**UCA International Users Group  
Testing Subcommittee**

**QUALITY MANUAL**

QMS-001

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**UCA International Users Group**

10604 Candler Falls Court

Raleigh, NC 27614, USA

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UCAIug Testing Subcommittee Quality Manual

1. Scope
   1. The purpose of this manual is to outline the overall Quality System of UCA International Users Group Testing Subcommittee (hereinafter referred to as UCA) and to set forth procedures covering all quality system functions. This manual has been constructed to reflect a quality program in compliance with the requirements of ISO/IEC Guide 65:1996, entitled, “General requirements for bodies operating product certification systems”.
   2. This manual is maintained and controlled by the UCA. This manual is intended for full public disclosure.
   3. The function of the quality assurance system is to ensure that the quality requirements are met by the UCA for use with product/services testing programs. The legal entity under which this quality assurance system operates is: “UCA International Users Group (a 501(c)(3) Corporation)”
   4. This manual outlines and describes the procedures for establishing and maintaining the quality of a product and services organization.
2. Document Structure

The UCA Quality Program includes this Quality Manual the documents listed in QMS-000. At the time of writing, this list included the following documents:

* **QMS-001: Quality Assurance Manual**
* **QMS-002: Document Control Procedure**
* **QMS-010: Test Case Summary**
* **QMS-020: Roles and Responsibilities**
* **QMS-030: Certification Staff Competencies**
* **QMS-040: Records Management Policy**
* **QMS-050: Confidentiality and Conflict of Interest Practices**
* **QMS-060: Non-discriminatory Practices**
* **QMS-070: Dispute and Complaint Resolution Procedures**
* **QMS-080: Internal Audit Procedure**
* **QMS-090: UCA Logo Usage**
* **QMS-100: UCA Certification Process Change Information**
* **QMS-110: Laboratory Selection and Retention Criteria**
* **QMS-120: Certificate Management Process**
* **QMS-130: Tester Audit Checklist**

The following associated forms are included in this quality system

* **QMF-010: UCA Non-conformance form**
* **QMF-020: IEC 61850 Test Laboratory Agreement**
* **QMF-030: IEC 61850 Test Laboratory Qualification Request**
* **QMF-040: UCA Laboratory Capability Checklist**
* **QMF-050: IEC 61850 Server Conformance Certificate Template**
* **QMF-060: IEC 61850 Client Conformance Certificate Template**
* **QMF-070: UCA Merging Unit Publisher Conformance Certificate Template**
* **QMF-080: UCA Merging Unit Subscriber Conformance Certificate Template**
* **QMF-090: UCA 61850 Interoperability Certificate Template**
* **QMF-100: UCA OpenSG Conformance Certificate**
* **QMF-110: UCA OpenSG Interoperability Certificate**
* **QMF-120: UCA CIM Conformance Certificate**
* **QMF-130: UCA CIM Interoperability Certificate**

**Related Procedures**

* UCAIug Conformance Test Procedures for Server Devices with IEC 61850-8-1 (Edition 1)
* UCAIug Server test procedures for enhanced reporting (TISSUE 453)
* UCAIug Conformance Test Procedures for Client System with IEC 61850-8-1 (Edition 1)
* UCAIug Test Procedures for Sampled Values Publishers according to the “Implementation Guidelines for Digital Interface to Instrument Transformers using IEC 61850-9-2” (9-2LE)

**General Related Documents**

* ISO/IEC Guide 65:1996 General requirements for bodies operating product certification systems
* ISO/IEC17025 General requirements for the competence of calibration and testing laboratories, First edition, 1999

1. Quality policy

## Mission and Vision Statement

* + 1. The mission of UCAIug is to provide high quality certification program for testing programs operated under UCA. These programs include, but are not limited to IEC 61850, 61968, and 61970.
    2. Our vision is to be recognized as the single organization responsible for certifying products and services for the programs under UCA. The testing program must assure the highest possible level of integrity and quality to ensure universal recognition by all UCA stakeholders in every aspect of our operations.
    3. To maintain a professional staff that is administratively competent and understands the requirements of this Quality Manual and the criteria defined in ISO/IEC Guide 65:1996. Furthermore, the staff shall be competent to subcontract functions for which technical competence by the paid staff cannot be assured.

## Objectives

* To provide appropriate leadership, clear vision and focus upon core values;
* To continue improvement of quality at the source, through employee and subcontractor involvement;
* To provide attention to the needs of all UCA stakeholders;
* To carry out all of our testing operations in a cost effective manner;
* To maintain compliance to ISO/IEC Guide 65:1996.
  + 1. The quality system of UCA is comprised of a series of policies and procedures in this Quality Manual and referenced documents and has been established to guide the staff in the performance of good certification practices and the production of quality test results. The requirements of the quality system apply to all technical work conducted, in principle and in detail, to the extent possible and feasible.
    2. The purpose of the quality system is to help fulfill the mission, vision and objectives of UCA. UCA staff and their subcontractors are to implement and follow the policies contained within this Quality Manual, to all procedures referenced within it, and to the latest release of ISO/IEC Guide 65. Each employee and subcontractor has a role in the quality of the certification work and has a responsibility for its implementation according to his/her technical and/or managerial responsibilities.
    3. The technical and quality management of UCA are committed to good professional practices and compliance to ISO/IEC Guide 65. Each member of the staff and their subcontractors shall be alert to problems or sources of error that could compromise the quality of technical work performed for certifications. Problems or sources of error shall be reported to the Quality Assurance Manager.

1. UCA management

## Organization

* + 1. UCA operates the certification system under the UCAIug Technical Oversight Committee.
    2. It is the intent of UCA to conform to the requirements of ISO/IEC Guide 65 (near latest release) and to satisfy the needs of its stakeholders.
    3. The overall management system described in this and referenced documents covers all aspects of work carried out by the testing subcommittee including work contracted by UCAIug. See section 4.6 for use of sub‑contractors.
    4. The key positions involved in the certification system are:

1. **Quality Assurance Manager** - Responsible for the effective implementation and maintenance of the quality assurance system. This includes the periodic internal audits of the quality system.
2. **Contracting Manager** - Responsible for the subcontracting of UCA activities which are either outside the technical competence of UCA staff or for which timely response to stakeholder needs cannot be met with existing UCA staff. The contracting manager shall assure that all contracted tasks are conducted in a manner consistent with this quality manual. The contracting manager shall assume responsibility for the tasks performed by the subcontractors.
3. **Technical Manager** - Responsible for the technical aspects of device/system conformance and interoperability including resolution of technical disputes. The technical manager typically seeks advice of technical experts to assist in dispute resolution, but is under no obligation to follow that advice. Other aspects of dispute resolution are discussed elsewhere in the UCA Quality System.
   * 1. UCA furthermore:
4. has staff to carry out their duties and to identify the occurrence of departures from the quality system or from the procedures for performing tests, and to initiate actions to prevent or minimize such departures;
5. has in place and follows a Code of Business Ethics to ensure that its management and personnel and subcontractors are free from any undue internal and external commercial, financial and other pressures and influences that may adversely affect the quality of their work;
6. has in place a Code of Business Ethics (Safeguarding Information Section) that contains policies and procedures to ensure the protection of its stakeholders confidential information and proprietary rights, including procedures for protecting the electronic storage of results;
7. has in place a Code of Business Ethics (Conflicts of Interest Section) that contains policies and procedures to avoid involvement in any activities that would diminish confidence in its competence, impartiality, judgment or operational integrity (reference QMS-050: Confidentiality and Conflict of Interest Practices);

## Quality system

* + 1. UCA has established, implemented and maintains a quality system appropriate to the scope of its activities. UCA has documented its policies, systems, procedures and instructions to the extent necessary to assure the quality of the certification program. The systems documentation has been communicated to, made available to, and implemented by the appropriate personnel and subcontractors.
    2. The UCA quality system policies and objectives are defined in Section 3.0 of this manual.
    3. Referenced in this Quality Manual is a list of UCA-specific procedures that are in place. The procedures reference both supporting and technical procedures.

## Document control

* + 1. General

UCAIug has established and maintains procedures to control all documents that form part of its overall quality system. Reference QMS-002, UCAIug Document Control Procedure for additional document control details.

* + 1. Document approval and issue
       1. Documents may be written by anyone. These documents will be reviewed for both technical and administrative content before public release.
       2. Official documents will be maintained in a private area of the UCAIug web site with publically available copies of the most recent versions of each document.
       3. Each procedure has a revision page with a comments field that describes changes from previous revisions.
       4. Invalid or obsolete documents are removed from the public-facing file server and paper copies are marked obsolete. Paper copies of documents are considered “uncontrolled” and should be marked as such.
       5. The quality system procedures are uniquely identified by a procedure number which contains a revision page. All pages of each document contain the document name, the page number, and the total number of pages in that document.
    2. Document changes
       1. Changes to procedures shall be reviewed and approved by the Quality Assurance Manager.
       2. If practical, the altered or new text shall be identified by bars in the margin of the document. A description of the change shall appear in the comments section of the revision block.
       3. The Documentation Control procedure describes how changes in documents maintained in computerized systems are made and controlled.

## Test Cases

* + 1. General

One of the main UCA tasks is the maintenance of test procedures. Test procedures consist of general test setup, a list of mandatory, optional, conditional tests, and specific summary test report (“Certificate”) requirements.

* + 1. Test Case Summary

A single document listing high-level groups of tests is maintained in the quality system under the designation UCA-QMS-010.

* + 1. The specific tests are maintained in separate documents according to the type of test performed. For example, a document detailing specific “61850 server” tests is maintained in the Quality System.
    2. The format of the summary test report (“Certificate”) is maintained in an annex to the Quality Assurance Plan for each stakeholder group within UCA (for example, IEC 61850 stakeholders).

## Staff Roles and Responsibilities

* + 1. General

UCAIug has defined the roles and responsibilities for various staff members.

* + 1. Documents UCA-QMS-020 details the roles and responsibilities of UCA staff and their contractors

## Subcontracting of certification tasks

* + 1. General

UCAIug does not maintain staffing levels consistent with performing all certification tasks using only in-house resources. Therefore, UCAIug contracts many certification tasks to subcontractors. These subcontractors operate as extensions to the UCAIug and therefore are responsible for operating under the same rules as UCAIug staff.

* + 1. Document UCA-QMS-030 details subcontracting and certification staff competencies.

## Records Management Policy

* + 1. General

A records management policy is one of the key features of a quality management system. Records of specific tests must be maintained in a secure manner to ensure both sufficient confidentiality and access to the test records. A backup management system is defined to ensure against loss of records due to failures outside of the UCA Quality Management System.

* + 1. Document UCA-QMS-040 details the complete records management policy.
    2. Document UCA-QMS-050 details the confidentiality policy.

## Conflict of Interest and non-discriminatory policies

* + 1. General

UCAIug stakeholders require that UCAIug be free of any possibility of favoritism in the granting of certificates. The Conflict of Interest Policy requires that all UCAIug staff and its subcontractors disclose any possible conflict of interest to the Quality Assurance Manager. Additionally, UCAIug direct staff shall not be allowed to perform work for stakeholders that are not directly concerned with the granting of certification. Specifically, UCAIug staff cannot provide consulting services to stakeholders which could provide the mere appearance of any conflict of interest.

* + 1. Document UCA-QMS-050 details the confidentiality policy
    2. Document UCA-QMS-060 details the non-discriminatory policy

## Dispute Resolution

* + 1. General

Certification systems inevitably produce disputes among the stakeholders. Generally, four types of disputes arise:

* Existing test do not match the underlying standard
* Requirements of the standard have no corresponding tests
* Disagreements as to the test verdicts of test specimens
* Defects discovered during a quality audit

Each of these general categories, as well as more detailed dispute and complaints are detailed in the quality system.

* + 1. Document UCA-QMS-070 details the dispute resolution procedure.

## Internal Audits

* + 1. General

ISO/IEC Guide 65 requires periodic audits of the certification body. These audits include the external audits by the accreditation bodies as well as internal periodic audits conducted by the UCAIug staff. The internal audits seek to ascertain whether the quality system continues to meet the requirements of a Guide 65 organization.

* + 1. Document UCA-QMS-080 details the internal Audit Procedure

## Complaints

* + 1. The laboratory complaint procedure is part of the nonconformance process.
    2. Entrance Criteria for the Nonconformance Process  
       The nonconformance process shall be initiated when any of the following occurs:
* Upon the receipt of a customer complaint.
* When conditions indicate that tests, procedures, reports, inspections or audits result in nonconformance to contractual and/or external requirements.
* As a result of nonconformances identified during a Quality Audit.
* As a result of a poor evaluation on a customer feedback form.
  + 1. Steps  
       The nonconformance process is detailed in document QMS-070. The general process consists of the following steps:
       1. Record the nonconformance:  
          In the UCA nonconformance file, the responsible Quality Assurance Manager or the Technical Manager shall place an entry in writing containing details of the complaint or condition found. If the matter is a customer complaint, include customer contact information. Record the date UCA personnel first became aware of the nonconformance.
       2. Determine severity and timeframe for resolution:  
          The responsible Quality Assurance Manager, along with the customer (in the case of a complaint) and other laboratory personnel as necessary, shall determine the level of severity of the nonconformance according to the following guidelines:

**Critical** - Expected resolution time of two business days.  
The nonconformance has a critical impact on all customer's ability to use UCA services or results. A large portion of other customers may also be critically impacted.

**Severe** - Expected resolution time of 10-15 business days.  
The nonconformance substantially limits the ability of the customer to use the laboratory's services or results, but does not render them unusable.

**Moderate** - Expected resolution time of 60 business days.  
The nonconformance does not substantially limit the customer's ability to use the laboratory's services or results, but has some negative impact, either currently or potentially, on the quality of laboratory results.

* + - 1. Determine cause of the nonconformance:  
         The responsible Quality Assurance Manager, or other personnel assigned by the Technical Manager, shall perform analyses and/or Quality Audits to determine the cause of the nonconformance, and devise a resolution agreeable to the customer, if the nonconformance is a complaint.
      2. Resolve the defect or problem:  
         The devised resolution shall be put into effect by UCA and.or the testing laboratory personnel responsible or those assigned by the responsible Quality Assurance Manager or the Lab Technical Manager. The resolution shall apply to all customers affected by the nonconformance.
      3. Record the defect and resolution  
         In the UCAIug's nonconformance file, the Quality Assurance Manager shall record when the condition or complaint was finally resolved, along with details of the nonconformance and its resolution.
      4. Carry out root cause analysis of the problem, if necessary  
         The responsible Quality Assurance Manager shall determine if there is a likelihood that the nonconformance will recur or if it could have been found earlier than it was. If so, the Quality Assurance Manager shall initiate changes in the laboratory's procedures to limit recurrence, or identify the nonconformance earlier.
      5. Communicate the resolution  
         The responsible Quality Assurance Manager shall communicate details about the nonconformance and its resolution to any customer affected by it, and to all laboratory personnel.
      6. Provide a summary for the annual quality audit  
         The UCA Quality Manager shall, at least annually, review the contents of the nonconformance file and develop a summary as described in Metrics, below.
    1. Exit criteria  
       A resolved nonconformance and record of resolution
    2. Metrics  
       For the annual quality audit compare year over year nonconformances, in number and severity, to establish trends. Also, assess expected resolution times versus actual resolution times. UCA personnel should use this information to improve UCA processes in order to limit the number and severity of nonconformances. Based on the results of these reviews, additional internal audits may be warranted.
    3. The UCA quality manager shall monitor the results of the corrective actions to ensure effective implementation is achieved.

## Control of nonconforming testing work

* + 1. The policy and procedure for any nonconforming work is to document it on the nonconformance form QMF-010. At this point, the nonconformance process is entered. See Sections 4.11.2 through 4.11.5.

## Corrective action

* + 1. The corrective action for nonconforming work is part of the nonconformance process. See Sections 4.11.2 through 4.11.5.

## Preventive action

* + 1. Procedures for preventative actions consist of continuous review of testing results from the testers for self-consistency.

## Control of Records

* + 1. It is the policy of UCAIug to retain quality records and client records on-site for a minimum of three years. After the initial three years, quality and client records will be stored off site for an additional seven years or per contractual stipulations.
    2. All final laboratory reports and quality records are kept as both electronic copies on a password protected server and as paper copies in a secure filing area. Ancillary information such as any drawings and notes are kept electronically in the project folder and may additionally be stored as paper copies as needed. Access to project folders is limited to UCAIug personnel.

## Internal Audits

* + 1. In an effort to determine the effectiveness of the implemented UCAIug quality system, Internal Audits shall be performed by an auditor on an annual basis. Non-conformances shall be documented on the non-conformance form. The audit shall include the following:
* Whether procedures described in the quality manual are being followed
* Whether objectives (as defined in the quality system) are being achieved
* Whether designated duties are being carried out satisfactorily
* Whether there are opportunities for improvements

## Management Review

* + 1. A management review shall be performed annually. A Management Review Report shall be documented. Non-conformances shall be documented on the non-conformance form. The audit shall include the following:
* The suitability of policies and procedures
* Reports from managerial and supervisory personnel
* The outcome of internal audits
* Corrective and preventative actions
* Assessments by external bodies
* Changes in the volume and type of work
* Client feedback
* Complaints
* Other relevant factors such as quality control activities and staff training.

1. Technical Requirements

## Reporting the test results

* + 1. UCAIug has a procedure in place for reporting test results to stakeholders. The results are reported in a summary report (“Certificate”) These test reports summarize the successful tests performed on the device/service along with clear identification of the device/service tested and the test conditions.

# ANNEX 1 UCAIug Testing Subcommittee Organization Chart

