ASCDI
The ITAD Association

and

SERI

R2

present

The ITAD Workshop

June 27th

1:00 PM - 5:00 PM

Cocktail Reception

June 27th

5:00 PM - 6:30 PM

E-WASTE WORLD

CONFERENCE & EXPO | 28-29 JUNE 2023 / FRANKFURT MESSE / GERMANY

Welcome

MILLER ANLAGEN

Used IT as a Value Product

IQ reseller

TES

Event Introduction | 1:00 PM – 1:30 PM
Joe Marion, ASCDI and Corey Dehmey, SERI
Data Security, Value Recovery, and CO2 Focus | 1:30 PM – 2:15 PM
Jens Teichelmann, Procurri | Jens.Teichelmann@procurri.com
ITAD and GDPR | 2:15 PM – 3:00 PM
Steve Mellings, ADISA | steve.mellings@adisa.global
Basel Accord | 3:00 PM – 3:30 PM
Mark Hoff, SLR Consulting | mhoff@slrconsulting.com
The EU Product Passport | 3:30 PM – 4:15 PM
Mark Hoff, SLR Consulting | mhoff@slrconsulting.com
How to Stand Out in the ITAD World? | 4:15 PM – 5:00 PM
Joe Marion, ASCDI and Corey Dehmey, SERI
Cocktail Reception| 5:00 – 6:30 PM

ASCDI
The ITAD Association

seri R2 V3

SUSTAINABLE IT EQUIPMENT RESALE

THE FUTURE OF IT ASSET DISPOSITION (ITAD)

Corey Dehmey

June 2023

SERI

Champions of
Electronics Sustainability

THE GROWING GLOBAL CHALLENGE

Improper management of used electronics has caused devastating harm to the environment and to people.

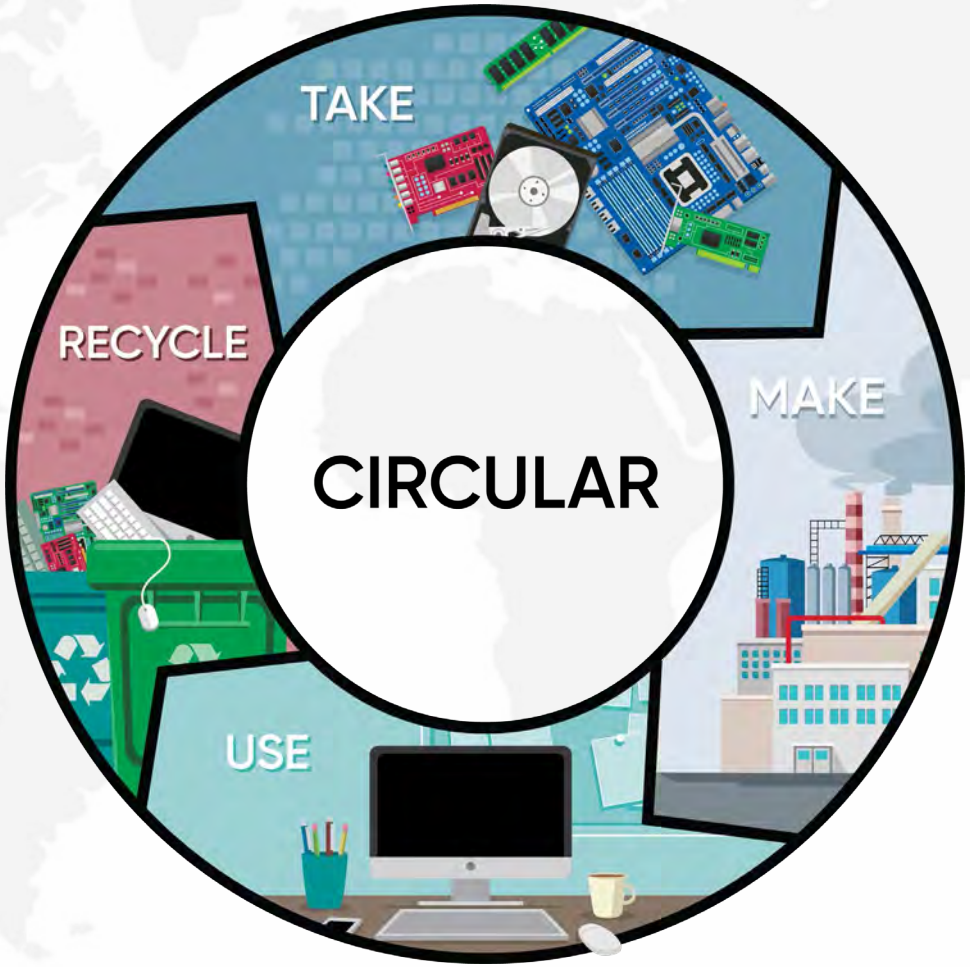
This problem grows as:

Global demand for electronics continues to rise

Devices become obsolete and are replaced with greater frequency

THE E-WASTE MANAGEMENT LIFECYCLE TODAY

BETTER, BUT...



IT ONLY BECOMES TRULY CIRCULAR WHEN WE FOCUS ON THE *ENTIRE* LIFECYCLE

Information

Technology

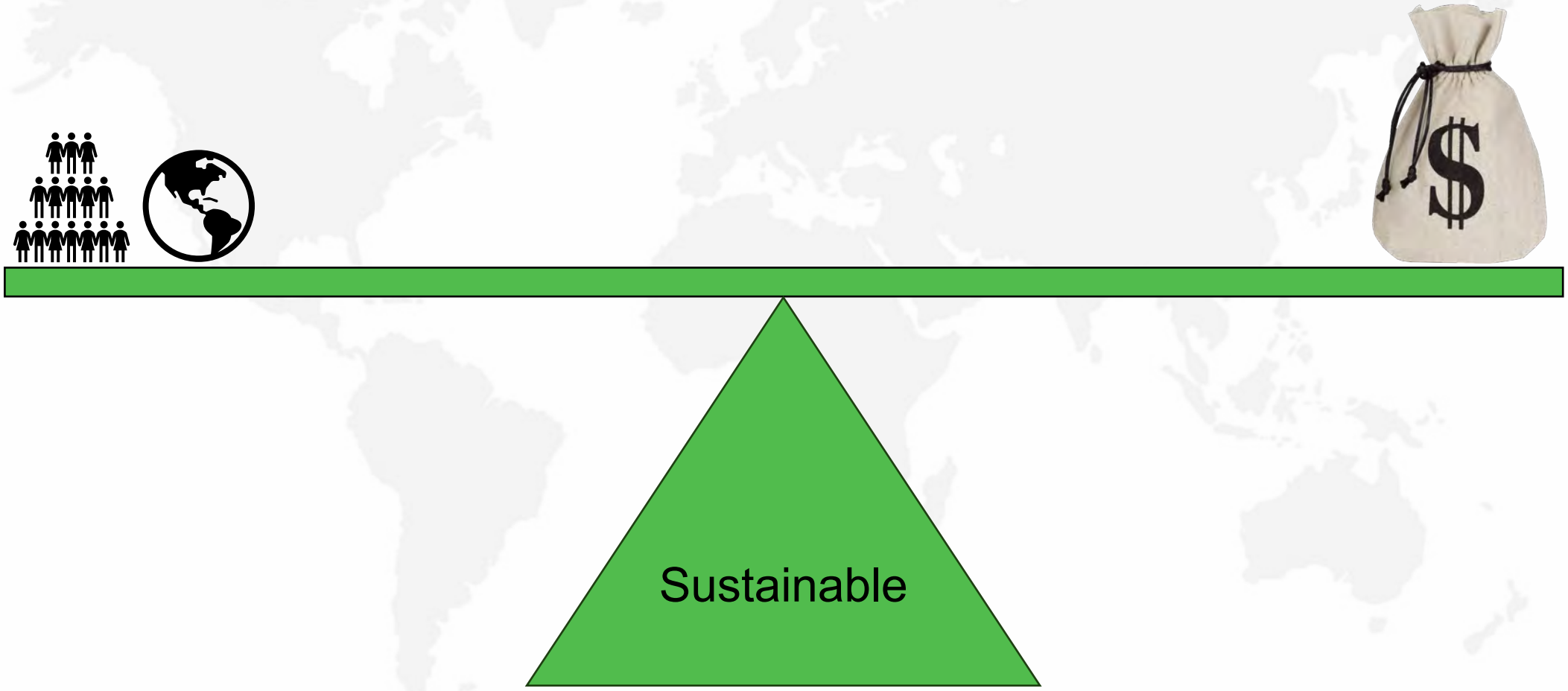
Asset

Disposition

SUSTAINABLE ITAD

BALANCED, HOLISTIC APPROACH THAT MAXIMIZES THE POSITIVE IMPACTS WHEN MANAGING DISPOSITION OF ELECTRONIC HARDWARE ASSETS

IT'S ABOUT BALANCE



ESG REPORTING

Environment

Social

Governance

SUSTAINABLE ITAD

- MAXIMIZES AND LEVERAGES THE VALUE OF ELECTRONICS
- FINANCIALLY RESPONSIBLE
- PROTECTS BRAND EQUITY
- PROTECTS PEOPLE AND THE PLANET
- HELPS LOWER AN ORGANIZATION'S ENVIRONMENTAL IMPACT, ITS CARBON FOOTPRINT, AND SUPPORTS ESG AND SUSTAINABILITY GOALS

SUSTAINABLE ITAD,
THROUGH THE WHOLE LENS

SERI | R2

PROCURRI

Jens Teichelmann

Managing Director, Germany

2Q / 2023

Data Security, Value Recovery and Co2 Focus

INVESTORS IN PEOPLE | Accredited Until 2022

Q1 | 2021

What happens to your data, when your IT gets old??

Data Security

- Most firms have very detailed data security guidelines, when it comes to running their system, or who has access to their data center and systems
- They also use very long and detailed contracts to ensure all data is save, if they outsource their datacenter operation to someone else
- But very often, when it comes to disposing IT equipment, it’s often the approach “I know a guy…” or people get more creative themselves….

Data Destruction

PROCURRI

- There are easily 20+ commonly used data wipe / destruction standards, depending on your type of operation, with one of the most commonly known lately is provided by the National Institute of Standards and Technology (NIST) in the US, but there is also the BSI in Germany and many others, in each country.

- ***From NIST:*** *"Destructive techniques also render the device Purged when effectively applied to the appropriate media type, including incineration, shredding, disintegrating, degaussing, and pulverizing. The common benefit across all these approaches is assurance that the data is infeasible to recover using state of the art laboratory techniques.* ***However, Bending, Cutting, and the use of some emergency procedures (such as using a firearm to shoot a hole through a storage device) may only damage the media as portions of the media may remain undamaged and therefore accessible using advanced laboratory techniques****."*

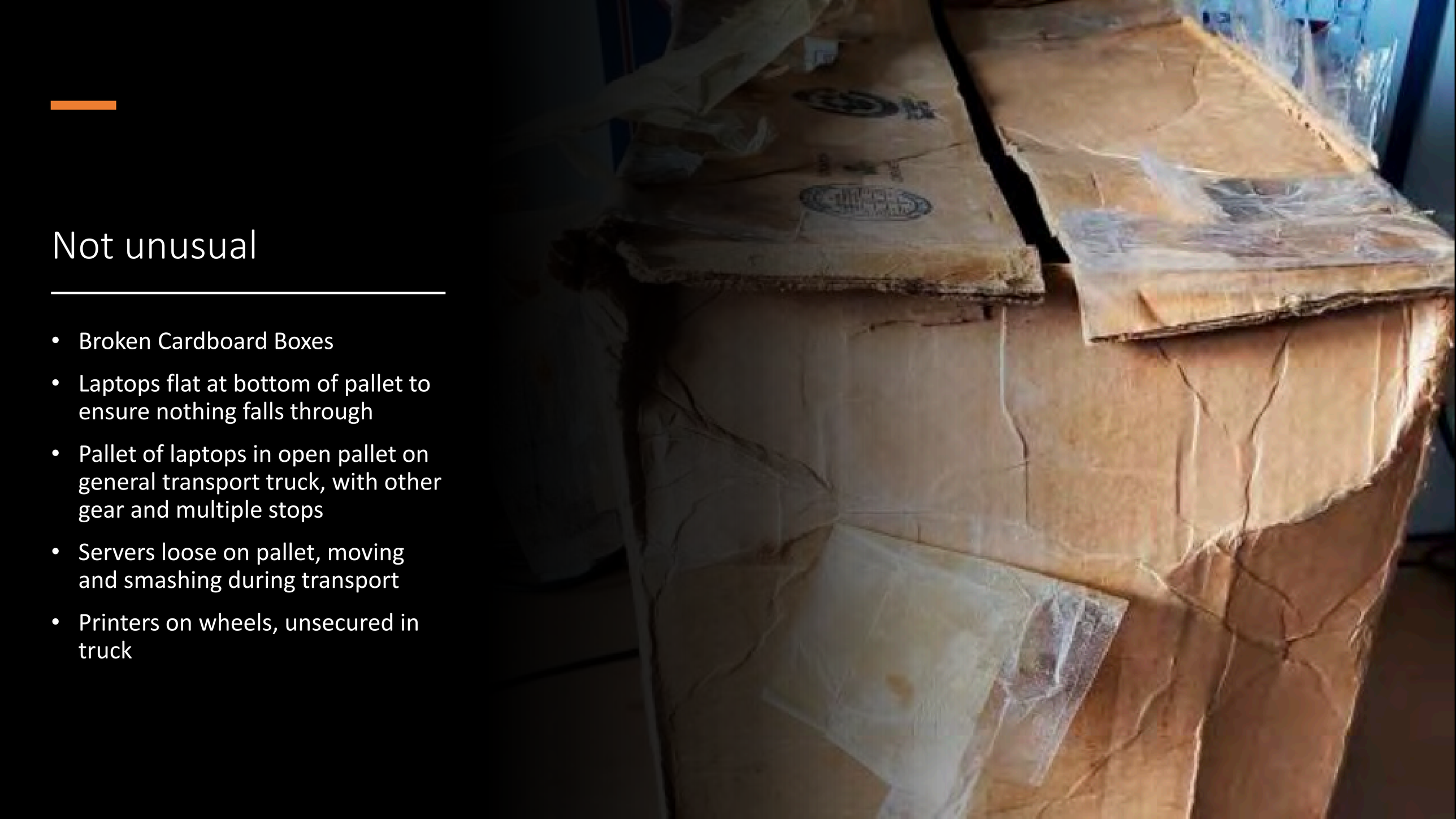
Packing, Transport, Data Destruction

PROCURRI

- Check who has access to data in your warehouse, while packing and moving it in-house
- How is the equipment packed to ensure later value recovery, nothing gets lost during the transport and who does it?
- How is the transport to the data destruction facility handled and by whom?
- How will the data be destroyed (Software or physical destruction)? What happens if the SW wipe fails and what is with SSDs?
- What reports do you get from the supplier (eg serial number of harddrive)

Not unusual

- Broken Cardboard Boxes
- Laptops flat at bottom of pallet to ensure nothing falls through
- Pallet of laptops in open pallet on general transport truck, with other gear and multiple stops
- Servers loose on pallet, moving and smashing during transport
- Printers on wheels, unsecured in truck



Packing, Transport, Data Destruction

PROCURRI

- What is with the data on Network devices like routers, firewalls, access points (eg IP addresses), servers (ILO or equivalent), chassis, etc.?

- What is with tapes, USB Sticks, optical discs, printers?
- What about the real scrap disposal? Certified partner used?
- What certifications does your supplier have? ISO, ADISA, others

Value Recovery 1/2

- Old IT equipment can still hold value
- Either as a whole or in the parts (memory, disks, CPUs)
- Balance between labor cost to factory reset, test and sell (or harvest in parts, e.g. for maintenance purposes)
- Procurri for example has product specialists for PCs, IBM, HP, Dell, Network, etc. and specialized engineers to perform the actual work on the devices

Value Recovery 2/2

PROCURRI

- Provide lists of equipment or demand audits of gear
- Look at or Audit supplier sites or trust certificates (like ADISA, see next presentation)
- Instruct IT teams accordingly, when prepping for Decom activities
- If self packing, have a word with the warehouse team about value of IT
- Assume costs for IT disposal (transport, handling, audit, wipe) and budget for it

Carbon offset reporting

A simple concept

Lifecycle
& ITAD

PROCURRI

Processing legacy assets enables us to reuse and resell, preventing the need for a new equivalent to be supplied. This could provide the disposing organisation with a carbon offset value, read about the mechanics of how our Carbon Offset calculator works at www.Procurri.com

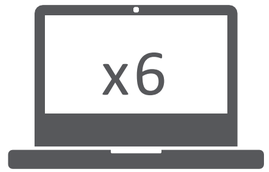
New laptop

= 300Kg CO^2

Average family car

= 1,800Kg CO^2

per 10,000 miles



Process & resell

6 laptops = 10,000

business miles

Q1 |2021

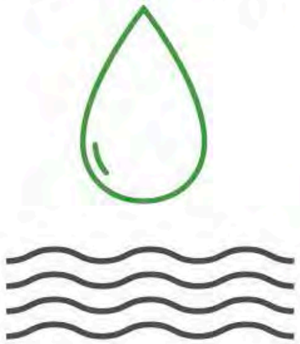
PROCURRI

1 laptop

Allegedly

1,200 tons of earth

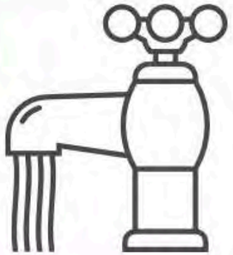
is mined to produce the minerals required for



along with the consumption of

190,000

liters of water



as much water the average family would consume in **700 years**

The CO_2 footprint of manufacturing an average laptop is currently viewed as being between **250 and 300 Kg's.**

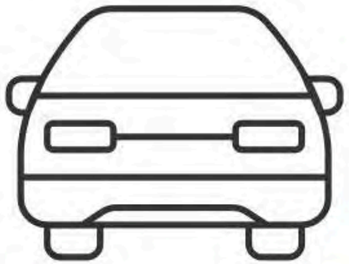
By comparison an average car that covers 15,000 Km generates 1800 Kg of CO_2

By partnering with Procurri and enabling just

6 laptops

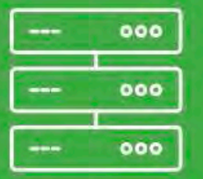
to be refurbished and resold

thus replacing the need for a new unit, is equivalent to

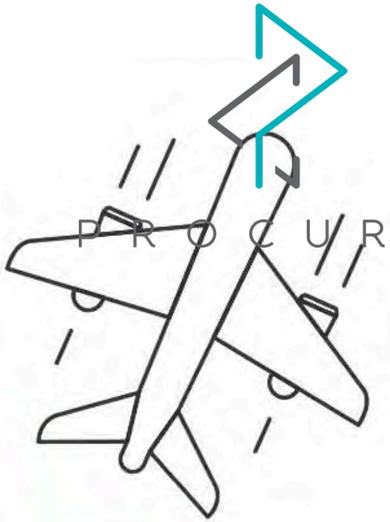


15,000 Km

of travel in a car



The manufacture of a **single server** could be the equivalent of **15,000 Km of business travel!**



The ability to report these types of Carbon offset are going to become key for modern business identifying smarter ways to displace and demonstrate meaningful reductions in their carbon emissions.

We are Procurri

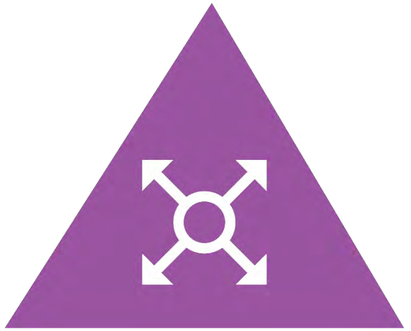
Our core services

PROCURRI

Independent Maintenance
+
Professional Services

Lifecyle & ITAD
+
Professional Services

Hardware Supply
+
Professional Services



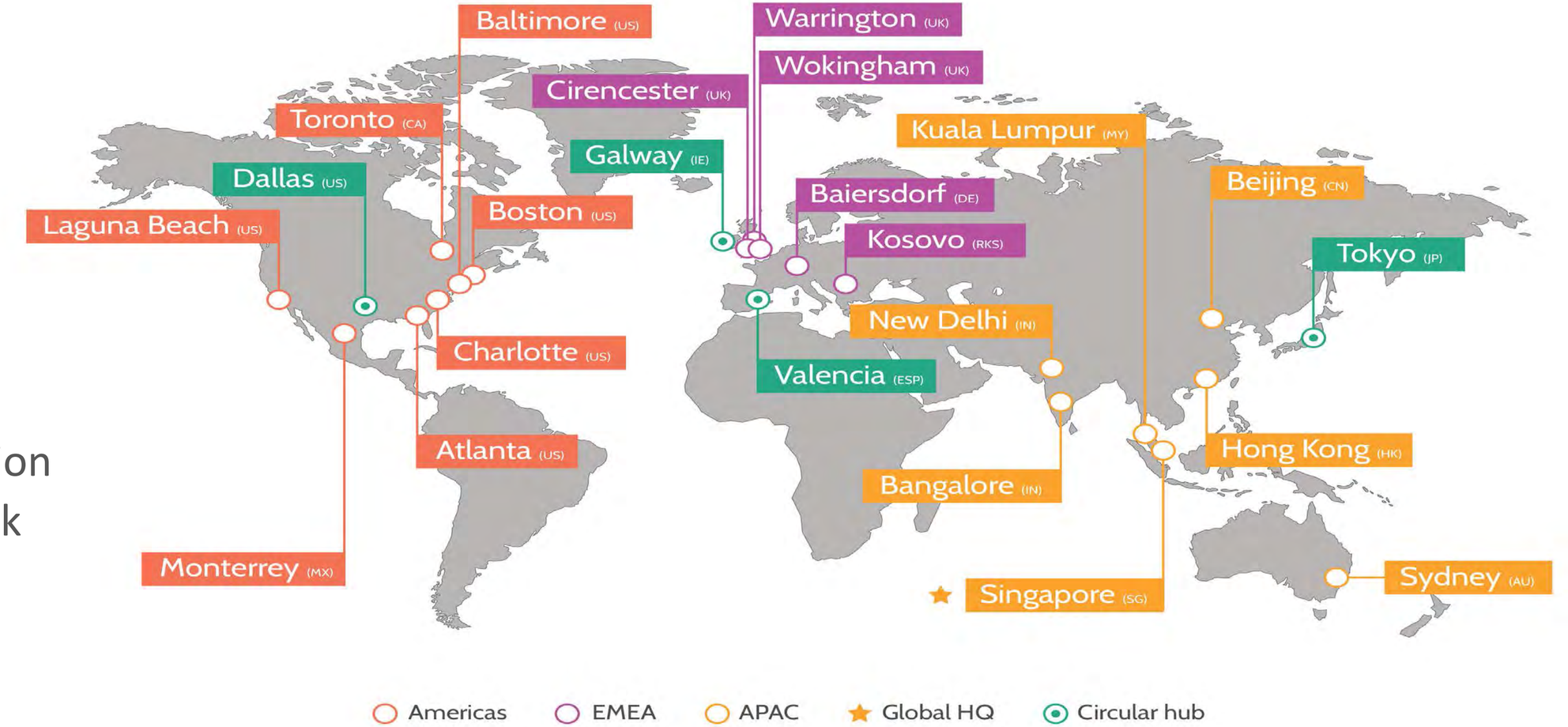
Distribution Services
+
Professional Services

Q1 | 2021

Global

Regional offices

Established global sourcing, distribution & logistics network



PROCURRI

Data Center Services

Data Center Services

Overview

Lifecycle & ITAD

PROCURRI

Our expert team offers a diverse range of solutions, able to support almost every business need globally

Running Data Centers is a very diverse task. Procurri supports you globally on all HW related elements in this area:

- General Hands & Feet Services (incl. Installation (Rack & Stack), Escort, Site Surveys, etc.)
- Lift & Shift -- Un-rack, pack, move, re-install
- General Hardware Rental & Purchase, Spare Parts
- One-Off Procurement Support with new suppliers
- Third Party Maintenance
- IT Asset Disposition with Secure Data Wipe & Disposal or Resale

Onsite professional services

Expertise

Lifecycle
& ITAD

PROCURRI

Adhering to onsite requirements and protocols, our global network of highly skilled, technical resources work seamlessly within our customer's diverse environments, helping with onsite projects and ensuring a positive customer experience.

Our expertise in Hands & Feet Support, Escort and DC Access Services, Site Surveys, and so on, is very broad and can be complemented by our robust other offerings around Hardware and IT Asset Disposition, providing a complete end-to-end solution.

Lift & Shift Services

Expertise & Logistics

Lifecycle
& ITAD

PROCURRI

Moving Data Center Equipment is a challenging task, from un-racking, to packing, the physical transport, including insurance coverage, up to bringing it back in the new place.
Procurri supports you all the way.

From moving a simple device up to a couple of server racks or a larger data center.
Procurri has the experience in making this smoothly for you, independent if during the week or over weekends.

IT Asset Disposition

Security & Environmentally responsible

Lifecycle
& ITAD

PROCURRI

Procurri provides a full chain of custody, safely and efficiently manages and tracks each asset through processing to re-deployment or remarketing to achieve the highest possible residual value.

Customer data is destroyed for each asset received and assets that are truly end-of- life are recycled in compliance with guidelines such as WEEE, R2 and e-Standards.

We track each asset by serial number, record all pertinent asset information, identify functional status and cosmetic condition, and determine the final disposition path in concert with any client-specific directions.

We sell through both mature and emerging channels to provide good returns.

Contact

Procurri GmbH
Erlanger Str. 9
91083 Baiersdorf

Jens Teichelmann
- Managing Director -

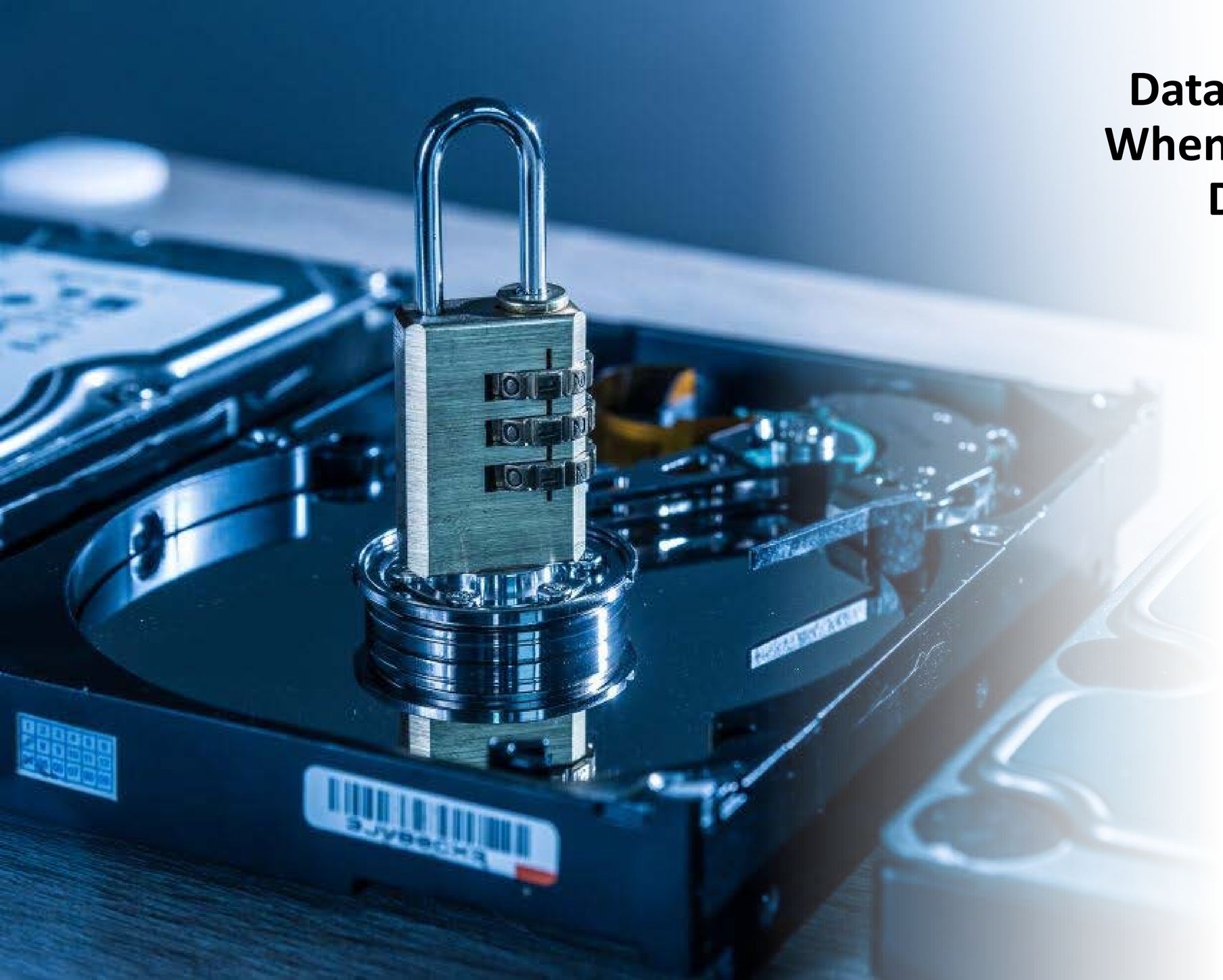
Mobile: +49 151 501 730 32
Office: +49 9133 888-3899
Jens.Teichelmann@procurri.com

Company Website
www.procurri.com

Procurri in 180 Seconds
https://youtu.be/9C2YVdo06qM

PROCURRI

Thank you !
Questions?



Data Protection Compliance When Recovering Redundant Data Bearing Electronics

Steve Mellings
Founder of ADISA
A UK GDPR Certification Scheme

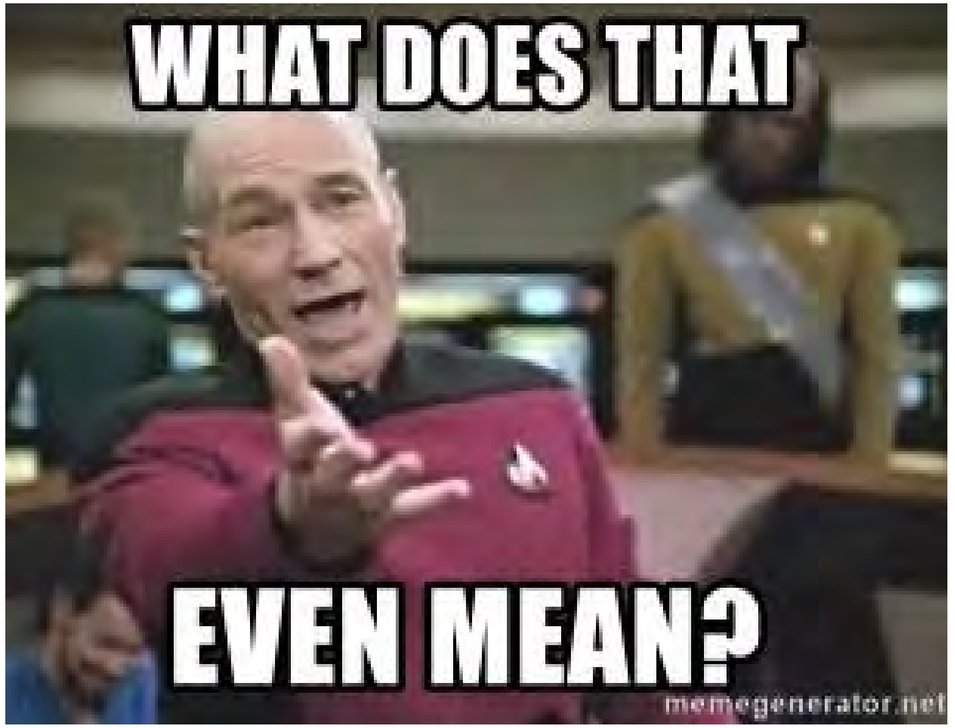
The Data Protection landscape
EU and UK GDPR – Article 4 Definitions

‘processor’ means a natural or legal person, public authority, agency or other body which processes personal data on behalf of the controller.

‘processing’ means any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organisation, structuring, storage, adaption or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, **erasure or destruction**.

EU and UK GDPR – The Data Protection landscape
Article 4 the GDPR: Definitions

If you provide data sanitisation services or hardware destruction services, you are a Data Processor under the eyes of the law.



EU and UK GDPR – The Data Protection landscape
Article 4 the GDPR: Definitions

If you provide data sanitisation services or hardware destruction services, you are a Data Processor under the eyes of the law.

Examples of what it doesn't mean:

"A GDPR compliant data wipe".

"Erase data or destroy hard drives as per GDPR".

"Certified data erasure".

Compliance (sadly) means much more than the act of data sanitisation
We'll explore 2 articles

Article 28 Processor

Requirement	
Article 28 (1)	The controller shall use only processors who provide sufficient guarantees to implement appropriate technical and organisational measures to meet the requirements of this regulation.
Article 28 (2)	The processor shall not engage another processor without prior specific or the general written authorisation of the controller
Article 28 (3)	The processor shall be governed by a contract (MOST IMPORTANT PIECE TODAY TO REMEMBER)
Article 28 (3) h	Makes available to the controller all necessary information to demonstrate compliance with obligations laid out in this article and to allow for and contribute to audits, including inspections
Article 28 (3)	The processor shall immediately inform the controller if an instruction infringes this regulation
Article 28 (5)	Processor may comply with an approved code of conduct as a means of providing sufficient guarantees

Article 32 Security of Processing

Requirement	
Article 32 (1) d	The controller and processor shall implement appropriate technical and organisational measures to ensure a level of security to include a process for regularly testing, assessing and evaluating the effectiveness of those measures to ensure the security of processing
Article 32 (2)	In assessing the appropriate level of security account shall be taken in particular of the risks that are presented by processing…….

Let’s explore appropriate….

Requirement	
Article 32 (1) d	The controller and processor shall implement appropriate technical and organisational measures to ensure a level of security to include a process for regularly testing, assessing and evaluating the effectiveness of those measures to ensure the security of processing

Who determines what is appropriate?

~~**ADISA**~~ ~~**Industry**~~

RISK OWNER

In the eyes of the law the risk owner is responsible for determining the risk treatment which will be based on principles which vary from one company to another

Current issue of compliance…..

- Controller MUST evidence “Appropriate Technical and Operational Measures”.
- What is deemed “appropriate” depends on the controller’s own determining factors.
- Asset Recovery has many high-risk processes with different levels of controls to mitigate those risks.

At the moment……the industry is making those decisions

THE TAIL IS WAGGING THE DOG!

ADISA's journey to becoming a UK GDPR Certification Scheme

- 2 years to get Standard 8.0 ICO approved.
- 1 year to get UKAS Accreditation for the audit process.
    - 7 separate audits.

This means ADISA Asset Recovery Standard 8.0 meets both Article 42 and Article 43 of the UK GDPR.

ADISA ICT Asset Recovery Certification 8.0

Approval date 19 July 2021

ADISA Asset Recovery Standard is a standard for processors or sub-processors providing data sanitisation services. This is where information is permanently removed from IT hardware such as computer hard drives or photocopiers so they can be securely disposed of or reused. The standard sets data protection requirements for the organisations performing these services. Certification is issued against this standard.

Scheme criteria

- **ICO-CSC/003** ADISA ICT Asset Recovery Standard 8.0 v3.0 Part 1: Introduction and Explanation Notes
- **ICO-CSC/004** ADISA ICT Asset Recovery Standard 8.0 v3.0 Part 2: Criteria

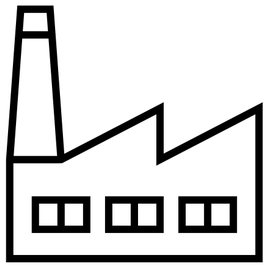
> New certification schemes will "raise the bar" of data protection in children's privacy, age assurance and asset disposal

ico.
Information Commissioner's Office

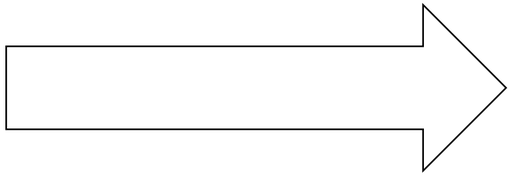
The Current Compliance position

Data Protection Law

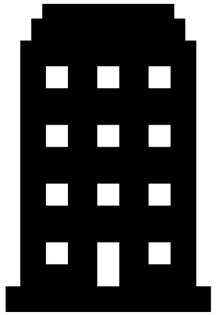
Industry



Industry Certifications



Customers

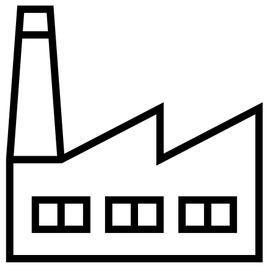


ISO Standards

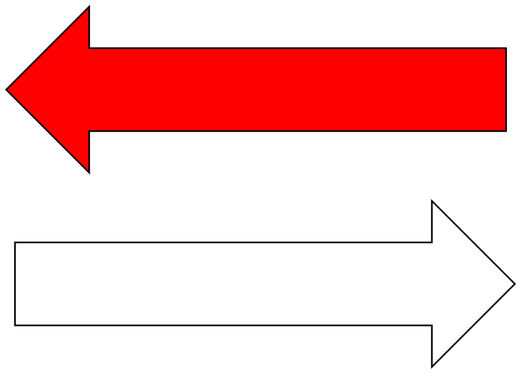
The Current Compliance position

Data Protection Law

Industry



ADISA Standard 8.0



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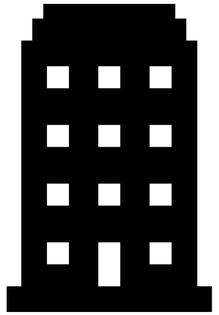


Data Impact Assurance Levels

5 metrics to determine the service you need to be provided.

- Threat.
- Risk Appetite.
- Category of Data.
- Volume of Data.

- Finally, assess the impact of a data breach.

Threat Level	Threat Actor and Compromise Methods
Low	Casual or opportunistic threat actor only able to mount unsophisticated attacks.
Medium	Motivated, targeted threat actor such as organised crime or journalists or hackers applying professional methods to access the physical device and / or data.
High	Government-sponsored organisations using sophisticated techniques with unlimited time and resources to access the physical device and / or data.

Threat	High	3	4	5
	Medium	2	3	4
	Low	1	2	3
		High	Medium	Low
	Risk Appetite			

Compliance is too confusing…..
The good news…..

Over 40 companies are already certified to 8.0 showing that GDPR compliance is achievable and commercially viable.

ADISA's responsibility is to liaise with the regulators to map out what compliance looks like – you don't need to!

Standard 8.0 is VERY similar to previous ADISA Standards. This is evolution rather than revolution.

edpb
European Data Protection Board

ADISA is already working with the Irish Data Commission to get Standard 8.0 (EU) approved.

ADISA®

Thank you

Come and meet with us on Booth 314

info@adisa.global
www.adisa.global

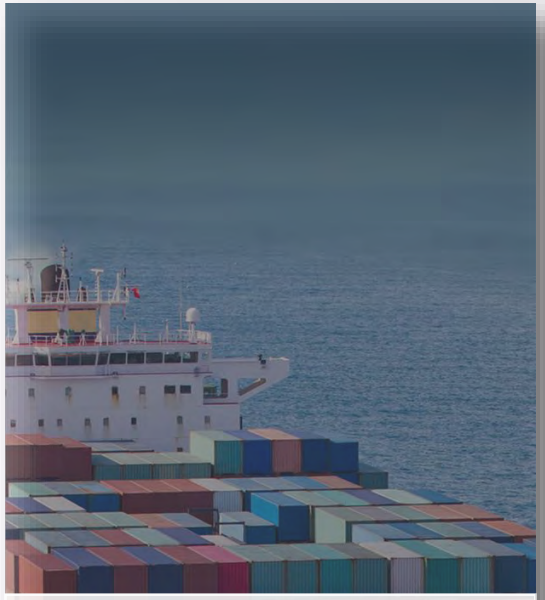
Basel Convention

BLACKFOREST

SOLUTIONS

What we do

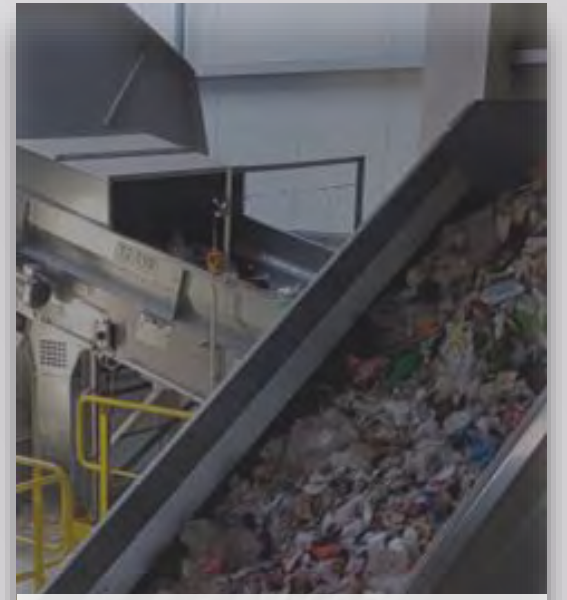
TRANSFRONTIER SHIPMENT



Worldwide waste transfrontier shipment and mediation to EU licensed disposal facilities (we act as their international representatives)

Worldwide in-situ operations for hazardous waste assessments, decontamination, repackaging, licensing

CONSULTING

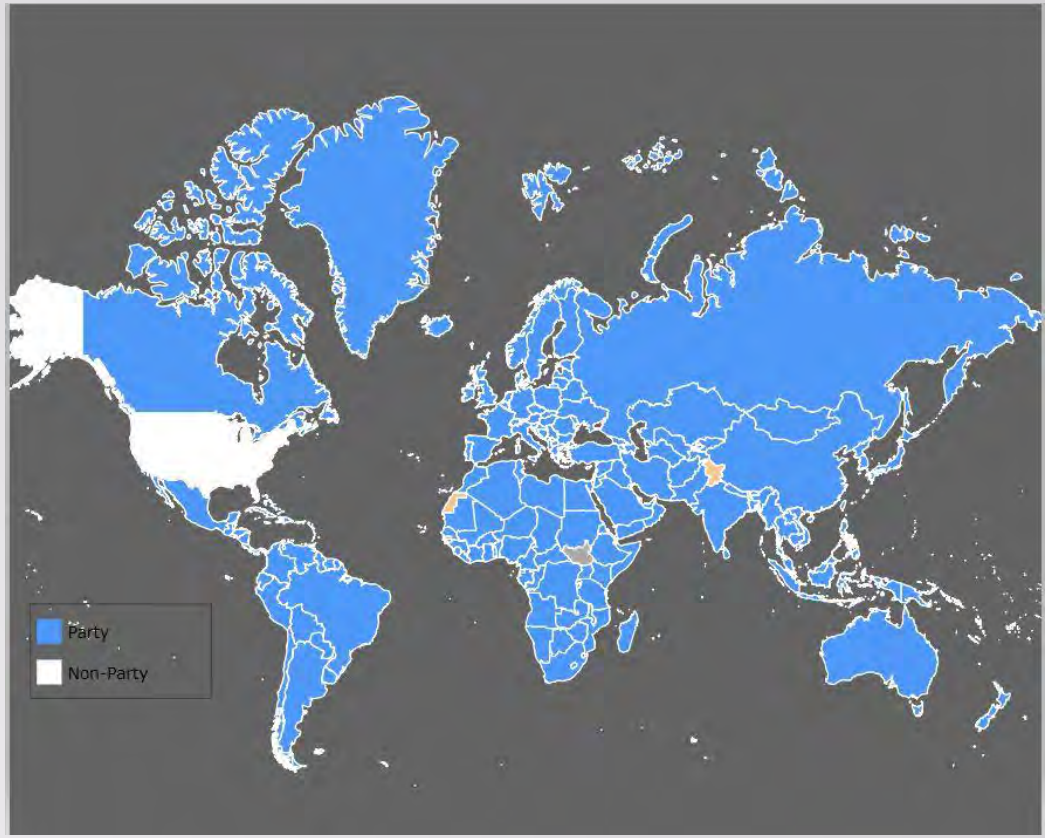


Technical waste management consultancy & project developers worldwide (hazardous & non-hazardous waste)

BLACKFOREST SOLUTIONS GmbH

Introduction to Basel Convention

Important dates	Countries	Highlights
Agreement: late 1980s Adoption: **March 22nd, 1989** Entering into force: **May 5th, 1992**	Signatories: 53 **Parties: 187**	• Objective: **Protecting human health and the environment** from adverse effects caused by hazardous and other wastes. • Goals: **Reduce transboundary movements of hazardous wastes,** minimize waste generation and hazardousness, ensure environmentally sound waste management. • Support: Assist **developing countries in environmentally sound management** of hazardous and other wastes.



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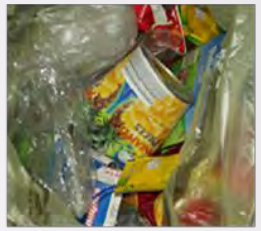
Definition of hazardous waste

The type of hazardous waste and its treatment is characterized by:

- The types of hazardous substances it contains
- The **concentration of hazardous substances** it contains
- The **physical properties** of these substances
- The **chemical properties** of these substances
- The **potential of these substances to react** with each other

Hazardous waste can occur in all areas of life

	Solid	Pasty/sludge	Liquid	Hazardous / Non hazardous	
Households						
Industry						
Commercial & Healthcare Sector						

BLACKFOREST SOLUTIONS GmbH

Definition of WEEE and types of WEEE waste

Waste Electrical and Electronic Equipment (WEEE) is defined under the Basel Convention as electrical or electronic equipment that is waste, including all components, sub-assemblies and consumables that are part of the equipment at the time the equipment becomes waste.
E-waste can be categorized as **hazardous or non-hazardous waste** under the Basel Convention.

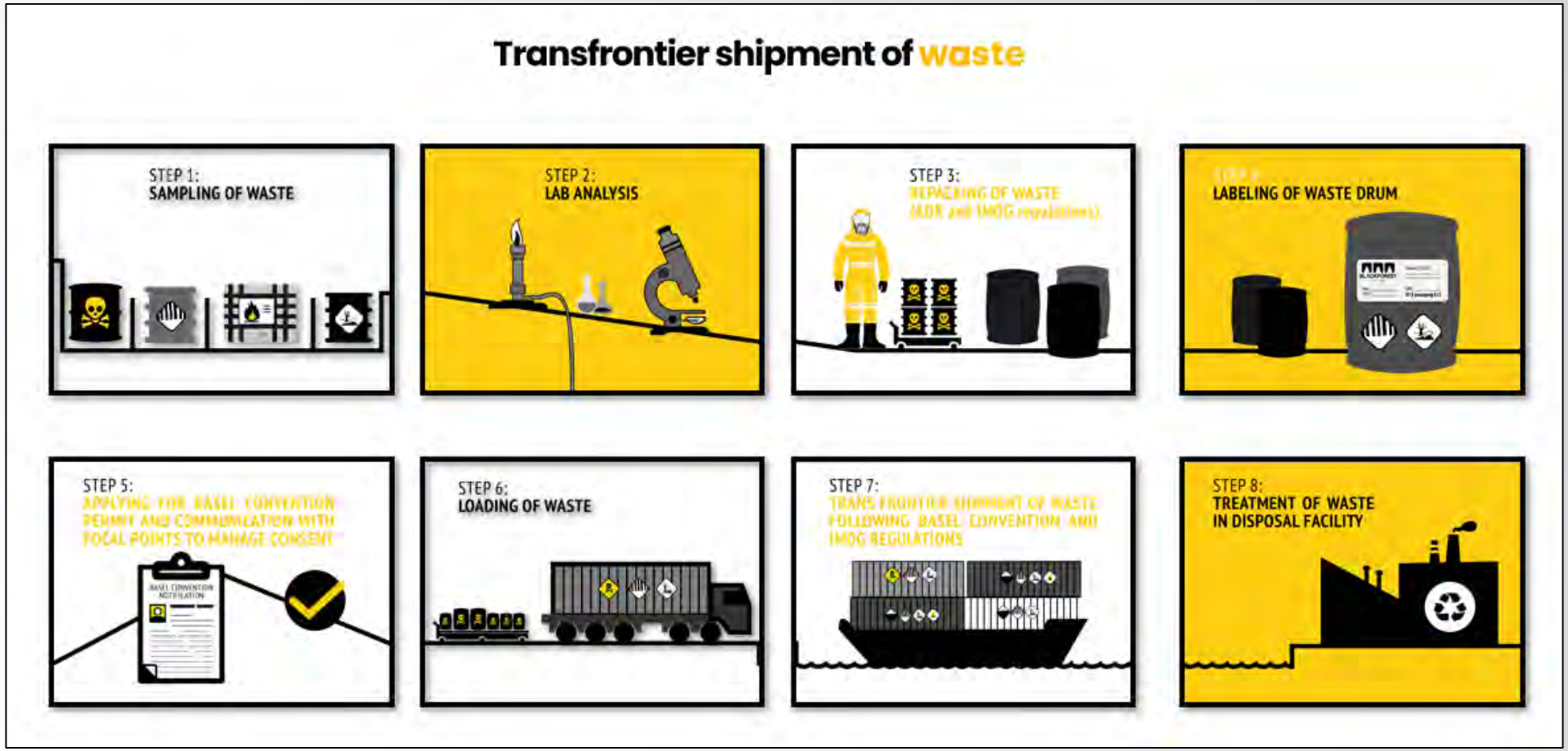
1	**Temperature exchange equipment**
2	**Screens, monitors, and equipment** containing screens having a surface greater than 100 cm2
3	**Lamps**
4	**Large equipment (any external dimension more than 50 cm)** including, but not limited to, Household appliances; IT and telecommunication equipment; consumer equipment, musical equipment; electrical and electronic tools; toys, leisure and sports equipment; medical device etc
5	**Small equipment (no external dimension more than 50 cm)** including, but not limited to: Household appliances; consumer equipment; luminaires; equipment reproducing sound or images, musical equipment; electrical and electronic tools; toys, leisure and sports equipment etc
6	**Small IT and telecommunication equipment** (no external dimension more than 50 cm)

Categories of EEE covered by the EU WEEE Directive after the transitional period (after August 2018)

Environmental and human impacts of E-waste

Environmental and human impacts of E-waste

Basel Convention Export process



BLACKFOREST
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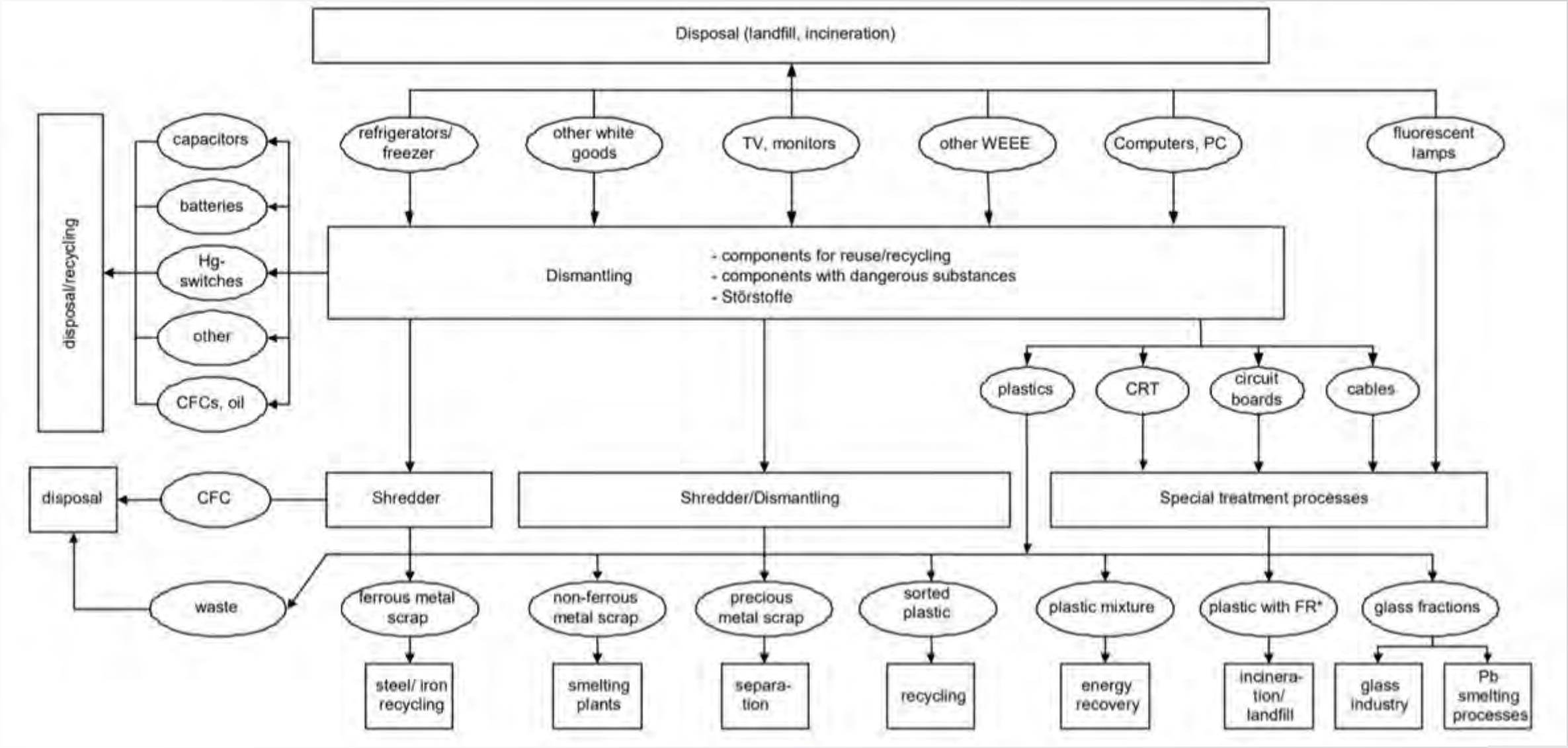
Treatment Technologies



BLACKFOREST SOLUTIONS GmbH

Reference projects:

Design, built and consult on a handover center for special waste from Agbogbloshie, Old Fadama

Date: 05/2018 - ongoing
Agbogbloshie / GHANA

Waste Type

- **Waste Electronics and Electrical Equipment (WEEE)**

Status quo

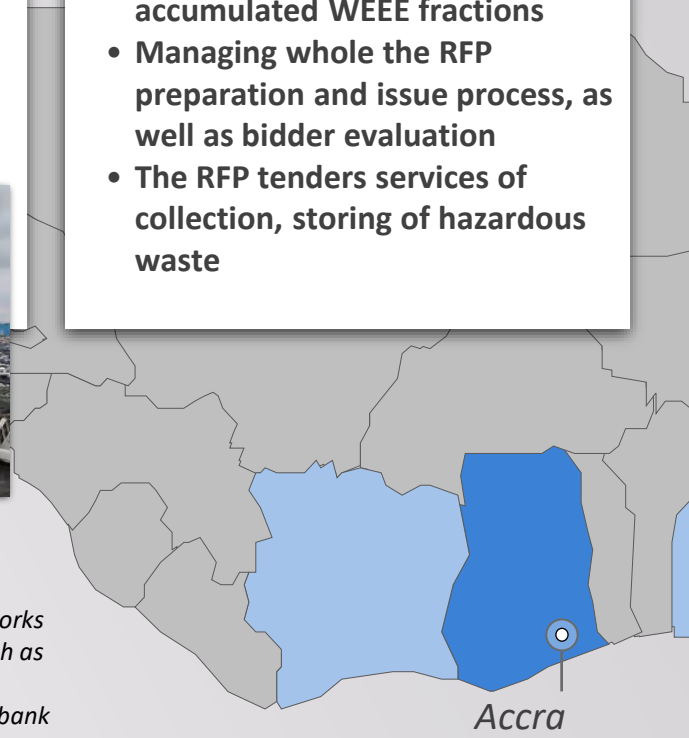
- **Toxic emission on the in the Agbogbloshie dumpsite**
- **Improper handling of WEEE**
- **Lack of awareness in WEEE**
- **No incentive mechanism for sound recycling of WEEE**

BFS Role

- **Technical Consultant**
- **Technical Advisor to GOPA Infra GmbH / KfW Bank**

Solution

- **Providing concept and layout of handover center of WEEE**
- **Conducting market surveys on WEEE trading structures & prices**
- **Formulating procedures for WEEE fractions purchasing**
- **Pro for strategy in tendering of accumulated WEEE fractions**
- **Managing whole the RFP preparation and issue process, as well as bidder evaluation**
- **The RFP tenders services of collection, storing of hazardous waste**



Agbogbloshie in Ghana remains tragically famous for being one of the most toxic locations in our world. The people working and living on this electronic scrap dumpsite, among them many children, are facing a dire future. Few income alternatives, ongoing illegal imports of WEEE amounts by local and international networks and a lack of any HSE measures for the informal sector are just some reasons for that. As part of a dedicated team consisting of local and international experts such as GOPA Infra and Ramboll, BlackForest Solutions supports as a technical advisor to improve the conditions on site. The main target is to implement processes that mitigate toxic emissions on the dumpsite, which are especially caused by open burning of electronic scrap. The 3 years projects is funded by German development bank KfW and is conducted in close cooperation with Ghanaian stakeholders.

BLACKFOREST
SOLUTIONS GmbH

The detailed feasibility study to establish sustainable hazardous waste management for end of life solar products and waste batteries, followed by RFP development & proposals evaluation for tendered services in supplying lead acid battery waste treatment facilities

Date: 08/2019 – 12/2020
RWANDA

Waste Type

- **Hazardous waste**
- **Waste batteries**

Status quo

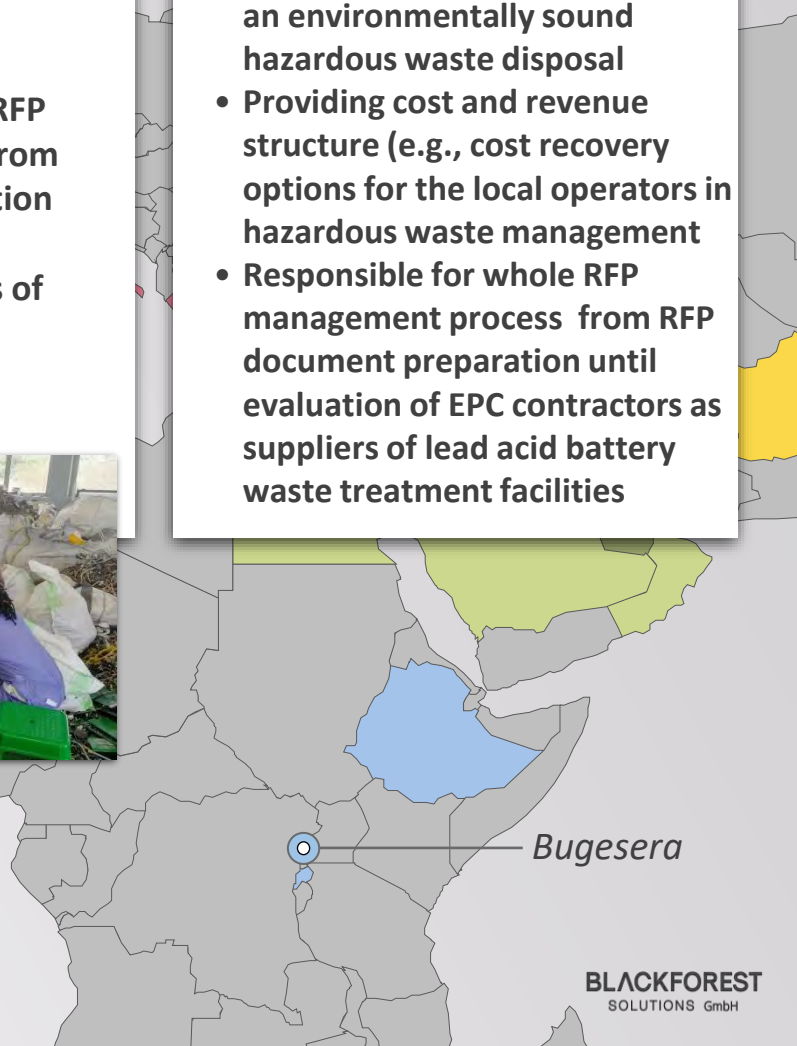
- **Inadequate handling of waste batteries**
- **Needs for improvement of the current dismantling & recycling facility for hazardous waste**

BFS Role

- **Technical Consultant for hazardous waste management**
- **Local Project Lead**
- **Responsible for whole RFP management process from RFP document preparation until evaluation of EPC contractors as suppliers of lead acid battery waste treatment facilities**

Solution

- **Improving the existing legislative and compliance framework for an environmentally sound hazardous waste disposal**
- **Providing cost and revenue structure (e.g., cost recovery options for the local operators in hazardous waste management**
- **Responsible for whole RFP management process from RFP document preparation until evaluation of EPC contractors as suppliers of lead acid battery waste treatment facilities**



BFS, together with colleagues from Ramboll, supported the technical assessment for a European Union delegation in Rwanda. BFS analysed how to evaluate the feasibility of business models in the recycling sector in Africa and how to increase treatment capacities for hazardous waste in emerging countries. For that, BFS conducted a feasibility study for the establishment of sustainable waste management systems for end of life solar products and waste batteries in the existing e-Waste facility located in Bugesera Industrial Park. BFS assessed various stakeholders and treatment facilities in the land of a thousand hills, including facilities for e-scrap, lead batteries, Lithium batteries as well as the informal sector in the country. This project is part of an increasing commitment of BFS in the African continent, now being active in three countries in West and East Africa.

BLACKFOREST SOLUTIONS GmbH

THANK YOU!

International project development:
Email: IPD@bfgroup.org

Contact person: Sebastian Frisch
Position: Managing Director
Email:s.Frisch@bfgroup.org

BLACKFOREST
SOLUTIONS

https://www.blackforest-solutions.com/

CIRPASS - Collaborative Initiative for a Standards-based Digital Product Passport for Stakeholder-Specific Sharing of Product Data for a Circular Economy

Mark Hoff (SLR Consulting)

info@cirpassproject.eu

June 27, 2023

Funded by the European Union

What is CIRPASS?

- Funded by the European Commission under the **Digital Europe Programme**, **CIRPASS** is a collaborative initiative to prepare the ground for the gradual piloting and deployment of a standards-based **Digital Product Passport (DPP)** aligned with the requirements of the Proposal for Ecodesign for Sustainable Product Regulations (ESPR), **with an initial focus on the electronics, batteries, and textile sectors.**

- **Duration:** 18 months (from Oct 2022 to March 2024)

- Build a common understanding on a **cross-sectoral DPP**.

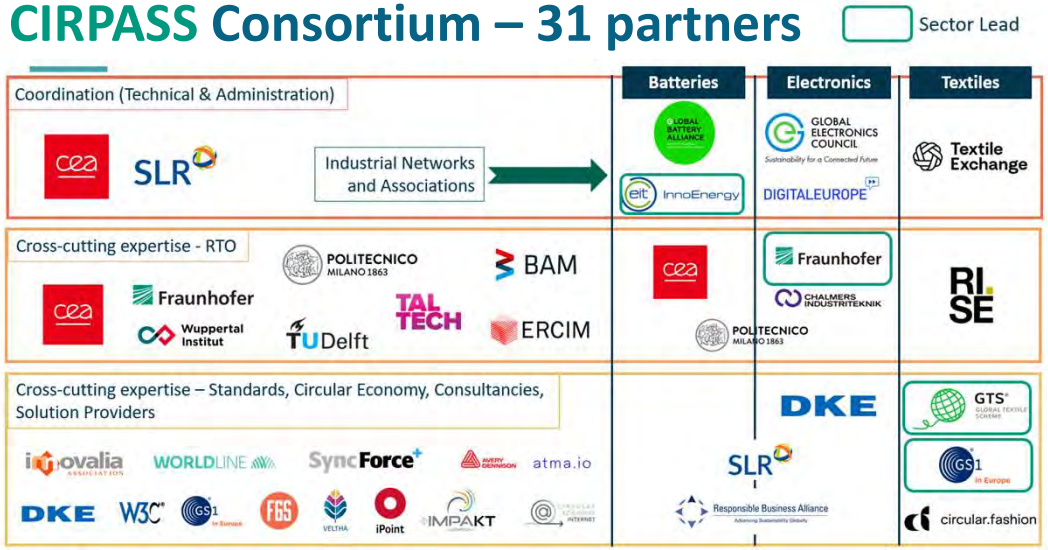
- Be an objective source of information for the **European Commission**
- Be an objective source of information for **all DPP stakeholders**

CIRPASS
Digital Product Passport

A forum for building consensus on a standards-based DPP

Initial sector focus:

CIRPASS Consortium – 31 partners



Partnerships

European Commission
DATA SPACE 4.0
IOTA
StandICT.eu
DATA SPACES SUPPORT CENTRE
wbcsd
EUIPO
NFC FORUM
UNECE
Battery Pass
ETP Fibres Textiles Clothing
Circ Thread
INTERNATIONAL MATERIAL DATA SYSTEM
giz

And many more…

Stakeholder Community

Describe your solution on www.cirpass.eu!

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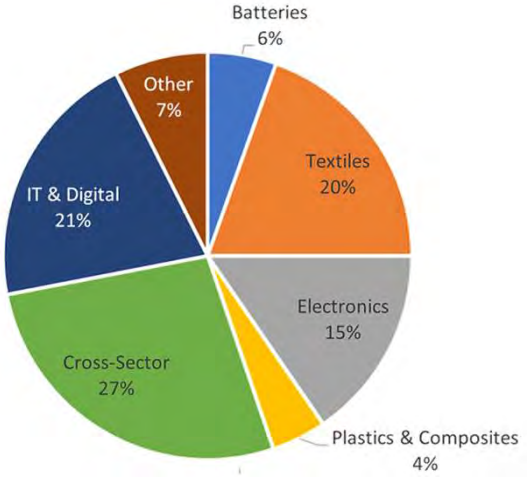
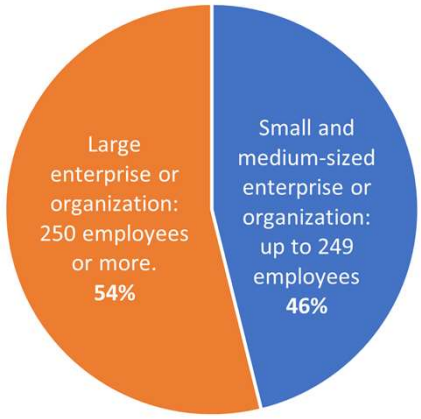
CIRPASS Digital Product Passport

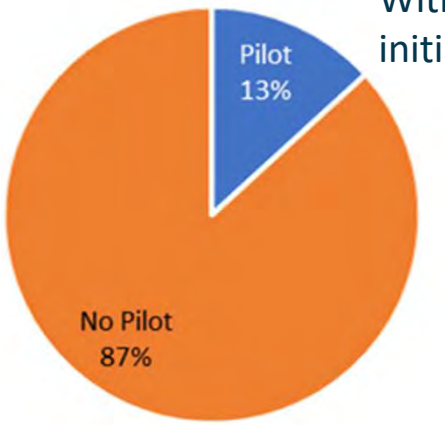
CIRPASS Stakeholder Community

May 2023: **>500 registered stakeholders**, 978 newsletter subscribers, 8000 website visitors/month





With DPP-related initiatives/pilots



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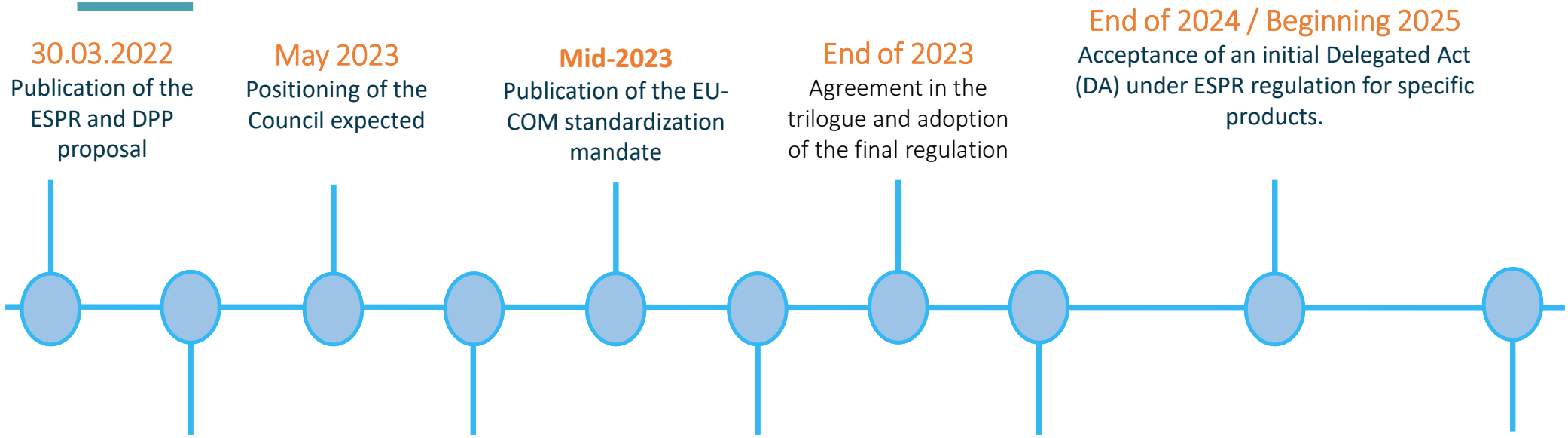
CIRPASS Resources

- Short “**Fact sheets**” on related regulations
- **Benchmark of existing DPP-related initiatives** & **Annex**

Extensive **FAQ**

General timeline



30.03.2022
Publication of the ESPR and DPP proposal

January 2023
Public consultation on the first ESPR work program

May 2023
Positioning of the Council expected

June 2023
Plenary vote on European Parliament (EP) Positioning

Mid-2023
Publication of the EU-COM standardization mandate

Mid/End of 2023
Acquisition under Horizon to pilot a DPP

End of 2023
Agreement in the trilogue and adoption of the final regulation

March 2024
Completion of the CIRPASS project (3 pilot DPPs)

End of 2024 / Beginning 2025
Acceptance of an initial Delegated Act (DA) under ESPR regulation for specific products.

2026 / 2027
First products with mandatory DPP covered by ESPR

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CIRPASS Digital Product Passport

… the Digital Product Pass

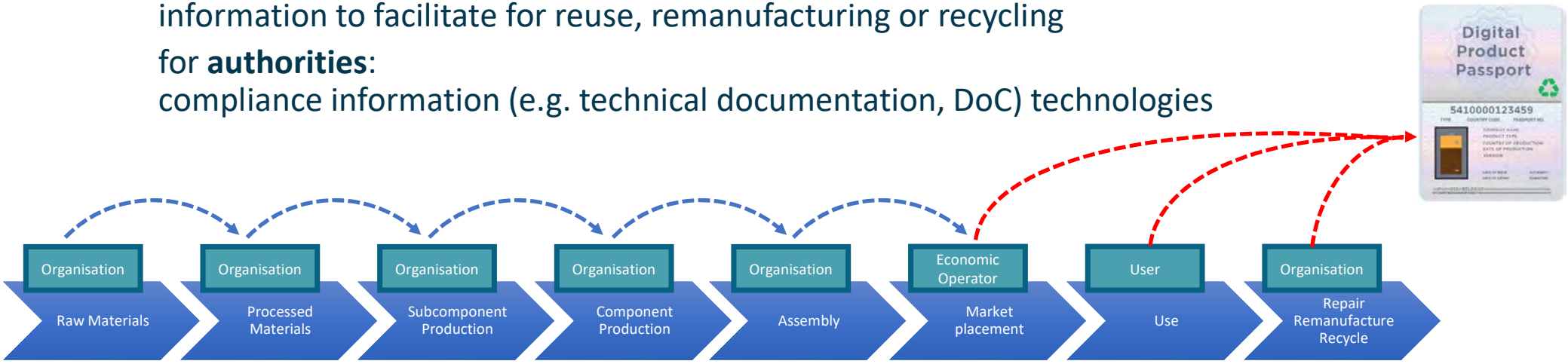
The DPP is an information system for the Circular Economy and it:

- will allow access to product information throughout the product life cycle, on a **need-to-know** basis
- should contain, as relevant to the product:

  for **consumers**:
  data on e.g. environmental impact, circularity, substances of concern

  for **value retention**:
  information to facilitate for reuse, remanufacturing or recycling

  for **authorities**:
  compliance information (e.g. technical documentation, DoC) technologies



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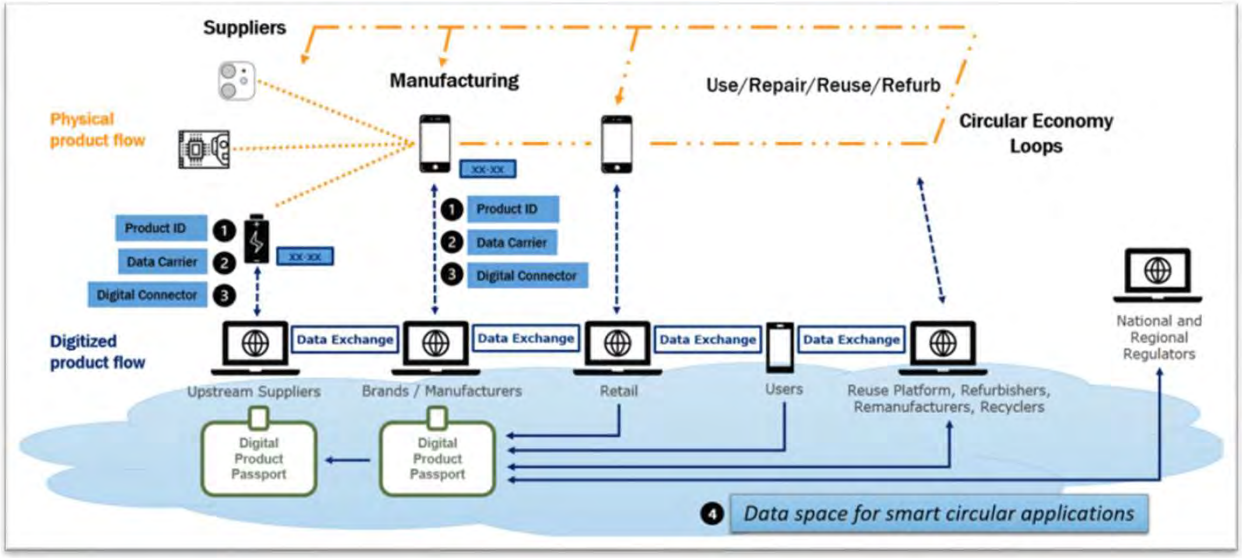
CIRPASS Digital Product Passport

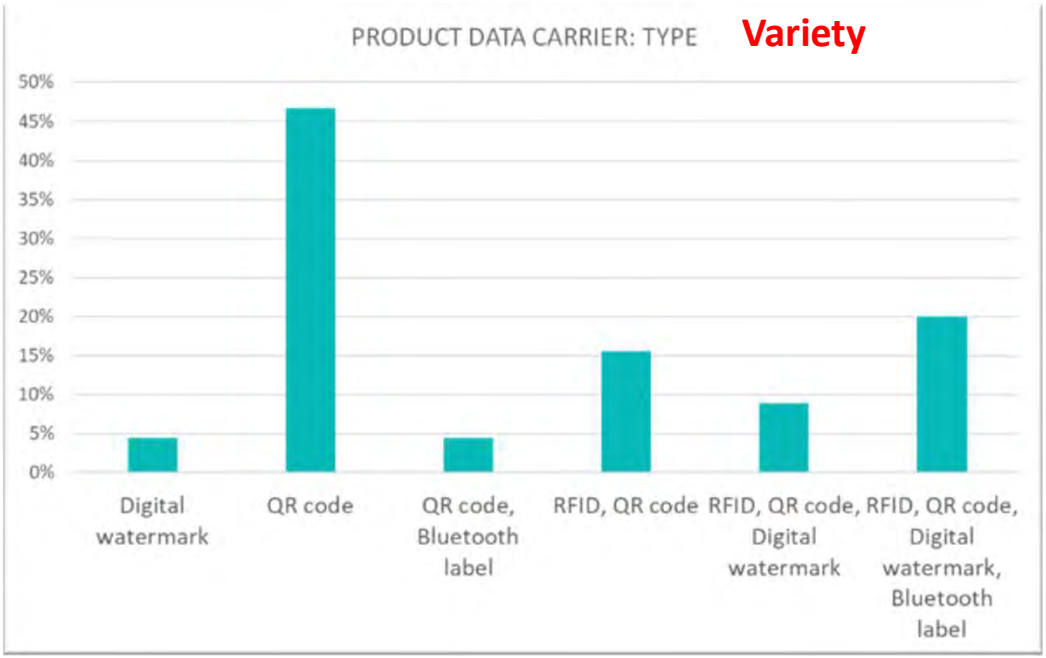
… the DPP system: terminology

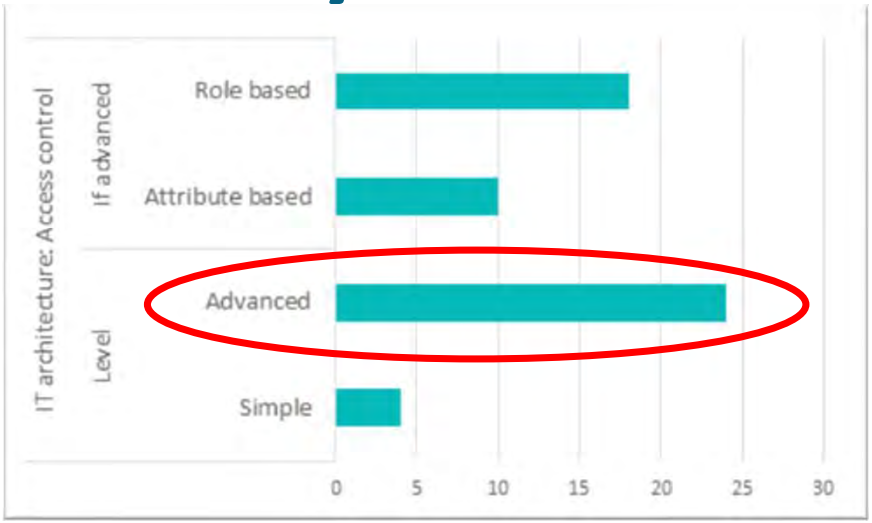
- **(1)** A unique persistent **ID** for the product (model, batch or serialized as necessary)
- **(2)** A persistent **data carrier** (RFID, QR Code, digital watermark, Bluetooth tag, etc.)
- **(3)** A **digital connector** between physical product and the digital place of information (e.g., URI address)
- **(4)** An IT architecture to facilitate the data exchange



Key results from Benchmark study

- A common analysis methodology
- 80 DPP-related initiatives





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Key results: standardisation

- Currently there are 300+ DPP-System Standards
- International standards (National standards, Industry Standards, etc.)
- Requirements to the DPP System as stated in the ESPR
  - Data storage is the responsibility of economic operators or their representatives (IEC 63278-Series)
  - Data authentification, reliability and integrity
  - **Interoperability between DPPs, e.g. IEC 63278-Series, ISO/IEC 30141, W3C (RDF), IEC CDD, eClass**
  - **Products have to be identifiable, e.g. IEC 61406-1-2, ISO/IEC15459, GS1 Digital standard link**

Standards shall enable systems to exchange data

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Key results: standardisation (system vs. data)

DPP-System

(to be developed before DPP-deployment)

- All standards and protocols related to the IT-System architecture, like standards on:
  - Data carriers and unique identifiers
  - Access rights management
  - Interoperability (technical, semantic, organisation). This includes data exchange protocols and formats
  - Data storage
  - Data processing (introduction, modification, update)
  - Data authentication, reliability and integrity
  - Data security and privacy
- The DPP registry

DPP-Data

(to be identified when developing product group specific secondary legislation)

- Possible Track and Trace identifiers :
  - Economic operator's name, registered trade name
  - Global Trade Identification Number or equivalent
  - TARIC Code
  - Global location number
  - Authorised representative
  - Reference of the back-up data prepository
  - …..
- Example of potential attributes
  - Description of the material, component or product
  - Recycled content
  - Substance of concern
  - Environmental footprint profile
  - Classes of performance
  - Technical parameters
  - …….

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CIRPASS vision for the DPP system

- **The DPP is an information system for the Circular Economy.**

- We focus on **data-level interoperability** to minimize constraints and facilitate adoption.
- Aim for a maximum reuse of legacy systems and legacy data.
- Transitioning to a Circular Economy will require great flexibility.
  - We believe that we need a DPP system with built-in flexibility.
- The DPP will be with us for a long time → Need state-of-the-art technologies

Proposition: ***The DPP is a knowledge graph***

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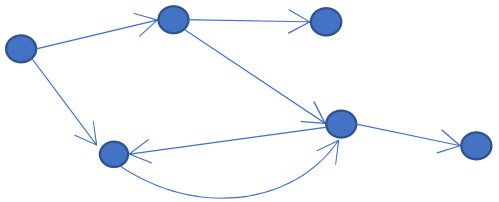
Gentle introduction to Knowledge Graphs

- A **knowledge graph** is made of assertions made in predicate logic:
  - Assertion : {Subject → predicate → object}
  - E.g. { The sky → has color → blue }
- Each assertion forms a « **semantic triple** ».
  - <subject> <predicate> <object> .

- A knowledge graph is a **directed** graph made of semantic triples.



- **knowledge graph = ontology + data**
- An **ontology** contains:
  - **Classes:** the distinct types of things that exist in our data.
  - **Relationships:** properties that connect two classes.
  - **Attributes:** properties that describe an individual class.

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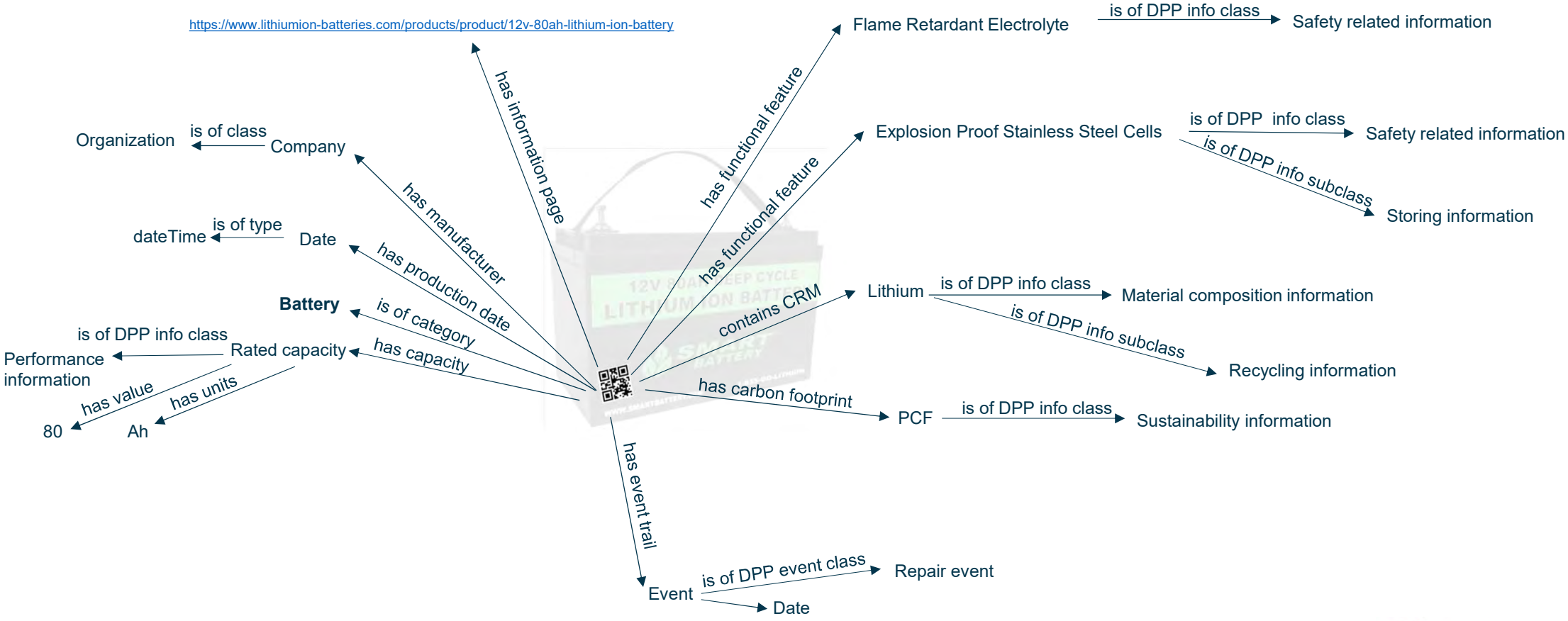
Example DPP knowledge graph for a battery



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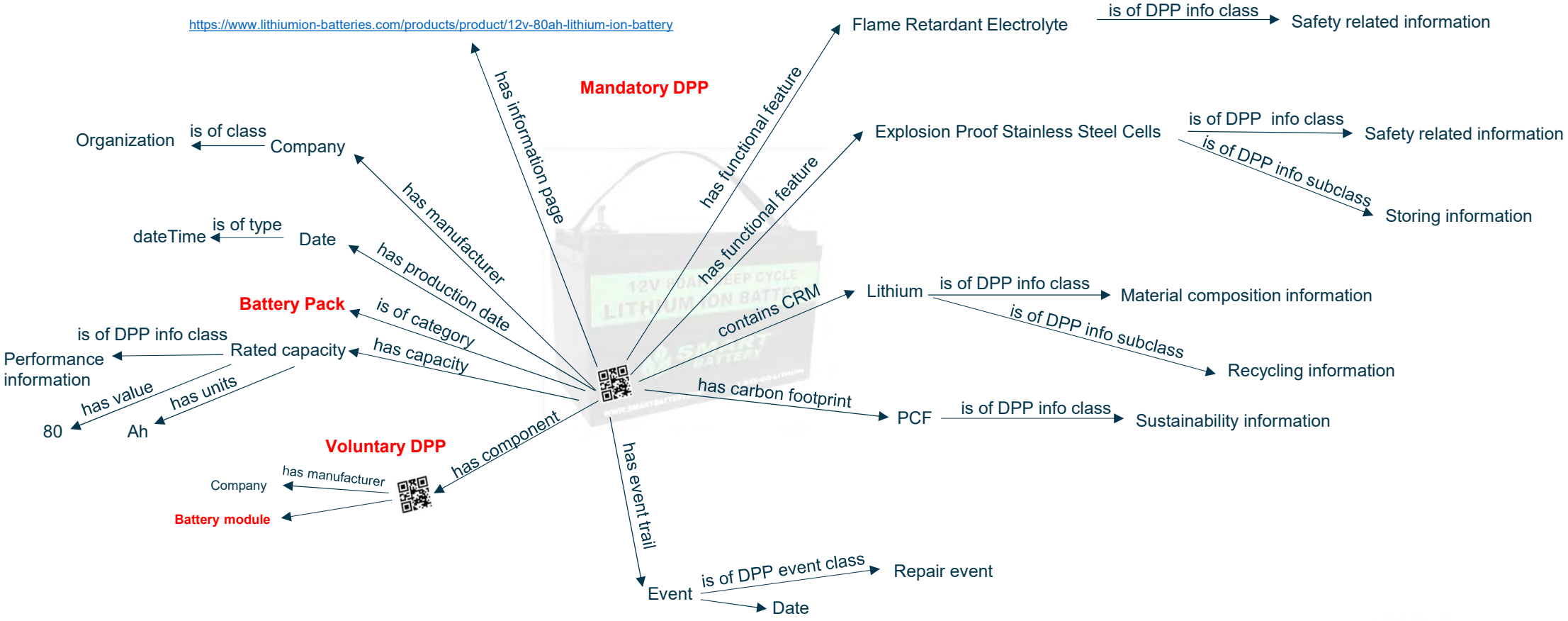
CIRPASS Digital Product Passport

Example DPP knowledge graph for a battery



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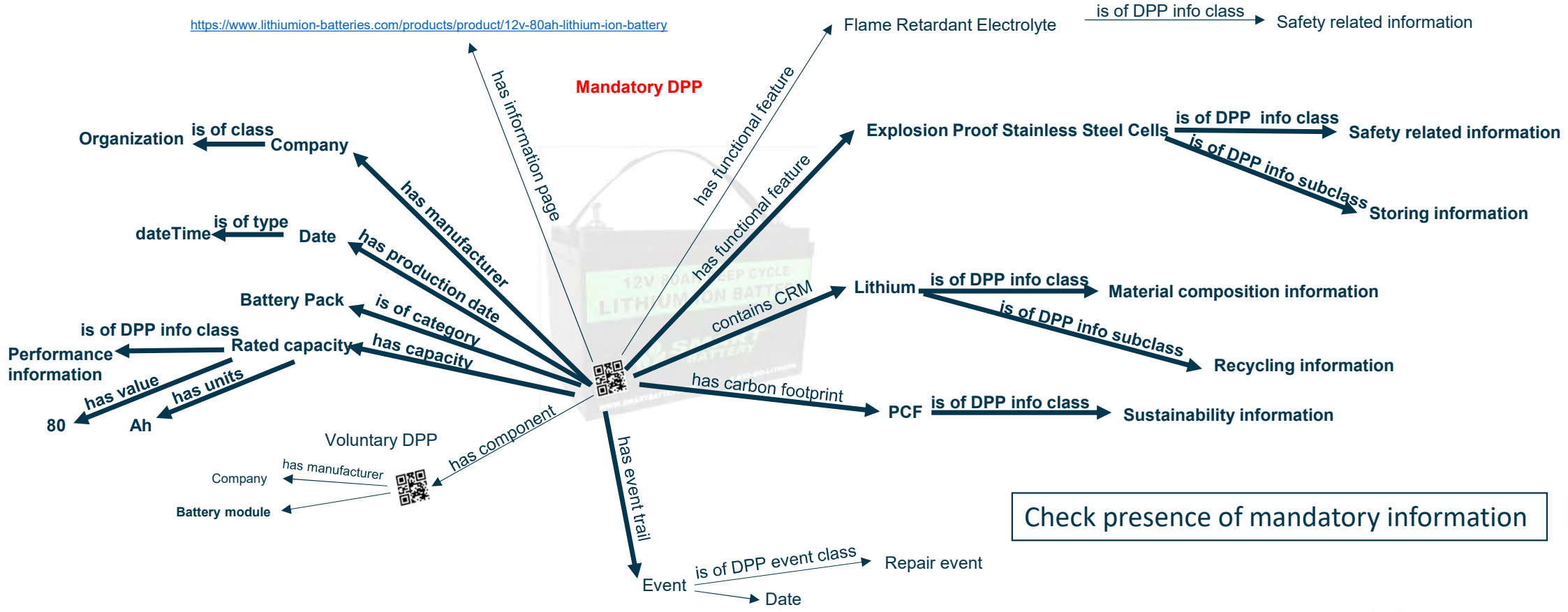
Verifying DPP compliance

e.g. using the SHACL (Shapes Constraint Language)



Check presence of mandatory information

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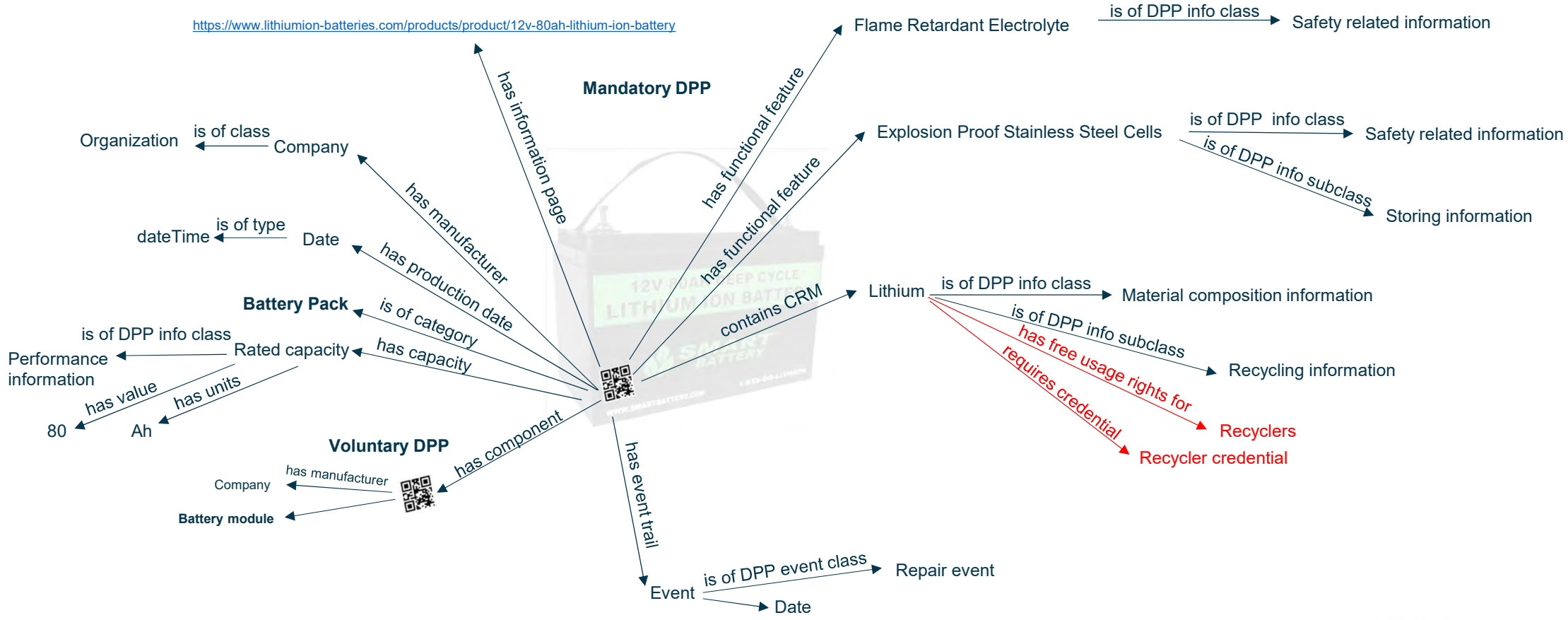
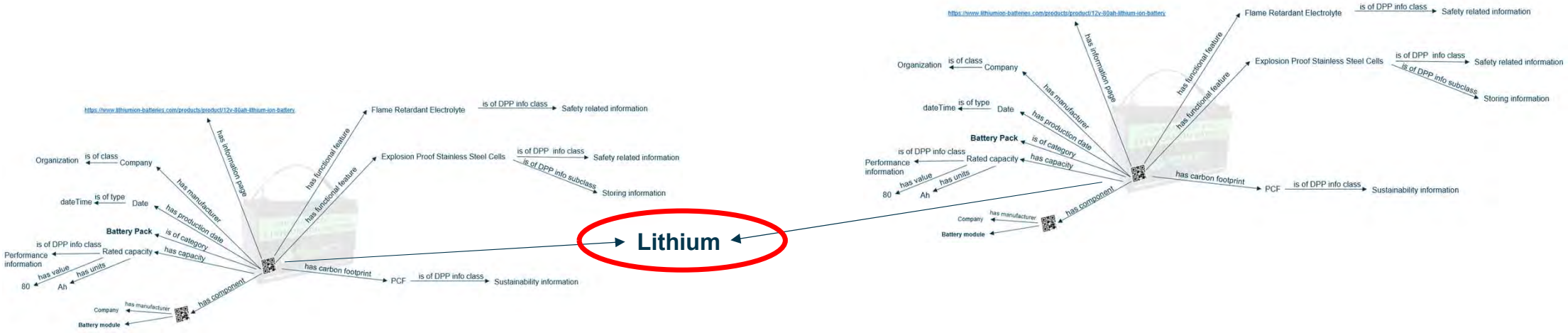
Linking legal rights to data (sticky policies)



A DPP « data fabric »

- DPP knowledge graphs are “woven” together to form a “data fabric” → data fusion



- Market Surveillance Authorities, who have the appropriate usage and access rights, can perform queries to the DPP « data fabric », e.g., using the SPARQL query language.
  - *“List all battery packs models manufactured in Europe between 2028 and 2029 containing Lithium”*

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CIRPASS Digital Product Passport

Ongoing work @ CIRPASS

- In preparation:
  - Consultation on DPP data gathering effort
  - Report on identification schemes
  - Report on current standards landscape
  - A common “DPP language” consultation
  - “DPP use cases” and “DPP user stories” report
  - Cost estimation of DPP-as-a-Service consultation
  - Links to external resources on benefits of digitalization for industry
  - Study on potential DLT-based services for DPPs
  - Study of the environmental impact of the DPP (@FhG IZM)

***Register here*: https://cirpassproject.eu/get-involved/**

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Q&A

CIRPASS
Digital Product Passport

Thank you!

www.cirpass.eu

Contact us: info@cirpassproject.eu

@cirpass-dpp

@cirpass_dpp

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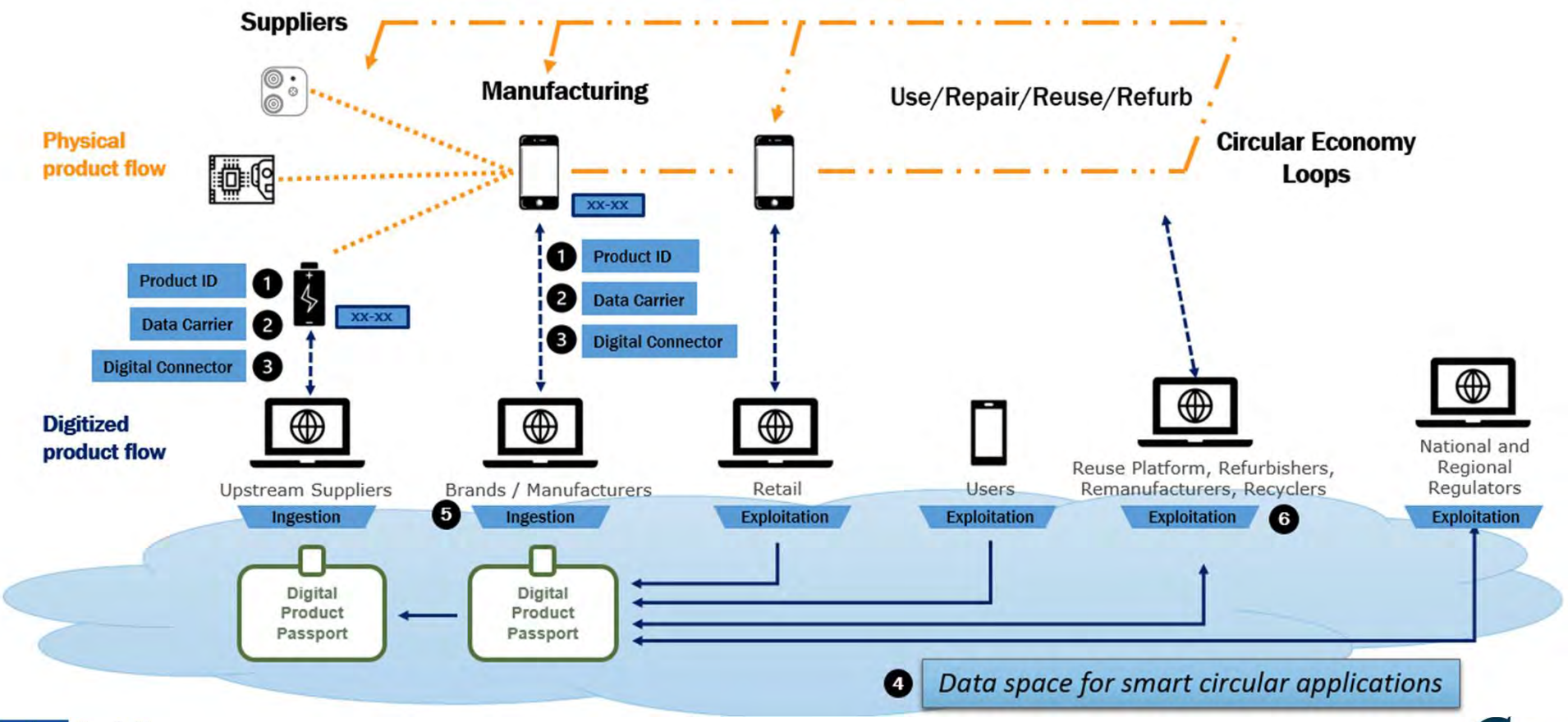
DPP system – 6 pillars / terminology



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CIRPASS Digital Product Passport

CIRPASS public report

- “Benchmark of existing DPP-oriented reference architectures”
- Available online:
  - https://cirpassproject.eu/wp-content/uploads/2023/03/CIRPASS_Benchmark-of-existing-DPP-oriented-reference-architectures.pdf

- Contents of the report:
  - Methodology for initiative selection
  - Detailed descriptions for 32 pilots

  →provided by initiative owners!

  - Analysis of 80 DPP-related initiatives according to a common framework

ID	Initiative short name	ID	Initiative short name
1	atma.io	17	itmatters
2	BP	18	Peppol
3	Wordline B-TraaS	19	QI-Digital
4	CircThread	20	RCS BP
5	Circular.fashion	21	RR
6	CYCLANCE	22	Worldline TCS
7	DDCC	23	TextileGenesis
8	DIBICHAIN	24	Tings
9	Digiprime	25	Tokenized Distributed Ledger
10	DNV	26	Toxnot
11	EasyBat	27	Worldline TBD
12	EON	28	TRACE
13	EPEAT Ecolabrl	29	TRICK
14	eReuseDPP RR	30	TrusTrace
15	FEDeRATED	31	Vine
16	GTS	32	ZVEI DPP4.0

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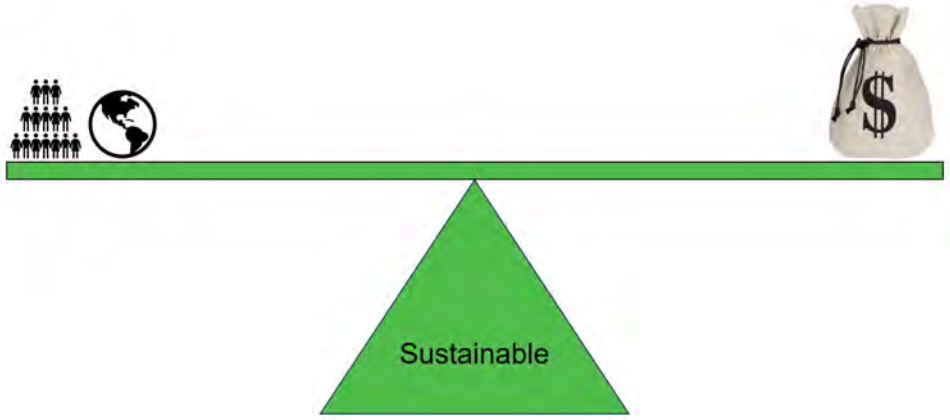
HOW TO STAND OUT IN THE ITAD WORLD

SUSTAINABLE ITAD

- MAXIMIZES AND LEVERAGES THE VALUE OF ELECTRONICS
- FINANCIALLY RESPONSIBLE
- PROTECTS BRAND EQUITY
- PROTECTS PEOPLE AND THE PLANET
- HELPS LOWER AN ORGANIZATION'S ENVIRONMENTAL IMPACT, ITS CARBON FOOTPRINT, AND SUPPORTS ESG AND SUSTAINABILITY GOALS



SERI | R2

HOW TO GET TO SUSTAINABLE ITAD

1

STANDARDS

Identify and Document Best Practices to meet the goal

2

CERTIFICATION

Create accountability to the Best Practices

3

COMMITMENT

to Best Practices by everyone

ELECTRONICS SUSTAINABILITY STANDARDS

e-Stewards

CENELEC

EN 50625-1	EN 50625-2-4
EN 50625-2-1	CLC/TS 50625-4
EN 50625-2-2	EN 50614
EN 50625-2-3	

R2

SERI | R2

BUILDING GLOBAL CAPACITY THROUGH ELECTRONICS SUSTAINABILITY CERTIFICATIONS

e-Stewards

N. America & Brazil

103 Facilities

http://e-stewards.org/find-a-recycler/

WEEELABEX CONFORMITY & VERIFICATION

16 EU Member States

162 Certified Operators

https://www.weeelabex.org/operators-list/

R2

40 Countries

1000+ Facilities

https://r2directory.org

SERI

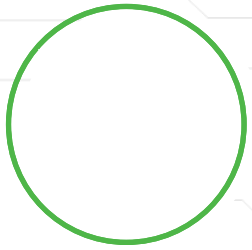
What Makes R2 Different?

- Addresses **all aspects** of responsible refurbishing and recycling of used electronics at all points in the revers supply chain.
  - Returns
  - Reuse
  - Recycling
  - Resell
  - Brokering
- **Free** to download R2 Standard
- **Free** training & educational resources
- **SERI** Team Support

RETURNS

REPAIRS

TRADE-INS



UPGRADES

REMARKETING

RECYCLING

R2 is Structured to adapt to many different business models

CORE Requirements

Apply to **ALL** R2 facilities

PROCESS Requirements

Apply **ONLY** to facilities that perform specific processes

CORE REQUIREMENTS

APPLY TO ALL
R2 CERTIFIED FACILITIES

1. Scope
2. Hierarchy of Responsible Management Strategies
3. EH&S Management System*
4. Legal and Other Requirements
5. Tracking Throughput
6. Sorting, Categorization and Processing
7. Data Security
8. Focus Materials
9. Facility Requirements*
10. Transport

PROCESS REQUIREMENTS

APPLY ONLY TO FACILITIES ENGAGED IN THESE SPECIFIC PROCESSES

Appendix A - Downstream Recycling Chain

Appendix B - Data Sanitization

Appendix C - Test & Repair

Appendix D - Specialty Electronics Reuse

Appendix E - Materials Recovery

Appendix F - Brokering

Appendix G (pending) - PV Panels

Core 7, Appendix B

Reduces Risk

- Data breaches
- Noncompliance
- Liability

- Strong Data Security Controls
- Data sanitization plan
- Effective data sanitization methods & quality controls
- Data Protection Representative

ADDITIONAL Requirements in Appendix B

- Traceability by device
- Sanitization Software w/electronic records
- Enhanced quality controls & data audits
- Enhanced security controls & video monitoring

Appendix C

Strong REUSE

requirements to **ensure quality**

- Quality Management Certification

- R2 Reuse Plan detailing…
  - Testing procedures
  - Quality assurance plans
  - Qualifications & Training
- Sanitization per **Appendix B**
- Detailed testing records

REC

LEVEL OF FUNCTIONALITY

Category	Product Functionality Description
F1	Collectible or Specialty Equipment *(Core Requirement 6.(e)(3)(A))* · Collectibles are rare, vintage, and no longer manufactured or supported by the OEM · Specialty equipment are rare and specialized equipment not generally available in retail · May have broken or missing parts
F2	Verified Specialty Electronics *(Appendix D)* · Verified removed from operation with no known defects in functionality · No physical damage or defects · No corrosion · No missing parts · Part numbers and serial numbers verified accurate
F3	Key Functions Working *(Appendix C – Test and Repair)* · A subset of the primary functions of the device that an ordinary user of the device expects to function are verified working through manual or software tests · Software may not be loaded or configured · Hardware required for key functions to be tested may have been removed after testing (e.g. Hard Drive) · May be missing components or parts not essential to key functions · Secondary functions may not be tested or working · May not include Focus Materials (e.g. Battery) that are not working or not tested · All missing components or parts will be listed for each item
F4	Hardware Functional *(Appendix C – Test and Repair)* · All hardware is tested and verified working through manual or software tests · No missing or damaged components or parts · Software not loaded or configured · No hardware defects
F5	Refurbished *(Appendix C – Test and Repair)* · All functions tested and verified working through software tests · Loaded and configured with legally licensed software for full operations · Software test results are available · No hardware or software defects
F6	Like New *(Appendix C – Test and Repair)* · All functions tested and verified working through software tests · Repaired with OEM original parts · Loaded and configured with original manufacturer's legally licensed software for full operation · Meets OEM specifications for full original functionality · Software test results are available · Zero defects

Core 5, Appendix A

Strong Accountability throughout the entire reuse/recycling chain

Annual Verification of each vendor in the downstream chain

Tracking flow of equipment, components, materials throughout the *entire* downstream until final processing*

Documented as working & sanitized **OR commodity materials ready to be reintroduced into the manufacturing stream*

Knowledge Base

Getting Certified

- Download R2 Standard / REC / Code of Practices
- Intro to R2 webinars
- Summary of R2v3
- Key Steps in the Certification Process
- Find a Consultant

Transitioning to R2v3

- R2v3 Formal Interpretation #1.0 - Data Sanitization Software
- IMPORTANT MESSAGE for R2 facilities and consultants about auditor availability and transition timing
- A Successful Transition to R2v3 - Webinar & Resource Guide
- Podcast 10 - What Have We

Video Library

- Translation instructions for R2 videos
- Intro to R2 - Translations
- Definitions & Overview
- Code of Practices
- Core 1 -- Scope
- Core 2 -- Hierarchy

Podcast Library

- Podcast 1 - Using the R2 Appendix Determination Tool
- Podcast 2 - Helpful hints when scheduling your Internal Audit
- Podcast 3 - Writing your Data Sanitization Plan
- Podcast 4 - Writing Your R2 Reuse Plan

R2 Training - CORE Requirements

- Translation instructions for R2 videos
- Definitions & R2v3 Overview
- Core 1- Scope
- Core 2- Hierarchy
- Core 3- Environmental, Health & Safety
- Core 4- Legal & Other

R2 Training - PROCESS Requirements (Appendices)

- Translation instructions for R2 videos
- R2v3 Appendix Applicability Guidance
- R2v3 Appendix Determination Tool
- The Scoop on Scope: What you need to know about scope for your R2 certification
- Appendix E Applicability Guidance

Common Questions & Answers about R2v3

- Click Here to Submit Your Question
- Podcast 6 - Finding Guidance in SERI's Knowledge Base

Code of Practices & Program Information

- Download R2 Standard / REC / Code of Practices
- R2v3 Formal Interpretation #1.0 -

Auditor Training & Resources

- SERI R2v3 Auditor Course
- Audit Tools
- Auditor Videos

RECENTLY ADDED...

- SERI R2v3 Auditor Course: July 10, 11, 12 (online) — May 1, 2023
- Appendix E Applicability Guidance — March 30, 2023
- Appendix E Applicability Flowchart Guidance — March 30, 2023
- R2v3 Appendix Determination Tool — March 30, 2023
- R2v3 Appendix Applicability Guidance — March 30, 2023
- Common questions about Industrial Hygiene requirements — March 29, 2023
- R2v3 and IH Monitoring: A Quick Primer and Key Resources — March 29, 2023
- SERI R2v3 Auditor Course: May 30, 31, June 1 (online) — March 24, 2023
- Advisory 22 – Transition Plan for R2v3 (version 1.4) — March 16, 2023
- Podcast 19 – Most Common Nonconformances in R2v3 Audits — February 27, 2023
- Preview SERI License Agreement — February 9, 2023
- Podcast 18 – Legal Compliance Audits, with R2 Director Mike Easterbrook — February 7, 2023

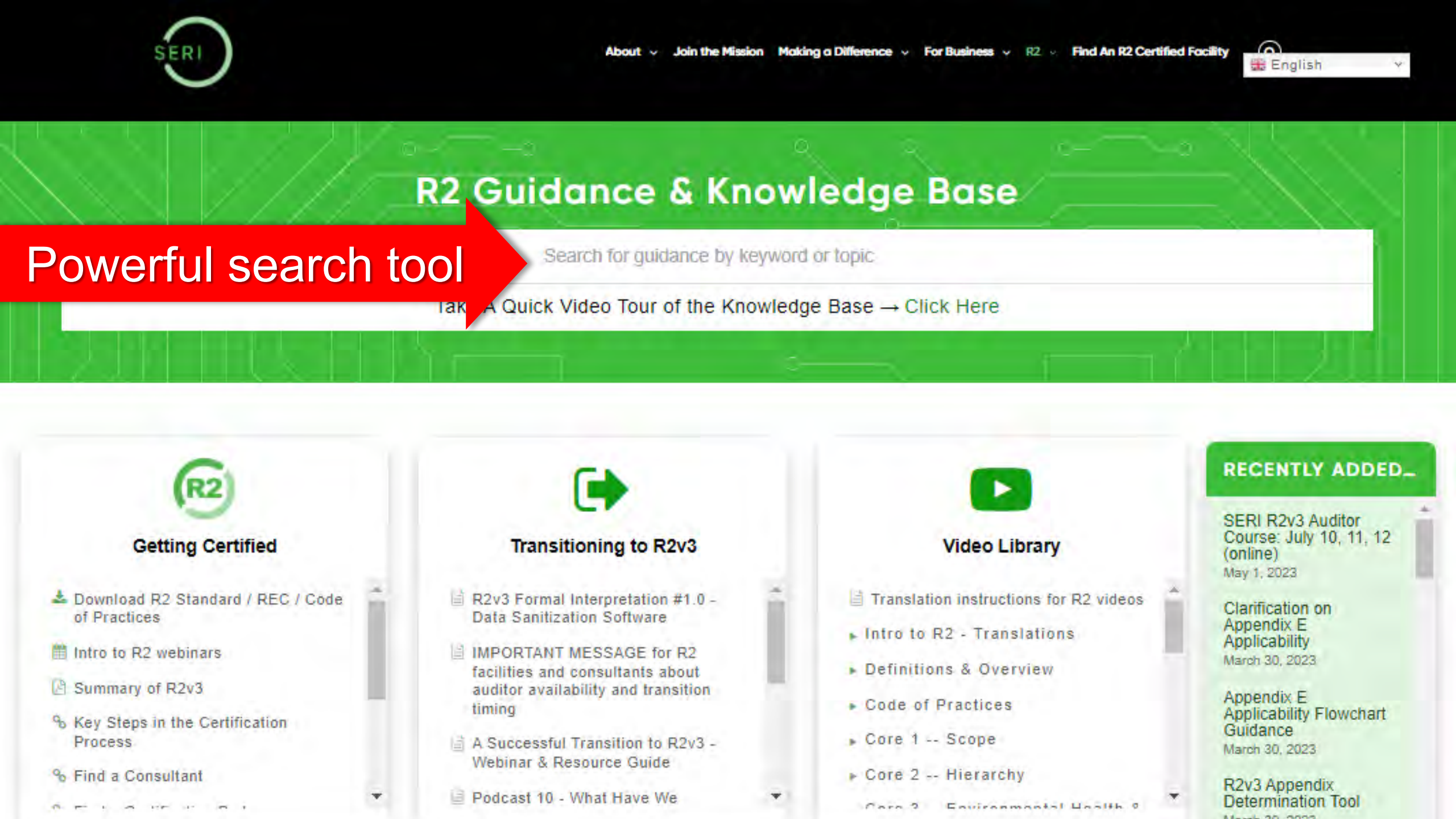
40+ Training Videos

YouTube

R2v3 Training Videos

Unlisted R2 Training - 8 / 40

5	Core 1.2 Scope	R2 Training	6:09
6	Core 2.1 Hierarchy	R2 Training	3:51
7	Core 2.2 Hierarchy	R2 Training	7:13
▶	Core 3.1 EH&S Management System	R2 Training	3:14
9	Core 3.2 EH&S Management System	R2 Training	10:03
10	Core 4.1 Legal	R2 Training	3:16
11	Core 4.2 Legal	R2 Training	8:12
12	Core 5.1 Tracking Throughput	R2 Training	4:51
13	Core 5.2 Tracking Throughput	R2 Training	9:20
	Core 6.1 Sorting		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Key Steps in the Certification Process
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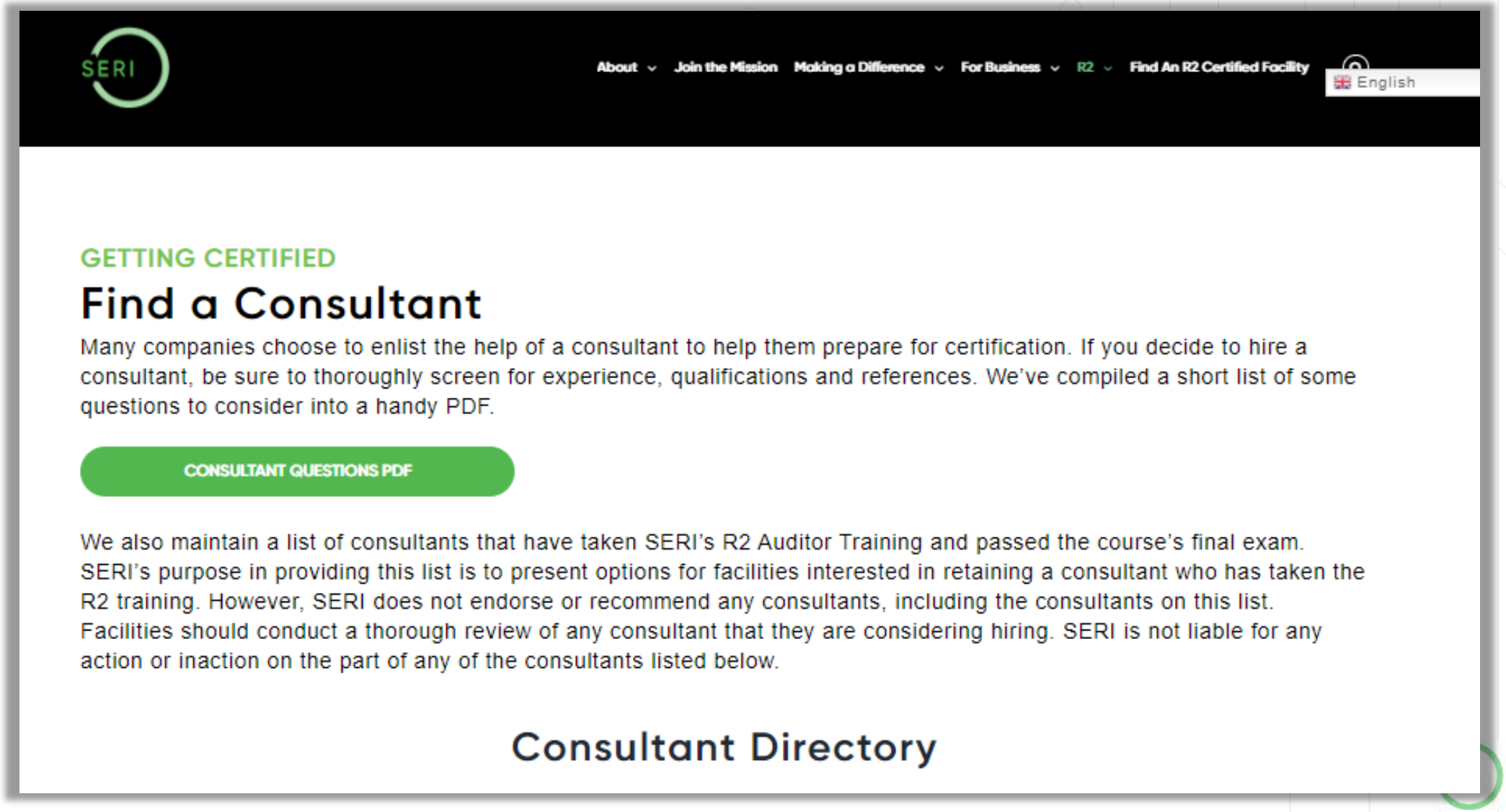
Definitions & Overview
Code of Practices
Core 1 -- Scope
Core 2 -- Hierarchy
RECENTLY ADDED
SERI R2v3 Auditor Course: July 10, 11, 12 (online)
May 1, 2023
Clarification on Appendix E Applicability
March 30, 2023
Appendix E Applicability Flowchart Guidance
March 30, 2023
R2v3 Appendix Determination Tool

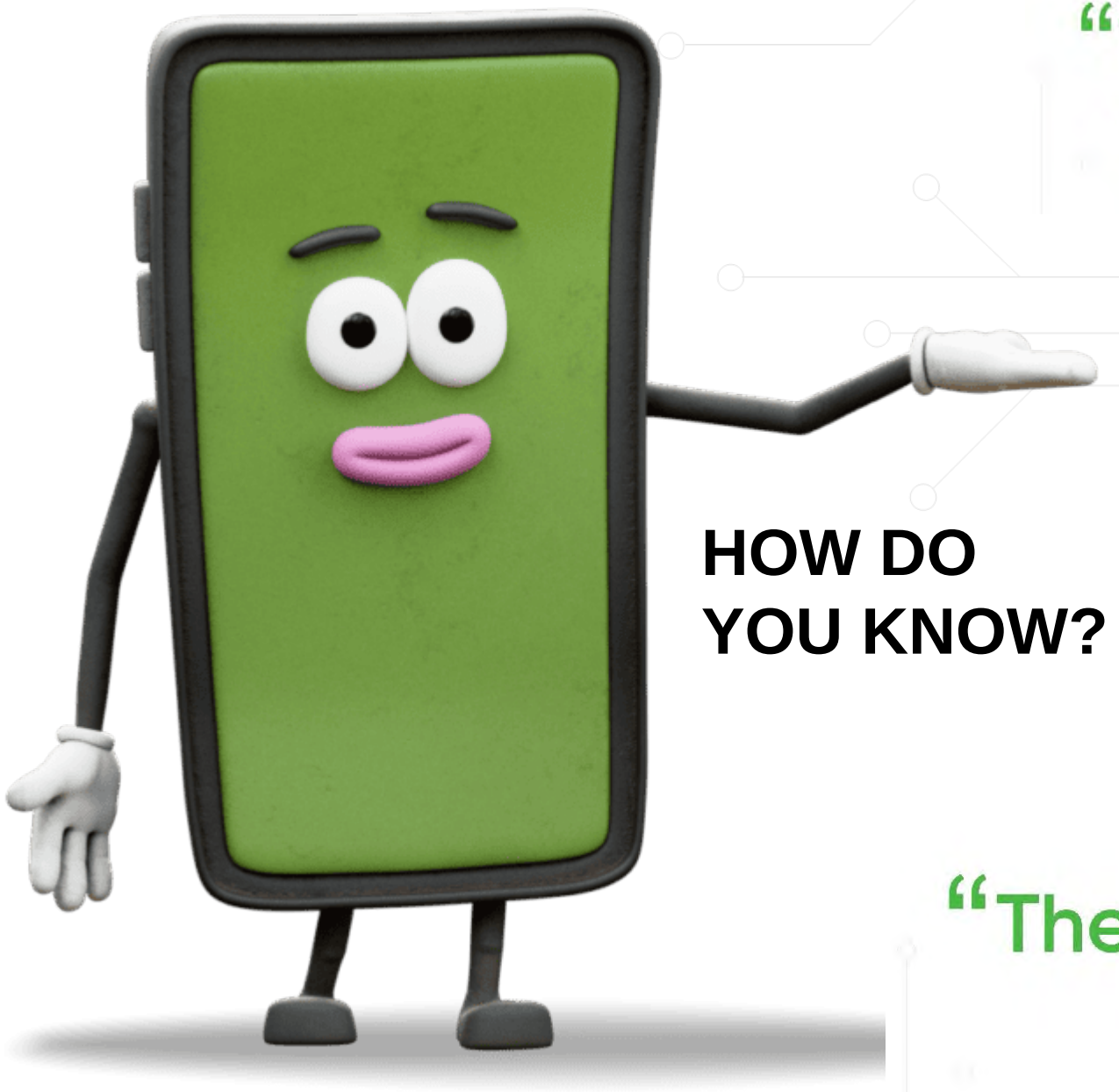
Online Training Classes

- Intro to R2 webinars
- R2v3 Auditor Training

R2 Trained Consultants



Live SERI support



HOW DO YOU KNOW?

"Trust us... we do it right"

"I got a guy!"

"Don't worry... your data is safe with us"

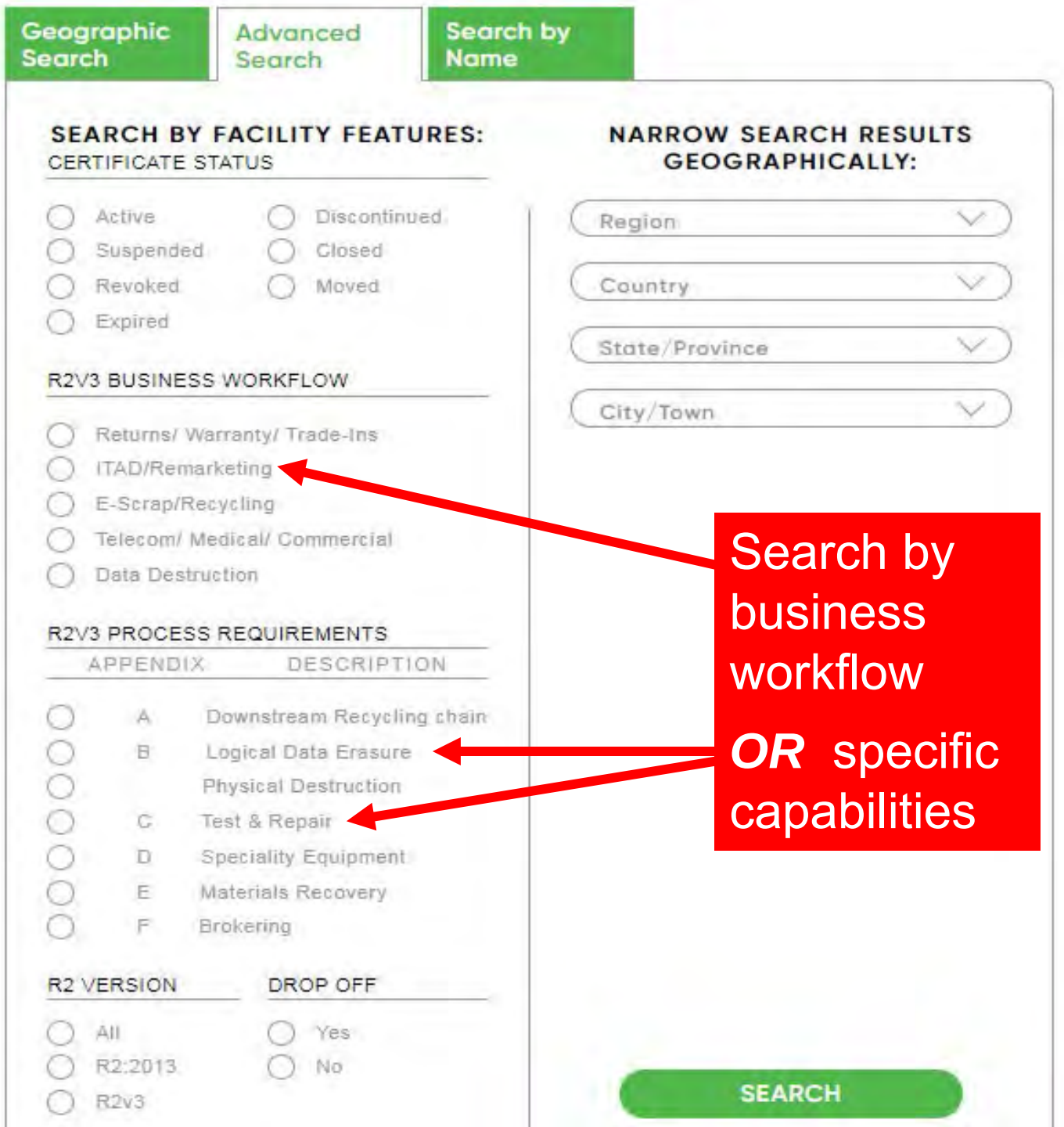
"They'll take it all, for free!"

SERI | R2

SUSTAINABLE ITAD

FACILITIES

https://R2Directory.org



SUSTAINBLE ITAD in EUROPE

MOST WIDELY ADOPTED CERTIFICATION for SUSTAINABLE ITAD

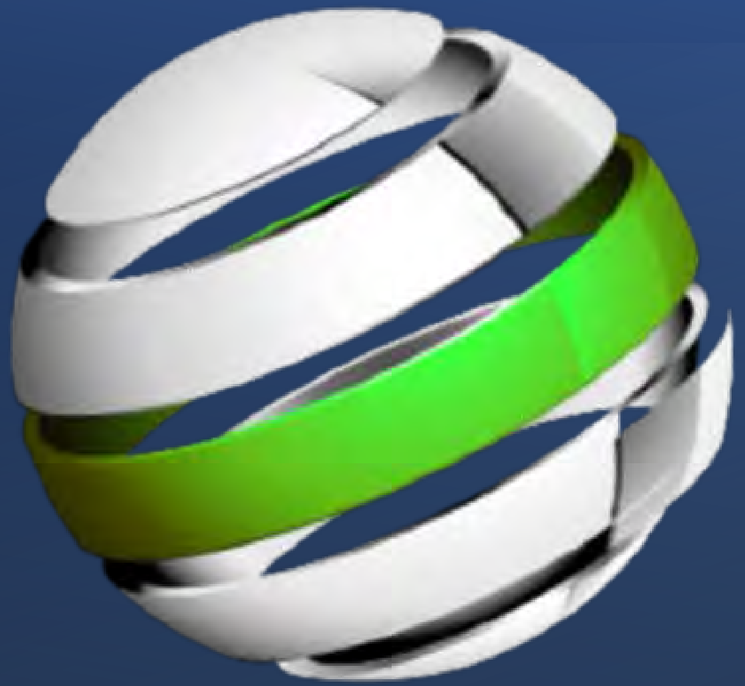
617 Facilities

36 Countries

SERI | R2

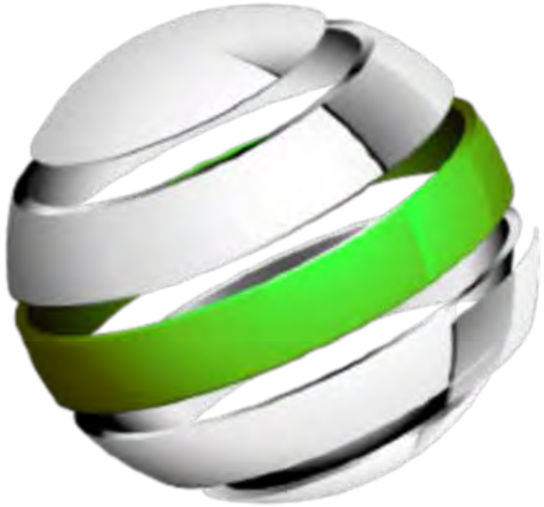
R2 CERTIFIED

1020	40	7
FACILITIES	COUNTRIES	REGIONS



ASCDI

The ITAD Association



ASCDI

The ITAD Association

Ethics

Code Of Professional Conduct And Practices

Information

- Meetings
- Newsletters
- Announcements- Email
    - Ethics Announcements
    - Counterfeit Announcements
    - Fraud Announcements
    - New Members
    - Manufacturer Policies
    - Government Affairs

ASCDI

The ITAD Association

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Publicity

- Articles
- Press releases
- Podcasts
- Monthly Newsletters

Equipment Trading Network

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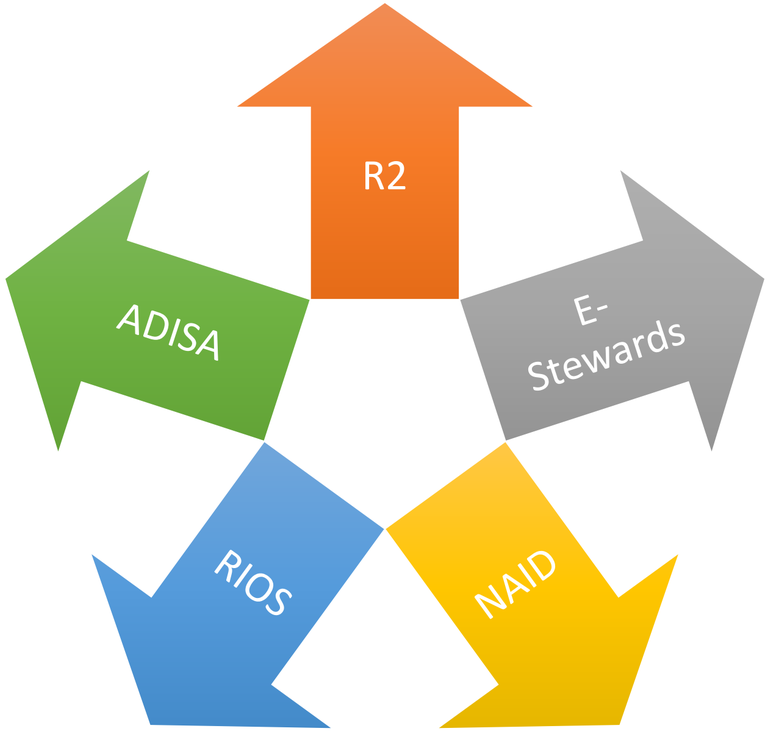

APPLICATION REQUIRED

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