	COOMET Recommendation **PROCEDURE for the International Competition "The Best Young Metrologist of COOMET"**	**COOMET R/GM/18:2013**

Approved at the 18th COOMET Committee Meeting (Kharkov, Ukraine, 15–16 May 2008)
Updated and amended
at the 20th COOMET Committee Meeting (Astana, Kazakhstan, 21–22 April 2010),
at the 17th COOMET President's Council Meeting (Lvov, Ukraine, 14–15 November 2012) and
at the 23rd COOMET Committee Meeting (Nizhny Novgorod, Russia, on June 5–6, 2013)

This document determines the procedure for the competition of young metrologists (CMY) of National Metrology Institutes (NMIs) and other organizations operating in the field of metrology in COOMET Member Countries and the criteria for evaluating their submitted scientific papers and presentations.

1 TERMS AND DEFINITIONS

A young metrologist is an expert under the age of 35 who works in the field of scientific and applied metrology at NMIs or other metrological institutions of COOMET Member Countries, independently on his/her academic degree and position.

A candidate for participation in the competition (hereinafter referred to as candidate) is a young metrologist *(or a group of ones)* who submits his/her paper for participation in the competition (the largest number of co-authors is three members) and one who will represent the oral report and presentation. Writing work and oral report should be devoted to the same topic.

Note – candidates can be research assistants, graduate students, doctoral candidates, -engineering- technical workers of NMI and others metrological organizations.

2 GENERAL PROVISIONS

2.1 Main objectives and aims of CMY

The competition is aimed at:

- encouraging young specialists in the field of metrology to introduce their scientific work to the metrological / scientific community
- introducing one's work to colleagues of other metrological institutions
- learning to apply generally accepted methods and techniques for presentations
- publishing the papers in the Booklet
- publishing papers and presentations online and/or on electronic carriers (e.g.CD)
- to find, support and encourage young metrologists in the achievements in the field of scientific and applied metrological activity that contribute to the development of metrology and cooperation of COOMET Member Countries and in global metrology society scales
- to inform metrological organizations about the scientific and applied papers submitted for the competition, results and winners of the competition.

- awareness-building among the wider audience about part and achievements of metrology through mass-media.

2.2. Time and place of conducting CMY

The competition "Best Young Metrologist of COOMET" is one time per two years in one of the metrological organizations of COOMET Members Country. All information about exact dates and venue of meeting are published on the site of COOMET and spread among the COOMET organizations **no later than for one year** before CMY.

It is recommended to combine CMY with scientific-practical conference in the field of metrology.

2.3 Scientific committee (SciCom, jury of CMY)

There are experience specialists in metrology in the SciCom, which are appointed by Member Organizations of COOMET (No more than 2 members from one COOMET Member Country) by 3 months before the competition. The general number of Scientific Committee members shouldn't overcome 9 persons. The membership of committee is proved by COOMET President's Council.

Science committee deals with next items:

- analyzes all work texts of candidates extended to members of committee by 1 month before CMY based on criteria transferred in Attachment 9;

- hears the presentations and overs the competition reports of candidates and estimates them according to the criteria transferred in Attachment 9 (acts as a jury).

2.4 Organization of CMY – the aims of Organization Committee and on-line editor of TC4 COOMET

One of the branches of activity of TC 4 COOMET "Information and training" is carrying out CMY.

Organization committee of CMY should include the officers from hosting metrological organization of COOMET Member Country and also TC member(-s) from relevant COOMET Member Country. In case the hosting committee suffers from lack of representatives or needs technical support, it can ask for help the countries-members of TC 4.

The Organization Committee is assigned by one year before the CMY, names of members of the Committee and data at least one contact person (e-mail, phone, fax, post address) are reported to all members of the COOMET Committee and National Secretariat COOMET Member Countries and published on the site of COOMET.

Organization Committee of CMY achieves the next objectives:

- accommodates the lecture hall/seminary room with tables and chairs for all candidates, members of Scientific Committee and other attendees of the meeting. The hall/room should be equipped with modern presentation technique (computer/laptop, TV projector, pointer, white desk/"flipchart" with felt pen etc. – all in double complete set for extra cases), technical experts' services during holding the CMY, non-alcohol drinks for all candidates and members of Scientific Committee during reports presentation;

- provides visa support (directs official invitation etc.), helps to make reservation of hotel rooms, to passage on destination between airport/railway station and hosting metrology organization or a hotel for candidates and Scientific Committee Members;

- collects the registration forms of the candidates (Annexes 6, 7, 8) and attached documents by 2 months before the CMY, checks the set of documents of relevant references and, if needed, call the candidates to request their essential data;

- direct the **bilingual** annotations/full work texts **(in English and Russian)** of candidates to Scientific Committee Members by 1 month before the CMY, transmits bilingual annotations to the on-line editor for public on COOMET website on a level with project of program of the competition(schedule of representation);

- beforehand the meeting booklets of CMY (full-text paper/electronic appendix of all works) to distribute them to all candidates and Scientific Committee Members at the beginning of the competition;

- organizes food during the CMY and one ceremonial dinner for communication of the candidates, Scientific Committee Members and coordinators of the CMY;

- upon completion of the CMY: the names of winners and data of their acceptance to NMI/metrological organization to on-line editor for publishing on COOMET site and, by approbation of candidates, adds their report's materials (The full materials of reports and photos from the CMY should be password-protected be, candidates, Scientific Committee Members and Members of TC 4;

- gives the Certificates for all participants of CMY.

2.5 The winners of CMY

Scientific and practical papers published in the complete form, oral reports and presentations are basic for evaluation by Scientific Committee Members in concordance with different measurement categories, detailed in Annex 9.

The winners of the first (the CMY winner) and also second and third places (awardee of CMY) are defined on the basic of results scored by Scientific Committee.

The special prize/cash prize is granted for the best English report on the finishing meeting of TC4.

The prizes/cash prizes for winner and awardees are granted by a COOMET Presidential Council Member in a solemn atmosphere on the final meeting of CMY. The winner of the competition will be given the title of "The Best Young Metrologist of COOMET" and granted with the diploma of the first degree and a bonus. The form of the diploma is given in *Annex 1*.

The second and third place winners of the competition "The Best Young Metrologist of COOMET" will be granted with the diplomas of the second and third degree and bonuses. The forms of the diplomas are given in *Annexes 2 and 3*.

The form of the diploma for the best English report is given *in Annex 4*.

2.6 Financing of CMY

Payments for participating in CMY from candidates and Scientific Committee members are not provided. Drinks, dinner and ceremonial meal are not paid by candidates and Scientific Committee Members

The financing of the conducting and participation in the competition, as well as awarding/getting cash prize to the winners is made at the expense of sponsors and institutions of COOMET Member Countries. The Organizing Committee is responsible for the collection of the corresponding funds.

3 COMPETITION PROCEDURES

3.1 Nomination and selection of candidates

Candidates for participation in the competition “The Best Young Metrologist of COOMET” will be nominated by their institutions accounting demands given in Part 1 present recommendation.

The representatives of TC 4 and, probably, the other COOMET representatives of structural units, acting in different NMI or metrological organizations are suggested to form the advises for nomination in their organization and agreed the term and criteria of internal screening with responsible scientific and technical advices of these organizations. It is recommended to organize the process of internal selection the candidates in the same way as final stage of CMY that is giving an opportunity to take part in CMY for all available young metrologists independently of post and academic degree.

The lists of candidates are pointed in Organizing Committee CMY as official letter of COOMET Committee Member from relevant Member Country **including full work texts of reports and full-completed, signed and certified with a seal documents according 3.2**, no later than by 2 months before CMY.

3.2. Presentation of full work texts

The presented letter can be made singly or as a part of the group of authors. The group of the candidates whose paper is submitted for participation in the competition must consist of no more than 4 persons (it can include the candidate, speaker on competition as main author and 3 or less co-authors). At the same time each candidate must be a direct participant of the work conducted by the group and make an important practical and creative contribution to the paper of the group.

The requirements to papers are in Annex 5.

Persons who were included in other groups of candidates in the current year or are individual candidates for participation in this competition should not include in the group of candidates.

The papers which took part in other similar competitions and received prizes and rewards cannot be accepted for the participation in the competition.

The papers which were exposed on CMY before could be presented on followed competitions only in case if it was made significant progress in comparison with previous results. In this case, candidate should submit for consideration his/her previous papers to Scientific Committee.

The acceptance of the papers submitted for the participation in the competition of CMY begins from the moment of announcing the competition and ends 2 months before its beginning by Organizing Committee. The papers and the accompanying documents arranged according to *Annexes 5–8* of this Procedure should be sent by e-mail to the address of the Organizing Committee(the signed papers certified with a seal for sending by e-mail are scanned beforehand) .

Names and addresses of candidates, subjects and bilingual annotations of their papers exposed on the competition should be published on COOMET site for the purpose of informing staff of NMI, other metrology organizations and public. Publishing of these data in metrology magazines of NMIs of COOMET Country Members is recommended.

Full texts of the papers are published in collection of the papers of CMY. The collections are given to all candidates and participants of Science Committee of CMY in the beginning of the competition.

The fact of sending the papers on CMY is confirmed that candidates, co-authors and teir NMI/metrology organizations agree with publishing bilingual annotations of the papers on the COOMET site and including full text of the papers to the printed collection of the papers of CMY.

3.3 The reports and presentations

The papers submitted for participation in the competition will be preliminarily considered by the judging panel.

The competition includes the presentation of the papers by the participants (with subjects relevant to the papers), discussion of the papers and their evaluation by the judging panel.

The materials of the papers (usually in form of file-presentation *.ppt) should be prepared by the beginning of the competition.

The materials of the papers gathered during the competition by Organizing Committee and placed with limited access on COOMET site (in *.pdf format): the password submitted on e-mail no later than 5 weeks after holding the competition to other candidates, members of judging panel and TC 4.

Representing the materials of the reports, the candidate confirms his agreement on distribution among limited number of persons. Nevertheless, he/she can exclude some slides, if publishing of them can be right violation. Despite the fact that report usually include files in *.ppt format, the candidate can take the decision to save file in the *.pdf-format for the further digital distribution.

3.4 The criteria of evaluation the papers and presentations

See the evaluation criteria in detail in *Annex 9*.

3.5 Subsequent publication

The Scientific Committee can propose to place the materials of works on COOMET site – first of all the report of the winners – and make the loading free for all site-visitors or recommend full texts of the letters in free-loading COOMET site or publishing in the science and technical magazine. At this case Science Committee or Organizing Committee should discuss all necessary steps, including copyright issues with the conforming candidate.

4. GENERAL PLAN OF PREPARING AND CARRYING OUT OF THE CMY

Terms of holding CMY	Carrying out items	Executive
2 years before	A hosting organization among organizations of COOMET Member Countries for the next CMY (by agreed with COOMET TC4 Members) is coordinated	COOMET members of Committee, or members of TC 4 from the country authorized by COOMET Committee Member for approval the data decision, TC Chairperson
1 year before	Exat time and place of holding the competition are reported to COOMET Members and on the site of organization, contact person is appointed, who represents the Organizing Committee, announcement about acceptance of competition letters	Organizing Committee
1 year – 2 months before	Submitting of list of the candidates. Full texts of their letters with annotations (**in Russian and English**) and full-completed, signed and certified with a seal Annexes 6,7,8. To the Organizing Committee	COOMET Member Committee
3 month before	Forming Scientific Committee and approval by COOMET President Council	COOMET Secretariat TC 4 Chairperson
2 months before	PEREMPTORY DAY FOR CANDIDATES: receiving full texts of the letters and full-completed, signed and sertified with a seal Annexes 6,7,8 directed in the Organization Committee address is over	Candidates Organizing Committee
1 month before	The Organizing Committee checks carrying out the letters' full-texts and full-completed forms, requests missing materials and data from the candidates etc. After all letters with Annexes 6,7,8 send on consideration to Science Committee Members, the annotation sends to online editor of COOMET TC4 through COOMET Secretariat	Organizing Committee

Immediately before the competition	The letters published in Collection of the letters of CMY by Organizing Committee and preparing for distribution to candidates, National Committee members etc. *Language of the letter written in Collection of the letters of CMY is chosen by the candidate and pointed in Registration Form (Annex 6). The CANDIDATES prepare the materials of their reports	Organizing Committee Candidates
One month after	All participants are proposed to receive digital versions of the letters' materials*	Organizing Committee
Setting the date of CMY	Holding of CMY	Candidates Organizing Committee Scientific Committee

** In case if the submitted letter has a group of authors, the collection of the letters of CMY and digital versions of materials of reports are presented to all authors. The collections send through the direct participants of competition if it is possible.*

Annex 1

Form of Diploma of 1-st Degree for the winner of the competition "The best young metrologist of COOMET"

ЕВРО-АЗИАТСКОЕ СОТРУДНИЧЕСТВО ГОСУДАРСТВЕННЫХ МЕТРОЛОГИЧЕСКИХ УЧРЕЖДЕНИЙ

COOMET

EURO-ASIAN COOPERATION OF NATIONAL METROLOGICAL INSTITUTIONS

ДИПЛОМ
DIPLOMA

1 СТЕПЕНИ
DEGREE

Награждается победитель конкурса
is given to the winner of the competition

"Лучший молодой метролог КООМЕТ"
"The Best Young Metrologist of COOMET"

20_ _

_____
(фамилия и имя/ name)

_____
(наименование страны/ country)

за достижения в сфере научной и прикладной метрологической деятельности, которые способствуют развитию науки и сотрудничества стран-членов КООМЕТ.

for the achievements in the field of scientific and applied metrological activity that contribute to the development of science and the collaboration of COOMET Member States.

Президент КООМЕТ
The President of COOMET

Annex 2

Form of Diploma of 2-nd Degree for the winner of the competition "The best young metrologist of COOMET"

Annex 3

Form of Diploma of 3-rd Degree for the winner of the competition "The best young metrologist of COOMET"

ЕВРО-АЗИАТСКОЕ СОТРУДНИЧЕСТВО ГОСУДАРСТВЕННЫХ МЕТРОЛОГИЧЕСКИХ УЧРЕЖДЕНИЙ

COOMET

EURO-ASIAN COOPERATION OF NATIONAL METROLOGICAL INSTITUTIONS

ДИПЛОМ
DIPLOMA

3 СТЕПЕНИ
DEGREE

Награждается победитель конкурса
is given to the winner of the competition

"Лучший молодой метролог КООМЕТ"
"The Best Young Metrologist of COOMET"

20_ _

_____
(фамилия и имя/ name)

_____
(наименование страны/ country)

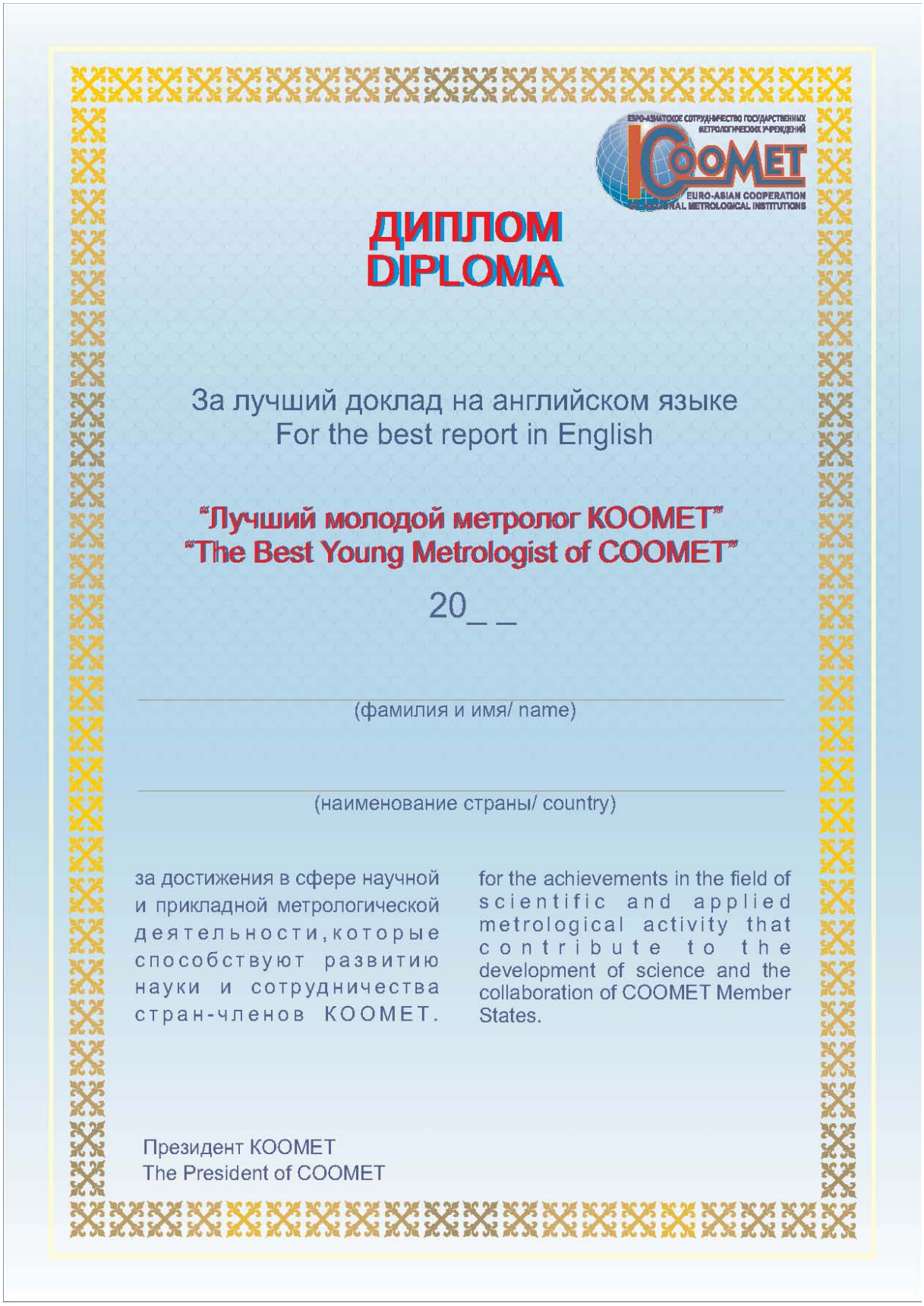
за достижения в сфере научной и прикладной метрологической деятельности, которые способствуют развитию науки и сотрудничества стран-членов КООМЕТ.

for the achievements in the field of scientific and applied metrological activity that contribute to the development of science and the collaboration of COOMET Member States.

Президент КООМЕТ
The President of COOMET

Annex 4

Form of the Diploma for the winner of the competition
"The best report in English"



Annex 5

Criteria for papers

1. The scientific papers having the following structure will be admitted for participation in the competition:
    a. statement of the problem in the general form and its connection with important scientific or practical tasks;
    b. analysis of the latest research and publications containing the ways of solving these problems and referred to by the author;
    c. determination of the way of solving the general problem the is devoted to;
    d. statement of the task, formulation of the aims of the paper;
    e. presentation of the main research material with explanation of the obtained scientific results;
    f. conclusions from research data and the prospect to future investigations in this direction.

2. The paper submitted for participation in the competition has to have scientific character and/or social-economic effect for application in metrology.

3. The paper should be written on a computer with 1 line spaces, left margin of 3 cm, top, bottom and right margins of 2 cm, Arial font and size of 11 points.
   The length of the paper should not exceed 4 printed standard A4 size pages, including all illustrations, tables, list of literature, etc.. Abstracts have to be submitted in Russian and English language.
   Additionally, the text file has to contain all formulas and tables. The illustrations that are not made in Word Graphics Editor have to be delivered in separate files, preferably in TIF, BMP, JPG, WMF, CorelDRAW formats. The minimum size of photographs is 9×12 cm. The formulas have to be represented only in Microsoft Equation 3.0.

4. The institutional details of the paper have to include: title of the paper (in Russian and English language); name(s) of the author(s); name of the institution where the paper was written, city and country, and also phone number, fax and e-mail of main author.

5. The institutional details of the paper are accompanied with annotation (150-200 words) which sets in main contents of the papers in form which is available for all metrological society. Annotation (as the title of the letters) should be presented in two languages and can be published.

6. In addition to the file in *.doc-format is recommended to export the letters in *.pdf-format or scan and send the relevant printed version for checking it for correct formatting by Organizing Committee before adding in Collection of the letters.

7. Only the formulas referred to in the text should be numbered (in round brackets on the right).

8. Tables and references to them must have consecutive order numbers.

9. Abbreviations of words, names, titles, measures, physical, chemical, mathematical quantities must be commonly accepted, units of measurement must be represented according to SI.

10. Bibliographic references in the text of the article (report) should be represented by means of numbers in *square* brackets [] with order numeration within the whole article (report) according to the list of literature. Names of authors, title of the paper, place of publication, publishing house, year of publication, volume number, issue number, total number of pages should be indicated for books. Names of authors, title of the journal, year of publication, volume or part, issue number, pages (from - to) should be indicated for journal articles. The list of literature should be formed in the order of its using in the text, regardless of the language.

    Articles and reports not drawn up according to the above mentioned rules will not be considered and returned to their authors.

Annex 6

Information form of a candidate for participating in the competition
"Best young metrologist of COOMET"
Filled by a candidate and certified by the Head of the NMI/metrology organization which has nominated a candidate

Full name of NMI/ metrology organization
nominated the candidate
(ZIP code, postal address, telephone number, e-mail)

INFORMATION
About young metrologist who is a candidate for participation in the competition
"Best Young Metrologist of COOMET-20__"

Candidate for participation in the competition	
Co-authors (if they present)*	
Title of the paper submitted for the competition	
Full name	
Date of birth	
Department, position etc.	
Academic degree	
Academic status	
Work experience in the field of metrology	
Telephone number, e-mail	
Home address	
Home telephone number	
Other information	

I hereby agree that:

- attached papers submitted by the above named author (a group of ones) will be includes in booklet "**Best young metrologist of COOMET – 20__"** in full size in_____(language is chosen and noted by the candidate",
- annotations will be published on COOMET site in English and Russian (available for all visitors),
- access to the letters' materials presented on the competition as the presentation will receive all participants of the action (exception of some slides is possible in copyright protection goals or for the other reasons),

and this way we set for preparing article confided in observance, reports and other in our organization.

Candidate (Name/signature) _____ / _____/

Co-author #1(Name/signature)* _____ / _____/

Co-author #2(Name/signature)* _____ / _____/

Co-author #3(Name/signature)* _____ / _____/

President of NMI/metrology organization _____ / _____/
(Signature) (signature interpretation)

* If a group of authors is regarded in the letters.

seal

Annex 7

The form of the reference information about candidate for participation in the competition "Best young metrologist of COOMET"

Filled by the candidate and representatives of NMI/metrology organization nominated the candidate (by his/her heads or Council Chairperson at nomination of the candidates at CMY (Council meeting, Scientific and technical conference)) from relevance NMI/metrological organization

INFORMATION

on the scientific and practical activities of a candidate for participation in the competition
"Best Young Metrologist of COOMET-20__"

1 Main directions of the scientific and practical activity: _____
_____
_____
_____

2 Title of the paper submitted for participation in the competition and annotation to it:
_____
_____
_____
_____

3 Number of publications: total _____, including:
monographs ____,
articles peer reviewed in international scientific magazines in English ____,
articles in other peer reviewed scientific magazines :___,
oral reports on the scietific conferences ____,
inventions ____, patents ____.

4 Experience of the candidate in the field of metrology (work in other organizations, staying/studying abroad, participating in realization of the projects, appointment as a head of laboratory/department etc.):
_____
_____
_____

5 Additional Information about the candidate: _____
_____
_____
_____

_____ 20__ _____
(candidate's signature)

Academic (Scientific and Technical)
Council Secretary _____ / _____/
(signature) (name)

Annex 8

The form of extract from the Minutes of the Council meeting on the nomination candidates at CMY (Council meeting, Scientific and technical conference) from relevant NMI/metrology organization

Issued by Secretary and signed by the Chairman from the relevant Council (perhaps with participation of the head of department, which the candidate works in)

***ATTENTION**: Current form serves for ensuring the Scientific Committee with a number of common information about the importance of the work (when evaluating the criteria 2 and 4 of Annex 9)*

EXTRACT

from the Minutes of the Council meeting on the nomination candidates at "Best young metrologist of COOMET – 20__" (Council meeting, Scientific and technical conference)

_____

(full name of the organization)

HEARD: On promoting the paper of _____

(name(s) of the candidate(s))

_____

_____

(title of the paper)

for participation in the competition **"Best Young Metrologist of COOMET"** in 20__

AGREED: To propose for participation in the competition **"Best Young Metrologist of COOMET"** in 20__ the paper of

IMPORTANCE OF CANDIDATE'S WORK

1) activity in metrology in within organization	
2) ensuring traceability within institute or in scale of the country	
3) for economics of the country and society on the whole	

Note – grounding is written in every item (1-3)

Personal contribution of Candidate

_____

(is evaluated in case of presence of co-authors in presented CMY work: personal researches made by the candidate is pointed , his contribution in work as an author, having articles, patents, reports on the meetings under the project topic are pointed too)

Academic (Scientific and Technical)
Council Chairperson _____ / _____/
(signature) (name)

Seal

Academic (Scientific and Technical)
Council Secretary _____ / _____/
(signature) (name)

Annex 9

Evaluation Criteria
(Instructions for the Competition Commission Members)

Innovation	1	**Is the paper's subject topical?** Weight coefficient 0.1 Marks from 1 to 5	The paper's subject is "hot" if it concerns a scientific direction actively developed by the world community (or directed to solve a problem acknowledged by the scientific community)
	2	**Scientific novelty and/or social and economic effect** Weight coefficient 0.3 Marks from 1 to 5	The paper is characterized by the scientific novelty if it presents new (unknown before) scientific results and/or the paper has a social and economic effect if it contains results which are practically useful for the country
	3	**Originality** Weight coefficient 01 Marks from 1 to 5	The paper is original if methods that were applied in the paper have not been used before for solving similar problems. In case of considering work, presented at CMY before, while evaluation the hugeness of progress of work in accordance with previous results presented on previous CMY
	4	**Potential for international cooperation** Weight coefficient 0.1 Marks from 1 to 5	The paper is important for international cooperation if which it can be used for cooperation projects within the COOMET region or on global scale
Quality of the reports' presenting	5	**Structure and scientific validity** Weight coefficient 0.1 Marks from 1 to 5	The content of the presentation is systematically structured and scientifically correct. The logical chain (approach, solution, correctness of results, validation of conclusions) clearly proves the correctness of the obtained results
	6	**Quality of the paper's adjusting** Weight coefficient 0.1 Marks from 1 to 5	The well-adjusted paper should be set out with clear and strict language with observance of general language forms and the commons standards of writing a papers scientific*. Font of presentation should be convenient for reading to everybody including listeners in the back rows. Visual presentation and oral explaining should be complement to each other in optimal way and provide best perception of report content by audience. The paper should contain necessary illustrative material. *including item of Annex 5 Recommendation COOMET R/GM/18
	7	**Quality of presenting the paper** Weight coefficient 0.2 Marks from 1 to 5	While evaluating the quality of presenting work the following criteria are taken into account: • reporter realizes communication with the listeners • reporter observes the time limit • reporter speaks correctly, clear and comprehensible • reporter answers to the questions correctly and convincing • reporter uses an additional equipment for his presentation (flip chart, white board, etc.)

According to these criteria:
maximum sum mark – 5
minimum sum mark – 1
(the rounding of the intermediate values to 0.01 mark)
The final mark is determined according to the formula

$$C = \sum_{i=1}^{7} a_i \bullet b_i,$$

where a_i is the weight of criterion i, b_i is the mark of criterion i.