Policies and Procedures for WISE Authorized Service Centers

Wireless Device Repair, Refurbishment and Remanufacturing

Version 6.0

February 2025

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This document was created by the wireless industry with input from the following companies and their representatives.

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AGiRepair, Jonathan Nestor	**iFixYouri**, Chris Johncke
Apkudo, Don Riley	**Ingram Micro**, Ron Wacker
Allstate, AJ Forsythe, Guennael Delorme	**Motorola Mobility**, Darwin Garcia
Apple, Brian Naumann, Sathy Venkatachalam	**Phoenix Innovations**, Amit Mahajan
Assurant, Adrian List, Brian Feist	**Quantum Lifecycle Partners LP,** Susan Murray, Justin Schwartz
Asurion, Robert Bishop, Ian Mackie, Chad DiDonato	**Quick Ship Brands**, Jordan Insley
AT&T, Keith Burkman	**Reconext**, Sergio Montoya
Back Market, Rachael McKasty	**Relectro**, Chris Hawk
Batteries Plus Bulbs, Jason Fladhammer, Danyelle Kukuk	**Samsung**, Paul Walker, Qanitah Khalid
Blancco, Andrew Kroeger, Russ Ernst	**ServiceCentral Technologies,** Chris Bleess
Bureau Veritas ADT, Steven Yeh	**SGS North America**, Inc., Alfredo Cortes
Clover Wireless, Sergio Montoya	**Shine Electronics Co, Inc.**, John Im, Radi Zummi
Cooper General, Elizabeth Da Cunha	**Sprint**, LaReash Bridges
ecoATM, Larry Worden	**T-Mobile**, Patricia Arnold, Kevin Sweeney, Nancy Caldwell
Encore Repair, Sean Flaherty, Josh Geller	**TSSI**, Jose Madrid, Peter Skuba
FedEx Supply Chain, Tevon Taylor	**United Smart Tech**, Aamir Noorani, Asif Noorani
FutureDial, Thomas Rayas, Dennis Pettit	**U.S. Cellular**, Timothy Ward
Global Resale, Mike Watson	

Section 1   Introduction

1.1   Purpose

The purpose of this document is to define the requirements and processes to become a WISE Authorized Service Center (ASC) for repair, refurbishment, and remanufacturing of wireless devices.

WISE ASC authorization does not imply nor is it inclusive of OEM authorization. An OEM may have additional requirements above and beyond WISE ASC requirements to become an OEM-authorized ASC.

This document also defines the ongoing compliance requirements for WISE ASCs.

1.2   Scope

This document applies to service centers performing non-consumer-facing repair, refurbishment, and remanufacturing. These facilities are typically high-volume production line environments.

Requirements and processes for consumer-facing wireless device service providers are defined in the WISE™ (Wireless Industry Service Excellence) Authorized Service Provider Certification Program document available at wisecertification.com.

1.3   Acronyms and Terms

Table 1.3-1 Terms and Acronyms

Acronym/Term	Definition
ANSI	American National Standards Institute
AQL	Acceptable Quality Limits
ASC	Authorized Service Center
BGA	Ball-Grid Array
CAPA	Corrective and Preventive Action
CPI	Customer Personal Information
CTQ	Critical to Quality
EPA	Environmental Protection Agency
ERP	Enterprise Resource Planning
ESD	Electrostatic Discharge
FAI	First Article Inspection
Golden Sample	Reference device for measurements
HDMI	High-Definition Multimedia Interface
IC	Integrated Circuit

Acronym/Term	Definition
B2B	Business-to-business, for the purposes of this document, includes enterprises and school districts.
IMEI	International Mobile Equipment Identifier
IPC	Institute for Printed Circuits, a global association for the electronic manufacturing industry
Li-Ion	Lithium Ion
NCM	Non-Conforming Material
NIAP	National Information Assurance Partnership
NIST	National Institute of Standards & Technology
OEM	Original Equipment Manufacturer
PCBA	Printed Circuit Board Assembly
QMS	Quality Management System
QC	Quality Control
RF	Radio Frequency
RI	Receiving Inspection
SD	Secure Digital Card
Same unit repair	Where the device under repair is going back to the same user once the repair is complete.
SIM	Subscriber Identity Module
SN	Serial Number
SMT	Surface Mount Technology
SOP	Standard Operating Procedure
Universal Waste	Any of the hazardous wastes that are subject to the universal waste requirements in Title 40 of the U.S. Code of Federal Regulations (CFR), part 273.
USB	Universal Serial Bus
WISE	Wireless Industry Service Excellence
ZIF	Zero Insertion Force

1.4   References

[1] United States Environmental Protection Agency: Title 40, Protection of Environment, June 2020

[2] ISO 9001: Quality Management Systems - Requirements, International Organization for Standardization, 2015 version or later

[3] RIOS™ Recycling Industry Operating Standard, Version 2016 or later

[4] R2: The Sustainable Electronics Reuse and Recycling (R2) Standard, Sustainable Electronics Recycling International (SERI), Version 3.0 or later

[5] e-Stewards: Standard for Ethical and Responsible Reuse, Recycling, and Disposition of Electronic Equipment and Information Technology, the Basel Action Network, version 4.0 or later

Section 2   Authorization Levels

2.1   Level 1

A Level 1 ASC is authorized to perform events that do not require the device to be opened.

2.2   Level 2

A Level 2 ASC is authorized to perform Level 1 events and effect repairs that require the device to be opened but do not require soldering.

2.3   Level 2 Plus

A Level 2 Plus ASC is authorized to perform Level 1 and Level 2 events and minor soldering, which includes reflow, USB, board to board, ZIF, SIM/SD, headset jack, coax, and HDMI connectors; vibrators, coin cell batteries, contact clips and pogo pins that are surface mount technology (SMT) or through hole technology on PCBA (not on flexes). It excludes passive components (resistors, capacitors, diodes, etc.), IC, ball-grid array (BGA), shields, sensors, microphones, lithium-ion batteries, and any other active electrical component. Technicians performing minor soldering shall be IPC certified.

2.4   Level 3

A Level 3 ASC is authorized to perform Level 1 and Level 2 events and effect repairs that require simple soldering. This involves the use of soldering equipment, tip temperatures and consumables that meet OEM requirements to replace specific types of components such as:

Passive SMD components e.g., Capacitors (ceramic & tantalum), resistors (thick & thin film), inductors and diodes

Technicians performing soldering shall be IPC certified. Level 3 is currently outside the scope of ASC authorization and is provided here for definition only.

2.5   Level 4

A Level 4 ASC is authorized to perform Level 1, Level 2 and Level 3 events and effect repairs that require complex soldering. Complex soldering is defined as fine pitch and/or BGA replacement.

Level 4 is currently outside the scope of ASC authorization and is provided here for definition only.

Section 3   Requirements

3.1   CTIA Membership

The service facility shall be a CTIA member company. Membership details may be found at https://www.ctia.org/about-ctia/become-a-member.

3.2   ISO 9001 or RIOS™ Certification

The service facility shall obtain certification to either ISO 9001: "Quality Management Systems – Requirements," version 2015 or Recycling Industry Operating Standard™ (RIOS™) version 2016 or later.

3.3   Sustainability and Responsible Recycling

The service facility shall have documented sustainability policies as a part of the organization's company goals.

For facilities who also offer device recycling services, for sustainability best practices it is recommended that the service facility obtain either R2v3 or e-Stewards certification. However, this is not a requirement to attain CTIA Authorized Service Center certification. Many but not all of the following requirements in this section may be covered by R2 Certification or e-Stewards. Any reproduction of requirements is listed for further certification guidance only and will not require additional work by the facility as a part of the audit.

The service facility shall use a certified R2v3 recycling partner or certified e-Stewards partner when disposing of any scrap material.

3.4   Management Responsibility

An effective quality program requires the involvement and commitment of the organization's top management. Responsibilities include overseeing the creation of the Quality Management System (QMS); Communicating the importance of meeting requirements, including customer, legal, and regulatory requirements; Establishing the quality policy and objectives; Communicating with parties responsible for product and service quality; Providing adequate resources for and reviewing the operation of the QMS.

3.4.1   Authorized Location

ASC authorization is location (i.e., physical address)-specific. Services performed as an ASC may be performed only at the authorized location. Address changes will require recertification.

3.4.2   Quality Metrics

Management shall ensure that all processes are in place to measure quality metrics and that these are maintained as defined by relevant authorizing bodies.

3.4.3   Quality Standards

Management shall maintain levels of quality in accordance with the standards prescribed by relevant authorizing bodies. Management shall oversee the ongoing planning of measurable product quality and process quality objectives to ensure they are established and met throughout the organization, even when changes to the QMS are made.

3.4.4 Service Quality

The service facility shall ensure that services are provided with promptness, due care, skill and diligence and in a professional and workmanlike manner with the level of quality and performance consistent with the practices of top-tier providers of such services and shall be (i) technically accurate, complete and performed in accordance with the requirements of this authorization; and (ii) free from defects in material and workmanship.

3.4.5 Risk of Loss

The service facility shall maintain adequate security for loss prevention control along with a disaster recovery plan and shall, upon CTIA Certification reasonable request, provide such plan to CTIA Certification. Notwithstanding the foregoing, the service facility shall be responsible for risk of loss of, and damage to, any products, equipment, software, facilities, or other materials in its possession or under its control.

3.4.6 Customer focus

Management shall ensure that customer focus is maintained throughout the organization as demonstrated by clearly determining and consistently meeting customer requirements resulting in improved customer satisfaction.

3.4.7 Management Review

Management shall conduct a regular management review of the QMS to ensure that it remains suitable, adequate, and effective to satisfy the company's quality policy and accomplish the organization's quality objectives.

3.5 Contract Review

The service facility shall monitor and control any contracts or other agreements between themselves and the supported customers/clients. This includes, but is not limited to, Non-Disclosure Agreements, Purchasing Agreements, Service Agreements, Pricing Schedules, and Statements of Work.

3.6 Design Control

Design activities are not part of all organizations and therefore not a requirement for ASC authorization. However, if they are part of the activities of the organization, they shall be documented including the overall flow of the activities to include the required responsibilities and authorities, the criteria for design verification and validation, and how design changes are controlled.

3.7 Document and Data Control

The service facility shall have a defined process for creating and updating documented information, which includes identification, appropriate format, and review & approval of documented information. Additional requirements include document control, and in particular, availability and suitability, adequate protection, applicable distribution, access, retrieval, use, storage, preservation, control of changes, and finally retention and disposition.

3.8 Purchasing

The service facility shall identify the methods it utilizes to procure/purchase materials, supplies, and services used to produce goods and/or services.

3.9   Control of Customer Supplied Product

The service facility shall establish and maintain documented procedures for the control, verification, storage, and maintenance of customer-supplied product. This includes all devices, raw material or components, Tools and Golden Samples provided by the customer.

Customer-owned Tools and Golden Samples shall be clearly identified. Tools shall be identified and tagged according to company processes. Sample identification contains the legend: "[Customer Company Name] Property".

The Golden Samples shall be separately controlled and maintained.

The service facility shall identify, segregate, and protect customer property from the time of receipt, during storage and throughout the product realization process. If customer property is lost, damaged or otherwise identified as unsuitable for use, these conditions shall be recorded and reported to the customer.

Any customer-owned material or tooling that is lost, damaged or otherwise unsuitable for use shall be reported to the customer, and records shall be maintained.

Unsuitable material shall be handled through the NCM system.

There shall be a defined individual(s) responsible for the materials control of customer-supplied product and providing feedback for scheduling of receipt of raw materials to ensure 100% on time delivery.

There shall be a defined individual(s) responsible for reporting any NCM issues to management to forward to the customer.

There shall be a defined individual(s) responsible for keeping traceability of all devices delivered to the facility by customer and providing feedback for scheduling of receipt of devices to ensure 100% on time delivery.

There shall be a defined individual(s) responsible for cycle counting product and conducting customer-requested physical inventories.

There shall be separation of duties for individuals responsible for production and quality assurance.

3.10   Product Availability and Traceability

Where appropriate, the identification system shall allow for traceability from the finished product back to incoming material records and customer specifications. Products shall be suitably identified by a part number or job number corresponding to applicable drawings, specifications and other technical documents related to the product.

3.11   Process Control

The service facility shall ensure that all necessary elements of the production process are planned and conducted under control conditions to ensure customer requirements are met.

3.12   Inspection and Testing

The service facility shall:

- Inspect, test, and identify the product during the process in accordance with documented procedures.
- Determine whether the product is conforming to specifications.

- Hold the product until required inspections and tests have been performed.
- Clearly identify any failed or nonconforming product

Inspection and test results shall be maintained.

3.13   Control of Inspection, Measuring and Test Equipment

All monitoring and measurement equipment used for product and process verification shall be controlled and calibrated against nationally traceable standards at specified intervals.

3.13.1   Control of Nonconforming Product

Nonconforming product shall be identified and controlled to prevent unintended use or delivery. Procedure shall be documented to define controls, responsibility, and authority.

3.14   Corrective and Preventive Action

The service facility's CAPA program shall be documented and utilized to collect and analyze information, identify, and investigate product and quality problems, and take appropriate and effective corrective and/or preventive action to prevent their recurrence.

3.15   Handling, Storage and Packaging

The service facility shall document and maintain procedures/process for handling, storage, packaging, and shall conform to all regulatory standards and requirements.

The goal is to eliminate/minimize damaged or lost goods, wasted effort, and material in replacing those goods. The service facility shall make every reasonable effort to eliminate or reduce corrugated materials within the manufacturing area.

Handling - Ensure proper handling methods to prevent unanticipated damage to the product when in custody.

Storage - Provide proper and secure storage areas to help prevent improper exposure or damage to product. Storage shall meet all regulatory compliance requirements.

Packaging - Utilize the correct packaging materials to ensure security, identity, and conformance to the appropriate regulatory standards and provide proper controls and identification. Examples: ESD packaging, battery packaging, etc.

3.16   Control of Quality Records

The service facility shall have control over the quality records to include distribution, access, retrieval and use, storage and preservation, version/change control, and retention/disposition.

3.17   Internal Quality Audits

The service facility shall conduct internal audits at planned intervals to provide information on whether the QMS conforms to the organization's requirements for ISO 9001 compliance and is effectively implemented and maintained.

3.18   Training

The service facility shall have a documented training program with records of training being performed by qualified instructors. These records shall be available upon request.

3.19   Repair Guidelines

The following guidelines will apply based on the level of authorization and the scope of services provided by the service facility.

3.19.1   General Overview

Product and parts traceability/tracking shall be well defined, visible, and evident throughout the process. All sub-processes shall have well-defined operator work instructions visible at each workstation. Shop floor controls shall ensure products move through all required processes. All tools, jigs and test equipment shall comply with the relevant safety and calibration requirements. These assets shall be logged and managed within a preventative maintenance program. Assembly processes shall utilize best-in-class and economical practices for assembly including, but not limited to, software flashing, tools and fixturing, and error proofing where applicable. All applicable workstations shall be ESD compliant.

As a best practice, the facility should notify customers on the use of parts not sourced directly from an OEM or OEM supplier as a part of the repair.

3.19.2   ERP System

All products shall be received into an electronic Enterprise Resource Planning (ERP) system, or equivalent, and given a unique device identifier. This unique device identifier shall travel with the device through all value streams after reverse logistics to maintain full traceability of received products. A documented process shall be in place particularly addressing, but not limited to, receiving controls and safe handling of inbound products.

3.19.3   Receiving Inspection

The service facility shall have a documented Receiving Inspection (RI) process. The RI process shall inspect all incoming finished goods and/or materials using an AQL sampling plan, or equivalent ANSI standard. If non-conforming product is found at RI, a reaction plan shall be developed for containing and segregating suspected product. Additionally, a corrective action process shall be established to document the problem statement, root cause, containment, corrective action, and validation plan. A dedicated hold area, preferably a caged area with limited access, shall be established to quarantine incoming suspect product. A documented process for identifying suspect and non-conforming product shall be established and maintained.

3.19.4   Triage

A documented triage process shall be defined with device traceability, serialized tracking and operator work instructions at each workstation.

3.19.5   Disassembly

The disassembly process shall incorporate material controls ensuring segregation among products being actively processed. All workstations within the disassembly area shall be equipped with, or have access to, compliant ESD safety equipment. All products pulled for disassembly shall receive an in-process status per unique identifier reflecting the specific location and custody owner of the device. Serialized tracking shall be utilized for key components at the part level, where relevant. Disassembly instructions shall be documented and updated according to device type and be made available at each station.

3.19.6   Repair

The service facility shall have a repeatable repair process with documented work instructions per device type specifying proper usage of tooling and equipment. All workstations within the repair area shall be equipped with, or have access to, compliant ESD safety equipment. All tooling and equipment shall be

logged in a preventative maintenance system incorporating calibration procedures and intervals. Error-proofing shall be incorporated into repair processes containing elevated critical to quality risk elements and characteristics.

Where repair processes also use outsourced services, the service facility shall disclose their outsource partners, including their physical address, and the work flow of repair processes. The service facility shall have a basic requirements document(s) (BRD) for the outsourced partner. At final touch, the service facility shall have an inbound quality control process as a part of its management system for the outsourced partner.

3.19.7   Assembly

The service facility shall maintain traceability of components containing data or proprietary technology throughout the assembly process. Traceability shall identify each unit according to a unique device identifier. Assembly processes shall utilize best-in-class and economical practices for assembly including, but not limited to, software, tools, fixturing and error proofing where applicable. Assembly process design shall consider ESD concerns. Serialized tracking shall be utilized for key components at the part level, where relevant. Operators shall be trained, certified, and periodically recertified when performing special processes such as soldering and plating. Equipment, fixtures and measuring devices shall be maintained through periodic calibration or preventive maintenance.

3.19.8   Software / Flashing (As Applicable)

The service facility shall perform software flash to the latest approved version(s) along with factory reset utilizing validated software. Flashing software version records shall be maintained to provide reasonable traceability to individual devices. Flashing records per IMEI or serial number shall be kept for a minimum of 5 years as evidence that proper and/or latest software was programmed to each device.

For same unit repair devices where the device is going back to the same user, there is no requirement to clear the data.

For devices where software cannot be updated due to enterprise software, then a partial cleaning or factory reset is acceptable with written acknowledgement from the customer contract.

3.19.9   RF (As Applicable)

The service facility shall develop an RF test plan to either customer or 3GPP standard including path loss considerations. All RF testing equipment shall be subject to a routine device calibration, be logged in a preventative maintenance system incorporating calibration procedures and include use of Golden Sample device to assure correlation and matching between one or multiple testers. The RF testing process shall include error proofing to flag any failed devices and provide users with a clear status of the result. All RF test results shall be electronically logged and captured per device SN or IMEI. A documented work instruction shall be maintained for proper handling and usage of RF test equipment additionally referencing approved RF test plan and procedure.

3.19.10 Functional Testing
Functional testing at a minimum shall include:

- Battery Health

- LCD Test (discoloration, pixels/lines missing etc.)

- Keypads & Buttons (power, home, volume etc.)

- Wi-Fi® connectivity

- Bluetooth® connectivity

- Proximity sensor (as applicable)

- Camera focus

- Camera color

- Vibe motor (as applicable)

- GPS/NFC (as applicable)

- Touchscreen response

- Microphone/speaker/earpiece functioning (as applicable)

- Flash led for camera (as applicable)

- Charging circuit

- Stylus (as applicable)

- USB Ports (as applicable)

- SD Card Reader (as applicable)

Some devices may require additional features to be tested. Test results should be available by serial number or IMEI, and a user assisted test program is recommended (3PL, OEM, or internally developed).

3.19.11 Content Clearing

The service facility shall have a process to perform content clearing utilizing validated software. Content clearing records shall be maintained to provide traceability to prove individual devices have been cleared.

3.19.12 In-line QC

The service facility shall perform an in-line quality control (QC) inspection of CTQ's on 100% of repaired product and quality assurance (QA) inspection of a sample of repaired product after QC. The QA process shall be managed according to an AQL sampling plan or equivalent ANSI standard. Sample size or AQL level shall be determined based on the best statistical data available. If no data is available, sound engineering judgement shall determine a conservative sampling approach until useful statistical data are available. QC and QA Inspectors shall be trained on proper use of measurement systems, inspection criteria and inspection instructions. Inspectors shall be certified to specific test or inspection points rather than "in general" and recertified on a periodic basis. A reaction plan shall be documented including, but not limited to, containment, identification, segregation, and disposition of nonconforming material. The reaction plan shall also plan for CAPA as appropriate.

3.19.13 External Vendor Management

The service facility shall use vendors of direct materials that have been validated through a documented vendor approval process. The process shall include verification of the vendor's technical, logistical, and financial abilities. The process shall include onsite visits (audits) as necessary to ensure compliance with product and program requirements. Once approved, a vendor shall also be reevaluated for new business (new models, new product lines) as appropriate. Ongoing verification of vendors' compliance shall continue throughout program life using appropriate means including, at a minimum, desk audits of chain of custody. Additional onsite audits may be conducted as necessary. Models or product lines shall be evaluated through a documented First Article Inspection (FAI) process. The process shall include evaluation of CTQ's identified during program launch. Models or product lines shall be evaluated on an ongoing basis at the service facility using AQL sampling similar to that used by the service facility's in-line QC.

3.20   Technician Certification

The service facility shall have at least one operational lead per shift that is WISE™ certified. The level of WISE certification shall be commensurate with the level of ASC authorization. WISE certification is described and obtained at wisecertification.com.

3.21   Customer Personal Information (CPI)

The service facility shall approach Customer Personal Information (CPI) protection with the highest priority by demonstrating protection of the following, but not limited to:

- Customer phone number (as applicable)
- Customer contact information
- Call logs
- Personal contact list
- Phone book (as applicable)
- Pictures/videos
- Dictated notes
- Applications
- Text messages
- Browsing history
- Data held within a SIM card
- Data held within a SD card

The service facility shall utilize one or more methods in compliance with R2 Data Destruction methodology and NIST 800-88 to clear a device or render the content unavailable. The 2013 version, or a later version of R2, shall be used.

The service facility shall destroy media-bearing devices in such a manner that the information contained is unrecoverable.

3.22   Handling Lithium-Ion Batteries

Precautionary measures and best practices shall be followed when handling devices with Li-Ion batteries. See Appendix A for guidance.

3.23   Employees Emergency Actions

The service facility shall have an employee emergency action plan in place.

3.24   First Aid Procedures

The service facility shall always have first aid equipment on-hand and documented procedures for handling incidents.

3.25   Facility Structure

The service facility shall be fully enclosed to adequately safeguard the workers and the product.

The service facility shall have adequate heating and cooling to maintain proper working temperatures between 55 degrees F and 86 degrees F (13 - 30 C).

3.26 Contingency and Disaster Recovery

The service facility shall have a detailed contingency plan to identify core activities in the areas of Data Backup Plan, Disaster Recovery Plan, Emergency Mode Operation Plan, Testing and Revision, and Applications and Data Criticality Analysis. The service facility shall be able to demonstrate and implement a contingency plan to ensure the confidentiality, integrity, and availability of sensitive information during and after an emergency as dictated by your customer.

The core objectives of contingency planning shall include the capability to:

- Restore operations at an alternate site (if necessary)
- Recover operations using alternate equipment (if necessary)
- Perform some or all of the affected business processes using other means

3.27 Physical Security

The service facility shall comply with industry best practice and make all reasonable efforts to ensure the physical security of materials, products and assets within its facility and/or within contractual control boundaries should they extend beyond the facility's physical location.

The service facility shall demonstrate the following:

- The service facility shall have fully operational intrusion detection systems in place
  - o Operational intrusion detection systems shall have records of testing
  - o Intrusion systems shall have documented incident escalation framework and adequate contact information
- The service facility shall have adequate security lighting in place
  - o Security lighting shall be appropriate to allow for proper surveillance camera operation and review
  - o Security lighting shall be sufficient to allow for employee safety inside all areas of the facility and outside the facility
- The service facility shall have appropriate video surveillance in restricted and sensitive areas of the facility
  - o Video surveillance record retention period shall not be less than 60 days

Section 4 Multi-Site (Campus) Authorization

4.1 Qualifications

To qualify for multi-site certification, the organization shall designate a central office or primary site from which the organization's processes are centrally controlled.

All repair service locations shall have standardized operations for equipment receiving, repair processes, waste handling (as applicable), and quality control. The organization shall demonstrate they have the resources and expertise to effectively manage and oversee the multi-site system.

All sites shall adhere to the same documented procedures, work instructions, and forms.

Records pertaining to the service facility's sustainable policies and quality management shall be maintained centrally with easy access for auditors.

Regular internal audits as defined by the internal QMS shall be conducted at each site to ensure adherence to the central management system.

4.2 Requirements

All facilities must comply with the policies and procedures detailed in Section 3.0 of this document.

4.3 Audit

An initial audit of each repair service location is required for authorization. For subsequent annual audits, the primary site will be audited along with a secondary site based on ISO 2859-1:1999, sampling procedures for inspection by attributes. The primary site shall be audited on an annual basis in accordance with Section 6.2.

4.4 Fees

An annual license fee of $2,000 USD is assessed for each authorized location. CTIA Certification will invoice the service facility for the fee.

Section 5   Authorization Process

5.1   Application Submission

The service facility shall contact CTIA Certification at application@ctiacertification.org to begin the application process.

CTIA Certification will provide instructions for submitting the application package. The application package shall consist of:

- Requested authorization level
- Proof of ISO 9001 accreditation, 2015 version or later
- Proof of R2 certification, Version 3.0 or later (as applicable)
- Company overview, including experience with servicing wireless devices
- Overview of facilities/sites involved with the application for WISE Authorization
- Organizational chart of location(s) being audited
- Nonconformance findings and CAPA plan from recent audits

5.2   Application Review

CTIA Certification will review the application package for completeness and adequacy. If the package is sufficient, an on-site audit of the facility will be scheduled.

5.3   Audit Process

CTIA Certification will provide the service facility with a listing of approved auditors.

The service facility shall select an auditor from the CTIA Certification-provided approved auditor list and shall be responsible for contracting with the auditor for the on-site audit. Once scheduled, the date of the audit, and auditor utilized, shall be communicated to CTIA Certification.

During the audit, the auditor will inspect the service facility and request, as necessary, evidence of compliance to the requirements in Section 2 of this document. Additionally, the service facility shall report to the auditor any violations of regulatory requirements (e.g., EPA, OSHA) for which it has been assessed.

At the end of the audit, the auditor will conduct an assessment review and exit meeting. Within three business days, the auditor will provide the ASC Audit Report documenting any deficiencies identified during the audit, including deficiencies corrected during the audit. This document will also identify actions the service facility must take to resolve each deficiency. The service facility shall sign the document, indicating its agreement, and return it to the auditor. Should there be a disagreement requiring an appeal, the service facility shall contact CTIA Certification for a resolution. The auditor will provide a copy of the report to CTIA Certification.

5.4   Authorization Decision

After addressing all deficiencies identified in the ASC Audit Report, the service facility shall provide appropriate evidence (e.g., documentation, photos) to the auditor. Once the auditor is satisfied that all deficiencies have been cleared, the auditor will notify CTIA Certification of the successful completion of the audit. CTIA Certification will grant ASC authorization to the service facility once all remaining requirements are met.

5.5   License and Service Agreement

The ASC License and Service Agreement is the legal agreement between CTIA Certification and the ASC. Upon ASC authorization, CTIA Certification will provide the agreement to the service facility for signature.

5.6   Annual License Fee

An annual license fee of $2,000 USD is assessed for each authorized location. CTIA Certification will invoice the service facility for the fee.

5.7   ASC Logo and Certificate

The WISE ASC logo identifies the service facility as meeting industry requirements for the servicing of wireless devices. The logo pertains to the authorized location only.

Service facilities licensed by CTIA Certification as ASCs are issued a WISE ASC logo with a unique facility identification number. CTIA Certification will provide the ASC with digital files for reproduction of the logo, along with the WISE ASC Brand Guidelines and WISE ASC Marks Usage Guidelines. The ASC will also be provided with a framed certificate incorporating this logo and identifying the facility as a WISE Certification Authorized Service Center.

Section 6   Ongoing Compliance Requirements

6.1   Maintaining Compliance with ASC Requirements

The ASC shall maintain compliance with all requirements in this document.

6.2   Certification Audits

The service facility is required to complete an initial full in-person audit, conducted by a CTIA Certification-approved auditor. The ASC shall schedule and complete a surveillance audit, conducted by a CTIA Certification-approved auditor, in years two and three between certification audits. All full certification audits shall be in-person. For secondary site audits, the initial audit must be conducted in-person. Proceeding audits can be conducted remotely.

Years of Certification	Audit Type
1	Full certification audit
2	Surveillance Audit
3	Surveillance Audit
4	Full certification audit
5	Surveillance Audit
6	Surveillance Audit
7	Full certification audit
8	Surveillance Audit
9	Surveillance Audit

Surveillance and full certification audits shall be completed 60 days from the anniversary date of their original certification.

6.3   Annual ASC License and Service Agreement Renewal

The ASC License and Service Agreement is renewed on January 1 of each year. CTIA Certification will provide the agreement to the ASC for signature.

6.4   Annual License Fee

Along with the renewal of the ASC License and Service Agreement, CTIA Certification will invoice the ASC for the annual license fee of $2,000 USD for each authorized location. The ASC shall pay this fee.

6.5   Notification of Material Financial or Management Changes

The ASC shall promptly notify CTIA Certification of any material change in its financial condition, management, or control/ownership of a majority of its outstanding equity.

Appendix A   Guidance for Handling Lithium-Ion Batteries

A.1   Background

Like many consumer electronics devices, wireless devices contain Li-Ion batteries and sensitive electronic components that are designed to be serviced by qualified technicians. Li-Ion batteries are a safety-critical component of these devices and must be handled with care.

When fully or partially charged, Li-Ion batteries can combust if punctured, bent, dented or damaged. Basic best practices can minimize incidents with Li-Ion batteries. All appropriate measures to protect personnel against possible chemical, thermal, and/or explosion hazards shall be taken.

It is important to note that consumer do-it-yourself (DIY) battery replacement or repair kits, often made available via third parties, do not ensure safety-critical best practices. Some may not adhere to basic lithium battery design requirements, although form and fit criteria are met. It is very important to use battery packs approved by the OEM.

Technicians who perform device repairs shall be properly trained and provided with the appropriate tools, components, and work instructions. Careless work during a repair, or the use of improper components, can lead to safety risks including battery thermal events.

The batteries used in most modern wireless devices are contained in a soft pouch protected by the outer enclosure of the device. When the device enclosure is opened for a repair, the battery can be damaged by tools or other components contacting the battery. Damaging the battery can create a safety risk.

It is highly recommended and in many cases an OEM requirement to replace a soft pouch battery that has been removed from a device, as the removal could damage the battery. A removed battery, including those "harvested" from other devices, does not provide the same guarantee of quality and safety as a new battery.

Use the highest quality components/batteries available along with proper tools.

Any repair requiring the removal of screws or other components shall be carefully performed to ensure that loose screws or misaligned components are not left inside a device. Loose screws or misaligned components can damage the battery and potentially lead to a battery thermal event.

Appropriate final testing according to each organization's internal processes and procedures shall be done to ensure the quality and safety of any repair. Best practices including checking and re-checking your work will ensure these standards are met.

A.2   Battery Service: Recommended Equipment

The service facility shall possess the following equipment for working on Li-Ion batteries:

- Neoprene or nitrile gloves (EN 374) or equivalent
- Heat-resistant gloves
- Safety glasses
- Cleaning wipes (to clean safety glasses)
- 8–10 cups of clean, dry, untreated sand, stored in a container as specified below
- Wide-mouth non-breakable plastic quick-pour sand container with a flip-top lid
  - The sand container shall be within arm's reach (2 ft. or 0.6 m), on either side of the workstation, for immediate access during an unexpected thermal event. It shall not be stored above or below the workstation.

- Hand broom with dust pan

- Existing ESD bags or re-sealable, plastic disposal bags, and boxes

- Yellow fire-proof safety cabinet

- Re-sealable aluminized bags

- ABC fire extinguisher

- Voltmeter and appropriate wiring

A.3   Battery Service: Safety Precautions, Training, and Handling Guidelines

The service facility shall follow these precautions and guidelines when working on Li-Ion batteries:

- Wear safety glasses whenever handling batteries.

- Remove jewelry items such as rings, wristwatches, pendants, etc., that could come in contact with the battery terminals.

- All swollen, creased, dented, punctured, or otherwise deformed, batteries shall be processed in accordance with appropriate SOP.

- Always inspect Standard Operating Procedure prior to disassembly to ensure the proper temperature guidelines are followed when disassembling devices.

- Do not handle battery packs if they feel warm/hot to the touch or look deformed (swollen, crushed, have breached enclosure, show signs of electrolyte leakage). Ask for a supervisor's involvement.

- Do not attempt to handle a venting battery or device containing one.

- All swollen, creased, dented, punctured, or otherwise deformed batteries shall be processed in accordance with appropriate SOP.

- Handle batteries with signs of leakage in a well-ventilated area.

- Always have all safety equipment available (quick-pour sand container, ABC fire extinguisher, fire safety gloves and dedicated Li-Ion battery containment container) when disassembling or processing devices with internal soft-pouch batteries.

- Cover all metal work surfaces with an insulating material (ESD mat). Work areas shall be kept clean and free of metal or sharp objects that could short the contacts, puncture or damage the cover to the battery.

- All tools shall be made of ESD material with no sharp edges in order to prevent dents and punctures.

- Promptly dispose of used batteries in accordance with local regulations.

A.3.1   Battery Safety Training

Every technician handling batteries, regardless of their skill level, shall complete battery safety training that includes the best practices described here. Training shall take place on a regular basis, with the recommended frequency being once a year. It is also recommended to undergo training if and when an unfamiliar battery pack design or chemistry is to be handled.

A.3.2   Battery Handling

The service facility shall follow these key handling and safety points when working on Li-Ion batteries. Some can be dangerous to the people carrying them out. All appropriate measures to protect personnel against possible chemical, thermal, and/or explosion hazards shall be taken.

- Do not subject batteries or battery-powered devices to high levels of force.

- All appropriate measures to protect personnel against possible chemical, thermal, and/or explosion hazards shall be taken

- Excessive force shall not be used to free a battery lodged inside the housing.

- Check for proper fit before inserting the battery into any type of housing.

- Batteries shall not be forced into the battery cavity.

- Do not expose Li Ion batteries to liquids.

- Only use inspection tools (such as calipers and rulers) that are made from, or covered with a non-conductive material.

- Properly connect the battery in the electronic device, charger, or testing equipment.

- Use only certified chargers. Non-certified chargers may not properly charge or may over-charge a battery, causing swelling.

- Discharge battery only in an approved device.

- Do not short circuit the battery.

- Do not directly solder a battery.

- Never attempt to open a battery

- Never attempt to repair a battery

- Remove batteries from a device that will not be used for an extended period (if possible).

- Do not reuse soft-pouch batteries.

- If something unusual is noticed, stop using the battery. If the battery or battery-powered device gives off an unusual odor, overheats, vents, sparks, is discolored, deformed, or reacts unusually in any way during use, recharging or storage, remove it from the device or battery charger and discontinue use.

- Never use a battery if it is:
  o Swollen
  o Dented
  o Creased
  o Punctured

- Keep metal tools away from batteries

- Never use water to put out a battery fire. Only use an ABC fire extinguisher and Li-Ion battery containment device with sand.

A.4   New Battery Installation

The service facility shall follow this guidance when working with new Li-Ion battery assemblies:

- Follow the provided work instructions.

- When required to remove a battery that is installed in a device using adhesive, always use new battery adhesives to install the replacement battery. Reusing the adhesive left on the housing could lead to the battery coming loose and may cause safety issues.

- Before placing new adhesive, completely remove and clean any residue left on the housing using isopropyl alcohol or other suitable solvent before placing new adhesive.

- Never place a new adhesive on top of existing adhesive since it increases the height and could cause interference with the internal space or battery cavity.

- Ensuring proper alignment of the adhesive to the housing surface is critical for proper bonding strength.

- Do not use clamps to hold the battery pack in place during the rework process.

- Ensure proper use of press and hand roller so that adhesive properly bonds to the housing and battery. Insufficient bonding may cause the battery to loosen, resulting in safety issues.

- Some batteries may require application of pads and/or tape after assembly; follow provided work instructions to attach protective materials.

- Inspect the housing to ensure no sharp edges contact the battery.

- Inspect battery flex or cable for signs of damage.

- Inspect the connectors on the battery flex/cables and board to ensure they are not damaged or corroded.

- Proper alignment of the battery to the housing surface is critical for safety.

- Do not place labels on the battery unless required by the OEM.

- Ensure the battery connector is properly connected to the board.

- Secure all battery connectors and the battery pack itself by using properly placed adhesive tape and wraps. This should be clearly explained in the work instruction.

A.5   Storage Guidelines

The service facility shall follow these Li-Ion battery storage guidelines:

- Store batteries in a well-ventilated, dry area. The storage temperature shall be between -4° F (-20° C) and 113° F (+45° C), or according to the battery manufacturer's guidelines.

- Lithium-ion batteries function best in the temperature range of 32° to 95° F (0° to 35° C)

- Store batteries in an isolated area, away from combustible materials and preferably in a fireproof safety container

- Store lithium batteries in their original protective cases, padding and boxes

- Do not compress or force batteries into boxes if they do not fit

- Store used batteries in a separate location from new batteries

- Make sure to place only one battery in each box or pad, exactly as provided by the manufacturer

- Any Li-Ion battery storage area shall have immediate access to quick-pour sand container with sand, an ABC fire extinguisher and a Li-Ion battery containment device

- Never stack heavy objects on top of boxes containing Li-Ion batteries and take necessary precautions to avoid crushing or puncturing the cell case. Severe damage may potentially lead to hazardous chemical release or a battery thermal event.

- Minimize the number of Li-Ion battery boxes that are stacked on top of each other

- Do not allow excessive quantities of batteries to accumulate in any storage area

The service facility shall follow the U.S. Environmental Protection Agency (EPA) universal waste batteries regulations, U.S. EPA: Title 40, Protection of Environment, Part 273, to determine the proper length of time to hold Li-Ion batteries in inventory. Table A.5-1 provides guidance on complying with universal waste battery requirements. All federal universal waste regulations can referenced here: https://www.govinfo.gov/content/pkg/CFR-2006-title40-vol25/pdf/CFR-2006-title40-vol25-sec262-34.pdf.

Table A.5-1 Guidance on Waste Management Plan, Universal Waste Batteries

Description	Container	Status/Instructions	Anticipated Volume Accumulation	Accumulate No Longer Than:
Failed Battery, Lithium Ion	blue barrel	Once battery has been determined as end of life, leads must be taped. Accumulate at Repair workstations in locked cages. Once cage storage is full, move to end of life blue barrel with the appropriate Lithium Ion Battery marking on barrel.	<100 lbs per month	90 days

A.6   Battery Recycling and Shipment

The service facility shall source a recycle provider and adhere to their prescribed shipping procedures. The recycler shall have appropriate certifications including R2, version 3 or later.

To find R2 recyclers, please see https://sustainableelectronics.org/recyclers.

Appendix B   Revision History

Date	Version	Description
July 2019	1.0	Initial release
August 2019	1.1	Updated Acknowledgements and copyright statement Changed administrative fee to license fee
November 2019	2.0	Added authorization levels
July 2020	2.1	Updated Appendix A Guidance for Handling Lithium-Ion Batteries Updated Section 3.18.9 RF and 3.18.20 Functional Testing Added to the definitions section; EPA and Universal Waste
September 2020	2.2	Added Appendix B Live Virtual Audit Procedures
February 2023	3.0	Update Table 1.3 1 Terms and Acronyms to reflect updates made to Section 2.3 Added 2.3 Level 2 Plus; definition for Level 2 Plus authorization Revised Section 3 to remove R2 as a requirement for certification Added Section 3.3 Sustainability and Responsible Recycling Added a best practice for parts transparency to Section 3.19.1 Added Table ASC Surveillance Audit Schedule to Section 5.3
June 2023	4.0	Expanded the scope of the program to include service facilities performing repair, refurbishment, and remanufacturing of Chromebooks. Added notations on requirements that are only applicable for smartphone/tablet repair. Changed the program name to WISE Authorized Service Centers. Global changes applied throughout the document.
November 2024	5.0	Added policies and procedures for auditing outsourced repair processes in Section 3.19.6 Added policies and procedures for data flashing in Section 3.19.8 Added Section 4 Multi-Site (Campus) Authorization policies and procedures Modified Section 6.2 and added a new requirement of 60 days to renew authorization Removed Appendix B Live Virtual Audit Procedures and updated appendix reference accordingly
February 2025	6.0	Added Recycling Industry Operating Standard™ (RIOS™) version 2016 or later as an acceptable alternative to ISO 9001 Certification (Section 3.2)