STANDARD TWINNING LIGHT PROJECT FICHE

Strengthening the capacities of the Bureau of Metrology for internal market integration

BC	Beneficiary Country
BC PL	Beneficiary Country Project Leader
BoM	Bureau of Metrology
CFCD	Central Financing and Contracting Department within Ministry of Finance
CV	Curriculum Vitae
EC	European Commission
EU	European Union
EUD	Delegation of the European Union
IPA	Instrument for Pre- accession Assistance
MS	Member State (of the European Union)
MS PL	Member State Project Leader
NPAA	National Programme for Adoption of Acquis
PAO	Programme Authorising Officer
PRO	Public Revenue Office
PSC	Project Steering Committee
SPO	Senior Programme Officer
STE	Short Term Expert
TAIB	Transition Assistance and Institution Building
CMC	Calibration and measurement capabilities
PT provider	Proficient testing provider

1. Basic Information

1.1 Publication reference: EuropeAid/138020/ID/ACT/MK

1.2 Programme: Instrument for Pre-accession Assistance (IPA) – National Programme for 2012 under IPA Transition Assistance and Institution Building Component (TAIB)

1.3 Twinning Number: MK 12 IPA EC 01 16 TWL

1.4 Title: Strengthening the capacities of the Bureau of Metrology for internal market integration

1.5 Sector: Private Sector Development

1.6 Beneficiary Country: Beneficiary country[1]

2. Objectives

2.1 Overall Objective:

The overall objective of is to improve the institutional capacities in the area of competitiveness and improve the competitiveness index of the country.

2.2 Project purpose:

The project will support the strengthening of the operational and administrative capacities of BoM concerning industrial and scientific metrology, for the purpose of better integration in the EU Internal Market.

2.3 Contribution to National Development Plan/Cooperation agreement/Association Agreement/Action Plan

Link with Action Plan

Activities that are necessary for further development of the Bureau of metrology, and apply the necessary measures to achieve full compliance with the EU acquis, are laid down Strategic Development Plan for the Bureau of metrology and metrological infrastructure in the beneficiary country 2013 -2015 which can be considered as a basis for further realization of the mission to achieve sustainable development of the economy and industry in the world globalization trends, as well as boost consumer confidence in the products and services they receive on the market in the country.

Within the IPA 2008, in January – February 2012, assessment on the national needs in the field of scientific, industrial and legal metrology was conducted. This assessment was realized in order to provide guidance for further development of the Bureau of metrology and the national metrology infrastructure. The results of the survey will be used as a basis for drafting the National Strategy for Development of metrological infrastructure of the beneficiary country 2013-2020.

Link with NPAA

In the area **of 3.1 Free movements of goods of** the National program for adoption of the Acquis 2015 foresees activities for further strengthening the metrological infrastructure in 2015, will continue with the implementation of training, seminars and workshops for promoting metrology and awareness programs within the country. Also continually updating of the laboratory equipment is very important issue regarding fulfilling of activates connected to the Law of metrology and especially the Rulebook on measuring instruments.

3. Description

1 As per Financing Agreement concerning the National Programme Transition Assistance and Institution Building – TAIB 2012 from the Instrument for Pre-Accession Assistance under the Transition Assistance and Institution Building Component –entered into force on 2 October 2013.

3.1 Background and justification:

3.1.1 Country background

The Programme of the Government for the period 2014-2018 comprises in its core strategic objectives i.a. the following:

- Increase economic growth and employment, raising the living standard of the citizens and improve quality of life;
- Investment in education, innovation and information technology as key elements for creating a knowledge based society

Over the past several years the Government has stabilized the macroeconomic and financial environment, enacted structural reforms to improve the business environment; achieved EU candidacy status, joined the WTO, and entered into a number of free trade agreements.

3.1.2 Current situation in the sector

The beneficiary country wishes to build a strong conformity assessment sector including but not limited to the institutions involved in the implementation of horizontal framework legislation such as standardisation, accreditation, metrology, market surveillance, etc. There is still room for improvement when it comes to strengthening technical aspects of internal market integration and establishing adequate support to the business community. Metrology is one of the pillars of conformity assessment that belong in this sector.

The Bureau of Metrology (hereafter BoM) is a legal entity within the Ministry of Economy, which has a leading role within the national system for metrology and performs tasks and duties laid down in:

- Law on Metrology ("Official Gazette of RM" No. 55/2002, 84/2007, 120/2009, 136/2011, 6/2012, 164/2013 and 41/2014),
- Law on control on articles of precious metals ("Official Gazette of RM ", 23/95, 22/07 and 164/2013) and
- Law on vehicles ("Official Gazette of RM" no. 140/2008, 53/2011, 123/2012, 164/2013 and 138/2014)

The Bureau of Metrology is a budgetary institution, funded from the national budget. Other sources of funding of the Bureau of Metrology come from the individual resources of BoM in the form of income earned from the services offered to the customers. At present, BoM operates mostly in the field of industrial and legal metrology.

Since June 2009, according to the "Rulebook for realization of national measurement standards, conservation and maintenance conditions, and conditions for recognition of reference materials as national measurement standards" (Official Gazette of RM No.28/09), BoM is the holder of national standards for mass and liquid flow. Currently, in the beneficiary country there is no other institution appointed as the holder of national measurement standards.

The traceability of the measurements performed by BoM is established through the calibration of BoM reference standards in other NMIs having CMC entries published on the BIPM KCDB QMS of BoM in accordance to ISO/IEC 17025 initially was presented at EURAMET TC-Q in March 2012, for having proof on capability of its metrological services. This approach enables BoM to meet all requirements of CIPM MRA. In July 2013, the first 13 (thirteen) calibration and measurement capabilities (CMC) of the Bureau of metrology in the field of volume of liquids, liquid flow of water, as well as in the field of measurement of conventional mass were published in the database KCDB the BIPM (International Bureau of Weights and Measures). The CMCs are as follows:

- Five (5) CMCs in the field of volume of liquids and one (1) in the field of liquid flow of water. The CMCs refer to measuring range from 0.001mL to 5000L and from 0.02 m3/h to 90m3/h, accordingly and

- Seven (7) CMCs in the field of measuring conventional mass, which refer to measuring range from 1mg to 20kg.

Within the Bureau of Metrology, there are 9 laboratories for calibration of measuring instruments (laboratory for mass, pressure, volume and flow, density, length and angle, time and frequency, temperature and humidity, electrical quantities and acoustics).

Since November 2011 four laboratories are accredited: Laboratory for mass, Laboratory for pressure, Laboratory for temperature and Laboratory for volume and flow.

Since November 2015 two additional laboratories are accredited: Laboratory for electrical quantities, Laboratory for acoustics. Furthermore the scope of accreditation of the Laboratory for temperature well be extended to cover humidity calibration.

After the harmonization of national legislation in the field of measuring instruments covered by the Rulebook for measuring instruments, the BoM and other relevant stakeholders shall put efforts to ensure their full enforcement. In this line the BoM should develop an action plan for preparation and obtaining a status of a conformity assessment notified body. BoM has capacity to become a notified body for conformity assessment for certain categories of measuring instruments specified with the Measuring instruments Directive. (This directive is transposed in the Rulebook for measuring instruments and Rulebook for Non-automatic weighing instruments).

Most of the metrological equipment has been supplied through earlier EU and World Bank funded Projects.

The national metrology system should provide basis for implementation of almost 400 EU technical directives and more than 20,000 technical standards. With the aim to enable free movement of goods, services and information with the country, international recognition of measurements is achieved via full membership of the country in the relevant international metrological organisations, such as the Meter Convention and OIML (at global level), and EURAMET and WELMEC (at EU and European level).

In order to perform these tasks, the Bureau cooperates with specialised international and regional organisations in which it represents the country.

Table 1. Membership of the Bureau of Metrology in international metrology organizations

International	Status	Since
Meter Convention	Associate of the CGPM / Signatory of the CIPM MRA	2006 / 2007
EURAMET	Full member	2010
OIML	Full member	1996
WELMEC	Associate member	2008

One delegate from the Beneficiary country is allowed to participate in the EURAMET general assembly meeting and WELMEC annual committee meeting. Following the work of these networks is essential to streamlining the work and building capacities in the Bureau for Metrology.

3.2 Linked activities:

1. Title: Technical assistance for capacity building of Bureau of metrology
Project funded by: IPA TAIB 2008
Duration: January 2011-October 2012
Value: EUR 600.000

Description: Project activities included strategic development of the metrology infrastructure and Public Awareness, capacity building in Legal Metrology and capacity building in Scientific & Industrial Metrology.

2. Title: Procurement of metrology equipment for the Bureau of metrology
Project funded by: World Bank (BERIS)
Duration: 31 October 2005-31 March 2010
Value: EUR 3.500.000
Description: The second component of the BERIS Project aims at addressing the enterprise sector's difficulties in competing in domestic and foreign markets related to poor national MSTQ infrastructure and services. The overall objective of this component is to strengthen the capacity of the national system to deliver EU-compatible services.

3. Title: Private sector development – Operation 3.2 Straitening of the capacities of the Bureau for Metrology for internal market integration - Procurement and installation of equipment for Bureau of metrology
Project funded by: IPA TAIB 2012
Duration: on going
Value: EUR 780.000
Description: Procurement and installation of new equipment for BoM's laboratory: laboratory for electrical quantities, laboratory for dimension and laboratory for gas flow. Further operation of some of new equipment is envisaged within this project.

3.3 Results:

The project will be focused on the following mandatory result:

Mandatory result 1: Enhanced capacities for BoM laboratory development in specific technical fields (electrical quantities, dimension and gas flow).

Measurable indicators:

1. Assessment report of the BoM's current calibration and verification working methods and documentation for BoM laboratory equipment for electrical quantities and dimension.
2. Updated calibration and verification working methods and documentation for BoM laboratory equipment for electrical quantities and dimension.
3. Drafted calibration and verification working procedures and laboratory manuals for newly introduced equipment in the area of electrical quantities, dimension and gas flow.
4. Approximately 8 technical BoM staff working in the area of electrical quantities, dimension and gas flow trained on calibration and verification.

Mandatory result 2: Enhanced capacities at national metrology institute level on cross cutting metrology issues.

Measurable indicators:

1. At least 10 technical staff trained in a minimum of five cross-cutting metrology issues.
2. Documents related to working procedures, technical protocols, excel sheets, uncertainty budgets) are prepared and at least 10 BoM laboratory staff are trained to be PT providers in the areas of accredited laboratories for mass, temperature & humidity, pressure, volume & flow, electrical quantities and acoustic following the ISO/IEC 17043.

3. Documents related to working procedures, technical protocols, excel sheets, uncertainty budgets for elaboration and pre-review of CMC`s are prepared.
4. Strategic documents for development of the Bureau of Metrology are prepared.

Mandatory result 3: Recalibrated selected BoM metrological standards.

Measurable indicators:

1. Approximately10 BoM staff, trained on recalibration of metrological standards for selected laboratory equipment.
2. International traceability for the selected BoM metrological standards is established. Corresponding calibration certificates are produced.

Mandatory result 4: Awareness raised on National and International level related to the Metrology.

1. Approximately30 persons/per workshop, including BoM staff from laboratories operating on calibration activities, as well as inspection bodies, laboratories performing testing, and others, are trained in the area of legal metrology.
2. Documents for presentation of the BoM (study, elaborate, presentation for BoM) at the EURAMET General Assembly and WELMEC annual committee are drafted.
3. BoM has improved capacity and successfully presented its operation in the area of legal and scientific metrology at the EURAMET General Assembly and WELMEC annual committee.

3.4 Activities

The Twinning light project shall be implemented as a joint project in which each partner takes on its responsibilities. The Twinning assistance will be provided in the form of know-how transfer. The selected MS shall transfer the requested hands-on metrological expertise to the Beneficiary Country, in the form of hand-on training for the new metrological equipment, advice and recommendations for drafting calibration procedures for operation and related manuals to the existing and new equipment according EU best practice, support in registration of CMC for some of the laboratory's (electrical), organization of the awareness regarding metrological infrastructure in BC.

The activities that will be developed under this project shall be primarily focused on:

Mandatory result 1: Enhanced capacities for BoM laboratory development in specific technical fields (electrical quantities, dimension and gas flow).

1. Assessment of the current calibration and verification working methods and documentation in the specific technical fields: electrical quantities and dimension.
2. Assistance in upgrading of existing and preparation of new calibration and verification working procedures and laboratory manuals, in field of: electrical quantities and dimension. The TP will produce working procedures and manuals in English and *македонски*language.
3. Assistance in preparation of calibration and verification working procedures and laboratory manuals for operation with newly introduced equipment and uncertainty budgets in the area of electrical quantities, dimension and gas flow. The TP will produce working procedures and manuals in English and *македонски* language.

4. BoM is planning to procure new equipment for the following laboratories:
    a. Laboratory for electrical quantities - multifunctional calibrator and reference multimeter.
    b. Dimensional laboratory - Gauge Block Comparator in the range from 0.5 mm to 100 mm and Test Bench For Steel Tapes And Rules (5m)
    c. Laboratory for volume and flow - Test Bench with Sonic Nozzles for Residential Gas meters including two independent lines in common frame and Calibration system for volume conversion devices.

The Procurement of the above listed equipment is ongoing through separate supply procurement tender. The supply contract is expected to be signed beginning of October 2016. The delivery and installation of the equipment is planned for January 2017.

5. Organization of specialized on-the-job trainings for calibration with newly supplied equipment for approximately 8 technical staff.

Several peer-to-peer training arrangements will be organized during the project. Technical trainings will focus on industrial and scientific metrology. The trainings will take place as in-depth technical assistance, dialogue and hands-on support from MS experts to BoM officers. To have successful transfer of knowledge before each training mission the MS experts will familiarize themselves with the current technical situation and the relevant equipment available in the BoM. Afterwards more detailed discussions regarding influence factors and sources of metrological uncertainty may be included into the peer-to-peer training sessions.

Considering the above planned timeline for purchase and installing of the equipment, the TP is expected to plan execution of Activities 3 and 4 above upon installation of the equipment, i.e. after January 2017.

In case the procurement of equipment for the three laboratories is not successful and the equipment is not procured and installed, both partners may jointly develop and agree a set of other capacity building activities that MS experts will provide to BS. The new activities will be developed on basis of an assessment of the BoM actual needs and ability of the MS to deliver such assistance.

Mandatory result 2: Enhanced capacities at national metrology institute level on cross cutting metrology issues.

1. Assessment of the training needs and development of training plan on cross-cutting metrological topics on advanced metrological level. The intention is to further train BoM staff, which already has a good basic understanding and experience in the above topics.
2. Updating of existing or preparation of new manuals on cross-cutting metrological issues. The TP will produce the manuals in English and *македонски* language.
3. On the job training, for approximately 10 BoM staff members, on cross-cutting in-depth metrology arrangement in the following metrological fields: mass, pressure, volume and flow, temperature & humidity, electrical quantities, acoustic, in accordance with the above executed training needs assessment. The following topics shall be considered, inter alia for the cross-cutting training sessions:
    a. organization and calculation of obtaining results of metrological comparisons;

b. expression of the uncertainty of measurement - advanced aspects and software support and

c. registration of calibration measurement capabilities for the calibration laboratories which don't have CMC`s.

Mandatory result 3: Recalibrated selected BoM metrological standards.

1. Assistance in selection and prioritization of the equipment to be recalibrated.

2. Calibration of the selected equipment. The equipment identified by the above activity shall be shipped to the MS twinning partner. All logistics and expenditures related to transfer of the equipment to the MS (transport, insurance, custom clearance, etc.) will be responsibility of the BoM from BC.

3. Organization of at least 5-days study visit for at least 10 BoM staff

The Twinning partner will organise, at least 5-days, study visit per person, for at least 10 BoM officers for exchanging of knowledge, best EU practice regarding calibration of equipment in the field of: mass, pressure, volume and flow, temperature & humidity, electrical quantities, acoustic, time & frequency, density and dimension. The purpose of the study visits is to transfer the experience and good practices in the process of calibration of above reference standards from the BoM calibration laboratories. The BoM staff shall observe the MS experts while performing calibration (only part of the calibration process, because the process of calibration of metrology equipment takes about 4-6 weeks) on the above listed equipment in order to acquire hands-on experience. Furthermore, the BoM trainees will become familiar with the MS internal calibration procedures, methodologies of organisation of the calibration processes within the corresponding laboratories and will be able to receive clarifications from the MS experts.

Mandatory result 4: Awareness raised on National and International level related to the Metrology.

1. Support to organize and held promotional and raising awareness activities concerning legal metrology. The BoM and the twinning partner will jointly organize minimum of 2 (two) metrological workshops, for approximately 30 persons/per workshop, in the area of legal metrology. The workshops are expected to be appealing to private sector operators and result to improved understanding of legal metrology.

2. Support BoM to develop preparatory documents for participation at the EURAMET General Assembly and WELMEC annual committee in the area of legal and scientific metrology in the beneficiary country. The Twining partner shall advice/train the selected BoM staff member and support him to develop necessary presentation material so BoM can achieve maximum impact from its participation in these international meetings.

EURAMET organizes annual general assembly to decide on EURAMET's strategy and objectives. One representative from the Beneficiary Country is allowed to attend the annual assembly.

The TP will train one BoM officer and support him to develop presentation materials for BoM to participate at the EURAMET discussion about: strategic objectives of EURAMET, capacity building activities in the member countries; discussions on joint research activities in the framework of the European Metrology Programme for Innovation and Research (EMPIR), analysis of reports from BIPM and CIPM; discussion on developments of the Liaison Organizations, etc.

The WELMEC Committee is the central controlling and decision-taking forum in the cooperation of its members. One representative from the Beneficiary Country is allowed to attend the annual assembly.

The TP will train one BoM officer and support him to develop presentation materials for BoM to be to participate at WELMEC Committee meeting to : evaluate and approve strategy documents and associated action plans, to review the WELMEC finances, to approve the yearly financial report and decide on the annual membership contributions; to evaluate and approve WELMEC guides, annual reports and programmes of working groups; to provide clear guidance to the conveyors of Working Groups (functioning rules, terms of reference, working program including deadlines and eventually the life time of the WG in connection with the outcome of the feedback information); to follow the work of WGs to be prepared to vote on a guide; and to survey the usefulness of all WELMEC documents.

3. Support participation of one BoM staff member at the EURAMET General Assembly and WELMEC annual committee plenary sessions. Participation shall be organized only in case the period of implementation of the Twinning project coincides with the period of organization of the above stated meetings.

3.5 Means/ Input from the Member State Partner Administration:

The project will be implemented in a form of a Twinning Light contract envisaged to provide exchange of experience and know-how with a MS Institution with good practice in the stated project activities. The Twinning Partner shall provide an adequate team of experts– one MS Project Leader, responsible for overall coordination of project activities and a pool of Short Term Experts (STEs) with suitable knowledge to carry out the activities described.

The interested MS Partner Institution shall include in its proposal the CV's of the designated Project Leader and the proposed Short-term Experts as well as their specific tasks to which they will be assigned to.

The MS Partner Administration should demonstrate experience in delivery of services in the relevant project fields mentioned above. This experience should be described in the proposal.

3.5.1 Profile and tasks of the Project Leader

The Project Leader from the Member State must be a high-ranking public servant of a Member State administration or equivalent staff, but preferably the Head of a body in charge of metrology in the Member State, with relevant working experience of at least 5 years. The Project Leader will have overall responsibility for the smooth running and timely implementation of the project and the efficient use of project funds. He/she will be responsible for planning and supervising all project activities. In addition, he/she should coordinate, on the Member State side, the Project Steering Committee (PSC).

The MS Project Leader will continue to work at his/her Member State administration but will devote some of his/her time to conceive, supervise and co-ordinate the overall thrust of the Twinning Project, and ensure the attainment of the projected outputs. The Project Leader will be responsible for the field management of the team of experts to mobilize backstopping expertise and to address unforeseen problems and technical issues.

As a minimum, the Project Leader should be able to dedicate to the project at least 3 days per month, with at least 3 on-site visits. He/she will be supported by his/her Member State administration for logistic, accounting and administrative affairs.

Qualifications and skills of PL:

- Be a high-ranking public servant of a Member State administration in charge of metrology or equivalent staff (either at a national metrology institute or at an accredited calibration laboratory);
- University degree[2] preferably in the area of engineering or natural science or equivalent professional experience of 10 years in public administration or equivalent metrological institution;
- At least 5 years of professional experience in the areas of metrology, preferably comprising experience with technical management aspects of scientific and industrial metrology or high level calibration;
- Working experience in the field of International/European metrology organization will be considered as an asset;
- Fluent in English.

Tasks of the Project Leader

- Coordinate and monitor the overall implementation of the project with the BC Project Leader;
- Co-ordinate MS experts' work and availability;
- Communicate with the beneficiary, CFCD and EUD;
- Ensuring the backstopping functions and financial management;
- Co-chairing, with the Beneficiary Country Project Leader, the regular Steering Committee meetings;
- Preparation of start-up and final report; and
- Guarantee the achievement of mandatory results from the MS administration side.

3.5.2 Profile and tasks of the RTA

N/A

3.5.3 Profile and tasks of the Short-Term Experts (STEs)

Other specialist staff will be made available by the Twinning Light Partner to support the implementation of activities. The proposed pool of short-term experts is expected to cover all relevant areas targeted under this project.

Qualifications and skills of the short-term experts:

- University degree[3] preferably in engineering or natural science or equivalent professional experience of 10 years in public administration or equivalent metrological institution;

[2] For reference EPSO website-Annex, http://europa.eu/epso/doc/diplomasfortheweb.pdf

- Be civil servants or equivalent staff seconded to work within department/unit/body dealing with metrology (either at a national metrology institute or at an accredited calibration laboratory);
- At least 3 years of working experience in one of the following fields: mass, pressure, dimension, volume and flow, temperature & humidity, electrical quantities, sound-pressure metrology, preferably comprising experience with technical management aspects in those fields.
- Experience with participation in EURAMET projects and registration of calibration measurement capabilities (CMC`s) in KCDB BIPM as relevant tasks (for STE working on Mandatory result 2 and 3);
- Experience with awareness raising activities, organising conferences on metrology, communication with groups of users of metrology and/or clients requesting calibration services (for STE working on Mandatory result 4);
- Fluency in English;

Tasks of the short-term experts

- Prepare and implement specific tasks based mainly on practical trainings and experience in compliance with their mission description and in accordance with Project activities;
- Provide practical expertise/advices and transfer knowledge to relevant staff for execution of all activities related to the results and objective required within the project;
- Provision of practical support, advice, recommendations and reports as foreseen under the Project in close cooperation and coordination with the relevant institution;
- Address cross-cutting issues.

4. Institutional Framework

4.1. Beneficiary Institutions

The Bureau of metrology is the beneficiary of this Twinning Project. The project has the following target groups: BoM staff, accredited laboratories and inspection bodies in the country, stakeholders of legal metrology and industrial metrology in the country.

As stipulated in the Law on Metrology, the Bureau of Metrology (BoM) is the competent national metrological institution, and as such, plays a leading role in establishment and maintenance of the national metrology system and is responsible for:

- Providing traceability of measurements, realization and maintenance of the national measurement standards and certified reference materials, as well as calibration of measurement standards and measuring instruments, conformity assessment of the type of measuring instruments,
- Implementation of metrological and related technical regulations, laid down in the Law on Metrology and other laws and regulations adopted on the basis of the Law on Metrology and other laws,
- Verification of measuring instruments, metrological supervision of the quantities of pre-packed products and supervision over the enforcement of the provisions of the Law on Metrology and regulations adopted pursuant to the Law on Metrology.
- Conducting and implementing activities related to the international recognition of measurements carried out in the beneficiary country.

The primary task of the Bureau is the provision of metrological traceability and operation, storage and maintenance of national metrological standards and certified reference materials as well as performing calibration of measuring instruments.

Bureau of Metrology is organized into three sectors and two departments, particularly

- Sector for calibration,
- Sector for verification, precious metals and homologation,
- Sector for general, financial issues and IT,
    - Department for Human Resources and
    - Department for internal revision.

As a state administrative body, the Bureau adheres to the principles of state bodies, defined by the Law on Organization and Operation of the State Administration and the Law on Administrative Servants, and the introduction of a system of quality in work of the laboratories.

The BoM staff base consists currently of 46 civil servants, of which 35 are technical staff engage in the fields of metrology. Most of the staff around 41 % are engage in the scientific/industrial metrology and also in the legal metrology. Only in the legal metrology are engage 47 % and only in the scientific/industrial metrology are engage around 13 %.

4.2. Co-ordination mechanisms between institutions and departments

A Project Steering Committee (PSC) will be established at the beginning of the project, comprising representatives of the Beneficiary institution, the Delegation of the European Union, the Central Financing and Contracting Department, the Member State Project Leader and other representatives from the MS Twinning partner. The final and exact composition of the PSC will be agreed with the Contracting Authority at the start-up of the project. Any observer to the PSC should be approved by the Contracting Authority.

The PSC will monitor, supervise and co-ordinate the overall progress and implementation of the project. The SC will provide guidance for the different components of the project, will define priorities, approve and monitor budgets and approve the results.

It should be noted that the participation of the Member State Project Leader in Steering Committees meetings has to be combined with expert mission in case the MS Project Leader is also a short-term expert in the twinning light project. If the MS Project Leader is not a short-term expert in the twinning light project then his/her visits to the Beneficiary country, (one visit every three months) as part of his/her overall task to ensure coordination and steering of the project should be organised at the same time as the two Steering Committee meetings of the project. As a minimum, the project Leader should be able to dedicate to the project at least 3 days per month, with at least 3 on-site visits.

The Steering Committee meetings are called and chaired by the Project leaders.

The following Steering Committee meetings shall be held during the project implementation:

• Kick-off Meeting at the project's start;

• Steering Committee meeting during the 3rd month of implementation, to discuss and approve the start-up report;

• Final Steering Committee meeting, to discuss and approve the Final Report within the last month of the project's legal duration.

MS and BC Twinning Light Partners will arrange regular and ad-hoc coordination and information exchange meetings with other stakeholders as necessary.

4.3. Reporting requirements as per Art 6.4 of the Twinning Manual

Proper project reporting is essential to ensure adequate follow-up of project implementation and evaluation of the results. These reports shall consist of a content section and financial section.

Reports will follow the templates of Annex C4/Annex C5 of the Twinning Manual.

The twinning partner shall submit following reports, following the templates of the latest Common Twinning Manual:

• **Start-up Report** covering the first two months of the contract and submitted during the first week of the third month, which should:

- Clearly define the aims and purpose of the aid provided by the project;

- Give detailed description of the content of particular parts of the project;

- Work out in detail the activities conducted and the results achieved;

- Work out in detail all modifications agreed with the beneficiary institution;

- Review difficulties met during the implementation of the project and measures that were undertaken for their removal;

- Provide all findings obtained in the meanwhile and preliminary conclusions; and

- Contain a general plan of activities for the implementation of the remaining duration of the project.

• **Draft Final Report** shall be submitted within one month upon the completion of the project activities and in any case within the legal duration of the project, and should contain the following:

- Complete review of all activities conducted by MS experts during the implementation of the project;

- Achieved progress concerning each activity;

- Summary of all project results, with particular emphasis on mandatory results;

- Estimation of the project impact compared with the project aims and measures of the achieved progress;

- Identification of all important problems met during the implementation of the contract and solutions that have been applied;

- Lessons drawn from the project; and

- Recommendations for further steps in future projects.

• **Final Report** shall be submitted within three months upon the completion of the project activities and in any case within the legal duration of the project.

In addition to these formal reporting stages, the twinning partners are obliged to inform in writing the Contracting Authority and the PSC of the action of any critical aspects or conditions of project implementation, or any amendments/ modifications necessary within the budget.

All reports must be produced in English. These reports shall be signed by both Member State and Beneficiary Country Project Leaders, and be submitted to the Contracting Authority. Each report must be presented in electronic format and 4 hard copies one week prior to the Project Steering Committee meetings to the relevant participants (the Project Beneficiary, the Contracting Authority, the members of the Steering Committee and the EU Delegation). All reports should be written in English. The final versions should incorporate any comments and discussions during the Steering Committee meetings. Failure to submit satisfactory reports in time may lead to the decision to suspend EU financing for the project.

Start-up Report and Final Report are subject of approval by the Contracting Authority.

5. Budget

The project will be implemented through a Twinning Light Contract estimated at a maximum of EUR 249,474.00 (out of which 95% IPA funds and 5% National co-financing).

Twinning Light Contract	Total (EUR)	IPA contribution	Community	National Contribution	Public

		EUR	%	EUR	%
	249,474	237,000	95	12,474	5

The co-financing requirement foreseen under IPA will be considered fulfilled according to the provision of the relevant Financing Agreement.

Its maximum duration (time spent for twinning activities) is limited to **6 months.** This duration is supplemented by the standard 3 months execution period foreseen for inception and reporting (see Article 2 of the general Conditions for Grants, Annex A2 to the Twinning contract).

The financial rules applicable to 'Twinning Light' are the same as those for standard Twining, except that:

a) Equipment and private sector services (other than translation and interpretation where necessary) are not eligible for funding;

b) Preparatory costs are not eligible for funding;

c) Project assistants are not eligible for funding;

In addition to the IPA and National co-financing as part of the Twinning Contract amount, as a rule, all twinning contracts must provide additional co-financing on the side of the Beneficiary Institution, for the purpose of covering costs not covered under the project budget as per Twinning manual, point 5.13, as follows:

- Direct and indirect cost of the Beneficiary administration working for the project;

- Travel by the beneficiary officials from their capitals to a MS or between MS;

- Organisation of seminars/workshops/trainings (incl. venue, printing seminar materials and other logistical support.)

The following expenses are to be covered with the project funds:

- Visibility cost;

- Audit certificate cost

- per diems and incidental costs for the study visit.

The project will be located in the premises of Bureau of metrology. Bureau of metrology will ensure appropriate facilities and basic equipment for the work of the experts. This includes administrative support, office space, computers, telephone and fax and other necessary facilities. This contribution should also include logistical support for various training activities, including selection of trainees (in consultation with the MS/Mandatory body experts), as well as providing the MS/Mandatory body experts with the documents and information necessary for project implementation.

The twinning partner (project beneficiary) shall provide all available assistance to solve unforeseen problems that the MS/Mandatory body twinning partner(s) might face.

6. Implementation Arrangements

6.1 Implementing Agency responsible for tendering, contracting and accounting

The Central Financing and Contracting Department (CFCD) will act as a Contracting Authority for the project, which will be responsible for all aspects for the project's tendering, contracting and payments.

The contact person on behalf of the CFCD is:

Ms. Radica Koceva, (PAO)
Head of Central Financing and Contracting Department

6.2 Main counterpart in the BC

Bureau of metrology

The following persons will be counterparts of the key personnel of the MS Partner Administration:

BC Project Leader:

Dimitar Parnardziev, MSc

Director of Bureau of Metrology

BC Contact person:

Biljana Atanasov,

Advisor in the Department for metrology development, Bureau of Metrology

Senior Programme Officer:

Ilija Trckov,

Deputy Head in the Department for verification, homologation and precious metals, Bureau of Metrology

6.3 Contracts

One Twinning Light Contract is foreseen for the implementation of the above mentioned activities, with an amount of EUR 249,474.

7 Implementation Schedule (indicative)

7.1 Launching of the call for proposals (Date) – April, 2016

7.2 Start of project activities (Date) – September, 2016

7.3 Project completion (Date) – March, 2017

7.4 Duration of the execution period: The twining light contract duration is 6 months for implementation of the action. This duration is increased by the standard 3 months for starting up and closure of activities.

8 Sustainability

The beneficiary administration is fully committed to ensuring long term impact of the Twinning Light project.The MS Twinning partners shall transfer the know-how necessary to achieve the mandatory results to the Beneficiary staff. During the project, the twinning partners should develop documents/handouts, guidelines or manuals that will be easily accessible for later use by the beneficiary staff. Moreover, the proposed Evaluation/Lessons Learnt Seminar at the end of the implementation which capitalises and presents the concrete results with practical implications for further follow up will add to the sustainability of results.

9 Crosscutting issues

9.1 Civil society

In compliance with the provisions of the IPA Implementing Regulation, the civil society will be involved through the mainstreaming mechanism developed. Representatives from the civil society shall be invited to participate in the workshops.

9.2 Equal Opportunity

Twinning partners will be expected to comply with EU Equal Opportunity and non-discrimination policies. In view of the specific sector, it is not expected that the gender aspects will be of prime relevance for the outputs of this project.

9.3 Environmental considerations

Any ecological friendly initiative which can be taken will have to be implemented.

9.4 Communication and publicity

All requirements to ensure the visibility of EU financing will be fulfilled in accordance with R. (EC). N. 718/2007[3].

10 Conditionality and sequencing

10.1 Conditionality

- Appointment of appropriate number of counterpart personnel by the beneficiary before the projects start (high-ranking officials);
- Organisation, selection and appointment of members of working groups, steering and coordination committees, seminars by the beneficiaries.
- Procurement of equipment for the three laboratories is envisaged through separate supply tender expected to be signed beginning of October 2016. In case the procurement of equipment for the three laboratories is not successful, both partners may jointly develop and agree a set of other capacity building activities that MS experts will provide to BC.
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10.2 Sequencing

N/A.

ANNEXES TO PROJECT FICHE

1. Logical framework matrix in standard format
2. Organizational chart of BoM

3 See Article 62 and 63 of R. (EC). N. 718/2007

ANNEX 1

LOGFRAME PLANNING MATRIX	**Bureau of metrology**		
		Total budget: € 249,474	IPA budget: € 237,000
Overall objective	**Objectively verifiable indicators**	**Sources of Verification**	
The overall objective of is to improve the institutional capacities in the area of competitiveness and improve the competitiveness index of the country.	Increasing the number of calibrated measuring instruments.	Organization of the events in the form of workshops or conference.	
Project purpose	**Objectively verifiable indicators**	**Sources of Verification**	**Assumptions**
The project will support the strengthening of the operational and administrative capacities of BoM concerning industrial and scientific metrology, for the purpose of better integration in the EU Internal Market.		Working/manuals procedures Calibration certificates for recalibrated equipment Reports on workshops and/or conferences Report of attendants on the General assemblies and Technical committees of international organisations	- Purchasing and installation of the equipment; - Sufficient number of participates from the accredited laboratories and inspection bodies in the country
Results	**Objectively verifiable indicators**	**Sources of Verification**	**Assumptions**
Mandatory result 1: Enhanced capacities for BoM laboratory development in specific technical fields (electrical quantities, dimension and gas flow).	1. Assessment report of the BoM's current calibration and verification working methods and documentation for BoM laboratory equipment for electrical quantities and dimension. 2. Updated calibration and verification working methods and documentation for BoM laboratory equipment for electrical quantities and dimension. 3. Drafted calibration and verification working procedures and laboratory manuals for newly introduced equipment in the area of electrical quantities, dimension and gas flow. 4. Approximately 8 technical BoM staff working in the area of electrical quantities, dimension and gas flow trained on calibration and verification.	Project reports Strategy report Analysis reports Working procedures Calibration manuals Uncertainty budgets Certified trainings accomplished	- Purchasing and installation of the equipment; - Sufficient number of participates from the accredited laboratories and inspection bodies in the country

Mandatory result 2: Enhanced capacities at national metrology institute level on cross cutting metrology issues.	1. At least 10 technical staff trained in a minimum of five cross-cutting metrology issues. 2. Documents related to working procedures, technical protocols, excel sheets, uncertainty budgets) are prepared and at least 10 BoM laboratory staff are trained to be PT providers in the areas of accredited laboratories for mass, temperature & humidity, pressure, volume & flow, electrical quantities and acoustic following the ISO/IEC 17043. 3. Documents related to working procedures, technical protocols, excel sheets, uncertainty budgets for elaboration and pre-review of CMC`s are prepared. 4. Strategic documents for development of the Bureau of Metrology are prepared.	Participation in General Assemblies in the area of legal and scientific metrology Organization of minimum two workshops	
Mandatory result 3: Recalibrated selected BoM metrological standards.	1. Approximately 10 BoM staff, trained on recalibration of metrological standards for selected laboratory equipment. . 2. International traceability for the selected BoM metrological standards is established. Corresponding calibration certificates are produced.		
Mandatory result 4: Awareness raised on National and International level related to the Metrology.	1. Approximately 30 persons/per workshop, including BoM staff from laboratories operating on calibration activities, as well as inspection bodies, laboratories performing testing, and others, are trained in the area of legal metrology. 2. Documents for presentation of the BoM (study, elaborate, presentation for BoM) at the EURAMET General Assembly and WELMEC annual committee are drafted. 3. BoM has improved capacity and successfully presented its operation in the area of legal and		

	scientific metrology at the EURAMET General Assembly and WELMEC annual committee.		
Activities	**Means**	**Specification of costs**	**Assumptions**
Mandatory result 1: Enhanced capacities for BoM laboratory development in specific technical fields (electrical quantities, dimension and gas flow). 1. Assessment of the current calibration and verification working methods and documentation in the specific technical fields: electrical quantities and dimension. 2. Assistance in upgrading of existing and preparation of new calibration and verification working procedures and laboratory manuals, in field of: electrical quantities and dimension. The TP will produce working procedures and manuals in English and *македонски* language. 3. Assistance in preparation of calibration and verification working procedures and laboratory manuals for operation with newly introduced equipment and uncertainty budgets in the area of electrical quantities, dimension and gas flow. The TP will produce working procedures and manuals in English and *македонски* language. 4. BoM is planning to procure new equipment for the following laboratories: a. Laboratory for electrical quantities - multifunctional calibrator and reference multimeter. b. Dimensional laboratory - Gauge Block Comparator in the range from 0.5 mm to 100 mm and Test Bench For Steel Tapes And Rules (5m) c. Laboratory for volume and flow - Test Bench with Sonic Nozzles for Residential Gas meters including two independent lines in common frame and Calibration system for volume conversion devices. The Procurement of the above listed equipment is ongoing through separate supply procurement tender. The supply contract is expected to be signed beginning of October 2016. The delivery and installation of	The project will be implemented in a form of a Twinning Light contract envisaged to provide exchange of experience and know-how with a MS Institution with good practice in the stated project activities. The Twinning Partner shall provide an adequate team of experts– one MS Project Leader, responsible for overall coordination of project activities and a pool of Short Term Experts (STEs) with suitable knowledge to carry out the activities described. The interested MS Partner Institution shall include in its proposal the CV's of the designated Project Leader and the proposed Short-term Experts as well as their specific tasks to which they will be assigned to. The MS Partner Administration should demonstrate experience in delivery of services in the relevant project fields mentioned above. This experience should be described in the proposal.	Total budget: € 249,474 IPA budget: € 237,000	- Purchasing and installation of the equipment; - Availability of appropriate staff for trainings; - The stakeholders ready to cooperate; - Appropriate expertise is available; - Beneficiary institutions can make (qualified) staff available

the equipment is planned for January 2017. 5. Organization of specialized on-the-job trainings for calibration with newly supplied equipment for approximately8 technical staff. Several peer-to-peer training arrangements will be organized during the project. Technical trainings will focus on industrial and scientific metrology. The trainings will take place as in-depth technical assistance, dialogue and hands-on support from MS experts to BoM officers. To have successful transfer of knowledge before each training mission the MS experts will familiarize themselves with the current technical situation and the relevant equipment available in the BoM. Afterwards more detailed discussions regarding influence factors and sources of metrological uncertainty may be included into the peer-to-peer training sessions. Considering the above planned timeline for purchase and installing of the equipment, the TP is expected to plan execution of Activities 3 and 4 above upon installation of the equipment, i.e. after January 2017. **In case the procurement of equipment for the three laboratories is not successful and the equipment is not procured and installed, both partners may jointly develop and agree a set of other capacity building activities that MS experts will provide to BS. The new activities will be developed on basis of an assessment of the BoM actual needs and ability of the MS to deliver such assistance.** **Mandatory result 2: Enhanced capacities at national metrology institute level on cross cutting metrology issues.** 1. Assessment of the training needs and development of training plan on cross-cutting metrological topics on advanced metrological level. The intention is to further train BoM staff, which already has a good basic understanding and experience in the above topics. 2. Updating of existing or preparation of new manuals on cross-cutting metrological issues. The TP will produce the manuals in English and *македонски*language. 3. On the job training, for approximately 10 BoM staff members, on cross-cutting in-depth metrology arrangement in the following metrological fields: mass, pressure, volume and flow, temperature & humidity, electrical quantities, acoustic, in accordance with the above executed training needs assessment. The following topics shall be			

considered, for the cross-cutting training sessions: a. organization and calculation of obtaining results of metrological comparisons; b. expression of the uncertainty of measurement - advanced aspects and software support and c. registration of calibration measurement capabilities for the calibration laboratories which don't have CMC`s. **Mandatory result 3: Recalibrated selected BoM metrological standards.** 1. Assistance in selection and prioritization of the equipment to be recalibrated. 2. Calibration of the selected equipment. The equipment identified by the above activity shall be shipped to the MS twinning partner. All logistics and expenditures related to transfer of the equipment to the MS (transport, insurance, custom clearance, etc.) will be responsibility of the BoM from BS. 3. Organization of at least 5-days study visit for at least 10 BoM staff The Twinning partner will organise, at least 5-days, study visit per person, for at least 10 BoM officers for exchanging of knowledge, best EU practice regarding calibration of equipment in the field of: mass, pressure, volume and flow, temperature & humidity, electrical quantities, acoustic, time & frequency, density and dimension. The purpose of the study visits is to transfer the experience and good practices in the process of calibration of above reference standards from the BoM calibration laboratories. The BoM staff shall observe the MS experts while performing calibration (only part of the calibration process, because the process of calibration of metrology equipment takes about 4-6 weeks) on the above listed equipment in order to acquire hands-on experience. Furthermore, the BoM trainees will become familiar with the MS internal calibration procedures, methodologies of organisation of the calibration processes within the corresponding laboratories and will be able to receive clarifications from the MS experts. **Mandatory result 4: Awareness raised on National and International level related to the Metrology.** 1. Support to organize and held promotional and raising awareness activities concerning legal metrology. The BoM and the twinning			

partner will jointly organize minimum of 2 (two) metrological workshops, for approximately 30 persons/per workshop, in the area of legal metrology. The workshops are expected to be appealing to private sector operators and result to improved understanding of legal metrology. 2. Support BoM to develop preparatory documents for participation at the EURAMET General Assembly and WELMEC annual committee in the area of legal and scientific metrology in the beneficiary country. The Twining partner shall advice/train the selected BoM staff member and support him to develop necessary presentation material so BoM can achieve maximum impact from its participation in these international meetings. EURAMET organizes annual general assembly to decide on EURAMET's strategy and objectives. One representative from the Beneficiary Country is allowed to attend the annual assembly. The TP will train one BoM officer and support him to develop presentation materials for BoM to participate at the EURAMET discussion about: strategic objectives of EURAMET, capacity building activities in the member countries; discussions on joint research activities in the framework of the European Metrology Programme for Innovation and Research (EMPIR), analysis of reports from BIPM and CIPM; discussion on developments of the Liaison Organizations, etc. The WELMEC Committee is the central controlling and decision-taking forum in the cooperation of its members. One representative from the Beneficiary Country is allowed to attend the annual assembly. The TP will train one BoM officer and support him to develop presentation materials for BoM to be to participate at WELMEC Committee meeting to : evaluate and approve strategy documents and associated action plans, to review the WELMEC finances, to approve the yearly financial report and decide on the annual membership contributions; to evaluate and approve WELMEC guides, annual reports and programmes of working groups; to provide clear guidance to the conveyors of Working Groups (functioning rules, terms of reference, working program including deadlines and eventually the life time of the WG in connection with the outcome of the feedback information); to follow the work of WGs to be prepared to vote on a guide; and to survey the usefulness of all WELMEC documents. 3. Support participation of one BoM staff member at the EURAMET General Assembly and WELMEC annual committee plenary sessions. Participation shall be organized only in case the period of implementation of the Twinning project coincides with the period of			

organization of the above stated meetings.			

Annex 2. Organizational chart