

**European Metrology Research
Programme**

Call 2011

**Health, SI Broader Scope and
New Technologies**

Report of the Independent Observer

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1. Introduction

1.1 Role of the Independent Observer

This report provides the findings of the Independent Observer, Dr John Lock, following the completion of the European Metrology Research Programme's Review Conference held in Berlin, 20-25 November 2011.

The role of the Independent Observer is described in European Association of National Metrology Institutes (EURAMET) documentation (Guide 6) as follows: "The European Commission may send an Independent Observer to the Review Conference. He/she does not participate directly in the evaluation procedure. He/she will have access to all areas of the evaluation process, and will report back his/her observations and opinions on the process to the European Commission".

The task of the Independent Observer, set out by the European Metrology Research Programme (EMRP) Programme Manager is **"to report to EURAMET and the Commission on the correctness of the selection process followed during the EURAMET EMRP 2011 Conference, as measured against the published rules"**.

The importance of following these rules is confirmed in the Official Journal Decision No 912/2009/EC (ref 7) which states that "the Community should have the right to reduce, withhold or terminate its financial contribution in the event that EMRP is not implemented or implemented inadequately".

1.2 Setting out the Selection Rules

Annex II of O.J. Decision 912/2009/EC confirms that EURAMET e.V., a non-profit association under German law, has sole responsibility for the implementation of EMRP including: defining and publishing the calls for proposals; selecting the independent experts for the evaluation; receiving the independent experts' individual assessments; chairing the evaluation panels; and taking the final selection decisions. The process leading up to the final selection of projects for funding, whilst being the responsibility of EURAMET e.V., needs to be broadly within the rules set out in the Seventh Framework Programme, and as defined in O.J. Decision 912/2009/EC, including:

- Para 19: "The evaluation of proposals should be performed centrally by independent experts under the responsibility of the dedicated implementation structure. A ranking should be approved by the dedicated implementation structure which should be binding as regards the allocation of funding from the Community financial contribution and from the national budgets earmarked for EMRP projects".

- Article 3, para 3: The EMRP projects shall be selected and the research grants awarded following calls for proposals respecting the principles of equal treatment, transparency, independent evaluation+
- Annex 1: Each proposal received will be evaluated with the assistance of at least three Independent Experts appointed on the basis of the criteria set out in the Rules for Participation in the Seventh Framework Programme. The Experts shall establish a ranking list which shall be binding in relation to the allocation of Community and National funding+

As agreed with the EMRP Programme Manager, the Independent Observer (IO) has focussed on Stage 2, Call for proposals for EMRP projects+of the selection process since that is what the IO has been able to observe directly. Stage 1 Call for potential research topics+ was observed directly by the Commission, and Stage 3 Call for proposals for researcher excellence grants and researcher mobility grants+ will be evaluated by referees electronically.

Also, as agreed with the EMRP Programme Manager, the Independent Observer has focussed on the selection of Joint Research Projects (JRPs) rather than the selection of Researcher Excellence Grants (REGs) since the latter are mainly an integral part of JRPs. Suggestions on improvements to the process that could be made in future years will be provided in a separate paper to the EMRP Programme Manager.

In summary, the Independent Observer (IO) has interpreted his core function as reporting to EURAMET and the Commission on whether the selection of proposals for the Single Ranked List has followed the principles of equal treatment, transparency and independent evaluation.

1.3 Structure of the Report

This report broadly follows the sequence of steps that leads up to the final Single Ranked List of proposals:

- Defining and publishing the call for proposals
- Selection of referees
- Evaluation Guidance and Process
- The Review Conference: preliminary stages including briefing for referees, and meetings with JRP coordinators
- The Review Conference: marking the JRPs
- Achieving the Single Ranked List

In the following sections the Independent Observer presents his views on the correctness of each step, as inferred by the published rules. A final section provides the conclusions of the Independent Observer.

Following the 2010 call EMRP's Management Support Unit (MSU) developed a number of detailed guides to facilitate the entire call and evaluation process. These have been referred to in this report and are listed in Annex 1, together with other reference material used by the IO.

2. Defining and Publishing the Call for Proposals

EMRP has adopted a two-stage process leading up to the call for proposals (Ref 1). Stage 1 involves the call for Potential Research Topics (PRTs) and Stage 2 the call for Joint Research Projects (JRPs). The 2011 Stage 1 Call opened on 4th February 2011 (Ref 2) and sought PRTs to address three topic areas:

- Metrology for Health
- SI Broader Scope, and
- Metrology for New Technologies

The call documentation included a description of the overall strategic aim of each of these topic areas, or Targeted Programmes (TPs) as they were referred to in the call. For New Technologies the TP description included a list of metrological needs in five areas, including nanotechnology to which EURAMET gave special weight. The PRT call had a deadline of 20th March 2011.

Detailed guidance for submitting PRTs (Guide 2) included eligibility criteria for a PRT, and how to complete the PRT template, including weak, improved and full examples of impact statements. A helpline (email and phone) was also available.

Guide 3, 'Prioritising Potential Research Topics', sets out in detail the process involved in finalising the list of Selected Research Topics (SRTs) from the pool of PRTs submitted, and the IO discussed the process with the EMRP Chair. Following the 2011 call a total of 153 PRTs were submitted, 40 for New Technologies (NTs), 75 for Health and 38 for SI Broader Scope (SI). An EMRP Sub-Committee had the responsibility of analysing and prioritising the ideas submitted. PRTs were grouped by defined classifications and members of the Sub-Committee were responsible for analysing these groups. At a prioritisation meeting a consensus position was reached by the Sub-Committee, and a full EMRP Committee meeting decided on the final list of SRTs that formed the call.

The EMRP Chair explained that in the course of this process certain PRTs were found to be sufficiently self-standing to provide an SRT with little if any amendment needed. Others were combined to form an SRT, whilst some PRTs were rejected because they were outside the scope of the call, or were too broad and not answering the stakeholders' needs. From the initial list of 153 PRTs received there emerged a final list of 17 for New Technologies, 20 for Health and 13 for SI Broader Scope. These SRTs formed the basis for Stage 2, the call for JRPs.

The Stage 2 Call was launched on the EMRP website on June 20th, 2011. It included a comprehensive description of eligibility criteria (Guide 1), and detailed guidance for completing a JRP application (Guide 4). The guidance explained in some detail what

the four criteria, excellence, relevance, impact and management meant. The process for costing and selecting JRPs was also described.

The IO was interested in establishing what changes the EMRP Management Support Unit (MSU) had made to the supporting documentation since the 2010 Call. Following the 2010 Conference a lessons learnt exercise was undertaken, based on comments made in the feedback forms and comments to the helpline. A new version control system was adopted, aimed at making text changes easier to manage and the Unit updated all the instructions, brigading information into a series of Guides (listed in Annex 1). To assist JRP submissions the Unit created a new JRP-Datasheet. This had the facility of automatically filling data into a number of worksheets, thus reducing duplication of data and minimising the risk of errors. All forms have now been separated from the Guides and are listed numerically.

The MSU had also updated the guidance on what needed to be included in the text covering the four evaluation criteria, with example text illustrating weak, improved and full responses. Access to all the Guides and Forms is on-line.

The IO discussed the process leading up to proposal submission with several JRP co-ordinators. For some, JRPs closely matched the original concept as described in their earlier PRT submission, whilst for others the SRT was an amalgam of two or three PRTs. This had both positive and negative effects. Some co-ordinators felt their JRPs had lost focus, whilst others saw positive benefits arising from expanding their original suggestion, and would lead to better integration with other partners. The guidance was considered to be clear and helpful, although some commented on the excessive amount of information required.

Having considered all the documentation, and based on discussions with the JRP co-ordinators, the IO has concluded that the process leading up to and including the call for proposals was clear, fair and fully transparent. This has been helped by the new guides that had been prepared following the 2010 Call.

Once JRP proposals were received they were acknowledged by the EMRP Management Support Unit (MSU) and their eligibility criteria were checked and proposals assigned to referees for evaluation.

3. Selection of Referees

The referee selection process is critical, both to ensure that the correct expertise is brought to the evaluation process, and that referees selected provide unbiased and independent views. Article 17 of the Rules for Participation in the Seventh Framework Programme states that independent experts shall be chosen on the basis of skills and knowledge appropriate to the tasks. Article 17 also notes that due regard should be given to gender balance and steps should be taken to ensure that experts are not faced with a conflict of interest. The European Commission also requires that all Independent Referees must be selected from the FP7 Database of Experts, and EURAMET has been granted special access. In response to a request

from the IO for more details on the 2011 selection process the MSU prepared a paper setting out how this was undertaken (Ref 4).

Efforts were made by MSU to try to secure the correct number and mix of specialists for the 2011 Call. As in 2010, the EC database search function presented some problems, for example truncating keyword fields, and some experts completed their forms incorrectly. Following liaison between MSU and the Commission a pool of nearly 1,000 potential referees were identified. Once National Metrology Institute (NMI) employees and duplications were removed the number was reduced to 548 referees.

This list was passed on to the EMRP Chair and Deputy-Chair who considered 295 referees as being ~~out of scope~~, leaving 253 potential referees. A check by MSU on experience, relevant skills and computer literacy reduced this to 233 referees who were contacted by MSU through a ~~letter of 1st contact~~. The pool of available referees was finally fixed at 121 experts, and the final confirmed referee allocation was 18 for NT, 24 for Health and 18 for SI.

Ideally, EMRP MSU would prefer to have two specialists designated for each JRP. An analysis by the IO indicated that this was broadly met. Overall, 85% of the JRPs had two or more designated specialists, but this fell to 70% for Health. From the IO's observations of the dynamics of the referee groups when marking the JRPs, 2 specialists for each JRP is the ideal number since this helps promote a fuller debate before the mark for any criteria is agreed. In addition there is always a risk that a specialist declares a conflict of interest at the Conference, as happened this year, or is unable to attend at the last moment. The IO is not advocating larger groups of referees, but is suggesting that a larger number of referees are contacted at the ~~1st~~^{1st} letter stage so that a larger pool of referees is available to match referee specialisms to JRPs. The IO is aware that for 2012 MSU has developed a new document (Guide 8), ~~Registering as a Referee in the EMRP~~, which is expected to help increase the pool of available referees.

Article 17 states that all necessary steps should be taken to ensure that referees are not faced with a conflict of interest. This is fulfilled through the completion of a declaration of confidentiality and conflict of interest form (Ref 5). Referees were reminded during the Conference of the need to declare any potential conflict of interest that might have emerged following remote reading of the JRP documentation. The IO was aware that two referees signalled a potential conflict and, following a review by MSU, were asked not to comment on the relevant JRPs.

The MSU referee selection paper (Ref 4) provided a detailed analysis of gender and nationality balance of the referees that attended the conference. The female participation ranged between 22% for NT and 11% for SI. Between 12 and 14 nationalities were represented in the TPs.

The IO concluded that the process for selecting referees had fully complied with the requirements set out in Article 17. Referees had been chosen on the basis of their specialist knowledge and due regard had been given to gender balance. MSU took every precaution to ensure there were no issues regarding conflicts of interest, both

through the requirement of referees to sign a confidentiality and conflicts of interest form and emphasising the need for confidentiality during the Conference. The IO noted that some JRPs had one specialist referee, rather than the two specialists preferred by MSU, and suggests that consideration is given to contacting a larger number of referees through the letter of 1st contact.

4. Evaluation Guidance and Process

Once the pool of referees had been selected the evaluation process moved to the next stage, firstly through a process of remote evaluation (Step 1) followed by the Review Conference (Step 2).

Referees were provided with detailed guidance on the evaluation process and scoring of JRP proposals (Guide 6). The core evaluation criteria for JRPs are defined in the Decision of the European Parliament and the Council (Ref 7) as follows:

- Scientific and/or technical excellence
- Relevance to the objectives of the EMRP
- Potential impact through the development, dissemination and use of the project results
- The quality and efficiency of the implementation and management

The IO concluded that the guidance provided to referees was fully comprehensive. It provided a summary of the call and evaluation process. The guidance had been updated since the 2010 call and explained more fully the preparation that referees needed to make before the Review Conference. Details were also provided in the guide and the JRP marking sheet on the four criteria listed above, on the mark scheme and the newly introduced weighting system. Evaluators were also advised to look at the detailed guidance given to JRP drafters in Guide 4, and which provided further interpretation of the criteria.

5. Remote Evaluation

Prior to the Review Conference referees were required to undertake their preliminary assessment of the proposals that had been assigned to them in order to form their initial opinion about the JRP proposals and begin marking the proposals against the evaluation criteria. Referees were reminded in their instructions not to discuss proposals with proposers or other referees, and to advise EMRP if they discovered a conflict of interest. The IO received positive comments back from a number of referees on the preparations for the conference. The paperwork was considered to be clear and well ordered, and their task at the conference was comprehensively explained in the documentation, and by the MSU at the Conference. The IO concluded that all referees appeared to take the task of evaluating the JRPs seriously. Some referees had made detailed notes and had made preliminary scores whilst others had approached the task in a less structured way, with notes made in the margins of JRP proposals.

6. Review Conference: Preliminaries

The Review Conference plays a critical part in the entire process of proposal evaluation and proposal selection. The IO attended the six day conference and had full access to all relevant personnel including referees, JRP coordinators, and members of the EMRP and MSU. Full details of the conference structure, group arrangements and attendees were provided in the EMRP-MSU Observer Book (Ref 6)

The Conference Agenda set out the steps adopted by MSU in progressing towards the adoption of the draft Single Ranked List. The following sections of the report provide the IO's observations on each step of the process, particularly the extent to which the correctness of the selection process rules were followed. It was not possible for the IO to attend all seven groups in full since sessions ran in parallel. Instead the IO followed the selection process and proposal selection of one of the NT referee groups in order to establish a comprehensive picture of the process. For Health and SI, the IO spent time with each of the referee groups in order to gain an impression across the groups.

6.1 Briefing for Referees

The EMRP Chair formally welcomed referees and JRP coordinators to the conference and outlined EMRP's strategic vision. He explained that a total of 153 Proposed Research Topics had been received. Following EMRP's sift 50 Research Topics were selected and it was likely that approximately 30 JRPs would be funded. The EMRP Programme Manager summarised the ground rules for the evaluation. He confirmed that the ratio between available budget and the bid total was approximately 1:1.5 for NT, 1:2 for Health and 1:1.7 for SI. Referees were reminded that it was the consensus view not the individual view that would eventually decide which proposals were selected for the ranked list.

In a separate session, not attended by the coordinators, the EMRP Programme Manager explained how the referee groups would operate, and emphasised some of the key points contained in the documentation, including the need to be independent, impartial and objective, and to advise MSU if any conflict of interest arose. He confirmed that the role of the referees was to recommend which JRPs were of sufficient quality to be considered for funding, and rank the JRPs in order of merit.

At several points during the conference referees were again reminded of the evaluation criteria and its interpretation, and the marking system, and this was also emphasised by the MSU breakout group facilitators. The EMRP Programme Manager confirmed that he and the MSU team were available throughout the conference to answer questions and help clarify any points of uncertainty.

The IO had informal discussions with a number of referees throughout the course of the Conference. All expressed satisfaction with the documentation and organisation of the proceedings, although several commented that the JRP proposals were too long, and could possibly have been more concise. Time allocated to each part of the

evaluation process was thought to be about right for the various tasks. The IO's own impression was that the conference was well planned and executed. All members of the MSU played their part in ensuring that the conference ran smoothly. Meeting rooms were clearly identified, verbal and written guidance was easy to follow and sufficient time had been allocated to each task.

Following this introductory session referees joined their break-out groups. Prior to the conference the MSU had selected between seven and eleven referees to work together in groups that would evaluate approximately six JRPs. Each group had a designated facilitator and note-taker from the MSU team. Referees introduced themselves and identified projects for which they were the designated specialist or generalist. The facilitators explained the procedures and emphasised the need to reach decisions on the scores for individual JRPs by consensus.

6.2 Informal Meetings between Referees and JRP Coordinators

Each JRP coordinator was instructed to provide a poster that summarised the key aspects of their proposal in a clear and concise manner in order to help referees to evaluate the proposal against the four evaluation criteria. The timetable for the informal meeting between coordinators and referees was carefully timetabled to ensure that each project received approximately the same level of scrutiny from the referees. Both coordinators and evaluators confirmed to the IO that they found the poster session extremely helpful. Coordinators said that questions ranged from very detailed technical questions to more general queries aimed at seeking a better understanding of the research aims.

Following the poster session referee groups re-convened to start developing questions for the formal meeting with the coordinators. This discussion also helped the group start developing its views on the overall strengths and weaknesses of each proposal. In developing the questions the IO observed that the process that seemed to work best was for the lead referee to briefly introduce the proposal, summing up views on the strengths and weaknesses before opening up the discussions.

The facilitators played a key role, helping to interpret the comments and forming these into specific questions which were then written down by the expert for that particular JRP. On average between three and seven questions were agreed for each proposal. The facilitators reminded the groups that approximately 10 minutes would be available for each JRP and the questions should not be open-ended.

The IO noted no extreme championing by individual referees for projects, and no individuals dominated discussions.

6.3 Formal Interviews between Referees and JRP Coordinators

The formal interview sessions were conducted on a group basis, with all the relevant coordinators and referees present in the room at the same time. For each JRP the expert referee asked the questions, and if time allowed other referees were able to seek further clarification. Some questions and answers led to more in-depth discussion and a lively debate developed around some points. After the interviews the IO received positive feedback from coordinators. All had found the poster sessions and interviews a good opportunity to clarify with the referees any areas of concern. Questions and responses were recorded in detail by the facilitators to be referred to later during marking.

7. Review Conference: Marking the JRPs

In closed session, each referee group undertook the task of scoring the JRPs. Careful preparation had been made by the MSU team for this. Pinned around the rooms were the JRP posters, the marking guidance, and a list of all the proposals to be scored, with columns for entering scores. The MSU facilitator reminded the referees of the task ahead, and the evaluation criteria and scoring guidelines

The process of reaching a final agreed score tended to follow a similar pattern in each group, with the lead referee introducing the JRP, referring to what had emerged during the question and answer session, opening up discussion on the first criteria, and suggesting a score. This was then commented on and either agreed or discussed further until a consensus score was reached. The role and conduct of the MSU facilitators was common across all groups and entailed: reminding the group of the SRT call text; the evaluation criteria and the marking guidance; reminding the group of the questions posed to the coordinators and answers received; and the time constraints if discussions became too convoluted. The IO noted that the facilitators did not attempt to influence the marking, but when necessary pressed referees to be able to justify their marks. When on a few occasions it proved difficult to reach an absolute consensus on a score the group resolved the issue by taking a vote.

Once marks for the four criteria had been placed on the marking poster for all the proposals, the totals were added up including the weighting, and the initial ranked list considered in detail. Discussions helped each group reach a final decision on the ranked list including: whether the scoring had been too generous for any of the proposals, and where two proposals were ranked equal to agree which should receive the higher score.

Within each group, once a consensus had been reached on the marks for each proposal and the ranked list agreed, the facilitator read out the agreed comments to be fed back to the coordinators. The referees signed their agreement of the marks awarded and comments. Mark books were collected in by the MSU and marks transferred to an excel spreadsheet for the final session, the agreement of the single ranked list.

8. Review Conference: Single Ranked List

Following completion of the marking, referees were assembled to receive details of the scores awarded to all the JRPs. A preliminary ranked list was presented to the referees with an indication of where the cut-off point came for funding. For NT this was at the 18.75 mark, for Health 19.50 and for SI 19.75.

For NT, because two projects were marked 18.75, further discussion was held to try to separate them for the ranked list. The sum of the science and impact weighting did not help separate the projects, nor did discussions between the groups help decide which project should be ranked highest. On the basis that both projects had only scored 3.5 for science and because the proposed funding level came somewhere between the two projects, the Programme Manager recommended that the two projects be declared as equal for the purpose of the ranked list, and suggested that the funding line may be raised above the 18.75 mark by the EMRP Committee. This proposal was accepted. Two projects also tied for Health, at the 19.50 cut-off point. In this instance applying the science plus impact weighting separated the two projects and the ranked list was achieved.

Once the final ranked lists had been agreed one referee was asked to check and sign the list and scores as being correct, and the documentation was circulated to all referees for signature.

8.1 Comparability between Referee Groups

An issue that was discussed separately with a number of referees, and was raised during the Health ranked list session was the extent to which there was comparability between the referee groups. Was there a risk that one group tended to mark harder than another? To consider the issue of comparability between groups further the IO undertook the following analysis.

For two of the Targeted Programmes, NT and SI, a comparison between the marks awarded by the two referee groups showed a similar level of marking. For NT, of the 8 JRPs above the funding line, four came from each of the two groups. For SI, five came from one group, and three from the other. For these two programmes there appeared to be good comparability between the groups.

For Health a somewhat different marking pattern emerged. Of the 11 projects above the funding line, five came from one group, four from a second group, and one from a third. A possible conclusion was that the third group had marked harder than the other two groups.

The IO has considered three potential sources of bias: the evaluation process established by MSU; the referees that make up the groups; and the JRP proposals.

Regarding the first possible area of bias, the **evaluation process**, the IO's conclusion is that MSU has taken every precaution to ensure that a fair and un-

biased process is in place. Each review group is managed in a similar way, with the facilitators making frequent reference to the marking guidance, the text of the SRTs, the evaluation criteria, and the question and answer session.

Regarding the **referees**, it is reasonable to assume that the referees themselves will inevitably introduce a certain degree of variability into the evaluation system since the level of expertise will not be identical and referee groups are made up of individuals who perform differently in a group situation, some being more outspoken than others. From the IO's observation, MSU takes several precautions to ensure that as far as possible referee groups are comparable and mark to the same standard. For example no individual referee is able to sway the group. Referees that have been identified as experts are asked to lead the discussions and suggest an opening score, but the final mark awarded is reached by the consensus of all the members of the group.

Regarding the **JRP proposals**, the purpose of the Conference is to agree a ranked list. This implies that JRPs are of different quality. Efforts are made to ensure that as far as possible a level playing field is applied to the JRPs up to the point when the formal question session ends. All JRPs use the same guidance, forms are identical, poster guidance is the same and referees spend the same time discussing each poster with the JRP coordinator.

The IO's observation is that every reasonable precaution is taken to ensure there is proper comparability between the groups of referees and that they mark to the same standard. The most likely reason that one of the Health groups marked lower than the other two groups was a result of the quality of the JRPs evaluated by that group, rather than any bias being introduced by the evaluation process itself, or the quality of the referees.

9. Conclusions

The Independent Observer (IO) was asked by the EMRP Programme Manager to report on whether the EURAMET EMRP 2011 Conference followed the correct selection process, as measured against the published rules. The IO referred to relevant EURAMET, EMRP and Commission documentation which set out these rules, and interpreted his core function as observing whether the process for selecting proposals for the Single Ranked List followed the principle of equal treatment, transparency and independent evaluation.

Conclusions that the IO has reached at each stage of the selection process have been set out in the main body of this report. The following provides a summary of his key conclusions:

Stages 1 and 2, leading up to the call for proposals: Having considered all the information set out in Guide 2 on submitting PRTs, Guide 3 on prioritising PRTs, and Guide 4 on writing a JRP, and having discussed various aspects with JRP coordinators, the IO has concluded that the process leading up to the call for proposals was clear, informative, and fully transparent. The MSU has undertaken a

thorough review of the associated guidance and the newly prepared Guides help ensure that there is little room for misunderstandings or misinterpretation to arise.

Selection of Referees: The IO concluded that the selection of referees had complied fully with the requirements set out in Article 17 of the Rules for Participation in the Seventh Framework Programme. All referees had been selected from the FP7 Database of Experts and EMRP ensured that JRP proposals were being allocated to referees that had the appropriate skills and knowledge to undertake the evaluation. The IO noted that overall 15% of the JRPs had only one specialist referee rather than the two as preferred by the MSU, but this rose to 30% in the Health TP. The IO suggests that for 2012 a larger pool of referees receive the letter of 1st contact+to try to ensure that all JRPs have two allocated expert referees. A new Guide (Guide 8: Registering as a referee in the EMRP) will help ensure a larger pool of referees will be available in 2012. Effort had been made to ensure reasonable gender balance.

Conflicts of interest and confidentiality: The IO noted that appropriate measures had been taken by the MSU to ensure that referees were not faced with conflicts of interest. No breaches of confidentiality were observed by the IO during the course of the Conference.

Evaluation Guidance: The IO concluded that the guidance provided to referees was comprehensive. It provided background information on the steps leading up to the call, the evaluation process itself, templates for JRP evaluation, and a code of conduct for referees. The evaluation criteria that were used to evaluate proposals - excellence, relevance, impact and management - were explained on the scoring sheet, and referees were referred to the JRP guidance which provided further details on the evaluation criteria.

Conference organisation: The Review Conference is critical to the entire evaluation and selection process. The IO received positive responses from individual referees and coordinators on the quality of the documentation and organisation of the Conference, and it was evident to the IO that the conference had been planned with care. The agenda set out the logical order of each day, meeting rooms were clearly identified, verbal and written guidance was easy to follow and sufficient time had been allocated to each task.

Formal interviews between referees and JRP-Coordinators: The IO noted that questions were clear and relevant, and coordinators were allocated the same time. After the interviews the IO received positive feedback from coordinators, and all had found the interviews a good opportunity to clarify any areas of concern with the referees.

Marking the JRPs: The IO observed no extreme 'championing' by individual referees for projects, and no individuals dominated discussions. A consensus view was reached on the scores for each of the criteria and the group agreed the total scores for each proposal. The IO noted that the facilitators did not attempt to influence the marking, but when necessary pressed referees to be able to justify their marks. The facilitators had an important role in ensuring that there was consistency

between the groups, frequently referring to the four evaluation criteria, the SRT call paper, and the marking guidance.

Single Ranked List. Separating proposals with equal scores: Any process to separate proposals with the same score needs to be open and fair, especially where two or more tied projects straddle the proposed funding line. The approach used by the EMRP Programme Manager is to sum the scientific and impact scores and the JRP with the highest figure is considered to be the better proposal. If this fails to separate the tied projects, the project with the highest impact score is ranked first. The IO considers this approach to be a logical and fair way of separating tied JRPs since it gives the correct emphasis to the science and impact criteria.

Comparability between referee groups: Triggered by a somewhat unusual difference that emerged between the scores of the Health referee groups, the IO considered further whether there was proper comparability between groups. Having examined three potential areas of bias - the evaluation process, the referees, and the JRP proposals - the IO has concluded that every precaution is taken by MSU to ensure there is proper comparability between the referee groups.

9.1 Concluding Statement

Based on all the evidence available to him, the Independent Observer has concluded that the EURAMET EMRP 2011 Conference followed the correct selection process, and that the process leading up to and including the selection of proposals for the Single Ranked List followed the principles of equal treatment, transparency and independent evaluation. Referring to the specific rules set out in the Seventh Framework Programme, and as defined in O.J. Decision 912/2009/EC, the IO has concluded that:

- Para 19: ~~The~~ evaluation of proposals should be performed centrally by independent experts under the responsibility of the dedicated implementation structure. A ranking should be approved by the dedicated implementation structure which should be binding as regards the allocation of funding from the Community financial contribution and from the national budgets earmarked for EMRP projects+ **has been complied with fully.**
- Article 3, para 3: ~~The~~ EMRP projects shall be selected and the research grants awarded following calls for proposals respecting the principles of equal treatment, transparency, independent evaluation+ **has been complied with fully.**
- Annex 1: ~~Each~~ proposal received will be evaluated with the assistance of at least three Independent Experts appointed on the basis of the criteria set out in the Rules for Participation in the Seventh Framework Programme. The Experts shall establish a ranking list which shall be binding in relation to the allocation of Community and National funding+ **has been complied with fully.**

Annex 1: Principal Documents and Papers Referred to by the Independent Observer

Reference	Details
Ref 1	EMRP Background Information,
Ref 2	EMRP Call 2011. Call Scope and Budget: TP New Technologies; TP Health: TP SI Broader Scope
Ref 3	List of Selected Research Topics
Ref 4	Referee Selection Process for EMRP Call 2011
Ref 5	Form 6a: Referee Code of Conduct and Declaration of Confidentiality and any Conflicts of Interest.
Ref 6	EMRP-MSU Observer Book: Agenda Participant list Photo sheets JRP & REG groups Poster session timetable and maps
Ref 7	Official Journal of the European Union. Decision No 912/2009/EC 16 September 2009 On the participation by the Community in a European metrology research and development programme undertaken by several Member States.
Guide 1	Eligibility Criteria for EMRP Calls
Guide 2	Submitting a Potential Research Topic
Guide 3	Prioritising Potential Topics
Guide 4	Writing a Joint Research Project
Guide 5	Costing a Joint Research Project
Guide 6	Evaluating Joint Research Projects and EMRP Researcher Grants
Guide 8	Registering as a Referee in the EMRP