Master Agreement on Participation in a Proficiency Testing Programme according to IECRE OD-551

between

MEASNET, a partnership organized under the laws of Spain and registered in the National Register of Associations: Group 1 /Section 1 / national number 597932, with its registered offices in UPM - Campus de Montegancedo EDIFICIO "CIDA", 28223 Pozuelo de Alarcón, Madrid, Spain

- hereinafter referred to as "**Measnet**" -

and

[ ] , a company organized under the laws of [ ] and registered in the Commercial Register of [ ] under docket-no. [ ] , with its registered offices in [ ] ,

- hereinafter referred to as "**Participant**" –

RECITALS:

Measnet is an international organization of wind energy institutes cooperating in a wind energy measuring network. The goal of Measnet is to improve and ensure the quality of measurements relating to wind energy technology in order to allow mutual recognition and interchangeability of results and to achieve uniform interpretation of standards and recommendations.

The International Electrotechnical Commission (IEC) has issued the IECR Operational Document regarding the IEC System for Certification to Standards relating to Equipment for use in Renewable Energy applications (IECRE-System) in the wind energy sector of IECRE, and has selected and approved Measnet as Proficiency Testing Provider as defined in the IECR Operational Document. In this course Measnet organizes Proficiency Testing Programmes (round robin or interlaboratory tests) on basis of the IECRE Operational Document. Participants in proficiency testing programmes may be RETLs, applicant RETLs, RECTFs, IECRE member organizations and other organizations approved by SG 551 as Proficiency Testing Provider, such as Measnet.

The Operational Document describes the requirements and the procedure to conduct proficiency tests for proficiency . This Agreement provides for the terms and conditions of a participation of RETLs, applicant RETLs, RECTFs, IECRE member organizations and other organizations approved by SG 551 as Proficiency Testing Provider in a Proficiency Testing Programme, in addition to the terms and conditions of the IECRE Operational Document. It is intended to apply as a framework agreement to all Proficiency Testing Programmes in which the Participant takes part during its term.

NOW, THEREFORE, in consideration of the premises and mutual covenants contained herein, the parties have agreed as follows:

1. Definitions

1.1. **Confidential Information**" herein shall mean all technical and economical Information concerning the PT disclosed by one Party ("**disclosing Party**") to the other Party ("**Recipient**") or in any other way obtained by a Party in connection with PT´, whether disclosed or obtained in writing or orally or in electronic form or in any other way, regardless of whether or not marked as "confidential" or "secret", including any and all copies or electronic or other records or reproductions made thereof, including, without limitation, trade or business secrets of a Party, know-how related to wind energy measurements, wind energy converters or process-, production- or application know-how in connection with equipment related to wind energy generation , product properties, market data or analyses data, test-results, test processes, technical specifications, prices, cost and the existence of this Agreement and its contents and the identity of the Laboratories participating in a PT, except as otherwise provided hereinafter or in the OD, in any case regardless of whether or not such information has been subject to reasonable steps under the circumstances by the disclosing Party to keep it secret.

Laboratories herein shall mean: Each of the companies or entities participating in a PT.

IEC herein shall mean: International Electrotechnical Commission, 3, rue de Varembé, 1211 Geneva 20, Switzerland

OD herein shall mean: The IECRE Operational Document issued by the International Electrotechnical Commission (IEC) regarding the IEC System for Certification to Standards relating to Equipment for use in Renewable Energy applications (IECRE-System) in the wind energy sector of IECRE, as amended from time to time, enclosed herewith in its present form as Annex 1.

PT herein shall mean: Proficiency testing in general is the evaluation of the performance of an entity with specific focus on compliance with the underlying IEC standard by interlaboratory comparison. The scope of a proficiency test may cover all aspects of its underlying standard or certain parameters of a standard (such as methods, procedures etc.) only.

Proficiency Testing Provider herein shall have the meaning as defined in Section 5.1.2 of the OD.

RECTF herein shall mean: Renewable Energy Customer Test Facilities.

RETL herein shall mean: Renewabale Energy Testing Laboratories

SG-551 herein shall mean: Test Labs Group as established by IEC.

Services herein shall mean: The Services provided by Measnet as Proficiency Testing Provider in the course of a PT.

1.2. All other terms used in this Agreement shall have the meaning as defined in the OD.

2. Scope of the Agreement

2.1. In all cases Measnet is selected by IEC as Proficiency Service Provider (as defined in the OD), Measnet will organize and manage PTs and the Participant will participate in PTs, as agreed case by case, subject to the terms and conditions of the OD and this Agreement, and the Participant acknowledges that PTs will only

be carried out subject to the terms and conditions of the OD and this Agreement.

2.2. It is understood and agreed that the terms and conditions of this Agreement only apply in addition and supplementary to the OD, in case of a conflict between the OD and this Agreement the terms and conditions of the OD take priority over this Agreement, and nothing contained in this Agreement shall be interpreted or construed as an alteration of the terms and conditions of the OD.

2.3. This Agreement shall not constitute a right of the Participant to participate in any PT and shall not limit the right of Measnet, the SG 551 Proficiency Testing Representative, Measnet as Proficiency Testing Provider or any other competent person or entity to disapprove participation of the Participant in a PT or exclude the Participant from a PT, in each case subject to the terms and conditions of the OD.

3. Use of Measnet name, Logo and Trade Marks

3.1. It is understood and agreed that participation in a PT will not result in, or be deemed as, accreditation of the Participant by Measnet. The Participant shall refrain from any public statement suggesting or implying in any way whatsoever that he performs measurements approved by Measnet.

3.2. It is understood and agreed that no right, license or privilege expressed or implied, is granted to the Participant regarding the name and logo of Measnet and any trade marks, registered designs or utility models owned or controlled by Measnet, and Participant shall not make any use of the logo or stamp of Measnet and any trade marks, registered designs or utility models owned or controlled by Measnet in connection with the PT.

4. Service Fee and Terms of Payment

4.1. The fee for to be paid by the Participant to Measnet for the Services will be agreed between the Parties case by case and will be based on general guidance from SG 551 and the budget presented by the PT Representative, as provided for in Section 5.1.1 of the OD. All fees are net plus statutory VAT and local taxes, if any.

4.2. Terms of Payment: 30 days after date of invoice net without deduction.

4.3. The Participant may offset payment, also if complaints or counter claims are raised, only if the counter claims are legally established or undisputed or accepted by Measnet.

5. Warranty and Liability

5.1. Measnet warrants that the Services shall be performed in accordance with the standards of practice customary in the profession for services of a similar nature.

5.2. If Measnet is notified by the Participant in writing that the Services provided by Measnet materially fail to conform to the warranty set forth in section 5.1 within ten (10) days after discovery of any such deficiency, and not later than twelve (12) months after the performance of the Services, Measnet shall, at its sole discretion, re-perform those services which fail to so conform provided this is technically and economically feasible or refund the fees paid for the deficient services in proportion which the value of the services free of any deficiency would, at the time when the Agreement was entered into, have had to the actual value.

5.3. The warranty set forth here above is exclusive and given by Measnet, and accepted by the Participant, in lieu of any and all other warranties of merchantability and fitness for a particular purpose, whether known to Measnet or not, and all other warranties including, without limitation, accuracy and correctness and absence of deficiencies of the measurements carried out by the Laboratories and the Final Results of PT or compliance with any time schedule, are hereby expressly disclaimed by Measnet and waived by the Participant.

5.4. Measnet and its directors, officers, members, partners, subcontractors and representatives disclaim and shall not be liable for any incidental, indirect or consequential loss, damage, cost or expense whatsoever, whether claimed in contract, equity, tort or otherwise, including without limitation loss of profit, loss of production, loss of contract, lost return on investment, increased cost of operation or loss of use or value of any facilities, unless caused intentionally. Furthermore, Measnet and its directors, officers, members, partners, subcontractors and representatives shall not be liable for any acts or omissions of the SG 551 Proficiency Testing Representative, the Technical Coordinator, a Laborarory or any other third party involved in a PT .

5.5. It is understood and agreed that this Agreement and the Services provided by Measnet under this Agreement and the OD do not constitute any contractual relationship between the Participant and the members or partners of Measnet, or establish any obligations, whether joint or several, of the members or partners of Measnet in relationship to the Participant.

6. Confidentiality

6.1. The Recipient undertakes to use Confidential Information only for the purposes of this Agreement and to keep strictly confidential any and all Confidential Information received from the disclosing Party in connection with this Agreement and not to disclose it to any third Party, not to directly or indirectly commercially exploit the Confidential Information or parts thereof and not to directly or indirectly use the Confidential Information for obtaining industrial property rights. For the avoidance of doubt, it is understood and agreed that the identity of the Laboratories participating in a PT may be disclosed by Measnet and IEC in a list of participants in the Final Reports (Internal Report, Participant Report, External Report) of a PT, as defined in the OD and subject to the terms and conditions of the OD (see section 6.1.6 OD).

In addition to the terms and conditions of the ID and section 6.1.6 (subpara “external report”, subsect. 4) of the OD, the Participant agrees that its name may be listed in the list of participants in the External Report not only if the Participant has passed the OD, as provided for in the OD (section 6.1.6 subpara “external report”, subsect. 4), but also in case the Participant did not pass the PT, unless Measnet is notified by the Participant in writing that the Participant does not wish to be listed in the list of Participants in the respective external report in case such Participant does not pass, or has not passed, the respective PT. It is understood and agreed that the Participant is free to refuse listing in the external report as aforesaid, at its sole descretion. Such written notification of refusal shall be submitted to Measnet either before start of a PT or at the latest within 10 (ten) working days after receipt of information about its failure from Measnet.

6.2. Each Party further agrees to make Confidential Information available only to those of its employees who need to have access to it for the purpose of this Agreement, to limit the disclosure to the extent required for the purpose of this Agreement, to inform such employees about the existence of this Agreement and its confidentiality obligations and to commit such employees to the same extent of confidentiality as provided for herein and, as far as legally permissible, also for the time after their employment. Upon request of the disclosing Party, the Recipient shall provide a list of such employees who have had access to the Confidential Information or parts thereof.

6.3. The Recipient shall protect the Confidential Information disclosed by the disclosing Party with at least the same degree of care it employs to protect its own confidential Information but shall, in no event, employ less than reasonable degree of care. The recipient agrees to promptly notify the disclosing Party of any misuse or misappropriation of the Confidential Information.

7. Exceptions to Confidentiality

7.1. The confidentiality obligations as mentioned in Section 6 here above shall not apply to such Confidential Information or to any part thereof, for which the Recipient provides evidence that

a) it was known to the recipient prior to its receipt from a third party other than the disclosing Party, or
b) it was in the public domain or generally available to the public prior to its receipt, or
c) it became known to the public or generally available to the public subsequent to its receipt without the Recipient being responsible therefore, or
d) it was received by the Recipient at any time without any commitment of confidentiality from a third party having a bona fide right to disclose the same to the Recipient, or
e) is legally required to be disclosed, in which case such disclosure shall be made, if at all, in accordance with section 7.2 below.

7.2. If a Party is required by law to disclose Confidential Information or if disclosure thereof is required by a Party in connection with the assertion of any Claim or defence in any judicial or administrative proceedings involving such Party, such Party may make disclosure thereof provided that the Party making the disclosure thereof shall immediately notify the other Party of the requirement and the terms thereof prior to such disclosure and shall use its best efforts to obtain proprietary or confidential treatment of such Confidential Information by the third party to whom the Confidential Information is being disclosed, and shall, to the extent such remedies are available, seek protective orders limiting the dissemination and use of the Confidential Information.

8. Right of Ownership in Confidential Information

8.1. The Recipient agrees that Confidential Information disclosed to it will remain the property of the disclosing Party, and that the Confidential Information or drawings or other written or printed data included therein shall not be copied or reproduced, mechanically, electronically or otherwise, without the prior written consent of the disclosing Party, except for such copies the Recipient requires for internal circulation for the purposes of this Agreement.

8.2. It is understood and agreed that no right, license, privilege or immunity, expressed or implied, is granted under any patent / patent application or proprietary rights owned or controlled by either Party.

9. Return of Confidential Information

Upon request of the disclosing Party, at its sole discretion, and in any case at expiry of this Agreement, the recipient shall within 30 (thirty) days return to the disclosing Party all Confidential Information received by the Recipient in written or electronic form or recorded in any other way (including copies, electronic records and transcripts thereof) and any samples or devices, finally delete all electronic records containing Confidential Information from its systems, destroy or finally delete all analyses` and adaptations in written or electronic form, and, upon request of the disclosing Party, confirm the complete return, destruction or deletion in writing.

10. Effective Date and Termination

10.1. This Agreement shall come into force on [ ] and shall be valid for an indefinite period of time. It may be terminated by either Party by giving one month prior written notice. It is understood and agreed that Services not having been completed prior to expiry of this Agreement will be subject to the terms and conditions of this Agreement also after expiry of this Agreement.

10.2. This Agreement may be terminated by Measnet with immediate effect by giving written notice if (i) the number of Laboratories prepared to participate in the PT does not reach the minimum number of 4 Laboratories or (ii) the number of Laboratories during the PT for any reason whatsoever drops below the minimum of 4 Laboratories or (iii) the PT cannot be continued for technical reasons or reasons attributable to the SG 551 Proficiency Testing Provider, the Technical Coordinator or any other third party, or the Participant, without the Participant being entitled to any compensation. In such a case the Service Fee will be refunded in proportion to the value of the Services not already having been rendered by Measnet, except in case the termination is due to reasons attributable, in whole or in part, to the Participant or in case of Force Majeure.

11. Notices

All written communication between the Parties shall be made in English language, and all notices to be given herein shall be effective upon receipt and shall be in writing in English language and delivered to the Parties by registered mail or reputed courier service or telefax to the addresses given in the Registration Form for the PT.

12. Force Majeure

12.1. If either of the parties be prevented from performing its obligations under this Agreement due to Force Majeure, such as acts of God, war, riot, insurrection, fire, flood, typhoon, earthquake, epidemics, strike or any other labour dispute, transport delays or major machinery break-down, as well as other cases which are beyond reasonable control of either party (hereinafter referred to as "**Force Majeure**"), regardless of whether occurring to the party or its subsuppliers, the performance of those obligation shall be extended by a period for which the effect of such cases has continued.

12.2. The prevented party shall notify the other party in writing without undue delay of the occurrence of Force Majeure. Under such circumstances, both parties are still under the obligation to use best efforts to take all necessary measures to execute this Agreement.

12.3. The prevented party shall inform the other party without undue delay in writing of the termination or elimination of the case of Force Majeure.

12.4. If the effect of Force Majeure continues for more than six months, either parties shall be entitled to terminate this Agreement by giving written notice.

13. Governing Law and Place of Jurisdiction

13.1. This Agreement shall be governed by and construed in accordance with Spanish Law.

13.2. Notwithstanding Section 7 (Conflict Resolution) of the OD, place of jurisdiction shall be Madrid, Spain.

14. Miscellaneous

14.1. In case any provision of this Agreement should be held, in whole or in part, invalid or unenforceable, the validity of the remaining provisions shall not be affected thereby. The parties will replace the invalid or unenforceable provision by a valid provision which will pursue most closely the economic intent of the replaced provision.

14.2. No part of this Agreement shall be assigned or transferred by any Party without the prior written consent of the other Party, which may be withheld at its sole discretion.

14.3. All of the terms and provisions of this Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors and permitted assignees.

14.4. This Agreement constitutes the entire agreement between the Parties regarding the subject matter of this Agreement, and supersedes all prior written or oral agreements, commitments, and understandings between the Parties. Annexes to this Agreement, including without limitation the OD (Annex 1), form an integral part of this Agreement.

14.5. No amendment, waiver or consent relating to this Contract shall be effective unless it is in writing and signed by the Parties, including a waiver of this provision.

Executed on

_____

MEASNET

Signature:_____
Name:
Title:

Signature:_____
Name:
Title:

IECRE OD 551-17

Edition 1.0 2020-08-17

IECRE OPERATIONAL DOCUMENT

IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications (IECRE System)

Proficiency testing in the wind energy sector of IECRE

IECRE OD 551-17:2020-08(en)

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1 Introduction

This operational document (OD) describes the requirements and the procedure to conduct proficiency tests (PT) for RETLs, applicant RETLs, RECTFs and IECRE member organizations or organizations with a liaison to IECRE. It applies to the wind energy sector of IECRE (WE-SWG) only.

This OD refers to ISO 17043 [1] as far as appropriate. Some definitions and procedures may vary slightly as the PTs are relevant for a very limited and known group of participants only.

The OD is based on the assumption that proficiency testing is mainly based on the analysis of data sets, however comparing measurements are not excluded and may be carried out e.g. for anemometer calibration. The procedure detailed in this OD is a result of the experiences from the first PTs, which have been carried out in the very beginning of the scheme by SG 551.

2 Purpose

The purpose of proficiency testing within the IECRE-Scheme is

- to assess the specified competence of RETLs and RECTFs by comparing the PT results,
- to clarify the interpretation of the IEC standard including corrigenda and amendments, which are relevant for the respective competence area,
- to give feedback on detected flaws, errors or sources of misinterpretation of IEC standards to SG 551 and TC 88 and/or initiate the production of corrigenda, amendments and clarification sheets and
- to demonstrate inter-comparability to the industry.

3 Validity

The OD applies to conducting proficiency tests for competence areas as defined by WE-SWG.

4 Definitions

The following definitions are based on ISO/IEC 17043:2010 [1] as far as possible and have been adapted to the purpose of proficiency testing under IECRE.

4.1 Proficiency Testing

Proficiency testing in General is the evaluation of the performance of an entity with specific focus on compliance with the underlying IEC standard by interlaboratory comparison. The scope of a proficiency test may cover all aspects of its underlying standard or certain parameters of a standard (such as methods, procedures etc.) only.

4.2 Proficiency Testing Scheme

A proficiency testing scheme is a set of one or more proficiency testing rounds. It may be useful to split up proficiency testing schemes into rounds in order to clarify questions, solve technical issues such as data formats, align the interpretation of IEC standards among the participants and define the operational procedure for this PT, first. Preliminary test rounds are useful to detect data inconsistencies or format problems, detect possible multiple interpretations of the standards and multiple methods that can be used to perform the same task, leading to different valid results that could lead to misinterpretations of the results.

4.3 Proficiency Testing Round

One proficiency testing round is a single complete proficiency test consisting of distribution of the proficiency testing task, test specimen (if applicable), evaluation and reporting of results. One or more rounds build a proficiency testing scheme.

4.4 Operational Procedure

The operational procedure is the document which serves as the basis for the proficiency test scheme or round. It contains the task formulation and may refer to a certain test specimen or test data set. Besides the technical instructions it needs to include accuracy requirements, information and/or assumptions for uncertainty estimations, assessment methodologies for results and pass/fail-criteria. Within the scope of IECRE Proficiency Tests it may also include indications on which one of the several methodologies or options available in the standard (line choice as defined in 4.10) has to be used by the participants.

4.5 Test Specimen

A test specimen is an item which is sent to the participants of a proficiency testing scheme or round and whose parameters shall be tested.

4.6 Test Data Set

A test data set is a data set which is typically sent around along with the operational procedure and to which the tasks refer. The data set shall be in such a format that can be read by all the participants. Test data may be composed of

1. Artificial data, which can be mathematically cross-checked,
2. data with specific aspects in order to identify issues which have previously been discussed
3. and/or anonymized real test data.

Participants will generally be required to be able to inject data in certain steps of the calculation process, in order to be able to use the chunk data approach. In the final round of a PT the participants can use the chain data approach if they desire, being aware of the possible consequences.

4.6.1 Chunk data

Simple data set oriented to test one evaluation step within the chain of the evaluation.

4.6.2 Chain data

Comprehensive data set oriented to test a whole process, from the first input to the final results.

4.7 Participant´s Results

The participant´s results are the results provided by individual participants. Participant´s results may be complete results or partial results as defined in the operational procedure. The results are sent to the Organizational Provider [5.1.2] who handles them to the Technical Coordinator [5.1.3] once the anonymity requirements are met.

4.8 Final Results of PT

The final results of a proficiency test are the summary of all participant’s results including its statistical analysis and evaluation. The final results of a PT are prepared by the coordinator. The final results of IECRE Proficiency tests are reflected in an Internal Report, an External Report, the participants’ reports and certificates and, for the member Testing Laboratories, the published list of participants that have passed the PT.

4.9 Clarification Sheet

Clarification sheets are documents that explain ambiguities present in the normative or correct deficiencies found. They are created by the participants and formatted by the Technical coordinator and circulated to TC88 through the IECRE secretariat according to IECRE OD-002. This process is done before the start of the last round of the PT.

4.10 Line Choice

The line choice is a set of instructions handled to the participants explaining which options, among those valid and present in the standard, have to be taken in order to improve the intercomparability of the results.

5 Roles

5.1.1 SG 551 Proficiency Testing Representative (Person or Group)

The SG 551 Proficiency Testing Representative is a person or group of persons who coordinate all proficiency testing activities for all competence areas on behalf of SG 551. The PT Representative makes sure that sufficient proficiency tests for all competence areas are being carried out in a timely manner. A schedule for all proficiency tests covering all competence areas and aligned with future RETL assessments and the creation of new competence areas as approved by WE-SWG shall be provided by the PT Representative.

The PT representative will be elected by and reports to SG 551. The PT representative advises SG 551 in matters of proficiency testing providers, proposes those providers to SG 551 and leads the communication on behalf of SG 551.

The PT Representative shall present budgets for the conducting of individual proficiency testing schemes to SG 551 based on general guidance from SG 551, including:

1. fees which have to be paid by the participants,
2. fees which will be paid to the coordinators,
3. fees which will be paid to the proficiency testing providers and
4. any external costs.

Minimum numbers of participants shall be determined with the PT Organizational Provider in order to make sure that there is no budget shortfall.

The budgets will be approved by SG 551 on a yearly basis as a minimum.

5.1.2 Proficiency Testing Provider

The proficiency testing provider (also referred to as “Organizational Provider” or “Provider”) takes responsibility for all organizational, logistic and financial tasks in the development and operation of the proficiency testing scheme. A PT scheme may include a number of PT rounds.

It shall be an organization whose commercial interests are not affected by the PT’s outcome nor could affect such outcome, sufficiently technically qualified and impartial. It is preferable that an organization with previous experience in the organization of Proficiency Tests in the Competence Area and ISO/IEC 17043 accredited is selected. The proficiency testing provider shall be proposed and selected by SG 551 per competence area for a period of time of three years. The WE-SWG chair has the right of veto over an organization selected by SG551 presenting well-founded reasons.

The proficiency testing provider:

1. Informs possible participants from group A and B (see 5.1.4) about the upcoming PTs,
2. provides technical facilities such as data servers,
3. administers the finances of the PT,
4. coordinates the applications for participation of the participants (e.g. registration, contractual issues, confidentiality issues etc.),
5. sets the time schedule for the PT (deadlines etc.) in coordination with the technical coordinator,
6. handles all results handed in by participants and hands them over to the coordinator for further evaluation,
7. makes sure that results are anonymized (this includes the coordinator),

8. supervises the production of the Clarification Sheets by the coordinator, and its correct distribution,

9. publishes the results according to the rules for publication defined in this document,

10. liaises with the IECRE Scheme Lead Assessor,

11. and provides input for changes in this document based on the lessons learned during the Proficiency Tests.

Subcontracting of proficiency testing provider responsibilities is not permitted without written approval of the PT Representative. In this case the subcontracting PT provider remains responsible for the full scope of work.

The proficiency testing provider may be recalled and released from its duties by SG 551 if there are doubts to the technical competency, the independence, the impartiality or in the case of severe failure to fulfil its duties. The financial consequences of such an event shall be agreed between IECRE and the PT provider before the Proficiency Test is initiated.

The proficiency testing provider is responsible that all data related to the PT, including, but without being limited to all test data, instructions, result tables along with their hand-in dates, time schedules, discussion outcome, reports, certificates and communication, are archived for a period of 10 years after the final publication of the PT.

Any physical test specimen (such as anemometers) are explicitly excluded from this obligation. If necessary, individual regulations for the storage of test specimen will need to be given by the PT provider.

5.1.3 Technical Coordinator.

The Technical Coordinator (also referred as “Coordinator”) takes technical responsibility for organizing and managing all the activities involved in the operation of the proficiency test.

The coordinator shall be elected by a vote held by all the type A participants, and its designation approved by the WE-SWG Convener. If no agreement can be achieved between both parties the WE-SWG shall take a decision.

Although the typical situation is that the coordinator is one of the type A participants, other individuals and organizations that do not qualify as type A participants can be elected provided that:

- The organization is content wise qualified for the job.
- There is a specific added value for the IECRE system to choose such an organization.
- The organization participates in the PT as a paying participant.
- The organization is a non-profit organization.
- The organization does not place orders to RETLs in the specific competence area.
- The organization is approved for the role as a possible non group A coordinator by SG551.

In General, coordinator RETLs should be ISO 17025 accredited for the respective competence area for at least 5 years or have technical staff which has been working in the competence area for the same period of time. For well-established competence areas, the person designated as coordinator should have at least participated in previous PTs in that competence area. For new competence areas without track record, coordinators without experience in the role may still be approved and shall be closely monitored, e.g. by frequent reporting.

The coordinator:

1. Governs the operational procedures (technical instructions and additional information) necessary to participate in the proficiency test and provides input to the PT provider for the calendar organization,

2. produces and provides the data sets needed by the participants,

3. analyzes the results received from the provider and writes preliminary and final reports,

4. leads the discussion on clarification sheets and line choices and takes responsibility that discussion results are being summarized in a clarification sheet and/or line choice definition for the next round of the PT. The clarification sheets are to be treated, with the supervision of the PT provider, according to OD-002 and

5. reports to SG 551 Proficiency Testing Representative as appropriate, in coordination with the PT Provider.

Participants are normally expected to choose themselves appropriate methods; however, the coordinator may require the participants to use a specific method (e.g. in case alternatives are given in the standard). This is called “line choice”. In the case that certain alternatives are allowed, these alternatives shall be reflected in the pass/fail criteria.

The coordinator may be recalled and released from its duties by the provider in agreement with SG 551 in case of doubts referring to the technical competency, the independence, the impartiality or in case of severe failure to fulfil its duties. The financial consequences of such an event shall be agreed between the coordinator and the PT provider before the Proficiency test is initiated.

5.1.4 Participants

Participants are laboratories, organizations or individuals that take part in proficiency testing and deliver results for review by the coordinator. For the purpose of IECRE SG 551 proficiency testing the following organizations may participate:

A-Participants: RETLs and applicant RETLs in the respective competence area and other TLs approved by SG551.

B-Participants: RECTFs, IECRE member organizations (including OEMs, end users, RECBs, other TLs) and other organizations approved by SG551.

A-participants members of IECRE have a right to participate. A-participants not belonging to IECRE can participate after approval from SG551 PT representatives. B-participants not belonging to IECRE do not have an automatic right of participation which is at the discretion of SG 551 PT representatives. The final decision on participation will be taken by SG551 in case of conflict.

Participants may be excluded from the proficiency testing by the proficiency testing provider in case of breach of confidentiality, failure to pay fees or other justifiable reasons. The participant may appeal to IECRE secretariat, which will take a decision in collaboration with SG551.

6 Proficiency test

6.1 General

ISO/IEC 17043 [1] and ISO 13528 [2] should be followed as far as possible and appropriate. ISO 13528 [2] may be used in order to formulate requirements for results to be handed in by participants and/or to formulate how the final results are to be determined.

6.1.1 Participants

6.1.1.1 Round 1

Round 1 shall be open for A-participants only and mandatory for RETLs and RETL candidates

The main aim of round 1 is to identify the root causes of the differences between the laboratories. These root causes can be classified in:

- Standards unclear.
- Proficiency Test guidance documents unclear.
- Mistakes or misinterpretations from the participants.

Therefore, the Round 1 should be used:

To confirm validity of pass/fail criteria for subsequent PT rounds. Changes in the pass/fail criteria shall be considered exceptional and only applied after their approval as defined in [6.1.3].

1. To produce clarification documents for the purposes of the PT.

2. To specify which options of standards (named Line Choice) shall be used in subsequent PT rounds, in case the standards allow the choice of methods. This line choice may have been already defined in the scope of the proficiency test.

3. To discuss unclear, false or not appropriate issues in the standard or procedure which may result in the publication of a clarification sheet.

4. To propose technical changes of standards to SG551 (including standards outside IEC). This stakeholder Group will direct the proposals to the appropriated organizations, involving WE-SWG if it is considered adequate.

As far as possible subsequent tasks in the instructions shall be independent of each other and not based on the outcome of previous tasks in order to ensure that participants may solve tasks correctly even if previous tasks have been failed.

6.1.1.2 Round 2

Round 2 is open to A and B participants. Round 2 shall follow the procedure as stated below. Test data shall be identical in structure but significantly different from test data used in round 1. Pass/Fail criteria identified in round 1 shall apply, except for extreme cases.

Round 2 is the final round of the PT which relates to the final outcome of the PT. It concludes with the publication of final reports.

6.1.2 Requirements to Test Data

If a proficiency test is mainly based on test data which will be distributed, participants shall make sure that test data can be injected into their respective software tools. Test data shall be in a general, common and suitable format. The coordinator shall make sure that the test data may be read by all the participants, e.g. by sending around a preliminary data set prior to the test. The test instructions shall contain a description of the test data. Test data shall have a reasonable resolution. All units shall be SI-units.

6.1.3 Pass/Fail criteria

The pass/fail criteria shall be approved by SG 551 and published in a –INF document prior to the PT round starting.

The Pass/Fail criteria shall be reflected and kept updated in a specific IECRE Informative Document that openly communicates the current states of such criteria and its evolution over the time. If there is previous experience, formerly used values will become the basis of the criteria. In the case that there is no relevant previous experience the criteria chosen must take into account the needs of the industry and be reasonably achievable. In general it is a goal of the Proficiency Testing that the results of the participants improve their uniformity and quality, and Pass/Fail criteria should contribute to this goal.

If the determination of agreed values is not possible, a first round of a PT shall be conducted in order to determine reasonable pass/fail criteria. Pass/fail criteria shall be part of the instruction document and hence, available to all participants prior to the PT.

When pass/fail criteria are derived, it has to be made sure that the criteria and instructions are designed in such a way that they are unequivocal and clear. During the final round it must be prevented that outliers which are based on correct results occur. This is achieved by the use of Clarification Sheets and Line Choice instructions. If in the first round correct outliers occur due to different interpretation of instructions, this needs to be clarified among all participants, and in case of disagreement, external experts may be consulted. If a participant with an outlier can prove with sufficient technical evidence that the result is correct and that all others are wrong the PT round shall be repeated, either partially or in its full extent.

In general Pass/Fail criteria shall not be changed from the initial to the final rounds. If such change is necessary, it shall be approved by SG551, after a well-founded report on the cause approved by the majority of the participants. Other Stakeholder groups shall be informed and a consensus has to be reached over the changes.

6.1.4 Determination of Final Results

Statistical guidance on how to evaluate the participant´s results and how to determine the final results of the PT may be taken from ISO 13528 [2].

Statistical methods shall be developed to meet the objectives of the PT based on the nature of the data (quantitative or qualitative, including ordinal and categorical), statistical assumptions, the nature of errors, and the expected number of results.

6.1.5 Correction plan phase

If a participant fails in the Proficiency Test, it can present a correction plan detailing the causes of the incorrect results, a new version of the calculations, a cause and extent analysis in order to prove that the cause and the extent of the problem has been determined and information on the measures taken in order to avoid the same problems from happening again.

This information will be analyzed by the IECRE-Wind RETL Lead Assessor. If the result of such analysis is satisfactory the participation in the Proficiency Test will be considered as successful.

The Lead assessor may communicate with the coordinator if further information about the fail values is needed, and also may provide feedback to the PT provider and/or SG551 if considered necessary, always maintaining the confidentiality with the participant.

The participation in the correction plan phase has an extra fee associated based on the Lead Assessor assessment fee.

6.1.6 Presentation of final Results / Final Reports

The results of a proficiency test shall be presented in the form of the following reports.

- Internal report, confidential and to be kept by IECRE secretariat and Organizational Provider.
- Participant reports, confidential and to be distributed to each participant.
- External report, public and to be distributed freely by IECRE.

In the external reports and in the participant reports all information which is related to participants shall be confidential and all results shall only be presented in an anonymized way (e.g. by coding or labeling). Participant reports will reveal only the name of the corresponding laboratory.

The reports shall be distributed into parts for A-participants and B-participants, if applicable.

Any statistical evaluation used to determine a pass or fail result shall only relate to A-participants (e.g. calculation of average values). Additional statistical evaluation will be presented for B-participants and a joint set of participants.

The internal report shall contain all the data relevant to the Proficiency Test, to a detail level that allows to reproduce all the calculations made and justify every pass/non-pass decision:

1. Original Scope of the Proficiency Test:
    a. Standards used, versions and extent of such standard to be applied.
    b. Preliminary line choice.
    c. Pass/Fail Criteria.
2. Complete participants list, including those participants that did not complete the full process.

3. Complete data set and instructions as sent to the participants and all the further information distributed related to it.
4. Reports issued by all the participants in all the rounds.
5. Minutes of the meetings held with the participants.
6. Clarification sheets issued.
7. Line choice applied in each round.
8. If the Pass/Fail criteria are modified from those in the original scope, values taken and documentation of the reasons and the approval of the new values.
9. Calculations that lead to the Pass/Fail decisions.
10. Pass/Fail values for each participant and final results.

The participant reports shall inform each participant of its own results, without providing information about other participants'. Since the participant has already received most of the information contained in the internal report, the participant report is intended to be shorter. It shall at least consist of:

1. Scope of the Proficiency test.
2. List of participants in the last round.
3. Anonymized numerical results of the other participants.
4. Numerical results of the participant.
5. Statistical evaluation of the results of the participants for each individual task
6. Statistical evaluation of the results of the participants which passed for each individual task
7. Results of the participant in terms of Pass/Fail.

The external report shall at least consist of:

1. Scope of the Proficiency Test.
2. Summary of the instructions and description of the process.
3. Pass/Fail criteria used.
4. List of all participants that have passed the Proficiency Test:
    a. Participants that withdrew with an explanation before the first data submission, will not be mentioned
    b. Participants that did not submit any data without explanation in round 1 or round 2, will be listed as participant and retired
5. Statistical evaluation of the results of the participants for each individual task. In the statistics outliers shall be excluded.
6. Statistical evaluation of the results of the participants which passed for each individual task, consisting at least of a mean value and standard deviation calculations.
7. Description of the issues found in round 1, with special attention to those aspects where the standard was considered unclear or incorrect.

An external report template is given as a separate document under IECRE.

6.2 Procedure

6.2.1 General

As a guide, the following procedure should be followed:

6.2.1.1 Proficiency test Preparation

1. SG 551 initiates a proficiency testing scheme and selects a proficiency testing provider through the SG 551 PT representative. A MoU shall be signed between the proficiency testing provider and a representative of IECRE (WE-SWG convener and/or the secretariat)

2. SG 551 defines if the PT scheme shall be divided into several PT rounds. By default, PT schemes should consist of 2 PT rounds. They may deviate from default for instance in case of repeating PTs, when new versions of the standards have been released or when there is information that suggests that issues will arise during the PT. Also SG551 defines the scope of the Proficiency Test:

    a. Standards to be used, version of such standards and extent within them to be covered by the PT.

    b. Preliminary Line Choice to be used during the PT, if desired by SG551.

    c. Chunk Data definition, i.e. the steps in the procedure in which the data are to be injected, if desired by SG551.

    d. Pass/Fail criteria to be used.

    e. Draft calendar of the Proficiency Test.

3. The proficiency testing provider plans and announces the availability of a PT at least 3 months before it starts. This includes the general announcement along with the scope of the Proficiency Test, participation fees, registration deadline and contractual requirements. Where there is a more immediate need for a PT the timeline can be shortened in exceptional circumstances.

4. Participants may register with the proficiency testing provider

5. The proficiency testing provider approves the participation based on the criteria defined in this OD. Participants may appeal to IECRE secretariat, which will take a decision in consultation with SG551 in case of rejection.

6. Participants pay fees prior to commencement of PT. Fees are not refundable in case of withdrawal of a participant. Refund is possible in case the tasks of the conductor or provider have not been fulfilled.

7. The proficiency testing provider queries all RETLs in the competence area for a coordinator and proposes a coordinator WE-SWG convener for approval.

8. The provider, in close collaboration with the coordinator, sets the time lines for delivery of results, issuing of reports and discussion rounds.

6.2.1.2 Round 1

1. The coordinator provides the instructions for the round:

    a. Database or test specimen and the technical instructions about it (format definition, units, explanation of files or manuals of equipment).

    b. Definition of the Preliminary Line Choice.

    c. Chunk Data definition.

    d. Pass/Fail criteria.

    e. Reference to the Standards and Clarification sheets involved.

f. Template for submitting results and/or reports.

2. Participants carry out the proficiency test and hand in their results to the Provider.

3. Provider anonymizes the results and sends them to the Coordinator.

4. Coordinator evaluates the results and prepares them to be discussed among the participants.

5. The participants meet and discuss the results. The Coordinator shall manage the meeting that will produce the following results:

    a. Line choice to be used in round 2

    b. Pass/Fail criteria to be used in round 2. These shall be the same ones as in the PT Scope except in exceptional circumstances.

    c. If necessary, Clarification Sheets to be used in round 2.

    d. Modifications to the technical instructions or the Chunk Data definition, if necessary.

6.2.1.3 Round 2

1. The coordinator provides the instructions for the round:

    a. Database or test specimen and the technical instructions about it (format definition, units, explanation of files or manuals of equipment).

    b. Definition of the Line Choice.

    c. Chunk Data definition.

    d. Pass/Fail criteria.

    e. Reference to the Standards and Clarification sheets involved, including those drafted in round 1.

    f. Template for submitting results and/or reports.

2. Participants carry out the proficiency test and hand in their results to the Organizational Provider.

3. Organizational Provider sends the anonymized results to the Coordinator.

4. Coordinator prepares and sends an anonymized draft of the internal report according to 6.1.5. Also communicates to each participant which its results are. Participants may communicate typing / editorial mistakes, but no technical corrections are allowed.

Round 2 should be completed within 6 months from the delivery of the dataset of round 1 to the participants. This period can be extended, if Clarification Sheets are issued, in the same amount of time as taken by IECRE to approve the Clarification Sheets.

6.2.1.4 Announcement / Correction Phase

After the Proficiency Test results have been communicated to the participants, a final phase is dedicated to the announcement of the results and to the correction of deviations from the participants.

1. The Coordinator handles the final Participant Reports to the Provider, which circulates them to the participants.

2. The RETLs that have not passed the Proficiency Test can Present a Correction Plan to the IECRE Lead Assessor to be evaluated in order to keep their status within the system, according to 6.1.4.

3. The coordinator handles the final versions of the Internal Report and the External Report to the Organizational Provider, which circulates them to IECRE through the SG551 representative.

Final versions of the reports shall be issued within two months from the finalization of round 2. At that moment IECRE web page will list those RETLs that have passed the Proficiency Test and also those that have presented a Correction Plan considered adequate by the IECRE Lead Assessor.

WE-SWG Chair checks that the internal and the external reports have been issued according to this procedure.

RETLs that complete a correction plan evaluation at later stages will be added to the list in the IECRE web page after such completion.

6.2.1.5 Participation Certificate

Upon closure of the PT the proficiency testing provider hands over participation certificates to the individual participants which have passed the PT with the following minimum information:

1. Basic data on the PT (competence area, standard(s), parameters)
2. Name of proficiency testing provider and coordinator
3. Name of participant along with a statement that the PT was passed
4. Signature of responsible person at the proficiency testing provider and of the coordinator

A template for a participation certificate is provided as a separate document under IECRE.

7 Conflict resolution

During the Proficiency Tests development, the PT provider shall arbitrate any discrepancies between the participants and the coordinator.

In case of conflict between an RETL and the Organizational Provider, IECRE-Wind Chair will arbitrate a solution through the SG551 representative.

8 Specific requirements for proficiency tests related to IEC standards

The specific requirements for each type of Proficiency test, as well as the current Pass and Fail criteria shall be published as separated documents referencing to this Operational Document.

References

[1] ISO/IEC, „ISO/IEC 17043; Conformity assessment - General requirements for proficieny testing; 1st edition; 2010-02-01,“ ISO/IEC, Geneva, 2010-02-01.

[2] ISO, „ISO 13528; Statistical Methods for use in proficiency testing by interlaboratory comparisons,“ ISO, Geneva, 2005-09-01.

[3] International Electrotechnical Commission (IEC), IEC 61400-12-1:2017 ed. 2.0; Wind energy generation systems - Part 12-1: Power performance measurements of electricity producing wind turbines, Geneva: IEC, 2017.

[4] International Electrotechnical Commission (IEC), IEC 61400-12-1:2005; Wind Turbines - Part 12-1: Power Performance Measurements of Electricity Producing Wind Turbines, Geneva: IEC, 2005-12.

[5] International Electrotechnical Commission (IEC), IEC 61400-13:2015; Wind turbines - Part 13, Measurements of mechanical loads, Geneva: IEC, 2015.

[6] International Electrotechnical Commission (IEC), „IEC 61400-11:2012, ed 3.0; Wind turbines - Part 11: Acoustic noise measurement techniques,“ IEC, Geneva, 2012.

[7] International Electrotechnical Commission (IEC), „IEC 61400-21:2008, ed 1.0; Wind turbine generator systems - Part 21: Measurement and assessment of power quality,“ IEC, Geneva, 2008.

[8] International Electrotechnical Commission, „IEC 61400-23:2014, ed 1.0; Wind turbines – Part 23: Full-scale structural testing of rotor blades,“ IEC, Geneva, 2014.

[9] International Electrotechnical Commission, „IEC 61400-24:2008, ed 1.0; Wind turbines - Part 24: Lightning Protection,“ IEC, Geneva, 2008.

[10] International Electrotechnical Commission, „IEC 61400-4:2012, ed 1.0; Wind turbines - Part 4: Design requirements for wind turbine gearboxes,“ IEC, Geneva, 2012.

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