Project of «Assistance to regional cooperation among the member-states of the RMO of COOMET»

The Regional Seminar
"Pilot comparison in the field of mass"

24th –26th of May, 2011 *Astana, Kazakhstan*

Participants

Representatives of the state metrological institutions of the COOMET member-states:

Country	Name, Surname	Organization
Azerbaijan	Tamilla Shabiyeva	National Center for Metrology under the Committee for Standards, Metrology and Patents of Republic of Azerbaijan, head of sector Tel: +99412 449-99-59 (in. 1-86) Mob: +99455 774-32-32 Mob: +99450 530-82-82 tamilla 72@gmail.com metrology@azstand.gov.az
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Georgia	Irma Rurua	GeoSTM, head of mass lab Georgia. Institute of metrology of GeoSTM Mob: +995 599 424-888 Tel: +995 32 60-66-29 irmarurua@yahoo.com
	Irakli Maglapheridze	GeoSTM, specialist of mass lab Georgia. Institute of metrology of GeoSTM
Germany	Karl-Christian Goethner	PTB christian.goethner@gmx.net
	Martin Firlus	PTB
Kyrgyzstan	Ekaterina Kotova	Standardization and Metrology Center, Head of Mechanic and Geometric measurement standards Tel: +996-312-66-26-20 (lab of mass) Tel: +996312-66-57-34 (depart of metrology) Tel/fax: +996-312-66-13-67 kakotova@rambler.ru
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Ukraine	Pavel Neyezhmakov	NSC "Institute of Metrology", head of COOMET secretariat
	Irina Kolozinska	NSC "Institute of Metrology" Tel: +980 57 -704-97-22 Iren_kolozinsky@ukz.net
	Lilia Teplitska	NSC "Institute of Metrology"
Kazakhstan	Chingis Kuanbaev	Kazakhstan, RSE «KazInMetr» Tel.: 793370 Mob.: 87014068890 chin_as@mail.ru
	Dinara Mukasheva	Kazakhstan, RSE «KazInMetr» Tel.: 793373 Mob.: 87015538323 dinaram.83@mail.ru

Program of the regional seminar:

Tuesday, 24. May

Time	Topic	Lecturer
09:15 – 09:30	Welcome of participants, Introduction to the seminar from director of pilot lab	Vasilij Michalchenko, (KazInMetr)
09.30-10.00	Self-introduction of the participants	All
10.00-10.15	Words of Secretary of COOMET	Pavel Neezhmakov (NSC "IM")
10.15-11.00	Presentation of standard base of "KazInMetr"	Chingiz Kuanbaev (KazInMetr)
11.00-11.30	Coffee Break	
11.30-12.15	**Part I:** Introduction into the question of comparison	Chingiz Kuanbaev
12.15-13.00	CIPM-MRA. Practical steps for CMC entries in KCDB of BIPM. Key, supplementary, pilot and other type of comparisons	Chingiz Kuanbaev Pavel Neezhmakov
13.00-14.30	Lunch	
14.30-15.15	Introduction to Supplement to JCRB Instruction for Appendix C the MRA: CMC for Mass and Related Quantities	Irena Kolozinska (NSC "IM")
15.15-16.00	Reference value of comparison. Methods of calculation	Irena Kolozinska

	reference value and criteria of the choosing of method	
16.00-16.30	Coffee Break	
16.30-18.00	Training course on term "Substitution weighing in air. Practical application"	Martin Firlus

Wednesday, 25. May

Time	Topic	Lecturer
09.30-11.00	**Part II:** Introduction into the practical exercise of measurement and uncertainty calculation Theoretical part of course "Uncertainty calculation"	Martin Firlus
11.00-11.15	Coffee Break	
11.15-13.00	Representation of the results of comparison – report of comparison: form and filling. Uncertainty budget and calculation of effective degrees of freedom	Lilia Teplitska (NSC "IM")
13.00-14.00	Lunch	
14.00-16.00	**Part III:** Practical exercise Practical work in lab of mass	Martin Firlus, Dinara Mukashaeva, all participants
16.00-16.15	Coffee Break	
16.15-18.00	**Part IV:** Evaluation of the result Calculation of uncertainty after practical exercise	Martin Firlus + All participants

Thursday, 26. May

Time	Topic	Lecturer
10.00-12.00	**Part V:** Free disposition for the discussion concerning handling of the transfer standards, transportation of the transfer standards, time schedule of comparisons, custom's documents and other formal questions	Pavel Neezhmakov, Martin Firlus, Chingiz Kuanbaev
12.00-13.00	Evaluation of the seminar and next steps. Closure of the seminar	Pavel Neezhmakov, Vasiliy Michalchenko
13.00-14.00	Lunch	

Opening of the seminar

Mr. V. Michalchenko, Director General of KazInMetr, opened the regional seminar "Pilot comparison in the field of mass**".**

Martin Firlus – scientist-keeper of the PTB mass measurement standard – greeted the participants on behalf of **PTB**.

On behalf of COOMET the participants were welcomed by Mr. **Pavlo Neyezhmakov – Head of the COOMET Secretariat** – who marked the importance of the seminar for the whole Region.

Moderator of the Seminar (PTB) – Karl-Christian Goethner – familiarized the participants with the aims of the seminar:

- Development and expansion of technical capabilities of the national metrology institutes by the example of the RSE "KazInMetr" mass lab;

- Practical studies on measurement in RSE "KazInMetr" mass lab;
- Practical studies on evaluation of results of mass measurements;
- Steps essential for preparing CMC for publication in BIPM KCDB.

Introduction of the participants

Participants of the seminar introduced themselves to each other.

Presentation of standard base of "KazInMetr"

Reporter: Chingis Kuanbaev – head of mass lab of KazInMetr.

Part I: Introduction into the question of comparison

Reporter: Chingis Kuanbaev – head of mass lab of KazInMetr.

1.1. Presentation: CIPM-MRA. Practical steps for CMC entries in KCDB of BIPM. Key, supplementary, pilot and other type of comparisons

Reporter: Pavel Neezhmakov

Discussion:

1.2. Introduction to Supplement to JCRB Instruction for Appendix C the MRA: CMC for Mass and Related Quantities

Reporter: Irena Kolozinska (NSC "IM")

1.3. Reference value of comparison. Methods of calculation reference value and criteria of the choosing of method

Reporter: Irena Kolozinska (NSC "IM")

Discussion:

1.4. Training course on term "Substitution weighing in air. Practical application"

Reporter: Keeper of the PTB mass measurement standard – Martin Firlus.

Part II: Introduction into the practical exercise of measurement and uncertainty calculation

Theoretical part of course "Uncertainty calculation"

Reporter: Keeper of the PTB mass measurement standard – Martin Firlus.

2.1 Representation of the results of comparison – report of comparison: form and filling. Uncertainty budget and calculation of effective degrees of freedom

Reporter: Lilia Teplitska (NSC "IM")

Part III: Practical exercise. Practical work in lab of mass

Participants of the seminar split into 2 groups for conducting practical measurements in KazInMetr mass lab.

Group members:

Group 1:	Group 2:
L. Teplitska	E. Kotova
I. Kolozinska	M. Kayumov
T. Shabiyeva	E. Davtyan
S. Babaryka	A. Nasriddinov
V. Bogdanova	I. Rurua
M. Varvasi	I. Maglaperidze
O. Barcary	D. Mukasheva
I. Milcamanaviciene	

Discussion after familiarization with the new KazInMetr mass lab:

J. Rakhimov: *How traceability is provided for the measurement standard?*
Ch. Kuanbaev: *Three weights of 1 kg each* is *traceable to BIPM, one set of weights is PTB, the other to ZMK.*
M. Varvasi: *What are the results of the calibration of 3 weights, which were marked as KZ1, KZ2, KZ3?*
Ch. Kuanbaev: *Uncertainty is 0,015 mg.*
T. Shabieva*: What about the financing of the project that covered establishment and equipment of the lab?*
Ch. Kuanbaev: *From government.*
E. Kotova: *What method should we use in lab now?*
M. Firslus: *It will be Gauss method.*

Part IV: Evaluation of the result

Calculation of uncertainty after practical exercise

Reporter: Keeper of the PTB mass measurement standard – Martin Firlus and all participants

Part V: Free disposition for the discussion concerning handling of the transfer standards, transportation of the transfer standards, time schedule of comparisons, custom's documents and other formal questions (*Annex 1*)

Reporters: Pavel Neezhmakov, Martin Firlus, Chingiz Kuanbaev

Discussion

Evaluation of the seminar and next steps. Closure of the seminar

Pavel Neyezhmakov informed the participants about dates of this comparisons and methods of processing results of comparisons in the field of mass, planned for 2011. According to the Technical Protocol of comparisons the collaborators of mass laboratory of NMI of Armenia and Tajikistan within the preparation for the comparisons should take part in the training (RGP "KazInMetr", Kazakhstan, NISM, Kyrgyzstan), to provide the equipment of laboratories with comparators, after it the laboratories can be included into the list of comparison participants.

Vassilii Michalchenko expressed gratitude to all the participants, COOMET and PTB for organizing and conducting this seminar.

Karl-Christian Goethner summarized the results of the seminar which was of a great interest from the point of its usefulness and fruitfulness and he also pointed out the next steps.

Pavel Neyezhmakov and **Nurlan Djumashev** handled certificates and souvenirs to the participants.

Summarized evaluation sheet of the seminar (*Annex 2*)

Pavel Neyezhmakov,
Head of COOMET Secretariat
Chairman of TC 4 “Information and training”

Chingis Kuanbaev,
Head of Mass Lab
KazInMetr,

Karl-Christian Goethner,
moderator, PTB

Annex 1

Schedule of comparison

PTB	KazInMetr	July 2011	shipment of weights to pilot
KazInMetr	Kyrgyzstan	12.09.11	shipment of weights to participant
Kyrgyzstan		26.09.11	receiving of weights by participant
		26.09-17.10.11	period of comparison (calibration)
Kyrgyzstan	KazInMetr	17.10.11	shipment of weights to pilot
KazInMetr		31.10.11	receiving of weights by pilot
		31.10.11-14.11.11	period of comparison (calibration)
KazInMetr	Uzbekistan	14.11.11	shipment of weights to participant
Uzbekistan		21.11.11	receiving of weights by participant
		21.11-26.12.11	period of comparison (calibration)
Uzbekistan	KazInMetr	26.12.11	shipment of weights to pilot
KazInMetr		6.01.12	receiving of weights by pilot
		6.01-16.01.11	period of comparison (calibration)
KazInMetr	Azerbaijan	16.01.11	shipment of weights to participant
Azerbaijan		06.02.12	receiving of weights by participant
		06.02.12-12.03.12	period of comparison (calibration)
Azerbaijan	KazInMetr	12.03.12	shipment of weights to pilot
KazInMetr		25.03.12	receiving of weights by pilot
		25.03.12-16.04.12	period of comparison (calibration)
KazInMetr	Georgia	16.04.12	shipment of weights to participant
Georgia		30.04.12	receiving of weights by participant
		30.04.12-21.05.12	period of comparison (calibration)
Georgia	KazInMetr	21.05.12	shipment of weights to pilot
KazInMetr		4.06.12	receiving of weights by pilot
		4.06.12-02.07.12	period of comparison (calibration)
KazInMetr	Moldova	02.07.12	shipment of weights to participant
Moldova		16.07.12	receiving of weights by participant
		16.07.12-24.09.12	period of comparison (calibration)
Moldova	KazInMetr	24.09.12	shipment of weights to pilot
KazInMetr		15.10.12	receiving of weights by pilot
		15.10.12-12.11.12	period of comparison (calibration)
KazInMetr	PTB	12.11.12	shipment of weights to PTB