



ЕВРО-АЗИАТСКОЕ СОТРУДНИЧЕСТВО ГОСУДАРСТВЕННЫХ МЕТРОЛОГИЧЕСКИХ УЧРЕЖДЕНИЙ (КООМЕТ)
EURO-ASIAN COOPERATION OF NATIONAL METROLOGICAL INSTITUTIONS (COOMET)

CONCEPTION

of cooperation and related activities of COOMET

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INTRODUCTION

Every organization inevitably undergoes specific stages of development. This equally applies to national, international and regional organizations.

To increase effectiveness of such organizations usually a thorough analysis of their activities is required. It includes understanding of the essentials of these activities, structure and priorities, key elements of policy, new tasks and fields of interests in constantly changing world.

COOMET at its present stage of development requires the above analysis, which should summarize and give a ground for estimation of cooperation performed during last years. It also should give conceptual ways of improvement of cooperation taking into consideration multiple influences including common trends of development of the world society and world economy as well.

The role and position of COOMET in the system of regional metrology organizations have to be clearly identified. Also some formalization of methodology and organization of functions of steering and working bodies of COOMET is required along with elaboration of mid-term plan of urgent tasks of cooperation in the most important fields of cooperation. The time has come to define acceptable ways of transformation of COOMET as regards its framework and budget etc.

This Conception is intended for all participants of cooperation within COOMET and must serve a basis for their work according to comprehensible objectives, tasks and ways of development of this regional organization. It is very important for defining ways of cooperation between COOMET and international and regional organizations as well as for working out plans and programs of cooperation in the framework of COOMET.

Structure of Conception was approved at 14th COOMET Committee meeting (May 2004, Bulgaria) and includes the following sections:

- Present-day trends and objectives of metrology;
- Role and position of COOMET in the system of regional metrology organizations;
- Realization of the Conception.

1. PRESENT-DAY TRENDS AND OBJECTIVES OF THE WORLD METROLOGY

1.1 world level: globalization of world economy and metrology

The major feature of contemporary world and the most important trend in development of world economy, which tremendously influence all spheres of human activities including metrology and face them with new challenges is the GLOBALIZATION of economy and trade.

This process assumes strengthening of the following:

- Interrelation and interdependency of economies of different countries;
- Influence of international economic relations on national economies;
- Wider participation of countries in world economy.

Basically, globalization of the world trade is covered by World Trade Organization (WTO) operating Agreements, which regulate more than 90 % of world trade. The major of WTO is to eliminate tariff and non-tariff (technical and legal) barriers to trade.

Globalization processes in metrology started well before introduction of the concept of globalization. It is worth mentioning some important stages of internationalization of metrological activities:

- Adoption of Metric Convention in Paris on 20 of May 1875. Consequently, it set International Committee on Weights and Measures (CIPM) and International Bureau on Weights and Measures (BIPM);
- Adoption of Convention establishing International Organization on Legal Metrology in 1995 (OIML);
- Adoption of International system of units (SI) by the majority of countries according the decision of 9th General Conference on Weights and Measures in 1960;

present days:

- Adoption of the Agreement on mutual recognition of national measurement standards and calibration certificates issued by National Metrology Institutes (CIPM MRA) according to the decision of CIPM of 14 of October 1999, Paris. Consequently, it lead to creation of international database of best measurement capabilities serving a world market of metrological services.

Globalization of economy inevitably encourages establishment of global system of measurements, which have the following features:

- World wide recognition of International system - SI as a unified system of units of measurement in manufacture, trade and metrology;

- Harmonization of national and international legislation regarding uniformity of measurements; primary use of internationally accepted standards, regulations and recommendations;
- Creation of primary measurement standards based on common definitions of the units of physical quantities;
- Global evaluation of the level of equivalence of national and international measurement standards;
- Development and unification of the conformity evaluation principles regarding measuring instruments and mutual recognition of such evaluations.

Creation of the global system of measurement is actually a key point of the activities of CIPM and BIPM, OIML, ILAC, ISO, IEC and other international organizations closely collaborating with WTO.

If compared to the slogan promoted in the field of conformity assessment - *"One standard – one testing – one certificate"*, *slogan of metrological harmonization may sound as "equivalent measurement standards – single set of measurement – worldwide recognition"*.

1.2 Regional level: regional separation of the markets and cooperation in the field of metrology

One of the most important stages of globalization is a regional separation of the markets. This process involves increasingly more countries and regions.

Nowadays there are more than 50 integrating groups, which in the long run will be the most powerful centers of economical interrelations at international level. A vivid examples of mutually beneficial intergovernmental cooperation at transcontinental level are the World Trade Organization and the World Customs Organization; at regional level – European Union (EC), North American Free Trade Agreement (NAFTA), Asia-Pacific Economic Cooperation (APEC), Single market of countries of South Pole (MERKOSUR), Community of Independent States (CIS) etc.

By participating in common integration processes countries support single economic policy at national levels. This policy decreases custom tariffs encouraging effective trade relations, sets common custom tariffs regarding third parties, encourages free-borders trade and promotion of transparent currency system.

A sound regional cooperation in the field of metrology in Europe, Euro-Asia and Asia-Pacific regions, America and South Africa should be specially emphasized as a result of economical integration and region market separation at the mainstream of last XX century developments. Regional and sub regional metrology organizations (RMOs) also tend to arise in such regions as Middle East and North Africa, area of Indian Ocean and Mediterranean sea.

At present in the process of regional separation the following regional organizations are involved besides COOMET:

a) in the field of measurement standards

- **APMP** - Asia-Pacific Metrology Programme;
- **EUROMET** - European Collaboration on Measurement Standards;
- **SADCMET** – Southern African development community cooperation in measurement traceability;
- **SIM** - Inter-American Metrology System.

b) in the field of legal metrology

- **APLMF** - Asia-Pacific Legal Metrology Forum;
- **SADCMEL** - Southern African development community cooperation in legal metrology;
- **WELMEC** - European Cooperation in Legal Metrology.

c) in the field of accreditation

- **APLAC** - Asia Pacific Laboratory Accreditation Cooperation;
- **EA** - European Cooperation for Accreditation;
- **IAAC** – Inter-American Accreditation Cooperation;
- **SADCA** - Southern African Development Community Cooperation in Accreditation.

Also a group of sub-regional organizations emerged, which unites countries by territorial belonging based on historically predetermined trade and economical relations etc. taking into consideration their peculiarities. NTC METR of CIS can be attributed to such organizations.

In particular, development of cooperation at regional level determine present infrastructure of cooperation in metrology.

In parallel with international organizations RMOs actively promote wider harmonization and unification including the field of legal metrology. Thus CIML approved OIML D1 “Elements of a law on Metrology”, European Parliament approved Directive of EU on Measuring Instruments (MID). Also international vocabulary on metrology (VIM) and Guide on expression of uncertainties (GUM) are implemented worldwide.

Role and importance of RMOs noticeably increased due to their involvement in realization of global treaties. First of all these are CIPM MRA solely being realized by RMOs collaborating in the field of measurement standards of physical quantities and ILAC MLA based at regional agreements on accreditation .

1.3 National level: reallocation of functions in the field of metrology

In the conditions of globalization and regional separation of economies and ever-increasing cooperation in metrology we can witness reallocation of metrological functions and standardization from national level to regional and international ones.

At the same time development of principles and ways of mutual acceptance of results in the field of metrology may facilitate cutting down of workload of national metrology institutes.

Economical development and market exchange relations as well as necessity in maintaining social guaranties at government level and also cutting down of governmental investments are the major reasons of spreading limitation of state controlled technical areas.

As regards metrology it also requires strict separation of state regulated area of measurements and area of ordinary measurements.

Present conditions favor establishment of private and semi-private testing and calibration laboratories and conformity assessment bodies etc. thus to preserve state involvement in socially important areas *the value of conformity assessment, type approval and market surveillance should constantly go up.*

1.4 Role and urgent tasks of metrology

A lot of examples show (refer to proceedings of a workshop “Role of metrology in economy and social development”, Braunschweig, Germany, 1998 etc.), that metrology is an indispensable precondition for safety and quality of products, processes and services, social stability and safety of environments.

Thus an important role is given to activities on conformity assessment which includes all kinds of testing, control, inspection which results directly rely on trustworthiness of measurement results. One more important factor is the realization of treaties on mutual recognition (e.g. CIPM MRA) which assumes acceptance of calibration and measurement certificates issued in close relation with officially published CMC being a prerequisite for wider acceptance of results in the field of conformity assessment.

Striving for improvement of products and services, level of medicine and labor safety in particular requires:

- Development and unification of corresponding international requirements to products and services. *Therefore there is an urgent need in qualified metrological expertise regarding proposed international standards, designs and technological documentation;*
- *Creation of a single market of metrological services based on official information about calibration and measurement capabilities;*
- *Improvement of testing and inspection by rising of level of automation and information transparency of these activities.*

CIPM, OIML and other international organizations pay special attention to the analysis of needs of metrology arising from trade, industry, social area and periodically prepare special studies reports.

It is very important that reports of international organizations regarding future tasks of metrology also oriented on the governments which are being members of these organizations and are obliged to follow relevant recommendations.

For the metrology to facilitate solving of economic and social issues it is necessary to provide its one-step-forward development and in particular development of measurement standards.

At present one of priority of developing countries and countries with economy in transition is creation of metrological infrastructure recognized at international level which should minimize or eliminate non-tariff barriers to trade and give free access to national markets increasing industrial and economic upsurge. For the purpose of rendering of assistance in establishment of such infrastructures a Joint Committee JCDCMAS was established and includes representatives of BIPM, ILAC, OIML, ISO, IEC, IAF, UNIDO and RMOs as well.

New forms of cooperation between international and regional organizations emerged recently due to urgency in reliable measurement results in all spheres of human activities. Thus we have witnessed signing of MoU between CIPM and World Health Organization (WHO), World Meteorological Organization (WMO), International Federation of Clinical Chemistry and Analytical Medicine (WOCC) and International Laboratory Accreditation Cooperation (ILAC). Next goes similar agreements with World Anti-Dope Agency (WADA), Codex Alimentarius etc.

Following initiative of BIPM, WOCC and ILAC works were started regarding traceability in analytical medicine. This work had large representation of organizations such as quality assessment organizations, manufacturers of reference materials and association of manufacturers of medical diagnostic equipment of EU, Japan and USA. This cooperation is now represented by Joint Committee on traceability in laboratory medicine (JCTLM).

Cooperation in this field exists at all levels and leads to adoption of EU Directive on medical devices for laboratory diagnostics (IVD – In-vitro-diagnostics) which became effective since 2003.

In many fields of measurements, in particular, time and frequency, length and angle and some other measurements of mechanical and electrical quantities required level of accuracy grows by 3 to 10 times per ten years. In certain areas current accuracy level does not meet requirements of trade and other sectors for maximum permissible errors prescribed by legislation. Sometimes traceable measurement standards even not exist. Therefore, to solve this problem NMIs are urged to carry out fundamental researches.

General trend to miniaturization of products and development of submicron technologies such as "lab-on-a-chip" leads to creation of principally new measurement techniques. Nanometrology (including measurements in biotechnologies) is a new trend in physics which promotes development of new measurement techniques and becomes a priority of many NMIs. A lot have to be

done regarding development of primary and secondary measurement standards which can provide measurements of extremely small objects and new physical quantities.

Metrology was accepted in chemistry and biotechnology more quickly than it was foreseen five years ago. International trade with chemical substances, reference materials, gas and oils, medicine, foods and measuring equipment constantly grows along with development of corresponding regulations on safety and environments protection which as a rule requires traceable and comparable measurements.

Reliable and comparable measurements in testing of foods became extremely important as due to rising costs at international level as due to people awareness of food safety problems. It first of all concerns issues of genetically modified organisms (GMO). Despite of legal barriers set by governments against inaccurate and false measurements yet there is no guidance on creation of appropriate technical infrastructure.

Measurements related to the quality of life, biotechnology and environments monitoring, in particular monitoring of pollution and changes of climate should be reliable, time-stable and comparable and requires corresponding measurement standards.

In these areas and others fields of human activities should be regulations stating requirements to the quality of measurements and urging for corresponding metrological researches.

Analysis shows that priorities in metrology are given to the following:

- *laser systems;*
- *nanotechnologies;*
- *electrical measurements;*
- *femot-second and optical measurements;*
- *time scales;*
- *ionizing radiation;*
- *metrology,*
- *compatibility of measurements of liquids, viscosity, acoustics etc. at international level.*

2. PLACE AND ROLE OF COOMET AMONG RMOS

Euro-Asian cooperation of state metrology institutes (COOMET) is the Regional Metrology Organization of definitely new type providing an open forum for metrologists of countries of Central and Eastern Europe and countries of Asia and other regions of the world.

Participation in COOMET gives member-countries an opportunity to effectively manage metrology at local level by using harmonized rules and procedures for the benefit of national economies.

In contrast to other RMOs, which are specialized ones, COOMET with its areas of cooperation represents a universal type organization (according to its MoU) having an objective to provide for cooperation regarding measurement standards of physical quantities, legal metrology, calibration and metrological evaluation of testing laboratories. However, because COOMET members are NMIs the pace of development of any declared field of cooperation is proportional to the competence and legitimacy of NMIs in the areas concerned. This is the reason why the first place in COOMET cooperation as regards workload and number of projects is given to measurement standards and major contributions to global measurement system are made in this area. Comparably small progress of cooperation is admitted in legal metrology because in a number of COOMET member-countries this area is beyond responsibilities of NMIs, but other bodies.

At present there is a little of progress in the field of accreditation despite this point is of great interest to some NMIs performing a lot of metrological evaluations in this particular area for the purpose of proving conformity of technical competence of organizations to render good measurements according to approved measurement procedures. This also concern state testing centers, conformity assessment bodies for measuring instruments, certain types of measuring laboratories and laboratories of non-distractive testing and radiation monitoring laboratories, analytical laboratories, metrological (calibration) divisions of different organizations. This situation also can be explained by a large number of accreditation bodies and agencies functioning in the majority of COOMET member-countries.

According to CIPM MRA COOMET Quality Forum carries out assessment of technical competence of NMIs calibration laboratories according to ISO IEC 17025 and QMS according to ISO 9001. Despite of resemblance of this assessment to accreditation it does not go on as the latter.

In COOMET a good deal of attention is paid to cooperation with international and regional metrology organizations.

Due to universality COOMET have established contacts with the following organizations: OIML, BIPM, ISO, EUROMET, WELMEC, APMP, APLMF, SIM. COOMET is included in a list of organizations affiliated to ILAC and doing the work overlapping with that of ILAC.

The most tight business contacts are established between COOMET and Joint Committee of Regional Metrology Organizations and BIPM (JCRB). Under JCRB COOMET together with EUROMET, APMP, SIM, SADC MET actively promote Agreement on mutual recognition of national measurement standards (CIPM MRA).

Contributions to realization of CIPM MRA estimated by different factors place COOMET on a third place among RMOs cooperating in the field of measurement standards (after EUROMET and APMP). Number of CMC entries which belong to COOMET member-countries and published by BIPM is estimated by 15-20 % out of the overall quantity.

As regards other areas of COOMET interests, in particular legal metrology and accreditation, COOMET have to undergo certain stages of its development and reach the level of WELMEC, EA, APLAC.

2.1 COOMET background

COOMET was established as a cooperation of state metrology organizations of the countries of Central and Eastern Europe on 12 of June 1991 by signing a Memorandum of Cooperation by representatives of Bulgaria, Poland, Romania, Russia and Czechoslovakia in Warsaw.

In November 1991 COOMET received Germany and Cuba as an associates. In 1992 Ukraine and Belarus joined COOMET as full members and in March 1993 the same did Slovakia. In April 1995 COOMET welcomed another member - Lithuania and in April 1997 follows Moldova and in November 1998 – Kazakhstan.

In may 2000 for the purpose of simplifying procedure of acquiring membership not only by NMIs of European but also of Asia countries COOMET name was changed to "Euro-Asian cooperation of state metrology organizations". Unfortunately by June 2000 Poland left COOMET. At the same time COOMET received three new members – Kyrgyzstan (May 2000), DPR of Korea (May 2002) and Uzbekistan (May 2004)

At present COOMET members are metrology organizations of 14 countries: Belarus, Bulgaria, Germany (associated member), Kazakhstan, Kyrgyzstan, DPR of Korea (associated members), Cuba (associated members), Lithuania, Moldova, Russia, Romania, Slovakia, Uzbekistan and Ukraine.

COOMET welcomes joining of new members from different countries of the world.

The first COOMET President was representative of Poland, GUM. Then COOMET was headed by representatives of Slovakia and Russia. At present COOMET president is a representative of Belarus.

2.2 objectives, tasks and principles of COOMET cooperation

COOMET cooperation is oriented on satisfying needs of member-countries in the field of metrology by encouraging solution of economic and social issues at global and national levels, including:

- Strengthening of innovation and technical base of member-countries with global economic and social systems of modern society;
- Equal and economically effective participation of COOMET member-countries in global integration processes in science, technologies, science dependent manufacture and economy as well;

- Increasing of competitiveness of member-countries in science and technologies and their equal representation at world market of intellectual products, high-technology products and services.

As regards objectives and tasks of COOMET cooperation they are clearly stated in MoU of COOMET and since its signing did not undergo considerable changes however requiring some improvement.

During the years COOMET cooperation became more concrete and comprehensible. Thus, since signing of CIPM MRA COOMET cooperation received the following permanent tasks:

- organization and coordination of regional key and supplementary comparisons of measurement standards, maintenance of traceability to internationally recognized measurement standards;
- regional review of CMCs of NMIs and their publication in KCDB of CIPM;
- Assessment of QMS of NMIs and external audits of QMS etc.

Taking into consideration importance and ever-urgency of this tasks it seems advisable to include them into MoU of COOMET.

COOMET like other RMOs pays special attention to training and skill improvement of metrologists. For this purpose COOMET initiate workshops, scientific-technical conferences, exchange of experts etc.

Effective realization of CIPM MRA and related COOMET projects urges using of state-of-art measurement procedures and informational technologies.

For the purpose of boosting up research potential of cooperation and providing of succession of results achieved so far COOMET retains its knowledge in COOMET publications (reports, recommendations etc.).

It is advisable for each COOMET structural unit to have their own specialized knowledge base besides corresponding regulations.

The above works and others pose a growing interest to COOMET and require special attention including relevant reaction from the part of leaders of COOMET structural units.

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COOMET and its structural units adhere to the following fundamental principles of cooperation:

- *Principle of reciprocity: mutual interest, mutual trust and respect, mutual aid etc.;*
- *Equality and democracy;*
- *Openness and transparency of the cooperating members;*
- *Trustworthiness of partners and execution of Agreements reached;*

- *Readiness for compromise;*
- *Wide involvement of qualified staff in cooperation;*
- *Willingness to constant improvement of cooperation;*
- *Implementation of cooperation results at national level and in joint works between member-countries etc.*

2.3 ways of cooperation improvement

In parallel with fundamental principles of COOMET cooperation its structural units may take as guidance the following:

- MoU and Rules of procedure;
- Regulations of COOMET structural units;
- Criteria of COOMET membership applied to realization of different treaties, e.g. CIPM MRA;
- Provisions of international standards and recommendations.

When contemplating perspective plans of cooperation all COOMET structural units, first of all, should take obligation to perform functions and fulfill tasks according to Regulations of these structural units.

If COOMET structural units are grouped according to urgent tasks of cooperation we can see that their activities for the most part are connected with realization of CIPM MRA. Such structural units are practically all technical committees of Joint Committee on measurement standards (JCMS), committees and subcommittees of Quality Forum of COOMET.

For these units common, to some extent, methodological and organizational principles of their activity regarding CIPM MRA can be formulated:

- Analysis of CMCs of COOMET NMI with the purpose to initiate necessary supporting comparisons;
- Scheduling, organization and methodological support of COOMET key and supplementary comparisons;
- review of CMCs either regional or interregional; improvement of criteria for supporting CMCs;
- maintenance and strengthening of relations between COOMET Technical committees COOMET and corresponding Consultative Committees.

Below general tasks of research and methodological nature are given according to proposals of TC leaders.

2.3.1 General metrology

1. Performance of research work regarding urgent issues of general metrology in particular interpretation of results of COOMET comparisons and implementation of

the uncertainty estimation when describing accuracy of measurement standards and measurements.

2. Methodological support to comparisons of measurement standards of NMIs (key, supplementary ones) regarding processing of results and determining of equivalence of measurement standards (also their traceability to similar comparisons of BIPM); consultations on proving measurement capabilities of COOMET NMIs.

3. Development of a methodological basis for arranging COOMET key comparisons for NMIs, which are currently not capable participate in BIPM comparisons.

4. Analysis of normative documents in the field of general metrology published by international organizations and finding of ways for their implementation into COOMET practice.

2.3.2 Cooperation regarding measurement standards

JCMS objectives based on those of subordinate TCs:

- Acoustic, ultrasound and vibration,
- Electricity and magnetism,
- Flow measurements,
- Length and angle,
- Mass and related quantities,
- Photometry and radiometry,
- Physical-Chemistry,
- Ionizing radiation and radioactivity,
- Thermometry and thermal physic,
- Time and frequency, Reference materials,

can be extended as follows:

1. Analysis of needs of metrology (in particular field of measurements) arising due requests of trade, industry and social area. Working out of development plans (programs) in a particular field of measurements;
2. Carrying out of fundamental and applied researches aiming at improvement of national measurement standards of COOMET NMIs;
3. Organization, coordination and realization of key, supplementary and pilot comparisons of measurement standards and preparation of corresponding publications in specialized editions; development of a corresponding procedures ensuring traceability to reference value of key comparisons (KCRV);
4. Development of new measurement techniques and new types of precise measuring instruments;
5. Methodological support regarding comparisons and ways of traceability of units;

6. Improvement of measurement standards on the basis of state of art technology;
7. Performing of researches in the filed of expression of accuracy (error and uncertainty theories, terminology in a particular field of measurements);
8. Participation in realization of CIPM MRA (according to point 2.2 3a the Conception):
 - Performing analysis of the best measurement capabilities of NMIs based on declared uncertainties of measurements for the purpose of their submission to JCRB database according to COOMET Recommendation R/GM/7 "Procedure of conducting inner expertise of measurement and calibration capabilities of COOMET national metrological institutes and interregional expertise of the institutes of other regional metrological organizations" and corresponding requirements of JCRB;
 - organization of comparisons.
9. Development and maintenance of information-analytical database on calibration and comparisons;
10. Development/ harmonization and updating of normative documents;
11. Development of recommendations for creation of measurement standards infrastructure in COOMET NMIs;
12. Rendering of assistance in researches and measurement related projects to NMIs of COOMET member-countries.

2.3.3 Legal metrology

Legal metrology in COOMET member-countries proves to be a well performing field of metrology having the purpose of establishing the uniformity of measurements and quality control of exported and imported measuring instruments. In each country legal metrology is supported by corresponding legal acts and standards, stipulating rules and procedures of type approval of measuring instruments their registration and verification. All COOMET member-countries have notified testing centers which perform testing of measuring instruments in the legally regulated area.

Despite of this, globalization of world market and strengthening of economic partnership between COOMET members-countries there is a strong need in creating equivalent conditions for legal metrology in each country i.e. reasonable harmonization of normative-technical and legislative basis. To achieve this goal a complex approach is necessary starting from exchange of information and finishing with share of experience in testing of measuring instruments.

The following major fields of COOMET cooperation in the field of legal metrology are distinguished:

1. Studying of experience of EU countries and development of harmonized recommendations on implementation of MID;

2. Studying of international experience in realization of the OIML Agreement on mutual recognition of results of type approval of measuring instruments (OIML V10-1) and its further adoption by NMIs of COOMET member-countries;
3. Harmonization of national legislation as regards legal metrology with international requirements (OIML D 1, documents of WTO etc.) in particular regarding co-ordination of legally regulated and non-regulated areas of metrology. Working out of agreed requirements to testing and calibration (verification) for encouraging improvement of mutual acceptance criteria;
4. Consultations on implementation of requirements of OIML documents and similar European norms at national level;
5. Stirring up of joint representation of COOMET countries being also OIML members in working groups of OIML dealing with development and review of international documents and recommendations;
6. Exchange of experience and consultations of COOMET member countries with the purpose of development of such relatively new fields of legal metrology as prepackages control and testing of gambling machines and testing of software for measuring instruments;
7. Studying of experience and projects of regional organizations of legal metrology and collaboration in projects of mutual interest;
8. Exchange of information about current state of legal metrology in COOMET member-countries for publications (including updates for COOMET WEB page).

2.3.4 Accreditation and Quality Management Systems (QMS) of NMIs

1. Methodological support in performing assessment of QMS of COOMET NMIs for the purpose to provide confidence to metrological activities of NMIs.
2. Joint consideration of urgent issues at COOMET Quality Forum (QF) for the purpose of realization of CIPM MRA and making of decision regarding results of assessments of NMIs QMS.
3. Holding QF meeting on regular basis as well as meetings of TC 3 and presentation of QMS (meeting the requirements of ISO IEC 17025) of NMIs signed CIPM MRA.
4. Consultations of NMIs which are still going to sign CIPM MRA regarding establishment of QMS (fully compatible with ISO IEC 17025) in their NMIs.
5. Maintenance of a list of auditors and technical experts evolved in assessments of QMS of NMIs. Organization, if necessary, of training courses on assessment of QMS.

6. Organization and realization of training of auditors and personnel of NMIs to the techniques of expression of uncertainty of measurements in connection with requirements of CIPM MRA.

7. Assisting COOMET member-countries to improve their activity in the field of accreditation of metrology institutes, calibration and measuring laboratories. Finding out possible ways of cooperation in this field (including interrelations with national bodies on accreditation in COOMET member countries and also facilitating establishment of a regional organization on accreditation of calibration and measuring laboratories).

2.3.5 Information and training

In the subject field "Information and informational technologies"

1. Improvement of COOMET WEB site and sites of NMIs of COOMET member-countries.

2. Development of COOMET hyperlinked database on calibration and measurement capabilities of NMIs and COOMET comparisons.

3. Edition and publication of COOMET Catalogue, brochures and other editions.

4. Organization of conferences dedicated to metrology issues and corresponding participation.

5. Maintenance of a list of available translations of international and regional regulations and laws and their distribution.

In the field "Training and improvement of skill of personnel"

1. Exchange of training programs in the field of metrology and their analysis for the purpose of working out general recommendation to their content.

2. Organization of workshops and corresponding participation.

3. Development and realization of programs for exchanging of personnel of COOMET NMIs.

2.4 Participants and organizational structure of COOMET

2.4.1 COOMET member-countries

As it was mentioned COOMET is open for participation of metrology related organizations of all countries of the world. Taking into consideration that members of COOMET are metrology organizations of Europe, Asia and Latin America, i.e. a line of regions, it can be right to name COOMET an interregional organization (IRMO).

Increasing of number of COOMET members (this can be regarded as natural process due to rising effectiveness COOMET activities and its status) is not our

objective. Besides, the more members we have, especially situated far apart from each others, the harder to manage RMO and interrelations between its participants despite modern means of information technologies at their disposal.

It is important for each new COOMET member-organization to find a sufficient forum for cooperation to take advantages regarding development of their own metrology. They also should have opportunity to use outcomes of cooperation as a tool for collaboration with international organizations in realizing international treaties, e.g. CIPM MRA, and the most important is to be active participants of COOMET cooperation.

COOMET has a potential in broadening its membership as regards different interested countries.

As a rule, among RMO members (this is natural in many RMOs) there is a group of more active members which is represented in the majority of RMO projects. Basically, the leaders of COOMET are chosen from representatives of this group, who then determine strategy and policy of organization.

It is quite possible that the representation in this group may change with the time and it is important to keep sound management by substituting less effective managers with those who showed eagerness in promoting COOMET cooperation.

As regards COOMET this first of all concerns presidency and top management and also leaders of structural units.

Therefore, besides professional level a level of assumed activity in member-country should be taken into consideration. It is also important to keep status quo regarding representation of member-countries in leadership of structural units as a prerequisite of their active position.

2.4.2 Representation of national metrology organizations in COOMET

According to definition COOMET is a cooperation of national metrology organizations (institutes).

At the same time COOMET MoU defines COOMET area of interest which are measurement standards of physical quantities, legal metrology, calibration and accreditation of measuring laboratories. As it was mentioned in section 2 of present Conception fields of cooperation and areas of NMI interests, *i.e. objectives and subjects are not fully* coincide because in a number of COOMET member-countries legal metrology is a task of other bodies and accreditation is performed by conformity assessment bodies (agencies).

In this situation emerged contradiction can be overcome as follows:

- In present conditions to continue works in the field of legal metrology and accreditation within COOMET it is necessary to attract into our organization representatives of corresponding organizations from those countries in which the activities mentioned are not primary tasks of NMIs;

- Further on specialized structures can be established in the framework of COOMET or separate specialized regional organizations with feasible representation of corresponding national organizations.

2.4.3 COOMET organizational structure and its improvement

Present COOMET structure is so designed as to provide cooperation in all *major metrological areas and other field of interest envisaged by COOMET MoU*.

Another important principle implemented in COOMET structure is a sufficient *tree of structural units* which allows the wider involvement of experts of national metrology organizations in cooperation and also encourages self-realization of personal ambition in research area and strengthens responsibilities of the leaders of COOMET structural units.

Taking into consideration universal feature of COOMET this organization have considerable potential in promotion of certain fields of cooperation and their intensive development.

The process of intensive development of cooperation in certain areas means their support by corresponding agreements and rising of their professional level to that one of specialized regional metrology organizations. This concerns cooperation in the field of measurement standards and legal metrology and accreditation.

These processes, as it was mentioned in 2.4.2, may serve a reason for certain increase of representation of different national organizations in COOMET followed by appropriate modification of COOMET structure and also change of COOMET status and corresponding COOMET regulations. In this case, for instance, COOMET Committee may change into COOMET General Assembly.

Pretty possible looks an idea of advance election of COOMET top management which assumes the retiring manager works in parallel with his successor sharing experience and giving immediate advice.

To improve cooperation between COOMET member-countries and Secretariat it is necessary to work out recommendations based on experience in creating of such secretariats in different countries. At present there are secretariats only in Belarus, Bulgaria, Lithuania, Russia, Slovakia, Ukraine. Establishment of similar secretariats in COOMET member-countries is a key condition for increasing effectiveness of COOMET activities. Next come establishment of secretariats of COOMET structural units.

Structural changes also urge reassessment of inner and outer interrelations of corresponding structural units.

2.4.3.1 Improvement of organization and functionality of COOMET structural units

An important condition for further improvement of COOMET cooperation is a sound functionality of COOMET structural units i.e. TCs/SCs.

This can be realized by analyzing experience of corresponding international and regional organizations which in the long run can be a partners of COOMET TCs/SCs, as well as by analyzing achievements of colleagues in TCs/SCs. The results of such analysis may constitute plans for improving work of TCs/SCs and their adoption into daily practice:

- forming of permanent staff of TCs as well as of SCs;
- establishing of TCs/SCs secretariats;
- organization of TCs meeting on regular basis and, if appropriate, special meetings of SCs;
- solving of urgent issues and improvement of cooperation in the defined area by polling of members on their urgent needs and by analyzing of activities of similar-task RMOs and their structural units;
- forming of and realization of, for instance, medium-term Work program of TCs/SCs;
- preparing of and open hearing of progress reports of TCs/SCs;
- training and skill improvement of TCs/SCs staff by using inner resources or with assistance of TC 4.

As an important point of TC work still remains establishment of contacts with corresponding international and regional organizations or their structural units.

2.5. Economic aspects of COOMET activities

According to COOMET MoU Secretariat's activities are financed at the expenses of a COOMET Committee presiding Party.

Other COOMET Members can extend financial support to the Secretariat on a voluntary basis, the Presidential Council and other COOMET bodies for the implementation of particular tasks.

3. REALIZATION OF THE CONCEPTION

3.1 Conception is to be realized by fulfillment of certain work and events or by including of necessary additions to COOMET Development program.

3.2 Realization of the Conception can go as follows:

- dissemination of the main ideas of the Conception;
- introducing provisions of the Conception into COOMET documents;
- realization of the Conception through plans and programs of cooperation.

This realization scheme can be represented in a form of action plan also defining executors (is attached herewith).

Development and realization of this Conception will increase effectiveness of cooperation and role of COOMET and will add to its international status and authority among its member-countries.

Action plan on realization of COOMET Conception

№	Actions	Executors	Remarks
<u>I. Dissemination of the main ideas of Conception among COOMET member-countries</u>			
1.1	Dispatch of the Conception after its approval at COOMET Committee meeting to all Committee members	COOMET Secretariat	Included in the pack of COOMET Committee materials
1.2	Publication of Conception in English and Russian in a form of brochure	COOMET Secretariat	Circulation is 50-100 items
1.3	Circulation of the brochure among all Committee members, chairpersons of TCs and SCs and other COOMET units.	COOMET Secretariat	
1.4	Translation of the Conception, if necessary, into national languages of COOMET member-countries and circulation among interested COOMET members	COOMET Committee members	
1.5	Placing of Conception on the COOMET WEB site	COOMET Secretariat, COOMET WEB site manager	
1.6	Sending of the Conception to international and regional organizations or their structural units	COOMET Secretariat, TC chairpersons	
<u>II. Realization of the Conception by developing relevant normative documents and regulations of COOMET</u>			
2.1	Calling up proposals for changes and additions to MoU and Rules of Procedure of COOMET	WG on Conception	
2.2	Introduction of changes to the Regulations of TCs/SCs	TC Chairpersons	
<u>III. Realization of the Conception through COOMET projects</u>			
3.1	Initiating of projects based on provisions of the Conception as concern subjects and ways of cooperation	Chairpersons and heads of TC/SC	