

APPROVED  
Uzbek National Institute of Metrology  
(UzNIM)  
Director

  
Mr. Lazizbek Saidoripov

“ 6 ” November 2023

Tashkent

APPROVED  
TÜBİTAK National Metrology Institute  
(TÜBİTAK UME)  
Director

  
Mr. Mustafa Çetintaş

“ 6 ” November 2023

**ROADMAP**  
on the implementation of scientific and technical cooperation in the field of metrology  
between UzNIM and TÜBİTAK UME  
for the period 2023-2024

No.	Description of activities	Date	Responsible person		Format
			UzNIM	TÜBİTAK UME	
1	Implementation of technical cooperation regarding the membership of the UzNIM Time and Frequency Laboratory to the International Atomic Time (TAI) Club of the International Bureau of Weights and Measures (BIPM)	2023 year December	Mr. Nuriddin Raymjonov, Mr. Sheroz Ismatullaev	Mr. Ramiz Hamid, Mr. Mesut Yoğun	At UzNIM premises and online
2	Experimental work on calibration of microphones and sound level meters (noise meters) in accordance with international standards IEC 61672-3:2013, IEC 61094-5:2016 and IEC 61094-6:2005	2023 year December	Mr. Nuriddin Raymjonov, Mr. Sheroz Ismatullaev	Mr. Enver Sadıkoğlu	At UzNIM premises

No.	Description of activities	Date	Responsible person		Format
			UzNIM	TÜBİTAK UME	
3	Development of procedures for calibration of measurement microphones and sound level meters (noise meters) on the basis of international standards IEC 61672-3:2013, IEC 61094-5:2016 and IEC 61094-6:2005, if necessary, perform verification ( <i>and / or</i> ) validation.	2024 year 1 <sup>st</sup> quarter	Mr. Nuriddin Raymjonov, Mr. Sheroz Ismatullaev	Mr. Enver Sadıkoğlu	At UzNIM premises and online
4	Technical work towards Recommendation of Consultative Committee for Time and Frequency (CCTF) on participation in CCTF-K001.UTC key comparisons and publication of the Calibration and Measurement Capabilities (CMC) Key Comparison Database (KCDB) data exchange.	2024 year April	Mr. Nuriddin Raymjonov, Mr. Sheroz Ismatullaev	Mr. Ramiz Hamid, Mr. Mesut Yoğun	At UzNIM premises and online
5	Support the participation of UzNIM in the comparisons between the 3 SMIC member countries in the areas of mass, pressure and temperature organized in the framework of the Metrology Council of the Standards and Metrology Institute for Islamic Countries Organization (SMIIC MC) activities.	During 2024 year	Mr. Nuriddin Raymjonov, Mr. Sunnat Muminkhodjaev, Mr. Kamoliddin Najmutdinov, Mr. Marat Yunusov	Mr. Abdullah Hamarat, Mrs. Beste Korutlu Yılmaz, Mr. Murat Kalemci	
6	Activation of efforts to conduct additional comparisons within the framework of the projects of the Euro-Asian cooperation of national metrological institutions (COOMET):				

No.	Description of activities	Date	Responsible person		Format
			UzNIM	TÜBİTAK UME	
6.1	<b>acoustics, ultrasound and vibration:</b> Organization of supplementary comparison on calibration of microphones.	2024 year 2 <sup>nd</sup> quarter	Mr. Nuriddin Raymjonov, Mr. Sheroz Ismatullaev	Mr. Enver Sadıkoğlu	Online
6.2	<b>time and frequency:</b> Complete the pilot comparison work 883/UZ/23 “Comparison of the national time scales of Türkiye UTC (UME) and Uzbekistan UTC(UZ)” organized within the framework of COOMET.	2024 year January	Mr. Nuriddin Raymjonov, Mr. Sheroz Ismatullaev	Mr. Mesut Yoğun	Both at UzNIM and TÜBİTAK UME premises
7	Perform 4 comparisons in the field of metrology aimed at supporting accreditation areas, <b>including:</b>				
7.1	<b>mass and related quantities:</b> Organization of bilateral comparison on calibration of compression type force transducers.	During 2024 year	Mr. Nuriddin Raymjonov, Mr. Marat Yunusov, Mr. Kamoliddin Najmutdinov, Mr. Nuriddin Xolmirzaev	Mr. Bülent Aydemir	Both at UzNIM and TÜBİTAK UME premises
7.2	<b>electricity and magnetism:</b> Organization of bilateral comparison on calibration of an 8.5 digit standard multimeter.	During 2024 year	Mr. Nuriddin Raymjonov, Mr. Ravshan Makhmudov	Mr. Mehedin Arifoviç	Both at UzNIM and TÜBİTAK UME premises

No.	Description of activities	Date	Responsible person		Format
			UzNIM	TÜBİTAK UME	
7.3	<b>acoustics, ultrasound and vibration:</b> perform supplementary comparison on calibration of measurement microphones;	2024 year 3 <sup>rd</sup> quarter	Mr. Nuriddin Raymjonov, Mr. Sheroz Ismatullaev	Mr. Enver Sadıkoğlu	Both at UzNIM and TÜBİTAK UME premises
7.4	<b>time and frequency:</b> Organization of interlaboratory comparisons of Cesium (Cs) clock indicators and national time scale in order to study the technical possibilities of the time and frequency standard established at UzNIM	2023 year December	Mr. Nuriddin Raymjonov, Mr. Sheroz Ismatullaev	Mr. Mesut Yoğun	Both at UzNIM and TÜBİTAK UME premises
8	Involving experts in connection with the establishment of a complex of laboratories on the basis of UzNIM and joint work on technical conditions and project proposals, <b>including:</b>	During 2024 year	Mr. Nuriddin Raymjonov, Mr. Kamoliddin Najmutdinov	Mr. Ramiz Hamid	
8.1	Development of a system of calibration of measuring instruments to ensure metrological traceability of time and frequency measuring instruments;	2024 year January	Mr. Nuriddin Raymjonov, Mr. Sheroz Ismatullaev	Mr. Ramiz Hamid, Mr. Adem Gedik	Online
8.2	Development of laboratory for measuring pH, pX and electrical conductivity in liquids;	2024 year February	Mr. Nuriddin Raymjonov, Mr. Kamoliddin Najmutdinov	Mr. Süleyman Can, Mr. Lokman Liv	At UzNIM premises and online
8.3	Development of laboratory for measuring the molar fraction of components in gas mixtures and the molar fraction of natural gas components in gas mixtures;	2024 year June	Mr. Nuriddin Raymjonov, Mr. Kamoliddin Najmutdinov	Mr. T. Erinç Engin, Mr. Tanil Tarhan	At UzNIM premises and online

No.	Description of activities	Date	Responsible person		Format
			UzNIM	TÜBİTAK UME	
8.4	Development of temperature measurement laboratory in the field of radiation thermometry;	2024 year February	Mr. Nuriddin Raymjonov, Mr. Kamoliddin Najmutdinov	Mr. Hümbet Nasibli	At UzNIM premises and online
8.5	Development of hardness measurement laboratory.	2024 year March	Mr. Nuriddin Raymjonov, Mr. Oybek Xalilov	Mr. Cihan Kuzu	At UzNIM premises and online
9	Organization of training and exchange of experience for UzNIM specialists, including:	During 2024 year	Mr. Nuriddin Raymjonov, 04-09 divisions	Mr. Ramiz Hamid	At UzNIM premises and online
9.1	training and internship on calibration of measuring instruments and standards for hardness measuring techniques;	2024 year March	Mr. Nuriddin Raymjonov, Mr. Oybek Xalilov	Mr. Cihan Kuzu	At UzNIM premises and online
9.2	training and practice in calibration of electromagnetic compatibility measuring instruments;	2023 year December	Mr. Nuriddin Raymjonov, Mr. Sheroz Ismatullaev	Mr. Bahadır Tektaş	At TÜBİTAK UME premises or online
9.3	<b>mass and related quantities:</b> - mass - small volume - strength - hardness - torque - density and viscosity	During 2024 year	Mr. Nuriddin Raymjonov, Mr. Sunnat Muminkhodjaev, Mr. Oybek Xalilov, Mr. Kamoliddin	Mrs. Beste Korutlu Yılmaz, Mrs. Gökçe S. Sarıyerli, Mr. Bülent Aydemir,	Both at UzNIM and TÜBİTAK UME premises

No.	Description of activities	Date	Responsible person		Format
			UzNIM	TÜBİTAK UME	
	<ul style="list-style-type: none"> <li>- gravimetry</li> <li>- liquid and gas flow</li> </ul>		Najmutdinov, Mr. Nuriddin Xolmirzaev	Mr. Cihan Kuzu, Mr. Çetin Doğan, Mr. Cafer Kırbaş, B. Akselli	
9.4	<p><b>electricity and magnetism:</b></p> <ul style="list-style-type: none"> <li>- AC power and voltage, electric power and impedance</li> <li>- electrical resistance</li> <li>- electric and magnetic fields</li> <li>- high voltage and high currents</li> </ul>	During 2024 year	Mr. Nuriddin Raymjonov, Mr. Ravshan Makhmudov	Mrs. Özlem Yılmaz, Mr. Enis Turhan, Mr. Bahadır Tektaş, Mr. Serkan Dedeoğlu	Both at UzNIM and TÜBİTAK UME premises
9.5	Training on the implementation of the ISO 17034 standard “General requirements for the competence of manufacturers of reference materials”	During 2024 year	Mr. Nuriddin Raymjonov, Mr. Kamoliddin Najmutdinov	Mr. Alper İşleyen	Both at UzNIM and TÜBİTAK UME premises
10	Ensuring the participation of TÜBİTAK UME in the activities of calibration of UzNIM standards in order to ensure their metrological traceability at the international level	Permanent	Mr. Nuriddin Raymjonov, 04-09 divisions	Mr. Enver Sadıkoğlu	Based on the needs of UzNIM, by holding a competition