

Draft Program of COOMET for assistance CEEMS for 2023-2025

Section 1. Organization of comparisons

№	Name of the comparison/ COOMET project	Offer of CEEMS	Possible partners		Terms	Note
			NMI (CEEMS)	NMI (not CEEMS)		
1.	T: Pilot comparisons in the field of calibration of glass thermometers (COOMET project 885/BY/23)	KG	CJSC "NBSM" (AM) Kyrgyzstandart (KG) UzNIM (UZ) TajikStandard (TJ)	pilot – BelGIM (BY) INM-MD (MD)	2023	Specify the participation of Moldova
2.	T: Pilot comparisons of digital thermometers (COOMET project 890/KZ/23)	KG	CJSC "NBSM" (AM) Kyrgyzstandart (KG) UzNIM (UZ) TajikStandard (TJ)	pilot – KazStandard (KZ)	2023	
3.	T: Additional comparisons of COOMET for thermal resistance converters	KG	CJSC "NBSM" (AM) Kyrgyzstandart (KG) UzNIM (UZ) TajikStandard (TJ)	pilot – INM-MD (MD) KazStandard (KZ)	2025	
4.	T: Pilot or additional COOMET comparisons for relative humidity hygrometers	KG	CJSC "NBSM" (AM) Kyrgyzstandart (KG) UzNIM (UZ)	pilot – East Siberian branch of FSUE "VNIIFTRI" (RU) INM-MD (MD)	?	Decision TC 1.10-2022: after the completion of the project 826/MD-a/21
5.	M: Additional comparisons in the field of mass measurement in the range from 1 mg to 1 kg <i>Object: Transported weight standards – weights with nominal values of 1 mg, 10 mg, 100 mg, 1 g, 10 g, 100 g, 1 kg</i>	AM	CJSC "NBSM" (AM) Kyrgyzstandart (KG) UzNIM (UZ) TajikStandard (TJ)	Pilot – VNIIM (RU) INM-MD (MD)	2023-2024	Decision TC 1.6-2022: VNIIM, Russia, should issue a form for the proposed project of COOMET in the prescribed manner.
6.	M: Additional comparison in the field of calibration of weights of accuracy class: E2; measurement interval: from 1 mg to 20 kg <i>Object: weights with (nominal values of 10 mg, 500 mg, 5 g, 10 g, 100 g and 5 kg)</i>	UZ	NMI of COOMET member countries CJSC "NBSM" (AM) Kyrgyzstandart (KG) TajikStandard (TJ) UzNIM (UZ)	?	2023-2024	See paragraph above Will be discussed at TC 1.6, which will be held on 27-28.09.2023

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7.	M: Comparisons within the framework of COOMET or bilateral comparisons <i>Object: Scales</i>	KG, TJ	Pilot - Kyrgyzstandart (KG) CJSC "NBSM" (AM) TajikStandard (TJ) UzNIM (UZ)	VNIIM (RU) INM-MD (MD)	2023-2024	<u>Decision TC 1.6-2022:</u> 1. Take note of the information on the interest of countries in organizing this type of work within the framework of COOMET. 2. Ask Mrs E.Kotova, Kyrgyzstan, to prepare proposals on the procedure for carrying out work for the next meeting of TC 1.6. <i>(based on comparisons conducted within the Kyrgyz Republic in June 2023, the concept of comparison for calibration of scales is being developed).</i>
8.	M: Additional comparisons of hydraulic piston pressure gauges of excess pressure according to method A and method B <i>Object: cargo piston overpressure gauges according to method A and method B (to clarify the characteristics in the working order)</i>	KG	CJSC "NBSM" (AM) Kyrgyzstandart (KG) - up to 7 MPa, UzNIM (UZ)	Pilot – VNIIM (RU) KazStandard (KZ)	2023-2024	<u>Decision TC 1.6-2022:</u> Ask VNIIM, Russia, to clarify the characteristics of the objects of comparisons with interested participants in a working manner, after which to issue the form of the proposed topic of COOMET in the prescribed manner.
9.	M: Additional comparisons in the absolute pressure range from 0 to 7 MPa <i>Object: pressure gauge with digital indication (nominal values: 0; 0,7; 1,4; 2,1; 2,8; 3,5; 4,2; 4,9; 5,6; 6,3 and 7.0 MPa), working medium: nitrogen or air</i>	UZ	Kyrgyzstandart (KG) Up to 70 MPa – in working order (UzNIM)	Pilot- VNIIM (RU) Up to 70 MPa – in working order (VNIIFTRI, RU) KazStandard (KZ)	2023-2024	<u>Decision TC 1.6-2022:</u> Ask VNIIM, Russia, to clarify the characteristics of the objects of comparisons with interested participants in a working manner, after which to issue the form of the proposed topic of COOMET in the prescribed manner.
10.	M: Comparisons within COOMET or bilateral comparisons <i>Object: pipette dispensers of variable filling</i>	KG	Pilot- ? Kyrgyzstandart (KG) TajikStandard (TJ)	Participants - ?	2024	<u>Decision TC 1.6-2022:</u> 1. Discuss at the next TC meeting the expediency of setting the topic of COOMET by comparisons, taking into

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						<p>account the current work on the projects of COOMET 766/GE-a/18 (COOMET.M.FF-S7) and 822/GE/20.</p> <p>2. Ask Mrs E.Kotova, Kyrgyzstan, to prepare proposals on the procedure for carrying out work for the next meeting of TC 1.6.</p> <p>(based on the calculation of the results of comparisons conducted within the Kyrgyz Republic during 2022, the concept of comparison for calibration of dispensers is being developed – Karymshakova Zh.I.) – It will be additionally discussed on TC 1.6, which will be held on 27-28.09.2023.</p>
11.	<p>M: Comparison of measuring dishes (flasks, pipettes) by gravimetric method (requires clarification of the name of the work)</p> <p><i>Object: glass measuring utensils (flask, pipette)</i></p>	KG	<p>Pilot- Kyrgyzstandart (KG) CJSC "NBSM" (AM) - ? UzNIM (UZ) TajikStandard (TJ)</p>	VNIIM (RU) INM-MD (MD)	2024	<p><u>Decision TC 1.6-2022:</u></p> <p>1.Take note of the information on the interest of countries in organizing this type of work within the framework of COOMET.</p> <p>2. Ask Mrs E.Kotova, Kyrgyzstan, to prepare proposals on the procedure for carrying out work for the next meeting of TC 1.6, as well as to clarify the list of participants in the working order.</p> <p>(based on the calculation of the results of comparisons conducted within the Kyrgyz Republic during 2022, the concept of comparison for calibration of dispensers is being developed –</p>

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						Karymshakova Zh.I.) – It will be additionally discussed on TC 1.6, which will be held on 27-28.09.2023.
12.	M: Additional comparisons in the field of calibration of compression force sensors <i>Object: reference compression force sensors (accuracy class: 00; measuring range: 100 kN, 500 kN, 1000 kN)</i>	UZ	CJSC "NBSM" (AM) - ? Kyrgyzstandart (KG) TajikStandard (TJ) UzNIM (UZ)	Pilot- VNIIM (RU)	2023-2024	<u>Decision TC 1.6-2022:</u> Ask VNIIM, Russia, to prepare proposals on the procedure for carrying out work for the next meeting of TC 1.6, taking into account the proposal made on the expediency of carrying out sensor calibration.
13.	M: COOMET project 788/KZ-a/19 "Pilot comparisons of kinematic viscosity units of a liquid"		UzNIM (UZ)	KazStandard (KZ)	2023-2024	At the moment, a technical protocol is being prepared
14.	M: COOMET Project 789/KZ-a/19 "Conducting pilot comparisons of liquid density"		UzNIM (UZ)	KazStandard (KZ)	2023-2024	At the moment, a technical protocol is being prepared
15.	M: Additional comparison in the field of liquid density measurements <i>Object: distilled water at 5 °C; 20 °C; 40 °C; 60 °C; tridecane C₁₃H₂₈ with a density of 756,356 kg/m³ at 20 °C</i>	UZ	NMI of COOMET member countries UzNIM (UZ)	Pilot- VNIIM (RU) or NMI of COOMET member countries INM-MD (MD)	2023 - 2024	<u>Decision TC 1.6-2022:</u> To discuss at the next meeting of the TC the expediency of setting the project of COOMET on additional comparisons with the specification of ranges (taking into account the results of comparisons on the project 789/KZ-a/19).
16.	M: Additional comparison in the field of measurements of the kinematic viscosity of a liquid <i>Object: Standard samples of kinematic viscosity of liquid from 0.3 to 100000 m²/s²</i>	UZ	NMI of COOMET member countries UzNIM (UZ)	Pilot- VNIIM (RU) or NMI of COOMET member countries China (?)	2023 - 2024	<u>Decision TC 1.6-2022:</u> 1. To discuss at the next meeting of the TC the expediency of setting the project of COOMET on additional comparisons, with the specification of ranges (taking into account the results of comparisons on the project 789/KZ-a/19).
17.	EM: Measures and stores of electrical resistance (by air method)	UZ	Kyrgyzstandart (KG) TajikStandard (TJ) (?)	?	2024	<u>Decision TC 1.3-2022:</u> Consider it expedient to

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18.	EM: Calibrator of alternating and direct current and voltage	UZ	Kyrgyzstandart (KG) TajikStandard (TJ) (?) UzNIM (UZ)	?	2024	conduct pilot comparisons of standards of the same level of accuracy, including two-sided. If a decision is made on the organization of comparisons and coordination of pilots, send to the TC secretariat and the COOMET Secretariat the forms of the proposed topics for their registration
19.	EM: "Additional comparison of measuring systems of high current transformers" (COOMET project 859/TR/22) <i>Object: inductive multi-band current transformer with nominal current conversion coefficients of 5 A ... 1000 A / 5 A</i>	UZ	UzNIM (UZ)	Pilot – TUBITAK UME (TR) KazStandard (KZ)	2022-2024	Discuss at the TC 1.3 meeting
20.	EM: Additional comparison in the field of calibration of current transformers of accuracy class: 0.05; measurement interval: from 0.5 to 1000 A	UZ	UzNIM (UZ)	KazStandard (KZ)	?	<u>Decision TC 1.3-2022:</u> Comparisons are underway on the project 859/TR/22 Discuss in a working order within the framework of TC 1.3
21.	EM: COOMET project 802/UZ-a/20 "Pilot comparisons in the field of voltage and DC and AC power measurements, electrical resistance" <i>Object: 6.5-digit digital multimeter: DC voltage 30 V at the limit (0 ÷ 1000) V; AC voltage 30 V at a frequency of 1 kHz at the limit (0 ÷ 750) V; DC 10 mA at the limit (0 ÷ 1) A; AC 10 mA at a frequency of 1 kHz at the limit (0 ÷ 1) A; electrical resistance 1 Ω at the limit (0 ÷ 1) GΩ</i>	UZ	Pilot - UzNIM (UZ)	AzMI (AZ) GEOSTM (GE) KazStandard (KZ) INM-MD (MD) NSC "IM" (UA)	2020-2024	
22.	EM: Additional comparison in the field of calibration of multimeters of accuracy class: 0.0003% of the measurement interval: from 0 to 1000 V (nominal values: 100 mV, 10 V, 100 V, 1000 V)	UZ	UzNIM (UZ)	?	2024 - 2025	<u>Decision TC 1.3-2022:</u> Comparisons are underway on the project 802/UZ-a/20 Discuss in a working order within the framework of TC 1.3
23.	RI: Two-way comparisons on the measurement of kerma in the air and the associated values of gamma radiation caesium-137 and/ or X-ray radiation	AM	CJSC "NBSM" (AM) ? TajikStandard (TJ)	VNIIM (RU)	2023-2026	<u>Decision of TC 1.9-2023:</u> Conduct two-way comparisons with VNIIM at the request of the

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						interested NMI
24.	AUV: Additional comparison in the field of microphone calibration <i>Object: Microphone-WS2P working standard (characteristic in the pressure field: ± 1 dB in the range from 5 Hz to 7 kHz; ± 2 dB in the range from 3.15 Hz to 20 kHz)</i>	UZ	UzNIM (UZ)	Pilot - TUBITAK UME (TR)	2023-2024	<u>Decision of TC 1.3-2023:</u> To include additional two-way comparisons in the field of microphone calibration to the Program of COOMET comparisons in order to confirm calibration capabilities (services) during microphone calibration (participants: UzNIM, TUBITAK UME). To request UzNIM to send to the COOMET Secretariat a form of the proposed COOMET project for registration in the prescribed manner.
25.	L: Caliper	KG	CJSC "NBSM" (AM) TajikStandard (TJ) UzNIM (UZ)	?	2023-2024	The issue will be discussed at the TC 1.5 meeting (autumn 2023).
26.	L: End length measures L: Additional comparison in the field of end measures <i>Object: plane-parallel end measures of length from 1 to 100 mm</i>	KG UZ	CJSC "NBSM" (AM) Kyrgyzstandart (KG) TajikStandard (TJ) UzNIM (UZ)	?	2023-2024	
27.	TF: Comparisons of electronic stopwatches	KG	Kyrgyzstandart (KG) UzNIM (UZ)	?	?	<u>Decision of TC 1.11-2023:</u> To assist the laboratory of Kyrgyzstan in the organization of calibrations of electronic stopwatches To clarify the status of the comparison: pilot or additional Any option (with accreditation) will be acceptable for the Kyrgyz Republic.

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28.	TF: Two-way comparisons of time scales UTC (UME) of Turkey and UTC (UzNIM) of Uzbekistan (COOMET project 883/UZ-a/23)	UZ	UzNIM (UZ)	Pilot – TUBITAK UME (TR)	2023-2024	
29.	M: Additional comparisons in the field of mass and volumetric water flow	UZ	UzNIM (UZ)	VNIIM (RU)	2024	Included based on the Proposals of the NMI (not CEEMS), based on the results of the survey

* Customs costs and logistics will depend directly on the geographical location of the participating countries.

Section 2. Internships under the authority of COOMET

№	Subject of training/internship	CEEMS interest	Number of specialists	NMI Offer CEEMS by format	Offer by NMI (not CEEMS)	Term/ number of hours	
1.	Calibration of pressure measuring instruments	AM TJ UZ	2	Offline, online		2023/ 72 h 1-2 quarters 2024/ 80 h	
2.	Calibration of mass measuring instruments	AM TJ	2	Offline, online		2023	
3.	Calibration of measuring instruments of geometric quantities (measuring goniometers, roughness devices, radius and threaded templates)	UZ TJ	2-3	Offline, online	VNIIMS (RU): Calibration of instruments for measuring surface roughness parameters and reference roughness measures. Training on the basis of FSBI "VNIIMS"	1-2 quarters 2024/ 80 h	
4.	Calibration of illumination devices	TJ UZ	3	Offline, online		1-2 quarters 2024/ 80 h	
5.	Calibration of electrical measuring devices	AM TJ UZ		COOMET member countries with CMCs in the KCDB database (offline)	VNIIFTRI (RU): Calibration of devices for measuring electric and magnetic fields	1-2 quarters 2024/ 80 h	
6.	Calibration of measuring instruments by thermometry	TJ UZ		COOMET member countries with CMCs in the KCDB database (offline)		1-2 quarters 2024/ 80 h	

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7.	Training on SI comparisons in thermometry	AM	2	Offline, online	VNIIFTRI (RU): Training on SI comparisons in thermometry (gas humidity). Temperature and thermophysical measurements	2024	
8.	Training on SI comparisons for electrical measurements		2	Offline, online	VNIIFTRI (RU): Conducting courses on calibration (verification) of electrical measuring instruments	2024	
9.	Training on SI mass comparisons		2	Offline, online		2024	
10.	Training on comparisons of SI force and pressure			Offline, online		?	
11.	Training on comparisons of SI ionizing radiation		3	Offline, online	VNIIFTRI (RU): In the field of ionizing radiation measurements (measuring instruments of absorbed dose, absorbed dose rate of photonic, electron, proton and neutron radiation; dose equivalent and dose equivalent power of photonic, electron and neutron radiation; volumetric activity of radioactive aerosols, vaporous iodine-131, radon, thoron; radon flux density; volumetric activity of beta-active gases). VNIIM (RU): The internship of specialists is carried out on a contractual basis. internships in the field of dosimetry, radioactivity measurement and neutron measurements.	?	Co-financing
12.	Verification of devices for photo and video recording of speed violations	KG	2	Russia, Offline		2022/ 48 h (?) The Kyrgyz Republic offers to conduct online	Co-financing
13.	Calibration of critical microscopes (by gas flow rate)		3		KazStandard (KZ): (paid, partial basis)	1-2 quarters 2024/ 80 h	Partially paid/gratuitous

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					<p>VNIIM (RU): The program of additional professional education is given on the website https://www.vniim.ru/program-ed.html It is also possible to conduct training on a separate application. The training is conducted on a contractual basis. We are ready to participate in training events on the topic of "Gas and liquid consumption" on a paid basis online and offline through VNIIM educational structures.</p> <p>VNIIR (RU): internships in the field of gas and liquid consumption. Internships with departure to NMI CEEMS on a paid basis.</p>		basis