



TC 1.5 COOMET "Length and Angle" ANNUAL REPORT 2019

**Chairman of TC 1.5
O. Kostrikov**



Tbilisi, Georgia 17-18.09.2019





1 General characteristics of cooperation in the field of "Length and angle"

The technical committee TC 1.5 "Length and angle" implements COOMET work in the field of metrological support of linear-angular measurements, from nanometers to hundreds of kilometers.

There are three subcommittees in the TC:

- TC 1.5.1 "Measurements of large distances in the open air";
- TC 1.5.2 "Measurements of length in the nanometer range";
- TC 1.5.3 "Measurement of deformations".



No	Project	Name of project
1	612/UA/13	Comparison of line scales up to 200 mm
2	657/UA/15	Comparison of the measurement standards of the line scales between 1 mm and 1000 mm.
3	714/UA/17	Comparison of standards for the measurement of end measures of length interference method in the range of 200 to 1000 mm
4	746/BY/18	Calibration of gauge blocks by interference method.



612/UA/13 "Comparison of line scales up to 100 mm"

The scale for comparisons is made at this stage. Pilot coordinator is NSC "Institute of Metrology".

Participants: VNIIM (Russia) and INIMET (Cuba)

657/UA/15 Comparison of the measurement standards of the line scales between 1 mm and 1000 mm.

The project is at the stage of approval.

714/UA/17 "Comparison of standards for the measurement of end measures of length interference method in the range of 200 to 1000 mm"

The project is at the stage of approval.

746/BY/18 "Calibration of gauge blocks by interference method"

The project is at the stage of approval.



Agreed projects:

№	Project	Name of project
1	590/UA/12	Comparison of precise rangefinder systems
2	591/UA/12	Comparisons of precise navigation systems GPS/GLONASS
3	674/UA/15	Comparison of standards nanometer range
4	690/UA/16	International comparisons of internal and external diameter gauges
5	705/UA/16	Measurement of two-dimensional standard for coordinate measuring machines
6	742/UA/18	The comparison of length standards for measuring end measures in the range up from 0,5 mm to 100 mm.
7	776/BY/19	Key comparison of standards in the field of measurement of 3D parameters of surface texture



590/UA/12 "Comparison of precise rangefinder systems"

NSC "Institute of Metrology" (Ukraine) headed the comparison as NMI-pilot. Participation in the comparison was confirmed by BelGim (Belarus) and NIM (China). NSC "Institute of Metrology" and NIM conducted measurements in October-November 2019

Measurement of BelGim is scheduled for April 2020.

591/UA/12 "Comparisons of precise navigation systems GPS/GLONAS"

NSC "Institute of Metrology" (Ukraine) headed the comparison as NMI-pilot. Participation in the comparison was confirmed by BelGim (Belarus) and NIM (China). NSC "Institute of Metrology" and NIM conducted measurements in October-November 2019

Measurement of BelGim is scheduled for April 2020.



674/UA/15 "Comparison of standards nanometer range"

The project is in the progress. BelGIM measure the artifact now.

690/UA/16 "International comparisons of internal and external diameter gauges"

The measurements are completed. Processing results.

705/UA/16 Measurement of two-dimensional standard for coordinate measuring machines

The project is in the progress.



742/UA/18 "The comparison of length standards for measuring end measures in the range up from 0.5 mm to 100 mm."

The list of participants was agreed. Measurements are continues.

776/BY/19 "Key comparison of standards in the field of measurement of 3D parameters of surface texture"

Measurements are in progress



Completed projects:

No	Project	Name of project
1	524/UA/11	Intercomparison of the national standards unit of the plane angle
2	529/RU/11	Comparison of interferometers for measurement of tapes up to 20 m
3	569/UA/12	Comparison of length standards in the range of 0.001 to 1 mm
4	570/UA/12	Comparisons of standards of flatness
5	610/UA/13	Comparisons of standards of flatness diameter up to 300 mm
6	658/BY/15	Comparisons of national measurement standards for deviations from linearity and flatness; the measurement range for deviations from linearity is 0 to 50 μm , the surface length is 0.4 to 5 m.
7	673/UA/15	Comparison of initial measuring instruments of the parameters of involute gears
8	765/UA/18	The bilateral comparison of length standards for measuring end measures in the range up from 0,5 mm to 100 mm



524/UA/11 "Intercomparison of the national standards unit of the plane angle"

The project is completed. Final Report is undergoing Expertise in CCL.

529/RU/11 "Comparison of interferometers for measurement of tapes up to 20 m"

The project is completed. Final Report is undergoing Expertise in CCL.

569/UA/12 "Comparison of length standards in the range of 0.001 to 1 mm"

The project is completed. The project is undergoing examination in JCRB.

570/UA/12 "Comparisons of standards of flatness"

The project is completed. The project is undergoing examination in JCRB.

610/UA/13 "Comparisons of standards of flatness diameter up to 300 mm"

The project is completed. Report B is being prepared.



658/BY/15 "Comparisons of national measurement standards for deviations from linearity and flatness; the measurement range for deviations from linearity is 0 to 50 μm , the surface length is 0.4 to 5 m"

The project is completed. Correction of Report B.

673/UA/15 "Comparison of initial measuring instruments of the parameters of involute gears"

The project is completed. The project is undergoing examination in JCRB.

765/UA/18 "The bilateral comparison of length standards for measuring end measures in the range up from 0,5 mm to 100 mm"

The project is completed. The JCRB examinations is completed.

SMS publishing is expected.



No	Countries	Number of SMS lines
1	Azerbaijan	0
2	Armenia	0
3	Bulgaria	19
4	Belarus	16
5	Bosnia-Herzegovina	0
6	Germany	97
7	Georgia	0
8	Kazakhstan	6
9	Kyrgyzstan	0
10	China	78
11	Korea	0
12	Cuba	0
13	Lithuania	9
14	Moldova	1
15	Russia	23
16	Romania	20
17	Slovakia	18
18	Tajikistan	0
19	Turkey	76
20	Uzbekistan	0
21	Ukraine	27



Decision of TC 1.5 2019

1. On the organization of TC 1.5 work

Cooperation within COOMET TC 1.5 "Length and Angle" to be recognized as satisfactory.

To charge the coordinators of comparisons to send quarterly a report on the status of the comparisons being held to TC Chairperson (last week of the quarter).



Proposals following TC 1.5 meeting

To update the database of the stage of comparisons being performed.

FSUE "VNIIMS" (Russia) to register bilateral comparisons of standards of flat angle with RSE "KazInMetr".

To update the list of experts in the field of linear and angle measurements. To charge the Chairperson of TC to develop and distribute the application form.

To perform registration of projects 657/UA/15 и 612/RU/13.

To charge BelGIM to register supplementary comparisons on calibrations of line length of the basis.

To perform updating of the web-page of TC 1.5 at the website of COOMET.



The next meeting of COOMET TC 1.5
"Length and Angle" will be held on
15-16 September 2020 in INIMET (Cuba).



Thank you for attention!