R2v3 APPENDIX DETERMINATION TOOL
Version: 2

Guidance is intended to offer further explanation of the requirements in the R2 Standard along with examples and audit recommendations. However, this document is not auditable and cannot be cited in relation to any nonconformances. The explanations are intended to prevent misinterpretation of the R2 Standard, not to add to, subtract from, or modify the R2 Standard. The examples cited may not be the only way to fulfill a requirement of the standard.

This guidance is intended to help clarify the application of the R2v3 Process Requirements (appendices) and facilitate scope development.

For each Process Requirement summary below, review each of the options and examples provided to determine which apply to your operations. Based on the applicability of each option, you can identify which of the Process Requirements apply.

Where it is determined that a Process Requirement applies to the operations, it must be included in the scope of R2 Certification. Where a Process Requirement is deemed not applicable, review the option and consider any alternate processes or controls that may still be required to address the requirement, such as through downstream vendor (DSV) qualification and selection.

Note that this tool uses examples to describe possible applications of the Process Requirements but is not an inclusive list of all applicable activities or operations and therefore is not intended to be a definitive assessment of which Process Requirements apply. Use the results of this tool to help guide scope development and work with your Certification Body to confirm the results.

Appendix A – Downstream Recycling Chain

General Principle – To manage the downstream recycling chain for all R2 Controlled Streams to ensure that all downstream vendors operate in conformance with the R2 Standard.

Appendix A applies to any facility that is not the final processor in the recycling chain and therefore must select and manage its DSVs to ensure processing in conformance with the R2 Requirements.

☐ **Option #1: Your facility requires the use of DSVs for further processing of R2 Controlled Streams**

R2 Controlled Streams are defined in Table 1 of the R2 Equipment Categorization (REC), and include:

- ☐ Unevaluated equipment, components and materials
- ☐ Unsanitized devices/media
- ☐ Equipment/components for test and repair
- ☐ FM containing equipment/components
- ☐ Focus materials

For example, does your facility send:

- ☐ Data devices or media to a DSV for sanitization?
- ☐ Equipment or components to a DSV for test and repair?
- ☐ Equipment, components or focus materials to a DSV for materials separation and/or recovery?

If any of the above scenarios apply and DSVs are used for further processing of R2 Controlled Streams, then certification to **Appendix A is required**.

☐ Appendix A is required

☐ **Option #2: Your facility is the final point of processing and does not require DSVs**

The final point of processing is the last step in the downstream recycling chain, where materials are recovered or transformed and no longer meet the definition of an FM.

Examples of final processes include:

- ☐ Smelting of circuit boards, batteries or CRT glass
- ☐ Hydrometallurgical extraction of batteries or circuit boards
- ☐ Retorting of mercury from lamps and other devices

For example, does your facility only:

- ☐ Processes circuit boards for metals recovery?
- ☐ Process batteries for metals recovery?
- ☐ Process CRT glass for recovery?

Where final processing is performed certification to **Appendix E is required.**

If only final processes are performed, and the resultant material has reached final disposition and is no longer an FM, certification to **Appendix A is not required**.

☐ Appendix A is NOT required

Appendix B – Data Sanitization

General Principle – To recognize organizations that maintain enhanced data security controls and perform physical or logical data sanitization in accordance with best practices, where data devices are managed to the highest level of sensitivity as required by the supplier or regulation.

Appendix B applies to any R2 Facility that performs logical data sanitization as well as those that perform an enhanced level of physical sanitization.

☐ Option #1: Data sanitization in accordance with Appendix B is required	☐ Option #2: Data may be sanitized through physical destruction under Core Requirement 7.(c)(2)(B)	☐ Option #3: Data sanitization is outsourced to a qualified DSV
Appendix B Data Sanitization is required: ☐ For all data wiping (logical sanitization) ☐ For all items processed for reuse under Appendix C – Test and Repair ☐ Where customers or suppliers require additional security, tracking and verification of sanitization For example, does your facility perform: ☐ Software based logical data sanitization, sometimes referred to as data wiping, overwriting or data erasure? ☐ An enhanced level of physical sanitization, with additional security controls, traceability, and quality controls beyond those required for destruction under 7.(c)(2)(B)? If this level of data sanitization and security controls are required and performed, then certification to **Appendix B is required**.	Sanitization can be performed under the Core Requirements, where: ☐ All data devices are physically destroyed ☐ A NIST 800-88 approved method of destruction is used, as applicable to the specific devices sanitized For example, does your facility perform only physical destruction of data devices, such as: ☐ Shredding? ☐ Disintegrating? ☐ Pulverizing? ☐ Incineration? ☐ Smelting? If only physical destruction in accordance with NIST Guidelines is used for data sanitization, **Appendix B is not required**.	Where data sanitization is not performed by the R2 Facility a DSV must be qualified in accordance with **Appendix A** for all data sanitization activities. Where a DSV is used for sanitization, the R2 Facility must at minimum: ☐ Identify and secure all data devices ☐ Provide for the secure packaging and transport of the devices to the DSV ☐ Track shipments of all data devices Where only DSVs are used to perform data sanitization **Appendix B is not required**.
☐ Appendix B is required	☐ Appendix B is NOT required	

Appendix C – Test and Repair

General Principle – To recognize organizations with the competency and tools to test, repair, or refurbish electronic equipment in accordance with best practices, to produce functional equipment, and accurately communicate the level of functionality, cosmetic condition, and data sanitization status.

Appendix C applies to all R2 Facilities that test and/or repair electronic devices for reuse.

☐ Option #1: Test and repair activities are performed internally in accordance with the requirements of Appendix C	☐ Option #2: Items are evaluated for reuse only, while test and repair operations are performed by a qualified DSV
Repair operations generally involve the fixing or replacing of parts to produce functioning parts or products. Testing involves checking and verifying that the functions of the device are operating as designed and intended. For example, does your facility: ☐ Replace parts such as hard drives, memory, screens or embedded batteries? ☐ Perform board level repairs like replacing components and fixing connections? ☐ Test device functions to determine the level of functionality? If any test or repair activities are performed, then certification to **Appendix C** is required.	All R2 Facilities are required to evaluate equipment and components to determine the capability for reuse. Evaluating for reuse can include a wide variety of activities, from visual inspections to some basic level testing like power on verification, but these evaluations are used solely to determine capability for reuse and are not a final indication of the device's level of functionality, that must be determined through Appendix C. For example, does your facility: ☐ Visually inspect devices for certain defects or condition? ☐ Check for particular technical specifications? ☐ Conduct power-on verifications? If only evaluation activities are performed to determine the suitability for reuse, then certification to **Appendix C is not required**. However, equipment and components deemed capable of reuse must be directed to an approved reuse process as defined in Core Requirement **6.(d)(4)** or **6.(e)(3)**.
☐ Appendix C is required	☐ Appendix C is NOT required

Appendix D – Specialty Electronics Reuse

General Principle – To allow for the legitimate reuse of untested specialty electronics which often require sophisticated test equipment and simulations to test functionality and often cannot be tested by specialty electronics refurbishers.

Appendix D applies to all R2 Facilities that specialize in managing specialty electronic devices where they do not have the feasibility to test full functionality.

☐ **Option #1: Specialty electronics that cannot be tested are verified in accordance with the requirements of Appendix D**

"Specialty Electronics" is defined as rare and specialized electronic equipment that is not generally available in retail. Specialty electronics may include medical, diagnostic, laboratory, or other devices, which are customized for a specific purpose.

Due to the sophisticated nature of specialty electronics and their application, it is often not feasible to fully test the devices and their functionality. To enable reuse of these untested devices, specific verification, tracking and management of the incoming and outgoing devices in accordance with Appendix D is required. As a result, only facilities that specialize in managing a specialty electronics stream can certify to Appendix D.

For example, does your facility:

- ☐ Specialize in managing highly sophisticated, commercial/industrial grade, specialty electronic devices?
- ☐ Maintain certification to Appendix C and test and repair any electronic devices where possible?
- ☐ Have specialty electronics that it does not have the ability to test?
- ☐ Have a direct connection with all organizations decommissioning the specialty electronics?
- ☐ Have specific knowledge of all specialty electronics and its condition prior to decommissioning?
- ☐ Have insight into the end-user of the specialty electronics?

Where ALL of the above activities apply, then certification to **Appendix D is required**.

☐ **Appendix D is required**

☐ **Option #2: Specialty and collectible electronics are reused under Core Requirement 6.(e)(3)(A)**

An R2 Facility that does not specialize in processing specialty electronics and only periodically manages this equipment, can sell limited quantities of specialty electronics in accordance with Core Requirement 6(e)(3)(A).

For example, does your facility:

- ☐ Maintain certification to Appendix C and test and repair any electronic devices where possible?
- ☐ Have specialty electronics that is does not have the ability to test?
- ☐ Sell a maximum of 1% of the total of all units sold as specialty electronics?

Where ALL of the above activities apply, specialty electronics can be sold for reuse under the requirements of Core 6.(e)(3)(A), and certification to **Appendix D is NOT required**.

☐ **Appendix D is NOT required**

Appendix E – Materials Recovery

General Principle – To maintain processes for the recovery of materials for recycling and the proper management of Focus Materials in the process of recovery.

Appendix E applies to all R2 Facilities that perform destructive dismantling and/or separation processes for the purpose of materials recovery.

☐ Option #1: Destructive dismantling and/or separation processes are performed by the R2 Facility for the purpose of materials separation and recovery	☐ Option #2: Only non-destructive de-manufacturing and parts harvesting processes are performed	☐ Option #3: Only dedicated self-contained data sanitization equipment is used for physical data sanitization purposes
Due to the increased EHS risks associated with materials recovery operations, additional EHS requirements apply where any destructive dismantling or separation processes are performed. For example, does your facility's operations include: ☐ Chemical processing? ☐ Thermal treatment? ☐ Mechanical shredding, crushing smashing or other breaking? ☐ Manual dismantling involving any destructive processes such as breaking, cutting, smashing, or prying? Where any form of destructive dismantling or separation takes place, certification to **Appendix E is required**.	Where de-manufacturing processes are performed that are non-destructive in nature, electronic devices and/or components are disassembled, and only intact parts or components are removed. For example, since the facility is not engaged in materials recovery activities, are your facility's de-manufacturing operations limited to: ☐ Dismantling and removal of whole parts or components for repair? ☐ Harvesting of whole parts or components for use in repairs? Where only non-destructive de-manufacturing processes are performed, certification to **Appendix E is not required**.	Where no other destructive dismantling or separation activities are performed, and only data devices are processed through specific self-contained equipment for the purpose of data sanitization. For example, are the facility's physical destruction activities limited to data sanitization operations with the use of dedicated and self-contained: ☐ Hard drive shredders? ☐ Chip crushers? ☐ Hard drive presses? Where the only physical destruction performed is through the use of dedicated self-contained data sanitization equipment for the purpose of data sanitization, certification to **Appendix E is not required**.
☐ Appendix E is required	☐ Appendix E is NOT required	

Appendix F – Brokering

General Principle – To enable an R2 Facility to source and control the delivery of equipment, components, or materials directly to a downstream vendor, while ensuring that the same R2 requirements apply to all brokered R2 Controlled Streams.

Appendix F applies to all R2 Facilities that manage the transfer of R2 Controlled Streams from the supplier directly to the DSV without physically receiving or processing the items.

☐ **Option #1: R2 Controlled Streams are sourced and delivered directly to the DSV without any physical handling by the R2 Facility**

R2 Controlled Streams include:

- ☐ Unevaluated electronic equipment, components or materials
- ☐ Unsanitized devices/media
- ☐ Equipment/components for test & repair
- ☐ FM containing equipment/components
- ☐ Focus Materials

Brokering is the process where an R2 Facility sources an R2 Controlled Stream and controls its delivery directly to a downstream vendor without physically receiving or processing the items.

Brokering may be the only activity of an R2 Facility or brokering may be a process in addition to those performed at the R2 Facility.

For example, does your facility:

- ☐ Purchase equipment or material streams, that it does not receive or process?
- ☐ Manage the transaction between the supplier and the DSV, where the items pass directly from the supplier to the DSV?
- ☐ Arrange for processing of equipment or materials that never physically pass through your facility?

Where any brokering activities such as the examples above take place for R2 Controlled Streams, certification to **Appendix F is required**.

☐ **Appendix F is required**

☐ **Option #2: All R2 Controlled Streams are physically received at or pass through the R2 Facility**

When electronic equipment, components and materials are received at and/or pass through the R2 Facility, they must be:

- ☐ Tracked in accordance with Core 5.;
- ☐ Sorted and categorized in accordance with Core 6., and
- ☐ Directed to the next applicable process to ensure that it is managed in accordance with R2 requirements.

For example, does your facility:

- ☐ Physically receive all electronic equipment, components and materials managed by your facility?
- ☐ Sort, categorize and warehouse equipment, components and materials that are not processed at the facility?
- ☐ Collect and consolidate shipments at your facility for downstream processing?

Where all R2 Controlled Streams are received at and/or pass through the R2 Facility, **Appendix F is not required**.

☐ **Appendix F is NOT required**