

# The Circular Product Data Protocol

NIST

September 23, 2021

The logo for EON, featuring the letters 'E', 'O', and 'N' in a bold, sans-serif font. The letter 'O' is stylized as a circle with a gap on its right side, suggesting a circular or continuous nature.

# The Circular Product Data Protocol

The ***shared language*** data protocol for digital identification of products in the circular economy in fashion & retail.

# Why a *shared language* for digital identification of products?

Today, we are unable to identify & manage products and materials in circular economy — essential for a sustainable fashion retail industry.





**Problem:** Data needed to resell or recycle is cut off — product can't be identified by circular partners

- ▶ Time consuming
- ▶ Costly
- ▶ Undervalued
- ▶ Design intentions are lost
- ▶ No measurement, transparency or accountability

**Solution:** Digitize products with a shared language, enabling brands & circular partners to:

- Scale circular business models (i.e. resale, rental, sorting, recycling, etc)
- Unlock data and systems essential for maximizing value and recovery of products and materials
- Bring transparency and accountability to the product lifecycle
- Extend sustainability investments

# CircularID Initiative established to solve

Industry leadership came together to support research, development of Protocol and pilots

## Founding Partners



## Brand and Retail Members



## Partners



## Knowledge Partners



## Pilot Partners



# ISEAL Compliant Development Process

Aligns with ISEAL standard setting practices



<b>Winter and Spring 2019</b>	CircularID™ Initiative internal development of the Protocol
<b>Summer 2019</b>	60-day Public Comment Period #1, update made
<b>Fall 2019</b>	30-day Public Comment Period #2
<b>January 2020 – August 2021</b>	The Protocol Pilot Version piloted with brands and retailers
<b>January 2021</b>	CircularID™ Protocol Advisory Council formed to govern the Protocol, updates made
<b>July 1 - August 1, 2021</b>	30-day Public Comment Period #3
<b>August 1-Sept 15</b>	Protocol and Implementation Guidelines finalized
<b>October 2021</b>	EON will gift Protocol V1.0 to industry under Creative Commons license

# Alignment with Standards

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Aligned with adopted industry standards



Aligned with GS1 standards



*The CircularID™ Initiative developed & introduced:*

# The Circular Product Data Protocol

The ***shared language*** for digital identification of products in the circular economy in fashion & retail.

- Defines product data essential to circular functions
- Ensures data for circular products is communicated in a universally consistent way
- Defines consistent format of product and material-level data

For each product's digital identity, the protocol outlines the:

- essential data
- structure of the data

### TARGETED GROUPS

Targeted User Groups  
There are four (4) targeted user groups that

Stakeholder Group	Roles	Impact
Circulators	Collectors, Sorters, Resellers, Renters, Peer-to-Peer reselling, Repairer, Digital Wardrobe	<ul style="list-style-type: none"> <li>• Create a market for used goods</li> <li>• Increase the life cycle of products</li> <li>• Reduce waste</li> <li>• Increase the circularity of the economy</li> </ul>
	Recyclers (includes ALL types of recyclers)	<ul style="list-style-type: none"> <li>• Create a market for recycled materials</li> <li>• Increase the circularity of the economy</li> </ul>
	Brands, Retailers	<ul style="list-style-type: none"> <li>• Create a market for recycled materials</li> <li>• Increase the circularity of the economy</li> <li>• Facilitates measurement of circularity</li> </ul>
	Individual who uses product	<ul style="list-style-type: none"> <li>• Helps customers maximize the use</li> <li>• Helps customers make intelligent choices</li> <li>• Enables ease of sustainable quality</li> <li>• Allows customers to connect with meaningful connections</li> </ul>

### PRODUCT ID

The Product ID includes all information required to enable commercial identification of the product, in order to facilitate the ongoing management, circulation and monetization of the asset.

COMPANY

<b>Business Entity</b>	<p><b>Description</b></p> <p>Business entity that manufactured or contracted the manufacture of the item.</p> <ul style="list-style-type: none"> <li>• Offers ability to give economic and material value back to the organization.</li> <li>• Creates recognition structure for "owner of" - legal entity that is responsible. Will allow companies to be able to quantify their circular progress, and validate their integrity of commitments</li> </ul>	<b>Rationale</b>
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### MATERIAL ID

The Material ID includes all information required for the identification of the materials in the product, in order to facilitate management of the product's material components. This information is considered essential for the regeneration of the materials and supports processes such as disassembly and mechanical and chemical recycling.

VISUAL ATTRIBUTES / LABEL MATERIALS

<b>Color Family</b>	<p><b>Description</b></p> <p>The main color represented on a garment or color grouping in e-commerce.</p> <p><b>Rationale</b></p> <p>This information is also essential for the Regenerators—sometimes mechanical recyclers will mix colors, like paint, to produce different yarn colors. Providing this information will help to sort by color, and then material type (e.g. white 100% cotton).</p> <p><b>Data Format and Examples</b></p> <p>The list of values for this field will be developed and finalized during CircularID™ Pilots.</p> <p>Examples: Black, Gray, White, Cream/Ivory, Brown, Tan, Red, Pink, Orange, Yellow, Green, Blue, Purple, Gold, Silver, Transparent, Multi (all colors represented equally) not yet an exhaustive list</p>	<b>Rationale</b>
<b>Fabric Type</b>	<p><b>Description</b></p> <p>Type of fabric for the body of the garment.</p> <p><b>Rationale</b></p> <p>Essential for regenerators to determine if a good match with their technical specification for recycling.</p> <p><b>Data Format</b></p> <p>The list of values for this field will be developed and finalized during CircularID™ Pilots.</p> <p>Examples: e.g. Knitted, Woven, Leather, Non-Woven, Felt</p>	
<b>Material Composition (on clothing label)</b>	<p><b>Description</b></p> <p>This is the composition that appears on the clothing label attached to the garment.</p> <p><b>Rationale</b></p> <p>Essential for regenerators to determine if a good match with their technical specification for recycling (along with the detailed information below)</p> <p><b>Data Format and Example</b></p> <p>Material name plus % of composition</p> <p>Example: 90% Cotton, 10% Spandex</p>	

## The Circular Product Data Protocol

### Pilot Version

The industry-wide protocol for digital identification of products in the circular economy

Protocol managed by:

# EON™



# Data Field Overview

Examples of Data Fields

## Identifying: Numeric & Brand Identification

- ▶ Product ID System
- ▶ Product ID Value
- ▶ Product Name
- ▶ Parent Organization
- ▶ Brand
- ▶ Sub-brand

## Production (Transparency)

- ▶ Country of Origin
- ▶ Manufacturing Facility Registry (ie OAR)
- ▶ Manufacturing Facility Name or Registry Value
- ▶ Material Facility - Registry
- ▶ Material Traceability

## Commerce

- ▶ Description
- ▶ Photograph
- ▶ MSRP - Currency Code
- ▶ MSRP - Currency
- ▶ Season
- ▶ Season Year

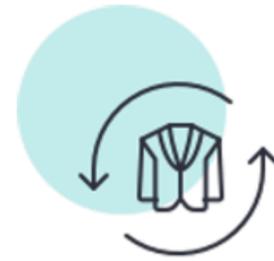
## Product Attributes

- ▶ Components and Material Content
- ▶ Net Weight (kg)
- ▶ Product & Material Certifications
- ▶ Body Fabric Type
- ▶ Dye Class
- ▶ Print Ink Type
- ▶ Trims Type & Content
- ▶ Sewing Yarn Content
- ▶ Fabric Finishes
- ▶ Chemical Compliance
- ▶ Data Carrier Type, Materials and Placement

## Product Info - Categorization

- ▶ Product Name
- ▶ Main Product Color Name
- ▶ Assigned Color Category
- ▶ Country Code for Size
- ▶ Size
- ▶ Product Categorization Standard
- ▶ Age Group
- ▶ Gender
- ▶ Product Category
- ▶ Family
- ▶ Article

# Functions — Protocol enables



## Identification of Products

*Supporting continued use & circulation of products*

Enables continued identification of products through circular business models (e.g. rental, resale) and management of products through channels for continued use & circulation (e.e. repair, reverse logistics, peer-to-peer, collections, etc)

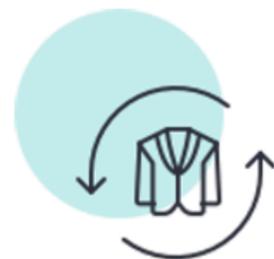


## Identification of Materials

*Supporting continued use & regeneration of materials*

Protocol enables the identification of materials for regeneration, including disassembly and recycling.

# *User Groups* — Protocol serves



## **Circulators**

Collectors, Sorters, Resellers, Renters, Peer-to-Peer, Reselling, Repairer, Digital Wardrobe



## **Regenerators**

Recyclers (all types)

# Data Protocol vs. Technology

<b>What the Protocol <i>IS</i></b>	<b>What the Protocol <i>IS NOT</i></b>
<i>Protocol is data carrier agnostic</i>	<i>Protocol is not specifying physical data carrier — I.e. NFC, RFID, QR Code, etc.</i>
<i>Protocol is specifying what data should be stored</i>	<i>Protocol is not storing data</i>
<i>Protocol is recommending data that should be included</i>	<i>Protocol is not outlining permissions around data access</i>



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# Global Advisory Council

After **3 years of R&D, Global Pilots & multiple Industry-Wide Peer Reviews** — The Circular Product Data Protocol™ launches publicly to industry

**To be announced October 2021** — EON gifts Protocol to industry, in Creative Commons license, making Protocol available to all.