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1 Introduction

REAL Networks Services (REAL) is committed to delivering a Passenger Information Display System (PIDS) project for DART with the highest quality standards. The REAL Contractor Quality Control Plan (CQC) establishes quality goals and objectives, details quality-related activities and indicators, and assigns responsibilities to ensure the project meets or surpasses DART's expectations.

Quality accountability is maintained at the highest level of REAL management by the Oversight Committee (OC). The Contractor's Quality Control Representative (CQCR) is exclusively responsible for implementing the CQC and managing the controls required to uphold the integrity of all construction quality activities, ensuring DART receives documentation with data demonstrating quality implemented.

This document defines how REAL Network Services Inc (hereinafter REAL) will provide the management of quality in the execution of the requirements of the Dallas Area Rapid Transit (DART) to the Passenger Information Display System project, Contract No. C-2076448-01 (hereinafter "Project"). Through the CQC plan REAL ensures that systematic, consistent, and authoritative quality assurance quality control processes are upheld throughout the entire project.

REAL is dedicated to ensuring a superior final product by appointing an experienced Quality Control Manager, supported by ample staff and resources to effectively manage and oversee all quality activities. The Quality Control Manager is granted the authority and independence to swiftly resolve any quality issues encountered during the project execution.

1.1 Objective

The CQC details REAL's dedication and goals to deliver thorough guidance and support for the execution and upkeep of all Quality Control activities within the project. This plan outlines key interfaces, responsibility allocations, and the methods and controls to be implemented. It references Standards, Codes of Practice, Client Company procedures, and REAL Network Services (REAL) processes as appropriate. These planned arrangements enable REAL to clarify requirements, minimize risks, and ensure potential errors are identified and corrected. REAL's quality approach promotes a systematic, consistent, and authoritative Contractor's Quality Control Plan (CQC), leading to the project's successful completion.

Service Quality Commitment:

The Construction Quality Control Plan (CQC) outlines REAL's commitment and objectives to provide comprehensive oversight and direction for the design and installation of each Passenger Information Display System (PIDS). This includes supporting the implementation and maintenance of all quality control activities throughout the project. The plan details specific quality control measures applicable during the design, construction, and installation phases of each PIDS. By utilizing the Toyota and Kaizen models for quality control, REAL is dedicated to ensuring the delivery of a 100% defect-free product to DART.

2 Scope

2.1 Applicability

This CQC applies to all REAL employees and subcontractors performing work for this Project.

REAL assumes the responsibility for development and administering this on and off-site Quality Control Plan for the Project. This CQC will assure REAL, the General Contractor (GC), provides for all material and workmanship is accomplished in accordance with all requirements referenced in our Contract, Specifications, Drawings and applicable Codes. REAL, through the utilization of the CQC, will strive to obtain a uniform and consistent high-quality level of workmanship throughout all phases of procurement, fabrication, construction, and installation of equipment and work activities.

2.2 Management Responsibility

Real Network Service Management has delegated the oversight of its Real Quality Management System (QMS) (Appendix F) to Flumarino LLC to ensure unbiased monitoring and reporting of quality-related matters for the project. REAL standards and procedures are used to review and audit the design, development, implementation, test, release, and documentation review of all phases of the Project. The Management Team (see figure on section 4.2.3) is responsible for establishing and maintaining a culture of quality throughout the Project. This includes providing the necessary resources, training, and support to ensure that all project activities comply with the CQC. See Appendix F for the Real Networks Services Quality Management System Manual. All the interactions regarding quality for this project are between Real Network Services and Dart. Flumarino LLC will report to Real Networks Services their findings and tasks in regard to quality for this project.

2.2.1 Quality Control Manager Responsibility

The Quality Control Manager (QCM) is responsible for overseeing the overall implementation of the Quality Control Plan and coordinates all project testing, inspections, and reporting matters. The QCM has the authority to intercede directly and stop unsatisfactory work and control further processing, delivery, or installation of non-conforming material.

Duties of the Quality Control Manager include the following:

- 1 Create, prepare, and implement the CQC that aligns with project specifications.
- 2 Oversee and Verification of materials as per project plans and specifications.
- 3 Maintain documentation of inspection status of materials.
- 4 Overseeing the maintenance of documentation for material and administrative approvals.
- 5 Carry out and participate in weekly progress and Quality Control meetings.
- 6 Ensure that all project activities comply with applicable codes, regulations, and standards.
- 7 Implement corrective and preventive actions to address non-conformances and prevent recurrence.
- 8 Work closely with project managers, engineers, contractors, and other stakeholders to address quality issues.

2.2.2 REAL Quality Control Representative

The REAL Contractor Quality Control Representative (CQCR), under the direction of the QCM, will carry out (field) quality control functions. See Appendices B and C for the appointment and

resume of the CQCR respectively. CQCR may witness tests, perform tests, perform inspections, and prepare daily appropriate reports and documentation required by the contract documents.

REAL QCM and CQCR will coordinate and or schedule all required testing. Inspections and field observation required by DART will involve the PM and our certified independent testing laboratory as needed. CQCR will also observe ongoing major activity for compliance with project contract, plans, submittals, and closeout requirements.

2.2.2.1 CQCR Activities and Responsibilities include:

- 1 Making sure that the means and methods align with delivering a top-notch product and meeting safety standards outlined in the specifications.
- 2 Acting as the main point of contact and taking responsibility for the Owner's Authorized Representative (OAR).
- 3 Strategizing, coordinating, and supervising crews and equipment.
- 4 Managing subcontractors and suppliers.
- 5 Supervising and guiding construction supervisory personnel.
- 6 Ensure documentation of inspection of work executed by subcontractors.
- 7 Identify items requiring immediate or belated corrective action. Assure all deficiencies are corrected prior to substantial completion and final acceptance inspections.
- 8 Issue NCR letters for corrective action as needed and provide prompt appropriate response.
- 9 Document preparatory inspections and preparatory meetings utilizing a three-phase inspection method consisting of pre-activity, initial and final inspections.
- 10 Daily quality control activities, engage the services of certified independent testing labs, and conduct training programs for Quality Control and construction personnel.
- 11 Provide a list of all tests to be performed to meet the requirements of the contract specifications, witness and review test and test reports for conformance with the contract specifications.
- 12 Ensure that all materials and construction are in accordance with the requirements for completeness, accuracy, and constructability in accordance with applicable building codes, project plans and specifications.

2.2.3 REAL Alternate Quality Control Representative

Although the QCM is responsible for the effective implementation of the CQC, occasions may arise when the CQCR is officially absent from the job site. Such occasions may include personal emergency, illness, vacation, professional training, etc. If such a condition occurs, an ACQCR will be made available to perform the CQCR duties on a temporary basis. The ACQCR will have authority and responsibility to act for the Contractor. See Appendices B and C for the appointment and resume of the ACQCR respectively

Other functions for the Alternate Quality Control Representative Includes:

- 1 Identify quality issues, halt work if necessary, and propose, support, provide, and validate implementation solutions with adequate authority and organizational independence.
- 2 Quality Control personnel carry out measurements, tests, and inspections to ensure that the work complies with specifications and technical accuracy, either directly or through qualified testing organizations.

3 Reference Documents

Unless otherwise specified herein, the referenced documents' versions are those in effect at the time of initial release of this Quality Control Plan.

- 1 DART Passenger Information Display Systems Contract (Contract No. C-2076448-01),
- 2 DART Quality Program Plan,
- 3 FTA – Quality Management System Guidelines,
- 4 ISO 9001:2015 Quality Management Systems Requirements, and
- 5 REAL Network Solutions Quality Management System Manual (Appendix F)

4 Quality Procedures

In addition to the REAL QMS (Appendix F) specific considerations presented in this plan, and content of the required CDRL documents, Masterworks workflows represent a significant quality control mechanism and is included here by reference and extension.

4.1 Project Quality Organization

REAL uses the Toyota Quality Model throughout the entire Quality Program. This Model produces quality products efficiently through the complete elimination of waste and inconsistencies. The Model follows an approach that is based on testing each step in a process to determine if it adds value to the final product. If the steps do not add value, it is examined closely to determine possible fixes.

Key components of the Quality Assurance Organization throughout the project are:

- 1 Continuous Improvement (Kaizen): Implement regular review cycles to identify areas for improvement and optimize processes.
- 2 Customer Focus: Ensure all activities align with the client's needs and expectations.
- 3 Employee Involvement: Encourage active participation and feedback from all team members to foster a culture of quality.
- 4 Standardized Processes: Develop and adhere to standardized processes to minimize variability and enhance quality.
- 5 Problem Solving: Use root cause analysis and other problem-solving techniques to address issues effectively and prevent recurrence.

4.2 DART Quality Program Plan to REAL QMS (Appendix F) mapping

The REAL QMS (Appendix F) is based on ISO 9001:2015 requirements. Specification section 01450 Clause 1.6.A.3 requires a matrix to map Attachment 01450-1 to the CQC. Some elements of Attachment 01450-1 are addressed or covered by the REAL QMS (Appendix F) while other elements are unique to the PIDS project.

The following table addresses the matrix mapping. Later sections amplify, where necessary, the unique aspects of the PIDS project to ensure Attachment 01450-1 coverage. For example, requirements for this section (01450) may be specific to the current project and are not addressed specifically or granularly for PIDS; in these cases, this plan or new, dedicated procedures not addressed in CDRL design disciplines are required.

Element	DART CQC Plan Description	REAL QMS (Appendix F)	ISO 9001:2015 Clause
1.5.B.1	Quality Policy	5.0 Quality Policy	5.2 Policy

Element	DART CQC Plan Description	REAL QMS (Appendix F)	ISO 9001:2015 Clause
		8.3 Quality Policy	
1.5.B.2	Contractor's Quality Control Representative (CQCR): Include letter appointing the CQCR	Appointment letter 9.1 Provision of Resources 9.2 Human Resources	7.1.2 People
1.5.B.5	Personnel List and Organization Chart: Define responsibilities, authority, and interrelationships	8.4 Organizational Roles and Responsibilities and Authorities	5.3 Organizational Roles Responsibilities and Authorities
1.5.C	Documented Quality Plan (System)	4.1 Determining Our Strategic Direction 4.2 Scope of the Management System	4.1 Understanding the Organization & Its Context 4.0 Context of the Organization (all) 4.3 Determining the scope of the QMS
1.5.D	Design Control	10.4 Design and Development	8.3 Design and development of products and services
1.5.E	Document Control	7.0 Documentation & Records	7.5 Documented information
1.5.F	Purchasing	10.5 Purchasing 10.2 Customer Related Activities	8.4 Control of externally provided processes, products & services 8.2 Requirements for products and services
1.5.G	Product Identification and Traceability	10.6.2 Identification and Traceability 10.6.3 Property Belonging to Third Parties	8.5.2 Identification and traceability 8.5.3 Property belonging to customers or external providers
1.5.H	Process Control	10.6.6 Process Change Control 8.6 Change Management	8.5.6 Control of changes 6.3 Planning of changes
1.5.I	Inspection and Testing	CDRL Extract or reference	
1.5.I.1	List of Tests	CDRL Extract or reference	
1.5.I.1.b	Preliminary Schedule	Schedule Extract or reference	
1.5.I.2	Procedures for inspection of incoming materials	CDRL design discipline tests	
1.5.I.5	Laboratory Reports		
1.5.I.5.a	Reports regarding Nonconformance	10.3 Customer Communication Procedure - Control of NC Service	8.2.1 Customer communication
1.5.I.6	Tabulation of Tests	CDRL Extract or	

Element	DART CQC Plan Description	REAL QMS (Appendix F)	ISO 9001:2015 Clause
		reference Appendices	
1.5.I.7	Inspection and Test Record Numbering System	CDRL Extract or reference Appendices	
1.5.J	Inspection, Measuring, and Testing Equipment	9.3 Infrastructure 10.6.7 Measurement and Release of products and services Procedure - Equipment Validation	7.1.3 Infrastructure 9.1 Monitoring, measurement, analysis and evaluation
1.5.K	Nonconformances and Deficiencies	10.6.8 Control of Nonconforming Outputs 11.4 Corrective and Preventive Action Procedure - Control of NC Service	8.7 Control of nonconforming output 10.2 Nonconformity and corrective action
1.5.L	Quality Audits	6.2 Process Controls & Objectives	6.2 Quality objectives and planning to achieve them
1.5.M	Training	9.5 Organizational Knowledge 9.2 Human Resources 9.2 Human Resources 8.5 Internal Communication	7.1.6 Organizational knowledge 7.2 Competence 7.3 Awareness 7.4 Communication
1.5.N	Listing of outside organizations	Listing 10.5 Purchasing	8.4 Control of externally provided processes, products & services
1.5.N.1	Contractor's Testing Facilities: Include documentation of accreditation	Listing 10.5 Purchasing	8.4 Control of externally provided processes, products & services
1.5.O	Sources of Materials	Refer to 01450-002 Sources of Materials List	

4.2.1 1.5.B.1 - Quality Policy

See sections 5.0 Quality Policy and 8.3 Quality Policy of the REAL QMS (Appendix F).

4.2.2 1.5.B.2 - Contractor's Quality Control Representative (CQCR)

See Appendices B and C for the appointment and resume of the CQCR.

4.2.3 1.5.B.5 - Personnel List and Organization Chart

PIDS Quality Organizational Chart



Quality Subcontractors Contact Information

Subcontractor	Main Contact	Email	Title
Flumarino	Fernando Marino	info@flumarino.com	CEO
Keeva	Greig Latham	gslatham@keeva.net	CEO
Milestone	Satinder Baweja	sbaweja@milestone.us.com	CEO
DES	Jason Andrews	jason.andrews@ao-ind.com	Engineer
Penta	Bob Chandler	bchandler@penta-corp.com	Engineer

4.2.4 1.5.C - Documented Quality Plan (System)

This document and the REAL QMS (Appendix F) comprise the Quality Plan (System).

4.2.5 1.5.D - Design Control

Following the DART Design Criteria Manual guidelines for design control and limiting submittals, the REAL Project team will prepare a comprehensive design package for a Preliminary Design Review (PDR) and a Final Design Review (FDR). The PDR and FDR will encompass all design disciplines (i.e., Communication Interface Cabinet, Fiber Optic Cable, Public Address, and Visual Message Board).

REAL controls the configuration of product/system designs from beginning of approval through the end of the Project life cycle following DART Design Criteria Manual. Design control procedures include:

- Design Reviews: regularly scheduled reviews of design to ensure they comply with Project requirements. These reviews involve cross-functional teams to provide comprehensive feedback.
- Design Verification: activities to confirm that design outputs meet input requirements. This includes simulations, calculations, and peer reviews.
- Design Validation: ensuring that the final design will perform as intended in the operational environment. Validation activities include prototype testing and field trials.

- Documented Approvals: all design changes must be approved and documented. Change requests are reviewed by the Quality Control Manager and relevant stakeholders to assess their impact on project quality.

From the FDR the team will prepare an Issue for Construction (IFC) package for each station as the station is slated for start of work.

The various submittals have been allocated in the CDRL; refer to the current (latest) revision of 240406-01330-001-Rev00 Appendix A CDRL Quality Activities, for the design 'gates' or submittals.

4.2.6 1.5.E - Document Control

Most document control measures are included in workflow description built into Masterworks. REAL QMS (Appendix F) section 7.0 Documentation & Records addresses this element as well.

All documents associated with the execution of the Project will be retained, regardless of origin. These will be maintained at the project offices with controlled access. A chronological file containing the original of all communications and their attachments will be maintained for hard copy documentation. Records and files will be kept in fire-safe storage, to preclude damage, loss or deterioration.

Additionally, Project files and records will be maintained in a centralized electronic document management system (SharePoint). This system will ensure that all documents are current, accurate, and accessible to authorized personnel. Regular audits will be conducted to ensure compliance with document control procedures.

All official documents for the project, including daily reports will be submitted to DART through Masterwork applications as:

- Documents: Contractor Documents>Submittals/Deliverables> General Submittals
- Documents: Contractor Documents>Submittals/Deliverables> Design Submittals
- Daily Reports: Contractor Documents>Submittals/Deliverables> General Submittals> Daily Reports
- Tracking and Feedback: Collaboration>Submittals
- Tracking and Feedback: Collaboration>Design Submittals

4.2.6.1 1.5E- Quality Document Control

This section establishes a system for the control of documentation and records which provide objective evidence of the quality of items and activities performed in accordance with the Project. The Quality Control Manager is responsible for the control, review, verifications and maintenance of the documentation required and listed in the Project specifications.

Reporting and Distribution of Reports

1. After CQCR reviewing Quality Control, Testing Laboratory, Independent Agencies reports (including subcontractor reports) the Quality Control Manager will submit documentation to DART signed by CQCR.

2. All inspections and testing will be summarized and recorded in a Contractor's Quality Control Daily Report and are added to a Testing Log. Field notes, inspection forms and test reports should be filed in and available for review.

The Contractor's Quality Control Daily Report (QCDR) includes the following:

- a. Contractor and Subcontractor areas of responsibility.
- b. Working, idle and downtime hours for equipment.
- c. Work accomplished each calendar day, indicating the location, activity and by whom.
- d. Laboratory test reports, including the test results (passing or failing), location of tests and specification references.
- e. Deficiencies and corrective actions.
- f. Material received onsite.
- g. Safety violations and corrective action implemented.
- h. Conflicts encountered in the plans and/or specifications.

Record Storage

Project records will be scanned and saved to QCM Records files. Items that are not scanned will be saved in QCM Office till project close-out and if not required will be maintained for duration of project warranty.

Project records will be stored for a period as determined by the contractual documents. Records designated for storage are not to be destroyed or otherwise disposed of within that period, usually until the contract warranty runs out. Control and final disposition of subcontractor and supplier records, both onsite and offsite, are to be in accordance with the contractual documents.

RFI Processing

When required RFI's will be generated and forwarded to DART and or CM for the item(s) in question. The CQCR, project manager, or project engineer will generate and forward the RFI to DART and or CM for their response. Once the RFI has been answered, the RFI will be forwarded to all parties, superintendents, and sub-contractors. RFI's will be filed and logged-in with appropriate tracking number. RFI's that modify or change the contract documents or drawings will be revised by insertion or red-line corrections whichever is applicable. All the RFIs will be documented in the Masterworks application.

4.2.7 1.5.F – Purchasing.

See REAL QMS (Appendix F) section 10.5 Purchasing for a full detail of the process.

Once the approval of the Material List by DART, the material procurement phase of the Project begins. Purchasing procedures include:

- Vendor Qualifications: ensuring that all vendors meet the required quality standards.
- Purchase Order Review: reviewing all purchase orders to ensure they include the necessary quality requirements.
- Incoming Inspections: inspecting materials and services upon receipt to ensure they meet the specified requirements.

REAL maintains with its vendors the right for itself, its customers, or their representatives, to verify at the source or upon delivery that purchased items or services conform to the requirements specified in the Project. All vendors of electronic products will be requested to include test results

where specific test data is required by the Project. This requirement, as well as any additional requirements, will be noted in the corresponding Purchase Order / Contract. Purchasing documents and procedures are reviewed and approved by designated purchasing personnel. According to REAL procedures, regular Audits are performed to ensure compliance.

REAL will request certificates of compliance from vendors to ensure compliance with specifications. Inspections and tests will be performed on the Vendor's product to ensure compliance with specifications as per the contract.

4.2.7.1 Purchasing Quality Process

To ensure that all products meet quality and other contract requirements, manufacturers and suppliers are required to comply with the following procedures:

- Office engineers, in coordination with the CQCR, review purchase orders to verify that the products align with contract documents prior to release.
- Quality Control personnel are responsible for reviewing contract-required Certifications of conformance/compliance, certified tests, or other delivery documents for accuracy and conformance.
- Certificates/tests should be issued for each lot of material, and all contract-required documents are maintained as quality records. Additionally, these documents may be provided at delivery and attached to the Materials Receiving Report (MRR).
- In cases where certified test reports and certificates from the manufacturer are required in the technical sections, these should be submitted to the OAR for approval prior to delivery.
- Source Inspections may be conducted to ensure the verification and validation of quality and other contract requirements. These inspections are scheduled and carried out by qualified quality, construction, or third-party personnel, based on the requirements indicated in contract drawings or documents, specifications, procedures, and/or industry standards. The authorized personnel conducting the source inspection complete the Source Inspection Report. These guidelines ensure that quality and contract requirements are upheld throughout the production and delivery process.

4.2.8 1.5.G - Product Identification and Traceability

See REAL QMS (Appendix F) section 10.6.2 Identification and Traceability.

All materials and products will be labeled with unique identification numbers to ensure traceability. This will include tracking materials from receipt through installation and final inspection. Records of product identification and traceability will be maintained in the project management system.

4.2.8.1 Identification and Traceability Process

As part of our commitment to maintaining organized and reliable records, RNS ensure that all purchasing, and procurement documents are meticulously filed and preserved. In accordance with

PIDS contract requirements, it is imperative that manufacturers and suppliers of parts, components, and batch materials thoroughly identify and control items of production to guarantee the use of only acceptable and compliant items. This includes:

- Ensuring that parts and components are supplied with clear identifying marks, tags, or labels, and maintaining original manufacturer containers with labels and directions.
- Batch materials should be equipped with appropriate batch tickets for identification purposes. Every receiving inspection is meticulously recorded on the Material Receiving Report (MRR), with detailed information on the disposition of received materials and products.
- The MRR is typically completed by the office Engineer and/or the receiving foreman and subsequently validated for compliance and completeness by QC personnel.
- In handling accepted items, RNS ensures that items requiring storage are adequately secured and stored in an orderly manner for easy retrieval. Items stored outside are provided with adequate protection to maintain their usability, and those requiring special handling or maintenance are managed in accordance with the manufacturer's instructions or contract documents.

Regarding rejected items, all permanent materials, products, or equipment categorized as "Reject" are clearly tagged with a red mark and quarantined. A thorough assessment is made to determine if the rejected item may be acceptable for use after the correction of any deficiencies.

Unacceptable items are promptly removed from the job site, while items that can be corrected are quarantined until the deficiencies are addressed. Once satisfactorily corrected, these items are re-evaluated as "Accept" and moved to the appropriate storage location, with all corrective measures noted on the MRR.

Owner-furnished items undergo inspection and receipt processes like those of contractor, subcontractor, or supplier-furnished items, with certain exceptions. The OAR retains Certificates of Conformance/Compliance and Certified Tests, and owner-furnished materials, products, and equipment are received and inspected in the presence of the OAR or designated representative.

4.2.9 1.5.H - Process Control

Procedures for identifying and planning the production and installation processes performed are included by design discipline in the specification-required CDRL document and / or the design package (i.e., IFC document set).

In select cases there are special processes required, for example, inspections prior to covering below grade conduit. Again, these special processes are described in the corresponding CDRL document (i.e., for Conduits and Raceways, the 16110 CDRL document).

REAL has established and maintains documented procedures to identify and plan the design, production, installation and servicing processes that directly affect quality and ensure that these procedures are carried out under controlled conditions.

Processes supporting the Project's efforts are controlled by REAL Quality System, which includes procedures for key areas to ensure proper control of the project requirements as listed below.

- Process Documentation: documenting all critical project processes to ensure consistency and compliance with quality standards.
- Monitoring and Measurement: regularly monitoring and measuring process performance to ensure compliance.
- Corrective Actions implement corrective actions to address any deviations from quality standards.

4.2.10 1.5.I - Inspection and Testing

Procedures for inspections are covered by discipline in their respective CDRL documents. For example, CDRL 16839-008 CIC Factory and Inspection Test Procedure addresses the receipt, factory, and inspection test procedure for the Communication Interface Cabinet.

Refer to the current revision of 240406-01330-001 Appendix A CDRL Quality Activities, to determine the subject inspection.

4.2.10.1 Inspections

As per the specifications REAL will utilize the three-phase inspection process which includes:

- a. Preparatory Inspection and Meeting: Perform preparatory inspection before beginning any work on any definable segment of work. Participants will include a representative of the Authority and will also include a member REAL Quality Assurance to inspect the work, the supervisor in charge of the work, and individuals responsible for accomplishing the work. Included in a preparatory meeting will be a review of the Contract requirements, the review of approved shop drawings and other submittal data, the review of safety requirements, assurance that required control testing is to be provided, a physical examination to ensure that materials and equipment conform to approved shop drawings and submittal data, and assurance that required preliminary work has been completed. Participants will discuss what will constitute a representative segment for purposes of the initial inspection of the item of work and shall come to a mutual agreement. If no mutual agreement is to be made, the Authority will define the representative segment. This inspection and meeting will be conducted and documented by CQCR.
- b. Perform an initial inspection as soon as a representative segment of the item of work is accomplished. Include in the initial inspection the following: performance of scheduled tests, examination of the quality of workmanship, a review for omissions or dimensional errors, and approval or rejection of the initial segment of the work.
- c. Perform follow-up inspections daily and include continued testing and examinations to ensure continued compliance with the Contract requirements. Follow-up inspections shall be identified with schedule activity code numbers in accordance with Section 01320, "Contract Schedule and Progress Reports".

Inspection and testing procedures will be specified to activity code numbers, implemented and results documented for receiving incoming product, work in progress and for final inspection and testing.

REAL will notify DART of delivery and location of incoming material to facilitate the inspection process. In addition to this REAL has a normal inspection process defined as under.

4.2.10.2 Tests

A list of tests required to verify that control measures are adequately delineated in the specifications and are determined upon the completion of the design. The list will include the test name, specification paragraph, feature of work to be tested, the test frequency and the organization's name that will perform the test. The QCM will provide notice to DART for any proposed field and/or any offsite test. The QCM or CQCR will witness the test with the appropriate organization representatives present and/or with the individual(s) qualified to perform the designated test(s).

The testing procedures include the following:

1. The Quality Control Manager reviews the testing requirements to ensure that the planned test is in accordance with the design documents (i.e., plans, specifications, shop drawings and/or other documents).
2. Instruments used for testing are calibrated in accordance with established calibration procedures. Specialists experienced in such work will perform the calibration.
3. Technicians performing the tests will provide copies of calibration certificates and their field notes and reports to the Quality Control Manager.
4. The Quality Control Manager or Contractor's Quality Control Representative will witness all required tests detailed in the design documents.
5. Test reports, when completed, are attached to the Contractor's Quality Control Report. Reports will be sent to DART management personnel as required or requested.

Failing tests are cleared by one of the following methods:

- a. Retest – retest if there is any doubt that the first test was not adequate.
- b. Rework – Re-inspect and re-test.
- c. Failed Material – Remove, replace, re-inspect and re-test.
- d. RFI to Engineer of Record for evaluation.

4.2.10.3 Product validation

Product validation will involve a final inspection and testing of the completed product to ensure it meets all project requirements. Validation results will be documented and reviewed by the Quality Control Manager.

Activities for ensuring the final product quality requirements include:

- Final Inspection: conduct a final inspection of the completed product.
- Validation Testing: perform tests to confirm that the product meets all specified requirements.
- Documentation: Document validation results and report them to the Quality Control Manager.

4.2.11 1.5.I.1 - List of Tests

See CDRL document 240406-01330-001-Rev00 Submittal Control Document for a list of all tests scheduled for the project.

4.2.12 1.5.I.1.b - Preliminary Schedule

See CDRL 240206-01322-001-Rev00 Start-up Baseline Schedule for the Preliminary Schedule.

4.2.13 1.5.I.2 - Procedures for inspection of incoming materials

Procedures for inspections are covered by discipline in their respective CDRL documents. For example, CDRL 16839-008 CIC Factory and Inspection Test Procedure addresses the receipt, factory, and inspection test procedure for the Communication Interface Cabinet.

4.2.13.1 Handling Procedures

Contractor shall provide for storage of construction materials and products for the work of the project in accordance with the following:

1. Store products, immediately upon delivery to a location approved by the Owner's Authorized Representative, in accordance with manufacturer's instructions, with seals and labels intact. Protect such products until final installed condition.
2. Deliver products too large to fit through openings to the Project site in advance of the time enclosing walls and roofs are erected. Set such products in place on raised cribs.
3. Arrange storage in a manner to provide access for maintenance of stored items and for inspection.
4. Inspect stored products frequently to ensure that the products are maintained in acceptable conditions.
5. Replace any products determined to be damaged upon delivery or damaged while in storage.
6. Provide access to the Owner's Authorized Representative for progress payment verification and approval purposes.
7. Arrange for ordering and storing approved long lead items.
8. Provide bonded off-site storage and protection when the Project site does not permit on-site storage or protection.

4.2.13.2 Enclosed Storage

The contractor shall provide adequate enclosed product storage on the Project site meeting the following requirements:

1. Store products, subject to damage by the elements, in substantial weather-tight enclosures.
2. Maintain temperature, humidity, and ventilation as required by the manufacturer's instructions.
3. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.

4.2.13.3 Exterior Storage

The contractor shall provide adequate exterior product storage on the Project site meeting the following requirements:

1. Provide substantial platforms, blocking, or skids to support fabricated products above ground: slope to provide drainage. Protect products from rusting, disfigurement, soiling staining and damage.
2. Cover products subject to deterioration from exposure to the elements with impervious sheet materials and provide adequate ventilation to avoid condensation.
3. Store loose granular materials on clean, solid surfaces such as pavement, or on rigid sheet materials, to prevent mixing with foreign matter.
4. Provide positive surface drainage to prevent erosion and ponding of water.
5. Prevent mixing of refuse or chemically injurious materials or liquids.
6. Do not stockpile materials higher than 30 feet unless shown otherwise in the Plans or as directed by the OAR.

4.2.13.4 Maintenance of Equipment Storage

The contractor shall protect and maintain mechanical and electrical equipment in storage throughout the Project including, but not limited to the following:

1. Provide the supplier's service instructions on the exterior of the package.
2. Service equipment on a regular basis as recommended by the supplier. Maintain a log of maintenance services and submit the log as Record Data at the Final Completion of the Project.
3. Provide power to and energize space heaters for all equipment for which these devices are provided.
4. Provide temporary enclosures for all electrical equipment, including electrical systems on mechanical devices. Provide and maintain heat in the enclosures until equipment is energized.

Refer to the current revision of 240406-01330-001-Rev00 Appendix A CDRL to determine the subject inspection.

4.2.14 1.5.1.5 - Laboratory Reports

Laboratory tests for 09770-001 Steel Coating Epoxy Zinc Rich Primer and 03305-001 Concrete Testing Laboratory are the only anticipated laboratory reports. These reports are prepared by certified, outside organizations.

REAL will maintain the Laboratory Reports of all the Test Performed and will be available to DART on request. The reports will contain details like the name of the test performed, results whether the test performed meets the pass/fail criteria based on specifications under the contract. All the Non-Conformances will be recorded and will be available to DART for review. Laboratory Reports key activities include the following:

- Report Creation: generate a detailed report that includes test methods, results and any deviations from expected outcomes.
- Review and Approval: the QCM will review and approve all Laboratory Reports.

- Documentation: Laboratory Reports will be stored in the project document management system.

4.2.15 1.5.I.5.a - Reports Regarding Nonconformance

See the section below on 1.5.K - Nonconformances and Deficiencies.

Non-conforming items are those conditions that deviate from the requirements detailed in the specifications, plans and/or shop drawing. The Quality Control Manager is responsible for the control and documentation of non-conforming products and prevents them from being installed. Minor non-conforming products, which are corrected on the same day, are documented in the deficiency logbook. All other non-conformances are documented in a Non-Conformance Report prepared by the Quality Control Manager, sequentially numbered and dated, and including the following information:

- a. Description of the non-conformance including relevant details of the occurrence.
- b. Identification of material, component or system by part number, plan, shop drawing and/or specification number and intended installation location.
- c. Source of material or item (name of supplier, owner or subcontractor).
- d. Status or item in shop, warehouse, lay-down yard or structure.
- e. Individual and organization which detected the non-conformance.
- f. Recommendation for corrective action including sketches, test data and/or repair procedures necessary to substantiate the recommendation.
- g. Cause of the non-conformance and steps taken to prevent reoccurrence indicating action(s) taken, positions or titles of persons contacted, letters written, and/or procedural changes proposed.

The Quality Control Manager signs and forwards the Non-Conformance Report to DART / CM and will be recorded on the Non-Conformance Report Log by the QCM.

Actions to be taken are entered on the Non-Conformance Report Log and a verification of corrective actions will be performed by the QCM after the work in question has been re-inspected and re-tested. Entries are made in the Non-Conformance Report (NCR) Log documenting the Final Disposition of each NCR.

Corrective action is realizing and defining the problems, determining their causes, and taking appropriate measures to prevent their recurrence. It includes the following process:

- a. Identify the problem or issue.
- b. Define the scope to assure the exact issue. Review the project specifications to confirm scope deficiencies.
- c. Identify the root cause to prevent the same deficiencies from reoccurring.
- d. Implement the corrective action by way of repair, adjust, or replace.
- e. Test for compliance with requirements.

4.2.16 1.5.I.6 - Tabulation of Tests

See the section on 1.5.I.2 - Procedures for inspection of incoming materials. The tabulation of test results is addressed in the respective test procedure. In most cases, the tabulation of tests occurs incrementally as the project is built out. As the build out occurs, another iteration of the CDRL is created with a new or revised appendix containing the new test results.

REAL will maintain an up-to-date tabulation of various tests performed which will be available to DART on request. The log will include the test performed as per the specifications. The non-conforming test listed will indicate the status of the non-conforming test result. As per the specification the certified tabulation of test performed under contract including conforming, non-conforming and repeated test results will be provided.

Reports will be numbered sequentially and traceable to contract number, location, lot, part and retest number, if applicable. All the inspections, measurements and tests will be performed under appropriate environmental conditions.

4.2.17 1.5.I.7 - Inspection and Test Record Numbering System

To streamline the inspection and test record numbering, the project team anticipates using the allocated CDRL documents by design discipline. For example, inspection and test records are embodied in the CDRL document or 'wrapper' that holds the results.

The testing required by specification ensures a three-phase inspection process (Preparatory, Initial, and Follow up).

4.2.18 1.5.J - Inspection, Measuring, and Testing Equipment

These aspects are covered in 'Procedure - Equipment Validation' which include relevant provisions from 'ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. For this Project, most applicable equipment (e.g., fiber optic testing equipment) is leased from a certified equipment company.

The status of all inspections and tests will be tracked using project management software. Regular reports will be generated to provide an overview of inspection and test status. Any issues identified will be addressed promptly to ensure compliance with quality standards.

REAL Quality Organization will ensure that all equipment used for inspection, measurement, and testing is properly calibrated, maintained, and fit for purpose. This involves a systematic approach to the control, verification, and calibration of equipment, including regular inspections and documentation of all activities.

All inspection, measuring, and testing equipment will be calibrated and maintained according to manufacturer specifications.

4.2.19 1.5.K - Nonconformances and Deficiencies

Nonconformances and deficiencies are treated in several different places in the REAL QMS (Appendix F). From REAL QMS section 6.1: "...identifying the top-level processes within the company, and then managing each of these discretely, this reduces the potential for nonconforming products and services discovered during final processes or after delivery."

Section 10.6.2 Identification and Traceability and 10.6.8 Control of Nonconforming Outputs further address nonconformances and deficiencies while section 11.4 Corrective and Preventive Action addresses proactive or preventive measures to avoid nonconformances and deficiencies.

Also see Procedure - Control of NC Service. Like other procedures and form, deficiencies manifested or highlighted during Project execution are feedback into these documents to improve their coverage and deliver conforming output.

4.2.20 1.5.L - Quality Audits

Per section 11.3 Internal Audit, REAL conducts internal audits at planned intervals to determine whether the management system conforms to contractual and regulatory requirements, to the requirements of ISO 9001, and to management system requirements.

REAL Internal Quality Audit program will be applied to the Project to ensure that all this Quality Control Plan is implemented and effective. Audits will also include new subcontractors and suppliers as well as subcontractors and suppliers that provide complex systems.

The audit includes but is not limited to the following:

- 1 Submittals
- 2 Test Results
- 3 Workmanship
- 4 Control of Measuring and Test Equipment
- 5 Receiving, handling, storage and control of materials and equipment
- 6 Warranties
- 7 Document control
- 8 Quality records
- 9 Subcontractor's Quality Control
- 10 As-Built drawings
- 11 REAL Quality Control
- 12 Non-Conformance and Corrective Actions

4.2.21 1.5.M – Training

REAL ensures that its employees and individuals are trained enough to work on the Project. All the training records of the employees are documented and will be made available to DART for review on request. Only personnel with the necessary qualifications, experience and training will be allowed to perform activities that affect the quality of work. REAL has a team of qualified and experienced personnel that will be utilizing different phases of the Project.

REAL will utilize its own or outside facility to perform tests and inspections, as applicable, and will ensure that they comply with the standards. Any change in the accreditation status will be notified to DART. As the project progresses REAL will ensure to update DART if it utilizes any other outside organization to perform activities on the project

Training consists of the Authority mandated classes listed below:

- 1 Light Rail Worker Protection
- 2 Roadway Worker Protection
- 3 Trinity Railway Express (TRE) worker protection

In addition, REAL requires the training listed below:

- 1 Worksite / Job briefings / On-The-Job (OJT) training
- 2 Quality system / process training

Specialized training is offered for personnel based on experience, work position, and requirements:

- 1 First aid
- 2 Cardiopulmonary resuscitation (CPR)
- 3 Automated External Defibrillator (AED)

4.2.22 1.5.N - Listing of outside organizations

We anticipate using the following company(ies) for various services (subject to change if improved service or delivery is available):

Activity	Company
Public Address Modeling (aka sound study)	Ateis 21 Sabin St Pawtucket, RI 02860 888-883-8383 http://www.penton-usa.com/
Concrete testing	To be named
Paint testing	To be named
Office and Field computer equipment	Penta Corporation (team member) 325 Edwards Ave New Orleans, LA 70123 (504) 733-1700 https://www.penta-corp.com/

4.2.23 1.5.N.1 - Contractor’s Testing Facilities

All anticipated testing, other than addressed in ‘Listing of outside organizations’, will occur either at REAL offices or in the field.

4.2.24 1.5.O - Sources of Materials

Sources of materials is required by 01450 Clause 1.6.A.1.and appear in the CDRL document 01450-002 Sources of Materials List allocated for that purpose. Appendix D.

Appendix A – 240406-01330-001 CDRL List – Quality Activities

01450-001	Contractor's Quality Control (CQC) Plan
01450-002	Sources of Materials List
01450-003	Contractor's Quality Control Personnel: Quality Control Manager
01450-004	CQC Plan Compliance Matrix
01450-005	Qualifications of Contractor's Testing Laboratory
01450-006	Daily CQC Reports
01450-007	Updated Tabulation of Tests
01450-008	Daily Next Day Activity List
01450-009	Written Responses to Nonconformance Reports
01450-010	Written Responses to Corrective Action Reports
01450-011	Written Responses to Audit Finding Reports
01450-012	Submittal Status Log
01450-013	Certified Test Reports
01450-014	Manufacturer's Certificates of Conformance or Compliance
01450-015	Preliminary Field Inspection and Testing Reports
01450-016	Written Response to Authority Audit Findings
01450-017	Contractor's Quality Control Representative Rev 00
01450-018	Alternate Contractor's Quality Control Representative # 1
01450-019	Alternate Contractor's Quality Control Representative # 2

Appendix B – Letters of CQCR and AQCR appointment



Real Network Services

5529 Redfield St.
Dallas, Texas 75235

October 1st, 2024.

Project: Passenger Information Display System – PIDS
Subject: Appointment as Contractor's Quality Control Representative

Dear Mr. Andres Guzman

We are pleased to inform you that you have been appointed as the Contractor's Quality Control Representative (CQCR) for the Passenger Information Display System Project, under contract C-2076448-01.

As the Contractor's Quality Control Representative, your primary responsibilities will include, but are not limited to, the following:

1. **Quality Assurance and Control:** Oversee and ensure the implementation of the Quality Control Plan, ensuring compliance with project specifications, standards, and regulations.
2. **Inspections and Testing:** Conduct regular inspections and tests of materials, processes, and finished products to ensure adherence to quality standards.
3. **Documentation:** Maintain accurate and detailed records of all quality control activities, including inspection reports, test results, and nonconformance reports.
4. **Nonconformance Management:** identify, document, and manage nonconforming products or processes, and implement corrective and preventive actions.
5. **Communication:** Serve as the primary point of contact for all quality-related communications with the project team, subcontractors, and the client.
6. **Training:** Provide training and guidance to project personnel on quality control procedures and best practices.
7. **Audits:** Participate in internal and external quality audits and ensure that audit findings are addressed in a timely manner.

As the Contractor's Quality Control Representative, you will have the authority to:

- Halt any construction activity that does not comply with quality standards or specifications.
- Request additional inspections or tests as necessary to verify compliance.

- Communicate directly with the Quality Control Manager and project leadership regarding quality issues and concerns.

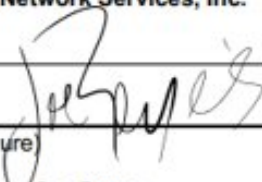
You will be provided with the necessary resources, including access to quality control documentation, inspection tools, and testing equipment, to effectively perform your duties. You will also receive full support from the project management team in fulfilling your responsibilities.

We trust that you will bring your expertise and dedication to this critical role, ensuring the highest standards of quality for the Passenger Information Display System Project.

Please acknowledge your acceptance of this appointment by signing and returning a copy of this letter.


Sincerely,

REAL Network Services, Inc.

By: 
(signature)
Printed Name: Joe Reyes
Title: President
Phone No. : 214.475.3065

Acknowledgement

I, Andres Guzman, hereby accept the appointment as the Contractor's Quality Control Representative (CQCR) for the Passenger Information Display System Project and commit to fulfilling my responsibilities to the best of my abilities.


Signature:

Date: 10/01/2024



Real Network Services

5529 Redfield St.
Dallas, Texas 75235

June 8th, 2024.

Project: Passenger Information Display System – PIDS

Subject: Appointment as Alternate Contractor's Quality Control Representative

Dear Mr. Fernando Marino,

We are pleased to inform you that you have been appointed as the Alternate Contractor's Quality Control Representative (ACQCR) for the Passenger Information Display System Project, under contract C-2076448-01.

As the Alternate Contractor's Quality Control Representative, your primary responsibilities will include, but are not limited to, the following:

1. **Support and Quality Control:** Assist the Contractor's Quality Control Representative in overseeing and ensuring the implementation of the Quality Control Plan.
2. **Inspections and Testing:** Conduct inspections and tests of materials, processes, and finished products to verify compliance with quality standards, especially in the absence of the primary Quality Control Representative.
3. **Documentation:** Maintain and update quality control records, including inspection reports, test results, and nonconforming reports.
4. **Nonconformance Management:** Support the identification, documentation, and management of nonconforming products or processes, and assist in implementing corrective and preventive actions.
5. **Communication:** Act as a secondary point of contact for quality-related communications with the project team, subcontractors, and the client.
6. **Training and Guidance:** Provide training and support to project personnel on quality control procedures and best practices.
7. **Audits:** Participate in internal and external quality audits and ensure that audit findings are addressed appropriately.

As the Contractor's Quality Control Representative, you will have the authority to:

- Halt any construction activity that does not comply with quality standards or specifications in the absence of the primary Quality Control Representative.


- Request additional inspections or test as necessary to verify compliance.
- Communicate directly with the Quality Control Manager and project leadership regarding quality issues and concerns when acting in the primary representative's capacity.

You will be provided with the necessary resources, including access to quality control documentation, inspection tools, and testing equipment, to effectively perform your duties. You will also receive full support from the project management team in fulfilling your responsibilities.

We trust that you will bring your expertise and dedication to this critical role, ensuring the highest standards of quality for the Passenger Information Display System Project.

Please acknowledge your acceptance of this appointment by signing and returning a copy of this letter.

Sincerely,

REAL Network Services, Inc.



 By: _____
 (signature)

Printed Name: Joe Reyes

Title: President

Acknowledgement

I, Fernando Marino, hereby accept the appointment as the Alternate Contractor's Quality Control Representative (ACQCR) for the Passenger Information Display System Project and commit to fulfilling my responsibilities to the best of my abilities.


 Signature: _____

Date: 07-16-2024



Real Network Services

5529 Redfield St.

Dallas, Texas 75235

October 1st, 2024.

Project: Passenger Information Display System – PIDS

Subject: Appointment as Alternate Contractor's Quality Control Representative

Dear Mr. Robert Heckrote

We are pleased to inform you that you have been appointed as the Alternate Contractor's Quality Control Representative (ACQCR) for the Passenger Information Display System Project, under contract C-2076448-01.

As the Alternate Contractor's Quality Control Representative, your primary responsibilities will include, but are not limited to, the following:

1. **Support and Quality Control:** Assist the Contractor's Quality Control Representative in overseeing and ensuring the implementation of the Quality Control Plan.
2. **Inspections and Testing:** Conduct inspections and tests of materials, processes, and finished products to verify compliance with quality standards, especially in the absence of the primary Quality Control Representative.
3. **Documentation:** Maintain and update quality control records, including inspection reports, test results, and nonconforming reports.
4. **Nonconformance Management:** Support the identification, documentation, and management of nonconforming products or processes, and assist in implementing corrective and preventive actions.
5. **Communication:** Act as a secondary point of contact for quality-related communications with the project team, subcontractors, and the client.
6. **Training and Guidance:** Provide training and support to project personnel on quality control procedures and best practices.
7. **Audits:** Participate in internal and external quality audits and ensure that audit findings are addressed appropriately.

As the Contractor's Quality Control Representative, you will have the authority to:

- Halt any construction activity that does not comply with quality standards or specifications in the absence of the primary Quality Control Representative.

- Request additional inspections or test as necessary to verify compliance.
- Communicate directly with the Quality Control Manager and project leadership regarding quality issues and concerns when acting in the primary representative's capacity.

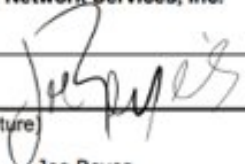
You will be provided with the necessary resources, including access to quality control documentation, inspection tools, and testing equipment, to effectively perform your duties. You will also receive full support from the project management team in fulfilling your responsibilities.

We trust that you will bring your expertise and dedication to this critical role, ensuring the highest standards of quality for the Passenger Information Display System Project.

Please acknowledge your acceptance of this appointment by signing and returning a copy of this letter.

Sincerely,

REAL Network Services, Inc.

By: 
 (signature)
 Printed Name: Joe Reyes
 Title: President
 Phone No. : 214.475.3065

Acknowledgement

I, Robert Heckrote, hereby accept the appointment as the Alternate Contractor's Quality Control Representative (ACQCR) for the Passenger Information Display System Project and commit to fulfilling my responsibilities to the best of my abilities.

Signature: 

Date: 10/03/2024

Appendix C1 – Quality Manager Resume

Fernando Marino



Industrial Engineer
Green Six Sigma
ISO Quality Auditor
Project Management
MBA Supply Chain

Profile

Over 20+ years of progressive, responsible experience in the public, private, and non-profit sectors, driving enterprise capabilities by leading IT vision, strategies, and large-scale project initiatives. Proven record of success at transforming enterprise applications, infrastructure, quality management, service management, data engineering, processes, and analytical systems. Influence business buy-in, manage change effectively, and align technology initiatives with strategic objectives. Turn around operations and orchestrate large-scale programs in various departments maturing security posture. Manage budgets up to \$40M.

Over 20 years of experience in quality assurance, control, and continuous improvement within Construction, Finance, Health Government and Transportation Organizations. Proven track record in implementing effective quality management systems (QMS) and ensuring compliance with industry standards such as ISO 9001, Six Sigma, and Lean methodologies. Skilled in leading cross-functional teams, conducting audits, and developing process improvements that enhance product quality, reduce defects, and increase customer satisfaction. Adept at fostering a culture of quality and continuous improvement within organizations.

Employment History

- **Flumarino LLC:** President: Quality Assurance.
- **Parkland Hospital:** IT Director of Operations
- **Dallas County:** IT Chief Project Management Office.
- **Texans Can Academies:** Chief Information Officer – Project Manager – Quality Assurance
- **Link America:** Project Manager – Quality Assurance.
- **Protection S.A.:** Chief Quality Officer.

Education

- MBA Supply Change Management, The University of Texas at Dallas 2015.
- Bachelor's degree in finance – University of the North Colombia 2001.
- Bachelor's degree Industrial and technology engineering – University of North Colombia – 1998.

Training and Certifications

- Six Sigma Green Belt Certification – Process Improvement.
- ISO9000
- ISO 9000 Quality Auditor
- ITIL Information Technology Infrastructure Library
- Pursuing PMP Certification, Target: Feb 2025

Projects Participation:

Dallas County Various Projects:

Served as a Program Manager for 24 project managers, including 50 projects with a budget of 200+ million. The responsibilities include ensuring the overall quality of the project by implementing and maintaining quality control standards, verifying that all materials meet project specifications, and overseeing the inspection process to identify and resolve any quality issues. Material management and document control, ensuring accurate tracking, storage, and accessibility of all project-related documents and materials, while adhering to compliance and record-keeping requirements Oversees the business analyst, providing guidance, aligning their tasks with project goals, and ensuring that analysis and reporting are accurate and contribute to informed decision-making throughout the project's lifecycle.

Major Projects: Construction of Data Base Centers, Building Renovations and Software Implementations.

Parkland Hospital IT Helpdesk Quality Assurance Program

Project Manager of record responsible for establishing a quality assurance program for a Helpdesk IT unit in a hospital that focus on developing and implementing a comprehensive QA framework to ensure the delivery of high-quality support services. This includes defining quality standards for service responsiveness, issue resolution, and customer satisfaction, as well as establishing metrics for monitoring and evaluating Helpdesk performance. Design and implementation of procedures for consistent incident tracking, escalation, and documentation, ensuring compliance with healthcare regulations such as HIPAA for data security and confidentiality. Conduct regular training for Helpdesk staff on quality standards, oversee audits to identify areas for improvement, and facilitate continuous feedback loops with end-users to enhance the overall effectiveness and reliability of IT support within the hospital environment. Setting up reporting mechanisms to track and report quality metrics, analyzing data to drive improvements, and ensuring the Helpdesk team meets the hospital's IT service expectations.

REAL Network Service Quality Management System (QMS) – All Projects

Developed, implemented, and maintained the QMS to ensure all construction projects adhere to both regulatory requirements and client specifications. This includes establishing quality standards, guidelines, and processes that align with airport safety and construction regulations and ensuring all project teams are trained and compliant with these standards. Conduct regular audits, inspections, and assessments on-site to monitor project quality, identify non-conformities, and implement corrective actions promptly. Work closely with project managers, engineers, and other stakeholders to promote continuous improvement, analyze quality metrics, and drive performance enhancements. Maintaining thorough documentation of all quality control activities, ensuring traceability and accountability throughout each project phase, and preparing detailed quality reports for both internal stakeholders and DFW Airport authorities.

Texans Can Academies – School District – All Projects

Led the school district in all aspects of process improvement, quality management plan, software, network management, technology architecture, infrastructure on-premises/cloud, and all other implemented applications. Expedited workflows, simplified processes, establish quality metrics for different departments and reduced the district operating costs by 50% through Six Sigma application standards inside of education, finance, facilities, human resources, and IT departments through functional technological solutions including restructuring all operational support programs and projects, policies and procedures. Total Projects: 35+ including IT Projects as well Campus Renovation/Construction Projects.

DFW Airport – PDAS System

Collaborated with the program manager for a PDAS (Public Display and Announcement System) project at DFW Airport responsible for overseeing the entire program lifecycle, including project planning, execution, and evaluation. Develop a strategic vision for the system implementation, manage budgets, and allocate resources effectively while ensuring compliance with airport regulations and safety standards. Collaborate among various stakeholders, including airport officials, contractors, and technology vendors, to ensure seamless integration. Monitor progress against milestones, manage risks, and facilitate communication across teams, monitoring the quality metrics were met, all while maintaining comprehensive documentation and reporting on program status. Ultimately, ensure the successful delivery of the PDAS project, enhancing the airport's operational efficiency and passenger experience.

Bank Of America – Data Center

As the assigned technical engineer responsible for overseeing the design and infrastructure implementation to ensure it meets strict quality standards and regulatory compliance. This includes collaborating with architects and project managers to develop detailed technical specifications, assessing site conditions, and selecting appropriate materials and technologies for reliability and security. Conduct risk assessments, implement best practices for system redundancy and disaster recovery, and oversee the installation of critical systems such as power, cooling, and networking infrastructure. Additionally, responsible for overseeing quality control inspections, testing systems for performance and reliability, and providing technical support throughout the construction process to ensure that the data center operates efficiently and securely upon completion.

NTTA – P25 Antenna Installation – Link America

Responsible for developing and executing a detailed project plan that outlines objectives, timelines, and budget management for the installation of 3 P25 Antennas including connecting to the radio system at North Texas Tollway Authority (NTTA). Coordinate the project team, ensuring effective communication with stakeholders and compliance with regulatory standards. Identify and mitigate risks, oversees quality assurance processes, and maintains thorough documentation throughout the project lifecycle. Additionally, facilitate post-installation testing and establish maintenance protocols to ensure the antenna system operates efficiently and meets all operational requirements.

DART – Link America – CCTV and Access Control System

Collaborated with the Main Project Manager overseeing the installation of CCTV, access control, and alarm systems for over 900 access points on DART trains and train stations. Responsible for coordinating the project lifecycle, from planning and design to execution and quality assurance. Work with engineering teams to interpret construction blueprints, ensuring that installations meet technical specifications and regulatory requirements. Tasked with managing project timelines, budgets, and resources while fostering effective communication among stakeholders, including vendors, contractors, and DART officials. Monitoring quality control measures to ensure all systems function optimally and maintain detailed documentation of progress, changes, and compliance with vendor requirements. Ensure that all installations were completed on schedule and within budget, facilitating training and support for operational staff to ensure seamless integration of the systems.

Protection S.A. – Quality Management System Implementation across Organization.

Chief Quality Officer (CQO) at Protection S.A. responsible for leading the development and implementation of a comprehensive Quality Management System (QMS) that ensures adherence to regulatory standards and enhances operational efficiency. Defined quality policies and objectives, conducting thorough assessments of existing processes, and identifying areas for improvement. Oversees the creation and maintenance of technical documentation, standard operating procedures, and training materials to ensure consistency and compliance across all functions. Implementation of regular quality audits, performance metrics, and feedback mechanisms to monitor the effectiveness of the QMS, promote a culture of continuous improvement, and ensure that all employees are engaged in quality initiatives. Collaboration with cross-functional teams to align quality strategies with organizational goals, fostering a commitment to excellence throughout the institution.

Appendix C2 – CQCR Resume

ANDRES GUZMAN

IE, ISO



PROFESSIONAL PROFILE

Accomplished and highly experienced professional with over 10 years of expertise in engineering and information technology, specializing in quality control, process optimization, and comprehensive systems management. Demonstrated excellence in overseeing and executing quality assurance protocols in both IT and large-scale construction projects, ensuring consistent alignment with industry standards. A deep understanding of quality frameworks such as ISO-9000, Six Sigma, and Total Quality Management allows for driving improvements that boost operational efficiency, reduce costs, and enhance project outcomes. With a proven track record in managing complex, multi-phase initiatives across construction-information systems and IT environments, I bring a strategic, detail-oriented approach to ensuring projects are completed on time and within budget, while maintaining a high level of accuracy and adherence to best practices.

EMPLOYMENT HISTORY

- Azteca Omega Construction Group – “Director of Technology”
- Texans Can Academies – “Project Manager/Quality Manager”
- REAL Network Solutions – Fiumarino – “Quality Control Manager/Alternative Quality Control Representative”
- Pharmacy Eticos Serrano Gomez – “Quality Manager/Analyst”
- Clinica Oftalmologica Unidad Laser del Atlantico – “Quality Control Assurance Specialist”

RELEVANT AND RELATED EXPERIENCE

Quality Assurance/Quality Control: Developed the entire Quality Management System for the organization including QC and QA procedures as well as the Quality Management Plan to be applied in all company projects, specially the DFW airport projects. Formalized all quality related procedures, policies and responsibilities, outlining the quality program in detail including roles, inspection criteria, documentation, and corrective action plans.

REAL Network Solutions | All DFW Construction Projects | 2023 – 2024

Project Manager/Quality Manager: Created Quality Management teams composed of project managers, engineers, architects, contractors, subcontractors, and school district representatives. Each team responsible for a specific aspect of quality—such as materials, safety, scheduling, and design. Worked closely with facilities to ensure quality standards were met throughout the construction projects of the district including data analysis.

Texans Can Academies | Campuses Renovation | 2021 – 2024

Quality Control Manager: Created a comprehensive QCP that defined the standards, specifications, and procedures for the entire project. Established quality objectives, such as structural integrity, mechanical and electrical systems performance, data center uptime standards, and adherence to energy efficiency requirements and complies with industry standards such as Uptime Institute's Tier Standards, TIA-942, LEED Certification, ASHRAE, and BICSI, which set guidelines for performance, reliability, and sustainability.
[REAL Network Solutions | Bank of America Data Center – Installation of Public Address System | 2021 - 2022](#)

Alternative Quality Control Representative: Conducted functional tests to confirm that the door sensors, biometric readers, and automated opening/closing mechanisms were working correctly. Performed interoperability testing with existing airport systems (e.g., fire alarms, HVAC systems, or centralized control centers) to ensure seamless integration. Ensured the accuracy of data on door usage, system errors, and biometric authentication logs. Validated that the data collected supports predictive maintenance to reduce downtime and improve operational efficiency. Provided detailed Quality reports on testing outcomes, issue logs, and rectification measures, ensuring clear communication with airport management.
[REAL Network Solutions | DFW Airport – SMART Restroom Installation | 2019 – 2021](#)

Quality Control Representative: Performed a physical inspection of the camera installations to ensure they are mounted correctly and securely. Performed functional tests on each of the 300 cameras to ensure proper operation and video quality. Tested the integration of the security cameras with other hospital systems (e.g., access control, fire alarms, emergency response). Conducted a thorough cybersecurity assessment of the camera system to ensure that hospital data and networks remain secure. Involved hospital security staff and IT personnel in final system tests to ensure the system meets user requirements.
[REAL Network Solutions | Parkland Hospital - 300+ Cameras Installation | 2019-2021](#)

Quality Control Representative: Inspected all equipment, including antennas, coaxial cables, connectors, and mounting hardware, prior to installation. Oversee the antennas installation process to ensure proper alignment, positioning, and secure mounting. Conducted Radio Frequency signal strength and coverage tests after antenna installation. Tested for potential interference from external radio sources or nearby electronic devices that could affect the P25 system. Ensured that the P25 antenna system integrates seamlessly with the overall communication network and radio equipment used by the transportation company. Verified the redundancy and failover capabilities of the antenna system in case of power failures, equipment malfunction, or signal disruption. Assessed the network security of the P25 antenna system, particularly if connected to digital or IP-based networks. Maintained detailed records of all quality checks, test results, and compliance reports throughout the installation process. Ensured that operational teams, such as technicians and dispatch personnel, are trained to use and maintain the P25 antenna system.
[Link America | NTTA \(North Texas Transportation Authority\) - P25 Antenna Installation | 2016 – 2018](#)

Quality Manager/Analyst: Managed quality audits and assessments, ensuring compliance with ISO 9001 and industry-specific regulations. Led cross-functional teams to conduct root cause analysis and implement corrective actions for quality issues, improving overall project outcomes. Developed and implemented quality management policies and procedures, resulting in an 87% reduction in defects and non-conformance reports. Trained and mentored staff on quality standards and best practices, fostering a culture of quality throughout the organization.
[Eticos Serrano Gomez | Distribution Center Construction | 2014-2017 | Colombia](#)

Quality Control Assurance Specialist: Collaborated with cross-functional teams, including construction and engineering, to address quality issues promptly and implement effective corrective actions. Managed the non-conformance reporting process, facilitating root cause analysis and ensuring timely corrective actions were taken to prevent recurrence. Conducted training sessions for new hires and existing staff on quality standards, inspection techniques, and regulatory requirements, improving team competency and awareness. Assisted in preparing for and conducting internal and external audits, ensuring compliance with ISO 9000 and other regulatory standards, which contributed to successful audit outcomes. Maintained accurate records of inspections, tests, and quality-related documentation, ensuring traceability and compliance with industry standards. Contribute to the company in the process of certification of all standardization of processes based on ISO-9000 standards.

Lasik Clinic of Atlantic | Organizational ISO Certification | 2013-2015 | Colombia

EDUCATION

Industrial Engineer – IE | Universidad del Norte | Colombia | 2012

ISO 9001 Certification | ICONTEC – Colombia | 2013

RELATED KEY SKILLS

Quality Control Tools, Standards & Methods | Data Extraction & Analysis | Project Management (PMI Standards) | Process Automation & Optimization | Programming (System Design) |

LANGUAGES

English | Spanish

Appendix C3- AQCR # 1 Resume

Robert Jay Heckrote

SUMMARY OF QUALIFICATIONS:

MANAGEMENT:

- Project Manager/ ACQCR, Real Network Services
- Field Operations Manager/ CQCR, Link America
- Project Manager/ CQCR, Lazo Technologies
- Route Manager , Genuity
- Site Manager , GTE Government Systems
- Telecommunications team lead/Technical Order Distribution officer, USAF
- Job Control / NCC, USAF
- Quality Assurance, USAF

SAFETY:

- EMT1 Anchorage Alaska, USAF
- Assistant EMT Instructor, University of Alaska
- Red Cross First Aid/CPR instructor, USAF
- Safety Manager, GTE Government Systems Moody AFB
- Safety Supervisor Dart Blue line Extension, Lazo Technologies
- Safety Supervisor DFW Airport (OSHA30), Lazo Technologies

Quality Management:

- USAF Quality Management training, USAF
- QA/QC Moody AFB, USAF
- LAZO Technologies Dart FAT, specifications drawings LFAT
- Link America FAT, specifications drawings LFAT, developed testing procedures
- Link America CQCR

TELEPHONE EQUIPMENT TRAINING AND MAINTENANCE:

- Cisco VOIP, Lucent G3R, AUDIX, Nortel SL100/ DMS100, Meridian North Star, AVAYA VOIP, Mitel SX200 Light L/W 16, ITT 3100, Tie communication ONYX I/II/III, Panasonic PBX, Panasonic Voicemail, Modkey, 1A2 and 1A1, tip and ring test and installation, Pots line, CAT5, CAT6 installation and Test

LAN/WAN EQUIPMENT TRAINING AND MAINTENANCE

- Nortel OC-48/192, Opter LH, Nortel Fmt 150, Fujitsu OC-48, Alcatel OC12, Cisco15454, Ciena metro, Marconi ASX-200BX ATM switch, Promina 800 multiplexers, T-1, T-3/DS3, ISDN, DWDM, Frame Relay, VPN, CSU/DSU, Cisco Adtran/Red Back routers, Cisco firewall, Cisco/Fastron switch.
- Ethernet, Fast Ethernet, Gigabit Ethernet, FDDI, LANE, ISL, 802.1g, VLAN, RIP, IRGP, EIRGP, OSPF2, BGP, IPX, TCP, UDP, TCP/IP

TECHNICAL SKILLS:

- Installation, termination and testing of fiber optic cable infrastructure
- Locate, test and splice copper/fiber cable infrastructure
- Troubleshooting skills to be applied to special circuits, such as alarm and data applications
- Maintained CO records to include line record cards, circuit layout cards and cable records
- AUTOCAD, VISIO, SMARTDRAW

Robert Jay Heckrote

COMPUTER SKILLS:

- Microsoft Windows, MS Exchange and Outlook clients, MS Office applications, server administration including access, security, and permissions, Citrix MetaFrame, basic IIS and SQL server administration, Backup Exec, VPN and RAS support, SMS client, TCP/IP configuration of network devices, Extensive troubleshooting skills

WORK HISTORY:

- 2023-Present Real Network Services, Project Manager/Engineer
- Supervises and trained a task force of up to 20 employees
 - Engineered and bid multi-million-dollar contracts
 - Engineer and schedule installs
 - CQCR
 - Schedule daily tasks for employee
- 2013-2023 Link America, Field Operations Manager
- Supervises and trained a task force of up to 20 employees
 - Generated multi-million-dollar proposals resulting in contracts
 - Plan, coordinated and schedule field installations
 - CQCR for DART LRV camera installation
 - Sharing with Safety Manager Link America Safety representative for DART projects to include employee badge and safety training, JHA process responsibility, perform weekly “job-box” meetings, generated weekly safety reports
 - Schedule daily tasks for employee
- 2003-2013 Lazo Technologies Project Manager/ Engineer
- Supervises and trained a task force of up to 20 employees
 - Engineered and bid multi-million-dollar contracts
 - Engineer and schedule installs
 - Coordinate maintenance and troubleshooting
 - Schedule daily tasks for employee
- 2001-2003 Belo Corporation, Senior Technician
- Install and maintain Lucent G3R
 - schedule phone installs for media events across the USA
 - maintain 4 call centers with aproxamatly 150 agents in each
 - Schedule monthly PMs
- 1997 – 2001 GTE GOVERNMENT SERVICES/General Dynamics
Site Manager/Route Manager/ Senior Field Engineer
- Supervises and trained a task force of up to seven employees
 - Engineer and schedule installs
 - Schedule monthly PMs
 - Schedule daily tasks for employee
 - Supervises a task force of five employees

Robert Jay Heckrote

- Responsible for complying with Air Force requests
- Prepares T & M Estimates
- Cable Locates
- Schedule daily tasks for employee
- Safety Manager responsible for training, reports, incident management, worked directly with OSHA to contribute in the development of safety standards to be implemented at Moody AFB
- Supervises a task force of five employees
- Responsible for complying with Air Force requests
- Prepares T & M Estimates
- Cable Locates
- Schedule daily tasks for employee
- Safety Manager responsible for training, reports, incident management, worked directly with OSHA to contribute in the development of safety standards to be implemented at Moody AFB

1987 – 2012 2E2X1 - COMPUTER, NETWORK, SWITCHING AND CRYPTOGRAPHIC

- Supervises and trained a task force of up to seven employees
- Engineer and schedule installs
- Schedule monthly PMs
- Schedule daily tasks for employee

Appendix C4- AQCR # 2 Resume

Fernando Marino



Industrial Engineer
Green Six Sigma
ISO Quality Auditor
Project Management
MBA Supply Chain

Profile

Over 20+ years of progressive, responsible experience in the public, private, and non-profit sectors, driving enterprise capabilities by leading IT vision, strategies, and large-scale project initiatives. Proven record of success at transforming enterprise applications, infrastructure, quality management, service management, data engineering, processes, and analytical systems. Influence business buy-in, manage change effectively, and align technology initiatives with strategic objectives. Turn around operations and orchestrate large-scale programs in various departments maturing security posture. Manage budgets up to \$40M.

Over 20 years of experience in quality assurance, control, and continuous improvement within Construction, Finance, Health Government and Transportation Organizations. Proven track record in implementing effective quality management systems (QMS) and ensuring compliance with industry standards such as ISO 9001, Six Sigma, and Lean methodologies. Skilled in leading cross-functional teams, conducting audits, and developing process improvements that enhance product quality, reduce defects, and increase customer satisfaction. Adept at fostering a culture of quality and continuous improvement within organizations.

Employment History

- **Flumarino LLC:** President: Quality Assurance.
- **Parkland Hospital:** IT Director of Operations
- **Dallas County:** IT Chief Project Management Office.
- **Texans Can Academies:** Chief Information Officer – Project Manager – Quality Assurance
- **Link America:** Project Manager – Quality Assurance.
- **Protection S.A.:** Chief Quality Officer.

Education

- MBA Supply Change Management, The University of Texas at Dallas 2015.
- Bachelor's degree in finance – University of the North Colombia 2001.
- Bachelor's degree Industrial and technology engineering – University of North Colombia – 1998.

Training and Certifications

- Six Sigma Green Belt Certification – Process Improvement.
- ISO9000
- ISO 9000 Quality Auditor
- ITIL Information Technology Infrastructure Library
- Pursuing PMP Certification, Target: Feb 2025

Projects Participation:

Dallas County Various Projects:

Served as a Program Manager for 24 project managers, including 50 projects with a budget of 200+ million. The responsibilities include ensuring the overall quality of the project by implementing and maintaining quality control standards, verifying that all materials meet project specifications, and overseeing the inspection process to identify and resolve any quality issues. Material management and document control, ensuring accurate tracking, storage, and accessibility of all project-related documents and materials, while adhering to compliance and record-keeping requirements Oversees the business analyst, providing guidance, aligning their tasks with project goals, and ensuring that analysis and reporting are accurate and contribute to informed decision-making throughout the project's lifecycle.

Major Projects: Construction of Data Base Centers, Building Renovations and Software Implementations.

Parkland Hospital IT Helpdesk Quality Assurance Program

Project Manager of record responsible for establishing a quality assurance program for a Helpdesk IT unit in a hospital that focus on developing and implementing a comprehensive QA framework to ensure the delivery of high-quality support services. This includes defining quality standards for service responsiveness, issue resolution, and customer satisfaction, as well as establishing metrics for monitoring and evaluating Helpdesk performance. Design and implementation of procedures for consistent incident tracking, escalation, and documentation, ensuring compliance with healthcare regulations such as HIPAA for data security and confidentiality. Conduct regular training for Helpdesk staff on quality standards, oversee audits to identify areas for improvement, and facilitate continuous feedback loops with end-users to enhance the overall effectiveness and reliability of IT support within the hospital environment. Setting up reporting mechanisms to track and report quality metrics, analyzing data to drive improvements, and ensuring the Helpdesk team meets the hospital's IT service expectations.

REAL Network Service Quality Management System (QMS) – All Projects

Developed, implemented, and maintained the QMS to ensure all construction projects adhere to both regulatory requirements and client specifications. This includes establishing quality standards, guidelines, and processes that align with airport safety and construction regulations and ensuring all project teams are trained and compliant with these standards. Conduct regular audits, inspections, and assessments on-site to monitor project quality, identify non-conformities, and implement corrective actions promptly. Work closely with project managers, engineers, and other stakeholders to promote continuous improvement, analyze quality metrics, and drive performance enhancements. Maintaining thorough documentation of all quality control activities, ensuring traceability and accountability throughout each project phase, and preparing detailed quality reports for both internal stakeholders and DFW Airport authorities.

Texans Can Academies – School District – All Projects

Led the school district in all aspects of process improvement, quality management plan, software, network management, technology architecture, infrastructure on-premises/cloud, and all other implemented applications. Expedited workflows, simplified processes, establish quality metrics for different departments and reduced the district operating costs by 50% through Six Sigma application standards inside of education, finance, facilities, human resources, and IT departments through functional technological solutions including restructuring all operational support programs and projects, policies and procedures. Total Projects: 35+ including IT Projects as well Campus Renovation/Construction Projects.

DFW Airport – PDAS System

Collaborated with the program manager for a PDAS (Public Display and Announcement System) project at DFW Airport responsible for overseeing the entire program lifecycle, including project planning, execution, and evaluation. Develop a strategic vision for the system implementation, manage budgets, and allocate resources effectively while ensuring compliance with airport regulations and safety standards. Collaborate among various stakeholders, including airport officials, contractors, and technology vendors, to ensure seamless integration. Monitor progress against milestones, manage risks, and facilitate communication across teams, monitoring the quality metrics were met, all while maintaining comprehensive documentation and reporting on program status. Ultimately, ensure the successful delivery of the PDAS project, enhancing the airport's operational efficiency and passenger experience.

Bank Of America – Data Center

As the assigned technical engineer responsible for overseeing the design and infrastructure implementation to ensure it meets strict quality standards and regulatory compliance. This includes collaborating with architects and project managers to develop detailed technical specifications, assessing site conditions, and selecting appropriate materials and technologies for reliability and security. Conduct risk assessments, implement best practices for system redundancy and disaster recovery, and oversee the installation of critical systems such as power, cooling, and networking infrastructure. Additionally, responsible for overseeing quality control inspections, testing systems for performance and reliability, and providing technical support throughout the construction process to ensure that the data center operates efficiently and securely upon completion.

NTTA – P25 Antenna Installation – Link America

Responsible for developing and executing a detailed project plan that outlines objectives, timelines, and budget management for the installation of 3 P25 Antennas including connecting to the radio system at North Texas Tollway Authority (NTTA). Coordinate the project team, ensuring effective communication with stakeholders and compliance with regulatory standards. Identify and mitigate risks, oversees quality assurance processes, and maintains thorough documentation throughout the project lifecycle. Additionally, facilitate post-installation testing and establish maintenance protocols to ensure the antenna system operates efficiently and meets all operational requirements.

DART – Link America – CCTV and Access Control System

Collaborated with the Main Project Manager overseeing the installation of CCTV, access control, and alarm systems for over 900 access points on DART trains and train stations. Responsible for coordinating the project lifecycle, from planning and design to execution and quality assurance. Work with engineering teams to interpret construction blueprints, ensuring that installations meet technical specifications and regulatory requirements. Tasked with managing project timelines, budgets, and resources while fostering effective communication among stakeholders, including vendors, contractors, and DART officials. Monitoring quality control measures to ensure all systems function optimally and maintain detailed documentation of progress, changes, and compliance with vendor requirements. Ensure that all installations were completed on schedule and within budget, facilitating training and support for operational staff to ensure seamless integration of the systems.

Protection S.A. – Quality Management System Implementation across Organization.

Chief Quality Officer (CQO) at Protection S.A. responsible for leading the development and implementation of a comprehensive Quality Management System (QMS) that ensures adherence to regulatory standards and enhances operational efficiency. Defined quality policies and objectives, conducting thorough assessments of existing processes, and identifying areas for improvement. Oversees the creation and maintenance of technical documentation, standard operating procedures, and training materials to ensure consistency and compliance across all functions. Implementation of regular quality audits, performance metrics, and feedback mechanisms to monitor the effectiveness of the QMS, promote a culture of continuous improvement, and ensure that all employees are engaged in quality initiatives. Collaboration with cross-functional teams to align quality strategies with organizational goals, fostering a commitment to excellence throughout the institution.

Appendix D - Source of Materials



240406-01450-002 Rev00

07/23/2024

Material	P/N	Manufacturer
Communications Interface Cabinet		
60 Amp 3 Pole Safety Disconnect	MD3604X	Square D
CIC CGB & TGB, Grounding Bar	TGB-A20L12PT	ERICO/ERITECH
30 Amp 3 Pole Safety Disconnect	MD3304X	Square D
Solid State Relay	SSR-2-10-DINDC	FactoryMation
HVAC/Power Backboard, Polycarbonate	CUSTOM	Hoffman
Communications Backboard, Polycarbonate	CUSTOM	Hoffman
Pullout Rack Shelf	A19SHP6	Hoffman
DIN Rail	ADNR1	Hoffman
Data Pocket	ADP2	Hoffman
Fluorescent Cabinet Light	LED24V15	Hoffman
Door Switch, Lighting	ALFSWD	Hoffman
Door Stop	ALGDSTOP2	Hoffman
6" Stainless Steel Skirt	CUSTOM	Hoffman
NEMA 4X Custom Enclosure	W9909	Hoffman
Cabinet Heater, 800W	DAH8001B	Hoffman
13.1K BTU External Air Conditioner	T501226G100	Hoffman
RTD Temperature Sensor	ENVIROSEAL	Watlow
Temperature Controller	EZ-ZONE PM	Watlow
AC Unit Stainless Cage	706SS	Hoffman
Padlock	PL340-50	Abloy
Visual Message Board		
VMB Sign	VMB	Daktronics
18 AWG x 2 Conductor (TVM, VMB, PEC)	AQC224	West Penn Wire
Public Address		
24VDC Power Supply	2787-2144	WAGO
Relay	288-364	WAGO
BLU100 Blue 800	BLU100	BSS
Bluusb	BLUUSB	BSS
DCi Network Series 300N	4/300N	Crown Audio
Relay	ST-LCR1	RDL
Ambient AKG PZM11 LL WR PP	PZM11 LL WR PP	AKG
Pole Speaker	CELL20T	Penton
Elbow Liquid Tight	3422-8	Liquid Tight
1/2 inch Liquid Tight	LA-11-25	Liquid Tight
Connector	MGC	3M
Bracket	GRD021	Bandit
3/4 Banding	S-15342	Bandit
Banding Buckle	S-11332	Bandit
Banding Tool	C00169	Bandit
14 AWG x 2 Conductor Shielded (PA Speaker)	AQC295	West Penn Wire
16 AWG x 2 Conductor Shielded (Ambient Noise Sensor)	AQC294	West Penn Wire
Microphone	US602FL	Electro-Voice
Receptacle Panel XLR-3MR	NC5FP-B-1	Neutrik
Connector, Microphone, XLR-3MR	NC5MX-B	Neutrik
Uninterruptible Power Supply		

Material	P/N	Manufacturer
UPS	5PX3000RT2U	Eaton
I/O Card	RELAY-MS	Eaton
Extended Battery Module	5PXEBM72RT2U	Eaton
Basic Rack PDU (External Bypass Switch)	EHBPL3000R-PDU1U	Eaton
Power Strip, 10-Outlet	PD-1015C-NS	Middle Atlantic
Fiber Optics		
LC LC Patch Cord	040402G5120005M	Corning
6 Strand MM	006T8F-31180-29	Corning
6 Strand Pigtail Bulkhead 50µm	CCH-CP06-E4-P03SH	Corning
Wall Patch Panel	SPH-01P	Corning
1U Fiber Patch Panel	CCH-01U	Corning
Mule Tape	MT1500	Gardner Bender
Content Delivery		
Server	PowerEdge R750xs	Dell
Enclosure	WMRK-4242SVR	Middle Atlantic
Rackmount KVM	B020-U08-19-IP	Tripp Lite
BLU Link to Audio Interface	BLU-USB	BSS
Station Communication Unit	SBOX 2602-i5	Sintron
1RU Shelf	SRSHELF2P1U	Tripp Lite
Multimedia Speakers	Inspire T-20	Creative
Console Computer	OptiPlex Small Form Factor(Plus 7010)	Dell
Console Monitor	S2721QS	Dell
PTT Foot Pedal	642-S	Linemaster
Microphone Assembly (Includes Bogen DDU250 microphone)	9000FA250	Penta
Audio Interface	Studio 68c	Presonus
Maintenance console	OptiPlex Small Form Factor(Plus 7010)	Dell
Maintenance console rackmount mic panel with Telex 450D microphone	8052FA002-001	Penta Corporation
Audio interface with power supply	Studio 68c	Presonus
Rackmount speaker for Maintenance console	RK1007	Synergy Global
Miscellaneous		
Cage Nuts	44351	The Hillman Group
Blank Panel, 3RU	44960	Middle Atlantic
Lacing Bar 2 inch	LBP-1.5R90	Middle Atlantic
Lacing Bar 4 inch	LBP-4R90	Middle Atlantic
Series 282 Terminal Block	282-101	WAGO
Series 282 Intermediate Plate	282-302	WAGO
DIN Rail	210-112	WAGO
Series 282 Fused Terminal Blocks	282-120	WAGO
Fuse	282-457	WAGO
End Plate	249-116	WAGO
Series 282 Intermediate Plate	282-311	WAGO
8 Outlet Power Strip Rack Mount	PD-915RV-RN	Middle Atlantic
Series 282 Spring Terminal Block	282-681	WAGO
Series 282 Intermediate Plate	282-339	WAGO
10 Outlet 15 Amp Power Strip	PD-1015C-NS	Middle Atlantic
Power Strip Vertical Mounting Bracket	PB-DWR	Middle Atlantic

Material	P/N	Manufacturer
Wire Duct 4.25	G4X1.5LG6	Panduit
Wire Duct 4.25 Cover	C4LG6	Panduit
Wire Duct 2.25	G2X1.5LG6	Panduit
Wire Duct 2.25 Cover	C1.5LG6	Panduit
Panduit Labels	S100X150YAJ	Panduit

Appendix E – Forms & Procedures

Main Quality Forms for PIDS Project

1. Nonconformance Report (Non-Design-Build)
2. Nonconformance Report (Design-Build)
3. Quality Control Daily Report
4. Next Day Work Activities
5. Preparatory Meeting – Check List
6. Initial Inspection List
7. Source Inspection Report
8. Deficiency Log
9. Calibration Log
10. Corrective Action Report
11. Corrective Action Report Log
12. Design Control Plan
13. Material Receiving Report
14. Material Receiving Report Log
15. Audit Check List & Result Sheet
16. Stop Work Notice
17. Audit Finding Report
18. Internal Audit Report

Other REAL QMS Forms

(May apply to PIDS Project)

1. SCAR Log
2. Product Repair Form
3. Calibration Record

Referenced REAL Procedures List

1. Procedure: Design Control (10.4.1)
2. Purchasing (10.5)
3. Procedure: Validation of Equipment (10.6)
4. Procedure: Identification and Traceability (10.6.2)
5. Procedure: Control of Third-Party Property (10.6.3)
6. Procedure: Change Management (10.6.6)
7. Procedure: Control of Nonconforming Product (10.6.8.1)
8. Procedure: Control of Nonconforming Service (10.6.8.2)

Appendix F - REAL Networks Services Quality Management System Manual