DPP User Stories

(2.0)

March 2024

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Document Revision History			
Date	**Version**	**Author/Contributor/Reviewer**	**Summary of Main Changes**
24/01/2024	1.0	CIRPASS user stories task force	Creation of document – excerpted from chapter 3 of D4.1
22/03/2024	2.0	CIRPASS user stories task force	Clarifications and modifications following feedback from external stakeholders

CIRPASS Consortium			
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22	SyncForce BV	SyncForce	NL
23	ASOCIACION DE EMPRESAS TECNOLOGICAS ES INNOVALIA	INNOVALIA	ES
24	Textile Exchange	TextileExchange	US
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27	RISE RESEARCH INSTITUTES OF SWEDEN AB	RISE	SE
28	IPOINT-SYSTEMS GMBH	iPoint	DE
29	Global Electronics Council	GEC	US/NL
30	Avery Dennison Atma GmbH	atma.io	AT
31	Global Battery Alliance	GBA	BE

Preparing the ground for the gradual piloting and deployment of DPPs from 2023 onwards, focusing on developing a roadmap for prototypes in three value chains: electronics, batteries and textiles.

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List of Abbreviations and Acronyms	
DPP	Digital Product Passport
EC	European Commission
EO	Economic Operator
EPR	Extended Producer Responsibility
ESPR	Ecodesign for Sustainable Products Regulation
MSA	Market Surveillance Authorities
REO	Responsible Economic Operator (for issuing the DPP)
UID	Unique Identifier (for the product)
URI	Uniform Resource Identifier

1 Introduction

This document is an attempt to describe the stakeholder interactions with the DPP system, based on the following regulations:

- Draft ESPR: https://www.consilium.europa.eu/media/69109/st16723-en23.pdf
- Battery Regulation: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R1542

1.1 Definitions: DPP use case and DPP user story

The methodology described in this report relies on the concepts of '**DPP use cases**' and '**DPP user stories**':

A **DPP use case** is defined in this document as a description of the use of a DPP related to a scenario of circular economy activities to serve one or several of the DRAFT ESPR objectives. Thus, **'use cases' refer to "why" a DPP is being used** and are more concerned with the data points contained in the DPP.

The '**user stories**', on the other hand, refer to "**how**" a DPP is being used. The goal of the user stories is to identify and define the requirements for the technical implementation of such a system, by describing the system components and data management and handling needs by the various stakeholders involved. This means that the focus is on the interaction between the parties, who are using a conceptual DPP system. The key difference between user story and use case is shown in Figure 1.
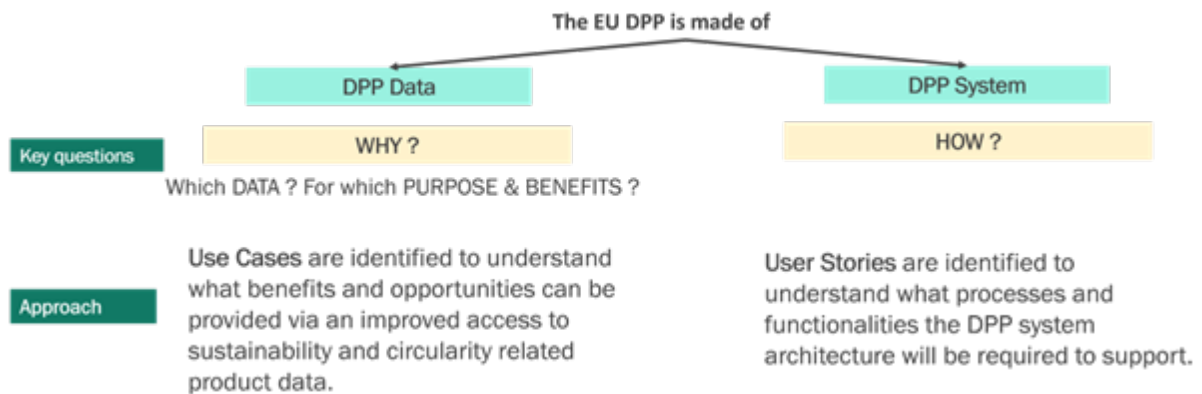

Figure 1 The difference between DPP use cases (DPP data) and DPP user stories (DPP system)

This document focuses on the "how", meaning the components and data processes that make up the DPP system. A User Story shall capture Stakeholders' interaction with the DPP system.

1.2 Scope and purpose of this document

The intent of the user stories is not to cover every theoretically possible situation, but rather to frame the overall process flows needed to perform the main activities in issuing, delivering, and consuming DPP data.

The user stories are an attempt to bridge the gap between the intentions of the European regulators, as expressed in the above-cited regulatory acts, and both technical implementation and standardisation activities. Their purpose is to support reasoning on how the future DPP system needs to function.

1.3 Disclaimer

This document was produced by the CIRPASS consortium as an attempt to reformulate the functionalities of the DPP system described in the ESPR. Its aim is to support exchanges and foster a common understanding of these functionalities, in discussions with the European Commission and with stakeholders both within and outside of the consortium. It is a tool designed for exploration and should not be seen as expressing the opinion of the European Commission.

2 Background and assumptions

2.1 Assumptions

For the following user stories, the following assumptions are made:

- The "Responsible Economic Operator" (REO) is responsible for issuing the DPP for a product placed on the EU market and all legal obligations therewith.

- Process traceability mechanisms, such as data timestamp, will always be part of the process. This addresses the topic of data timestamp management requirements in the user stories, which seems to be an important data characteristic, to track changes and update needs.

- Cyber security: The user stories do not detail the implementation of required cyber security measures.

- Interoperability (Ontology): It is assumed that sector-specific data models for required DPP data are based on a common cross-sectoral ontology, to ensure semantic interoperability. To provide one example, the category specific product requirements would be based on the same ontology.

- The user stories have been formulated to be as technological and sector agnostic as possible. Sector and technological specific requirements may be mentioned as "optional".

- In case the use of specific dictionaries is imposed by sector-specific delegated acts, it is assumed that interoperability mechanisms are in place to enable semantic interoperability between sectors and between different sector-specific dictionaries.

- It assumed that an IT-System with access to the internet is used for all interaction with the DPP system, including consuming DPP data at scale.

2.2 Remarks concerning the concept of "placing on the market"

- DRAFT ESPR Considerando (40) " 'placing on the market' means the **first** making available of a product on the Union market;"

- DRAFT ESPR Considerando (41) " 'putting into service' means the **first** use, for its intended purpose, in the Union, of a product;"

- DRAFT ESPR Considerando (53) "the distributor *makes a product available* on the market after it has been placed there by the manufacturer or importer"

The DRAFT ESPR states that the DPP should be issued by "the economic operator responsible for placing the product on the market or putting the product into service". In this present document, this actor is defined as the Responsible Economic Operator (REO). However, this definition opens a number of questions related to how products are placed on the market today and to how product-related information is delivered to consumers:

- It is common practice that **several importers** place the same product (defined at model level) on a given market. Who is responsible for DPP issuing in this case? Potential

solutions are that the importers have joint responsibility or, alternatively, that different product model identifiers are used in this case.

- It is common practice that the **same** products are placed on markets in **different** member states by **different** economic operators and with **different** information requirements (e.g., language, mandatory labelling information from specific member states). How is DPP issuing handled in this case? Note that this question only applies to products with UIDs with model-level (or potentially to batch-level) granularity.

2.3 Remarks concerning DPP validation

Automatic DPP validation checks should be run when a REO registers a product identifier in the EU registry. All public authorities, in addition to the general public, could potentially be provided with the same automatic validation tools.

2.4 Remarks concerning access to DPP data by public authorities

Public authorities can be divided between:

1. parties that write the legislation.

2. parties that will execute the legislation and perform compliance monitoring.

Compliance monitoring activities, in regard to DPP, are further divided into:

a) activities related to verifying that a product concerned by DPP legislation, when placed on the internal market, is accompanied by a valid DPP,

b) activities related to verifying that the information content of the DPP is correct and can be used for the support of the work of surveillance authorities,

c) activities related to checking whether the product complies with the regulation (using data, including DPP data).

2.4.1 Customs Authorities

When products are imported into the European internal market, activities related to point a) above will be performed by the customs officials of the importing Member State. In the ESPR proposal, key aspects for customs consists of being informed that a DPP is mandatory for a product, performing a look up of the unique product identifier in the EU DPP registry by direct access to it via the EU Single Window Environment for Customs and a verification that the relevant information of the customs declaration corresponds to the information that is stored in the registry (and potentially an automatic DPP completeness check).

> *Art 13 (3) Customs authorities may release a product for free circulation only after having verified as a minimum that the unique registration identifier and the commodity code provided or made available to them correspond to the information stored in the registry., p. 115, [Draft ESPR]*

Customs may also need to access the DPP data for risk assessment.

> *Art 13 (6) Customs authorities and the Commission may retrieve and use the information included in the product passport and the registry for carrying out their duties pursuant to Union*

legal acts, including for risk management, customs controls and release for free circulation (p. 116, [Draft ESPR])

Some additional considerations related to customs are:

In some cases, and depending on the specific member state practices, customs may be assigned to perform tasks on behalf of other authorities, which may also lead to situations in which customs may require access to specific DPP data. Second, it is important to note that when it comes to customs, in many cases, they will not have physical access to the goods (e.g. goods in a container). But when they have access to the product's unique identifier (e.g., if it is made available on the import/export customs declaration), this may allow them to query the DPP data.

2.4.2 Market Surveillance Authorities

Market surveillance authorities (MSA) will perform product (and corresponding product information) compliance checks. Market surveillance authorities perform random checks of physical products: check labels, request information from economic operator (documentation, conformity assessment), test the product in laboratories. For goods sold on online marketplaces (these goods are formally considered to be 'placed on the EU market' if the website targets EU customers), if checks take place, they will be based on information available on the website. The products may be ordered for further checks. DPP data can assist them in performing these checks. It is expected that the default access to DPP data will be through the data carrier physically present on the product, but with different access rights. Another potential access to DPP data is through the EU registry. An important requirement for MSA is the possibility to automatically import data from the DPP into their internal IT systems.

Some of these checks can be based on, e.g. random selection. But in the future, the market surveillance authorities may use data-driven approaches for deciding which products to check. Since market surveillance authorities across the European Union may have different levels of IT sophistication, different tools may need to be developed to respond to their different and evolving needs. The DPP system should be able to support this evolution in IT sophistication and support advanced analytics capabilities based on DPP data.

2.4.3 Further potential uses of DPP data by authorities

In future evolutions of ESPR regulations, MSA could potentially be provided with the possibility to write into a DPP to provide non-compliance, recall or product ban information to consumers.

In the future, a final use of DPP data by public authorities may concern the capturing and aggregation of data from many DPPs, to gain insights that may be useful for policy making.

3   DPP User Stories

3.1   Issuing a DPP for a new product

This user story mainly addresses the requirements from DRAFT ESPR Art. 21, 22, 23 and 28 with regards to the manufacturer's obligations on the provision of information required by Art. 7 and the requirements for the system.

Assumptions: The Unique Identifier (UID) put on the product can be pushed to the registry. In this case the registry will need to know how to create a link to a resolver from that identifier.

As a Responsible Economic Operator, I want to place my product on the market and issue its DPP so I can comply with the relevant delegated act
1.   The economic operator's IT system sends a request for a DPP data model for the relevant product category to assess the current regulatory DPP data requirements.   **Assumption**: these DPP data requirements could be obtained via a query on a server.
2.   The economic operator creates/assesses, on the supply side, all data needed to populate the DPP (and to meet other external data requirements) in their IT system and creates the Product identifier at the granularity required by regulation, in addition to a model identifier. If needed (e.g., optimisation of the REO's business processes), an optional item-level identifier is created.   **Remark**: This data can originate from individual (today mainly manual) data generation from suppliers into PLM or ERP systems, upstream traceability systems and more.
3.   The economic operator generates machine-readable DPP content at both the model level and at the granularity required by regulation (if different from model level) and makes it available at one or more digital locations. Some data may be generated by service providers (e.g. safety data sheet, traceability, image banks) or external parties such as certification bodies. Appropriate access levels are assigned to each data point. Access credentials are issued to relevant economic operators.
4.   The economic operator registers the product's links (both DPP granularity-level and model-level (if different from model level) in a resolver service component (self-managed or external), pointing to multiple data sources as mentioned above.
5.   The economic operator registers the product identifiers and other relevant content encoded in the data carrier (i.e. the web URI, depending on ID scheme) at the product ID granularity level specified in the relevant delegated act in the EU registry.   **Remark**: It will still be possible for economic operators placing products on the EU market to identify products at more granular levels than required in the data carrier, such as batch or item. In this case, the corresponding URIs may resolve to the same DPP.
6.   The economic operator places the product on the market (retail store, online, etc.)

Remark: Several repositories may be used to store the data corresponding to a single DPP. Indeed, it is common industry practice that companies store data applicable at model, batch and item levels on different servers.

3.2 Reading a DPP

3.2.1 Reading with default access to DPP data

This user story addresses the requirements of "consumers, economic operators and other relevant actors shall have free access" of Art. 10, section (b).

Assumptions: The user starts a QR-enabled camera on their mobile phone or the user uses other technologies. Ideally no vendor specific app on the phone should be needed to access basic public information.

As a consumer, I want to retrieve DPP data from a data carrier physically on the product
1.   The user uses a scanning device to read the DPP data carrier.
2.   The browser uses the URI from the data carrier (e.g. the QR code) to request information.
3.   The web browser presents all public DPP data to the user. If the product is identified through an item-level unique identifier, the browser shows all public data related to the product (including downstream activities provided by repairers/refurbishers, etc.)

3.2.2 Reading with default or restricted access to DPP data

This user story mainly addresses the requirements of the user story "consumers, economic operators and other relevant actors shall have free access" of Art. 10, section (b). A stakeholder (e.g. someone who wants to access the data e.g. end customer wishing to make sustainable purchases, data consumer etc.) gets DPP data by scanning a data carrier (for example QR code) with their mobile phone.

Assumptions: The user starts a DPP-capable app on their mobile phone. (e.g., in case of a server-based app) or the user starts a QR-enabled camera on their mobile phone or the user uses other technologies. Ideally no vendor specific app on the phone should be needed to access basic public information.

This user story is not complete since a means for providing access credentials to the stakeholder is needed to allow access to the restricted data that the DPP may contain.

As an actor in the Circular Economy, I want to retrieve DPP data from a data carrier physically on the product
1.   The user uses a scanning device to read the DPP data carrier.
2.   The app uses the URI from the data carrier (e.g. the QR code) to request all available links from the resolution service component. The service component can be managed by the economic operator or a service provider acting on their behalf. The app can run locally on the mobile phone or be a server-based web app.
3.   The resolution service component responds back to the app with a webpage or with a link to a webpage or with a list of links and their associated link types.

4.	If the product is identified through an item-level unique identifier, and the user is interested in all data related to the product (including downstream activities), the app shows such data (provided by repairers/refurbishers, etc.)
5.	(Optional) The DPP-capable app selects the relevant links and sends queries to them.
6.	The data sources receiving the request determine the appropriate access level of the querying party and the app receives machine readable data from multiple data sources identified by the links.
7.	The DPP-capable app or web browser processes the data received and presents the relevant data to the user.

3.2.3 Accessing model-level product information before purchase

This user story mainly addresses the ESPR requirements from Art. 25, and 29, as well as Art. 8, paragraph (e) on the manner in which the product passport is to be made accessible to customers before they are bound by a contract for sale, hire or hire purchase, including in case of distance selling.

As an online buyer, I want to retrieve the model-level data from a list of model-level product identifiers so I can compare sustainability markers	
1.	A user has received a list of model-level product identifiers (internally for a product review or from a supplier as part of a tender) encoded as web URIs or with a known resolver endpoint. The purchase decision will likely be made at the 'model' level, irrespective of the granularity level of the DPP.
2.	The data is entered in the user's internal IT system.
3.	The IT system uses the web URIs from the list, or constructs web URIs using the known resolver end point URI to request all available links associated with the product identifiers from the resolution service component.
4.	The resolver service endpoint responds back to the IT system with a list of links and their associated link types for the product identifier.
5.	The user of the system selects the relevant links and uses their IT system to send queries to them. The data sources receiving the request determines the appropriate access level of the querying party.
6.	The user's IT system receives machine readable data from multiple data sources identified by the links.
7.	The user's IT system processes the data received and presents the relevant model-level data to the user.

3.2.4 Batch access to DPP data by authorities

This user story builds on the remarks presented above concerning access to DPP data by public authorities. It should be noted that in this user story, the authority checks that the DPP information content is correct. This is different from operations which would only check that the product has a compliant DPP.

Remark: This user story is not complete as a means for providing access credentials to the appropriate authority is needed to allow access to restricted data.

As a public authority officer, I want to retrieve DPP data using the EU registry so I can monitor compliance
1. In their IT system, the public authority officer selects product identifiers that they want to get data about from their local product information system.
2. The IT system retrieves all web URIs for the list of product identifiers. This information can come from either the EU registry or from some other service.
3. The IT system uses the web URIs from the list to request all available links associated with the product identifiers from the resolution service component, including the links registered by downstream actors such as repairers and refurbishers.
4. The resolution service component(s) responds back to the IT system with a list of links and their associated link types for each product identifier.
5. The IT system selects the relevant links and sends queries to them.
6. The data sources receiving the request determines the appropriate access level of the querying party and the IT system receives machine readable data from multiple data sources identified by the links.
7. The IT system processes the data received and presents it to the user.

3.3 Writing to a DPP

3.3.1 Writing into the DPP with the original REO's authorization

This user story mainly addresses the requirements with regards to the introduction and update of information to a DPP Art. 8 paragraph (g). It should be noted that in the case that the economic operator is different from the repair company, information added to a DPP might be stored on a different server.

Assumptions:

- A business agreement exists between the repairer and the responsible economic operator (REO) or the repair is done by the REO himself. This means that the repairer has appropriate access credentials to write into the REO's decentralized DPP Data repository.

- The product already has an item level product identifier.

- This user story assumes that the component being replaced does not have its own DPP that needs to be linked to the product's DPP.

As an Economic Operator, I want to update the item-level DPP data so I can document the repair actions to a product
1. The repair shop adds information about the replacement to the instance level data about the product in the original economic operator's DPP publication system

Remark: If information is not stored in the REO's DPP data repository but in a DPP Data repository managed by the repairer (or by a professional repair association), in order for this information to be linked to the DPP, there are several possibilities: the repairer must either declare this to the REO, who will ensure that the required links are added (either to its resolver service or to the DPP itself), or the repairer must register the needed links with the EU registry.

3.3.2 Adding data to an existing DPP without the original REO's authorization

This user story mainly addresses the requirements with regards to the introduction and update of information to a DPP Art. 8 paragraph (g). It should be noted that in the case that the economic operator is different from the repair company, information added to a DPP might be stored on a different server.

Assumptions:

- No business agreement exists between the repairer and the responsible economic operator (REO) or the repair is done by the REO himself.

- The product already has an item level product identifier.

- This user story assumes that the component being replaced does not have its own DPP that needs to be linked to the product's DPP.

As an independent repair shop, I want to add to the item-level DPP data so I can document the repair actions to a product
1. The repair shop adds information about the replacement to the instance level data about the product in his own DPP publication system (decentralized DPP data repository)
2. The repair shop registers a link to this DPP data repository in the default EU resolver (or EU registry) or the REO resolver is mandated to point to an 'unknown link type' resolver.

Options for technical implementation: this user story requires all REO resolvers to always have a link to the default EU resolver (automatic data retrieval) or that all DPPs contain a link to the default EU resolver (manual data retrieval.)

3.4 Accessing archived DPP data

This user story mainly addresses the ESPR requirements from Art. 10, paragraphs (c), (e) and (f). This user story can further be built on the requirements from Articles 21, 22, 23, 24 and 25, which lay down the requirements for the different economic operators.

Assumptions:

- While the REO is still in business, backups to DPP data will be provided through appropriate SLA (service level agreement) to guarantee availability.

- Optionally, the REO may use a DPP backup provider to ensure long-term archive of its DPPs in case they go out of business. Note that this option may be too expensive for SMEs (other long-term archive)-

- In case the REO goes out of business and no other long-term archive is available, the DPP data will remain available thanks to an archiving service provided by the public authorities (EU archive).

- If the REO uses a DPP service provider, all or some of the tasks described below are performed by the service provider on behalf of the REO.

As a DPP user, I want to access DPP data of a product from a company that has gone out of business
1. A user using a camera app scans the QR code and receives a 404 response (e.g., the REO's domain name no longer exists)
2.1 Option 1: The user accesses the EU web portal using the product UID to access the archived data (stored in the EU archive or in other long-term archive).   2.2 Option 2: The user uses a dedicated app to access the EU resolver which points to the archived data (stored in the EU archive or in other long-term archive).
3. The dedicated app or EU web portal requests the DPP data through the EU resolver
4. The EU resolver redirects to the archived DPP data including the requested link types.

Considerations:

- We assume that when a REO goes out of business, during the legal recovery procedure, the responsible administrator of that process will transfer the DPP data to the EU archive or to another long-term archive. The links to the active DPP data will be also updated in the EU resolver and/or registry.

3.5 Transferring the responsibility for a product

Here we assume that the responsibility under the ESPR is transferred from the REO to another legal entity that becomes the new REO.

This user story also addresses the requirements from Art. 8, paragraph 2(g) of the ESPR concerning the creation of a new product passport. Note that Art. 8 paragraph 2(g) ESPR is also addressed in 3.3.1 and 3.3.2.

"Transfer of responsibility" is here defined as a **new** responsible economic operator taking **over the complete responsibility for providing up-to-date information about a product identified by a given product identifier.** There are (at least) 4 options for how this transfer of responsibility can occur, each requiring different DPP system features and process steps.

Table 1 Options for transfer of technical responsibility to a new economic operator

Options	Benefits	Challenges
Option A: UID and data carrier are unchanged. The data source remains under the responsibility of the original REO. The complete DPP data for a product is hosted only by the original economic operator that placed the product on the market (i.e., the REO). The new REO can add or modify data in existing DPPs hosted in the original REO repositories.	Technically simple. Does not require a new data carrier, since the product ID and the web link remain unchanged.	The original REO must allow other economic operators, with which they potentially have no business relationship, to add or change entries to the DPP for existing products, or links to the new REO's DPP data. The original REO acts as a DPP service provider for the new REO and continues to host and manage access to the DPP repository, and also assumes the burden of identity management. As the data comes from the new REO, this change of responsibility must be noted in the DPP data. There is no need for a prior business relationship between the new REO and the old REO.
Option B: UID and data carrier are unchanged. Additional data sources can be added and discovered. A new REO can create and host new DPP data or the complete DPP data in **a new data repository** for an existing product with the **existing product ID and existing data carrier.**	Does not require a new data carrier, since the product ID and the web link remain unchanged.	In option B1, the original REO's DPP must contain a link to the EU registry, in which the new REO has added a link to their new data source. The user will have to query the EU registry (either manually or automatically). In option B2, we assume that the original REO's repository will stop responding. The original REO's

Option B1: New REOs publish only their own data. The new REO only makes available the new data added by them. ***Option B2: New REOs publish the complete DPP.*** The new REO copies the original REO's DPP and republishes it with their own added data.		resolver will either have to point to the new REO's repository or have to redirect any DPP queries to the EU registry, where the new REO has entered links to the complete DPP in their new data source.
Option C: both UID and data carrier are changed. A new REO can create and host a new (complete) DPP for an existing product with a **new product ID**. Either the new DPP contains a copy of the original DPP data or the new DPP links back to the original DPP if there is an agreement with the original REO.	Allows a change in data carrier technology over the lifetime of the product.	Requires the generation and application of a new data carrier on the product, since the product ID and the web link are changed. The EU registry entry for that original unique product identifier must be updated by the new REO.
Option D: UID is unchanged, URI in data carrier is changed A new REO can create and host a new (complete) DPP for an existing product with the **existing product ID.** The URI in the data carrier is changed to point to the new DPP.. This option is only viable when the URI domain name is not part of the UID.	Facilitates traceability as the product ID remains unchanged. Avoids the reissuing of product identifiers by e.g., refurbishers or remanufacturers, which may be difficult for small operators.	Requires the generation and application of a new data carrier on the product since the web link is changed. The EU registry entry for that original unique product identifier must be updated by the new REO so that the EU registry knows what is the currently valid link to the DPP data.

Considerations:

- While the ESPR clearly states that remanufacturers place **new** products on the market and therefore are responsible for issuing DPPs for these products, in certain circumstances such as engraved data carriers on products, a remanufacturer may choose to continue using the same data carrier (and therefore product identifier). Likewise, while the ESPR states that a refurbisher does not place new products on the market but only aims to extend the lifetime of an existing product, a refurbisher may choose to issue new product identifiers and/or data carriers and thus voluntarily take over the legal responsibility for the DPP. Note that, in the case of option A above, the original REO would have the responsibility for hosting this data until the extended end of life of the product, potentially including the remanufactured product, if the product identifier continues to be used by the remanufacturer. In a circular economy, since the aim is to extend lifetime as much as possible, it will be difficult to define limitations to the original REO's responsibility.

- In certain cases, regulation may require that a link to the DPP of the old product be included into the DPP of a new product. This could be done by adding a link to the original REO's data repository or by copying the relevant mandatory data of the old product into the new DPP.

- It is highly recommended that for product categories for which this user story may apply, there are requirements by delegated acts that all products are identified at item (instance) level when placed on the market, thus avoiding the addition of serialized identification by the downstream economic actor (for example the refurbisher).

The table below shows option B2 from the above table.

As a refurbisher, I want to retrieve the DPP data using the product data carrier so I can update it and take legal responsibility for the product and its DPP.	
1.	The refurbisher scans the product's data carrier and downloads all mandatory data related to the product. The data sources receiving the request determines the appropriate access level of the querying party. Refer to section 3.2.2 for details.
2.	The refurbisher creates new product information using the data from step 1 and adds/changes data reflecting the refurbishment (new parts) in his data repository.
2.1	Option 1: The refurbisher reports to the original economic operator that they have refurbished the product and taken over legal responsibility for the product and its DPP. They request that the original REO's resolver now points to the new repository for that product identifier. The data carrier on the product remains unchanged.
2.2	Option 2: The refurbisher changes the entry in the EU registry for that unique product identifier to point to the new repository. He informs the original REO to stop exposing DPP data for that product.
3.	(Optional) The refurbisher adds a link in the DPP to point to the original product (at model level).
4.	The refurbisher places the refurbished product on the market.

3.6 Deactivating a DPP

3.6.1 Deactivation in case of recycling

This user story mainly addresses the requirements from Art. 77, paragraph 8 of the Battery Regulation "*A battery passport shall cease to exist after the battery has been recycled*."

Assumptions:

- This user story is independent of any sorting process (which may precede this user story). It assumes that the earlier sorting operation has prepared a batch of products to be forwarded to the recycling operator.

As a Recycler, I want to retrieve the DPP data from the product's data carrier so I can optimize my operation and deactivate the DPP of recycled products
1.   The recycler scans the combined product data though a Data Carrier (e.g. QR code or RFID tag) and downloads all relevant data needed for recycling management. The data sources recognise that the request comes from an authorised recycler and makes the relevant material and disassembly data available. These steps are described in section 3.2.1.
2.   The recycler uses the data combined with a condition evaluation of the product to decide the most appropriate recycling activity and the data is used to manage their recycling process.
3.   Once the old product is no longer valid, the data may be deleted after an appropriate delay.

4.   The recycler optionally reports to the economic operator that placed the product on the market:
    a. The product ID.
    b. The condition of the product and its components (for example in order to improve the design of the product model).
    c. An offer to buy back the components and recycled materials.

Considerations:

- There is an obligation for the recycler to report to the Member State the weight of products and the type of valorisation (recycling, energy and material recovery, etc.) for statistics. The step 4 proposes that the recycler can potentially inform the producer but without obligation. An analysis of current market practices shows that manufacturers are already paying recyclers to retrieve knowledge on their products coming to the recycling facilities (which defects, product age, etc.) In the future, it would be possible to imagine DPP-enabled mechanisms to automatically inform the producer that the product has entered the recycling process.

3.6.2 Other DPP deactivation options and considerations

"Deactivating a DPP" is an ill-defined concept which may apply with different implications to a product ceasing to exist at the moment it is remanufactured, recycled or after timeout of the legally mandated duration of data availability. This may refer to a combination of the following activities, the responsibility for which is to be defined:

- deleting destroyed product UID's from the EU registry.

- deleting resolver links that point to data about destroyed product.

- deleting DPP data for a product from the decentralized DPP data repositories.

- destroying the data carrier.

- writing into a deactivated DPP that it has been deactivated.

- for products with item-level granularity, writing into the EU registry entry for that product that its DPP has status = deactivated (in case of remanufacturing) or status = destroyed (recycling).

By default, deactivation can also consist in a DPP validity timeout after the legal obligations for the original issuer are over. This can be done easily by providing a DPP validity date in the DPP.

However, the intention of the DPP is to support the lifetime extension of products for as long as possible, and potentially even after the product has been destroyed. While the technical implications of deactivation are easy to describe, the actual triggers for deactivation, if needed, will have to be defined by regulators.

4 Potentially missing and/or incomplete user stories

Additional user stories that were mentioned in discussions when preparing this document but not elaborated on are:

- Analysis of the life cycle of products by their economic operators (based on item level data), to gain learnings for the improvement of future product design and durability- or value-analyses.

- Management of references and links between several DPPs are not included as the reference to these requirements are vague in the DRAFT ESPR and the Battery Regulation.

- Updates by independent certification bodies to the information in the DPP. For example, a certification body may withdraw the certificate issued or a supplier may update the data provided by the economic operator.

- Use of the EU registry to perform filtered searches by public authorities.

- Use of tools and processes to ensure that the DPP content has not been tampered with.

- Both the economic operator that has placed products on the market and the DPP backup service provider go out of business.

- User Story steps related to product and data carrier anti-counterfeiting verification, as mentioned in the standardisation request.

- Removing a product from the market following a product withdrawal procedure.