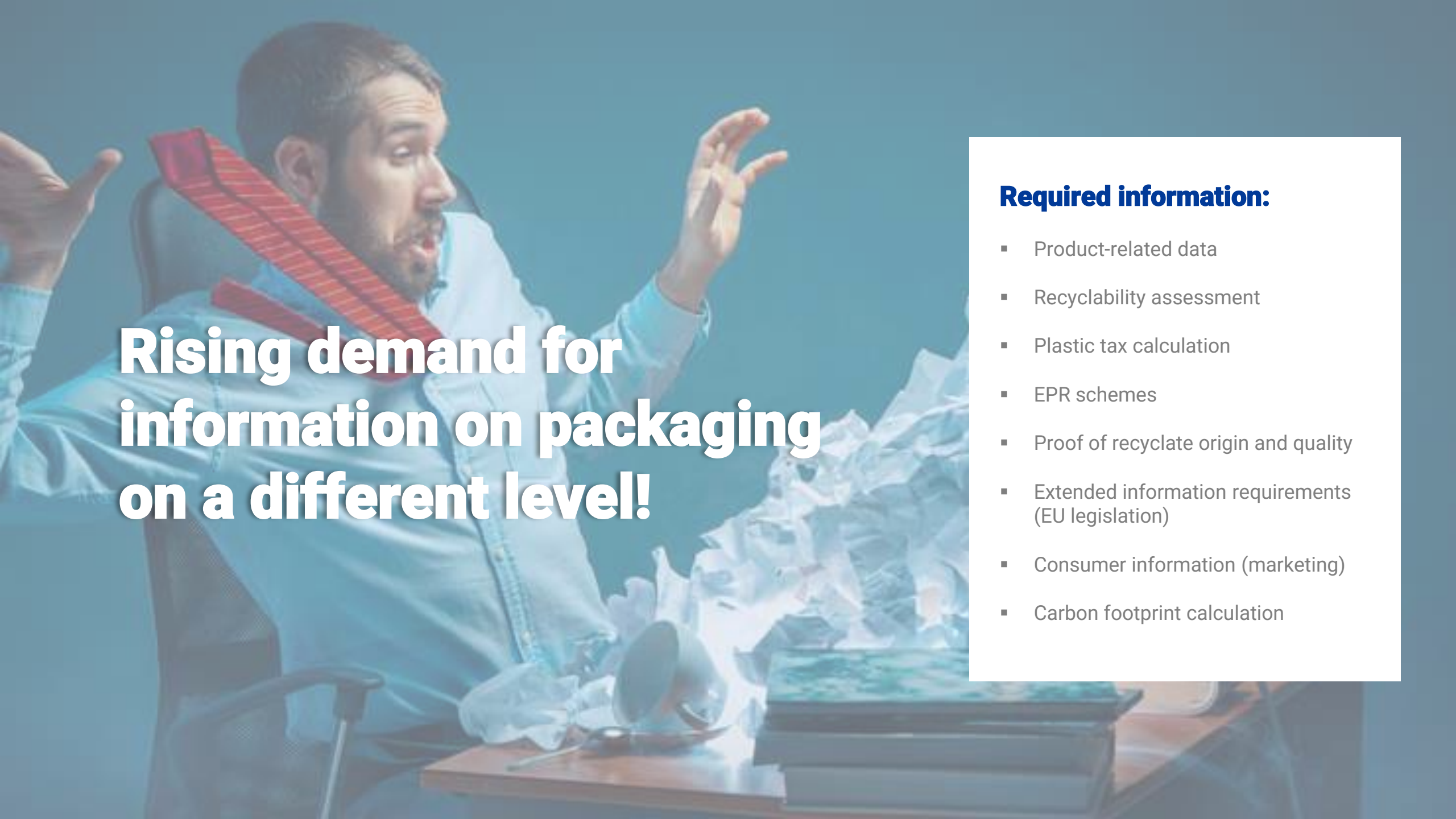
# R-Cycle


# The Digital Product Passport for Packaging

Nieuwegein, November 21st 2023

Conrad von Bonin, EECC GmbH
Dirk Bansemer, Euro Plant Tray GmbH
Benedikt Brenken, ProData GmbH



# Rising demand for information on packaging on a different level!

## Required information:

- Product-related data
- Recyclability assessment
- Plastic tax calculation
- EPR schemes
- Proof of recyclate origin and quality
- Extended information requirements (EU legislation)
- Consumer information (marketing)
- Carbon footprint calculation

# High effort for data management

Information exchange is time-consuming, costly and control intensive


## Problems:

- Time-consuming information allocation
- Costs for obtaining information
- No or insufficient traceability of raw materials
- No standardized information exchange
- No automated data transfer
- No interoperable platform or tools
- Error sources due to manual inputs

# R-Cycle – The Digital Product Passport for Packaging

enables standardized data exchange across the entire value chain and company borders.


## R-Cycle values:

- Dynamic data traceability along the full product lifecycle
- Data aggregation, analysis and automation
- Use of open standards
- Auditable data infrastructure
- Reduced documentation costs and increased efficiency
- Long-term value for brands, e.g. by optimizing EPR eco-modulation
- Different automation levels

# Structure of R-Cycle Digital Product Passport

Global and open standards guarantee a future-proof solution

**Identifier**
**0406407400021***
(global unique identifier)

*Global Trade Item number (GTIN), Based on open GS1 Standards


**Marker**

*Open, standardized and detectable marker (Digital Watermark, QR, etc.)

# Where are DPPs already being used?

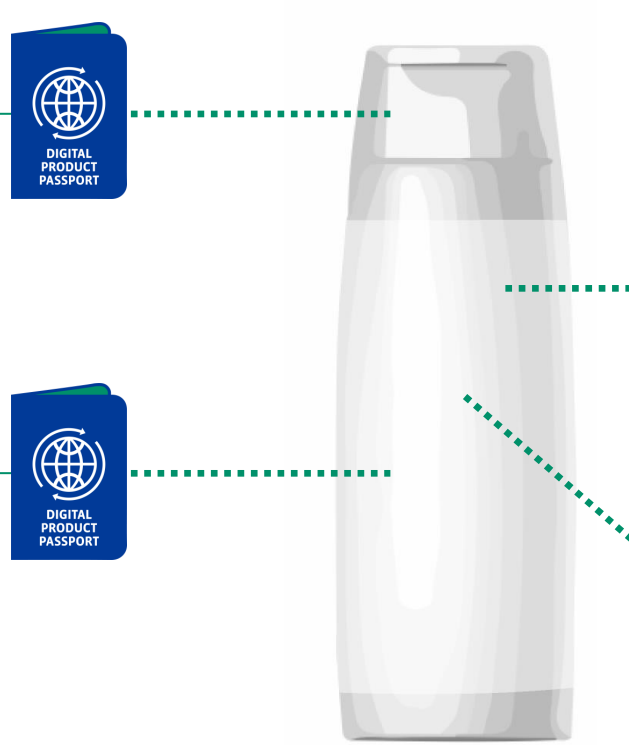
## Application example: Shampoo Bottle

### Cap

| | |
|---|---|
| PP | NO |
| Density | YES |
| PCR content | 7.0 g |
| Biodegradable | |
| Food approved | |
| Weight | |
| 100% | |
| 0.916 g/cm³ | |
| 0% | |

### Bottle

| | |
|---|---|
| HD-PE | NO |
| TiO2 | NO |
| Density | 20.2 g |
| PCR content | |
| Biodegradable | |
| Food approved | |
| Weight | |
| 98.2% | |
| 1.8% | |
| 0.957 g/cm³ | |
| 97.0% | |




### Sleeve

| | |
|---|---|
| PS | 0% |
| Ink | NO |
| Adhesive | YES |
| Density | 1.56 g |
| PCR content | |
| Biodegradable | |
| Food approved | |
| Weight | |
| 96.6% | |
| 3.3% | |
| 0.1% | |
| 1.050 g/cm³ | |

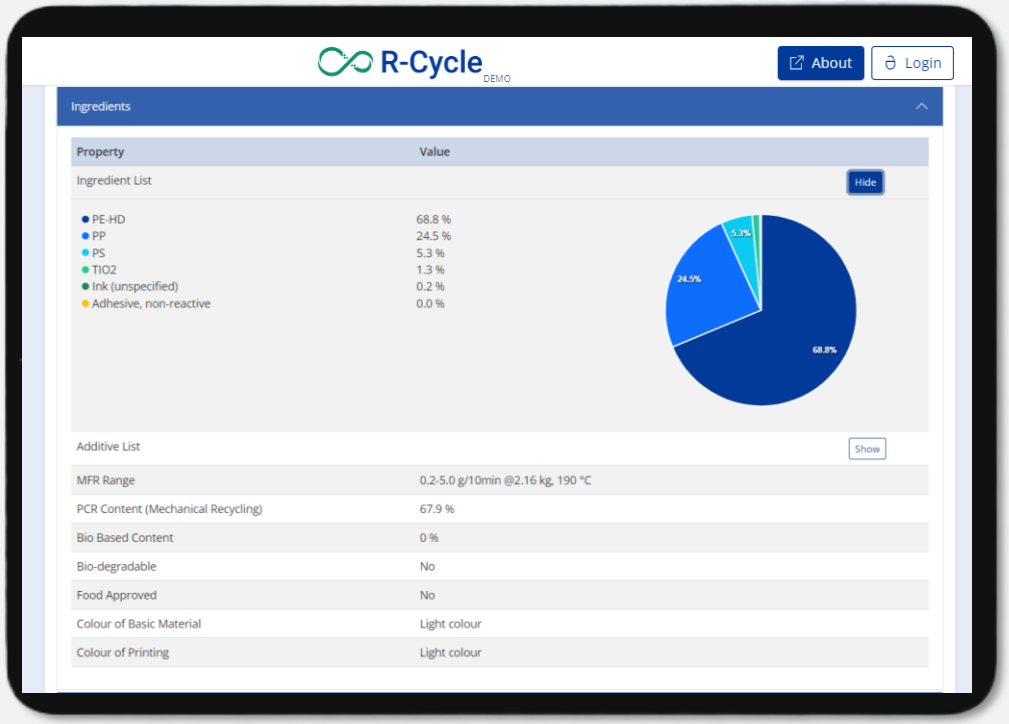
**All data in one place**

Live example

# Cosmetic Packaging


Digital Product Passport

SCAN ME!



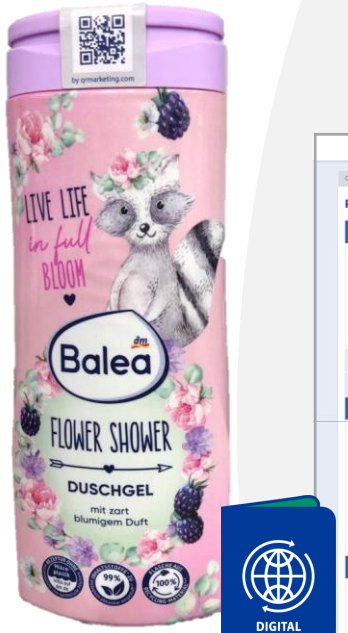

R-Cycle ID

# Automated Recyclability Assessment

Interoperability is the key – realizing added value together

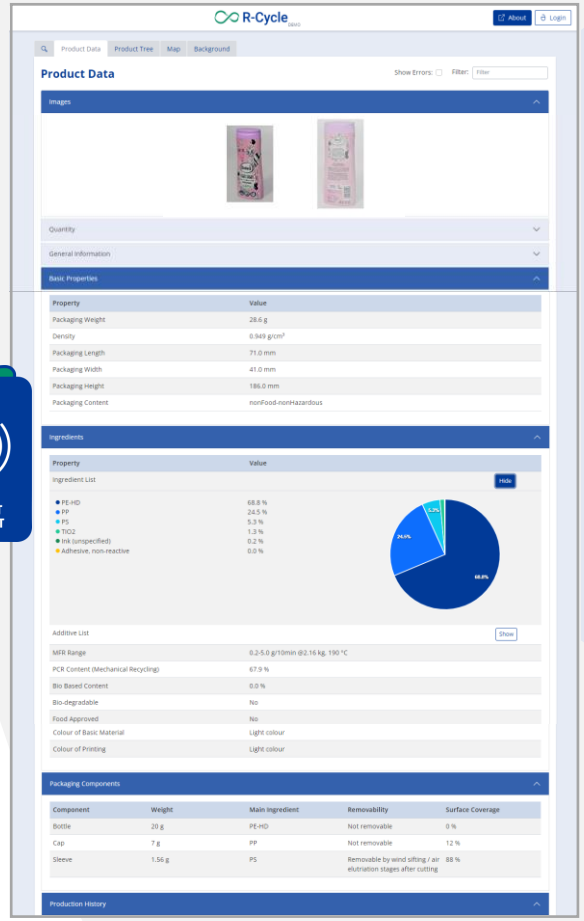
## Motivation

- Integration of the complete packaging supply chain
- Aggregation of all packaging data for the Recyclability Assessment
- Integration & automatic data exchange between R-Cycle and recyda
- Creation of transparency for the stakeholders involved
- Automated calculation of the total recycled content (PCR)

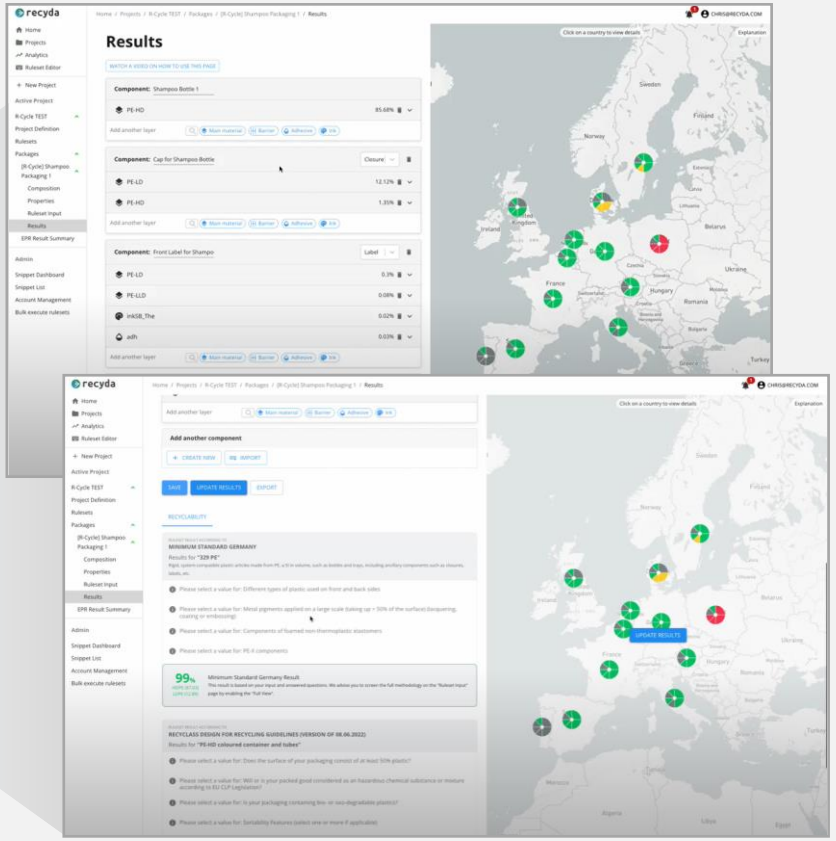



DIGITAL PRODUCT PASSPORT

R-Cycle




recyda



# Reporting for Taxation

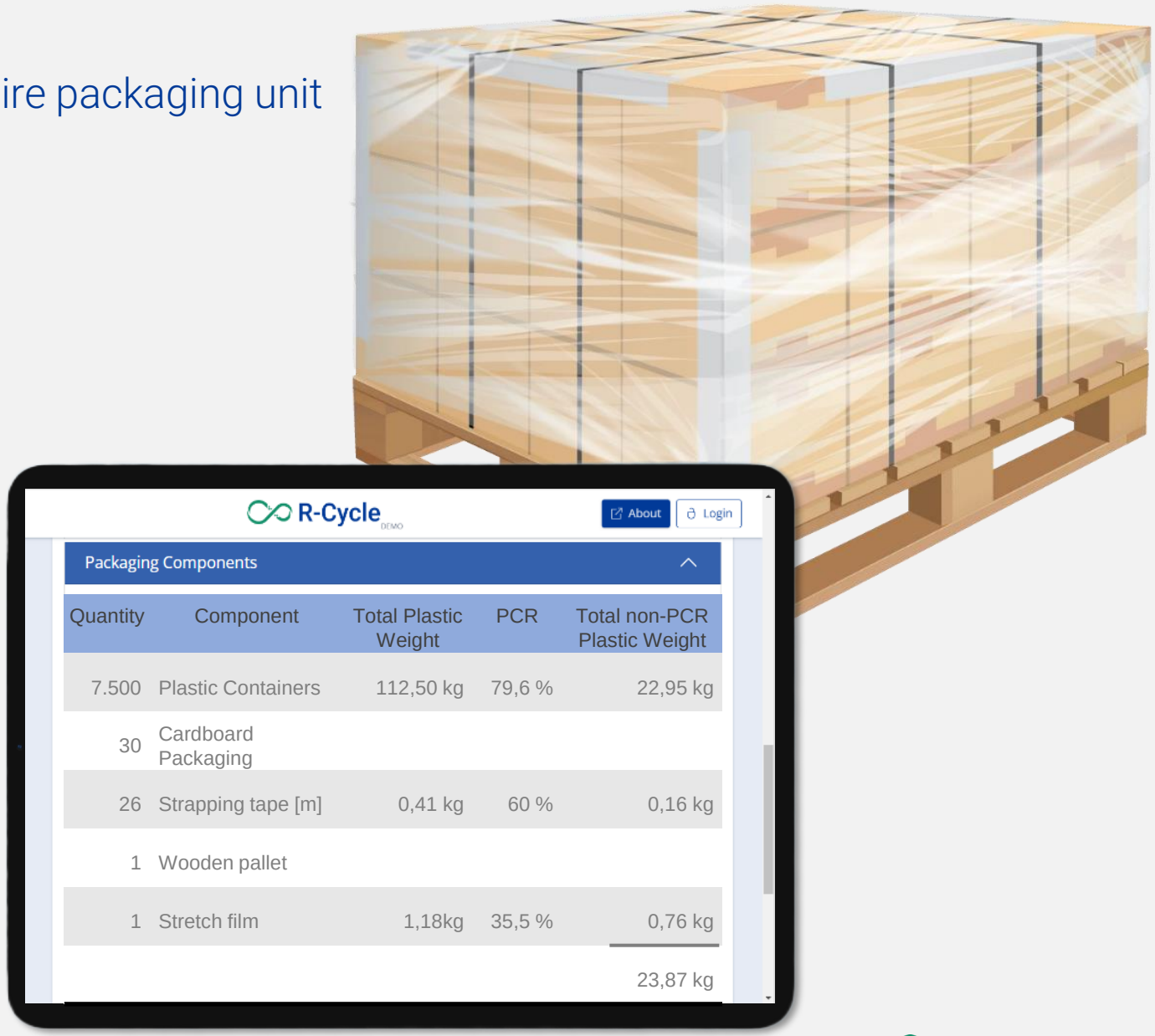
Automatic aggregation of data over the entire packaging unit

## Motivation

- Laborious manual documentation of material flows
- Inability to provide accurate product-specific evidence of recycled content
- Meeting additional customer information needs

## Solution

- Batch-level tracking of used materials and recycled content on packaging unit
- Accurate disclosure of the amount of non-recycled plastic per packaging unit
- Specific customer report



Euro Plant Tray

# Reduction of one-way tray packaging material in Europe’s Green Supply Chain

Euro Plant Tray eG

# Starting Point

- Estimated use of one-way plastic trays p.a. with limited/no recycle systems:
  → 500-700 mio. in Europe
- Wide variety of existing trays make automation of processes nearly impossible
- Existing reusable tray solutions do not fulfil the requirements of the industry and have not achieved market penetration
- Planned CO2 and plastic waste taxation will increase costs of usage for single used trays

# Initiative startet in 2021

- Deutsche Umwelt Hilfe e.V.  (DUH / NGO) Symposium: "Anything but green? The plastic waste problem in the plant trade"
- Start of project “Flowertray” March 8th 2021
- Participants: ca 80 major players in the European market (mainly DE, NL, DK) of plant production, trade and retail as well as industry connected companies
- Survey with 350 companies in the Green Industry to gain insights about needs, wishes and restrictions for a European standard tray solution

**Resulting in:**

- Agreed draft criteria for future tray types, operational pool management, financing and roadmap for further steps
- Founding an branche-driven European Cooperative to develop manage and operate the reusable plant tray system in August 2022: **Euro Plant Tray eG**

Founding the Euro Plant Tray eG

Cologne, August 23rd.2023

# Grown to 30 Members from six contries while the first Year: Euro Plant Tray eG

Euro Plant Tray

BAUHAUS
bellaflora DIE WELT DER GRÜNEN NUMMER 1
BGI Verband des Deutschen Blumen- Groß- und Importhandels e.V.
Blomsterringen
coop
Cox Mit wachsender Begeisterung.
Dehner
DUTCH FLOWER GROUP
EPS Dem Markt gewachsen
EUROFLEURS ... immer einen Schritt voraus.
Floral Trade Group
FLORPARTNER SYSTEMLOGISTIK PFLANZE
FM Group
globus BAUMARKT WER BAUT BRAUCHT GLOBUS
PFLANZEN UND KONZEPTE
hagebau
HORNBACH
INTERMARKT THIELEN
Landgard
Martin Bloemen- en Plantengroothandel B.V.
mvb plants worldwide
OBI
PLANTES POUR TOUS
Plantify Partners Europe
PLUSPLANTS for a green planet
Royal Flora Holland
SAGAFLOR
südblume Wir blühen vor Ideen
VAHLDICK BLUMEN
VGB

# Jointly achieved results

- **Development of reusable trays:**
  - two types of the Normpack 400 series
  - Additional types development ongoing
- **Supply Chain test** with 40 k samples in Spring 2023
- **Rental Models** and contracts,
  incl. uniform deposit fee / replacement fee
- **Poolmanagement** tender ongoing
- **Production** tender ongoing
- Selection of **Tools** and **Software**

- **Definition of Identification Options**
  - **GTIN**
  - **Data Matrix Code**
  - **RFID**
  - **Fust Code**

# EPCIS – successful GS1 & ISO Standard connects multiple Businesses

## Business Case

## Technical Features

C&A

Support for
- Supplier Processes
- Production processes
- Logistics processes
- Store processes: Front- & Backstore

- 150 million events p.a.
- live since 2018, Archive solution 10 years
- 600 stores, 5 countries, 14 DCs
- Real-time DB for real-time processes
- Hosting: Private SaaS (Recast IT)

METRO

- Meat and Fish Tracking from Supplier to the POS
- Tobacco Tracking for EU
- Deposit Tracking für Makro NL
- Electronic Shelf Label Control
- Connected with fTRACE for some use cases

- Hosting: Google Cloud Platform (METRO.digital)
- 100 Mio Events p.a.
- >500 Stores
- Live since 2015
- Kafka adapter for Backend

arvato BERTELSMANN Arvato Systems

- Connection to EU and national verification systems
- Manufacturing processes pharmaceutical companies
- Wholesaler logistics processes
- Verification processes hospital pharmacy

- Hosting: Microsoft Azure (provided by Arvato)
- 200-500 Mio Events p.a.
- Live seit 2018

SCHAEFFLER

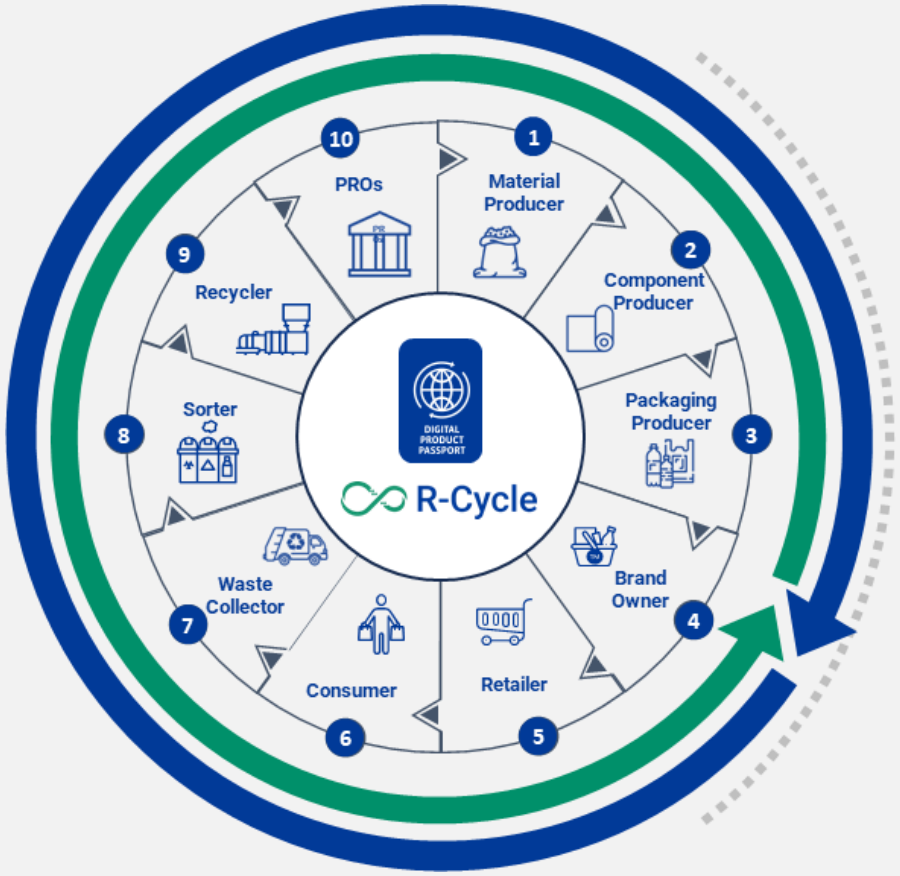
proData


- Manufacturing processes Schaeffler
- Wholesaler logistics processes
- Verification processes workshop / service
- REPEXPERT portal solution

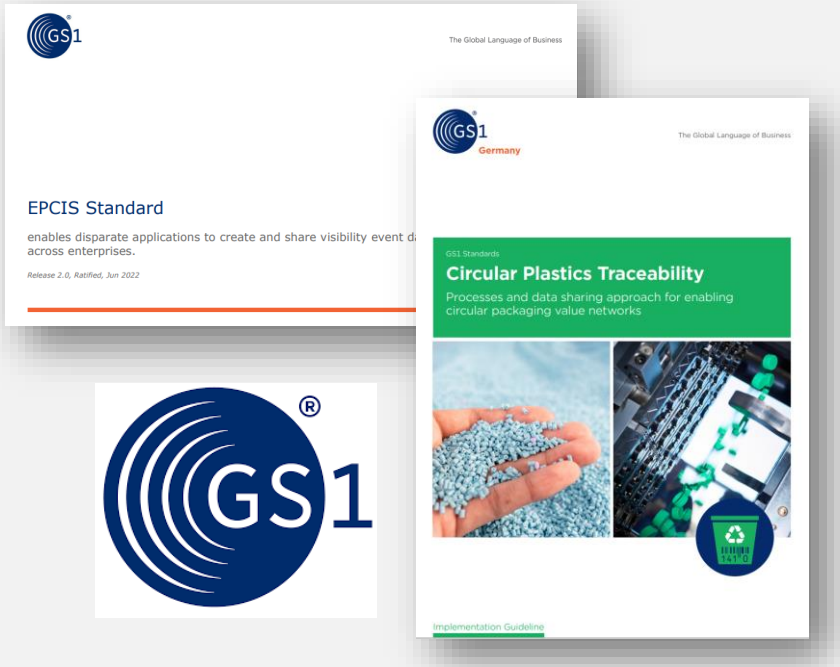
- Manufacturing processes Schaeffler
- Wholesaler logistics processes
- Verification processes workshop / service
- REPEXPERT portal solution

# Lessons Learned …

Integration of all value chain partners is necessary to close loops and enable a true circular economy




Standards are critical to facilitating effective communication across value chains



# Lets accelerate your business with R-Cycle DPPs.

R-Cycle

## Any more questions?


**Contact us:**


Conrad von Bonin
Managing Director EECC
vonbonin@eecc.info
+49 175 2982091

Dirk Bansemer
Managing Director Euro Plant Tray
dirk.bansemer@europlanttray.com
+49 170 4557178

Benedikt Brenken
Director R-Cycle
Benedikt.Brenken@r-cycle.org
+49 151 57972132


EECC European EPC Competence Center

Euro Plant Tray

R-Cycle