IMBIH

MAIN CHANGES FOR THE REPORTING PERIOD AND CURRENT STATUS OF IMBIH

Katarina Hafner-Vuk, IMBiH

IMBIH AND ITS CAPACITIES

IMBIH

- IMBIH has a certified QMS in accordance with ISO 9001:2015
- IMBIH is accredited (BATA) and has a QMS (approved by EURAMET) in accordance with ISO/IEC 17025:2017 and ISO/IEC 17020:2012
- After 2011, QMS was successfully approved for the third time in 2021 (EURAMET)
- IMBIH has implemented ISO/IEC 17043:2010 for carrying out proficiency testing of competence
- IMBIH has internationally certified the information security management system in accordance with ISO/IEC 27001:2013
- PT tests offered by the IMBIH laboratory are published in the international EPTIS database
- Introduction of ISO 17034 and ISO 17065 as well as expansion of the scope of work in accordance with already implemented standards
- IMBIH established the only laboratory in BiH that meets the requirements for conformity assessment bodies in accordance with NAWI EU requirements directives through the implementation and accreditation of the verification laboratory(ISO/IEC 17020, type A)

IMBIH AND ITS CAPACITIES

IMBIH

IMBIH has 82 CMCs for the following fields:

- *CMCs general physics*(81)
  - AC voltage, current and power (6)
  - DC voltage current and resistance (20)
  - Flow/Volume (4)
  - Frequency (11)
  - Humidity(3)
  - Mass, mass standards (8)
  - Presure (2)
  - Temperaturea (15)
  - Time interval (9)
  - Time scale difference(3)
- *CMC Chemistry* (1)
  - Yellow gold jewellery alloys (1)

More information at the following link:
https://www.bipm.org/kcdb/cmc/quick-search?keywords=bosnia

IMBIH has participated in 36 key ILCs published in BIPM KCDB:

- 1 **BIPM** – time scale UTC
- 26 **EURAMET**
- 4 **COOMET**
- 5 **GULFMET**

https://www.bipm.org/kcdb/comparison/quick-search?keywords=bosnia&excludedFilters=&includedFilters=&displayResults=true

IMBIH AND ITS CAPACITIES

IMBIH

IMBiH has moved to new location at the begining of 2022

New location
Branilaca Sarajeva 25
71000 Sarajev

Old location
Dolina 6

- Menagment
- Labroratory
  and humidity
- Laboratory fo
  Frequency
- Laboratory for Electrical Quantities
- Laboratory for Chemistry

oratories
heir

mass
- Laboratory for density
- Laboatory for volume and flow

Beside mentioned laboratories there is a laboratory for **ionizing radiation** in Banja Luka at Jovana Dučića 23A, 78000 Banja Luka.
The location of this laboratory remained unchanged.

LOCATION CHANGE INFORMATION

IMBIH

About the location change IMBiH has notified in time all international/regional organization where IMBiH has its membership, December 2021.

BOSNA I HERCEGOVINA
INSTITUT ZA MJERITELJSTVO
BOSNE I HERCEGOVINE

БОСНА И ХЕРЦЕГОВИНА
ИНСТИТУТ ЗА МЕТРОЛОГИЈУ
БОСНЕ И ХЕРЦЕГОВИНЕ

BOSNIA AND HERZEGOVINA
INSTITUTE OF METROLOGY
OF BOSNIA AND HERZEGOVINA

No: 01-50-HK-1446-1/21
Sarajevo, December 27, 2021

Bureau international des poids et mesures [BIPM]
Pavillon de Breteuil
92312 Sèvres Cedex
France
Email: ahenson@bipm.org

SUBJECT: Notice of change of the official address of the Institute of metrology of BiH

Dear Madam/Sir,

I wish to bring to your kind notice that the address of the residence of the Institute of Metrology of Bosnia and Herzegovina has changed.

The new address is as follows:

Institute of Metrology of Bosnia and Herzegovina (IMBiH)
Branilaca Sarajeva 25
71000 Sarajevo
Bosnia and Herzegovina

Please make note of this new information in your records where required.

The contact telephone numbers and e-mail addresses of the Institute and its correspondents remained unchanged.

I look forward to continuing successful cooperation in the future.

Sincerely,

GENERAL DIRECTOR
Dr sc. Zijad Džemić, Dipl.-Ing.

Delivered:
- Title
a/a

71000 Sarajevo, Branilaca Sarajeva 25; TEL: 033/568 901; FAX: 033/568 909
WEB: www.met.gov.ba; E-MAIL: info@met.gov.ba
ID BROJ: 4201178930001

F-040, Izdanje 2, 2021.

ACTIONS PRIOR RELOCATION

IMBIH

ALL LABORATORIES

- Risks and opportunities discussed with staff and management.
- Several visits to new location were organized in order to identify rooms that will be available as new laboratory room.
- All existing technical requirements currently available at laboratory location have been communicated to the representative of the owner of the building on new location and requested to be fulfilled before laboratory relocation.
- This includes: antistatic floor, air conditioning requirements, power cabling to UPS and main distribution frame including 3 phase high power cabling, separate signal ground/earth cable for measuring devices, ventilation above oil bath separate from ventilation of working rooms, necessary number of LAN connections, phone connection, etc.

ACTIONS PRIOR RELOCATION

IMBIH

ALL LABORATORIES

- Working group for monitoring the activities for relocation on new locations was established with the goal to ensure that all requirements are fulfilled on new location.
- Audit visits were organized every few days and done/to done list checked and communicated to the owner of the building.
- From end of November 2021 all calibrations have been stopped and no further calibration requests accepted.
- Device manufacturer contacted in several cases where additional information for safe transport and mounting on new location was necessary

ACTIONS PRIOR RELOCATION

IMBIH

ALL LABORATORIES

- All laboratory equipment were protected and packed for transport, and the most of it have been carried personally by the laboratory stuff on new location (especially sensitive equipment like SPRTS, fixed point cells, resistance bridges, multimeters, nanovolmeter,..).
- Robust equipment and laboratory furniture were transported by external company under supervision of the laboratory stuff at the old location, in the transport and on the new location.

ACTIONS PRIOR RELOCATION

IMBIH

ALL LABORATORIES

- **Temperature and Humidity** - Chambers, calibration baths, and laboratory furniture were transported by an external company under supervision of the laboratory stuff at the old location, in the transport, and at the new location.
- **Electrical quantities and time and frequency** - at the old location, all equipment was in one common room. It was decided that the Laboratory for electrical quantities and time and frequency, will be separated into two premises (one for electrical quantities and another for time and frequency at the new location).

ACTIVITIES OF IMBIH AT THE NEW LOCATION

IMBIH

- Plan for the laboratory start at new locations created
- All furniture and equipment in temperature and humidity laboratory were mounted
- Power installation were checked
- Network connection established
- Air conditioning started and monitored

ALL LABORATORIES

ACTIVITIES OF IMBIH AT THE NEW LOCATION

IMBIH

TEMPERATURE AND HUMIDITY

- Separate ventilation for oil bath mounted and tested
- Water installation for distillator and ice machine connected, and devices tested
- Nitrogen and Argon bottles fixed and connected to installations
- While not providing calibration services time was used for regular maintains tasks such:
- Calk removed from the heating elements of the water distillator
- Standard resistor bath cleaned; filled with new oil and temperature setting accuracy and stability check done.

ACTIVITIES OF IMBIH AT THE NEW LOCATION

IMBIH

TEMPERATURE AND HUMIDITY

- WTP bath cleaned, new water filled, temperature controller setting checked and temperature monitored and adjusted and protecting controller adjusted too.
- Preventive service of temperature chamber done by service technician.
- All calibration bath and furnaces tested for the functionality and operated.
- Water fixed point cells (WTP) realized and SPRT thermometers checked in WTP
- DEW point meter checked with primary humidity generator

ACTIVITIES OF IMBIH AT THE NEW LOCATION

IMBIH

TEMPERATURE AND HUMIDITY

- Secondary humidity calibration system checked with primary system and air temperature sensor checked in Gallium fixed point
- All thermometers that are used as etalons checked at WTP and crossed checked with measurement of 2 different bridges using different software on WTP + additional check in Gallium fixed point
- Thermometers cross checked in calibration bath on same temperature at 2 additional points
- Resistor bridges checked with unity and zero test, and linearity test with known resistors values.

ACTIVITIES OF IMBIH AT THE NEW LOCATION

IMBIH

TEMPERATURE AND HUMIDITY

- Room temperature logged records were analyzed and cross checked with laboratory/equipment demands. Temperature stability is confirmed to be in the required limits, and few records showed that humidity was slightly lower than previously stated as our laboratory standard. All technical request for measuring devices checked once again and standard laboratory environment conditions have been slightly changed .
- Laboratory started operation with internal calibrations.

ACTIVITIES OF IMBIH AT THE NEW LOCATION

IMBIH

ELECTRICAL QUANTITIES/ TIME & FREQUENCY

- Additional separate air conditions were mounted in both laboratories (electrical quantities and time and frequency)
- Measurement equipment was checked, resistors were calibrated
- Intermediate checks for all relevant equipment were performed
- Laboratories logged records were analysed and cross checked with laboratory/equipment demands. Temperature stability is confirmed to be in the required limits, and few records showed that humidity was slightly lower than previously stated as defined conditions. All technical requests for measuring devices checked once again and standard laboratory environment conditions have been slightly changed.

ADVANTAGES AT NEW LOCATION

- Larger premises for all laboratories
- Laboratories are at the same address as the administrative offices (majority of staff do not need to change locations during the working day).
- Large space for administrative activities, offices, and conference rooms, including a large space for a training conference room.
- Some laboratories now have their own laboratory room (electrical quantity, time, and frequency were in one room).
- New stone tables for pressure balances

IMBIH

ADMINISRATION AND LABORATORIES

ADVANTAGES AT NEW LOCATION

- Because of the larger space, several staff can work in the laboratory at the same time, and several measurements can be performed in parallel (pressure, electrical quantity, etc.).
- The laboratory for chemistry has now divided an area where specific methods can be performed.
- The laboratory for chemistry has a separate room for weighing.
- Separate laboratory room for small volumes

IMBIH

ADMINISTRATION AND LABORATORIES

SERVICES AT THE NEW LOCATION

IMBIH

- Laboratory for Electrical quantities and time and frequency started operation with internal and external calibrations in Mid of January 2022.
- Laboratory for Temeprature and Humidity started operation with internal calibration in January 2022 and external calibrations in March 2022.
- All requirements of the ISO/IEC 17025 have been additionaly approved by internal audits

LABORATORY FOR TEMPERATURE AND HUMIDITY

IMBIH

OLD LOCATION TEMPERATURE

NEW LOCATION TEMPERATURE

LABORATORY FOR TEMPERATURE AND HUMIDITY

IMBIH

OLD LOCATION HUMIDITY

NEW LOCATION HUMIDITY

IMBIH

LABORATORY FOR ELECTRICAL QUANTITIES AND TIME & FREQUENCY

OLD LOCATION

IMBIH

LABORATORY FOR ELECTRICAL QUANTITIES AND TIME & FREQUENCY

NEW LOCATION
ELECTRICAL QUANTITIES

IMBIH

LABORATORY FOR ELECTRICAL QUANTITIES AND TIME & FREQUENCY

NEW LOCATION
TIME AND FREQUENCY

LABORATORY FOR PRESSURE

IMBIH

OLD LOCATION PRESSURE

NEW LOCATION PRESSURE

IMBIH

ACCREDITATION AUDIT

- Accreditation audit has been performed in the **Laboratory for Chemistry** period from 23.-24.05.2022.
- Three nonconformities have been recorded, all of them resolved.

OB 07-10 | *IZVJEŠTAJ O OCJENJIVANJU* | BATA ACCREDITATION

Broj izvještaja: **171/22**

1. OPĆI PODACI

Za predmet: **LI-82-01**
Naziv TOU: **Institut za mjeriteljstvo Bosne i Hercegovine - Laboratorija za hemiju**
Adresa: **Branilaca Sarajeva 25, 71000 Sarajevo**
Tel: **033-568-926**
Fax: **033-568-909**
Email: **katarina.hafner@met.gov.ba**

Vrsta TOU: **Ispitni laboratorij**
Temeljni kriterij/Standard: **BAS EN ISO/IEC 17025:2018**
Područje rada TOU: **LI 2 Fizičko-hemijska ispitivanja**
- LI 2.10 Nafta i naftni proizvodi
- LI 2.13 Metali i legure
Vrsta ocjenjivanja: **Ocjenjivanje na licu mjesta u svrhu produžavanja akreditacije**
Datum: **23-24.5.2022.**
Broj termin plana: **044/22**
Broj rješenja o timu: **05-44-1-85-7/21**

2. ČLANOVI TIMA ZA OCJENJIVANJE

R.B.	Ime i prezime	Funkcija u timu	Područje
1.	Sanela Avdagić-Tanković	Vodeći ocjenjivač	Sistem upravljanja
2.	Tidža Muhić Šarac	Ocjenjivač	LI 2 Fizičko-hemijska ispitivanja (LI 2.10 Nafta i naftni proizvodi) LI 2 Fizičko-hemijska ispitivanja (LI 2.13 Metali i legure)

3. LOKACIJE NA KOJIMA JE OBAVLJENO OCJENJIVANJE

R.B.	Naziv lokacije	Adresa lokacije
1.	**Institut za mjeriteljstvo Bosne i Hercegovine - Laboratorija za hemiju**	**Branilaca Sarajeva 25 i Dolina 6, 71000 Sarajevo**

4. NALAZ OCJENJIVANJA

Informacije sa uvodnog sastanka

Akreditirano područje koje je trenutno pod dobrovoljnom suspenzijom zbog preseljenja laboratorije na novu lokaciju, navedeno je u dodatku akreditacije br. LI-82-01 od 13.05.2019. Revizija 2 od 13.12.2021.

Laboratorija je podnijela zahtjev za produžavanje akreditacije prema Izjavi o području zahtijevane akreditacije od 22.09.2021. za dva područja LI 2.13 i LI 2.10. Planirani datum ocjenjivanja je bio zakazan u prošlој godini (2021), ali zbog preseljenja laboratorije na novu lokaciju (u Branilaca Sarajeva 25) i zahtjeva za dobrovoljnu suspenziju (od 02.12.2021), ocjenjivanje u svrhu produžavanja akreditacije je prolongirano dok se ne steknu uslovi za obavljanje ocjenjivanja na licu mjesta. TOU je dana 14.04.2022. izvijestilo BATA-u o spremnosti da se organizira ocjenjivanje na licu mjesta u svrhu

1/18

BOSNA I HERCEGOVINA
BOSNIA AND HERZEGOVINA
INSTITUT ZA AKREDITIRANJE BOSNE I HERCEGOVINE
INSTITUTE FOR ACCREDITATION OF BOSNIA AND HERZEGOVINA

BATA ACCREDITATION
EA MLA potpisnik
EA MLA signatory

Na osnovu člana 9. Zakona o akreditiranju Bosne i Hercegovine izdaje se
In accordance of article 9. of Law on Accreditation of Bosnia and Herzegovina it is issued

CERTIFIKAT O AKREDITACIJI
ACCREDITATION CERTIFICATE

kojim se potvrđuje da
confirming that

Institut za mjeriteljstvo Bosne i Hercegovine
Laboratorija za hemiju
Branilaca Sarajeva 25
71000 Sarajevo

ispunjava zahtjeve standarda BAS EN ISO/IEC 17025:2018 u pogledu osposobljenosti za izvođenje ispitivanja
complies with requirements of BAS EN ISO/IEC 17025:2018 for competence to carry out testing

Detalji o području akreditacije, kao i ostali podaci značajni za akreditaciju, dati su u dodatku, koji čini njen sastavni dio.
Details of accreditation scope, as well as other data relevant for the accreditation, are specified in the Annex, that is its integral part.

Broj akreditacije
Accreditation number
LI – 82 – 01
(Prva akreditacija / *Initial accreditation:* **2014-01-23**)

Akreditacija važi do
Accreditation is valid until
2026-01-22

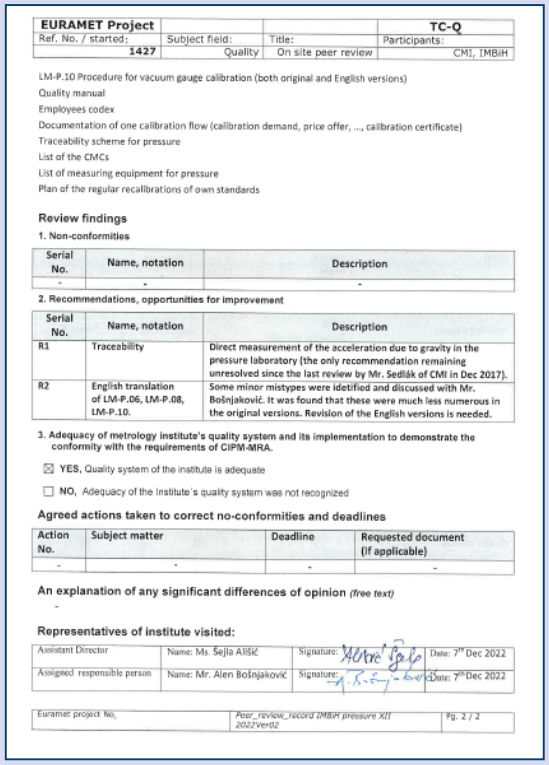
Sarajevo, 2022-07-05

Direktor / *Director*
mr.sc. Dražan Primorac

IMBIH

PEER REVIEW PERFORMED IN PRESSURE LABORATORY

Peer review has been conducted in December 2022, by expert from CMI, Mr. Dominik Pražak. In this peer review 2 recommendations have been recorded, without any nonconformity.



EURAMET Project			TC-Q
Ref. No. / started:	Subject field:	Title:	Participants:
1427	Quality	On site peer review	CMI, IMBiH

LM-P.10 Procedure for vacuum gauge calibration (both original and English versions)
Quality manual
Employees codex
Documentation of one calibration flow (calibration demand, price offer, ..., calibration certificate)
Traceability scheme for pressure
List of the CMCs
List of measuring equipment for pressure
Plan of the regular recalibrations of own standards

Review findings

1. Non-conformities

Serial No.	Name, notation	Description
-	-	-

2. Recommendations, opportunities for improvement

Serial No.	Name, notation	Description
R1	Traceability	Direct measurement of the acceleration due to gravity in the pressure laboratory (the only recommendation remaining unresolved since the last review by Mr. Sedlák of CMI in Dec 2017).
R2	English translation of LM-P.06, LM-P.08, LM-P.10.	Some minor mistypes were identified and discussed with Mr. Bošnjaković. It was found that these were much less numerous in the original versions. Revision of the English versions is needed.

3. Adequacy of metrology institute's quality system and its implementation to demonstrate the conformity with the requirements of CIPM-MRA.

☒ **YES,** Quality system of the institute is adequate

☐ **NO,** Adequacy of the institute's quality system was not recognized

Agreed actions taken to correct no-conformities and deadlines

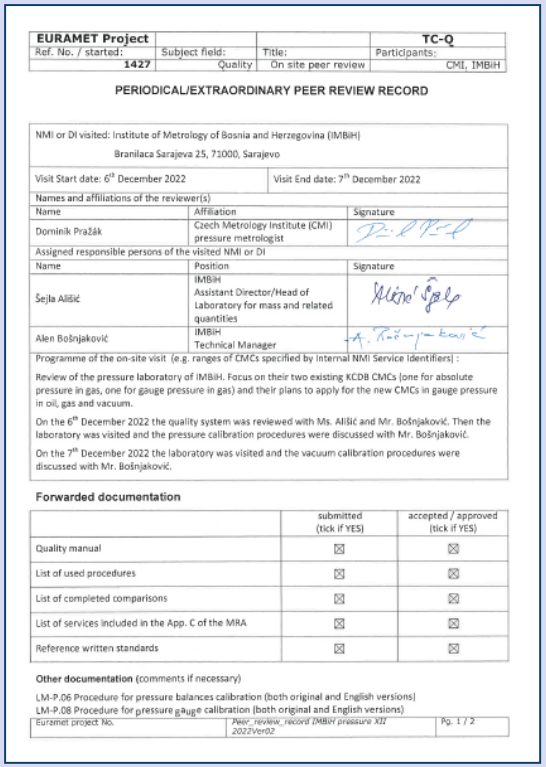
Action No.	Subject matter	Deadline	Requested document (if applicable)
-	-	-	-

An explanation of any significant differences of opinion *(free text)*

-

Representatives of institute visited:

Assistant Director	Name: Ms. Šejla Ališić	Signature:	Date: 7th Dec 2022
Assigned responsible person	Name: Mr. Alen Bošnjaković	Signature:	Date: 7th Dec 2022



EURAMET Project			TC-Q
Ref. No. / started:	Subject field:	Title:	Participants:
1427	Quality	On site peer review	CMI, IMBiH

PERIODICAL/EXTRAORDINARY PEER REVIEW RECORD

NMI or DI visited: Institute of Metrology of Bosnia and Herzegovina (IMBiH)
Branilaca Sarajeva 25, 71000, Sarajevo

Visit Start date: 6th December 2022 | Visit End date: 7th December 2022

Names and affiliations of the reviewer(s)

Name	Affiliation	Signature
Dominik Pražák	Czech Metrology Institute (CMI) pressure metrologist	

Assigned responsible persons of the visited NMI or DI

Name	Position	Signature
Šejla Ališić	IMBiH Assistant Director/Head of Laboratory for mass and related quantities	
Alen Bošnjaković	IMBiH Technical Manager	

Programme of the on-site visit (e.g. ranges of CMCs specified by Internal NMI Service Identifiers) :

Review of the pressure laboratory of IMBiH. Focus on their two existing KCDB CMCs (one for absolute pressure in gas, one for gauge pressure in gas) and their plans to apply for the new CMCs in gauge pressure in oil, gas and vacuum.

On the 6th December 2022 the quality system was reviewed with Ms. Ališić and Mr. Bošnjaković. Then the laboratory was visited and the pressure calibration procedures were discussed with Mr. Bošnjaković.

On the 7th December 2022 the laboratory was visited and the vacuum calibration procedures were discussed with Mr. Bošnjaković.

Forwarded documentation

	submitted (tick if YES)	accepted / approved (tick if YES)
Quality manual	☒	☒
List of used procedures	☒	☒
List of completed comparisons	☒	☒
List of services included in the App. C of the MRA	☒	☒
Reference written standards	☒	☒

Other documentation (comments if necessary)

LM-P.06 Procedure for pressure balances calibration (both original and English versions)
LM-P.08 Procedure for pressure gauge calibration (both original and English versions)

IMBIH

THANK YOU FOR YOUR ATTENTION!