

SEMINAR
REPORT

OIML S 7
Edition 2013 (E)

Seminar on the OIML Mutual Acceptance
Arrangement (OIML MAA)

TRANSCRIPT





International Organization of Legal Metrology

Secretariat:

BUREAU INTERNATIONAL DE MÉTROLOGIE LÉGALE (BIML)

11, RUE TURGOT – 75009 PARIS – FRANCE

TEL: +33 1 48 78 12 82

FAX: +33 1 42 82 17 27

E-MAIL: biml@oiml.org

INTERNET: www.oiml.org

**Seminar on the
OIML Mutual Acceptance Arrangement
(OIML MAA)**

Ho Chi Minh City, Viet Nam

7 October 2013



Contents

Welcome by Prof. Roman Schwartz	8
Session 1 – History of the MAA and its initial implementation.....	10
Mr. Gerard Faber	10
Mr. Alan Johnston (on behalf of Dr. Charles Ehrlich).....	11
Mr. Alan Johnston.....	16
Session 2 – Current operation and impact of the MAA	19
Mr. Cock Oosterman.....	19
Mr. Stuart Carstens	23
Mr. Luis Mussio.....	26
Session 3 – Options for further developing the MAA.....	29
Mrs. Veronica Martens	29
Dr. Philippe Richard	31
Prof. Roman Schwartz	34
Mr. Denis Chew	38
Session 4 – General discussion, conclusions, draft resolutions	43
Mr. Peter Mason.....	43
Prof. Roman Schwartz	44

Seminar on the MAA
Ho Chi Minh City, Viet Nam
7 October 2013

Welcome by Prof. Roman Schwartz

Prof. Roman Schwartz, CIML first Vice-President, welcomed delegates and introduced himself, saying that it was an honor to chair the seminar and a pleasure to see so many people attending it. About 100 people were expected.

The Panel members for the first session were:

- Mr. Gerard Faber, CIML Member of Honor and CIML President at the time when the establishment of the MAA had been discussed, who would speak of the intentions at the launch of the project, some 20 years previously;
- Mr. Alan Johnston, CIML Member for Canada, who had been CIML President at the time when the MAA had been implemented. In order to improve the MAA it was necessary to understand what the original intention for it had been; and
- Dr. Charles Ehrlich, CIML Member for the USA, the intended third member of the Panel, but who had unfortunately not been able to attend, due to the US Government shut down. He held the Secretariat of OIML TC 3/SC 5, which was responsible for developing OIML publications B 3 and B 10. Mr. Johnston would give Dr. Ehrlich's presentation.

Introducing the day's program and beginning with an explanation of what the MAA was about, Prof. Schwartz showed delegates the brand new OIML MAA website.

In addition to its Basic Certificate System, the OIML had developed a Mutual Acceptance Arrangement, which was related to OIML type evaluations. The MAA had begun in 2006 and its aims were to increase confidence through regular evaluations of participating testing laboratories for compliance to ISO/IEC 17025, either by accreditation or by peer assessment. There should be benefit both for the participants and for the manufacturers, and the major intention was to avoid duplication of tests by improved recognition of test results or type approvals in different countries.

The principle was described in OIML Basic Publication B 10, which was the framework for the MAA. This publication had been revised in 2011 and amended in 2012. The aim was worldwide recognition of OIML type evaluation reports. One important step was declarations of mutual confidence (DoMC) for each category of measuring instruments. In 2006, at the start of the MAA, the first DoMC had been signed for non-automatic weighing instruments and modules such as indicators according to R 76. At the same time the DoMC for load cells under R 60 had been signed, one year later followed by the DoMC for water meters according to R 49. During the seminar there could be discussion of which DoMC would be signed next.

One important point, Prof. Schwartz said, was to distinguish between Issuing Participants and Utilizing Participants. A very important role was played by the CPR, the Committee on Participation Review, which was the committee responsible for accepting new Issuing Participants in a certain DoMC.

Prof. Schwartz showed some slides giving key figures and statistics for the MAA:

- the R 76 DoMC had 12 Issuing Participants and a number of Utilizing Participants;
- the R 60 DoMC had 7 Issuing Participants and quite a few Utilizing Participants;
- the R 49 DoMC had only two Issuing Participants (Denmark and the UK), and four or five Utilizing Participants;
- altogether about 3000 OIML certificates had been issued since the beginning of the basic system in 1993, of which 22 % (over 400) were MAA certificates issued since 2007;
- the number of MAA certificates was steadily growing as a proportion of the total number, which remained comparatively stable at around 200 certificates per year;
- the most certificates had been issued for R 76;
- the next largest number of certificates was for load cells (R 60), followed by automatic catchweighing instruments, for which at the moment there were only basic certificates, and also measuring systems for liquids other than water, based on R 117.

The third category of MAA certificates, water meters, was in fifth position. As could be seen, only a very few MAA certificates had been issued because there were only two Issuing Participants for water meters at the moment.

Prof. Schwartz showed another graph of MAA certificates issued per country. The clear winner was The Netherlands, who had also issued the largest number of basic certificates. He was glad to see they were present because discussion of the MAA without them would not make any sense. The second, though far below, was Germany, with the UK close behind. He would return later to the reason why Germany had issued so few. France came fourth, then China and Japan.

Another graph showed the certificate owners per country. Prof. Schwartz said he had not previously realized that most certificate owners came from Germany. German industry held very few MAA certificates at the moment. Then came China, third was the UK and fourth the USA. These were the countries and the manufacturers who should be asked whether they benefited from the MAA, and what could be done to improve it.

These matters, Prof. Schwartz said, would be considered at the seminar, together with:

- conditions for expanding the MAA to include additional categories of measuring instruments, probably R 117 and others such as automatic weighing instruments;
- the level of participation in the MAA;
- the impact of the MAA;
- the benefit for both participants and manufacturers;
- the differences between and the parallel operation of the MAA and the old Basic Certificate System – were two parallel systems necessary? Should one be shut down or should they be kept in parallel for a while?
- the role of, and the advantages for Utilizing Participants which represented majority of participants.

There would be a contribution from Mr. Carstens on Utilizing Participants' expectations. Other issues might be sanctions for non-compliant participants, and the role, tasks and operation of the CPRs, and possibly others.

In the second session they would look at the current operation and its impact, in session 3 the options for further development and in the fourth session there would be an attempt to summarize the discussions, come up with some conclusions and draw up some draft resolutions for consideration by the CIML. The speakers would be:

Session 1: Mr. Faber and Mr. Johnston.

Session 2: Mr. Oosterman (NMI, The Netherlands), Mr. Carstens (South Africa), and Mr. Mussio, who was responsible for the MAA at the BIML.

Session 3: Mrs. Martens (CECIP Legal Metrology Group), Dr. Richard (CIML Member for Switzerland, who would present some ideas and proposals from the point of view of

METAS, which was an MAA Issuing Participant), Prof. Schwartz himself, who would inform the participants about peer assessment of manufacturers' testing laboratories, and Mr. Chew from the IEC who would provide very important input because two years previously an MoU had been signed between the OIML and the IEC, which also ran a conformity assessment system for electrical and electronic equipment.

Session 4: General discussion on the conclusions reached, and of the draft resolutions to be presented at the CIML meeting.

Prof. Schwartz felt the MAA was extremely important and looked forward to all the presentations and to the conclusions and the proposals for improving this important system.

Session 1 – History of the MAA and its initial implementation

Mr. Gerard Faber

Now was a good moment, Mr. Faber said, to look back over the history of the MAA. Discussions had started about 20 years before. Ten years ago the CIML had approved the MAA, and ten years after that the system was being evaluated.

When Mr. Faber had been CIML President he had often said that the (then operational) certificate system (currently referred to as the OIML Basic Certificate System) was at the heart of what the OIML should be doing. This was because, as he had always said, when a certain test on a certain type of instrument was done twice somewhere on this planet, that was once too much. It was a waste of money and time to repeat a test already done by another country, provided that the test was done in the way it should be done.

How was it possible to know, under the OIML Certificate System, that a test had been executed in the right way? That had been the matter under discussion, and a lot of countries had said that perhaps the OIML Certificate System was too liberal and there was a need for a system which would be stronger and would contain the idea of underpinning it with quality assurance. Many countries had suggested creating something like the MAA because there needed to be a better basis under the OIML Certificate System. This was one of the reasons for beginning discussion about 20 years previously.

Another factor was that NMI in the Netherlands, which at that time was more or less privatized, wanted to undertake work not only in the Netherlands but also in other countries, so they had started discussions about some bilateral agreements with other countries. Some countries accepted this and made agreements with NMI Netherlands, but others did not accept it. The USA in particular said they did not like this type of bilateral recognition agreement, but would like to see a system of a more global nature. This was the start of discussions about creating MAA, and Dr. Ehrlich and his colleagues in the USA had from that moment been very active in working on the creation of the MAA.

In 1997 or 1998, therefore, the USA had drawn up a first document, which had led to many discussions, such as whether it should be an agreement or an arrangement, who would be entitled to sign the document, what would be the role of CIML Members in the system, whether it would address certificates or test reports or test results, whether it was a recognition or an acceptance system. All these discussions had taken a lot of time, but nevertheless, as President, Mr. Faber had always encouraged them to go on with developing a system which was much needed and which would facilitate one stop testing and one stop shopping.

As well as many discussions, there had been many problems. Among these was the fact that the USA did not want there to be any legal commitment, because NIST did not have any authority in the USA on legal metrology. Some European countries were not allowed to sign agreements; only the EU

Commission could negotiate and submit agreements to governments and to the EU Parliament. The EU Commission had never wanted to participate in the OIML discussions, arguing that they were not a CIML or OIML Member. Another problem was that there was already another recognition system in Europe, supervised by WELMEC, and a lot of Members were very happy with that. A number of bilateral agreements were also already in existence. Some countries wondered if a new system was really needed. There had also been much discussion of the cost of the system, which many had feared would be too high.

Nevertheless, at the beginning of the 21st century there had been a first draft document, which at that time had not been acceptable to the CIML. Shortly after this there had been discussion of the option of starting again with a completely different approach on the basis that the ILAC MRA was considered sufficient for the mutual acceptance of test reports, and a future IAF MRA should be sufficient for the mutual acceptance of type approval certificates. However, most CIML Members did not have enough confidence in this option.

Then, as President, Mr. Faber had asked the USA and the Bureau to start from scratch and work together to make a draft MAA document and to present it to the CIML. They had worked very hard and after some time there had been discussions in CIML meetings and in 2003, Mr. Faber's last meeting as CIML President, on the last day, in Kyoto, the MAA document had been accepted with a large majority in the knowledge that the system was not perfect but that it would be fine-tuned in the following years. This was exceptional, because normally a document had to be perfect before it was adopted by the CIML.

This had given great pleasure to Mr. Faber and he was now looking forward to evaluating its present state and future development. He had seen the statistics; the most interesting thing was not how many certificates under the Basic Certificate System or the MAA had been issued, but the difficult question of how many tests were not done or skipped as a result of the existence of this system.

Mr. Alan Johnston (on behalf of Dr. Charles Ehrlich)

Mr. Johnston conveyed Dr. Ehrlich's apologies that he had been unable to attend due to the US government shut down.

Mr. Johnston said that Dr. Ehrlich had enjoyed preparing his presentation and had gone back through numerous documents relating to the time of the development of the MAA. Dr. Ehrlich had been asked to focus his presentation on the role of TC 3/SC 5, for which the US served as co-secretariat with the BIML in producing OIML B 3 on the Basic Certificate System and B 10 on the MAA, and on the role played by these publications.

B 3 and B 10 were framework documents but they did not provide all the details concerning either of the systems, especially concerning their implementation. They did, however, provide the basic operating principles, which were augmented in other documents. The purpose of the presentation would therefore be to intermingle a little history of the two systems with a description of the organization – their structures, the responsibilities of key players including the CIML and its individual Members, the Bureau, the issuing authorities and participants, the manufacturers and their representatives – and some of the issues which had been identified as the MAA had progressed.

As previously mentioned, the OIML Basic Certificate System had been set up in 1991. Sam Chappell, whom many Members might remember as Dr. Ehrlich's predecessor as CIML Member for the USA, had been a member of the working group which had produced the first OIML Certificate System document. The idea behind the original certificate system had been to enable a manufacturer's measuring instrument design to undergo pattern or type approval by a testing laboratory in one OIML state, and if the design passed the tests prescribed by the appropriate OIML Recommendation, the OIML certificate would be issued and registered by the BIML. The certificate, along with the test report, could then be taken to another OIML Member State or anywhere, where a national type

approval certificate could hopefully be issued without requiring further testing. The certificate system had been, and remained, voluntary.

The basic aims of the certificate system were to globally harmonize testing requirements and thus minimize the need for manufacturers to engage in costly duplicate testing. A very important aspect of the original, now “Basic Certificate System” was that it did not place any firm requirements on the testing laboratory in regard to evaluating its competence. It was up to the CIML Member of each participating Member State to designate an issuing authority, if they chose, based on their own cognizance. The issuing authority then designated one or more testing laboratories in their country. While the testing laboratories were required to observe the principles established in the international guidelines, there was no outside evaluation of this. In fact, in some cases there was no fully capable government testing laboratory, in which case the issuing authority might utilize a third party testing laboratory or the testing laboratory of a manufacturer in their country. The Basic Certificate System still operated under the above principles. From Dr. Ehrlich’s perspective, the lack of a firm requirement on evaluating the competence of the issuing authorities and especially the testing laboratories was what primarily promoted the development of the OIML MAA.

Mr. Johnston showed slides illustrating the key stakeholders as described in the 2003 edition of the Basic Certificate System. As already stated, it was the responsibility of the CIML Member in a Member State which wished to issue OIML certificates for a given category of instruments to designate the issuing authority. No binding requirement was placed on the issuing authority concerning evaluation of their competence. In 2006, an amendment allowed more than one issuing authority per category of instrument. The issuing authority designated the testing laboratories, which complied with requirements such as ISO/IEC 17025. However, it was a recommendation and not a requirement that the competence of the testing laboratories be assessed even by the assessment bodies within their own country. The issuing authority had responsibility for issuing the OIML certificate and the test report, and the BIML had the responsibility for registering the certificates and maintaining a list of both the certificates and the issuing authorities on the OIML web site.

Mr. Johnston showed a schematic diagram which some Members might already have seen and which Dr. Ehrlich had used on previous occasions. Most Members understood how the basic scheme worked; if anyone required elucidation Mr. Johnston would find him an appropriate expert after the meeting.

By the mid-1990s it was apparent that the original OIML Certificate System was not enough for many countries who wanted further evidence of competencies of the issuing authorities and testing laboratories and so bilateral agreements were being pursued. Several countries, including the US, had objected to these, because they caused a lot of duplication. The US did not have responsibility for legal metrology and each state did this in the US. So the US National Conference on Weights and Measures had approached Mr. Chappell to see whether there was another option to the Basic Certificate System. So in 1999, TC 3/SC 5 had been created and had taken up the work of both revising the certificate system and also beginning to develop what was then called the OIML Mutual Acceptance Agreement. In June 2000, a TC 3/SC 5 meeting was held in Paris to discuss what was already the 6th committee draft of the MAA document. Those few people present who had been at that meeting might recall that many issues surrounding the MAA were still being discussed extensively there.

Mr. Johnston said that when he made his own presentation he would talk about the time when he was President but he pointed out that the document was already on its sixth draft five or six years before it was implemented. Mr. Johnston believed that the complexity and difficulty of getting agreement round an MAA was part of the reason why progress had not been as great as he had hoped it might be during his term as President. There had been other issues also, which would be examined later. A number of points had been discussed during this meeting: the advantages and disadvantages of establishing confidence in the issuing authorities and testing laboratories, who would make decisions and who would coordinate the MAA system. These were important discussions which had been necessary but they had taken up a tremendous amount of time and effort and had led to some confusion as to how this system would eventually unfold. Options proposed and discussed had ranged

from self-declaration to third party accreditation. Costs were also a concern, especially among some OIML Member States, and also some manufacturers had expressed concern that they felt that the OIML Basic Certificate System met their needs and they could not see the benefits in having an MAA as well.

At this meeting also the decision had been taken to call the MAA an arrangement and not an agreement, since an agreement implied that there was agreement among governments, which was not the case, the MAA being an arrangement among issuing authorities involved. Mr. Johnston thought this was a key decision and a good decision in the sense that it removed the need to seek individual government approval in a lot of cases for participants in the MAA. Other matters discussed included the possibility of having supplementary tests beyond those in the OIML Recommendation and having the issuing authority include a letter of transmittal with the certificate and test report to clarify everything that had been done during the testing. There had also been clarification of the supporting role of the BIML. Interestingly enough, considering the options, the outcome of the meeting had been to propose self-assessment. However, as Members knew, during the following three years there had been a completely different outcome which had culminated in a system which was approved in 2003, which had in turn resulted in 2004 in the published version of B 10, in two parts, part two being the assessment checklist to be used for assessing the competence of both the issuing authorities and testing laboratories under the MAA. As Members knew, the allowed methods in B 10 were either accreditation or peer assessment, and from Dr. Ehrlich's perspective, there was not really a lot of difference between the two, although different opinions might be heard on this later in the day.

As he had described earlier, Mr. Johnston said, B 10 was a framework document, leaving room for many of the details of the implementation to be worked out. However, there were two key components. One was to set up Declarations of Mutual Confidence, or DoMCs, which were the signed documents according to which issuing authorities agreed to accept test data from another issuing authority unless there were serious questions about the data. The other provision was to establish what were called Committees on Participation Review, or CPRs, which were comprised of experts from the participating Member States, to get together to review the information submitted by the issuing authorities in order to critically assess the competencies of the issuing authorities and the testing laboratories they used.

Mr. Johnston showed a schematic provided by Dr. Ehrlich which demonstrated how a DoMC would be established. It had always been the intention that the BIML would play a key role in coordinating and implementing the MAA. This was indeed the case up to the present day. It had also been the intention that there would be a separate DoMC for each OIML Recommendation that was covered under the MAA, and this was also still the case, although there had recently been some talk of possibly having an overall DoMC with annexes for the individual OIML Recommendations that were covered. This had possible advantages, especially considering the way in which the MAA was viewed outside the OIML, and he suspected that it might be one of the items discussed later in the day. It had also been the intention that there would be a participants' panel that would review the inputs from the CPR, but this panel had never really materialized as a formal body; it remained virtual in that each participating country voted on the recommendations of the CPR, but there was no separate body or meeting to review the voting outcomes.

Mr. Johnston showed a chart demonstrating the different ways in which a country could participate, so countries A and D might be Issuing Participants that issued MAA certificates, country B might be a Utilizing Participant that accepted OIML certificates and test reports but did not issue them, country C might be what was called in B 10 an associate, which was willing to use the OIML test reports for various purposes within their own country. The schematic also showed a pool of legal metrology experts who could do the assessments, and one of the responsibilities of the CPR, in B 10 was to validate the candidacies of the members on this list. More would be heard about how the CPR process had been working, including identifying candidates as well as the review process in general.

After the publication of B 3 in 2003 and B 10 in 2004, there had still been several implementation issues to be worked out, both financial and operational. For example, the MAA had been expected to be self-financing, but it had quickly become apparent that this would not work, at least at the

beginning until the program was fully functioning. A number of decisions had therefore been made by OIML Members as part of the MAA review to allow for the hiring of a staff member funded out of general OIML revenues.

Operational issues had included how to operate both the Basic Certificate System and the MAA Certificate System in parallel and how the CPR would actually function. Again, all this took a lot of time, which had led to some of the issues which would be discussed later in the day.

Between 2004 and 2011, a lot of experience had been gained with the MAA, for example how it was going to work, and what changes might be envisioned or might have to be made at a later date. The first CPR meeting, covering R 60 and R 76, had been held in France in 2005, with the first assessors' training later that year in Paris.

As time went on it had been recognized, Mr. Johnston said, that it was necessary to harmonize some of the terminology and technical aspects of the two OIML certificate systems documents, so the revision of both documents had been undertaken in a TC 3/SC 5 meeting beginning in 2006, which had eventually led to the publication of a revised B 3 and B 10 in 2011.

Mr. Johnston then went on to explain some of the differences between the Basic Certificate System and the MAA, showing them on a slide.

Besides the issuing authorities, now called the Issuing Participants, and the testing laboratories, now being either peer assessed or accredited, it was possible under the MAA to include additional tests from other countries that the CPR had reviewed and identified as being not substantially different from the corresponding OIML requirements. These not substantially different requirements were listed in each of the appropriate DoMCs. But basically, the manufacturers could still do the same things with their MAA certificate and test report, and now also had an authenticating letter, as they would have had with the original certificate, namely to go to other countries to obtain either their national certificate or other authorization to market and sell their instruments.

Looking further at B 10, Mr. Johnston pointed out some key differences between the 2004 and 2011 editions, to illustrate what had been learnt during the initial implementation phase of the MAA. Besides harmonizing terminology with B 3, the 2006 amendment was incorporated and clarified matters relating to DoMCs and CPRs that had been learnt along the way. Clarification had also been provided on maintaining the OIML Basic Certificate System and MAA Certificate System in parallel, and on the processing, registration and use of the MAA certificates and OIML MAA type evaluation reports.

In the 2011 edition of B 10 there had been five new annexes which had not been included in the 2004 edition. The middle three of these pertained to the registration and evaluation of Issuing Participants in a DoMC, with the third providing a summary of the maintenance process of the DoMC. It showed the time line for submitting information by the Issuing Participant as well as the time line for the review of that information by CPRs. More would be heard later about the issue of providing maintenance of the process. The checklist for issuing authorities and testing laboratories to complete was no longer part of B 10 but had been moved to a separate MAA section of the OIML website.

Mr. Johnston then showed the differences between the 2003 and 2011 versions of B 3. The name had been changed to Basic Certificate System to distinguish it clearly from the MAA, although in fact much of MAA built on and included what was in the basic system. It was clarified in the definitions in the 2011 edition that manufacturers' testing laboratories were included as allowed testing laboratories and also that more than one issuing authority per nation was permitted. Terminology had also been added to distinguish between the different types of test reports and certificates, and details were provided on how to move from having a category of instruments in the Basic Certificate System to having it in the MAA Certificate System. The 2011 B 3 also specified that when all three parts of a Recommendation were published the instrument category automatically entered the Basic Certificate System. More might be heard later in the day about the possibility of not keeping the three parts of a Recommendation as three separate documents, since they could get out of sync, but the concept would probably still apply.

Returning to B 10, Mr. Johnston told delegates that another significant issue that had arisen since the 2011 edition, and had since been settled, was the use of test data from manufacturers in the MAA, under conditions of what was called controlled supervision. As Members might know, while the MAA was voluntary, once a participant had signed the DoMC there was an obligation on that participant to accept test data unless there was a justified reason for questioning it. However, as might be recalled, there had been a successful vote at the 2012 CIML meeting on an amendment to B 10 to allow the use of test data obtained from manufacturers' testing laboratories under certain well defined conditions, but this was entirely voluntary, no questions asked whether any signatory to the DoMC had to accept the test data. So there was now the 2011 version of B 10 that incorporated this amendment.

Apologizing for perhaps not having explained these matters as well as Dr. Ehrlich might have done, Mr. Johnston said that he hoped that he had provided delegates with some insight as to the issues related to the development of the relevant Basic publications and some of the issues related to the development of the MAA during his six years as CIML President. He invited questions, adding that if no-one else had any questions he had prepared some himself for his own presentation.

Mr. Dixit asked which countries were in Group A, what India's position was, and what he should do if he was interested in the MAA. He noticed that countries had been divided into A, B C and D.

Mr. Johnston replied he did not have in front of him the information on who was in which group of countries, but this information could be provided. On the MAA he asked whether India would be applying as an Issuing Participant or a Utilizing Participant.

Mr. Dixit replied he wanted to participate with the BIML and with the CIML for the MAA.

Mr. Johnston felt that this could be best answered in a discussion after the seminar. The process of deciding to participate involved determining whether to do so as an issuing or a Utilizing Participant in the MAA.

Prof. Schwartz added that the information required in order to answer Mr. Dixit's question could all be found on the OIML website, under "Certificate Systems", where all the rules for becoming a member were explained.

Mr. Johnston further recommended Mr. Dixit to speak to Mr. Mussio, the BIML expert on the MAA, who had been very helpful in the past.

Mr. Dixit said he had looked at the website but still required some clarification on how to participate. If this clarification was given, he hoped many Members would participate. The procedure should therefore be explained in this seminar, including what had to be done and how.

Mr. Mussio explained that the first step was to contact him and he would provide all the required information and explain the procedure.

Mr. Dixit said that was something he could do, but if things were elaborated, and soon, all Members could do it. This was a very important issue at an international level. Certificates from only a few countries were accepted, others' certificates were not. But the procedure, qualifications and experience for obtaining these accepted certificates had to be elucidated, including whether only governing bodies or also private bodies could be recognized.

Prof. Schwartz thanked Mr. Dixit for raising this important point about the importance of advertisement for the MAA. Thought should be given to producing a circular providing the necessary information showing a new utilizing or Issuing Participant how to contact the relevant person at the BIML, what information had to be provided and so on. He believed that this was important and should be included in the conclusions of the meeting.

Mr. Albasini asked whether the "Mutual Acceptance Arrangement" was replacing the "Mutual Acceptance Agreement", and in either case, what was the difference between them.

Mr. Johnston replied that the original name had been “Mutual Acceptance Agreement” but as he had explained earlier, many governments objected to the use of the word “agreement” from a legal perspective, since an “agreement” would normally signify that governments had agreed with the terms and conditions of the mutual acceptance. It had therefore been decided as part of the review process that in order to avoid those legal issues of having to obtain government approval, it would be called an “arrangement”, which was a non-legally binding term that allowed the issuing authorities to agree on what would be in the MAA without having to seek their own governments’ approval.

Mr. Almulla asked whether Corresponding Members could join the MAA or only Member States.

Mr. Mussio replied that to be an issuing or a Utilizing Participant it was necessary to be a Member State. Corresponding Members could be associates of the MAA, but for full participation and to have votes at meetings it was necessary to be a Member State.

Prof. Schwartz suggested that this important information should be included in the proposed circular.

Mr. Alan Johnston

Mr. Johnston began his own presentation, covering the term of his presidency of the CIML, by offering an explanation of why it had been thought necessary to produce a Basic Certificate System and/or MAA. He showed a slide demonstrating that, then as at present, governments were being asked more and more to protect their consumers, there was newer, better, more hi-tech technology in measuring instruments, and manufacturers and countries had been asking for one-stop shopping and one-stop testing. However, because of the scope and complexity of modern measuring instruments, a broad spectrum of expertise and testing capability had to be maintained. This was not always possible in every country. One of the challenges now facing most metrology organizations was how to do all this, normally with a budget which was shrinking or at best not growing, except for organizations with a cost recovery system which allowed revenues to be re-spent.

For the last 20 years the metrology organizations had been asked to justify why they needed all of this equipment, why the cost of doing this was so great and what were the benefits to politicians. If politicians could not be convinced that what was being done was important to consumers and to industry, nothing could be achieved. From experience with the Canadian government Mr. Johnston had learnt that it was all about what was in it for politicians and for the public of the country. Measurement organizations had to market themselves in order to achieve anything.

Citizens, Mr. Johnston told delegates, were now demanding access to the new technology, but at the same time they wanted their government to protect them. A way had to be found to allow a device which was being manufactured and tested in one country to be sold in other countries without doing vastly costly re-testing. If duplicate testing was being done by each of the laboratories, no matter where they were, resources were being used, and a way had to be found to reduce the duplication. Measurement organizations had to find a niche, to become expert in certain areas but they could not be experts in all areas. Some countries were lucky enough to have that kind of expertise and financial base but many countries were being pressured to find better ways of accomplishing the objectives which the government wanted to achieve but did not want to pay for. The challenge was to do things differently and hopefully better, and in Mr. Johnston’s opinion the MAA and the Basic Certificate System were examples of how organizations could demonstrate to their governments how this kind of work could be accomplished.

When the MAA had initially been introduced, it had been intended to assist legal metrology organizations in addressing the types of challenges just described, and to assist manufacturers in resolving some of the challenges associated with selling measuring devices in multiple jurisdictions. The OIML had a role in assisting manufacturers in whatever country to get these instruments to market as quickly as possible, ensuring at the same time that they performed as the manufacturer

indicated they would perform, and that they would continue to perform throughout the lifetime of the device.

Mr. Johnston showed a slide outlining what he considered to be the benefits of the MAA. Other countries' facilities and competencies could be used to achieve type approval. It allowed for the exchange of ideas and information, as was clear from the present seminar and many previous ones. For the manufacturers, promoting standardized testing gave them a target, without which every time they went into a different country they might be asked to do different tests, perhaps similar or slightly different, but nonetheless a lot more work had to be done in order to have a device accepted within different countries. Mr. Johnston hoped that there would be an overall decrease in the cost of testing, in the sense that under the MAA, assuming that the test results were valid, in other countries that had signed up to the MAA it would not be necessary to test again.

Another benefit, Mr. Johnston said, was that it was a very flexible program. It was voluntary, OIML Member States could decide whether they wished to participate or not, the commitment to accept and utilize test results was not legally binding, but, as previously mentioned, those who signed on should accept results unless they had real concerns with the validity of the test data. The most important aspect of the MAA was the confidence built up between the testing authorities. Much time had been spent during Mr. Johnston's presidency discussing how confidence could be built up between testing laboratories in different countries. This happened through exchange of information and of test results, which was where he believed the flexibility of the MAA was very important – it was not essential to accept everything, and in some countries there might be valid reasons why this could not be done.

Mr. Johnston said that he had earlier alluded to the large amount of work and administrative processes involved in the early years of implementation of the MAA. He believed that it was a very complex system, not obvious or straightforward to a newcomer. Many changes had been made in the course of setting up the MAA. After 20 years, changes were still being made.

One of his tasks as President had been to make sure that the information was spread, written in plain language that it could be understood by people who wanted to participate in the process. This was not easy, in the light of the responsibilities of different countries in terms of their legislation versus OIML Recommendations. Many countries of course could not adopt OIML Recommendations; their government required them to go through a whole regulatory process. It was important that if countries chose that route they should understand what was involved in the process. He and several others had spent a lot of time trying to explain this to countries which wished to participate. Later there would be discussion of what had and had not worked. He felt it important that the process be made understandable, written in plain language, and marketed – something that had perhaps not been done well in the past, but which was essential for legal metrologists.

One question Mr. Johnston wanted to raise was whether the decision that two issuing authorities were needed initially had been the correct one. Might a single one have been enough, or would three have been better? Difficulties had been experienced with R 49 in terms of the number of issuing authorities. Had it been made too complex, or had there been valid reasons for doing so? Extensive involvement by the BIML had been necessary, Régine Gaucher and then Luis Mussio being heavily involved in working on the MAA, so it was by no means inexpensive for the OIML. The BIML had given good support but their resources were limited, and if they were working on the MAA they were unable to tackle other projects which Members would like them to begin.

Looking back, Mr. Johnston wondered what could have been done faster or differently to speed up the implementation. Looking at the past might give rise to changes that would allow faster implementation of the MAA in the future.

His second question regarded the number of issuing authorities; he understood why more than one was wanted, but it might not always be possible to have two at the beginning of a new Recommendation.

His third question was whether the anticipated benefits for the MAA been realized for load cells and automatic instruments. He knew there had been issues with water meters and the desired benefits had not been achieved.

Mr. Johnston concluded by saying that his purpose in raising the above questions had been to give Members time to think about them as some of these issues would be discussed later. His own view was that the MAA had to be made as simple as possible so that everyone clearly understood it, and to continue to develop the level of confidence between countries that was necessary for its success. Many countries did not wish to include manufacturers' test results at present; this might or might not change, but the process was flexible enough to allow countries to accept them or not. Many issues within the MAA needed to be clarified; he was glad that the Member for India had asked a question. If CIML Members themselves did not understand the process, how could it be sold outside the Organization? Mr. Johnston asked for questions.

Mr. Oosterman asked Mr. Johnston to say something about the involvement of manufacturers in the stage of developing the MAA, because they were the greatest beneficiaries in the field.

Mr. Johnston replied that he clearly believed that manufacturers should be involved as much as possible in the development of the MAA, and he knew that a number of manufacturers' associations had participated actively in it, which was a good thing for the MAA, as it prevented OIML from becoming insular and inward looking. The purpose of type approval was to make sure a device worked as intended. It had never been intended to check the same thing 50 times. It was essential to have the opinion of manufacturers as well as countries and consumers.

Mr. Dixit said that if certificates were issued by say Germany, the USA and the UK, all three would be different. One country might have 100 % OIML certification, another 80 % or another 90 %, so which of these certificates would be accepted?

Mr. Birch thanked the speakers for reminding him of the 80s and 90s discussions of the development of the MAA. He was delighted that a reasonably good scheme had at last been arrived at, and was particularly encouraged by the move towards accepting test data from manufacturers, because a key component of any type approval system was that manufacturers should have the facilities to ensure that their production models met the requirements. In addition to Mr. Johnston's list, another challenge was the need for a level playing field for manufacturers, both internationally and domestically. There had always been concern that, due to the conformity of production models, some manufacturers were doing the right thing while others would cut corners and obtain an advantage in the market place. This depended on conformity of production models and he was not sure how much progress had been made on this. He agreed with Mr. Faber that to test pattern evaluation more than once was a waste of money, but it was a case of how to have confidence that production models met the requirements. This was particularly a concern for developing countries. Developed countries could often pick up non-conformity in the field with their own testing procedures but many developing countries had very limited test facilities and he had too much experience of equipment which did not meet requirements being dumped in developing countries which would result in major financial hardship for those countries. He was not sure that this point fitted in with conformity production models but wondered if Mr. Johnston had any comments on it.

Mr. Johnston agreed that it was important to ensure that conformity met type. He thought that the matter needed to be pursued, but was not in a position to say that this should be the next project for the OIML. Sometimes devices could be pulled and tested in the field; there might be many ways of looking at it, various marks that could be used. There was general concern that a device that had been tested might not be the one which would reach the market place. However, although he knew it was a matter for concern, for the manufacturers he had spoken to, their whole reputation might be affected by this. In any line of business there would always be people who cut corners; this matter, especially its effects on developing countries and how to help them, had frequently been discussed but regrettably no viable solution had ever been found.

Mr. Mundembe (Namibia) said that his was one of the developing countries being talked about. A challenge they had experienced, as a small country trying to put legislation together that would work for them, was determining whether a particular measuring instrument was really suitable in

terms of their regulations. One instrument had come with a very nice certificate from a German company but it had been difficult to establish whether the tests listed on the certificate corresponded to the tests required by Namibia's regulations. They would have liked access to the test results themselves, but had been told that they could not have these because of confidentiality issues. This was a challenge for the OIML.

Session 2 – Current operation and impact of the MAA

Prof. Schwartz introduced this session on the current operation of the MAA by listing the speakers:

- Mr. Cock Oosterman Certification Manager of the NMI, Netherlands, representing the most important Issuing Participant in the MAA at the moment with the largest number of certificates issued;
- Mr. Stuart Carstens, CIML Member for South Africa. The National Research Council of South Africa was a MAA Utilizing Participant, so he would provide input from this aspect and also the viewpoint of developing countries;
- Mr. Luis Mussio, the BIML engineer in charge of the MAA and Secretariat for the MAA CPRs.

Mr. Cock Oosterman

Mr. Oosterman introduced himself and said that he had been happy to discover in that morning's Vietnamese newspaper that a new decree issued in 2011 was coming into force shortly, which ruled that petrol station owners would face heavier fines of up to \$2000 and have their business licenses revoked for meter rigging. As a result those who intentionally rigged meters or committed similar frauds would be fined. The fact that people relied on their systems in their different countries had already been mentioned, and Mr. Oosterman really hoped that the decree would discourage fraudulent activities at petrol stations, which were becoming quite widespread and directly affected customers. Further on it was stated that stations using inaccurate devices in which the error was of a technical nature would be fined. This started from conformity to type, because the instrument should be in conformity with the type.

Mr. Oosterman said that he had taken this as a very good example from daily life of having a system of certification which could be relied on. For the WTO, a very important issue was to reduce technical barriers to trade, and this was also the reason why the MAA had been established, i.e. to provide manufacturers with a certification system arranging mutual acceptance. One time testing, as previously mentioned, was very important for them.

Mr. Oosterman went on to say that NMi had not been much in favor of an MAA system because they already had MRAs with other countries so that their certificates could be accepted. As also mentioned by Mr. Johnston, NMi had a very large testing facility for different kinds of measuring instruments. This meant that they were able to issue OIML basic certificates for a wide number of Recommendations. They had a DoMC with a number of countries and an operating system with B 3 and B 10 that gave very good rules on how to operate. They had an operational CPR which had already met several times, and they performed peer assessments, which was a very good additional issue for acceptance. So the whole system relied on trust of these organizations which were issuing authorities. They had established a number of assessors who were very well informed in the field and knew the details of this type testing and what was relevant, and could do the assessments.

Looking at accreditation bodies, they had very good facilities and good assessors for calibration, but legal metrology was quite different from calibration, and especially with the peer assessment being performed now, these assessors were giving much more information on how to do that in type

approval. This whole system had given very good transparency between the different countries and between the different issuing authorities. The channels of communication were also much more open.

The result so far was that the Netherlands, as an issuing authority, issued quite a large number of certificates and had seen a big increase in the number of MAA certificates. At the moment of speaking, Mr. Oosterman said, it was known that about 28 MAA certificates were directly accepted for NTEP approval in the USA. So the technical barrier for the manufacturer was reduced. Nevertheless, some comments could be made on this system. As seen at the seminar, and as India and Mozambique had indicated, there was considerable confusion as to what was the basic system and what was the MAA system, and how it could be accepted. A lot of missionary work needed to be done, and there were some concerns about the system. It had a lot of benefits, it was operational, the rules were there. But there was concern about the level of acceptance. Worldwide, only a limited number of countries accepted it. There were seven issuing authorities for MAA R 60, and about twelve Utilizing Participants. This was positive, but looking at the MRA, which NMi and also Germany and France had, the MAA only offered limited additional value. This was a concern that NMi had. Earlier statements and comments by India and Mozambique raised the question of whether the system was really known and whether it could be accepted. If a country had limited testing facilities there were certificates which could readily be accepted to obtain national approval. This was a concern of NMi, i.e. how added value could be given to the MAA system which could be wider than the MRAs that issuing authorities already had in place.

Looking at the ratio between basic and MAA certificates, there was indeed an increase in the proportion of MAA certificates, but this did not have a relation to the international acceptance of MAA certificates. The issuing authorities who were issuing basic certificates and were now issuing MAA certificates were not issuing any more basic certificates. The overall number of certificates was not showing a significant increase, the MAA was merely replacing basic certificates. Acceptance was not any wider, because countries which had previously accepted the basic certificates now accepted the MAA, but countries which had not accepted the basic did not accept the MAA either. This was a concern. Looking at the effort put into the MAA and CPRs meetings, the number of certificates in R 49 was very limited. In 2012 and 2013, more basic certificates than MAA certificates had been issued. Thought had to be given to how this could be improved.

Looking at acceptance, many countries had signed the ILAC agreement, especially on testing. Testing was the most widely accepted agreement within ILAC but there were still refusals of ILAC reports. If NMi issued a certificate or test report with ILAC approval it was rejected in several countries and retesting had to be done. The goal of one-time testing was being missed.

In the CPR meetings there had been discussions about acceptance to what level. For example if an issuing authority was testing itself it was directly accepted because the whole system was based on peer assessment or accreditation. But what would happen in a case where the issuing authority used third party equipment, or used test facilities by witnessing, or witnessing by webcam?

Another question was how to deal with MTLs. Prof. Schwartz had done a lot of work on this, but concern remained on why certificates were not accepted in cases where there were manufacturers' test results or where manufacturers' equipment was used.

A further worry was how much traction there was within the CPR and how much power it had. Rules had been set and a CPR was functioning, but there were also problems with its functioning. For instance, to perform peer assessments there was a list of experts, and this list was needed to do the peer assessments, using not a calibration approach but a legal testing approach. To get people who were experts onto this list was very difficult, because the response of the Utilizing Participants in the CPR was very low. So although experts were available, they could not be added to the list because there was no voting on it.

Another issue was that there was a limited number of Recommendations in the MAA: R 60, R 76 and R 49. MTLs were also included. If other Recommendations were to be included, matters became more and more complex. First of all, Mr. Oosterman said, the first two problems he had mentioned had to be worked on, i.e. acceptance and the limited traction of the CPR. These were the concerns of NMi.

This week, Mr. Oosterman continued, was the 48th CIML Meeting, and NMI wanted to address some key questions to the Members. The first was what was to be done to render acceptance more global. It had already been said that more promotion was needed. Several countries did not know how to apply to participate in the MAA system. The second question was what could be done to get more discipline, more traction in the CPR, and to improve their power. Comparing the MAA with accreditation, this was now nationally arranged and accepted within the country, with ILAC agreements also internationally accepted. How could this be arranged for the MAA? Mr. Oosterman thought that the OIML was only facilitating this. It was not an accreditation body, and only the CPR had the power to work on this.

Another issue was how to attract the manufacturers, get them involved and get their response to the CPR, because they were the beneficiaries of this system. A survey among the manufacturers had met with a very low response. Mr. Oosterman felt that this must be worked on and wondered how the CIML could best do this. Prof. Schwartz had asked Mr. Oosterman if he had solutions. He did not have direct solutions but he could give the meeting some recommendations.

Firstly, on the matter of global acceptance of the MAA there should be a transition period from the basic system to the MAA. There had been a question on the difference between them. It was important to replace the basic system with the MAA system so that there was wide confidence in its accreditation, peer assessment, CPR and so on. There should also be regular meetings with the CPR and a group of experts should be available within the CPR who could perform the assessment like an accreditation and also provide the CPR with technical competence by having the technical experts involved. Secondly it was important to have wide acceptance in place before extending the number of included Recommendations or dealing with other issues such as MTLs. These, for Mr. Oosterman, were the main issues and his main advice to the CIML meeting.

Prof. Schwartz thanked Mr. Oosterman for his presentation and his recommendations and asked for comments and questions.

Mr. Awosola said that the UK shared these concerns regarding the operation of the CPR in practice. His understanding was that Issuing Participants were not providing the relevant information to the CPR in a timely manner, and also in some cases translation of the information provided was not readily available. They also had some concerns regarding the nomination of experts to the CPR. They considered that there should be a transparent process by which experts could be nominated, also in a timely manner.

Dr. Richard referred to Mr. Oosterman's concern about the insufficient level of acceptance in general. He wondered what Mr. Oosterman thought was the reason for the small number of Utilizing Participants and how this could be changed.

Mr. Oosterman felt that there were several issues. One was lack of knowledge in several countries, so some missionary work was needed. A delicate issue was protection of the national market. A wider acceptance of one-time testing could mean that some countries missed their own testing. Also, in some places national legislation was not yet in line with OIML Recommendations, so there were national requirements. This had already been solved by means of DoMCs. National requirements could be given so that if testing was done, additional requirements could be given to the manufacturer. But countries needed to know what their additional requirements were, and to know the system. So there were several reasons which had to be understood before there could be a wider acceptance, and Mr. Oosterman thought that in order to solve this, manufacturers should be asked to provide this information to the CPR. The manufacturers encountered the problem during the process of getting market access, and they could be a very good advisory group to the CPR. An advisory group made up of manufacturers' associations would have considerable experience in different countries and could give good feedback on why acceptance was not there.

Mr. Dixit thanked NMi Netherlands, whose certificates India accepted, and who answered letters promptly. Manufacturers always benefited from this. Once NMi certificates had been received, India issued approvals on the basis of these and did not test equipment further. He went on to say that the EU had its own standards, apart from OIML Recommendations, and India found it confusing to know to which set of standards to conform. Some certificates conformed to European standards, others to OIML MAA certificates, and India did not know which to accept. The European standard did not completely conform to the OIML Recommendations and this created confusion in the government.

Mr. Oosterman agreed that this was true. In Europe there were normative documents or standards which were used for European approvals, which were not directly in line with the OIML. When the time came to vote on R 46 for electrical energy meters, it was very important for these Recommendations to be ready before there was an MAA so that international acceptance could be reliant on OIML Recommendations and not on European or ISO standards. There should be worldwide accepted standards, but national requirements could still be applicable and could be addressed through the DoMC, so this could help.

Mr. Dixit said that his question had been that all OIML Recommendations were accepted by CIML Members, published and circulated and the legal framework of most countries was based on these. But in the European Union there were some different types of system and OIML Recommendations were not fully accepted. Yet these countries were also Members of the OIML, so when they issued a certificate which did not conform to OIML standards, how could other OIML countries accept it? Indian law prescribed OIML standards, so he wanted to know how they could accept European Union certificates not conforming to these, even if they conformed 90 % to OIML.

Mr. Oosterman agreed that this was true, and indeed was the reason why he mentioned that several issues needed to be thought about. Global acceptance of these could only be done if there were common agreements on technical requirements.

Mr. Dixit said that countries which were Members of the OIML should accept only OIML requirement standards and not others. His question was why this was not the case for EU countries.

Mrs. Lagauterie explained that if an instrument was totally in conformity with an OIML Recommendation, all the necessary steps had been taken in the past years so that these instruments could be accepted according to the European Measuring Instruments Directive (MID). So if there was an OIML MAA certificate for a non-automatic weighing instrument or a water meter, these instruments were strictly in conformity with R 76 and R 49, so that there was no doubt that they could obtain a European certificate. But it was true that the contrary was not the case, because there was a legal possibility in Europe to deviate from the OIML Recommendation and to fulfil only what were called essential requirements. These essential requirements had themselves derived from OIML Recommendations at the time when the EU Directive had been written. If a manufacturer applied for an EU certificate for an instrument that was not fully in conformity with the OIML, he could obtain this EU certificate providing that he fulfilled the essential requirements. However, this manufacturer could not claim that he was fully in conformity with the OIML Certificate System and could not obtain automatic recognition through the OIML MAA system in other countries. But this was the choice of the manufacturer, and this approach in Europe was not only valid for weights and measures, it was valid for all technical fields. It was not a situation the EU CIML Members had wished for, but it was a political agreement over which CIML Members had no control.

Mr. Oosterman added that if a manufacturer held an MAA certificate for a non-automatic weighing instrument, load cell or a water meter, he would certainly obtain a European type approval certificate. This was the important message for the OIML community.

Prof. Schwartz thanked Mr. Oosterman and the other speakers for their contributions. Mr. Oosterman's presentation had been not only provocative but also very useful.

Mr. Stuart Carstens

Speaking as an MAA Utilizing Participant and from the viewpoint of developing countries, Mr. Carstens said that he had been asked to make a presentation on the benefits of the MAA to Utilizing Participants.

He would go on to speak about the MAA in relation to developing countries, and then how to improve the MAA for the future. His presentation would consist of a short introduction, then the perspective of Utilizing Participants, a glance at the developing country perspective, challenges or a way forward and a short conclusion.

Mr. Carstens quoted from an MAA document: “to establish rules and procedures, to foster mutual confidence, to promote pliable harmonization and uniform interpretation, further to promote efficiency in time and cost and to offer a viable alternative”. This question of offering a viable alternative for countries with no test facilities was what he would like to spend time on.

Mr. Carstens said that if delegates looked at the current MAA ratio of utilizing to participating members within the three DoMCs, it was 5:2 on R 49, 18:11 on R 60 and 20:10 on R 76. Combining these, 22 countries were participating and 11 were utilizing – a 50/50 split.

The advantage of possible type approval was that the normal six months of testing could take half that time for a Utilizing Participant, and half the cost. But was this really a benefit to the regulator, or to the person who was doing type approval, if this was a government department? Or was the advantage once again to the manufacturer? Clearly, there was an advantage to the manufacturer; the regulator would hope to be more efficient and more cost effective, because the government wanted to use taxes as well as possible. However, in the developing communities there was a certain amount of protection of national interest and needing to look at their own economies, which might well be having an influence on the MAA.

The disadvantage was that if one accepted and became a Utilizing Participant, there was no personnel development in type approval, all they did was read test reports and see whether it was a go or a no go situation. The test report said that the item was within a tolerance, all that was done was ticking boxes. Where was this person to pick up experience within his own sphere, if he did not go out and test instruments? Systematically expertise was lost. It had been said that Utilizing Participants were not making people available for peer assessment; this would get worse because if there were a lot of Utilizing Participants there would not be experts to make available to the peer assessment and accreditation teams.

Secondly, Mr. Carstens said, infrastructure did not develop or grow, due to lack of exposure or requirements. This made it more difficult to grow. For example, South Africa would like to grow their type approval section and offer a service to SADC, and even further into Africa, possibly as an issuing authority later on, but this became very difficult once a country was a Utilizing Participant, because it was difficult to explain to the government why more money was needed. Current participants in the MAA were predominantly first world countries, but eventually all experts would come from there if there was no development of experts within the developing world.

Further to this, there was no guarantee that instruments imported into the smaller economies were compliant to the certificate issued at the time of the MAA. The Utilizing Participant then had to spend more money but in another way, by trying to find increased inspection function looking at conformity to type or initial verification and testing to make sure that it complied with the requirements of the MAA. This could also stifle industry growth in some of the fields in developing countries. If they wanted to set up a small scale industry, this became very difficult for them.

Mr. Carstens also said that the MAA clearly added value to established industry with one test, one time, one place. It took them much less time to get approval done, because they did not have to do 20 approvals, and saved cost. The uniform application of requirements was also useful to the established manufacturer. Looking at current usage, this was clearly at the moment an American/European system, as against developing countries. On R 49 it was 7:1; on R 60 13:5; and on R 75 14:6. This

was to be expected at the moment as most of industry was in these countries, but should be looked at if the MAA was to be improved. At the moment it seemed to have stalled. In the almost 10 years since its inception, issues were continually being discussed, and this had the effect of slowing progress. But if the OIML wanted the MAA to add any value, they needed to start looking at how this could be done.

Mr. Carstens also wondered whether participation might be too costly. The BIPM MRA accreditation was in the process, the laboratory needed to be accredited or peer assessed, but they paid no membership fees – you joined the MRA for free. So why was the OIML charging more membership fees and making it more difficult? Of the 47 developed member countries, only 16 used the MAA at the moment. In the developing world the situation was worse; of the 78 members, including Corresponding Members and Member States, there was a ratio of 78:6. Nothing seemed to be happening in other disciplines, whether this was an issue of revenues or of self-interest, and from what other speakers had said, this seemed likely to be the case for some time.

Looking at the Convention, Mr. Carstens said that it stated that personal relationships between departments of weights and measures should be developed. The MAA was an ideal opportunity to do this. It was one of the ways in which developing countries could be helped. What he was going to say next to some extent contradicted what he had said earlier. He had said that there were a lot of disadvantages for a country which became a Utilizing Participant, but for a country which had nothing, being a Utilizing Participant did have advantages, because if it wanted to set up a type approval department, this cost a lot of money in equipment, laboratories, etc. There was also the issue of resources. Many developing countries did not have the resources that were needed, or the expertise, or any currently entrenched industries. So in Mr. Carstens' view, the MAA could be used as a vehicle to support the OIML as an international body by using it to help the developing countries to set up some form of type approval, which at present many of them did not have.

The need to market the MAA had been mentioned, but a document was not enough. Assistance with arrangements could become part of the OIML's initiative for helping developing countries. A model could be developed, based on becoming a Utilizing Participant, and present it to developing countries. Training could be offered in helping them to develop and implement the system. Mechanisms needed to be found to help developing countries become more and more involved in the activities of the OIML. There needed to be a full blooded marketing campaign on the benefits of membership and training on the new D 1, help in obtaining economic assistance, secondment programs put in place among Member States, and assistance offered in disciplines on recognized metrology qualifications. This was another problematic issue. A document existed about training, but this had to be in-house as there were no facilities elsewhere. Mr. Carstens thought that some sort of degree in legal metrology should be set up in institutions of higher education.

Going further, Mr. Carstens said that the national regulator dealt with other matters as well, but he wondered if this was something that could be done at a higher level and internationally. He thought this was a good way of setting up a type approval ability with minimum costs and maximum control, because at the moment there was no control (though of course also no costs). Type approval, however, did not solve the basic problem, because once again the issue of conformity to type was raised. If this was implemented more and more an issue arose of how to make sure the countries that were utilizing and importing were assured that the instruments being exported to them were in line with the certificates that had been issued.

In conclusion, Mr. Carstens said that he thought the MAA was of value as Utilizing Participants to the developing countries which had no type approval process in place; that it needed to become more inclusive; that the membership should be looked at; and that the demands of developing countries should be looked at. Looking at the United Nations, where the developing world was asking for more and more say in issues and in the G20 and many other forums, the OIML needed to take cognizance of this and see how it could be possible to involve developing countries, before this became an issue. He repeated that the MAA should be used as a marketing tool by the OIML. Opportunities had been lost when they had tried to do something similar on prepackages; all the principles mentioned in the seminar were relevant also to the prepackaging industry and Mr. Carstens found it difficult to

understand why Members could see the benefits of the MAA system but not of the other. That opportunity had been lost and the same must not happen to this one. The OIML needed to become relevant to all its Members and not to a select few.

Prof. Schwartz thanked Mr. Carstens for his very good analysis and constructive proposals and recommendations.

Mrs. Lagauterie commented that conformity to type was a concern not only for developing countries but also for all OIML Members. Her understanding of the figures presented at the beginning by Prof. Schwartz was that there was a kind of competition between the OIML MAA system and the basic system. She would like to know whether Mr. Carstens could say something also about the implementation of the basic system in developing countries. Were basic certificates being used instead of MAA certificates, or was the basic system not being used either?

Mr. Carstens replied that he could not speak for all the developing countries, but in those that he knew of, most of them did not even have a type approval program. Scales were being used; some of them had copies of a basic certificate or even an MAA certificate but there were no facilities for type approval. For instance, South Africa currently only accepted MAA certificates, because they had joined the MAA, so they did not accept basic certificates. Within SADC and AFRIMETS a considerable number of countries did not have any type approval process.

Mr. Almulla asked what would be the best model for developing countries without much manufacturing capacity which normally depended on importing devices, to set up type approval and conformity to type.

Mr. Carstens did not know if there was any ideal system yet; the OIML needed to look at this matter and devise a model of what could be done, but if this was looked at from an MAA perspective, the first step was to join the MAA as a Utilizing Participant, accepting MAA certificates and then issuing a type approval based on these. What was done on basic certificates had been discussed earlier; it would differ from country to country, but he would recommend using the MAA system because there were regulations in place that to a certain extent provided a guarantee. The certificate could be relied on. There was an issue around conformity to type, Mr. Carstens went on to say. There had been discussions, but little progress with the document, so work needed to be done on this. One way was for initial verification to be just about conformity to type, so for everything imported into the country a sample would have to be drawn and fully tested. Expertise would be needed when the item was opened up, to check whether it was the same as stated in the type approval documentation. This was not easy but thought could be given to drawing up advice.

Mr. Almulla asked whether results found from the facilities for testing weighing machines were acceptable as partial testing so as not to go through the full testing required by R 76.

Mr. Carstens replied that if something came to South Africa that had not been through the MAA process, they would do a certain amount of issuing without an MAA. They would not refuse but they would start the whole process from the beginning; where the MAA might have taken three months, this full testing procedure could take anything up to six months, but they would only obtain approval that would be relevant within South Africa or possibly within SADC, and would not be within the MAA process.

Prof. Schwartz thanked Mr. Carstens for his proposal for issuing something on the transition between issuing and Utilizing Participants.

Mr. Dixit felt that it was also necessary for the OIML to survey some of the developing countries. They would find that these were working no less than the developed countries and their certification was no less either. When one country's certificate was accepted by another and they had the same sort of technology and expertise, why was their certificate not accepted by the OIML systems, and why was the certificate not accepted by the third country, when it was based on the OIML certificate itself?

India was always helping developing countries, at least those associated with the PTB in providing formal training programs, free of charge.

Mr. Carstens thanked Mr. Dixit for his input and said that if this was going to be done, the developing countries themselves needed to become seriously involved. The request for a survey was a good one but he had to say that many surveys were not answered. If developing countries wanted OIML support they needed to provide the information so that the OIML knew what support and training was needed and where.

Mr. Dixit commented that OIML Member countries should decide what kind of training they required so that it could be organized and formalized. If a total survey was not feasible, some sample countries should be surveyed. Another point was that some countries followed OIML systems in total while other countries did not. So preference should be given to those who were following the total system. Those countries which followed regulations would at least acquire some appreciation in this way and fulfil objectives and remove trade barriers.

Prof. Schwartz thanked contributors and introduced Mr. Mussio's talk from the perspective of the BIML.

Mr. Luis Mussio

Mr. Mussio explained for those Members not familiar with the workings of the MAA that the task of the BIML had changed somewhat between the beginning and the present time.

Looking at documents and minutes from meetings, it had seemed at first that the BIML would be working as an accreditation body. The old type peer assessments would be organized and the experts hired by the BIML and sent to the laboratories, and the reports would go first to the BIML and then to interested parties.

This was no longer how things worked. The participants themselves now did the organizing. One of the main tasks of the BIML was of course the review and registration of certificates. There had been problems with this in the past but now it seemed to Mr. Mussio to be working quite well. The BIML had set up a powerful new certificates search facility on the new OIML website. The next project would be for issuing authorities to directly upload certificates, which would then be published after being checked by the BIML.

Mr. Mussio displayed graphs showing statistics on R 76 and R 60 spanning almost 20 years, since the beginning of the basic certificates. With an average of only 200 certificates per year over 20 years, he wondered whether it was worth expanding the system to cover another Recommendation. This needed to be thought through. The only exception was R 117 as there was a strong requirement to have R 117 in the MAA. This had not yet been possible because parts 2 and 3 of R 117 had not been approved.

Mr. Mussio believed, however, that the numbers did not really reflect what was happening in the MAA. Looking first at the geographical distribution, many parts of the world were blank. For example, he was very surprised that there were no participants in South America. This was where he himself came from and he knew that that part of the world used a lot of OIML Recommendations. However, there was not much OIML activity there, except perhaps in Brazil, but Brazil did not participate in the MAA. The reason for this should be explored.

A different way of looking at the numbers, Mr. Mussio explained, was to look at the numbers of MAA certificates. The principal participating issuing authority was NMi Netherlands, followed by NMO, UK and NMIJ, Japan. These countries made up three-quarters of all the certificates issued. But a slight difference in the numbers was shown with the instruments, however. Mr. Mussio had looked at the spread of the certificates by manufacturer and not by applicant. In some cases there were a lot of European applicants with manufacturers in Asia. So, Asian manufacturers might be from European countries, manufacturing for European markets. This did not really affect the rest of the world. This was why there were so many blank parts of the world. However, Mr. Mussio said, he might be

jumping to conclusions without enough data, and he needed to acquire more data to verify whether his interpretation was correct.

However, as Mr. Awosola had pointed out, not all Issuing Participants sent in their information on time. Some participants had not issued a single certificate all year, so although they were Issuing Participants they were not really active in the MAA. It had also been pointed out that there were some problems in the review process, because there was not a common way of submitting the information. It was hoped that the next review would work better.

Mr. Mussio's third point was a personal view. Mutual confidence could be acquired by exchanging documents and papers. But real mutual confidence was built by working together, and this was why he proposed that there should be more frequent CPR meetings. One of the problems had been that the scope had not been expanded to R 117 because the Recommendation had not yet been approved. There were also problems with the on-site peer assessments. At this point Mr. Mussio wanted to comment on some of the wording. It was said that the MAA relied either on accreditation or on peer assessment. In his view, it always relied on peer review. Even though it was accredited, the information should be sent to the peers to read. He did not understand why it relied sometimes on accreditation and sometimes on on-site peer assessment of the laboratories. But in fact all the information was always peer review. It was not blindly accepted accreditation, it should go to the CPRs and this was important.

One of the points mentioned many times, Mr. Mussio said, was the use of manufacturers' testing laboratories in the test reports. Ways had to be found for the work of the CPRs to be improved. An important question was the role of the Issuing Participants in the CPRs. What should happen for example if an Issuing Participant had not voted in the last three reviews? Should they be kept on if they were not active? Periodic review of Issuing Participants was something that must be discussed.

Regarding the future of the MAA, Mr. Mussio asked whether its scope should be expanded, and if so, with which priorities? Should they attempt to increase the number of issuing authorities? His opinion was that this should be done, but seeking better geographical coverage, preferably to have some in parts of the world not currently covered, especially in South America. He knew there was a lot of legal metrology activity there, based on OIML Recommendations. But many countries did not accept basic or MAA certificates. The reason for this must be explored. The questions he wanted to put to the floor were:

- Why were there not more issuing authorities in the MAA?
- Were MAA certificates accepted in other countries or not?

By "non-participants" he did not mean only OIML Members who were not participants; he also wanted to know what happened in the countries which were not OIML Members.

Mr. Mussio hoped that answers to these questions would be found in the next session. It was a real benefit for manufacturers to have an MAA certificate instead of a basic certificate.

Were certificates accepted or not? To find this out he had sent survey questionnaires to the top 27 manufacturers. From the first request he had only received one answer, and after two reminders he had received three more answers. This was also an indicator of how important the MAA was for manufacturers. However, the four responses had been quite positive. The questions were very simple. Mr. Mussio had only sent questions that could be answered very fast:

- How many OIML certificates have you had as a manufacturer?
- How many were used for type approval in a different country from the one that issued the certificate?
- Did the MAA facilitate the process?

The answers were positive. The certificates had been used and in some cases had facilitated approval; but Mr. Mussio also had a feeling that this could be biased, because all the manufacturers who had answered were customers of the MAA, and the option of basic or MAA certificates had not been offered. More work needed to be done.

On a different subject, Mr. Mussio suggested that there should be more harmonization with ILAC so that ILAC accreditation would be more readily acceptable to the OIML MAA. The problem with this was that the document would be issued by ILAC and not the OIML, so acceptance would not necessarily be simple.

Thinking of the future, one wish of Mr. Mussio was to try to stimulate a better response from the survey the following year. This time he intended to involve some issuing authorities. He also wanted to ask issuing authorities in countries that were not in the OIML whether they used OIML certificates or not, and if not, why not. He wondered whether it was lack of confidence, legal problems, or lack of knowledge of the MAAs.

Prof. Schwartz thanked Mr. Mussio for his presentation, which had provided a lot of input to the discussion.

Responding to a question from Mr. Dixit, Prof. Schwartz said that what Mr. Mussio had referred to was the joint OIML/ILAC assessment procedure paper. It was correct that harmonized procedures were needed so that there was a real equivalence between accredited and peer assessed laboratories.

Ms. Villière commented that she valued the morning's discussion and hearing from different sides. This subject reminded her of a previous experience she had had at a different level, which had been more in relation to the registration of human medicines or veterinary medicines. She found that day's situation similar, in that progress had reached a certain level, there was an attempt to engage different Members, and the next step needed to be evaluated in terms of implementing further. She was looking forward to the afternoon's discussion.

Mrs. Martens asked whether Mr. Mussio had sent his questionnaire only to manufacturers that were MAA certificate users, or also to users of basic certificates. She thought that to find out what was good and what was bad and why some manufacturers did not yet use MAA certificates, it would be of interest to ask users of both certificates. The answer might be not that they did not support it, but because there was no possibility to switch to MAA certificates.

Mr. Mussio replied that the survey had been sent to the 27 manufacturers with the most MAA certificates.

Prof. Schwartz said that the suggestion of also looking at manufacturers who were basic certificate users was a good one.

Mr. O'Brien alluded to what Mr. Mussio had said about the role of the CPRs and the importance of participation for development and the exchange of information. He had found it difficult to attend CPR meetings even on an annual basis. If meetings were to be more frequent it would be necessary to look at doing so online or in some other way.

Mr. Mussio said that his drive to increase the frequency of CPR meetings had come from his experience in the BIPM, where equivalent meetings took place twice a year, whereas according to the rules the CPR should meet only once every four years.

Prof. Schwartz commented that the problem was the distance to New Zealand. He then asked what Mr. Mussio thought should be done to improve the operation of the CPR. Were simpler rules needed? Should the documents be looked at? Were the procedures clear? How did Mr. Mussio think the operation of the CPR could be improved in the future?

Mr. Mussio felt that the main problem he had found with the CPRs was the lack of response. This was why he proposed more frequent meetings. When he sent out CVs of new experts he did not receive enough responses back. When information for review was requested, not all CPR members sent this information.

Prof. Schwartz asked whether in Mr. Mussio's view it was also a problem that TC 3/SC 5 was responsible for the MAA rules and procedures under OIML B 10, and whether there was clear demarcation of responsibility between TC 3/SC 5 and the CPRs.

Mr. Mussio did not consider this to be a problem; he felt that the problem came from the Issuing Participants. From the first five he had received answers within two weeks at most, whereas from the others he had had to repeat the request several times. He wondered whether all the Issuing Participants were really active in the MAA.

Mr. Awosola said the UK thought there was not a problem with the rules as they stood. The problem was that they were not being followed closely enough by the participants. There was a need to look more closely at this area.

Mr. Mussio thought it might be a more effective strategy to have an umbrella organization to oversee the CPRs rather than one CPR per DoMC.

Prof. Schwartz thanked all the speakers and contributors and concluded session 2.

Session 3 – Options for further developing the MAA

Mrs. Veronica Martens

[The beginning of this session was not recorded.] Mrs. Martens said that harmonization in labelling and securing had not yet been reached and that this was something the OIML should work on. Lack of harmonization meant that an instrument that was going to different countries had to be manufactured differently in each case. She asked for more harmonization in the future. She was not speaking of inscriptions, but about how to secure and how to label, how to fix plates. This was reality at the moment and she was speaking of the consequences for users. The users had different levels of technology on their production sites. When manufacturers had to follow the different rules of different countries with their weighing instruments, of course they could not provide the same instruments to different countries because of different regulations. Users had to realize that they were getting different instruments and they were not happy about this; sometimes indeed they were very angry. But what could be done?

Another problem was that there were different levels of instrument quality in a country's market. When it came to globalization, this was not good. The same quality was required in different countries. The consequences for instrument manufacturers were that no harmonization of instruments was possible at the moment. Time to market and costs were critical because of the development of different versions and special national certification processes. Customers were dissatisfied, and satisfied customers were the most important thing for industry.

Participation in the basic or MAA certification systems was voluntary for countries, but the consequence of this for users and instrument manufacturers was that no planning reliability was reached. Planning reliability was, however, essential for industry. There were problems once again with quick time to market, which was essential. An earlier speaker had pointed out that with the MAA, the lead time from manufacturer to market was reduced by half. This might be the case in some countries, but in others, for whatever reason, it could still take a year. Each day of delay raised avoidable costs for all stakeholders, not only for the weighing instrument manufacturers but also for the users.

Industry needed an international system of legal metrology that could be relied on, Mrs. Martens said. Another reality was that the acceptance of certificates was voluntary, especially when these were based on test results in the MAA. Several countries did not support the development of MTLs at all. Industry considered that by this they did not contribute enough qualification of manufactures. In the seventies, Mrs. Martens's company and other companies had set up a testing laboratory because they said that before taking their instrument to a certification body or to a customer, they first needed to be

able to test the instruments themselves and find out whether they fulfilled the rules or not. Before that, they had not been able to do so. Several manufacturers were in this situation, and in Mrs. Martens's opinion it was the task of OIML Members to qualify manufacturers in their countries to test their own instruments and to know whether they were up to standard. It was not only testing for the type approval certificate, but much more. The competence and the qualification were needed to test a series of instruments. Possibly a year later the manufacturer might produce an instrument. If this was a high resolution instrument it would not be exactly the same; there would be multiple differences and manufacturers must be able to test. In most countries of the world, not only in Europe but in other regions also, manufacturers needed and wanted to be qualified. This was essential because it was the only way to get a CTT. It was the task of individual countries to qualify manufacturers to do the work themselves. Most manufacturers wanted to fulfil the rules, and this gave the best basis for them to do so.

Speaking of MTLs and the current MAA situation, Mrs. Martens said that in 2012 the CIML had approved a procedure to have MTLs certified under an issuing authority when they were monitored by the issuing authority. In September 2013 three CECIP MTLs had undergone OIML MAA peer assessment. There had been auditors from South Africa and France, and all three MTLs had fulfilled the requirements laid down in the respective OIML documents. Mrs. Martens said that the auditors were of high quality and she could assure Members that the peer assessments of these auditors could be relied upon. All the auditors had attested that the MTLs had competence, quality and full integrity, by which was meant independence of judgment and impartiality. These manufacturers already had experience in fulfilling ISO/IEC 17025 rules because they had many different calibration laboratories and other structures accredited in this context.

CECIP hoped that others would follow, because there were more suitable MTLs in the world, not only in Europe but elsewhere, which were suitable. She therefore asked Members to support the MTLs in their countries and by this to support quality and fair competition and time to market in their own economies. Europe already had a long tradition of learning with MTLs. The three companies involved were competitors but Mrs. Martens knew that if they had undergone this assessment procedure, and previously similar European type approval processes, she could rely on their competence and quality. She knew that there were other manufacturers who could not be relied on; manufacturers knew their competitors better than outsiders did, because they had to test the competition's instruments to see how good they were. Members could do something for fair competition and time to market, and then it could be relied upon. Certification took a long time, therefore she asked the CIML to develop procedures to reduce the certification process, to make MAA work properly and to support MTLs.

In Europe and in many other parts of the world, Mrs. Martens continued, there were "fairy tales". If a fairy granted her three wishes these would be

- to harmonize technical requirements, including labelling and securing,
- to convince all OIML countries to participate in the MAA, and
- to resign from voluntary status and accept certificates based on MTL reports.

Mrs. Martens thanked delegates for their attention.

Prof. Schwartz thanked Mrs. Martens for this comprehensive view from the perspective of the weighing industry. He asked for questions and comments.

Mr. Dixit said that the Indian government approved test centers so initial verification by manufacturers was allowed and private participants were allowed to open new laboratories for verification and re-verification of weighing and measuring equipment in different parts of the country. In this way, after the initial verification had been done, they could export products to other countries without problems. Another point was that he supported what Mrs. Martens had told Members about approval systems. The MAA must be explored for all countries and should be simplified so that it could be adopted easily. Also, the procedure for type approval had been given very properly to three

manufacturers of different types of instruments, but verification should be more simplified so that once the type approval was obtained, manufacturers would not face problems. He requested that some of the technical requirements in R 76 and R 60 and R 106 and other Recommendations to be rectified.

Prof. Schwartz thanked Mr. Dixit for his comments.

Mr. Oosterman asked whether the three manufacturers' laboratories of which Mrs. Martens had spoken were accredited.

Mrs. Martens replied that not all were accredited. In Germany, for example, until recently there had been no possibility of accreditation for such instruments. But they had to fulfil the complete process, and, as had been said earlier, she thought it was always a good idea to have peer assessment in any case. All the laboratories, accredited or not, had fulfilled the same peer assessment procedure by OIML auditors.

Prof. Schwartz thanked Mrs. Martens again and introduced Dr. Richard's presentation about options for the future of the MAA from the perspective of an MAA Issuing Participant from METAS.

Dr. Philippe Richard

Dr. Richard said that he would speak about the future from the perspective of an Issuing Participant. He was with the Federal Institute of Metrology, METAS, in Switzerland. METAS was the national institute of metrology and within it there was a certification body which was an Issuing Participant for the OIML MAA for R 76 and R 60, and a Utilizing Participant for R 49. He had also been a member of the CPR for many years during the initial phase.

He would talk about the objectives and key success factors for the future, and briefly about requirements, which had already received some attention, and make some proposals for the future. Dr. Richard had six proposals for development, and many questions for discussion, in fact he had many more questions than solutions. His objective was to give Members some food for thought.

What were the main objectives and key success factors for the future of the OIML MAA? Dr. Richard asked. For him the system must give clear added value for industry, for regulators and for customers. It must be simple, sustainable and cost effective, must provide a single type of certificate, must be available for all necessary categories of instruments and also provide world-wide acceptance.

Dr. Richard showed a list of key success factors, of which some were new but others were already available or applicable. He then posed a series of questions on the requirements of industry over the next five to ten years, in the field of product certification and conformity assessment:

- were these requirements known? Industry needed simplicity, cost efficiency, wide acceptance and so on;
- did they have very specific needs? Delegates had just heard some examples of additional very special requirements.;
- did the needs and requirements depend on the type of industry and the type of instruments?
- did industry want a regional or a global system?
- did industry prefer a voluntary or a mandatory system?
- did industry need MAA certificates for all instrument categories? He did not think an answer to this need be sought at the moment;
- could full recognition of the MTLs within the MAA certificate system increase the interest of industry? This did seem to be the case;
- if the demand for MAA certificates was too low, for industry in general or compared to other systems, should the OIML stop, or should it change the system to improve it? Thought was being given to incremental change but perhaps something more should be changed; and
- concerning the regulators' requirements, was a voluntary certificate system viable in the long run?

He wondered what the OIML could learn from the EU and the MID, and if they had EC type approval, what would this imply in terms of recognition, of harmonization and what could be learnt for the OIML itself? He then posed the question of whether the OIML could imagine the introduction of sanctions for non-complying participants.

Coming to possible options to be developed, Dr. Richard said he had prepared six different possibilities:

- merging the Basic Certificate System with the MAA system; as a first step, the former could be suppressed in favor of the MAA in categories where there was a DoMC;
- MTLs could be fully recognized within the MAA system;
- all categories of instruments could be integrated under the MAA. The first step would be to introduce a new category for automatic weighing instruments or R 117, as seen earlier;
- thought could be given to establishing a global DoMC, similar to the one at the BIPM;
- within this context it could be important to clarify the role and operation of the CPR, and perhaps re-introduce inter-comparisons; and
- the OIML could be inspired by other well-established systems and eventually join or merge with these.

Returning to each of these steps and their advantages and disadvantages, Dr. Richard said that if the two certificate systems were merged, the advantages would be more clarity for the users; all users could be Utilizing Participants, which was simpler and could have more impact and give more confidence. A single certificate was easier to explain and to sell to everyone. A potential disadvantage might be confusion between different types of participants, but if everyone was utilizing this was no longer a major factor.

On full recognition of the MTLs within the MAA system, Dr. Richard said that this would establish full confidence based on peer assessment and accreditation of MTLs. The advantages were that it would increase industry interest and participation, improve confidence and recognition, and have more impact and more confidence in the system. There would be more access, wider use and wider recognition, and finally, more MAA certificates would be issued under the present MAA. Others might find disadvantages but he had not found any.

The third option, to integrate all categories of instruments within the MAA, would increase the visibility of the OIML Certificate System; it would improve simplicity, with a single system for all categories, and have consequences also in a harmonized review process. There would again be more MAA certificates and reduced costs for manufacturers but perhaps also for all issuing authorities and for utilizing participants. A single system would provide economies of scale. Disadvantages might be one DoMC per category, and the CPR process might be too complicated. One possible way to do this integration of all instrument categories into the MAA would be, as a first step, to integrate all automatic weighing instruments at the same time into a single category or integrated family. Step by step there could be integration of R 117 for liquids other than water, R 85 for level of liquids in stationary storage tanks, R 129 for multi-dimensional measuring instruments and finally evidential breath analyzers under R 126.

The fourth option was to establish a single global DoMC for all categories of instruments. At the moment there was one for each category; this would mean a single CPR with sub groups or sub categories. The advantages, in Dr. Richard's opinion, were simplicity, with a single system for all categories; more impact and more confidence. It would be easier to explain, it could reduce the cost of the CPR operation and maybe reinforce the role of the RLMOs. On the other hand, a disadvantage could be more work for the RLMOs. They would have to be organized to manage both this work and the inter-regional review. This could also mean a transfer of some responsibilities from the CPR to the regions, but Dr. Richard did not see why this should not be done. The BIPM operated in this way.

The logical follow up to this, Dr. Richard continued, was the fifth proposal, clarifying the role and responsibilities of the CPR itself. This needed to be done. Inspiration could come from similar systems such as the JCRB of the CIPM MRA (Joint Committee of the Regional Metrology Organizations of the BIPM). Mr. Mussio had been on the secretariat of this some years previously, so

he knew the system. As mentioned earlier, there should be regular meetings; the tasks and responsibilities of the CPR needed to be clarified – should they report to the TC, or to the CIML, or to both, and at what level? Possibly also the idea of more inter-comparisons could be introduced, so that discussion could be on the results of inter-comparisons rather than on audit reports, which would provide more technical confidence between Members. Again this would be similar to the key comparisons under the CIPM MRA.

The sixth option was to be inspired by what was working well in similar well established systems, such as IEC, ISO, JCRB or others, or possibly even join a similar well established system, for example the one which would be presented next. It might also be possible to improve the BIML database, again by being inspired by the key comparison database of the BIPM and other information such as inter-comparisons of testing of measuring instruments. Here, the advantages were that they would be using what had already been proved to work in other systems, not reinventing, and avoiding duplication of processes and application of procedures. There was a risk: if the OIML became inspired by another system they might lose some identity, but perhaps they could nevertheless keep the OIML name.

In concluding, Dr. Richard reminded delegates that there had to be clear added value for industry, regulators and customers, and that his six proposals for discussion were to

- merge the basic certificate with MAA,
- fully recognize the MTLs within the MAA system,
- integrate all instrument categories under the MAA,
- be inspired by other systems,
- join or merge with other systems, and
- improve the CPR operation.

Prof. Schwartz thanked Dr. Richard for his excellent and precise talk which contained many constructive proposals. He invited discussion.

Mr. Dixit commented that in India an opportunity had been offered to private players in cases where the government did not have full facilities in place. If MTL laboratories had better facilities than government organizations, they should be accredited and their facilities utilized. The MAA should cover all types of weighing and measuring instruments, whether automatic, non-automatic and all others. There was a lot of similarity between what the IEC and the OIML were doing. The same balances with the same principal functioning had European and also OIML certification from different laboratories, but they had faced problems with different users. The OIML should accept European certificates and vice-versa. In India only metric systems were followed, and this was where problems began, and this must be the same for other countries. Simplification of the system of verification was needed.

Mr. Carstens said that Dr. Richard's idea of using inter-comparisons had a lot of value but the problem that had been found with it even in the BIPM process was, especially in the developing world, getting the artefacts through customs. He did not know if this was a European problem also, but perhaps there was some international customs body that could be approached in advance for assistance.

Dr. Richard agreed that this was a problem. However, he did not want to talk about customs at the moment because there were more problems with customs in Switzerland than elsewhere in Europe! However, he did feel that comparison was the best way to build confidence, much more than audits, peer assessment, etc. It was a question of having clear results and comparing them.

Mr. Van Mullem asked Dr. Richard for further explanation of what he had said about merging the Basic Certificate System with the MAA system. Would the merged result be just MAA, or the best of both systems?

Dr. Richard replied that he had just raised this possibility as a question, but offered no immediate solutions. He thought a single system was needed, and that this would more logically be the MAA, because it was more in accord with the needs of industry. Perhaps a working group could be formed to work out how it might be done, because this would influence a lot.

Ms. Lagauterie felt that it was good to think about how to improve the existing system, but that the first question should be to address the actual needs. The presentation from industry had been very interesting but she was not sure that it represented the views of all types of industry. Small to medium sized companies did not have the same attitude as the large international ones and what she very often gathered from the French issuing authorities was that some of these manufacturers, even if they were told that they should obtain an OIML certificate, because it would help them to develop trade outside Europe, or outside the French speaking countries, they said they were not particularly interested for the time being. They were often content to live with their existing system, since French and German documents were recognized. Ms. Lagauterie thought that the first step should be to promote the present system to small and medium industry. The second step would be to improve the needs from other countries, because in some of these, as Mr. Carstens had pointed out, there was no national approval, and therefore no need to recognize a certificate, because there was free circulation without it. These countries should also be active and require the OIML certificate for free circulation in their own systems. More demand from Member States would be an improvement. She of course shared the view that if the MAA system was to be improved, it should not be in unfair competition with the basic system.

Prof. Schwartz asked Mrs. Martens whether she would like to respond to the comment from France.

Mrs. Martens said that CECIP represented companies of all sizes in the weighing industry, and took care of all of them. In her presentation she had meant that although small companies often did not have a testing laboratory, she thought it was important for them to be able to qualify themselves. This was necessary and CECIP worked on it. The companies had to know the rules, which meant that one testing for the approval process was not enough. CECIP also strongly supported market surveillance, which meant that a manufacturer putting instruments onto the market must know what he was doing. This was a long process and therefore she thought it was necessary to support a company of any size to be able to carry out tests themselves, either the complete test or only part of it.

Mr. Oosterman said that care had to be taken to avoid making the system complex and confusing. Merging basic and MAA had not been the intention, which had been that the MAA would take over from the basic system. If they were merged at this point there would be four systems – basic system, basic system with MAA, MAA, and MAA with MTLs. There were already problems with extending acceptance worldwide, and to make it even more complex could only endanger this acceptance. It had to be made very clear how the OIML wanted to continue with the MAA. He urged caution.

Dr. Richard agreed, but the biggest challenge was to have a single system, which could be MAA with MTL. This would be the simplest. But Mrs. Lagauterie's comments would have to be taken into consideration, because there might be a potential problem with small and medium enterprises.

Mr. Dixit asked a question on type approval and what system should be adopted. It was better to go for the MAA and simplify its systems. MTLs should be only for verification purposes and not for type approval. Government organizations were performing type approval but if they did not have the facility, only then should they seek the help of the MTLs.

Prof. Roman Schwartz

Prof. Schwartz said that the matter of the MTLs had already been touched on more than once, so this was a good opportunity to present some of the ideas behind them, and also the recent experience of peer assessment of the three MTLs of Mettler Toledo, Sartorius and Bizerba.

Before coming to the experiences, Prof. Schwartz reminded delegates of the background, emphasizing that from the start of the implementation of the MAA and right up until 2012 there had been discussion (always interesting) about including the MTLs in the MAA. Signature of the R 76 and R 60 DoMCs had taken place in 2006. In 2009, the PTB, METAS and NMi had joined the R 76 DoMC. At that time the PTB had organized a voluntary full peer assessment of the MTLs of Sartorius and Mettler Toledo in order to acquire experience with this for the many countries which were not familiar with the systems to take into account manufacturers' test data. They did not at that time have the requirements which had since been drawn up, but they wanted to use the assessments to establish the conditions MTLs should fulfil, based on practical experience.

In 2010, TC 3/SC 5 had become involved and on the basis of the audit reports and the CPR proposals they had prepared a proposal for the CIML on including MTLs under the control and supervision of an Issuing Participant. This was the result of the voluntary peer assessments, which had made it possible for the OIML and many of its Member States to think about accepting test data produced under the controlled supervision of an Issuing Participant.

In 2011, the CIML had charged TC 3/SC 5 to work out a B 10 amendment, which the CIML accepted in 2012. The amendment clearly described the conditions to be fulfilled before test data could be accepted.

Prof. Schwartz then defined an MTL. He reminded delegates that there were two different types:

- testing laboratories within a manufacturing company or manufacturers' organization which was designated an MTL by an OIML Issuing Participant, which then took responsibility for it; or
- a third party, or subcontracting laboratory.

It was already the case that some manufacturers' testing laboratories performed tests not only for their own company, but also earned money by performing tests for other companies, and especially for DoMC tests, which was a very common situation. Prof. Schwartz also knew from the UK and from other countries that there were manufacturers doing this. In Germany this did not happen.

Conditions for MTLs had been agreed at TC 3/SC 5 level and confirmed by the CIML. The aim was to have the same conditions in all kinds of testing laboratories. Their competence was being examined in the light of ISO/IEC 17025 only. The only difference between an MTL and a third party testing laboratory was the need to consider the safeguards to ensure sufficient independence and impartiality and to prevent potential conflicts of interest. The conditions which all had to be fulfilled in order to address potential conflicts of interest, were for the MTL to operate the six safeguards mentioned in B 10 under the controlled supervision of at least one Issuing Participant, identified in the DoMC.

The first experience had been when they had started this peer assessment on the basis of the new B 10, approved only in 2012. There had been a need for a new checklist to B 10; as mentioned earlier, the previous B 10-2 *Checklist* was still available on the website, but it was quite old and would not have been very useful. So a new draft B 10 checklist had been prepared, which could be used later by others; its status could be considered later. Quoting it, Prof. Schwartz said:

- *The Issuing Participant shall exercise a controlled supervision.* This meant there were not only requirements for the MTL but also requirements concerning the Issuing Participant in order to have a good "handshake" between the MTL and the Issuing Participant. This had been the focus of the audits of the PTB and METAS, so it had been not only an audit of three MTLs but also an audit of the PTB and METAS. In effect there had been five peer assessments within ten days;
- *the auditors have to look at the independence and impartiality of the MTL.* So there had to be clearly documented charts and explanations to show the MTL was defined as a part of a larger organization within the company, and so on; again, they had seen the need for a new B 10 checklist as these conditions were not reflected in the old B 10-2 *Checklist*;
- the suitability and effectiveness of the procedure described in the other parts of B 10 are evaluated as part of the ISO/IEC 17025 accreditation or included in the scope of the peer assessment;

- OIML D 30 was also relevant when looking at the competence of a testing laboratory; and finally
- several Issuing Participants might designate the same MTL, in which case there had to be agreement as to which was the principal one to take the main responsibility; in the recent assessment it had been agreed with METAS that the PTB would be the main Issuing Participant for Sartorius and Bizerba, and METAS would be the principal Issuing Participant for Mettler Toledo, which was geographically logical.

Explaining the procedure for designating an MTL in a DoMC of the MAA, Prof. Schwartz took the example of the R 76 DoMC, with the PTB having a test lab and METAS having a test lab. The PTB and METAS and other Issuing Participants and Utilizing Participants in the R 76 DoMC had performed inter-comparison exercises using three balances, a class I instrument, a class II instrument and a class III instrument. It had been agreed with the three manufacturers that complete R 76 tests would be done on each of these instruments, so one manufacturer had tested class I, another class II and another the class III instrument, and both the PTB and METAS had made spot checks to verify whether the same results were arrived at.

Preliminary assessments of these MTLs had taken place with METAS and Mettler Toledo and there had been some cross relationship between the PTB and Mettler Toledo. Next, an appropriate assessment team had been sought. Fortunately there were enough technical experts in the diminishing joint OIML/ILAC list (for which new experts needed to be found). The lead assessors had been Thomas Scriven from South Africa, with Denis Vogel from LNE (France) as technical expert and Michael Denzel from the PTB as an observer. These experts had carried out the complete assessment according to B 10 and ISO/IEC 17025 requirements, plus the additional requirements and safeguards for MTLs. They had looked not only at the MTLs but also at the Issuing Participants. Their report was expected shortly and Prof. Schwartz hoped that they would then be ready to apply to the CPR officially, submitting the report by the end of the year. The CPR would meet in March 2014 to discuss this and when, hopefully, the CPR was convinced, then the three MTLs could be added to the PTB testing laboratory list, and Mettler Toledo to the METAS laboratories. This would enable the PTB to issue its first OIML MAA certificates since joining the DoMC four years previously. All of the PTB's customers were global players with their own MTLs. The PTB had been reluctant to accept the voluntary use of MTL test data, because there was still some opposition to it on the part of certain countries, but had now agreed to take the risk with the condition of supervision they could at least start to gain experience and hoped with time to come to full acceptance.

This had demonstrated the procedure. The aim was that these testing laboratories should be in the DoMC, identified explicitly, so there were three additional MTLs for the PTB. The program had been tough, with one day at the PTB, two days at Sartorius in Göttingen, two days at Bizerba in Balingen, a day at METAS and two days at Mettler Toledo.

The auditors' final reports were not ready, but preliminary conclusions from the experience were:

- the program had been tough but the time had been sufficient for visits to laboratories, which had been considered important;
- the assessment team had used the draft B 10 check lists developed on the basis of B 10:2012 and D 30 and also with the support of Mr. Mussio, whom Prof. Schwartz thanked; it was considered that the checklists should be further elaborated either by TC 3/SC 5, giving rise to a new B 10 checklist, or by the CPR, in which case it would perhaps become an MAA document;
- the main focus had been on the MTL conditions in B 10 and especially on the "handshake" between the Issuing Participants and the test laboratory;
- the preliminary conclusion agreed with the auditors was that the principles and tools defined in B 10 were adequate and allowed proper supervision of the MTL, by the responsible Issuing Participants;
- there had also been agreement that each of the three MTLs were very proper and undoubtedly competent under ISO/IEC 17025;

- the “handshake” was thought to function very well. They had looked deeply into the process and even into the e-mail traffic between for example the PTB and the company, wanting to know what would happen if the instrument tests at the MTL failed – what would then happen to the “handshake”?
- the Issuing Participant should be informed when tests at the MTL were about to begin so that they could be witnessed at any time;
- the assessment team had acknowledged the inter-comparisons of three non-automatic weighing instruments and had found good agreement;
- the scope of the MTL should be better mentioned in the DoMC, independently of the scope of the Issuing Participant, since it was obvious that the MTL would not have the same scope as the testing laboratory of the Issuing Participant, and this should be identified independently in the DoMC;
- the general observation of how to deal with changes in equipment, staff and scope of accredited and peer assessed laboratories was a general question for all testing laboratories; it was doubtful whether the annual report of an Issuing Participant was sufficient.

Prof. Schwartz then showed the expected time line:

- the peer assessment reports should be ready in November 2013;
- METAS and the PTB would apply to the R 76 CPR, which would meet in combination with the R 60 TC 9 group in March 2014 at NIST, USA;
- designation of the MTLs in the DoMC was expected shortly afterwards;
- publication of the changed DoMCs was expected in June 2014 at the latest.

They would then expect to issue their first OIML MAA certificates for non-automatic weighing instruments in the second half of 2014, and he assured delegates that the number of MAA certificates issued by the PTB would swiftly rise.

Mr. Dixit considered that this type of MTL recognitions and mutual testing arrangements and inter-laboratory comparisons was possible only to a limited extent of weighbridges, perhaps a maximum of 50 kg, 100 kg or 150 kg, but it could not be done up to 30 T. Similar facilities might be available with other manufacturers also. Then there was the question of meters for liquids other than water. If one manufacturer fulfilled all the requirements but he had to do the installations, then the same machine might not have the same performance. Mr. Dixit gave an example. When some companies involved in the metering of liquids other than water had established their organizations in various parts of China, India, Brazil and other parts of the world, performance was not good, but when they were in their own countries the performance was good.

Prof. Schwartz replied that concerning the question of the weighing range, he thought that this might not be a problem, as the scope for the MTL and the Issuing Participant would be defined independently of each other. For weighing instruments the modern approach was to use certain combinations of critical parts of the instrument, so it was not a problem to make an approval for 30 T by just simulating loads larger than 5 T. This was regularly done and could be done on the manufacturer’s side. He emphasized again that it was important to distinguish strictly between the scope of the MTL and the scope of the testing laboratory of the Issuing Participant.

Concerning Mr. Dixit’s question on conformity to type, Prof. Schwartz reminded him of the existence of the TC 3/SC 6 *Conformity to type* on this subject, which existed because of the problems, of which they were all aware. This group was expected to develop guidelines and a guidance document before anything else, which all Members were looking forward to as soon as possible.

Mr. Denis Chew

Mr. Chew said the IEC was pleased to be present and to share their experience with conformity assessment. The IEC was not only concerned with conformity assessment; one of their main activities was the development of IEC international standards. The IEC headquarters was in Geneva and the organization had been in existence since 1906. They were similar to the OIML in that they were an international organization where the membership was by country. They had two key products: IEC international standards and IEC conformity assessment systems, using ISO international standards. Together these helped to facilitate trade and remove technical barriers to trade. The IEC's scope was wide – wherever there was use of electricity there was a need for the IEC.

IEC standards were used for power generation, renewable energy such as solar, hydro-electric, all transmission of electricity, lights, all the way to the home. And even within the home, products such as consumer electronics were covered by IEC standards. Their scope was very wide, covering everything electric, electronic and related technologies.

The IEC had grown rapidly, almost by 30 % in the last few years. There were now 165 countries participating in the IEC itself. Of these, three very small European countries were affiliates and had free access to IEC standards because of the IEC affiliate country program. 163 countries could use IEC standards, and to support this membership there were offices in Brazil for the Latin American region and in the USA and in Singapore to support the Asian Pacific region. There was also an office in Australia which ran two of the IEC conformity assessment systems.

Speaking of the organization of the IEC, Mr. Chew said that the apex was the IEC Council, which represented the full member countries of the organization, each of which had one vote. Under the Council there were different bodies:

- the IEC Standardization Management Board, overseeing the government of IEC international standards;
- the IEC Conformity Assessment Board, which looked after the three conformity assessment systems; and
- the Market Strategy Board, which looked at new areas, because they always had to be looking at new areas for standards.

Mr. Chew said that the focus of his presentation would be on the IEC conformity assessment system, so he would go straight to this. The Conformity Assessment Board oversaw all conformity assessment activity within the IEC. There were 15 members on the Board, which set the policy, and which was also responsible for accrediting new IEC conformity assessment systems. The three conformity assessment systems were the IECEE, the IECEX and the IECQ. They were currently looking at a possible fourth system, which would be on renewable energy.

Looking at the essential features of IEC conformity assessment, Mr. Chew said this was the use of everything in the IEC/ISO 17000 series of standards. All technologies were based on this, so that it was consistent whether the IECEE, IECEX or IECQ was being used. As well as the same terminology they all used the IEC standards for their technical requirements in all their conformity assessment systems. As an example, Mr. Chew showed the standards for high density explosive atmospheres, one of the 6000 published IEC standards. The IEC used these standards in all their conformity assessment systems.

The IECEE system, or IEC CB scheme, was their largest. It covered 22 product categories, so virtually everything was covered. It was product specific, so there were different standards for different products. The system recognized certificates based on testing to IEC standards. The CB scheme was open to all IEC member countries and they were all covered by the Certification Management Committee. So although there was a Conformity Assessment Board for the IEC itself, in terms of the operations of the IECEE itself, everything was under the Certification Management Committee. This was self-financing. There was a secretary in the Geneva office to support the IECEE CB scheme.

Mr. Chew highlighted that, although he had mentioned that IEC standards were used in the CB scheme, some national differences were allowed. For example, Singapore might have slightly different requirements from IEC standards because of the infrastructure of the country. These were set down in a special bulletin, so that if a body did the testing they knew that slight differentiation was practiced in different countries and they were able to test to those deviations. So there was some flexibility of implementation.

IEC test certificates were all the responsibility of the national certification body. IEC laboratories did the testing and issued the test report but issuing the certificate was the responsibility of the national certification body. So under the CB scheme the test certificate was the most important document, demonstrating that standards were met. All IEC test certificates had the same format, regardless of which national board had issued it, so they were widely accepted around the world. This reduced the cost of testing and certification, and through the CB scheme and mutual recognition there was considerable saving for manufacturers exporting to different markets, because instead of products being tested ten times for ten markets they were tested once to meet the needs of the different markets.

Mr. Chew said that the CB scheme was accepted by regulators around the world. The scheme itself was voluntary in nature, not mandatory. In fact the whole IECEE system was run by industry, and not by government mandate. Very frequently, however, regulators required the CB certificate as a means to show that the product complied with standards. Giving some facts and figures, Mr. Chew said that for IECEE there were 56 member bodies, one per country, and 74 national certification bodies. This was because one country could have more than one NCB but only one member body. Under this National Certification Body, which was responsible for issuing test certificates, there were the testing laboratories, the CBTLs, ACTLs and more than 2700 MTLs under the CB scheme. So this was similar to the OIML, and as in the OIML these MTLs operated under controlled conditions – either they were supervised by their NCB or the work was done by the NCB itself in the manufacturer's laboratory. Different options were available for operating the MTLs.

Mr. Chew showed a graph demonstrating the success of the scheme. In 2000 there had been fewer than 2000 certificates under the IECEE CB scheme, but there had been more than 70 000 in 2012 alone. The scheme was very much in demand by companies around the world, as it enabled products to be exported to markets around the world.

Moving on to IECEx, Mr. Chew explained that it was very different from the IECEE, and came from a different environment. IECEE dealt with everyday products in everyone's life. IECEx was concerned with products used in an explosive atmosphere. In the case of an accident the cost could be catastrophic. It also operated under the IEC conformity assessment but, like the IECEE, it had different committees to look at programs or different schemes under the IECEx system. Like the IECEE, this referred to IEC standards as their reference standards. But IECEx did not just perform verification of equipment, it also looked at the certification of repair services. This type of equipment was very expensive and when it was not working it was not disposed of, it was repaired. So the IEC had a system in place for certifying repair services, to make sure that the expensive equipment was again safe to be used in the IECEx environment.

Additionally, in another scheme IECEx looked at the competency of people. In the area of explosive atmospheres it was important to have the right people to design and install the equipment, so IECEx offered certification of competence in this area. All IECEx systems were there as a result of industry demand for them. Mr. Chew showed a slide illustrating the types of experts certified by IECEx. It was endorsed by the UNECE as one of the best practitioners for conformity assessment systems. Its services were used not only in the oil and gas environment, but in many environments including hospitals and in environments where there were very combustible materials. These could be in manufacturing, in pharmaceutical factories and so on.

This type of equipment was costly and complex, and if there was an incident the cost was very high. For this reason IECEx operated differently from IECEE. Mr. Chew showed a slide of the effects of such an accident. In addition to type testing, IECEx also did factory audits to ensure that processes and procedures were in place in terms of manufacture of the equipment. Summarizing IECEx work, he said that it covered certification of Ex equipment, the conformity mark license scheme that could

be applied for by manufacturers if their work was satisfactory, and also inspection of repair systems, repair workshops, and certificates of competency to repair electrical equipment used in this atmosphere. IECEx procedures and rules could be found on their website. They were always guided by standard procedures and had the same report format for the product.

With other systems, when a product certificate was received, it was sufficient proof. IECEx, however, kept the master copy of all the certificates it awarded. In order to be sure that an IECEx certificate of conformity was genuine, all that was necessary was to visit the website, where details of every certificate awarded could be found. All data for the IECEx was kept secure and a system was in place of having an IECEx number on the product, with the certificate number and the standard matching that on the website. If a certificate of conformity was no longer valid, the IECEx Secretariat would remove the listing on the IECEx website.

Mr. Chew explained that there was a team of people working on the IECEx operations and its subsidiary bodies. He showed the online certification system for the repair and overhaul of workshops or competency of personnel certification, all of which were available on their website, where the genuineness of all certification could be checked. He showed one of the PTB's certificates as an example, which showed that the PTB operated under IECEx, and the year of issue of the certificate. He also showed the marking on some equipment, which consisted of the standard number, the IECEx certificate number and the year. It was a very transparent system. So checking genuineness of the product was freely available. In the ten years since the IECEx system had begun there had been much progress and now there were thousands of certificates, covering several categories.

Mr. Chew pointed out the consistency between the IECEx and IECEx operating documents and procedures, and how reports were generated in the same format. Companies that utilized IEC services could add their own logo, but otherwise all certificates followed the same format.

Mr. Van Mullem asked Mr. Chew about confidence between Issuing Participants and about confidence between national conformity bodies in different countries, of which he had counted about 70. He further stated that the IEC's certified equipment seemed to be comparable to the OIML's type approval for instruments, and the OIML's conformity to type system also seemed to bear comparison to the IEC's certified equipment, so he asked how this was arranged.

Mr. Chew replied that the conformity system for type approval and certificate was in fact a certificate of conformity based on factory surveillance.

Mr. Van Mullem wanted to verify that the IEC certified equipment.

Mr. Chew confirmed that this was the case.

Mr. Van Mullem said the manufacturer produced the equipment so this had to conform to the first certificate.

Mr. Chew confirmed this also.

Mr. Van Mullem asked how this was arranged under the IEC system.

Mr. Chew explained that this worked on the basis of ISO/IEC 17067 'system 5', which included a regular factory audit; when the audit was done the inspectors assessed that the manufacturing process was in place, and that the whole system was in place to ensure that the product manufacture was the same as what had been done for testing initially.

Concerning recognition or confidence between the certification bodies, for the IEC itself this was a little different from accreditation, which was recognition between accreditation bodies and certification bodies. In the IEC system, it was a recognition system between certification bodies directly, and this was because of their peer assessment approach. A high standard was ensured by the high quality needed for IEC CB scheme membership and in order to be assessed by rival manufacturers. Testing bodies needed to have a proven record and be assessed by their peers. In

addition, the IEC did not only do 17025. They also ensured that staff at the laboratories had the IEC standard of competency and products. This helped to give confidence in the system.

Mr. O'Brien commented that he had been interested in the IECEE scheme, and in the fact that it was self-financing. He asked for an explanation of this, and who was paying.

Mr. Chew replied that IEC members had to pay IECEE dues. NCBs and CBCTLs also made their own contribution. In addition, if a country was not a member of the IEC, there would be a levy or surcharge on products tested from that country. For example, if New Zealand was not a member of the IEC, any product from there would bear a levy or surcharge for testing. But he did not believe that much of the funding came from this source. First of all it was from fees from the member body NCBs and the CBCTL, and for test report generation. The fees for these bodies depended on the number of test reports they generated. The greater the number the greater the contribution.

Prof. Schwartz said that this certainly merited closer consideration.

Mr. Almulla asked, based on Mr. Chew's experience, how the IEC dealt with the so-called "rogue" manufacturer. Sometimes a manufacturer gave their best sample for approval and then what came to the market was very different.

Mr. Chew replied that the type test certificate was issued based on the test sample. But after the item had been tested, then the certification scene came into play. The IECEX full certification scheme would cover this, and for the IECEE, there was an option called IECEE FCS – full certification scheme. For this the manufacturer or handler would be assessed by the national CBs to make sure that the products were manufactured according to the design and that there was a fixed manufacturing process in place. For type test certificates, the post market product was not looked at; for post market there had to be a full 'system 5' certificate system to keep a check on the manufacturer. If a regulator thought that a certain product was very hazardous and that the original test was not enough, they could use 'system 5'.

Mr. Almulla said the problem could appear after approval.

Mr. Chew agreed. But under a 'system 5' everything had to be in place according to what had been declared earlier.

Mr. Mason commented that the IEC system was very impressive and he was very pleased to hear about it. He asked how many years it had taken to build it.

Mr. Chew replied that it had taken more than ten years and that progress had only been made in the last 10–15 years.

Mr. Awosola referred to the fact that test reports and certification could be deleted only by the secretariat. He asked whether this was a formal documented process and if so, what happened to the copies held by the issuing authority. Were they too deleted, or what happened to them?

Mr. Chew said that he had been referring to the certificate of conformity of the product. In the case of the IECEX the master copy was owned by the IEC and not by the certification body, which at most had a copy. So the online copy was the most current and genuine certificate.

Mr. Nater said that Mr. Chew had mentioned that the IEC worked with MTLs and that there were 2600 of these, and all their results were accepted. If this was the case, he wondered what the IEC's experience had been with all these test laboratories.

Mr. Chew replied that under the MTLs and the CB scheme itself, the laboratories were all under NCB certification bodies. NCB staff attended the laboratories to witness the manufacturer's staff, and test the process itself. This was sufficient to ensure that they kept up to standard. There was also a supervision body to do the testing on the manufacturer's site.

Mr. Oosterman said that 90 % of the certificates were issued by the authority which was also the testing laboratory. He asked to what extent the certification bodies were paper organizations, or whether they were also testing laboratories.

Mr. Chew said he presumed that Mr. Oosterman was referring to the IECEE CB scheme. In this the testing laboratories were normally the certification body. Assessing was all done through the peer assessment system.

Mr. Oosterman said he had been referring to the 2700 MTLs, which performed a lot of tests.

Mr. Chew replied that they were all assessed by some 60 odd certification bodies. Peer assessment was not done by the certification bodies but by peers of the CBTLs. CBTLs could not assess themselves, this would be a conflict of interest.

Mr. Oosterman said that 80 % of certificates were issued by the testing laboratories.

Mr. Chew said that certificates could only be issued by NCBs and not by testing laboratories, who could, however, issue a test report.

Mr. Oosterman asked whether the certification authorities were the testing laboratories.

Mr. Chew said that the certification bodies looked at the test reports to make sure all was well.

Mr. Oosterman commented that they were therefore paper organizations.

Mr. Chew agreed that they were largely paper but added that they also assessed.

Mr. Oosterman asked if this assessment was on paper and not in a lab.

Mr. Chew said that was the case, otherwise there would be duplication.

Mr. Kool commented that a lot of similarities could be seen between the IEC system and the MAA. He wondered whether the same kind of problems could be seen in the IEC as in the MAA with the acceptance of certificates. Delegates had heard earlier about areas in the world where MAA certificates were not accepted at all, there was the issue of MTLs where some jurisdictions said they would not accept certificates if the test results had come from MTLs. His question was whether the IEC experienced the same problems, and, if so, what mechanisms or tools they had to increase acceptance.

Mr. Chew said that the IEC did experience the same issues. Some bodies did not accept MTLs unless under certain conditions. This was resolved by the Certification Management Committee on a case by case basis. The IEC did however have, openly on their website, the list of the certification bodies which had additional conditions for the acceptance of MTLs.

Mr. Dixit said that there were some arrangements between the IEC, ISO and the OIML on the specifications for assessment. He asked how many OIML Recommendations were accepted by the IEC.

Mr. Chew replied that the IEC used conformity assessment documents published by ISO/CASCO and the ISO/IEC 17025 as the basis for assessment. But they operated according to documents issued by the IEC system.

Mr. Dixit said that many ISO/IEC documents had similarities to OIML Recommendations and he would like to know how many OIML Recommendations ISO/IEC used.

Mr. Chew asked what Recommendations were being referred to.

Prof. Schwartz said there were certain OIML Recommendations that acted as standards, and that Mr. Dixit was asking whether OIML Recommendations would be accepted under the IEC scheme.

Mr. Dixit said that IEC standards were accepted for reference by the OIML, and again asked how many OIML Recommendations were accepted by the IEC.

Prof. Schwartz commented that this was not a fair question as the IEC was not concerned with measuring instruments.

Mr. Dixit replied that ISO/IEC made regulations for the same weights and weighing instruments as the OIML. He said that the OIML accepted IEC certification, so how many OIML Recommendations did the IEC accept.

Mr. Mason said that he could answer this question. Two years previously the OIML had signed an MoU with the IEC and as part of that there were mechanisms for identifying problems where there were conflicts between OIML Recommendations and IEC standards. In the last two years he had not been made aware of any conflicts. The two organizations had worked together very well for many years but if there were problems then there were mechanisms for dealing with them.

Mr. Dixit said that in India he was the chairman of the ISO/IEC committee looking after legal metrology in that country. He harmonized their regulations with OIML Recommendations. A similar situation might exist in other countries also.

Prof. Schwartz said that the point had been understood. He had enjoyed the lively discussion but time was up.

Mr. Dunmill said that, adding to what Mr. Mason had said, the use of IEC standards in OIML Recommendations was because they were used for particular technical areas of the entire instruments that OIML Recommendations concerned, so he would not expect the reverse to be true because the whole instruments were not the subject of IEC regulation. The OIML made use of IEC standards where appropriate, for electrical testing, radio interference, environmental testing and so on, whereas the reverse would not be true because it was looking at the whole instrument.

Prof. Schwartz thanked Mr. Chew for providing all the information and said delegates were also looking forward to his presentation at the CIML and to having opportunities to talk to him.

Session 4 – General discussion, conclusions, draft resolutions

Mr. Peter Mason

Mr. Mason said he had found the seminar very interesting. His objective now was to draw some conclusions to present to the CIML. He expressed his thanks to Prof. Schwartz for chairing the seminar and for doing all the work.

One thing had struck him while listening to the various presentations: not once had there been any mention of an MAA certificate causing problems of any kind. No MAA certificates had been wrongly issued and there had been no errors. All the certificates that had been issued fully deserved the mutual confidence and over the nine years since the MAA started, the hundreds of MAA certificates issued had never generated any issues.

Another key point was the importance of all the OIML Recommendations being up to date and “fit for purpose” in a context of continually changing technology. This part of the OIML work was very important. Mr. Mason had also noted the importance of the conformity to type issue, notably during the IEC presentation. The IEC developed standards and also ran a conformity assessment system; as had been identified in 2011 when the OIML Strategy document had been drawn up, the OIML was in exactly the same situation: we write standards and we have also opted to run a system which allows conformity assessment to be widely accepted around the world. However, the OIML system was not yet as wide or as widely accepted as we would like and he had found it encouraging that there had been so many different views during the seminar from people who were committed to seeing the system more widely used. This was very positive.

Mr. Mason asked Prof. Schwartz to summarize the conclusions.

Prof. Roman Schwartz

Prof. Schwartz explained that some preliminary conclusions had been drawn up; he invited comments and additions as appropriate:

- it should be emphasized that there is a high level of confidence in the MAA system;
- the MAA system could be improved and awareness should be increased. Information on the benefits of the system and how to become a Utilizing or Issuing Participant should be communicated widely, via the OIML Bulletin and via the regional legal metrology organizations;
- the role of Utilizing Participants should probably be re-thought with the aim that all Members should be able to accept MAA certificates. In the long term the MAA system will not be that successful if more Utilizing Participants are not involved (though still on a voluntary basis);
- the structure of the CPRs should be reconsidered. Do we need only one CPR to oversee the MAA system, possibly with a number of subgroups dealing with specific measuring instrument issues? Do we need annual or bi-annual meetings? Do we need to simplify the rules or should we leave them as they are?
- there was agreement that where there was a DoMC in place (currently R 76, R 60 and R 49), the Basic Certificate System should probably be phased out.

Mr. Roland Nater (Mettler Toledo/CECIP) commented that during the seminar it had also been suggested that there should be closer ties between the manufacturers and the CPRs.

Mr. Mason replied that this had been a suggestion, but he was not sure how that would operate because under any system it was the users of the system (primarily governments) who would be accepting the certificates. Manufacturers had much to contribute – for example the shape of the rules, and which Recommendations should be covered by the MAA, but he was unsure how the CPR decisions would be helped by having manufacturers' input. He asked whether there were any other views on this point.

Prof. Schwartz said that there was clearly a wish for manufacturers' associations to be more closely involved in the CPR activities – this could be considered under the fourth bullet point (see above). An ad hoc working group would be taking up all the seminar conclusions. Maybe the manufacturers' associations could participate in this group.

Mr. Nater thought this would be a good solution.

Mrs. Lagauterie suggested also including manufacturers' associations in the awareness raising process as this could help promote the MAA system.

Prof. Schwartz thanked Mrs. Lagauterie for her comment and agreed that this should be explored.

Mr. Valkeapää requested clarification about the final bullet point concerning the phasing out of the Basic Certificate System. Did this only concern those categories for which there was a DoMC, or the whole Basic Certificate System?

Mr. Mason replied that this only concerned those categories for which there was a DoMC. He also felt that there was an important decision to make concerning whether efforts should be concentrated on the existing DoMCs or whether we had enough resources to consider instigating DoMCs for other categories. This discussion, he said, would continue during the CIML meeting but in the long term we would need to consider whether the MAA should be applied to all the major categories of instruments.

Mr. Valkeapää felt that if both systems continued in parallel then confusion could remain. He wondered what consideration had been given to the transition period for basic certificates.

Mr. John Paul Musimami (Uganda) raised a question concerning bullet point 3: did that also apply to OIML Corresponding Members?

Prof. Schwartz replied that yes, this was the intention.

Mr. Patoray clarified that what was being talked about under bullet point 3 in the context of the MAA was not the certificate itself, but rather the accompanying MAA test report which was accepted by the Utilizing Participant. He also specified that it was not the OIML that issued certificates but rather the Issuing Participants or issuing authorities. The OIML authorized them to do that and registered the certificates, which was important in the context of conformity to type. He would like the MAA system itself to be clarified and for it to be stipulated whether the OIML issued certificates, or was its role just to register them?

Prof. Schwartz felt that this point was already clear and was explained in the various documents.

Mr. Patoray agreed, but felt that sometimes the conversations had indicated a possible lack of understanding on this point.

Mr. Mason reiterated that the OIML had a registration function, but this could become an active registration function in as much as the Bureau might have the right to subsequently cancel a registration, as explained in the IEC's presentation. This was the drift of the discussion and Mr. Mason felt it should be recognized as such.

Mr. Valkeapää wished to return to the third bullet point: he felt that today, everybody was able to accept MAA certificates, but this was on a voluntary basis. If Members were "pushed" to accept the certificates, then this was different to the notion of "voluntary". He was happy with the existing situation, but would like to see further clarification.

Mr. Mason agreed that the third bullet would benefit from being redrafted. It must be the OIML's objective to reach a point where all Member States were able to accept certificates issued by bodies that had undergone a CPR-type process. But when it was expressed in those terms, the present structure where there were Utilizing Participants who took part in the process rapidly became unwieldy. As the Utilizing Participants had a role to play in the CPRs, the more Utilizing Participants who participated, the potentially more difficult the system would become to run.

Mr. Mason suggested that although it was generally agreed that there were only a limited number of Utilizing Participants, in fact in one sense every member of the EU could be considered as a Utilizing Participant if a notified body within the EU was prepared to issue a type approval on the basis of an MAA certificate. In this sense, the OIML was already in the situation where the number of Member States acting on certificates was greater than it first appeared to be when one only considered the role of Utilizing Participants. This why Mr. Mason was suggesting there may be a need to rethink this role.

Prof. Schwartz reiterated that the aim was to make the system more attractive rather than to force anyone to accept it. He also advised taking into account any opposing views to the MAA so that these opinions could also be considered. He would appreciate hearing any criticism or negative opinions, again with a view to improving the system.

Draft resolutions

Prof. Schwartz then proceeded to read the three draft resolutions which would be put to the CIML during its 48th meeting.

Draft resolution 1

The Committee,

Noting the oral report by its first Vice-President on the outcome of the seminar to review the operation of the OIML Mutual Acceptance Arrangement (MAA),

Considering that the MAA's Committees on Participation Review (CPR) decide on their own rules and procedures within the framework set by OIML Publication B 10 (*Framework for a Mutual Acceptance Arrangement on OIML type evaluations*),

Considering that a number of MAA participants find these rules and procedures no longer adequate to ensure an efficient operation of the MAA and that this may hamper the further extension of the system,

Urges the CPRs to review the rules and procedures governing the operation of the MAA with a view to increase the efficiency of the operation of the MAA, to amend their internal documents (in particular MAA 01) accordingly, and to suggest appropriate amendments to OIML Publication B 10,

Instructs the BIML in its capacity as secretariat of the MAA CPRs to set up an ad-hoc working group consisting of interested CPR members to conduct the review, and to provide secretarial support to this working group,

Requests its first Vice-President to chair this ad-hoc working group and to report on its activities to the 49th CIML Meeting.

Mr. Mason suggested firstly concentrating on the phrase "rules and procedures". The view had been expressed by many that the rules themselves were adequate, but that there was concern over how they were being operated. He would like a clearer idea of opinions on that question. Secondly, did we need to rethink the role of the Utilizing Participants? Also, should the structure of the CPRs be reconsidered, including the concept of whether one sole umbrella CPR should be developed as opposed to one CPR per Recommendation? Should these points be part of the ad hoc group's reflection?

Mr. Kool commented that they were only looking at how the rules were being applied. He believed that comments had also been made on the structure of the CPRs and how they should operate, so it was not just a question of looking at the application, but it was also necessary to make changes to these rules and procedures, especially the structure of the CPRs.

Mr. Mussio asked whether this meant that B 10 would be taken out of the scope of OIML TC 3/SC 5.

Prof. Schwartz replied that the ad hoc WG would only consider appropriate amendments to B 10, but the question was open as to how any amendments would subsequently be dealt with.

Concerning the question of awareness raising, Mrs. Villière wondered whether they were not trying to find a solution before actually identifying all the problems. Having listened to the different points of view in the day's presentations, she suggested first engaging in a thorough contemplation of the present situation, including the awareness raising process. She felt this would be beneficial in the review process and would provide direction to move forward.

Prof. Schwartz read draft resolution no. 2:

Draft resolution 2

The Committee,

Recalling its decision on the implementation of the MAA in its 39th meeting (2004);

Recalling Resolution no. MAA 2006-2 of its 41st meeting concerning a transitory period ending 31 December 2008 in which both MAA certificates and Basic certificates may be issued;

Recalling Resolution no. 20 of its 43rd meeting (2008), extending the transitory period until such time that the Committee takes an express decision (separate for each category of instruments) to end it, effectively maintaining the Basic Certificate System in parallel to the MAA;

Recalling the conclusion of a Memorandum of Understanding on the 13th of October 2011 with the IEC, pertaining to the cooperation between the OIML and the IEC in matters of conformity assessment and in other matters;

Considering that for almost nine years now there exist de facto two OIML conformity assessment systems for OIML type evaluations: the OIML Basic Certificate System and the MAA, but that, instead, the MAA was conceived to replace the Basic Certificate System;

Resolves that steps should be taken to ensure that, in future, there will be only one single certification system for OIML type evaluations, based on the principles of the MAA, and that, as a first step, the CPRs should be requested to investigate options and make recommendations on how such a single system should be organized, taking into account the experiences of similar, well established certification systems, in particular the IEC conformity assessment systems for electro-technical equipment;

Instructs the BIML in its capacity as secretariat of the MAA CPRs and as the liaison with the IEC, to set up an ad-hoc working group consisting of interested CPR members and external experts to make appropriate recommendations, and to provide secretarial support to this working group;

Requests its first Vice-President to chair this ad-hoc working group and to report on its activities to the 49th CIML Meeting.

Mr. Mason felt that a third resolution was also necessary in order to record the successes of the MAA to date. These successes were limited because the scope itself was limited, but where certificates had been issued they had been used and as Mr. Carstens had pointed out, they were indeed a very valuable resource for many institutions and not only those who wanted to become Issuing Participants. He felt it would be a good idea to draft a third resolution which explained the achievements to date as well as setting out ideas for improvement.

Mr. Kool suggested adding text to the first resolution to the effect that the ad hoc group must take into account the conclusions of the seminar, including any references to awareness or other points.

Mrs. Villière agreed this was a good idea; it would provide a better picture of how best to proceed.

Mr. Nater asked whether his suggestion had been taken into account. Prof. Schwartz replied that all the conclusions of the seminar would be taken into account by the ad hoc group.

Mr. Carstens agreed that another resolution was necessary to reflect the conclusions. Prof. Schwartz replied that a more developed text would be presented to the CIML, as it was not possible to draft detailed texts immediately.

Mr. Dixit asked whether, after acceptance of the MAA, since many countries issued type approval certificates in their own countries, there would be an effect on that system.

Mr. Mason replied that he hoped there *would* be an effect and hoped that more countries would become Utilizing Participants at the very least, perhaps even Issuing Participants; that would lead to changes in the way they accepted instruments in their legislation. The role of the OIML was to provide countries with a system to give them the confidence to make those changes.

Mr. Dixit asked whether if in Europe for example 20 manufacturers had OIML certificates and if in India there were 100 manufacturers, where would the 100 manufacturers go for type approval?

Mr. Mason replied that in his understanding, if the Indian authorities had the possibility to be an Issuing Participant, then the manufacturers who had been provided with test reports would be accepted for European purposes as Prof. Schwartz had mentioned.

Mr. Dixit understood, but said that was only the case if manufacturers had already obtained OIML certificates. What happened in the case where manufacturers could not obtain OIML certificates in their own country – and indeed there were many manufacturers in Asia in this position?

Mr. Mason replied that this would be better discussed in the CIML meeting. But in his experience, potential competition between bodies in different Member States to issue certificates was helpful to manufacturers. They had the choice of going to issuing bodies anywhere in the world and would make that decision on the basis of price and quality, in the assurance that the certificate would be accepted as equivalent, which is what the system's aim was.

Mr. Carstens added that for those who had MAA test reports, their test results would be accepted under the system. Taking Mr. Dixit's example, if only three of the 100 companies wanted to enter the world market, they could either approach one of the other issuing authorities or ask the Indian government to set themselves up to become an issuing authority, but the other Members would not be affected as they would obtain a normal type approval through the type approval process of the country.

Prof. Schwartz thanked Mr. Dixit and Mr. Carstens for this example and for their clarification.

Mr. Kool said that a request had been made by Mr. Carstens to add text to the resolutions to reflect the conclusions of the seminar. He felt that the resolutions should be considered as part of the conclusions of the seminar but not to reflect the conclusions of the seminar itself. Basically, the two resolutions were

- to ask the CIML to request the CPR to set up an ad hoc group to examine certain questions, and
- to ask interested CIML Members to participate in an ad hoc group to discuss how to phase out the basic system.

This is why he felt that not too much text should be included to reflect the outcome of the seminar.

Mr. Mason agreed, but also felt it was a conclusion of the seminar that it is worthwhile promoting what the MAA can achieve as a "positive story". This was so important that it justified a third resolution, making a total of three:

1. The MAA is actually a limited success but a success nevertheless which we should promote more actively.
2. There is a need to reform the way in which the CPRs work.
3. There is a need to speed up the transition from the basic system to the MAA.

He felt that all three points were very important and that it would do justice to the importance of the subject that there were three separate resolutions to put to the CIML – however, unfortunately they did not have the ability to draft the third resolution that evening.

Prof. Schwartz closed the seminar by thanking all the speakers for their presentations and valuable input, those who contributed to the discussions especially the guest speakers from the IEC and CECIP, those who had made the MAA a success up to now, those who would contribute to make the MAA even more successful in the future, and finally the hosts and organizers of the seminar.

**

*