

# R2v3 *The Next Evolution of the R2 Standard*

The original intent of the R2 Standard remains unchanged—to require best practices for safe and sustainable reuse and recycling of electronic equipment, components and materials. Many of the requirements in R2v3 will be familiar—just reorganized into **Core Requirements** (applicable to all R2 facilities) and specialized **Process Requirements** (additional requirements applicable only to R2 facilities that perform specific processes). In cases where requirements needed to be clarified or strengthened, The R2 Technical Advisory Committee (TAC) has proposed changes to clarify requirements and expectations, and ultimately achieve more consistent implementation, audits and outcomes.

## Summary of **CORE** Requirement Changes



# 1

### Scope *(In R2:2013, covered by Provision 1)*

- Added scope requirements to ensure transparency and that all R2-related activities performed by a facility are audited and included on the R2 Certificate.
- Revised the definition of “scope” to clarify included and excluded operations/activities.



# 2

### Hierarchy of Responsible Management Strategies

*(In R2:2013, covered by Provision 2)*

- Focus remains on reuse before other management strategies. This core principle of R2 is aligned with the global trend towards a more circular economy.
- Focus Materials continue to be prohibited from disposal.



# 3

### EH&S Management System

*(In R2:2013, covered under Provisions 1, 4, 13)*

- Includes all of the core EH&S related requirements in the same section for greater clarity and efficiency. Removed redundant requirements.
- Increased emphasis on risk assessment, inspection, and monitoring activities to ensure potential hazards are being identified and managed.

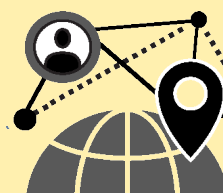


# 4

### Legal and Other Requirements

*(In R2:2013, covered under Provision 3)*

- Separated compliance monitoring into individual requirements to ensure adequate coverage of each.
- New requirements: prohibition on the use of child and forced labor; and developing and maintaining a non-discrimination policy.



# 5

### Tracking Throughput

*(In R2:2013, covered by Provision 7)*

- New requirements for tracking /managing /maintaining records for all equipment managed.
- New requirements regarding inventory levels and storage of R2 controlled streams.
- More clarity regarding inbound, under control, and outbound equipment.



## 6 Sorting, Categorization and Processing

(Clarifies & strengthens R2:2013 Provisions 2 & 6)

- Simplified the new **R2 Equipment Categorization (REC)** reference document that is to be used in conjunction with the R2v3 Standard to identify the functional, cosmetic, and data sanitization status of electronic equipment, components and materials.
- More clarity about the processing paths for R2 Controlled Streams.
- Permits facilities to use their own internal categories if they are mapped to corresponding categories in the REC.



## 7

## Data Security

(In R2:2013, covered under Provisions 8 & 10)

- Enhanced requirements for securing the facility; receiving and securing data containing equipment; and securing and tracking equipment during transport.
- Defines the approved methods for sanitizing equipment in a timely & effective manner.

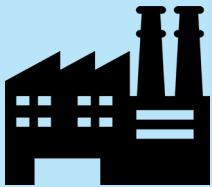


## 8

## Focus Materials

(In R2:2013, covered by Provision 5)

- Requires FM management plan and downstream flowchart to final disposition **OR** to the first R2 Facility.
- Existing R2:2013 requirements for Removal of FMs and Selection of Downstream Vendors move to PROCESS Requirements.



## 9

## Facility Requirements

(In R2:2013, covered under Provisions 9 & 11)

- Defines requirements for processing and storage areas.
- Requires an evaluation of risk and insurance for injury/illness.
- Requires closure plan and financial assurance.
- Pollution liability insurance moved to PROCESS Requirements.



## 10

## Transport

(In R2:2013, covered under Provision 12)

- Proper packing of equipment, components, and materials during transport to prevent environmental, health, or safety hazards; and to secure data containing items.
- Clear and accurate labeling and shipping documents.
- All transport, including import/export, must be in compliance with legal requirements.

### **Please note:**

**Core Requirements** 1-10 are applicable to all R2 facilities. The **Process Requirements** on the next page are additional requirements that apply only to R2 facilities that perform those specific processes. Many **Process Requirements** are based on R2:2013 requirements, but are reorganized, clarified and/or enhanced to achieve more consistent implementation and outcomes.

Facilities are not required to perform all R2-related processes in order to be R2 Certified. It is important to note, however, that all R2-related processes performed at a facility **must be audited** and cannot be excluded from R2 Certification.

Certified specialty processes will be included on the R2 Certificate to provide customers/suppliers more information about the expertise and capabilities of each R2 Certified facility.

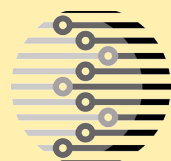
# Summary of **PROCESS** Requirement Changes



## **A** Downstream Recycling Chain

*(Consolidates R2:2013 Due Diligence requirements covered in Provisions 3, 5, 6, 8 & 11)*

- Option for facilities to track entire downstream chain, **OR** register their portion of the chain with SERI and stop tracking at the first R2 Certified facility.
- R2 facilities must confirm with records the receipt of all FMs by the downstream vendor.
- Enhanced requirements for verifying non-R2 downstream vendors for data sanitization.



## **B** Data Sanitization *(Replaces or enhances R2:2013 Provision 8)*

- Core Requirements for Data Security (R2v3 Prov. 7) apply to ALL R2 Certified facilities. Appendix B-Data Sanitization provides an enhanced level of security, practices, verification, and tracking.
- Covers all logical sanitization activities, as well as any physical destruction where additional tracking and verification of sanitization is required.
- Additional quality controls to confirm successful sanitization and identify any discrepancies.



## **C** Test and Repair *(Replaces or enhances R2:2013 Provisions 6 & 8)*

- Applies to facilities performing test & repair in-house.
- Must be certified to Quality Management System standard ISO 9001 or RIOS.
- Data must be sanitized in accordance with the requirements of Appendix B.
- Requires detailed R2 Reuse Plan for test and repair by equipment type; test results recorded for each function tested; and product safety evaluation.
- 1 year limit to process equipment and components.
- Technical competency requirements for workers.



## **D** Specialty Electronics *(New to R2v3)*

- New requirements for R2 Facilities concentrating on specialty equipment markets such as medical and commercial telecom equipment. Allows specific verifications where full testing is not possible.
- This Process Requirement will not eliminate the ability for most R2 facilities to sell Specialty Equipment for Reuse under the 1% rule.



## **E** Materials Recovery *(In R2:2013, primarily covered by Provisions 4 & 5)*

- Required for facilities engaged in processing electronics for materials recovery (e.g. manual dismantling, mechanical separation, or other engineered methods).
- Requires Environmental Pollution Liability Insurance.
- Additional EH&S hazard identification and controls.
- Enables precious metal refiners, lead smelters, battery recyclers, etc. to be R2 Certified.



## **F** Brokering *(Replaces Broker Allowance in R2:2013)*

- Requirements for brokering only (no facility), AND for facilities that perform brokering services.
- Requires QMS Certification (ISO 9001 or RIOS) for brokering activity.
- Certified to Process Requirement A - Downstream Recycling Chain.
- Must provide packaging requirements to seller prior to shipment in accordance with CORE 10.