

The Circular Product Data Protocol

NIST

September 23, 2021

EON

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



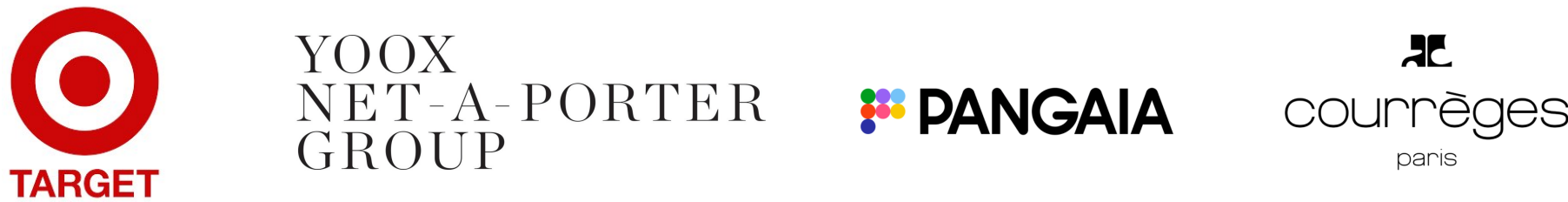
Partners



Knowledge Partners



Pilot Partners



ISEAL Compliant Development Process

Aligns with ISEAL standard setting practices



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

Alignment with Standards

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	High
		Medium
		Low
		Low
		Low
Regenerators	Recyclers (includes ALL types of recyclers)	High
		Medium
Product Owner	Brands, Retailers	High
		Medium
Customer	Individual who uses product	High
		Medium

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

Business Entity	Description	Business entity that manufactured or contracted the manufacture of the item.
	Rationale	<ul style="list-style-type: none">• Offers ability to give economic and material value back to the organization.• 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

Parent Brand

Brand on Label

IDENTIFICATION

SKU

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

Color Family	Description	The main color represented on a garment or color grouping in e-commerce.
	Rationale	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).
	Data Format and Examples	The list of values for this field will be developed and finalized during CircularID™ Pilots. 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.
Fabric Type	Description	Type of fabric for the body of the garment.
	Rationale	Essential for regenerators to determine if a good match with their technical specification for recycling.
	Data Format	The list of values for this field will be developed and finalized during CircularID™ Pilots. Examples: e.g. Knitted, Woven, Leather, Non-Woven, Felt
Material Composition (on clothing label)	Description	This is the composition that appears on the clothing label attached to the garment.
	Rationale	Essential for regenerators to determine if a good match with their technical specification for recycling (along with the detailed information below)
	Data Format and Example	Material name plus % of composition Example: 90% Cotton, 10% Spandex

10 CIRCULARID™ PROTOCOL

The CircularID™ Protocol Pilot Version is currently not available for public use. The CircularID™ Protocol V1.0 will be released after the Protocol is finalized, and is anticipated to launch in 2021. Unauthorized use of the CircularID™ trademark and logo is strictly prohibited.

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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

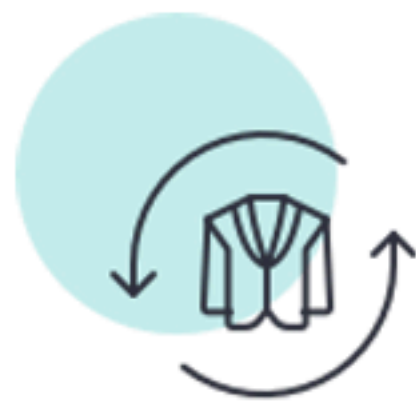
Product Attributes

- ▶ 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

What the Protocol <i>IS</i>	What the Protocol <i>IS NOT</i>
<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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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.