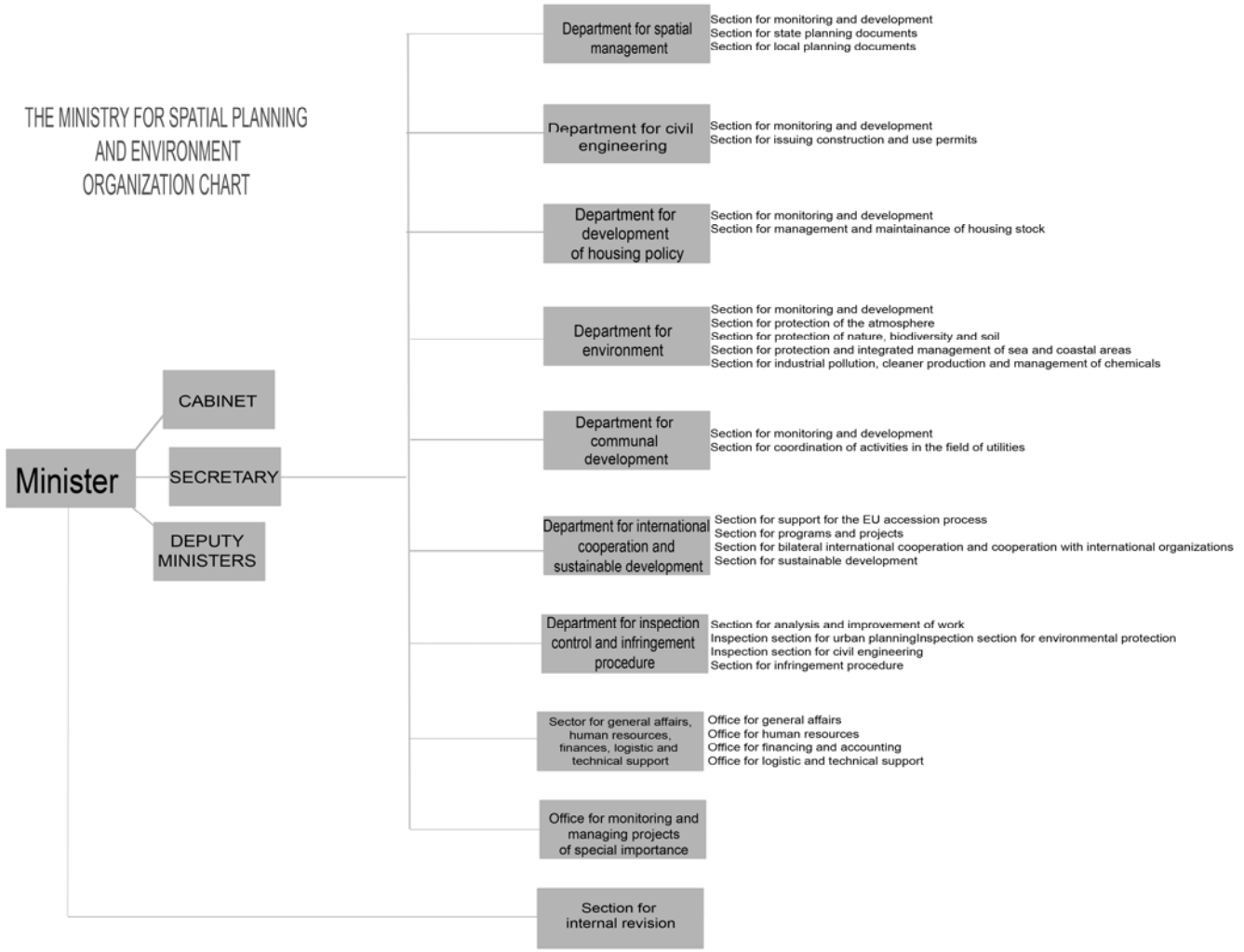
- **Pre-conditions**

  - establishing of a Montenegrin Project Steering Committee;
  - provided national co-financing;
  - the English version of the EN Eurocodes standards provided by the Institute for Standardization to the Montenegrin participants in the project;
  - creation of 12 working groups of the Montenegrin participants mirroring the CEN TC250/SCs on EN 1990 to EN 1999 and the Horizontal Groups on bridge and fire design;
  - availability of the results from the NATO project "Harmonization of Seismic Hazard Maps for the Western Balkans Countries" for incorporation in the national annex.
  - availability of sufficient staff of the Ministry for spatial planning and environment for implementing the activities (see Annex III)

ANNEX II: amounts (in EUR) Contracted and disbursed by quarter for the project

Contracted	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012	Q2 2012	Q3 2012	Q4 2012
Contract 1				700.000						
Cumulated				700,000		700,000		700.000		700.000
Disbursed										
Contract 1				400.000		115.000		115.000		70.000
Cumulated				400.000		515.000		630.000		700.000

ANNEX III
Description of Institutional Framework



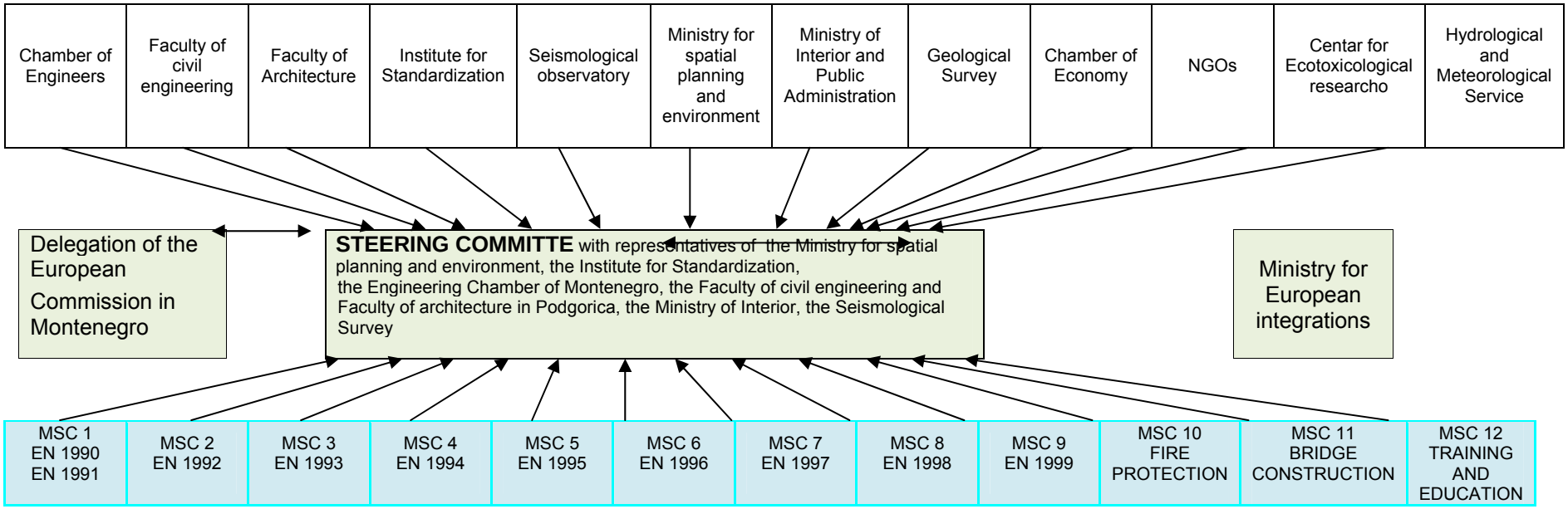
The ministry for spatial planning and environment, proposal of organization chart newly established ministry.

The Department for construction will be in charge of the major tasks of this project - the Section for monitoring and development.

The Department for construction is responsible for tasks relating to: management of development and strategic policy in the field of construction industry and monitoring their implementation; improvement of aseismic planning, design and construction; development strategies, programs and projects in the field of construction industry and monitoring their implementation; draft laws and other regulations in the field of construction industry; participation in preparing and providing opinions on drafts and proposed laws and other regulations prepared by other bodies; monitoring the process of EU accession and harmonization of regulations, standards, directives and recommendations in the field of construction industry and construction products; monitoring the legality of the acts and the legality of the authority of local governments and other entities entrusted with the exercise of public authority; decision making in administrative matters and matters of administrative oversight; licensing for elaboration of technical documentation, issuing licenses for construction of facilities; providing technical guidelines, opinions and interpretations; running second instance administrative procedure, control over implementation of laws and other regulations in the field of construction industry; monitoring and study of economic conditions and economic position of economic entities in the field of construction industry and proposing measures; current development policies and analyzing their impact on the economic status of economic entities in this field; monitoring and improvement of personnel resources in this area, cooperation with educational institutions and professional associations in the direction of improving work in this activity; monitoring international best practice in the area of the Department in accordance with the proposal of measures; monitoring the application of new technologies and best solutions in the field of construction industry, specifically directed towards eco solutions, issuance of building and occupancy permits; cooperation with other institutions involved in issuing permits; international and regional cooperation in the construction industry; supervision of institutions from their portfolios over which the Ministry performs administrative supervision, implementation of cooperation with NGOs and other civil society organizations; execution of the laws and regulations; preparation and submission of data for managing and updating the site; promoting the activities and the Department itself; managing and updating the register of licenses; participation in the preparation of tender documents for public procurement in the responsibility of the Department; making information, reports and other duties in accordance with the regulations.

The Section for monitoring and development is responsible for tasks related to: of development and strategic policy in the field of construction industry and monitoring their implementation; improvement of aseismic planning, design and construction; development strategies, programs and projects in the field of construction industry and monitoring their implementation; draft laws and other regulations in the field of construction industry, as well as monitoring the process of EU accession and harmonization of regulations, standards, directives and recommendations in the field of construction industry and construction products; providing opinions on drafts and proposed laws and other regulations prepared by other bodies; monitoring and study of economic conditions and economic position of economic entities in the field of construction industry and proposing measures; current development policies and analyzing their impact on the economic status of economic entities in this field; monitoring and improvement of personnel resources in this area, cooperation with educational institutions and professional associations in the direction of improving work in this activity; monitoring international best practice in the area of the section in accordance with the proposal of measures; monitoring the application of new technologies and best solutions in the field of construction industry, specifically targeted towards eco solutions, managing and updating the register of licenses; control of institutions from their portfolios over which the Ministry performs administrative supervision; international and regional cooperation in the field of construction of industry; preparation and conduct of projects and programs in the field of construction industry; licensing for elaboration of technical documentation, issuance of licenses for construction of facilities; handling administrative matters and matters of administrative oversight, management second instance administrative proceedings; realization of cooperation with other organizational units to collect and unify the data to create information from the Ministry, necessary for the preparation of action plans, reports and other materials in the process of accession and the accession to the EU, preparing and managing projects and programs of the European Structural Funds (IPA , funds and other instruments), international and regional cooperation in the field of construction industry; communication and coordination with the Department for International Cooperation and Sustainable Development; realization of cooperation with NGOs and other civil society organizations; preparation and submission of data for managing and updating the site; promoting activities and the section itself; participation in the preparation of tender documents for procurement of public sector responsibilities, making information, reports and other duties in accordance with the regulations.

Implementation Arrangements



SC- Sub-Committee
MSC – Mirror Sub-Committee
NGOs - Montenegrin Association for seismic engineering and Association of constructors of Montenegro

Project will be housed within the Ministry for spatial planning and environment – Department for civil engineering, Section for monitoring and development.

Setting up the Montenegrin team to work on the IPA project on adoption and implementation of European standards for structural design

It is recommended to create 12 working groups of the Montenegrin participants to mirror the Sub-Committees (CEN TC250/SCs) on EN 1990 to EN 1999 and the Horizontal Groups on bridge and fire design of CEN Technical Committee 250 "Structural Eurocodes". There should be created one more working group (WG12) on training and education on Eurocodes, which will be responsible to collect the material on this matter from the other groups and to draft the action plan on the implementation of the Eurocodes together with twinning experts E14 and E15 (see Annex V for details on twinning experts).

The list of the mirroring working groups is shown in the Table below, together with the required professional background, the Eurocode/activity on which they will work, as well as the twinning expert with whom they should work.

Working group	Professional background	Expertise in Eurocode/ activity	Participation			To work with twinning expert
			Activity 1.1-1.6	Activity 2.1-2.4	Activity 3.1-3.3	
WG1	Civil or structural engineering, or meteorology	EN 1990 and EN 1991	∇	∇		E1, E2
WG2	Civil or structural engineering	EN 1992	∇	∇		E3
WG3	Civil or structural engineering	EN 1993	∇	∇		E4
WG4	Civil or structural engineering	EN 1994	∇	∇		E5
WG5	Civil or structural engineering	EN 1995	∇	∇		E6
WG6	Civil or structural engineering	EN 1996	∇	∇		E7
WG7	Civil, structural or geotechnical engineering	EN 1997	∇	∇		E8
WG8	Civil or structural engineering, or seismology	EN 1998	∇	∇	∇	E9, E10
WG9	Civil or structural engineering	EN 1999	∇	∇		E11
WG10	Civil or structural engineering	Bridge design	∇	∇		E12
WG11	Civil or structural engineering or fire design	Fire design	∇	∇		E13
WG12	Civil or structural engineering	Training and education		∇		E14, E15

The professional background, experience and recommended duration of mission of the short and medium term experts on the different twinning activities are shown in Annex V.

The duration of the mission of the short and medium term experts on Activities 1.1-1.6 is estimated also taking into account the amount of the nationally determined parameters (NDPs) in the different Eurocodes. It should be noted that the exact number of the short and medium term experts and the duration of their missions will be defined in the Work Plan that will be stipulated in the Twinning Contract.

When planning the duration of the involvement of the Montenegrin experts in the project, it would be recommendable to plan their engagement to last longer (approximately two times) compared to the twinning experts' engagement as to provide time for preparation for the activities and thus to achieve more benefits from the joint work.

The number of Montenegrin experts engaged should be at least equal and favourably importantly bigger compared to the twinning experts.

It would also be recommendable to provide technical assistants to all working groups where appropriate.

ANNEX IV

Reference to laws, regulations and strategic documents:

Laws

- Law on spatial development and construction of structures (»Official Gazette of the Republic of Montenegro«, No. 51/08);
- Law on economic societies (»Official Gazette of the Republic of Montenegro«, No. 06/02, 17/07);
- Law on state survey and real estate cadastre (»Official Gazette of the Republic of Montenegro«, No.29/07);
- Law on administrative fees (»Official Gazette of the Republic of Montenegro«, No.55/03, 46/04, 81/05, 02/06, 22/08);
- Law on energy (»Official Gazette of the Republic of Montenegro«, No.39/03);
- Law on protection and rescue (»Official Gazette of the Republic of Montenegro«, No.13/07 and 05/08);
- Law on environmental impact assessment (»Official Gazette of the Republic of Montenegro«, No. 80/05);
- Law on sanitary inspection (»Official Gazette of the Republic of Montenegro«, No.56/92, 27/94 and 14/07);
- Law on roads (»Official Gazette of the Republic of Montenegro«, No.42/04);
- Law on electronic communications (»Official Gazette of Montenegro«, No.50/08);
- Law on water (»Official Gazette of the Republic of Montenegro«, No.27/07);
- Law on agricultural land (»Official Gazette of the Republic of Montenegro«, No.15/92, 59/92, 27/94);
- Law on geological researches (»Official Gazette of the Republic of Montenegro«, No. 28/93,27/94, 42/94, 26/07);
- Law on air traffic (»Official Gazette of Montenegro«, No.66/08 from October 31, 2008);
- Law on protection of cultural monuments (»Official Gazette of the Republic of Montenegro«, No.47/91, 17/92 and 27/94);
- Law on safety at work (»Official Gazette of the Republic of Montenegro«, No.79/2004);
- Law on standardization (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.57/88, 23/91, 55/91);
- Law on measure units and measures (»Official Gazette of the Federal Republic of Yugoslavia«, No. 86/94, 83/94, 28/96 and 12/98);
- Law on telecommunications (»Official Gazette of the Republic of Montenegro«, No.59/00);
- Law on explosive materials and flammable liquids (»Official Gazette of the Republic of Montenegro«, No. 44/76, 49/79, 34/86, 11/88 and 29/89);
- Law on traffic safety on roads (»Official Gazette of Montenegro«, No.72/05);
- Law on public procurement (»Official Gazette of Montenegro«, No.46/06);

Regulations

In the field of architecture

- Rule Book on manner of keeping and content of a building log, a building book and an inspection book (»Official Gazette of Montenegro«, No.81/2008);
- Rule Book on manner of conducting review of conceptual project or main project (»Official Gazette of Montenegro«, No.81/2008);
- Rule Book on manner of conducting technical review (»Official Gazette of Montenegro«, No.33/2008) ;

- Rule Book on manner of developing and content of technical documentation (»Official Gazette of the Republic of Montenegro«, No.22/2002);
- Rule Book on contents of elaborate on preparatory works (»Official Gazette of Montenegro«, No.80/2008);
- Rule Book on detailed conditions and ways of adapting the facilities for access and movement of persons with reduced mobility (»Official Gazette of Montenegro«, No.10/2009);
- Rule Book on detailed conditions for establishing institutions in the field of education (»Official Gazette of the Republic of Montenegro«, No.40/2006);
- Regulation on spatial planning and arrangement, construction, reconstruction and maintenance of military facilities in the military circle (»Official Gazette of Montenegro«, No.48/2008);
- Rule Book on technical regulations for construction of warehouses and manner of maintenance and usage of warehouses (»Official Gazette of Montenegro«, No.44/2008);
- Rule Book on classification, the minimum conditions and categorization of catering facilities, restaurants (»Official Gazette of the Republic of Montenegro«, No.33/2007);
- Rule Book on minimum technical conditions for housing construction (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.15-7132/1969 and No. 32,33,34/1998);
- Rule Book on technical measures and conditions for the final works in the buildings (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.12213/1970);
- Rule Book on technical measures and conditions for the construction of housing according to the system of modular coordination (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.15-7133/1969);
- Rule Book on technical measures and conditions for hydrocarbon waterproofing of roofs and terraces (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.15-7131/1969);
- Rule Book on general measures and standards of occupational safety for buildings designed for the working and auxiliary facilities (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.49/2-9/1967);
- Rule Book on technical measures and conditions for thermal protection of buildings (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No. 9624/1/1970);
- Rule Book on technical measures and conditions for ventilation in residential buildings (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.9225/1/1970);
- Rule Book on technical measures and conditions for sound protection in buildings (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.9623/1/1970);
- Rule Book on technical measures and conditions for thermal energy in buildings (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.7-5132/1/1970);
- Rule Book on technical measures and requirements for building space and equipment for collecting and ablation of waste materials from residential buildings (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.15-7881/1/1970);
- Rule Book on general minimum technical conditions of devices and equipment for office space, commercial enterprises, commercial activities and commercial business units (»Official Gazette of the Federal National Republic of Yugoslavia" No.065613/2-59/1960);
- Rule Book on specific minimum technical conditions, devices and equipment, office space waste for transport companies and their business units (»Official Gazette of the Federal National Republic of Yugoslavia" No.06-4664/2-59/1960 and no. 011-106/1969);
- Rule Book on minimum technical and hygienic-technical conditions of premises, equipment and devices for resorts (»Official Gazette of the Federal National Republic of Yugoslavia" No.13469/1954);
- Rule book on storage and refueling (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.22-21/17/1971);
- Technical conditions for the performance of finishing works in construction, publisher “Zavraj” Belgrade;

- Norms and standards in construction, publisher “Građevinska knjiga” Belgrade;
- Montenegrin standards (MEST EN) in the field of construction materials and construction;
- JUS Yugoslav standards in the field of construction materials and construction;

In the field of civil engineering

- Interim technical regulations for load building - only the Article 213 Load snow and 3rd chapters Supplementary loads (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.61/48);
- Rule Book on technical regulations for load construction facilities (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.26/88);
- Rule Book on technical regulations for warehouses (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.53/83);
- Rule Book temporary technical regulations for construction in seismic areas - does not apply to facilities construction (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.39/64);
- Rule Book on technical regulations for construction of buildings in seismic areas (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.31/81, 49/82, 29/83, 21/88 i 52/90);
- Rule Book on technical regulations for rehabilitation, strengthening and reconstruction of damaged high-rise buildings for earthquake reconstruction and revitalization (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.52/85) ;
- Seismologic map - Rule Book on technical regulations for construction of objects in areas of high seismicity;
- Rule Book on technical regulations for concrete and reinforced concrete (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.11/71);
- Rule Book on technical measures and conditions for concrete (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.51/71);
- Rule Book on technical regulations for concrete and reinforced concrete made of lightweight aggregate natural and artificial fillings (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.15/90);
- Rule Book on technical regulations for design, production and performance structures prefabricated elements not reinforced and reinforced cellular concrete (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.14/89);
- Rule Book on technical regulations for concrete and reinforced concrete facilities set forth to aggressive effects (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.18/92);
- Rule Book on technical regulations for steel wires, rods and ropes for prestressing construction (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.41/85 and 21/88);
- Rule Book on technical regulations for bearing steel structures (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.61/86);
- Technical regulations for simple construction of buildings by bearing steel structures (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.6/65);
- Technical regulations for light steel structures for bearing steel structures (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.6/65);
- Technical regulations on quality of welded joints for bearing steel structures (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.41/64);
- Technical regulations for tolerance of measures and forms of bearing steel structures (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.41/64);
- Rule Book on technical measures and conditions for the protection of steel structures (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.32/70);
- Rule Book on technical measures and conditions for installation of steel structures (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.29/70);

- Technical regulations for inspection and testing of bearing steel structures (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.6/65);
- Technical regulations for maintenance of steel structures during the exploitation of bearing steel structures (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.6/65) ;
- Rule Book on technical regulations for foundations for buildings (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.15/1990);
- Rule Book on technical measures and conditions for performing research work in the construction of large buildings (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.3/1970);

In the field of utilities

- Rule Book on manner of determining and maintaining zones and belts of sanitary protection of water sources and restrictions in these areas (»Official Gazette of Montenegro«, No.8/1997);
- Rule Book on the quality of wastewater and manner of their discharge into public sewers and natural recipient (»Official Gazette of Montenegro«, No.10/1997);
- Rule Book on criteria for selection of location, manner and procedure of waste disposal (»Official Gazette of Montenegro«, No.56/2000);
- Rule Book on manner of elaboration and content of technical documentation (»Official Gazette of the Republic of Montenegro«, No.22/2002);

In the field of mechanical engineering

- Rule Book on measures and standards of safety at work on instruments for work (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.15, 18/91) ;
- Rule Book on technical regulations for low voltage wiring (»Official Gazette of the Federal Republic of Yugoslavia«, No.br. 28/95) ;
- Rule Book on technical regulations for production and use of steam boilers, steam courts and water heaters (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.br. 56, 61/72);
- Rule Book on technical regulations for pumps and compressors (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.br. 32/74);
- Rule Book on technical regulations on lightning rods (»Official Gazette of the Federal Republic of Yugoslavia«, No.br. 11/96);
- Rule Book on technical regulations for electrically powered elevators for vertical transport of persons and goods (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.br. 16/86);
- Rule Book on means of personal protection at work and personal protective equipment (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.br. 35/69) ;
- Technical regulations for special protection of power plant fire (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.br. 16/66, 58/72, 24, 75) ;
- Regulations on technical provisions for hydrant network for fire (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.br. 30/91) ;
- Rule Book on technical regulations for warehouses (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.br. 55/83);
- Rule Book on technical regulations for ventilation and air conditioning systems (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.br. 38/89);
- Rule Book on technical regulations for electrically powered elevators for vertical transport of persons and goods (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.br. 16/86) ;
- EN 81-1,:1998 safety regulations for construction and installation of elevators for transportation of persons and goods - Part 2, Annex E Electric elevators;
- Rule Book on technical regulations for electrically powered elevators for vertical transport of cargo, with the cabin to which people do not is not possible to access people (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.br. 55/87);

- EN 81-3,:2000 Safety rules form the construction and installation of elevators - Parts 3: Electric and hydraulic service elevators, Annex E.1.Annex E.2 ;
- EN 81-2,:1998 safety regulations for the construction and installation of elevators for the transportation of persons and goods - Part 2, Annex E Hydraulic elevators;
- Rule Book on technical regulations for facade elevators on electric drive (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.br. 19/86);
- Rule Book on technical regulations for electrically powered elevators for sidelong transport of persons and goods (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.br. 49/86);
- Rule Book on technical regulations for moving staircase (escalator) and mobile routes to transport persons (»Official Gazette of the Federal Republic of Yugoslavia«, No.br. 83/94) ;
- Rule Book on technical regulations for electrically powered elevators for vertical transport of persons and goods (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.br. 16/86) Section XXIII.
- JUS Standards in the field of mechanical engineering;
- Montenegrin standards (MEST - EN) in the field of mechanical engineering;

High voltage wiring

- Rule Book on protective measures against the dangers of electricity in the work premises and work sites (»Official Gazette of the Republic of Montenegro", No. 6/86 and 16/86);
- Rule Book on technical measures and requirements for elevators (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No. 51/70 and 16/86);
- Rule Book on technical regulations for electrically powered elevators for vertical transport of persons and goods (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No. 16/86, 28/89, 22/92 i (»Official Gazette of the Federal Republic of Yugoslavia«, No. 47/95);
- Rule Book on technical regulations for Hanging scaffolding on electrical power (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No. 16/86);
- Rule Book on technical regulations for electrically powered elevators for vertical transport of cargo, with the cabin to which people do not is not possible to access people
- (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No. 55/87);
- Rule Book on technical regulations for cranes (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No. 65/91);
- Rule Book on technical regulations for moving staircase (escalator) and mobile routes to transport persons (»Official Gazette of the Federal Republic of Yugoslavia«, No.83/94);
- Rule Book on technical regulations for grounding power plant with a nominal voltage above 1000 V (»Official Gazette of the Federal Republic of Yugoslavia«, No.61/95);
- Rule Book on technical regulations for power plant with a nominal voltage above 1000V (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.4/74);
- Rule Book on technical regulations for protection of low voltage networks and associated substations (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.13/78 and No.37/95);
- Rule Book on technical regulations for protection of buildings from atmospheric discharges (»Official Gazette of the Federal Republic of Yugoslavia«, No.11/96);
- Rule Book on technical regulations for operation and maintenance of power plants and power lines (»Official Gazette of the Federal Republic of Yugoslavia«, No.41/93);
- Rule Book on technical regulations for low voltage wiring (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.53/88 and 54/88 and »Official Gazette of the Federal Republic of Yugoslavia«, No.28/95);
- Rule Book on technical regulations for construction of overhead power lines with nominal voltages from 1 kV up to 400kVA (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.65/88, »Official Gazette of the Federal Republic of Yugoslavia«, No.18/92);

- Rule Book on technical regulations for construction of medium voltage overhead lines with self bearing beam cable (»Official Gazette of the Federal Republic of Yugoslavia«, No.20/92);
- Rule Book on technical regulations for construction of low voltage overhead lines (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.6/92);
- Montenegrin standards (MEST EN) in the field of energy;
- JUS Yugoslav standards in the field of energy;

Low voltage wiring

- Standard DIN VDE 0888 (Part 1, 2, 3, 4 and 5) ;
- Standard DIN VDE 0472 (Part 1) ;
- Standard DIN VDE 0472 (TI.211, TI.213, TI.214, TI.221, TI.222, TI.223, TI.231, TI.232, TI.233, TI.234 ;
- ITU-T Directives: IEC G.652 ;
- Directives IEC 793 in IEC 794 ;
- Directives EN 187 000 in EN 188 000 ,
- Guideline on safety measures from electricity on electricity lines of the Yugoslav Rail -JŽ (Guideline 227, Beograd 1978) ;
- Rule Book on terms for elaboration of technical documentation for telecommunication network and telecommunication equipment (»Official Gazette of the Republic of Montenegro«, No.61/04) ;
- Recommendation of the Montenegrin Telekom for design and construction of telecommunication signal systems in housing objects;
- Montenegrin standards in the area of telecommunications MEST EN 50412-2-1:2009;
- Montenegrin standards for houses and buildings from MEST EN 50090-2-1:2009 to MEST EN 50090-5-3:2009;
- Rule Book on technical requests for protection of garages for passenger cars from the fire and explosion (»Official Gazette of Montenegro«, No.31/05 – 29th July 2005);

Fire protection

- Rule Book on technical regulations for access roads turntable and plateaus, fire engines nearby facilities with an increased risk of fire (»Official Gazette of the Federal Republic of Yugoslavia«, No.8/95);
- Rule Book on technical regulations for hydrant network for fire (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.30/91);
- Rule Book on technical regulations for protection of high buildings from fire (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.7/84);
- Rule Book on accommodation and keeping of heating oil (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.45/67);
- Rule Book on technical regulations for protection from fire and explosion during clearing the courts for flammable liquids (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.44/83 and 60/86);
- Rule Book on technical regulations for protection from fire and explosion during clearing the courts for flammable liquids (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.44/83 and 60/86);
- Rule Book on technical regulations for systems of ventilation and air conditioning (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.38/89);
- Rule Book on technical regulations for planning for the automatic closing doors and flaps resistant to fire (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.35/80);
- Rule Book on technical regulations for systems for removal of smoke and heat caused by fire (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.45/83);

- Rule Book on technical regulations for design, construction, operation and maintenance of gas boiler-room (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.10/90 and 52/90);
- Rule Book on technical regulations for stable devices for extinguishing fire with carbon dioxide (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.44/83 and 31/89);
- Rule Book on technical requirements for fire pyrotechnic aerosol generated (»Official Gazette of the Federal Republic of Yugoslavia«, No.58/99);
- Rule Book on technical regulations for stable installation for fire notification (»Official Gazette of the Federal Republic of Yugoslavia«, No.87/93);
- Rule Book on technical regulations for elaboration of technical documentation that must be supplied systems, equipment and devices for fire detection and alarming (»Official Gazette of the Federal Republic of Yugoslavia«, No.30/95);
- Rule Book on technical requirements for protection of garages for passenger cars from fire and explosion (»Official Gazette of the Federal Republic of Yugoslavia«, No.31/2005);
- Rule Book on technical regulations for stable courts under pressure (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.16/83);
- Rule Book on technical regulations for mobile closed courts for compressed liquid and dissolved gases under pressure (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.25/80, 9/86 and the Federal Republic of Yugoslavia br. 21/94 and 56/95);
- Rule Book on technical regulations for stable courts under pressure liquid atmospheric gases (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.9/86);
- Rule Book on technical regulations for appointment of stable courts under pressure for liquid atmospheric gases (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.39/88);
- Rule Book on technical regulations for appointment of court stable under pressure for liquid carbon dioxide (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.39/90);
- Rule Book on technical regulations for stable installation for detection of explosive gases and vapors (»Official Gazette of the Federal Republic of Yugoslavia«, No.24/93);
- Instruction on the Prohibition of the use of petrol for degreasing, washing or cleaning of metal parts and articles of other materials (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.23/67);
- Rule Book on technical regulations for designing and laying of gas pipeline distribution of polyethylene pipes for operating pressure up to 4 bars (»Official Gazette of the Federal Republic of Yugoslavia«, No.20/92);
- Rule Book on technical regulations for house gas port for operating pressure up to 4 bars (»Official Gazette of the Federal Republic of Yugoslavia«, No.20/92);
- Rule Book on technical regulations for domestic gas installations (»Official Gazette of the Federal Republic of Yugoslavia«, No.20/92);
- Rule Book on technical regulations for low voltage wiring (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.53/88 and the Federal Republic of Yugoslavia No. 28/95);
- Rule Book on technical regulations for protection of electrical installations and equipment from fire (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.74/90);
- Rule Book on technical regulations for protection against static electricity (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.62/73);
- Rule Book on technical regulations for protection of electrical installations against overvoltage (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.7/71);
- Rule Book on technical regulations for protection of buildings from atmospheric discharges (»Official Gazette of the Federal Republic of Yugoslavia«, No.11/96);
- Rule Book on technical regulations for low voltage wiring (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.53/88, 54/88 and the Federal Republic of Yugoslavia No. 28/95);

- Rule Book on technical regulations for construction of overhead power lines with nominal voltage of 1 kV to 400 kV (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.65/88 and the Federal Republic of Yugoslavia No. 82/92);
- Rule Book on technical regulations for construction of low voltage overhead lines (»Official Gazette of the Federal Republic of Yugoslavia«, No.6/92);
- Rule Book on technical regulations for operation and maintenance of power plants and power lines (»Official Gazette of the Federal Republic of Yugoslavia«, No.41/93);
- Collection of Yugoslav standards-JUS for fire protection and explosions (Book I and Book II, issued by the Federal Institute for standardisation of the Socialist Federal Republic of Yugoslavia;
- Montenegrin standards (MEST - EN) in the area of fire protection.

Traffic

- Resolution on spatial plan of Montenegro (»Official Gazette of Montenegro«, No.24/08);
- Rule Book on grounds that the public roads outside the towns and their elements must meet in terms of security of transport (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.35/81);
- Rule Book on technical conditions for dimensioning road constructions;
- Rule Book for concrete and reinforced concrete;
- Rule Book on traffic signs on the roads;
- Rule Book on detailed conditions and manners of adjusting facilities for access and movement of Persons with reduced mobility (»Official Gazette of Montenegro«, No.10/09);
- Rule Book on manner and procedure for performing expert supervision (»Official Gazette of Montenegro«, No.6/09);
- Rule Book on manner of keeping and content of a building log, a building book and an inspection book (»Official Gazette of Montenegro«, No.81/08);
- Resolution on public parking lots and garages (local provisions)
- Decisions of the Institute for standardisation of Montenegro on Montenegrin standards (»Official Gazette of Montenegro«, No.16/09);
- Yugoslavian standards-JUS;

Safety at work

- General Rule Book on hygienic and technical protection measures at work (»Official Gazette of the Federal National Republic of Yugoslavia" No. 16/1947, 18/47(»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.29/71-379);
- Rule Book on LSZNR (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.35/69);
- Rule Book on measures and regulations for protection from the noise at work (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.21/92);
- Rule Book on provision of location (»Official Gazette of the Republic of Montenegro«, No.5/86);
- Rule Book on qualifying of employees (»Official Gazette of the Republic of Montenegro«, No.79/04);
- Rule Book on procedures and terms (»Official Gazette of the Republic of Montenegro«, No.79/04);
- Rule Book on injuries at work (»Official Gazette of the Republic of Montenegro«, No.29/90);
- Rule Book on professional exam (»Official Gazette of the Republic of Montenegro«, No.79/04);
- Rule Book on risk assessment (»Official Gazette of the Republic of Montenegro«, No.79/04);
- Rule Book on working and utility rooms (»Official Gazette of Montenegro«, No.27/87);
- Rule Book on content of elaborate on arrangement of construction site (»Official Gazette of the Republic of Montenegro«, No.4/99);
- Rule Book on terms for authorised organisation (»Official Gazette of the Republic of Montenegro«, No.79/04);

- Rule Book on keeping files considering safety at work (»Official Gazette of the Republic of Montenegro«, No.79/04);
- Rule Book on safety at work in the field of civil engineering (»Official Gazette of the Socialist Federal Republic of Yugoslavia«, No.42/68, 45/68 , Article 69 of the Law RS 42/91-1649 , Article 15 of the rule book RS 31/92-1146);
- Rule Book on safety at work on machines (»Official Gazette of the Socialist Federal Republic of Yugoslavia« No.18/91);

ANNEX V

Details per EU funded contract:

The Project will be implemented through 2 (two) contracts. The first contract (twinning financed by IPA) will fund Activities 1.1 - 1.6; 2.1 - 2.4, and 3.1 - 3.3. The beneficiary – the Ministry for spatial planning and environment (MSPE) will co-finance the project through second contract (supply) that will fund Activity 1.7. The sequence of the implementation of the first contract doesn't depend of the implementation of the second contract.

The project will be managed according to the Practical Guide for contract procedures.

The following Table presents how total funds are likely to be distributed:

Contract/type	**Title**	**Estimated Cost (€)**	**Funded by**
Contract 1: Twinning (IPA)	Assisting Montenegro in adoption and implementation of European standards for structural design	700,000	EU (100%)
Contract 2: Supply (NC)	Provision of IT equipment for elaboration of the nationally determined parameters to all Eurocodes	70,000	MSPE (100%)
Total:		**770.000**	**EU (90.9%)** **MSPE (9.1%)**

1. Twinning contract

The twinning contract will cover all major activities described in this project fiche, except the activities related to Provision of IT equipment for elaboration of the nationally determined parameters to all Eurocodes, which will be provided through a separate service contract. The twinning partner shall ensure the implementation of all planned activities and the achievement of the project goals, along with the technical organisation of the work and reporting.

A Steering Committee should be established (see section 3.5 "Conditionality and sequencing") to supervise the programme, coordinate the stakeholders involved, and provide guidance in the implementation of the technical assistance.

Under the twinning covenant Member States expertise will be involved to assure that the adoption and implementation of European standards for structural design in Montenegro will be performed in consistency with the Commission and CEN rules and in correspondence with the best practices.

Profile of the resident twinning advisor (RTA)

a) A solid background in the European standardisation system and the legislation in construction
b) Professional experience in the Eurocodes adoption and implementation
c) Sound knowledge of the technical background of the Eurocodes.
d) Strong written, oral and inter-personal communication skills
e) Experience in drafting strategies, reports and recommendations
f) Excellent oral and written English
g) Experience in similar technical assistance assignments in third countries will be considered as an asset.

In addition to the RTA, the Members State Partner (MSP) must have quick and flexible access to a pool of short and medium-term experts from the EU Member States. These experts shall either work as advisors and trainers or perform specific studies or assignments within the scope of the twinning project.

Profile of short and medium term experts

Common to all experts:
a) Relevant University degree, PhD will be an asset
b) Sound knowledge of the EU regulations and policies related to construction
c) Sound knowledge of the Eurocodes system of standards
d) Professional background and proven experience in adoption of the Eurocodes related to their specific tasks, as shown in the following table
c) Good written and oral command of English
d) Sound background in drafting and in implementing policies and standards
e) Proven contractual relation to public administration or mandated body

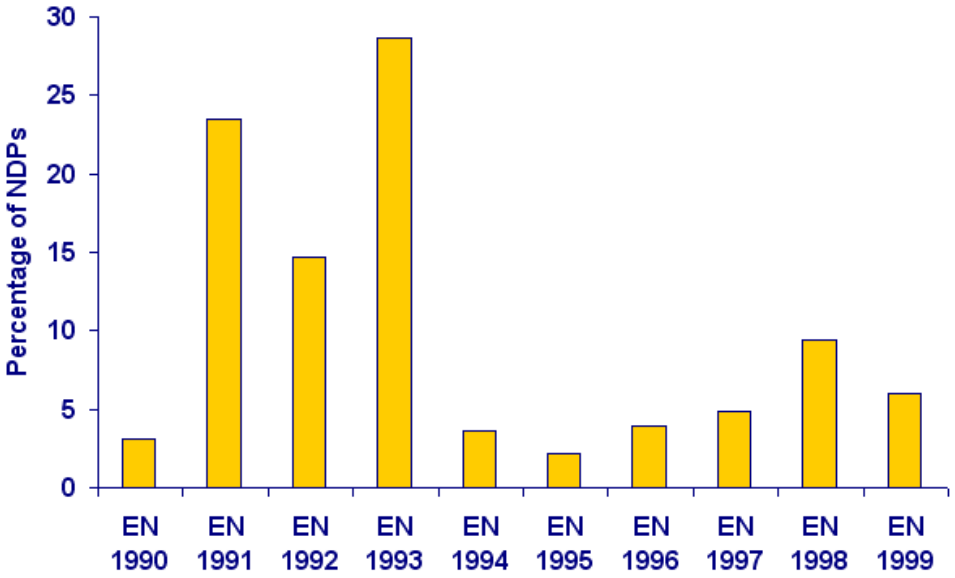
Professional background, experience and recommended duration of mission of the short and medium term experts on the different twinning activities.

Expert	Professional background	Expertise in Eurocode/ activity	Duration of mission (weeks)			Total duration of mission (weeks)
			Activity 1.1-1.6	Activity 2.1-2.4	Activity 3.1-3.3	
Expert 1	Civil or structural engineering	EN 1990 and EN 1991	4	3		7
Expert 2	Civil or structural engineering, or meteorology	EN 1991	10	2		12
Expert 3	Civil or structural engineering	EN 1992	8	2		10
Expert 4	Civil or structural engineering	EN 1993	10	3		13
Expert 5	Civil or structural engineering	EN 1994	3	2		5
Expert 6	Civil or structural engineering	EN 1995	3	2		5
Expert 7	Civil or structural engineering	EN 1996	3	2		5
Expert 8	Civil, structural or geotechnical engineering	EN 1997	4	2		6
Expert 9	Civil or structural engineering, or seismology	EN 1998	2	2	6	10
Expert 10	Civil or structural engineering	EN 1998	3	2	6	11
Expert 11	Civil or structural engineering	EN 1999	3	2		5
Expert 12	Civil or structural engineering	Bridge design	4	2		6
Expert 13	Civil or structural engineering or fire design	Fire design	4	2		6

Expert	Professional background	Expertise in Eurocode/ activity	Duration of mission (weeks)			Total duration of mission (weeks)
			Activity 1.1-1.6	Activity 2.1-2.4	Activity 3.1-3.3	
Expert 14	Civil or structural engineering	Teaching Eurocodes in University		3		3
Expert 15	Civil or structural engineering	Teaching professionals to Eurocodes		3		3
		subtotal	61	34	12	
		total				107

NB:

1. The duration of the mission of the short and medium term experts on Activity 1.1 is estimated also taking into account the amount of the nationally determined parameters (NDPs) in the different Eurocodes which is shown on the following figure.



Percentage of the NDPs (out of the total of 1507) in the different Eurocodes

2. The exact number of the short and medium term experts and duration of their missions will be defined in the Work Plan that will be stipulated in the Twinning Contract.

2. Supply contract

The supply contract will cover the activities related to the provision of IT equipment for elaboration of the nationally determined parameters to all Eurocodes. The Montenegrin Ministry for spatial planning and environment will organize tendering process for this contract and will supervise its implementation.