

# USER STORIES V3.1

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<b>Abstract</b>	This document describes user stories for the DPP system. These user stories are intended to bridge the gap between the intentions of the European regulators, as expressed in the ESPR, and the DPP system development and standardisation activities. The purpose of these user stories is to elaborate, reason on and illustrate how the DPP system would function and enables the specification of its technical requirements and reference architecture in the next steps of the CIRPASS-2 project.
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## Document Revision History

Version	Date	Description of change	List of contributor(s)
1.0	24/01/2024	Creation of document – excerpted from chapter 3 of D4.1of CIRPASS1 project	CIRPASS1 user stories task force
2.0	22/03/2024	Clarifications and modifications following feedback from external stakeholders	CIRPASS1 user stories task force
3.0	11/10/2024	Further defined terms. Added explicit assumptions and considerations for each user story. Separated between core and additional user stories. Further detailed each user story through the addition of a BPMN diagram and table	CIRPASS-2 Task 4.1
3.1	19/12/2025	Incorporation of feedback from EC and the CIRPASS2 EWGs.	CIRPASS-2 Task 4.1

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46	Open Blockchain for Asset Disposition Alliance (OBADA)	OBADA	US
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49	iPoint-Systems GmbH	iPoint	Germany



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## OBJECTIVE OF THIS DOCUMENT

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This document describes ‘User Stories’ for the European DPP system, i.e., interactions between the DPP system and its intended users, based on the [Ecodesign for Sustainable Product Regulation \(ESPR\)](#) (Regulation 2024/1781, OJ L, 2024/1781, 28.6.2024). The User Stories have been identified and drawn from the ESPR and cover the basic requirements for the DPP reference architecture developed in CIRPASS-2. 13 core User Stories were identified that cover the five main steps of the DPP lifecycle: ‘Create a DPP’, ‘Access a DPP’, ‘Update a DPP’, ‘Transfer responsibility of a DPP’, and ‘Deactivate a DPP’. Each core User Story has been detailed with a process diagram and a table which elaborates on this diagram. It also describes 42 ‘additional’ User Stories that were identified as being potentially value adding for a DPP system but are not drawn directly from the ESPR. Furthermore, for each audience, the User Stories identify additional considerations:

**For Policy makers**, many assumptions were made during the design of the User Stories. These assumptions make choices about processes and, where needed, technologies implied in the User Stories explicit. The assumptions are intended to convey our current interpretation of the requirements of the ESPR. Each assumption is documented before the User Story where it is directly relevant, or in Chapter 2 where the assumptions are generally relevant to the whole document.

**For Organizations**, based on the ESPR we define 7 roles that organizations can take on (Responsible Economic Operator, End User, Independent Operator, DPP Service Provider, Public Authorities, Credentials Agency, Supply Chain Actor). Together with the User Stories, this provides insight in ‘what needs to be done by whom, in what order.’ This document can clarify the kinds of roles and responsibilities your organization may (have to) take on and the kinds of processes and interactions your organization may (have to) be able to perform.

**For DPP system designers**, the User Stories describe essential and potential additional functionalities and requirements of the European DPP system. These can inform the design of processes that the DPP system must and could support in the future and how existing product data sharing systems may need to be updated to be interoperable with the European DPP system.

All references to articles in this document refer to the ESPR unless stated otherwise.

### Disclaimer

This document was produced by the CIRPASS-2 consortium. It is a tool designed for exploration and should be seen neither as being exhaustive nor as expressing the opinion of the European Commission. Unless specifically stated in the assumptions, it also does not prescribe technical solutions, and nor does it specify which standards or technologies should be used for the DPP system. This document is not intended to be legal advice.

## Changes compared to User Stories 3.0

This document changes and builds on the CIRPASS User Stories 3.0<sup>1</sup> document in the following ways:

- Minor textual revisions and alterations to better align with the CIRPASS 2 architecture and JTC24
- Minor textual revisions and alterations to improve usability for expert working groups
- Textual adjustments based on comments from the EC

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<sup>1</sup> <https://doi.org/10.5281/zenodo.13902463>

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## ABBREVIATIONS

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BPMN	Business Process Model Notation
CPR	Construction Products Regulation
DPP	Digital Product Passport
DPPSP	Digital Product Passport Service Provider
EC	European Commission
ESPR	Eco-design for Sustainable Product Regulation
IAA	Identification, Authentication, Authorization
ID	Identifier
MSA	Market Surveillance Authorities
rEO	Responsible Economic Operator
SME	Small-Medium Enterprise

# 1. INTRODUCTION

This document describes the interaction between a Digital Product Passport (hereafter, DPP) system and its users, in order to facilitate better communication among policy makers, industry, DPP system designers and other stakeholders, and to foster a shared understanding of what a DPP system should achieve. The User Stories specified in this document are therefore intended to bridge the gap between the intentions of the European regulators, as expressed in the ESPR, and the technical development and standardisation activities that support the widespread implementation of the DPP System. The present document is a refinement of the User Stories 3.0 and incorporates the lessons learned from the CIRPASS 2 architecture and their impact on the User Stories.

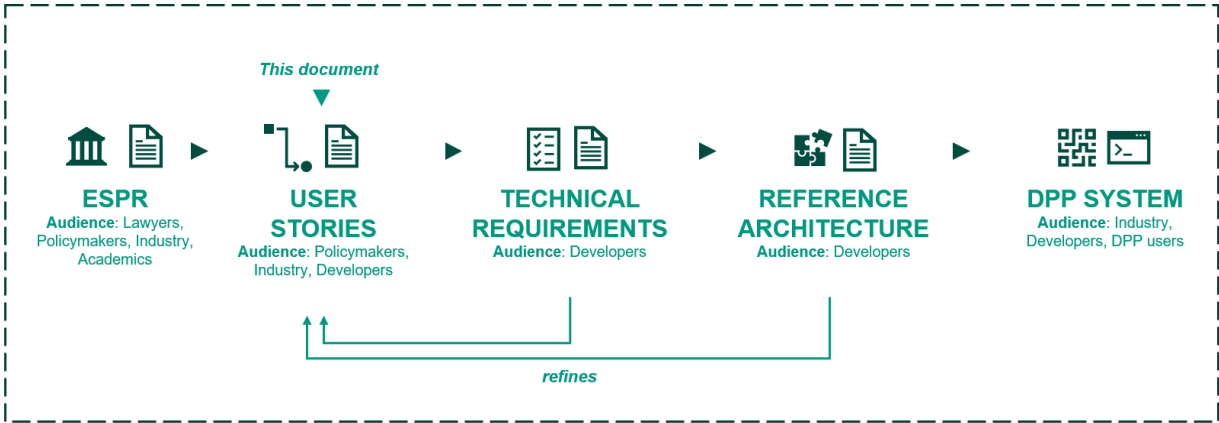


FIGURE 1. CONTEXT OF THE USER STORIES DOCUMENT

## Scope

DPPs are a wide-reaching concept, with a plethora of potential uses. In order to scope the work in this document, therefore, a distinction is made between functionalities and requirements for the DPP system which are mandatory for compliance with the ESPR, (hereinafter ‘core’), and those which are value adding but not mandatory (hereinafter ‘additional’). This distinction is made for both the DPP system and User Stories. Core User Stories and the DPP core system have a legal basis in the ESPR, i.e., they are required for the implementation of, and compliance with, the essential requirements of the ESPR. ‘Additional’ User Stories enhance the core but are not mandatory for the implementation of or compliance with the essential requirements of the ESPR.

This document focuses primarily on identifying, describing, and detailing, in a non-technical way, the DPP Core User Stories. The assumptions made during the design of the User Stories have been made explicit.

This document also identifies and describes, but does not elaborate on, a list of ‘Additional’ User Stories as consideration for implementation by DPP pilots. ‘Additional’ DPP User Stories can make others aware of a potential opportunity to derive value from DPP beyond its legislative requirements or guide future regulatory evolutions.

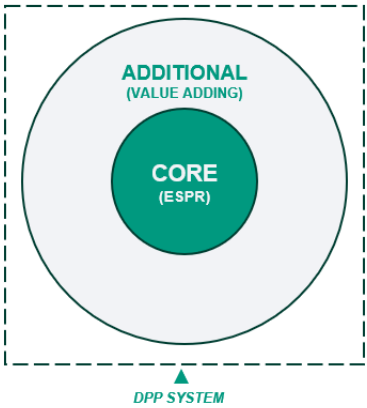


FIGURE 2. DPP SYSTEM CORE – ADDITIONAL

The intent of this document is to be illustrative – that is, the Core and ‘Additional’ User Stories included herein are not intended to cover every theoretically possible situation, nor does this document aim to define a set of User Stories that contain every exception.

## Method

This document draws on four inputs for the creation of the user stories:

1. First, this document utilises **the Eco-Design Requirements for Sustainable Products Regulation (EU) 2024/1781** (hereinafter, ESPR) and its associated Impact Assessment, and aims for completeness with regards to the essential requirements the ESPR sets for the development and deployment of Digital Product Passports in the EU. While it also refers to and draws on other regulations, such as the Battery Passport Regulation (EU) 2023/1542, especially for validation and interoperability, it does not aim for completeness with the same.
2. Second, it draws and iterates on the User Stories specified in **the DPP User Stories (3.0) document created in the CIRPASS 2 project.**<sup>2</sup>
3. Third, **a questionnaire** was designed and shared with the members of the CIRPASS-2 consortium in order to receive feedback **on the aforementioned DPP User Stories (3.0) document.** This present document draws on the feedback received through this questionnaire as well.
4. Finally, parallel to the feedback received from the consortium members, **the European Commission** (hereinafter EC) **provided feedback on the aforementioned DPP User Stories (3.0) document.** This document draws on the feedback received from the EC as well.

Based on the sources above, this document identifies and defines the roles concerned with the lifecycle of DPPs, and correspondingly identifies User Stories.

## Structure of this document

The rest of this document is structured as follows: Section 2 elaborates on what a User Story is, including design principles, the criteria used to specify core and additional user stories, the roles, assumptions made, and underlying technological components. Section 3 contains the DPP lifecycle and User Stories themselves. Section 4 describes the additional User Stories, and Section 5 discusses open questions and reflections on the User Stories for the DPP System and the delegated acts that are to follow from the ESPR. At the end of the document there are a glossary and appendices.

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<sup>2</sup> [CIRPASS-2 User stories V3](#)

## 2. CONTEXT OF USER STORIES

### 2.1 WHAT IS A USER STORY?

The figure below provides our perspective on what User Stories are. In short, User Stories describe the interactions of roles with the DPP core system.

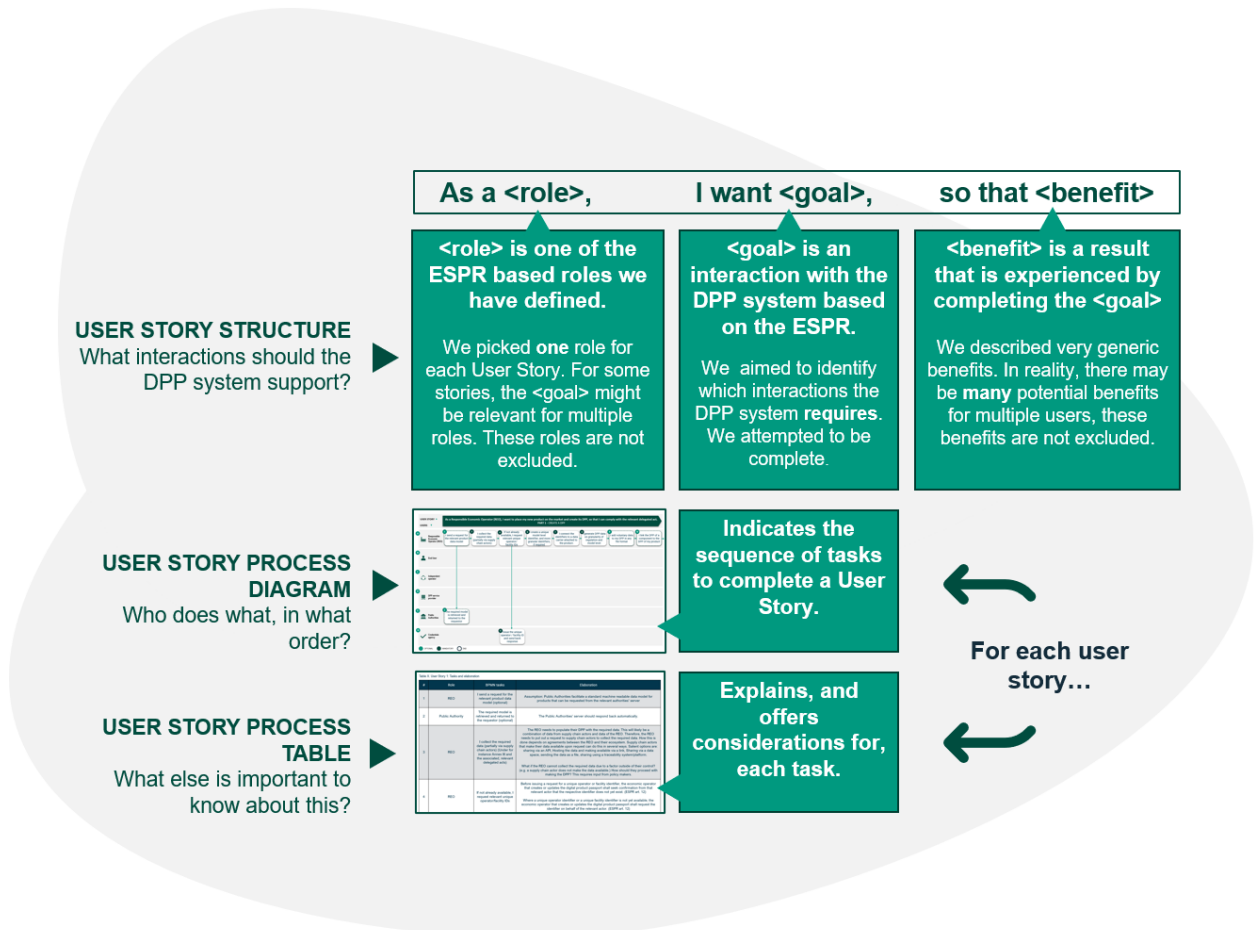


FIGURE 3. WHAT IS A USER STORY?

## User Story design principles

Recognising that the User Stories are input for the reference architecture for the DPP system, a few design principles are noted here.

- The user stories are formulated to be as technological and sector agnostic as possible. Technical assumptions have been made explicit.
- DPPs should be interoperable with other DPPs, in relation to the technical, semantic and organisational aspects of end-to-end communication and data transfer (Art. 11(a)).
- All data included in a DPP shall be based on open standards developed with an interoperable format, in compliance with the requirements of Art. 10 (1)(d) and Art. 11.
- DPPs shall be designed and operated so that a high level of security and privacy is ensured and fraud is avoided (Art. 11 (h)).
- DPPs shall be user-friendly (Recital 32) and the data therein shall be accurate, complete and up to date (Art. 9(1)).
- A DPP core system should minimize administrative burden where possible.
- A DPP core system should be affordable.
- A DPP core system should be extensible.

## Criteria to adopt User Stories

A longlist of User Stories was collected, and evaluated on fixed criteria to determine whether it is part of the DPP core system. If a User Story meets the criteria for the DPP core system, they are further detailed in this document.

Criteria for a User Story to be part of the core User Stories:

- The user story describes interaction(s) between at least one ESPR based role and the DPP system.
- The user story is essential to fulfil a requirement under the ESPR.
- The user story is sector agnostic.<sup>3</sup>

Criteria for a User Story to be part of the additional User Stories:

- The user story describes a potentially value adding result that might be facilitated by a DPP system.

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<sup>3</sup> While specific sectors may require additional technical functionalities, these will not be addressed here.

## 2.2 ROLES BASED ON THE ESPR

An actor is a natural or legal person that 1) has to, or may, take on different roles in different DPP ecosystems, 2) has to, or may, take on multiple roles in each of these ecosystems, and 3) has to, or may, take on multiple roles during the lifecycle of a DPP. In this document, a role represents a collection of tasks and obligations. A role is included based on two criteria: 1) the ESPR legislation refers to, or strongly implies the existence of, the role, and 2) a need that the DPP core system should serve involves them. This means that multiple roles may share the same need but that the user story that addresses this need is attributed to only one of the roles. This also means that there are roles that are not included that do make use of the DPP core system. These are considered valid users of the DPP core system.







ICON	ROLE	SHORT DESCRIPTION
	REO	The 'Responsible Economic Operator' (REO) refers to a legal person that is responsible for creating a DPP, and all legal obligations therewith
	End User	A natural or legal person in the EU to whom a product has been made available
	Independent Operator	Independent Operators are natural or legal persons that perform activities associated with the Circular Economy (i.e. R-Ladder activities)
	DPPSP	The DPP Service Provider (DPPSP) refers to a natural or legal person authorized by the REO to provide DPP services, including keeping a DPP back-up
	Public Authority	Public Authorities refer to parties that are carrying out the duties assigned to them by law, such as customs authorities or market surveillance authorities
	Credentials Agency	A legal person that provides credentials to parties, which may be used to make and verify a variety of claims in the DPP
	Supply Chain Actor	A legal person that performs an activity in a product's value chain up to where the product reaches the customer

FIGURE 4. ROLES RELEVANT TO THE DPP CORE SYSTEM

TABLE 1. ROLES RELEVANT TO THE DPP CORE SYSTEM

Role	Description	User Story
<b>Responsible Economic Operator (rEO)</b>	<p>The ESPR defines an ‘economic operator’ as <i>‘the manufacturer, the authorised representative, the importer, the distributor, the dealer and the fulfilment service provider.’</i> In Art. 2(46)<sup>4</sup></p> <p>The ‘Responsible Economic Operator’ refers to a legal person that is responsible for creating a DPP under Art. 9(2)(g), and all legal obligations therewith.</p>	1, 2, 6, 10, 11, 13
<b>End User</b>	<p>A natural or legal person in the EU to whom a product has been made available.</p> <p>The ESPR employs in Art. 2 the definition of ‘end user’ used by the Regulation 2019/1020, i.e., <i>‘means any natural or legal person residing or established in the Union, to whom a product has been made available either as a consumer outside of any trade, business, craft or profession or as a professional end user in the course of its industrial or professional activities’</i></p> <p>The ESPR uses the definition of ‘consumer’ used by the Directive 2019/771, i.e., <i>“‘consumer’ means any natural person who, in relation to contracts covered by this Directive, is acting for purposes which are outside that person’s trade, business, craft or profession”</i>. The definition of ‘end user’, therefore, also includes a reference to the definition of ‘consumer’.</p>	2, 3
<b>Independent Operator</b>	<p>The ESPR defines an ‘Independent operator’ as <i>“a natural or legal person that is independent of the manufacturer and is directly or indirectly involved in the refurbishment, repair, maintenance or repurposing of a product, and includes waste management operators, refurbishers, repairers, manufacturers or distributors of repair equipment, tools or spare parts, as well as publishers of technical information, operators offering inspection and testing services and operators offering training for installers, manufacturers and repairers of equipment”</i> in Art. 2(47).</p> <p>‘Professional repairers’ are also considered to be included in this.</p> <p>Independent Operators perform activities associated with the Circular Economy (i.e. R-Ladder activities)</p>	7, 8, 9

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<sup>4</sup> Art. 27 – Manufacturer is obligated to ensure that a Digital Product Passport is available for a product it places on the market if covered by delegated acts adopted pursuant Art. 4. A Similar obligation for the importer under Art. 28. There is an obligation on distributor to ensure that the product is linked to a DPP in Art. 29. There is an obligation on dealer to ensure that DPP is easily accessible for customers and potential customers in Art. 31. Obligations regarding DPPs are not explicitly mentioned for authorised representatives or fulfilment service providers under the ESPR. However, a manufacturer may appoint a authorised representative to perform the manufacturer’s tasks in Art. 28. The implication of these descriptions is that the *Responsible* Economic Operator as used in this document is likely the manufacturer, the importer, or the authorized representative.

<p><b>DPP Service Provider (DPPSP)</b></p>	<p>As per Art. 2(32) of the ESPR, a Digital Production Passport service provider is “[a] natural or legal person that is an independent third-party authorised by the economic operator which places the product on the market or puts it into service and that processes the digital product passport data for that product for the purpose of making such data available to economic operators and other relevant actors with a right to access those data under this Regulation or other Union law”<sup>5</sup></p> <p>The DPPSP as an independent third party may also be responsible for keeping a back-up copy of the most up-to-date version of the DPP, at the request of the rEO, as required under Art. 10(4), Art. 27 point 1(c), and Art. 29 point 2(c).</p> <p>The DPPSP may also be responsible for ensuring “access to the digital product passport for the period specified in delegated acts, including after an insolvency, a liquidation or a cessation of activity in the Union” ESPR (38)</p>	<p>12</p>
<p><b>Public Authorities</b></p>	<p>The relevant public authorities, carrying out the duties assigned to them by law, such as EU agencies, customs authorities or market surveillance authorities.</p>	<p>1, 5, 8, 13</p>
<p><b>Credentials Agency</b>  (may be an Issuing Agency under specific conditions)</p>	<p>A legal person that provides (professional) credentials to parties, which may be used to make and verify a variety of claims in the DPP, Art. 11 last paragraph. For example, a credentials agency could certify a professional repairer and provide appropriate credentials for the DPP system.</p> <p>Credential agencies are not explicitly mentioned in the ESPR but it is strongly implied that access to specific data included in DPP will require a variety of credentials provided by different organisations. The credentials agency can provide all credentials, however, for the unique identifiers and data carriers, the credentials agency should qualify for the criteria of an issuing agency.</p> <p>Issuing Agencies are explicitly mentioned in the ESPR. Issuing Agencies are legal persons that provide unique identifiers and data carriers Art.12(4a). Under specific conditions, economic operators may perform the functions associated with an Issuing Agency (Art 12 (4b)).<sup>6</sup></p> <p>Delegated acts will specify the criteria to become an Issuing Agency, and what the role will entail (Art. 12(5)).</p>	<p>-</p>
<p><b>Supply Chain Actor</b></p>	<p>As per art. 2(10) and 2(35), a supply chain actor is defined as a legal person that performs an upstream activity or participates in a process of the product’s value chain, up to the point where the product reaches the customer. In the context of DPP, a supply chain actor often provides a good that is part of a product with a DPP. The supply chain actor may have to make data available to the rEO.</p>	<p>-</p>

<sup>5</sup> A DPP service provider can perform any task regarding DPPs as long as they have been authorized to do so. The DPP service provider uniquely provides a back-up of DPPs.

<sup>6</sup> Issuing Agencies are defined as part of the ISO/IEC 15459-2:2015 series cited in Annex III of the ESPR.

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## 2.3 ASSUMPTIONS

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The User Stories are based on a set of assumptions. Assumptions shared by all user stories are listed here.

### Assumptions about roles

- A. An rEO is responsible for creating the DPP for a product placed, or put into service, on the EU market, and all legal obligations therewith, as under Art. 9(2)(g).
- B. A DPP Service Provider (DPPSP), including DPP-as-a-service providers, can perform any task that is performed by the rEO in the user stories, as long as the DPPSP is authorized by the accountable party to do so.
- C. Art. 9 point 2(g) states that delegated acts will determine which actors are to “*update the data in a digital product passport and what data they may introduce or update*”<sup>7</sup>. We assume that Independent Operators may update the DPP, though updates may also be performed by other roles, including (responsible) Economic Operators.
- D. Actions are in good faith and in accordance with the law. Where processes are needed to support good faith actors in identifying and informing them about bad faith actors, these are included in the User Stories. For a deeper understanding of the risks of -and possible mitigations for- DPP systems consider the Risks and Mitigations document of the CIRPASS 2 architecture.<sup>8</sup>

### Assumptions about technical aspects

- E. An IT system with access to the internet is used for all interaction with the DPP core system. The DPP should be accessible via web (based on ESRP art. 2 (30) and (28)).
- F. The DPP is digitally signed at creation by the rEO and each update to the DPP is digitally signed by the relevant party. This guarantees data integrity.
- G. Traceability systems that collect data such as timestamps and lifecycle events, will be an essential part of DPP-enabling IT systems to comply to the requirements set out in the ESRP. However, traceability is not elaborated upon in the user stories. Nevertheless, some degree of upstream traceability is implied in some user stories.
- H. Sector-specific data models for mandatorily required DPP data align with common cross-sector semantics to ensure semantic interoperability, to the extent possible. For example, textiles and chemicals DPPs should be anchored to a common semantic model. Furthermore, the category-specific product requirements would be based on the same semantic model for a specific delegated act. For example, if there is a delegated act for ‘textiles’, an associated standard data model should be available. This data model should align to the extent possible with other relevant data models.
- I. Access to DPP data using the web link will require, in most cases, a redirection service, under the (possibly delegated) control of the rEO, able to process a unique product identifier or web link and find the ‘active’ web link. In addition, in most cases, DPP data services, over which the rEO also has (possibly delegated) control will be required to process an ‘active’ web link and produce as an

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<sup>7</sup> Depending on the relevant delegated act, ‘update’ may mean ‘amend’. I.e. updating the actual DPP data may be reserved for the rEO.

<sup>8</sup> [Risks and mitigations: a companion to D4.1 Reference Architecture](#)







output DPP data, potentially considering among other things, the access rights, data format, and multiple locations of DPP data.

- J. We assume that rEO can deploy their own redirection services to ensure DPP availability in cases such as mergers, acquisitions or insolvency, including by redirection to backup DPPSPs. To ensure access to DPP data using only the unique product identifier (UPI), we assume that the web portal which will be provided by the EC exists and is able to take the unique product identifier (UPI) as an input and produce the active web link as an output. 'Active' means that by using this web link the DPP data can be found.
- K. Should the data carrier not contain a web link, it is understood that dedicated means will be defined to construct one (e.g., a professional application used exclusively in B2B contexts or via the web portal).
- L. A unique product identifier corresponds to the finest level of granularity present in any attribute of the DPP data (which may combine model, batch, and item level attributes). Therefore, there must be at least as many unique product identifiers as there are instances at that finest granularity level. For example, if any attribute in the DPP data requires item-level detail, each individual product must have a unique product identifier. It is possible, though not yet determined, that unique product identifiers may be issued at a finer granularity than required by regulation (e.g., item-level identifiers even when all other DPP data is at model or batch level) to enable specific business processes.

## 2.4 TECHNICAL COMPONENTS OF THE DPP SYSTEM

Several technical components of the DPP system are described in the User Stories and have been made explicit. The intention is to provide an intuition about each component's primary functions. This is not an exhaustive list of technical components and application services, nor have they been fully detailed. All actors in the system are assumed to have the ability to perform Identity and Access Control at a sufficient level to support the requirements for the product they are involved with. For some products this may entail the support of an extensive set of roles, and related access controls, while for other products this may be a very limited effort. The more technical details on this subject are outside the scope of the user stories.

Figure 5. Technical components

ICON	NAME	PRIMARY FUNCTION	NOTES
	Data Carrier	Scannable to easily access the DPP data	<ul style="list-style-type: none"> <li>• May contain a weblink</li> <li>• May contain (only) a unique product identifier</li> </ul>
	Redirection service	In this context, 'redirection service' refers specifically to a service that leads to a weblink for the DPP data services.	<ul style="list-style-type: none"> <li>• A redirection service, in general, redirects a weblink to another address.</li> <li>• Under control of REO / DPPSP</li> <li>• Input: unique product identifier / weblink</li> <li>• Output: active weblink</li> </ul>
	DPP data services	Return DPP data, considering access rights and data format	<ul style="list-style-type: none"> <li>• A set of technical services under control of REO / DPPSP</li> <li>• Input: 'active' weblink</li> <li>• Output: DPP data; possibly from multiple storage locations</li> </ul>
	DPP data repository	Store DPP data	<ul style="list-style-type: none"> <li>• Under control of REO, DPPSP, and / or supply chain actors</li> <li>• Stores DPP data</li> </ul>
	EU registry	Store specific data for public authorities	<ul style="list-style-type: none"> <li>• Will be created by EC, under control of EC, to be used exclusively by Public Authorities</li> <li>• Stores, at least, unique product identifier, unique registration identifier, commodity code</li> </ul>
	Web Portal	Find and compare DPP data	<ul style="list-style-type: none"> <li>• Will be created by EC, under control of EC</li> <li>• Can be used to search for DPP and compare DPP</li> <li>• Stores: unknown</li> </ul>

### 3. USER STORIES FOR THE ESPR DPP SYSTEM

#### 3.1 USER STORIES OVERVIEW

The lifecycle of a DPP consists of five main stages<sup>9</sup>. In each stage, interactions between the roles and the DPP core system take place.

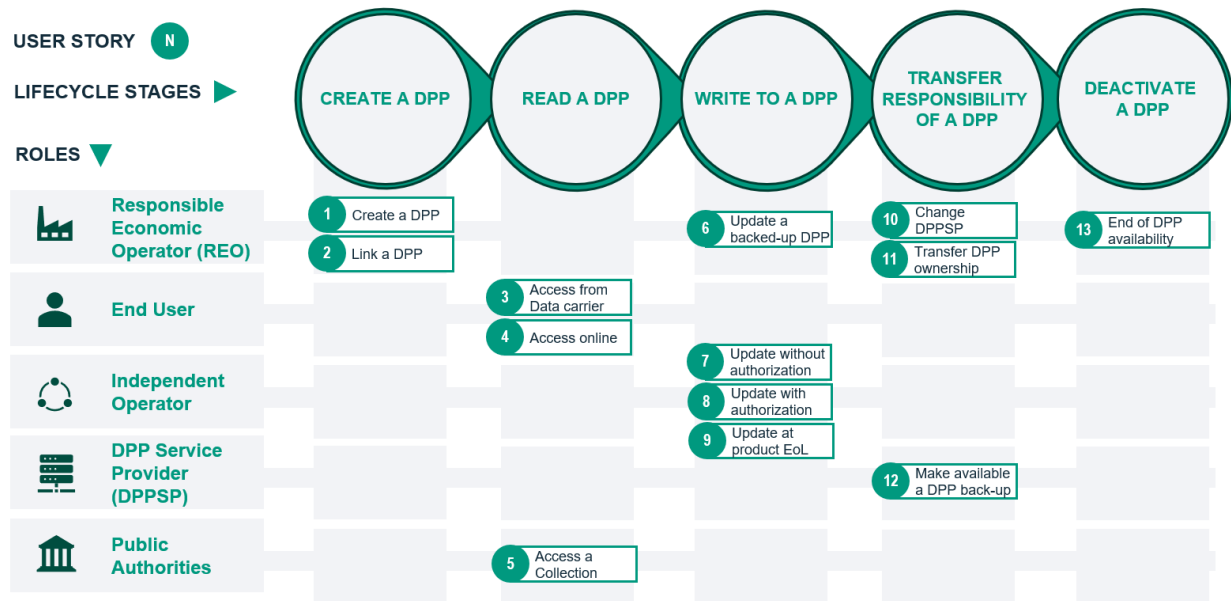


FIGURE 6 THE LIFECYCLE OF A DPP

The lifecycle of a DPP provides an illustrative overview of how the roles interact with the DPP core system. The lifecycle consists of five stages (not every DPP has to traverse each stage) :

1. Create a DPP,
2. Read a DPP,
3. Write to a DPP,
4. Transfer Responsibility of a DPP,
5. Deactivate a DPP.

One might recognize 'create-read-update-delete' (CRUD) operations in the DPP lifecycle, and indeed, CRUD is essential, however, the DPP core system is more complex than the CRUD operations in a database in several ways. Consider that there are multiple parties that exchange data throughout the lifecycle, that there are regulatory requirements to follow for each stage, that anyone could offer DPP related services, that there are many different kinds of systems that interact with each other, some of which provided by public authorities, and that the ownership of the DPP might be transferred throughout its lifecycle, while ensuring technical, semantic, and organizational interoperability between DPPs.

<sup>9</sup> Source: CIRPASS presentation [User stories v2.pdf \(cirpassproject.eu\)](https://cirpassproject.eu/User_stories_v2.pdf)

TABLE 2. USER STORIES V3.0 OVERVIEW

User story code	User story
1	As an rEO, I want to place my new product on the market and create its DPP and register it to the EU registry, so that I can comply with the relevant delegated act
2	As an rEO, I want to link an existing DPP and data carrier to my new DPP, so that my product is linked to relevant other DPPs
3	As an End User, I want to retrieve DPP data via a data carrier physically on the product, so that I can make an informed decision
4	As an End User, I want to retrieve DPP data before online purchase, so that I can make an informed purchasing decision
5	As a Public Authority, I want to retrieve a collection of DPPs using the EU registry and Web Portal, so that I can monitor compliance
6	As an rEO, I want to ensure that my DPP back-ups, stored by the DPPSP, remain up to date, so that users will have access to up to date DPP data in case the original DPP is no longer available
7	As an Independent Operator or End User, I want to add to the item level DPP data, so that users can access detailed and updated product information
8	As an Independent Operator authorized by the rEO, I want to add data to the item level DPP data, so that users can access detailed and updated product information
9	As an Independent Operator, I want to indicate in the DPP that a product no longer exists, (e.g. after remanufacturing or recycling), so that others are informed of the state of the product.
10	As an rEO, I want to change my DPPSP, so that I can choose a vendor that provides my current needs
11	As a prospective rEO, I want to transfer all ESPR-related legal responsibilities for a product to my organization, so that I become the new rEO for this product.
12	As a DPPSP, I need to make available a back-up of the DPP that is no longer made available by the rEO, so that the DPP remains available
13	As an rEO, I want to stop making my DPP available when the expected lifetime of my product has passed, so that I no longer have to host the DPP

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## 3.2 CREATE A DPP

### USER STORY 1: CREATE A DPP

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#### User Story Description

*As a rEO, I want to place my new product on the market and create its DPP, so that I can comply with the relevant delegated act.*

#### Reason to adopt User Story

This user story mainly addresses the requirements from ESPR Art. 27, 28, 29, 30, 31, 34 with regards to a rEO's obligations towards making DPPs, as specified in Art. 9, 10, 11 and Annex III, available or accessible.

#### Assumptions and Considerations

- Next to the unique identifiers and commodity code, other relevant data encoded in the DPP may also be stored in the EU registry (Art. 13(2)).
- Public Authorities ensure availability of a service (e.g. by providing the service themselves or ensuring that others provide it) via which a standard data model for products regulated via a delegated act is made available. 'Making available' here means at least that it can be requested from the relevant authorities' server in a standard machine-readable format (e.g. SHACL, CSV, JSON, XML, etc.).
- Public Authorities ensure availability of a service via which a DPP (data model) can be assessed for its compliance. This may not qualify as an assessment of the accuracy of data in the DPP but it may be an assessment of the data model and completeness of the data.
- Public Authorities ensure availability of a service (e.g. by providing the service themselves or ensuring that others, such as Issuing agencies, provide it) via which a request can be made for a unique operator identifier and a unique facility identifier (based on ESPR art. 12).
- Voluntary data, including obtained certifications, may be added to the DPP by the rEO. If at all possible, this data should adhere to standards, either universal or sector-specific.
- rEOs may voluntarily create unique product identifiers at a higher granularity level (batch/item) than required by the relevant delegated act. In some cases, higher granularity is beneficial for the rEO. An industry example are socks, where a DPP at product or batch level would suffice for compliance, but manufacturers and retailers use item level identifiers to better support their (supply chain and inventory) processes.
- Accessing a DPP resolves to a single web link. The rEO must make sure that the complete DPP is provided at that endpoint, even if multiple technical systems are used to store the data. It is common industry practice for companies to store data applicable at model, batch and item levels on different servers.
- In the short term, multiple IAA systems will exist in parallel, for example to allow access for reading and writing a DPP. Long term, using internationally standardized IDs and claims about roles (e.g. repairer, recycler) as the default would be desirable to reduce administrative burden.
- The DPP back-up provider should provide the access controls specified in the relevant delegated act(s), just as the rEO must do. The access control details (i.e. which parties get access to which data) must therefore be shared with the DPP back-up provider.

Process diagram

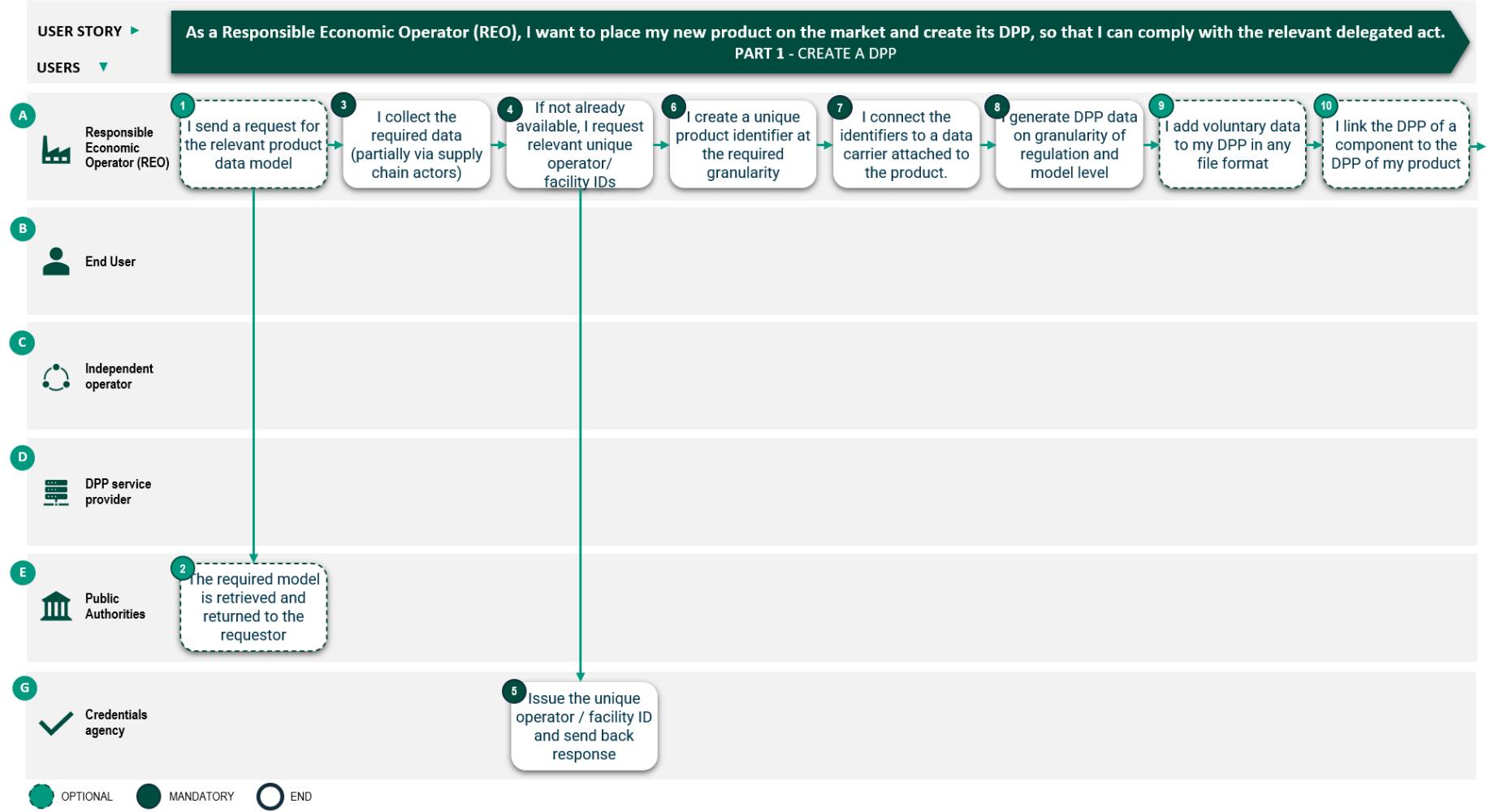


FIGURE 7. USER STORY 1 – PART 1

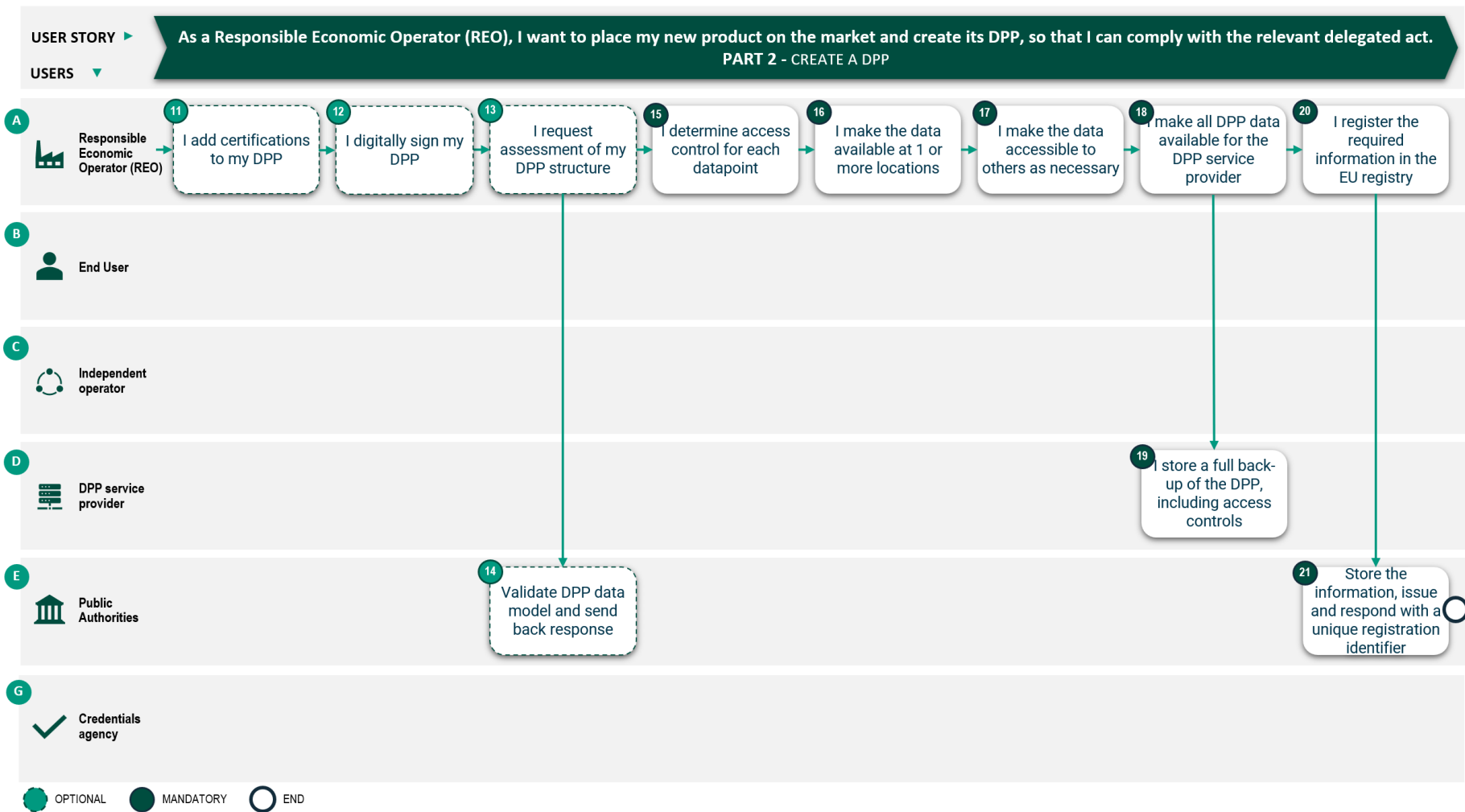


FIGURE 8. USER STORY 1 – PART 2

## Tasks and elaboration

Table X. User Story 1: Tasks and elaboration

#	Role	Task	Elaboration
1	rEO	(optional) I send a request for the relevant product data model	Assumption: Public Authorities facilitate a standard machine readable data model for products that can be requested from the relevant authorities' server. This data model may differ depending on the relevant delegated act.
2	Public Authority	(optional) The required model is retrieved and returned to the requester	The Public Authorities' server should respond back automatically.
3	rEO	I collect the required data (partially via supply chain actors) (Under for instance Annex III and the associated, relevant delegated acts)	The rEO needs to populate their DPP with the required data. Depending on the relevant delegated act this will likely consist of a combination of data from supply chain actors and data from the rEO. Therefore, the rEO needs to put out a request to supply chain actors to collect the required data. How this is done depends on agreements between the rEO and their ecosystem. Supply chain actors that make their data available upon request can do this in several ways. Salient options are: sharing via an API, hosting the data and making available via a link, sharing via a data space, sending the data as a file, sharing using a traceability system/platform.
4	rEO	If not already available, I request relevant unique operator/facility IDs	<p>Before issuing a request for a unique operator or facility identifier, the economic operator that creates or updates the digital product passport shall seek confirmation from that relevant actor that the respective identifier does not yet exist. (ESPR art. 12)</p> <p>Where a unique operator identifier or a unique facility identifier is not yet available, the economic operator that creates or updates the digital product passport shall request the identifier on behalf of the relevant actor. (ESPR art. 12)</p> <p>The rEO shall provide that actor with full details of the unique operator / facility identifier once issued. (ESPR art. 12)</p>

5	Credentials agency	Issue the unique operator / facility ID and send back response	<p>In order to provide the unique operator and facility identifiers, the credentials agency must be an Issuing agency as described in the ESPR article 12.</p> <p>The economic operator may issue these identifiers themselves, depending on the rules specified in the relevant delegated act based on article 12 point 4(b).</p>
6	rEO	I create a unique product identifier at the required granularity	<p>The unique product identifier is created at least at the granularity required by the relevant delegated act. If lower granularity is not required but beneficial (e.g., for optimisation of the rEO's business processes), a unique item-level identifier may be created voluntarily.</p> <p>The creation of these IDs may be delegated to a service provider.</p>
7	rEO	I connect the identifier to a data carrier attached to the product (Art. (9(3))	The DPP is connected through a data carrier to a persistent unique product identifier (Art. 10(a)).
8	rEO	I generate DPP data on granularity of regulation and model level (Articles 9-12, and Annex III)	Model level data is always required, batch and item level data may be required depending on the applicable delegated act. The DPP for a product will be represented as a single artefact to the user, even if it contains data on multiple levels. Some data may be generated by supply chain actors, service providers (e.g. safety data sheet, traceability, image banks) or other external parties.
9	rEO	(optional) I add voluntary data to my DPP in any file format	The rEO or supply chain actors may want to include optional information in their passports, in many different file formats. Consider pictures, video's, dynamic streaming data, VR instructions, etc.
10	rEO	(optional) I link the DPP of a component to the DPP of my product	If a component of a product has its own DPP and the rEO includes this component in their product they include a link to the DPP of the component.
11	rEO	(optional)	To make claims about the product the rEO may want to include certifications from independent third parties. There may be different ways to include a certificate. Salient options are: including a certificate as pdf, including a reference to where the issuer of the certificate stores the certificate, request the issuer of the certificate to place a signed

		I add certifications to my DPP	document in the DPP themselves, or add a link by which the certification organization can verify whether or not there is a valid certification connected to the product identifier (usually at model level).
12	rEO	I digitally sign my DPP	To provide a reliable DPP and prevent disputes, it is strongly advised for rEOs to provide a digital signature for each DPP, making provenance clear and creating a tamper-evident DPP.
13	rEO	(optional) I request assessment of my DPP structure	Assumption: Public Authorities facilitate a service via which a DPP data model can be assessed for its compliance. This does not qualify as an assessment of the data in the DPP, only an assessment of the data model. A similar assessment is expected to take place during registration, but a separate service will increase efficiency for all actors.  Whether or not additional access rights need to be acquired by the rEO to use an assessment service is to be determined by the public authorities involved.
14	Public Authority	(optional) Validate DPP data model and send back response	The Public Authorities server should respond back automatically. Optional data may have been added to the DPP, which does not necessarily invalidate the DPP.
15	rEO	I determine access control for each datapoint (Art. 10 (g))	A DPP may consist of public data and protected data. For the protected data, access rights are determined for each data point in the relevant delegated act(s) or (for voluntary data in the DPP) by the Economic Operator. Depending on the IAA solution used by the rEO the technical implementation of this step may differ.
16	rEO	I make the data available at 1 or more digital locations	Assumption: 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. In addition, some of the DPP data might be hosted by supply chain actors that the DPP refers to and is at another location. In this case, there should be some service that 'assembles' the DPP.
17	rEO	I make the data accessible to others as necessary (Art. 27, Art. 79, Art. 30)	Including; end users, economic operators, independent operators or online marketplaces as necessary.

			The rEO ensures that appropriate DPP data services are operational, and registers the DPP links in order to make the data accessible. This is a requirement because the DPP should be accessible via web. (based on ESRP art. 2 (30)).
18	rEO	I make all DPP data available for the DPP service provider (Art. 10(4)).	A back-up of the DPP must be stored and the rEO needs to make this available. (Art. 10(4))
19	DPPSP	Store a full back up of the DPP including access controls (Art. (10(4)).	The rEO is responsible for making a back-up of the DPP available. Maintaining the required access must be part of the agreement between rEO and DPP service provider, since it is dependent on the (technical) choices by the rEO.
20	rEO	I register the required information in the EU registry (Art. 13)	The economic operator registers the product identifiers and other relevant content encoded in the data carrier (e.g. the web URI, depending on ID scheme), as specified in the relevant delegated act, in the EU registry.
21	Public Authority	Store the information and issue a unique registration identifier (Art. 13)	The EU registry stores the DPP information received from the rEO and issues a unique registration identifier to the rEO. The rEO can choose to store the unique registration identifier locally.  Store the necessary DPP information in the registry and issue a unique registration identifier (Art. 13)

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## USER STORY 2: LINK A DPP

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### User Story Description

*As the rEO, I want to link an existing DPP and data carrier to my new DPP, so that my product is linked to relevant other DPPs*

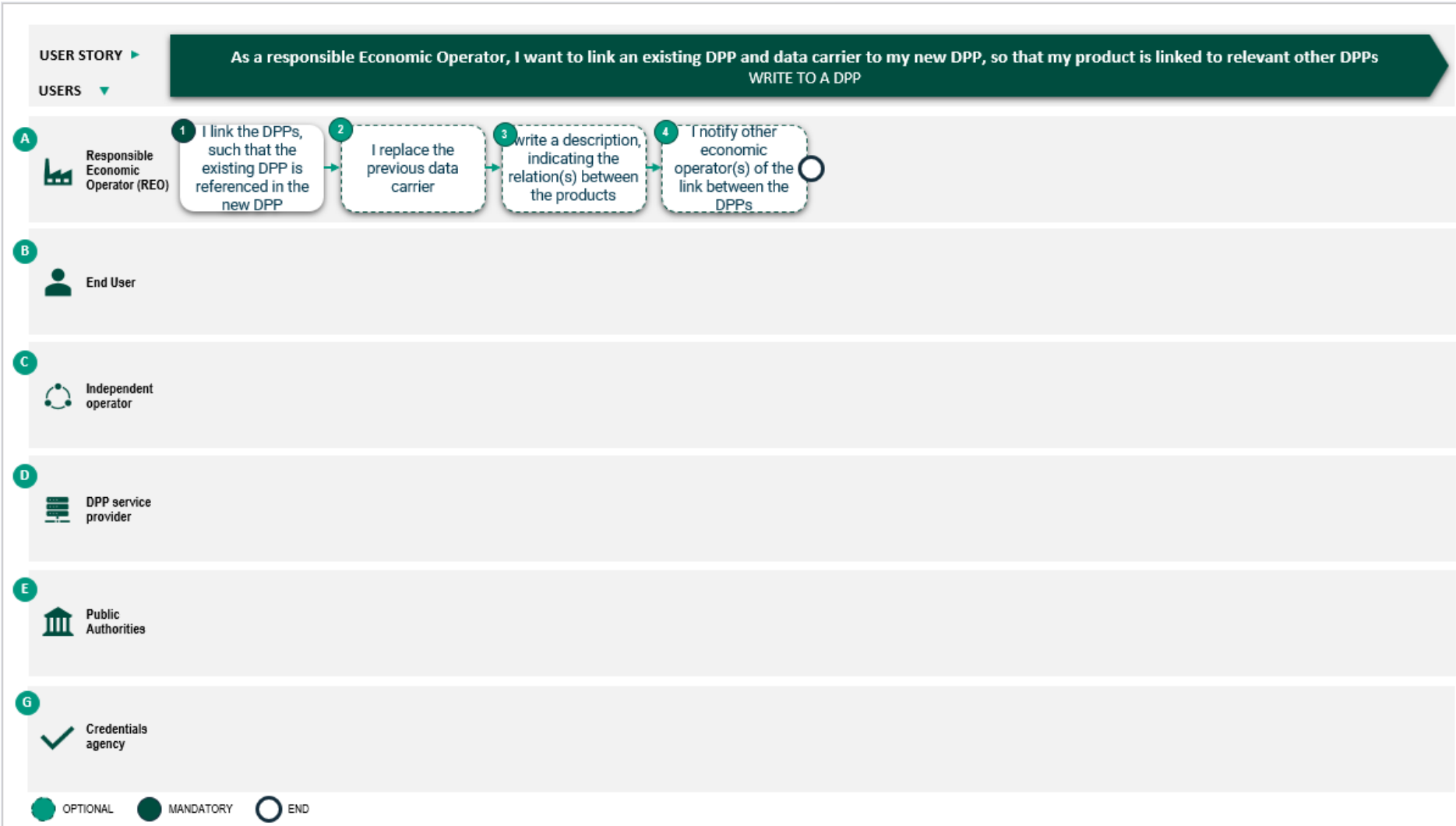
### Reason to adopt User Story

This user story mainly addresses a requirement from Art. 11(d) of the ESPR, which states that *'where a new digital product passport is created for a product that already has a digital product passport, the new digital product passport shall be linked to the original digital product passport or passports'*. It also links to requirements from Recital 36 and the definition of a unique product identifier as specified in art.2(30).

### Assumptions and Considerations

- We expect that linking to DPP will be uncommon, a link is expected only in specific situations for instance where a product contains subcomponents with their own DPP or in cases of remanufacturing.
- In the case of a product with a DPP containing subcomponents with their own DPPs, we assume that a 'parent' DPP and an 'child' DPP exist (e.g. a car DPP can be a parent of a battery DPP, where the car DPP contains a link to the battery DPP), and that they can be linked (i.e., for instance that the data model contains a field for such links). This link has a start date, which could be the same as the creation of the product, and potentially an end date as well.
- A new DPP, for instance in the case of a remanufactured product, should reference an old DPP, but since the data carrier will reference the new DPP the old DPP does not have to reference a new one.
- 'Linking' a DPP in the case of a repair during which a component with its own DPP is replaced, is not part of this user story. Instead, this is considered an update to an existing DPP.
- A potential consequence of such linkage is that the EU registry will contain 'duplicate/ghost DPPs' of products that are no longer in circulation and have either 1) become a part of a new product 2) been separated into their components, which have become parts of new products. However, the original DPPs will still be maintained. For example, my car has been stripped and is no longer functional, some of the parts of my car that were functional are placed on a remanufactured car. The old DPP is referenced in the new DPP. However, the old DPP might very well remain available, for example, when the rEO is not aware that the original car is no longer functional. So the DPP might still be found in the EU registry, the Web Portal, at the place of purchase online, etc. We have not been able to come up with a solution that prevents this *and* results in an acceptable administrative burden for rEOs.

Process diagram



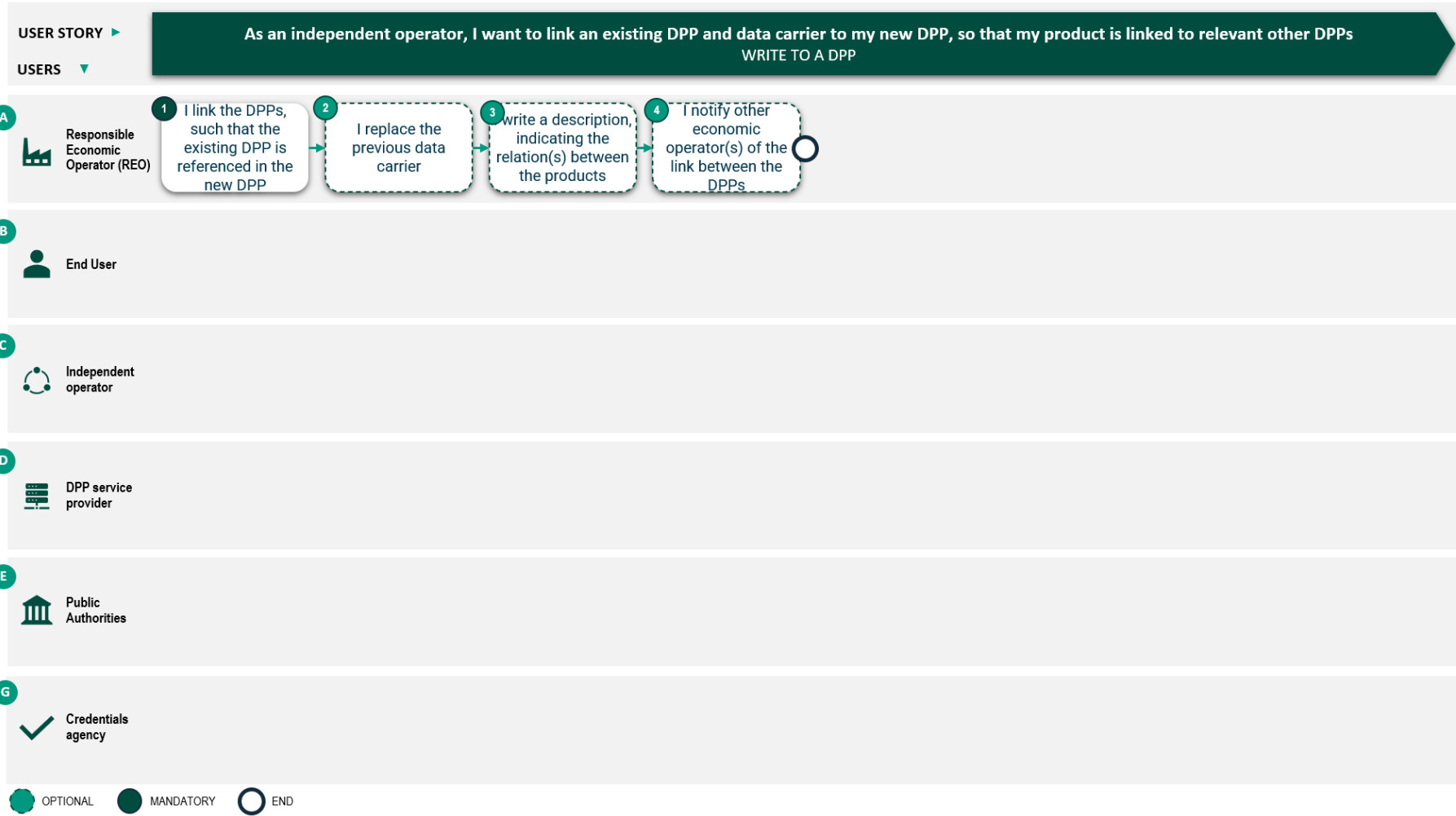


FIGURE 9. USER STORY 2

Tasks and elaboration

TABLE 3. USER STORY 2: TASKS AND ELABORATION

#	Role	Task	Elaboration
1	rEO	I link the DPP such that the existing DPP is referenced in the new DPP	<p>The appropriate fields must be available in the data model of the DPP for the rEO to add a link, preferably with a start date and time, and optionally with an end date and time.</p> <p>The reference in the new DPP should either be the unique product identifier of the existing product that functions as a link to the existing DPP, or the unique product identifier of the existing product and a link to the existing DPP.</p>
2	rEO	<p>(optional)</p> <p>I replace the previous data carrier</p>	<p>If the independent operator is creating a new product, a new data carrier must be created, which is described in user story 1. The new rEO may have to, or choose to, replace the existing data.</p>
3	rEO	<p>(optional)</p> <p>I write a description indicating the relation(s) between the products</p>	<p>In the new DPP, the new rEO may consider to include information about how the physical products relate. Consider for example, a (standard, machine readable) description of how to best decouple components.</p>
4	rEO	I notify the economic operator(s) of the link between the old and new DPP	<p>Notifying could happen in various ways, salient options are: use contact details in the DPP, DPP used as a channel; get direct contact via the DPP.</p>

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### 3.3 ACCESS A DPP

#### USER STORY 3: ACCESS DPP DATA VIA A DATA CARRIER

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##### User Story Description

*As an end user, I want to retrieve DPP data via a data carrier physically on the product, so that I can make an informed decision*

##### Reason to adopt User Story

This user story addresses the requirements of Art. 10(1)(g) and 11(b), whereby “customers, manufacturers, importers, distributors, dealers, professional repairers, independent operators, refurbishers, remanufacturers, recyclers, market surveillance authorities and customs authorities, civil society organisations, trade unions and other relevant actors” are to have “free of charge and easy access to the digital product passport based on their respective access rights”.

##### Assumptions and Considerations

- There may be multiple formats and data models that the Economic Operator has to support, for instance to support different levels of access to data or to support multiple product categories.
- The user has a device available to scan the data carrier. Based on the requirement for “easy access” the assumption is that a smartphone should suffice, although for some specific use cases the user may need to use a specialized application to scan the data carrier.
- If the user needs additional credentials to access specific data, the user is able to determine the relevant Credentials Agencies; i.e. the knowledge about how to identify the relevant Credentials Agency for the protected data elements is publicly and readily made available. We assume that there is EU-level harmonisation for Role-based Access Control that enables interoperability between different credentials that may be issued.
- A rEO or authorized DPPSP can provide credentials for DPP access to any party.
- Data Carriers need to be created using appropriate anti-counterfeiting measures, as defined in delegated acts or other regulations.

Process diagram

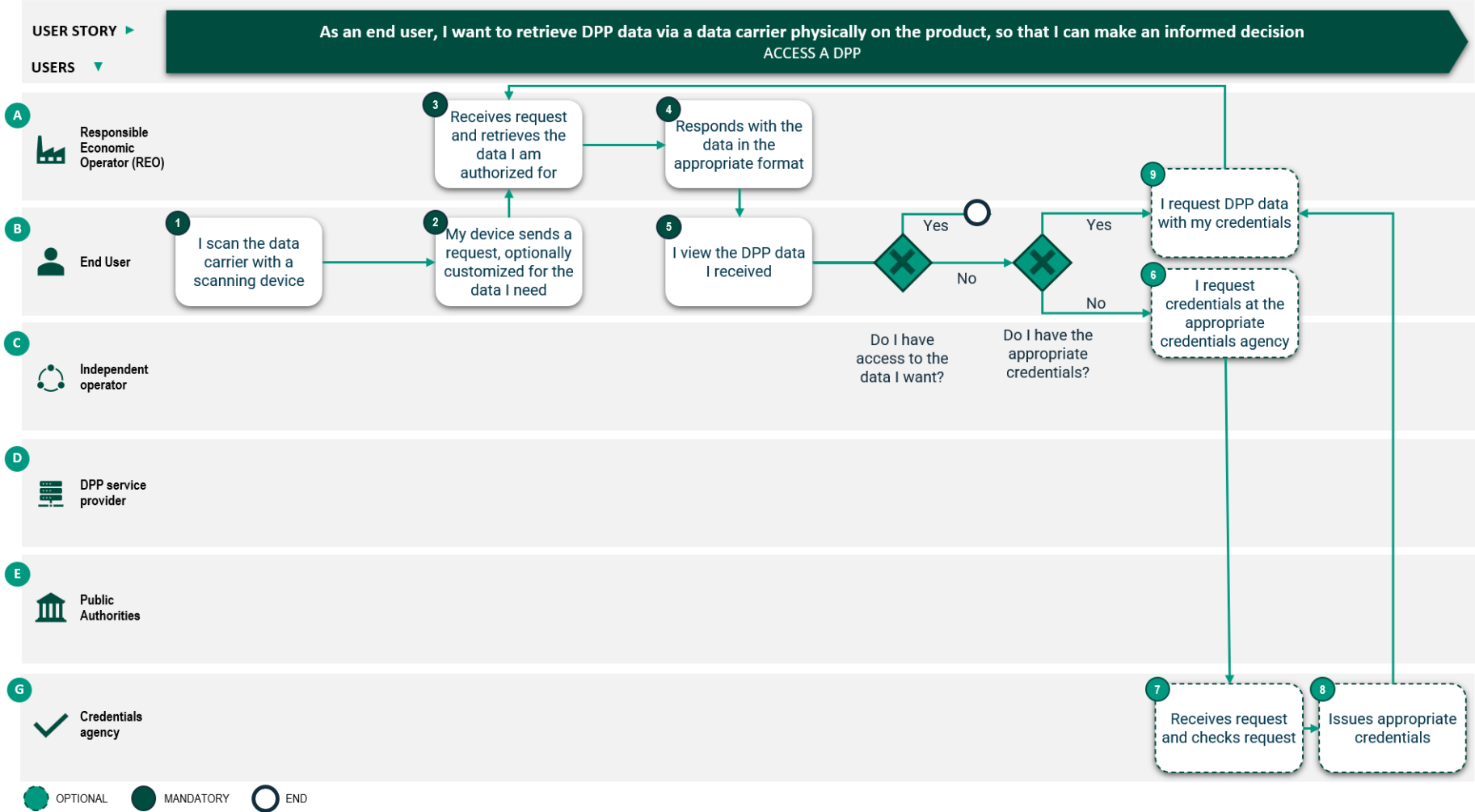


FIGURE 10. USER STORY 3

## Tasks and elaboration

TABLE 4. USER STORY 3: TASKS AND ELABORATION

#	Role	Task	Elaboration
1	End User	I scan the data carrier with a scanning device	<p>The user scans the data carrier with an appropriate scanning device, which retrieves the 'active' web link, possibly using one or more redirection services. Depending on the type of product, the scanning device and the underlying specific infrastructure, additional steps, such as verifying the authenticity of the data carrier, may be performed. Since such steps are specific to types of products they are beyond the scope of this document.</p> <p>If data carrier scanning does not work (e.g. data carrier broken, rEO does not respond, scanning device not working), the user can use the UPI to find the DPP via the EU web portal.</p> <p>The request may be sent automatically after the data carrier is scanned. Additionally, some DPP systems may give the option to the user to customize their request. A request may be customized before or after scanning a data carrier, and may be automatic.</p>
2	End User	My device sends a request, optionally customized for the data I need	<p>This customisation could include, for instance, specifying whether the user is requesting specific public data or access-protected data, or whether the user's scanning devices asks for and stores user's default preferences for requesting user data.</p> <p>Depending on the credentials provided (and <i>if</i> credentials are provided) in the request, the request concerns public data or protected data. The user may also be making a request for a deactivated DPP (see User Story 9 and 13).</p>
3	rEO	Receives request and retrieves the data the end user is authorized for	<p>The rEO receives the user's request and ascertains whether the user has the appropriate credentials for the requested information. It retrieves the data the user is authorised to view and gives a warning in case the user has requested data they are not authorised to view.</p> <p>Data is retrieved at the most detailed level available. If item-level data is available, the rEO responds with all data the requester has appropriate credentials for (i.e. including downstream activities provided by repairers/refurbishers, etc.) on the item level and, if relevant, batch level and model level. If only DPP data on the model level is available that will be returned.</p>

4	rEO	Responds with the data in the appropriate format	The rEO responds to the user's request, taking all reasonable steps to ensure that the data it sends can be processed and displayed by the user's device in a user-friendly manner. The term 'format' here is used as broadly as possible, as the specific standards are not yet known, but may include JSON, JSON-LD, XML, CSV and other formats. The data should be accurate, complete, and up to date (Recital 32). In case of a deactivated DPP (see User Story 9 and 13), the deactivated status of the DPP would also be communicated to the user.
5	End User	I view the DPP data I received	The data that was received by the user's device is displayed to the user. This display should be user-friendly (Recital 32), and may also take user preferences from Step 2 into account.  At this point, the user may make a decision about whether they want to see more data and/or if they require additional credentials.
6	End User	If I want to see more data, but do not have the appropriate credentials, I request credentials at the appropriate credentials agency (optional)	In case the user lacks appropriate credentials and would like to obtain them, they can in this step apply for the appropriate credentials at the relevant authority. For instance, in order to gain access to data reserved for independent operators, they may have to register as and obtain credentials relevant for independent operators. Since credentials should be valid for a limited span of time, an occasional request to refresh credentials is expected as well.
7	Credentials Agency	(optional) Receives and checks the request	The issuing agency receives the request and checks if the user can be issued the requested credentials, based on the information provided and the requirements associated with the credentials.
8	Credentials Agency	(optional) Issues appropriate credentials	In case the requirements associated with the credentials are met, the credentials are issued and this is communicated to the user.
9	End User	(optional) I request DPP data with my credentials	(back to step 3)

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## USER STORY 4: ACCESS DPP DATA ONLINE

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### User Story Description

*As an end user, I want to retrieve DPP data before online purchase, so that I can make an informed purchasing decision*

### Reason to adopt User Story

This user story mainly addresses the requirements from ESRP Art. 10(3) and Art. 31(2), with regards to the dealer's obligations on the provision of information in the case of distance selling, and from Art.14 and Recital 42, whereby the Commission should set up a user-friendly Web Portal which allows end users to search and compare DPP data.

### Assumptions and Considerations

- The online seller has received appropriate copies of the data carriers and unique product identifiers as required under Article 10(3).
- (optional) DPPSPs can provide the functionality to compare between DPPs and the data therein. This implies that DPPSPs have a means to identify all, or a significant portion, of DPPs placed on the EU market, so that they can provide a comparison service.
- In accordance with ESRP article 14, a web portal is made available by the Commission which supports comparison between the data in different DPPs. Additionally, the EU web portal can be used to enter a UPI in order to retrieve the 'active' web link for a specific DPP. Detailed assumptions, considerations and implementation recommendations are provided in Options for EU Web Portal Search (DPP System), CIRPASS-2 Consortium. (2025).

### Process diagram

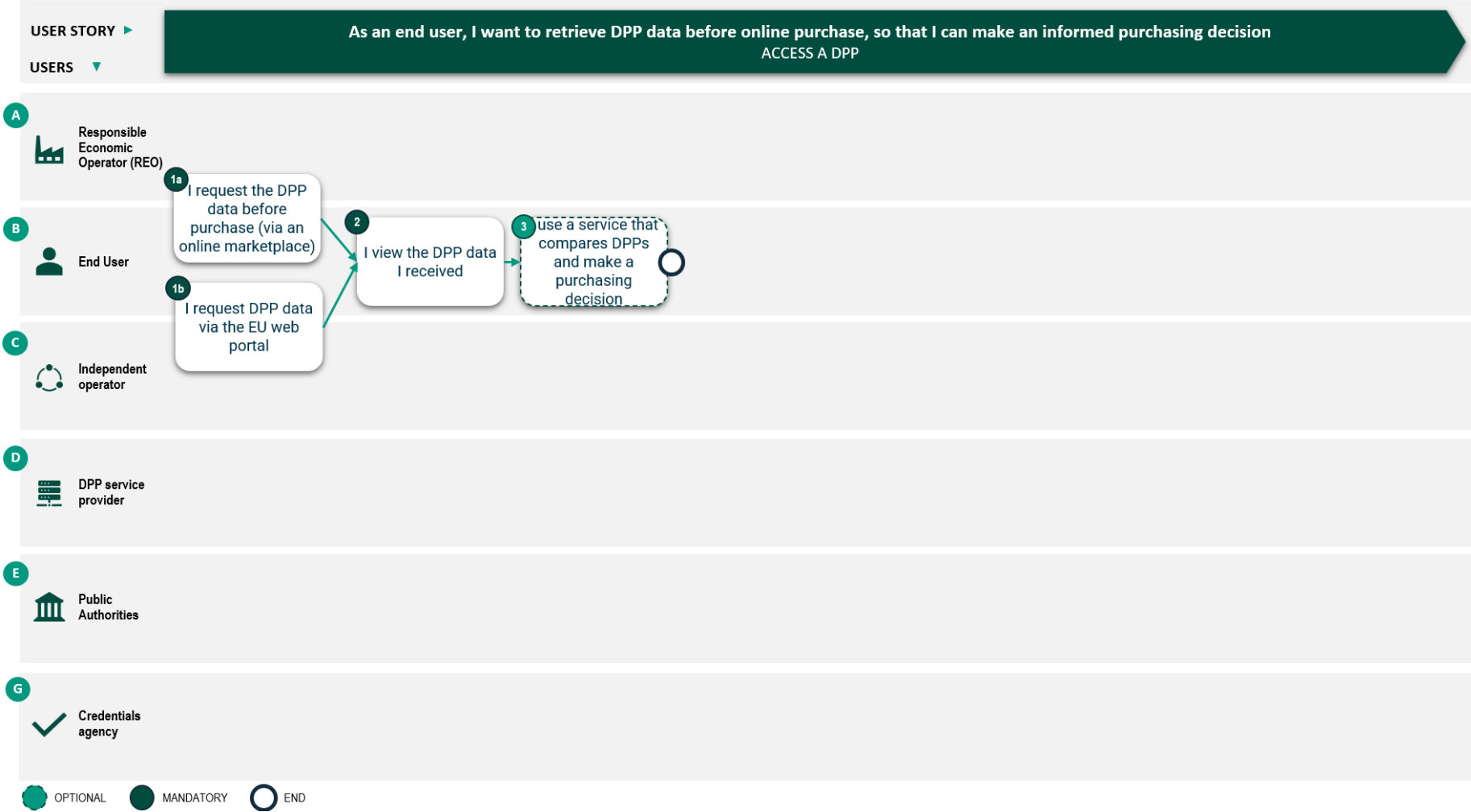


FIGURE 11. USER STORY 4

## Tasks and elaboration

TABLE 5. USER STORY 4: TASKS AND ELABORATION

#	Role	Task	Elaboration
1a	End user	I request the DPP data before purchase	<p>The dealer makes the DPP data available to the user. For example, the user is able to see a data carrier or web link that leads to the DPP data, or the user is able to see the DPP directly in the browser or application of the dealer.</p> <p>Depending on the context and the product sold (e.g. a new product versus a remanufactured product), the DPP data will consist of model data potentially in combination with batch or item level data.</p>
1b	End User	I request DPP data via the EU web portal	I can use the EU web portal to access DPPs. Optionally, I can use a unique product identifier as input for the EU web portal in order to get the 'active' web link for a specific DPP.
2	End user	<p>I view the DPP data I received</p> <p>(optional)</p>	<p>The user needs to access the DPP data made available by the rEO.</p> <p>See user story 3: 'Access DPP data via data carrier', starting from step 2</p>
3	End user	I use a service that compares DPPs and make a purchasing decision	The web portal, and potentially other comparison services, make it possible to compare DPP data of different products with each other.

---

## USER STORY 5: ACCESS A COLLECTION OF DPPS

---

### User Story Description

*As a Public Authority, I want to retrieve a collection of DPPs using the EU Registry and Web Portal, so that I can perform my legal duties, such as monitoring compliance..*

### Reason to adopt User Story

This user story mainly addresses the requirements from ESPR Art. 13 and 15 with regards to the requirements for the functioning of the EU Registry and EU Web Portal and its use by Public Authorities for performing their legal duties.

### Assumptions and Considerations

- Concerning the EU Web Portal, detailed assumptions, considerations and implementation recommendations are provided in Options for EU Web Portal Search (DPP System), CIRPASS-2 Consortium. (2025).<sup>10</sup>
- All roles may make use of the Web Portal to request model-level information from several DPPs through a single request. For this user story, we choose to focus on the perspective of a Public Authority doing so, as, differently from other stakeholders who must be prevented from being able to scrape DPP data, we assume that Public Authorities would be able to retrieve collections of complete DPPs at the granularity level required by law. We therefore assume that the Web Portal functionalities will differ for Public Authorities compared to other stakeholders.
- Customs will benefit from automatic connections between CSW-CERTEX and the EU Registry to check a DPP's existence using its unique registration identifier. As this process is unique to Customs, it is not discussed further in this user story.
- We assume that there is a (internal to EU services) connection between the EU Registry and the Web Portal and that data retrieval and search queries are addressed to the Web Portal which may require data from the EU Registry.
- The Public Authorities may access information based on a list of unique identifiers or web links.
- Similarly, the Public Authorities may want to retrieve DPPs of a specific category (e.g. issued by a specific economic operator, all DPPs of a specific product group, etc.). We assume that they can use the Web Portal for this purpose. We assume APIs will be available for automatic processing.
- Features for filtering and selecting are made available as part of the Web Portal. Enough data is available in the Web Portal for Public Authorities to be able to filter down to the DPPs they intend to retrieve (e.g. rEO, Date of DPP creation, etc.).
- Public Authorities may have access to analytics services that aid them in their duties, for instance by assessing whether they received the DPP data that they requested or automatically checking the validity of a given DPP.

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<sup>10</sup> [Options for EU Web Portal Search \(DPP System\)](#)

Process diagram



FIGURE 12. USER STORY 5

## Tasks and elaboration

TABLE 6. USER STORY 5: TASKS AND ELABORATION

#	Role	Task	Elaboration
1	Public Authorities	I receive a list of unique identifiers of products I want to check	For example, a risk assessment procedure has identified a set of products as being potentially non-compliant. The corresponding list of unique product identifiers is provided to a market surveillance authority.
2	Public Authorities	I input the unique product identifiers into the EU Web Portal to obtain DPP data	<p>Public authorities, such as market surveillance authorities, may retrieve and use the data included in the DPP for carrying out their duties as mentioned in Art. 15(4). The Public Authority can therefore scan the data carrier or otherwise access the DPP data as in User Story 3 or 4 and retrieve DPP data in accordance to their access rights.</p> <p>While this can be done on a per-DPP basis, this step requires that the Public Authority is able to request multiple DPPs simultaneously, perhaps even from multiple rEOs. This can be done manually (e.g., by entering multiple UPIs into a field and pressing a button) at the Web Portal or automatically.</p>
3	Public Authorities	(optional) I use analytics services to aid in monitoring compliance	For example, one service may check the validity of an existing DPP, i.e, the necessary data is available and it is structured according to the requirements of the harmonized standards. Another service could verify that the information content of a DPP associated with a product is correct. Another service could collect data from multiple DPPs and perform an outlier analysis on specific metrics in order to determine a monitoring strategy.

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## 3.4 UPDATE A DPP

### USER STORY 6: UPDATE A BACKED-UP DPP

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#### User Story Description

*As the rEO, I want to ensure that my DPP back-ups, stored by the DPPSP, remain up to date, so that users have will have access to up to date DPP data in case the original DPP is no longer available*

#### Reason to adopt User Story

This user story mainly addresses the requirements from ESRP Art. 10, 27 and 29 with regards to the economic operator's obligations to ensure the availability of a back-up copy of DPPs through a DPP service Provider. It also links to requirements from Recital 38 and Annex III.

#### Assumptions and Considerations

- The rEO is in business and the DPP is active.
- Access control for the protected data should be ensured even after insolvency of the rEO. I.e. it should not be the case that all data is made public.
- The rEO and DPPSP make an agreement about how data in the back-up is updated
- The DPPSP stores the product identifier and date and time of the update as properties of the backup, to allow retrieving the backup.

Process diagram

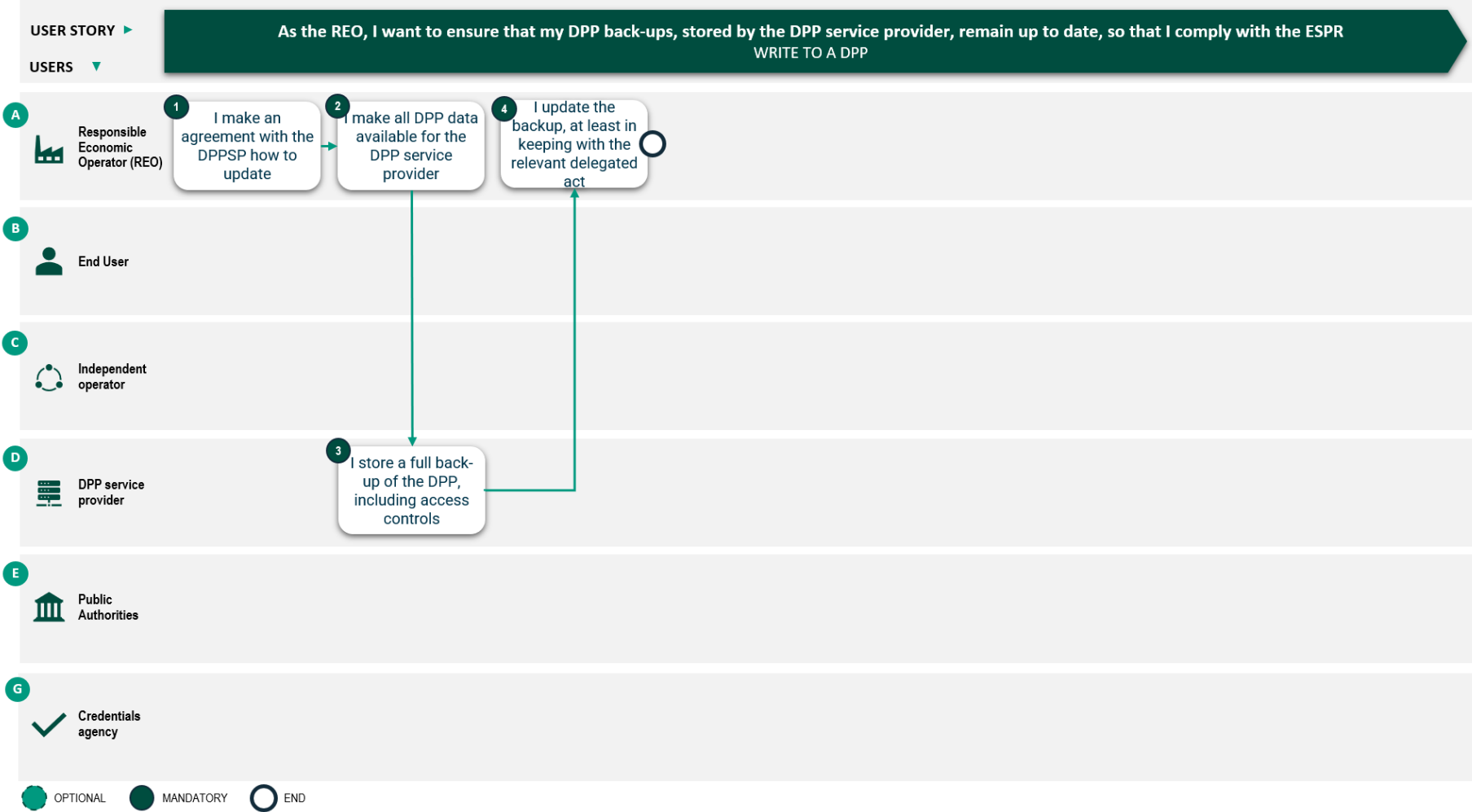


FIGURE 13. USER STORY 6

## Tasks and elaboration

TABLE 7. USER STORY 6: TASKS AND ELABORATION

#	Role	Task	Elaboration
1	rEO	I make an agreement with the DPPSP how to update	An agreement between an rEO and a DPPSP is a formal agreement between private parties. The requirement for an 'up-to-date' back-up must be taken into account, the mechanism for updating the data is part of the agreement. The agreement at least includes versioning of each DPP update.
2	rEO	I make all DPP data available for the DPP service provider	See User Story 1
3	DPP service provider	I store a full back-up of the DPP, including access controls	See User Story 1
4	rEO	I update the back-up, at least in keeping with the relevant delegated act	The relevant delegated act may specify specific requirements for the back-up, for instance regarding the maximum amount of time between updates and versioning requirements.

---

## USER STORY 7: UPDATE DPP DATA AS AN INDEPENDENT OPERATOR OR END USER

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### User Story Description

*As an independent operator or end user, I want to add to the item level DPP data, so that I can document operations on the product.*

### Reason to adopt User Story

This user story mainly addresses the requirements from ESPR Art. 9(2)(g) and Art 11(f) with regards to parties other than the rEO updating or adding data to a DPP. This User Story elaborates on a version of this requirement where the entity making updates to the DPP does not have a formal contractual relationship with the rEO.

### Assumptions and Considerations

- There is no business agreement between the independent operator (e.g. repairer) and the rEO. This means that the Independent Operator has no specific access credentials to add repair information.
- The data added by the Independent Operator does not invalidate the structure of the DPP, the DPP will still conform to the requirements as specified in the relevant delegated act and ESPR article 10 after the update.
- The contents of the data may be free text, a link or structured data: the requirements and limitations are dependent on the system hosting the data and the requirements on the DPP from the relevant delegated act.
- Given that the DPP system shall be decentralized, the data added may be hosted by the rEO, or by the Independent Operator, or by a third party. To ensure the integrity of the DPP it is strongly recommended that all updates are stored by the rEO. Other options are possible but require additional measures to guarantee reliability and correctness of the DPP.
- Any component being installed or removed during repair may have its own DPP that needs to be linked to the product's DPP. In cases the components have a DPP, this can be utilized when recording the repair operation for the product's DPP.
- All products subject to data additions are governed by a delegated act requiring item level product identifiers for all products placed in the EU market. The product in this story already has an item level product identifier.
- An Independent Operator may have their own DPP system that performs functionalities relevant to them.
- There is a risk of spam / incorrect data being added and linked to the DPP.
- It may be beneficial to the rEO to be able to add their own comments / information to the data added by the Independent Operator. For example, a note that the added information is irrelevant/false. This could be performed in a similar manner as the Operator adds the data in the first place.
- It may be beneficial to set up specialized search / hosting services requiring authorization from the Independent Operator willing to add data, and thus having a potentially higher level of trust than other similar systems. Such systems can be set up by the rEO, a third party on behalf of the rEO, or an independent third party.
- Allowing independent operators to update a DPP without authorization allows freedom of choice to consumers and prevents rEO's from exercising undesired behavior.
- Updating an existing DPP does not require an update to the EU registry, as the identifiers stored in the registry do not change.

Process diagram

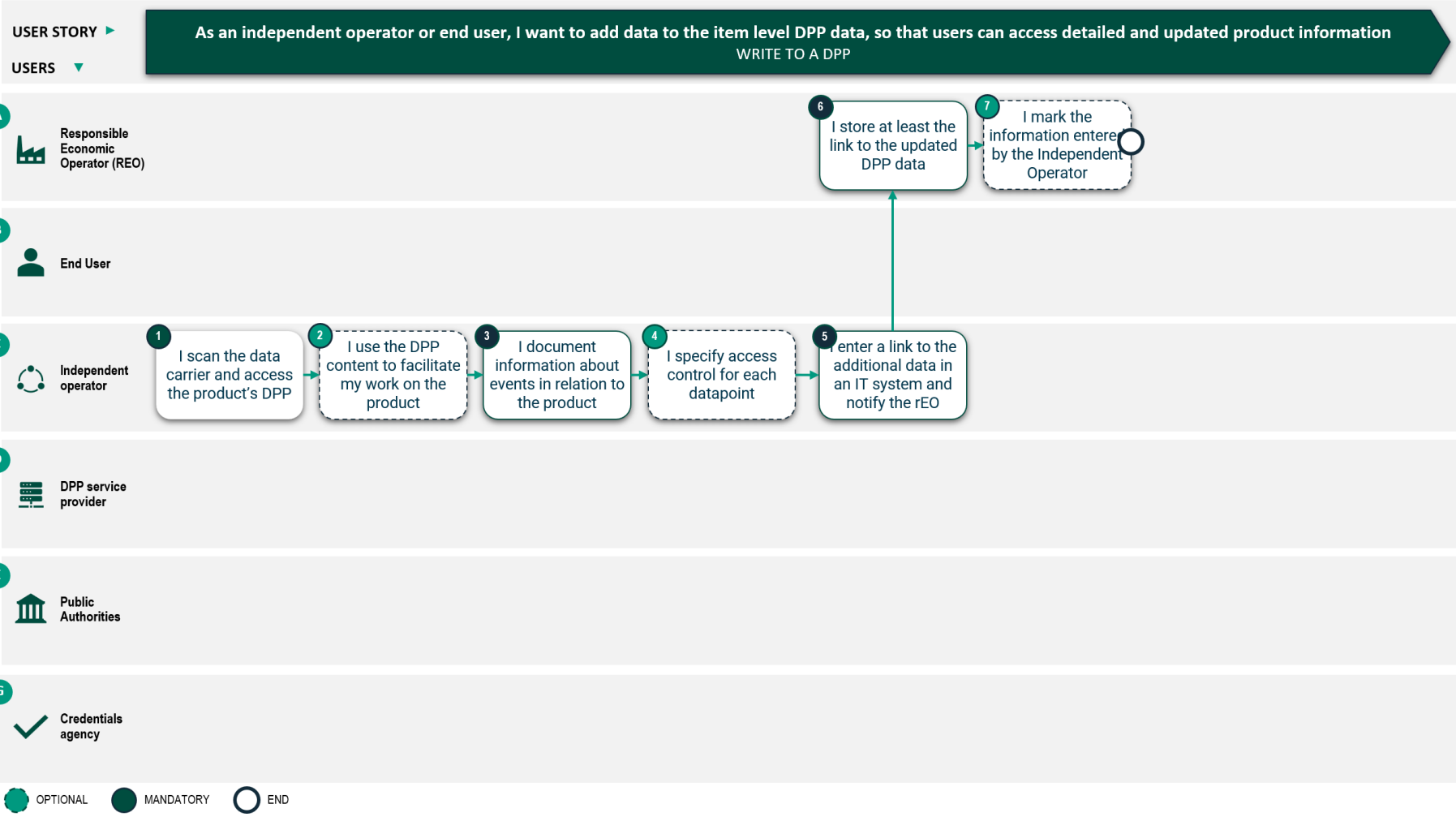


FIGURE 14. USER STORY 7

## TASKS AND ELABORATION

TABLE 8. USER STORY 7: TASKS AND ELABORATION

1	Independent Operator	I scan the data carrier and access the product's DPP	See User Story 3.
2	Independent Operator	(optional) I use the DPP content to facilitate my work on the product	The independent operator may use the DPP to find repair manuals, etc. Similarly, the DPP data may be used for remanufacturing, recycling or another activity that requires an update to the DPP.
3	Independent Operator	I document information about events in relation to the product	During the operation, the repairer documents information about (an) event(s) in relation to the product, at a minimum the requirements from the relevant delegated act. This may be information such as identifiers and material/chemical content of used spare parts
4	Independent Operator	I specify access control for each datapoint	Access control is at least based on the relevant Delegated Act. If additional access controls are desired, this requires close cooperation between the independent operator and the rEO. The IO therefore specifies access rights, following the guidance from the delegated act and/or the rEO, which the rEO must implement in their access control.
5	Independent Operator	I enter a link to the additional data in an IT system and notify the rEO.	The new data is recorded in an IT system and a link to this data is created. The relationship between the new data and the DPP is determined by the unique product ID, making the data findable for users accessing or searching the DPP. A version number should be part of the DPP and must be updated in this case.
6	rEO	I store at least the link to the updated DPP data	The rEO must store the DPP, including updates if in scope of the relevant delegated act.

7

rEO

(optional)

I mark the information  
entered by the  
Independent Operator

Since the repair data originates from an Independent Operator with which the rEO has no agreement, the rEO may want to do an additional check to maintain data quality and consistency. The intent of this process step is not to be used by the rEO to approve that the repair took place or block the addition of that information, but rather to verify that no bad or inconsistent data is added to the DPP or to assign a 'level of trust' or appropriateness to the data. Similarly to the way the Independent Operator adds information about the product with a given DPP, the rEO may have an option to add comments or feedback to the information added by the Independent Operator. This step is optional to not burden the rEO with checking this validity for each update.

---

## USER STORY 8: UPDATE DPP DATA AS REO OR AUTHORIZED PARTY

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### User Story Description

*As the rEO or an independent operator authorized by the rEO, I want to update the DPP data, so that users can access detailed and updated product information*

### Reason to adopt User Story

This user story mainly addresses the requirements from ESPR Art. 9(2)(g) and 11(f) with regards to parties other than the rEO updating or adding data to a DPP. This User Story elaborates on a version of this requirement where the entity making updates to the DPP does have a formal contractual relationship with the rEO (i.e., is trusted by the rEO) or *is* the rEO.

### Assumptions and Considerations

- A business agreement exists between the independent operator (repairer) and the rEO or the repair is done by the rEO. This means that the Independent Operator (repairer) has appropriate access credentials to add repair information, but not to alter any of the original DPP data.
- rEOs are allowed to make contractual agreements with independent operators that provides these independent operators with certain rights that other independent operators do not have with regards to updating or adding data to a DPP.
- If I have authorization, I can make specific additions to the DPP directly (I have write access).
- Given that the DPP system shall be decentralized, the data added by the Independent Operator may be hosted by the rEO, or by the Independent Operator, or a third party. However: Storing all updates by the rEO is strongly recommended to guarantee completeness of the DPP. If the updated information is hosted by the Independent Operator, a link to the data must be included in the rEO's DPP and measures must be taken to guarantee completeness and maintainability of the DPP backup and availability of the storage location of the updated data.
- Updates regarding repair or other modifications of a specific product require the product to have an item level product identifier and DPP. Updates to the required information of a DPP on the level of a product model or batch (stemming for instance from updated regulatory requirements) may be performed by the rEO only and can affect DPPs at model, batch or item level.
- This user story assumes that any component being installed or removed during repair may have its own DPP that needs to be linked to the product's DPP. In cases the components have a DPP, this can be utilized when recording the repair operation in the product's DPP.
- An Independent Operator may have their own DPP system that performs functionalities relevant to them
- An Independent Operator updating a DPP digitally signs these updates to ensure provenance of the information and prevent tampering.
- Updating an existing DPP does not require an update to the EU registry, as the identifiers stored in the registry do not change

## Process diagram

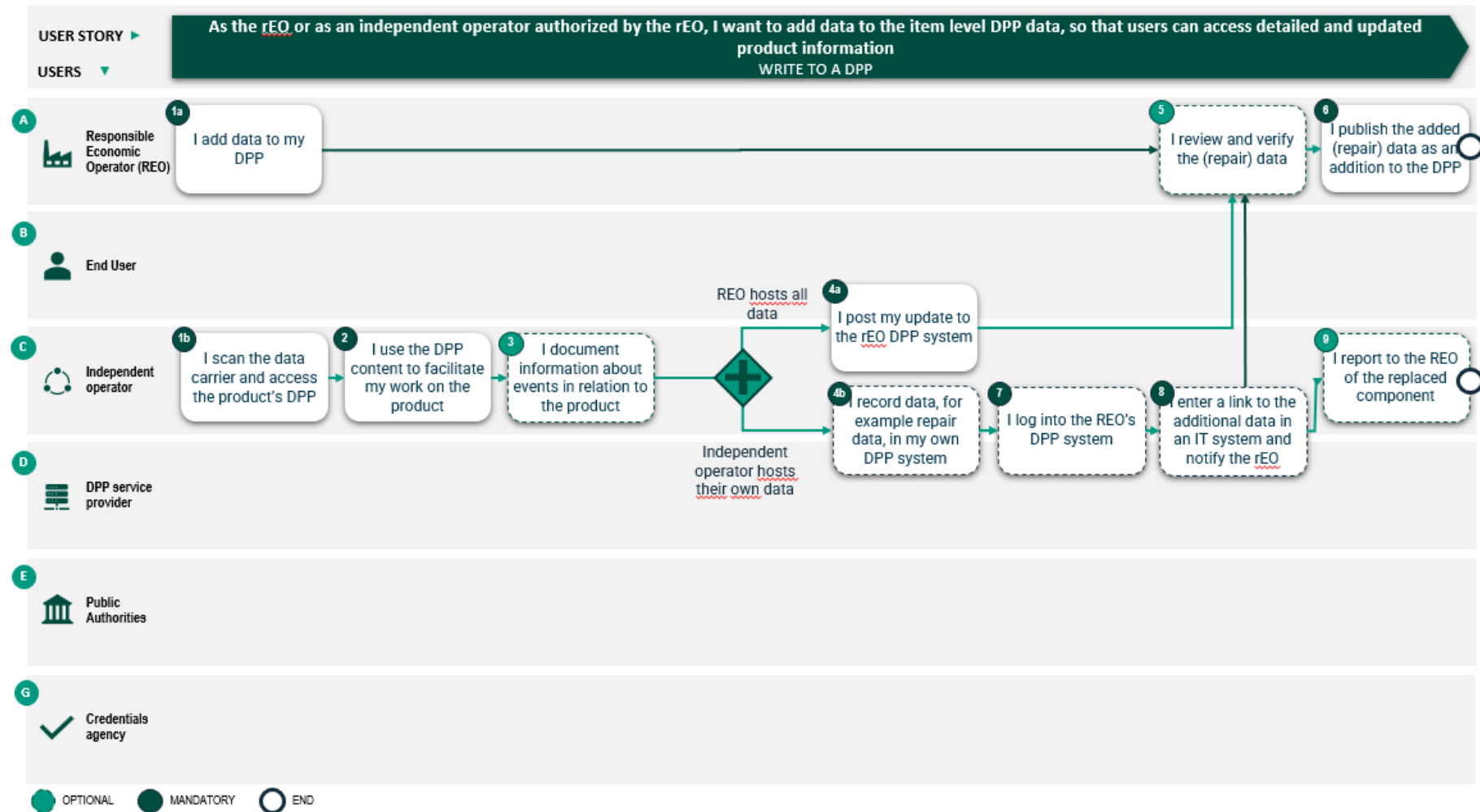


FIGURE 15. USER STORY 8

## TASKS AND ELABORATION

Table 9. User Story 8: Tasks and elaboration

User Story 8: Tasks and elaboration			
1a	rEO	I add data to my DPP	If the rEO performs their own repairs or updates to a DPP, the DPP may be updated. If there is a mandatory update to the DPP data model, the rEO could retrieve the new data model and then update the DPP accordingly.
1b	Independent Operator	I scan the data carrier and access the product's DPP	See User Story 3.
2	Independent Operator	(optional) I use the DPP content to facilitate my work on the product	The repairer may use the DPP to find repair manuals, etc. Similarly, the DPP data may be used for remanufacturing, recycling or another activity that requires an update to the DPP.
3	Independent Operator	I document information about events in relation to the product	During the repair operation, the repairer documents information their work on the product, at a minimum the information required by the relevant delegated act. This may be information such as identifiers and material/chemical content of used spare parts  Option A: All data hosted by rEO
4a	Independent Operator	I post my update to the rEO's DPP system	This relies on a pre-arranged authorization of the independent operator to perform repair operations and record them in the rEO's DPP. This authorization provides, at least, write access to the DPP that was scanned. An alternative method is that the Independent operator sends the data to the rEO (as an (automated) email or equivalent).
Option B: Repair data hosted by Independent Operator			

4b	Independent Operator	I record data, for example repair data, in my own DPP system	<p>If a repair took place, the independent operator may record information about the repair, including identification of spare parts, when applicable a link to the spare part's DPP may be entered</p> <p>The (repair) data may be added manually or by integrating the Independent Operator's IT system with the rEO's DPP platform.</p> <p>A link to the recorded data is created.</p>
5	rEO	(optional) I review and verify the (repair) data entered by the Independent Operator.	<p>Although the (repair) data originates from an Independent Operator with which the rEO has an agreement, the rEO may want to do an additional check to maintain good data quality and consistency. Whether the rEO is allowed to approve the change before the data is made available is an open question that for now depends on the agreement between the rEO and independent operator, in the future this may be specified by a delegated act. The intent of this process step is <i>not</i> to be used by the rEO to approve that the repair took place or to approve the modification of the DPP, but rather to verify that no bad or inconsistent data is added to the DPP. Since delaying the availability of the updated data may carry legal consequences, an rEO may choose to automatically add an indication to the data specifying their opinion (such as 'data verified by the original producer', or 'updated by an independent repairer'). Who bears responsibility for the correctness of the data supplied by the IO is a legal question and outside the scope of this document.</p>
6	rEO	I publish the added (repair) data as an addition to the DPP	<p>Depending on whether Option A (repair data hosted by the rEO) or Option B (repair data hosted by the Independent Operator) is used, the amended DPP data may reside in the DPP system hosted by the rEO or the repairer. For option A the rEO publishes all the data, while for option B the rEO adds the link to the data hosted by the Independent Operator to the DPP.. Option A is strongly advised, as storing the data separate from the DPP as a whole requires multiple legal and technical measures to ensure compliance.</p>
7	Independent Operator	I log in to the rEO's DPP system	<p>This relies on a pre-arranged authorization of the independent operator to perform repair operations and record them in the rEO's DPP. Logging in provides, at least, write access to the DPP that was scanned.</p>
8	Independent Operator	I enter a link to the additional data in an IT system and notify the rEO	<p>The link to the Independent Operator's added (repair) data is added to the DPP data in the rEO's DPP system, making the data available for users accessing the DPP. A version number should be part of the DPP and must be updated in this case.</p>

9

Independent  
Operator

(optional)

I report to the rEO of the  
replaced component.

In case the component that has been replaced has its own DPP, the status of the component may be updated in the components DPP. If there is a delegated act for the product category of the component, there may be a legal requirement for this update in which case this step becomes mandatory. Examples of use cases for this are that the component may be recycled or refurbished by the Independent Operator. In cases the component does not have a DPP, but carries an identifier allowing identification of its supplier this can be done anyway.

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## USER STORY 9: UPDATE DPP AT PRODUCT END-OF-LIFE

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### User Story Description

*As an independent operator, I want to indicate in the DPP that a product no longer exists, (e.g. after remanufacturing or recycling), so that others are informed of the state of the product.*

### Reason to adopt User Story

The ESPR does not explicitly define any scenario where a DPP might/should be deactivated or deleted. However, in Art. 9(2)(i) and 11(e) it mandates delegated acts to define the availability period for a DPP, thus (likely) delegating to them the definition of the conditions for/possibility of a DPP deactivation/deletion. This User Story elaborates on a special case of User Stories 7, 8 and 13, where the product no longer exists but the DPP remains available.

### Assumptions and Considerations

- This user story is independent of any sorting, dismantling, and/or shredding 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.
- It is assumed that remanufacturers might have, in some cases, the necessity to destroy the data carrier of the product.
- The product already has an item level product identifier.
- The EU registry may keep a record of the state of each registered product.
- While a product exists, the rEO is responsible for the DPP. There is no transfer of responsibility for the DPP involved in this story, as the DPP is destroyed (or marked as deleted) along with the product.

Process diagram

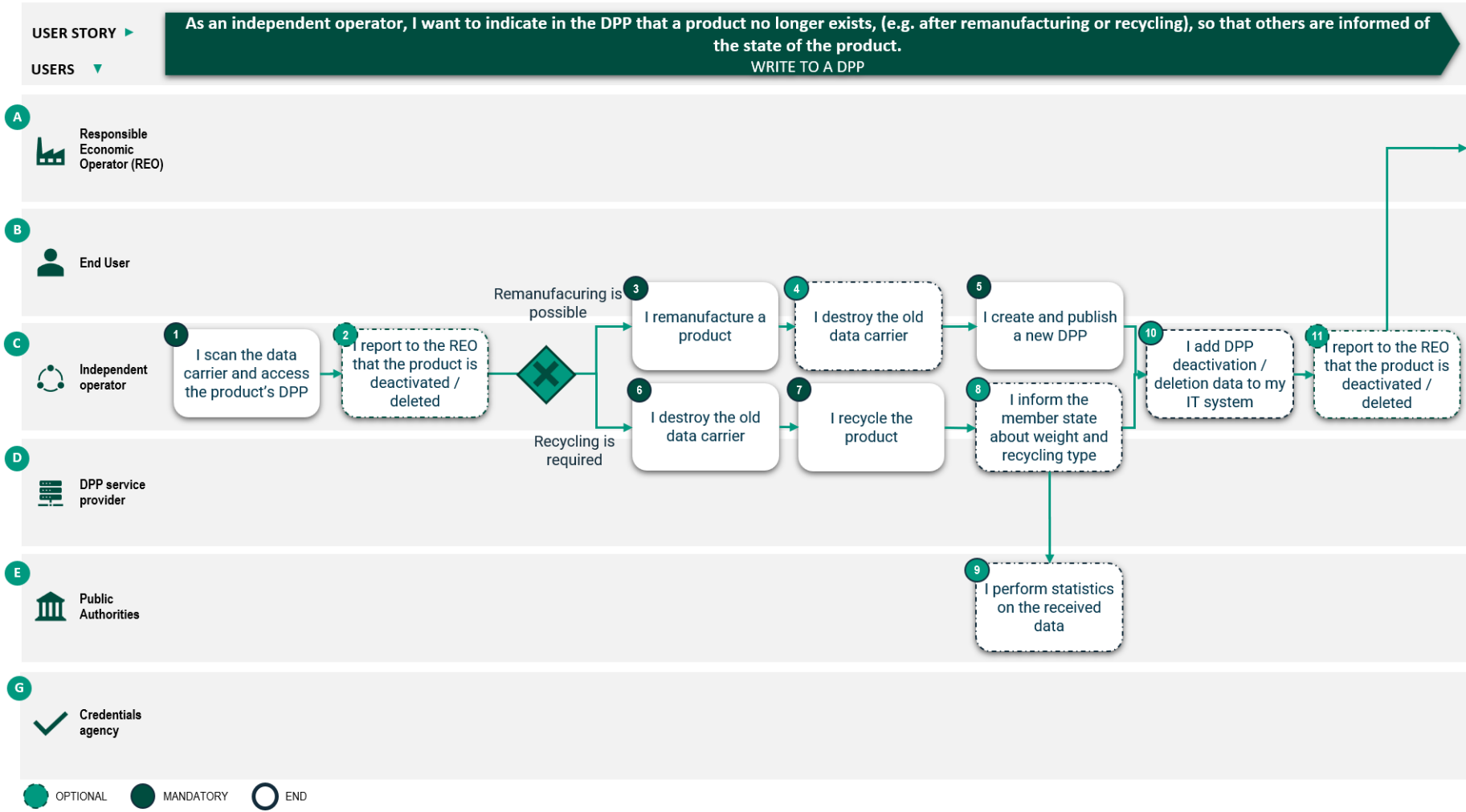


FIGURE 16. USER STORY 9 – PART 1

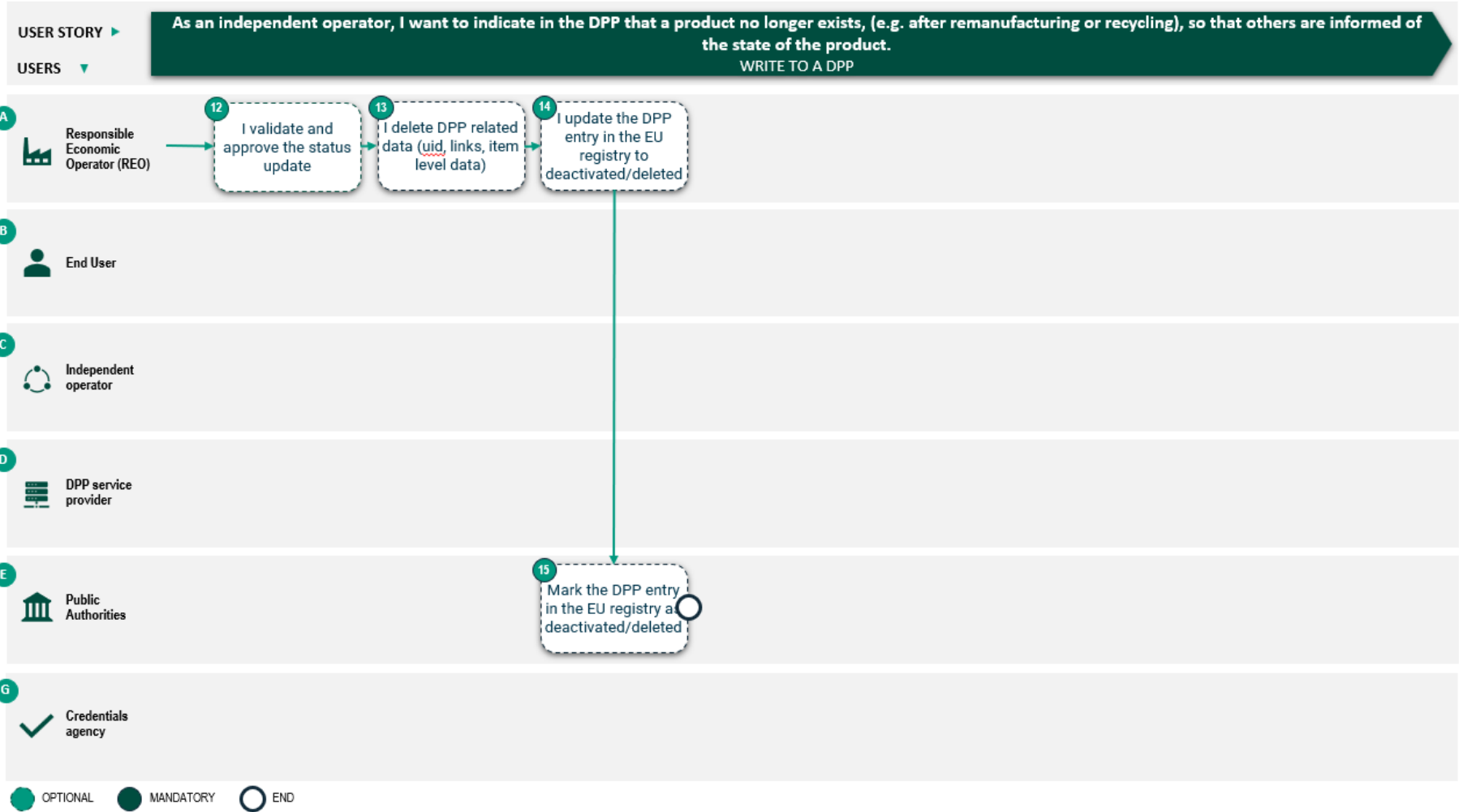


FIGURE 17. USER STORY 9 – PART 2

## Tasks and elaboration

Table 10. User Story 9: Tasks and elaboration

#	Role	Task	Elaboration
1	Independent operator	I scan the data carrier obtaining DPP data to assess the product EoL state.	See user story 3.
2	Independent operator	I inform the producer about the state of the old product (optional)	<p>The independent operator can optionally report to the producer: the product ID, the condition of the product and, in case of recycling, an offer to buy back the components and recycled materials. This can provide useful information to the producer to improve for instance the eco-design of the product.</p> <p>An analysis of current market practices shows that manufacturers are already paying recyclers to retrieve knowledge on their products coming to the recycling facilities (defects, product age, etc.).</p> <p>Remanufacturing is possible (task 2-4)</p>
3	Independent operator	I remanufacture a product (optional)	The remanufacturer uses the data combined with an evaluation of the product to decide the most appropriate remanufacturing activity (i.e. for functionality upgrade or restore) and to manage the remanufacturing process.
4	Independent operator	I destroy the old data carrier	The data carrier might be destroyed since the remanufacturing output is a new product with its own data carrier.
5	Independent operator	I craft and publish a new DPP	<p>This task consists of the steps detailed in user story 1. Depending on the requirements from the relevant delegated act data from the original DPP may be copied to the new DPP, or a link to the original DPP may be added.</p> <p>Recycling is required (tasks 5-8)</p>

6	Independent operator	I destroy the old data carrier	The data carrier has to be destroyed since the old product doesn't exist anymore.
7	Independent operator	I recycle the product  (optional)	The recycler uses the DPP data combined with a condition evaluation of the product to decide the most appropriate recycling activity and to manage the recycling process.
8	Independent operator	I inform the member state about the product's weight and recycling type  (optional)	Depending on the relevant delegated act (e.g. in Art. 75 paragraph 5 of the battery regulation) there may be an obligation for the recycler to report to the Member State the weight of products and the type of valorisation performed (recycling, energy and material recovery, etc.) for statistics.
9	Public Authorities	I perform some statistics on data provided by the recycler  (optional)	Public authorities may use statistics on the recycling of products to determine the effect of regulations and provide input for policy decisions.
10	Independent operator	I add DPP deactivation/deletion data to my system  (optional)	In case the Independent Operator has its own IT system they might need to store the deactivated/deleted state (and possibly some additional data that delegated acts might identify) of the product and DPP directly into its system (similarly to the repairer, user story 7 or 8).  Depending on the delegated act this step can be mandatory or optional.
11	Independent operator	I report to the rEO that the product is deactivated / destroyed	The request may be twofold: it can be a link to the deactivation/deletion data that the remanufacturer added to its own system in case it exists (see task 9) or the deactivation/deletion data itself. The remanufacturer may include the new DPP link so that the rEO can use it to redirect consumers of the old DPP to the DPP of the new product.  This task could be performed with the remanufacturer/recycler having privileged access to the rEO DPP system in order to request DPP deactivation (similarly to the repairer, user story 8).

12	rEO	(optional) I validate and approve the DDP state updated operation	The rEO can validate and approve the state modification from the Independent Operator. Depending on the delegated act, to which the ESPR mandates the determination of the validity period of a DPP (Art. 11(e)) and (probably) the conditions for deletion or deactivation, the rEO might choose between one of the below strategies.
13	rEO	(optional) I delete DPP related data (uid, links, item level data)	If the delegated act allows/mandates it, the rEO assesses that he can delete the DPP related data. The product ID and the links in the systems under control of the rEO are deleted. Depending on the legislation a timeout before deletion may be required.
14	rEO	(optional) I update the DPP entry in the EU registry to deactivated/deleted	The rEO assesses that deletion is not applicable and deactivates the DPP by preventing write operations. This means that the DPP will remain available for read access, but it will not be possible to update it.  Reasons that deletion is not possible include provisions from the relevant delegated act forbidding it, future reference from the remanufactured product or a desire to facilitate traceability.
15	Public authorities	Approve/verify the DPP entry update in the EU registry as deactivated/deleted	Possibly approve or verify DPP entry update as deleted/deactivated, if the relevant delegated act allows deleting/deactivating a DPP.

---

## 3.5 TRANSFER RESPONSIBILITY OF A DPP

### USER STORY 10: CHANGE DPPSP

---

#### User Story Description

*As an rEO, I want to change my DPPSP, so that I can choose a vendor that provides my current needs*

#### Reason to adopt User Story

This user story mainly addresses requirements from Recital 36 and Article 10(1)(d), which states that DPP data should be ‘transferrable through an open interoperable data exchange network, without vendor lock-in.’

#### Assumptions and Considerations

- The rEO has a contract with a DPPSP, which is authorized to manage (several of) the DPP the rEO is responsible for.
- Both the former DPPSP and the new DPPSP make use of internationally recognized standards to make the transition technically feasible and economically viable.

Process diagram

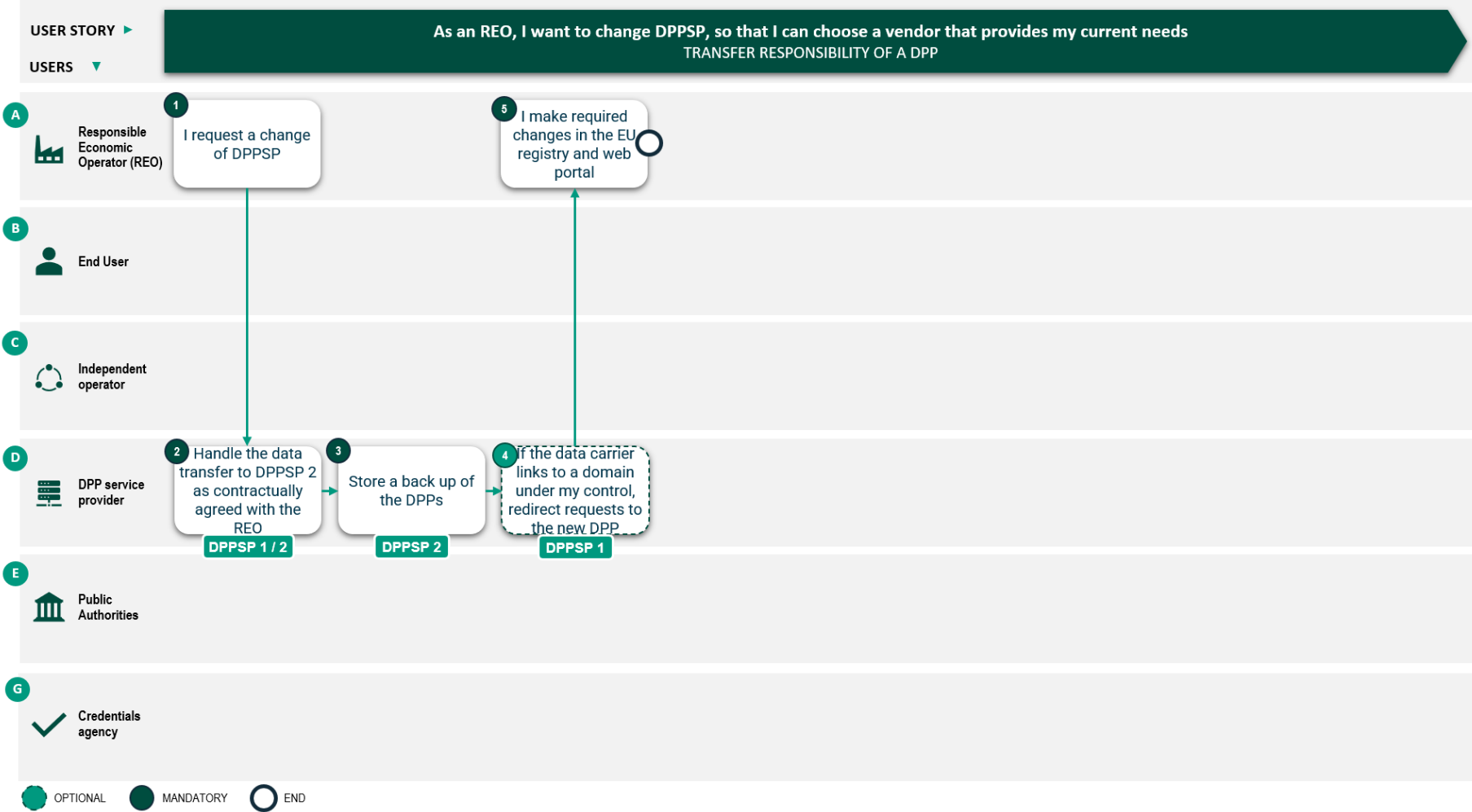


FIGURE 18. USER STORY 10

## TASKS AND ELABORATION

TABLE 11. USER STORY 10: TASKS AND ELABORATION

#	Role	Task	Elaboration
			This may be requested at the former DPPSP (DPPSP 1) or new DPPSP (DPPSP2).
1	rEO	I request a change of DPPSP	In other sectors, like energy or telecom providers, it is common to request the new service provider to handle the transfer to a new provider. From an rEO perspective, this may reduce administrative burden.
2	DPPSP 1 or 2	Handle the data transfer to DPPSP 2 as contractually agreed with the rEO	The new and former DPPSP, together with the rEO, ensure a switch from DPPSP 1 to DPPSP 2, how the transfer is ensured should be defined in the contract with the rEO.
3	DPPSP 2	Store a back up of the DPPs	If DPPSP 1 hosted a back-up of the DPP, DPPSP 2 also has to ensure that a back-up of the DPP is available.
		(optional)	A DPPSP may have to start providing the back-up, for example when the rEO is insolvent. See User Story 12.
4	DPPSP 1	If the data carrier points to a domain under my control, redirect incoming requests to the new DPP	If the DPPSP hosts the current DPP for the rEO, the redirection service must be updated to redirect the product ID to the new 'active' web link for the DPP.
5	rEO	I make required changes in the EU registry and web portal	Depending on their contract, the rEO or DPPSP 2 make all necessary changes to be reflected in the EU registry and Web Portal, such that the DPP remains easily accessible

---

## USER STORY 11: TRANSFER OF RESPONSIBLE ECONOMIC OPERATOR

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### User Story Description

*As a prospective Responsible Economic Operator, I want to transfer all ESPR-related legal responsibilities for a product to my organization, so that I become the new rEO for this product.*

### Reason to adopt User Story

Similarly to User Story 1, this user story mainly addresses the requirements from ESPR Art. 9(1) which states “that products can only be placed on the market or put into service if a digital product passport is available in accordance with the applicable delegated acts adopted pursuant to Article 4 and with Articles 10 and 11” and with Article 10(d) and Recital 36 where they require that DPP data should be transferrable through an open interoperable data exchange network without vendor lock-in. While the transfer of ESPR-related DPP legal responsibilities between two different economic operators is not explicitly mentioned in the ESPR, it may occur seeing the many value chain actors that are typically involved in market placement, e.g., manufacturers, authorized representatives, importers, distributors, dealers and fulfilment service providers. This situation may also occur if a company corresponding to a rEO is acquired by another or if a product line is sold to another company.

### Assumptions and Considerations

- Only one economic operator can be the rEO under the ESPR for a product at a given time.
- Updating or adding data to a DPP does not make it a ‘new DPP’ since it is expected that DPP data can be updated (e.g., state of health indicators) or that the DPP data will be enriched (e.g. inclusion of repair events.)
- Transfer of ESPR-related legal responsibility does not necessarily lead to the creation of a ‘new DPP’ needing to be linked to the old DPP, as expressed in Article 10 d).
- The transfer of ESPR-related legal responsibilities to a new rEO can only occur if there exists a contractual agreement with the previous rEO or if the previous rEO has gone out of business.
- Transfer of ESPR-related legal responsibility does not imply that the product should be registered a second time in the EU registry.
- Transfer of ESPR-related legal responsibility between rEO1 and rEO2 can be such that rEO1 retains no technical responsibility or liability after having been released from its legal responsibility.
- If the web link (i.e., UID-enabled URI) is changed, the data carrier may also have to be changed to ensure continued access, or the original rEO can make use of a redirection service making redirection to a new web location possible.
- This user story is independent of the possibility that certain of rEO1’s or rEO2’s ESPR-related responsibilities might be delegated to DPPSP.
- It is likely that creating ‘new DPPs’ for a product that already has one will add data quality risks and costs. Thus, the situations leading to the creation of a ‘new DPP’ linked to another DPP should be clearly identified (e.g., remanufacturing).
- If a company or product line is taken over by a new company, transfer of ESPR-related legal responsibility may occur at any granularity level (model/batch/item), but for other scenarios, this transfer will likely only occur at item level. In particular, in the case of downstream circular economy operators wishing to voluntarily take over the ESPR-related legal responsibilities for a product, 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.

- This user story does not address the situation where an economic operator may voluntarily take responsibility for a product in the absence of a contractual agreement with the rEO, as the legal context surrounding this situation is not yet well understood.
- This user story describes the situation where an economic operator takes over the responsibility from another economic operator, the situation that the transfer is rejected is therefore not in scope.
- If the operator identifier of the rEO is stored in the EU registry, transfer of ESPR-related responsibility to another economic operator may require updating the EU registry.
- With regards to the possibility of keeping track of the history of rEOs, several technical solutions are possible to achieve this, we consider applying both:
  - using the EU registry: rEO1 modifies the existing EU registry entry to declare rEO2 as the current and new rEO for this product.
  - by writing a change of responsibility event to the DPP to track the past and current rEOs. This can maintain a chain of custody of the product.
  - Similarly, since the responsibility for DPP data content is now with rEO2, for traceability reasons, the change of responsibility event may need to be noted in the DPP.

Process diagram

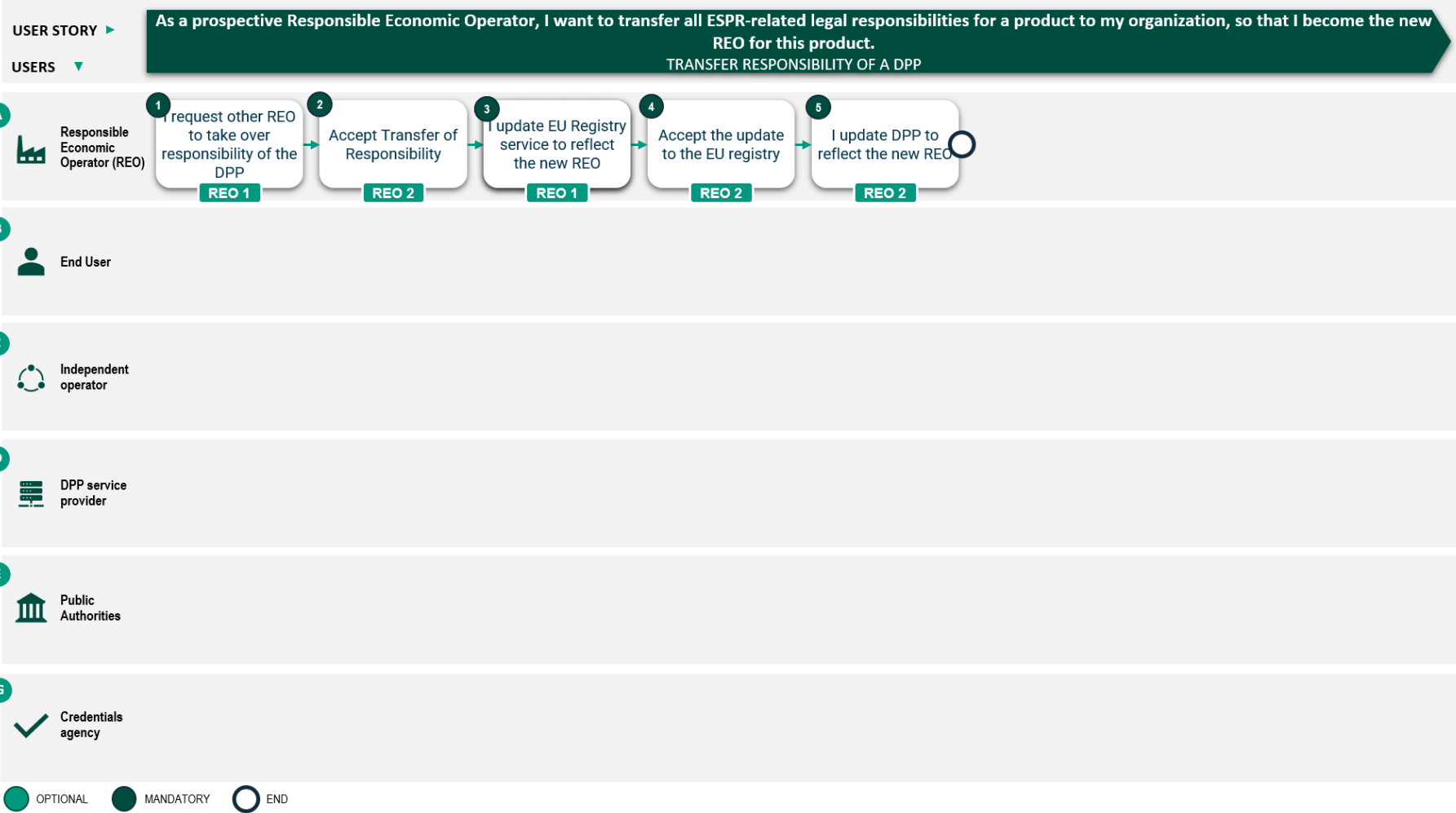


FIGURE 19. USER STORY 11

## Tasks and elaboration

TABLE 12. USER STORY 11: TASKS AND ELABORATION

#	Role	Task	Elaboration
1	rEO 1	Request other rEO to take over responsibility of the DPP	Either the former (rEO 1) or new rEO (rEO 2) can initiate the transfer of responsibility to the new rEO.
2	rEO 2	Accept transfer of responsibility	The new rEO has to accept the transfer of responsibility, to prevent rEOs from abusing the ability to transfer responsibility.
3	rEO 1	Update EU Registry service regarding new rEO	Either the former or new rEO has to update the EU Registry to reflect the current economic operator
4	rEO 2	Accept the update to the EU Registry	The other rEO has to accept the update to the EU Registry as entered in step 6, to prevent abuse of the system. How the EU Registry validates the update is left as an implementation choice to the EU Registry service.
5	rEO 2	Update DPP to reflect the new rEO	This includes updating the rEO information in the DPP, as well as potentially adding data to the DPP to reflect the new rEO. Adding such data would enable chain of custody techniques. It may be that, as part of changing rEO, a change of DPP Service provider also takes place, this is described in user story 10

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## USER STORY 12: MAKE AVAILABLE A BACKED-UP DPP

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### User Story Description

*As a DPPSP, I need to make available a back-up of the DPP that is no longer made available by the rEO, so that the DPP remains available*

### Reason to adopt User Story

This user story mainly addresses the requirements from ESRP Art. 27, 29, 10(4) and Recital 38 with regards to the availability of DPP backups provided by DPPSPs.

### Assumptions and Considerations

- An rEO and a DPPSP that provides back-ups have a business agreement
- The DPPSP has some legal obligation to continue to provide the back-up service even after insolvency of the rEO
- If no measures, such as an independent redirection service, have been taken by the rEO to guarantee a persistent web link even after the rEO becomes inactive the DPP may no longer be reachable through the data carrier on the product. The EC Web Portal will provide always be able to provide access to the back-up DPP.

Process diagram

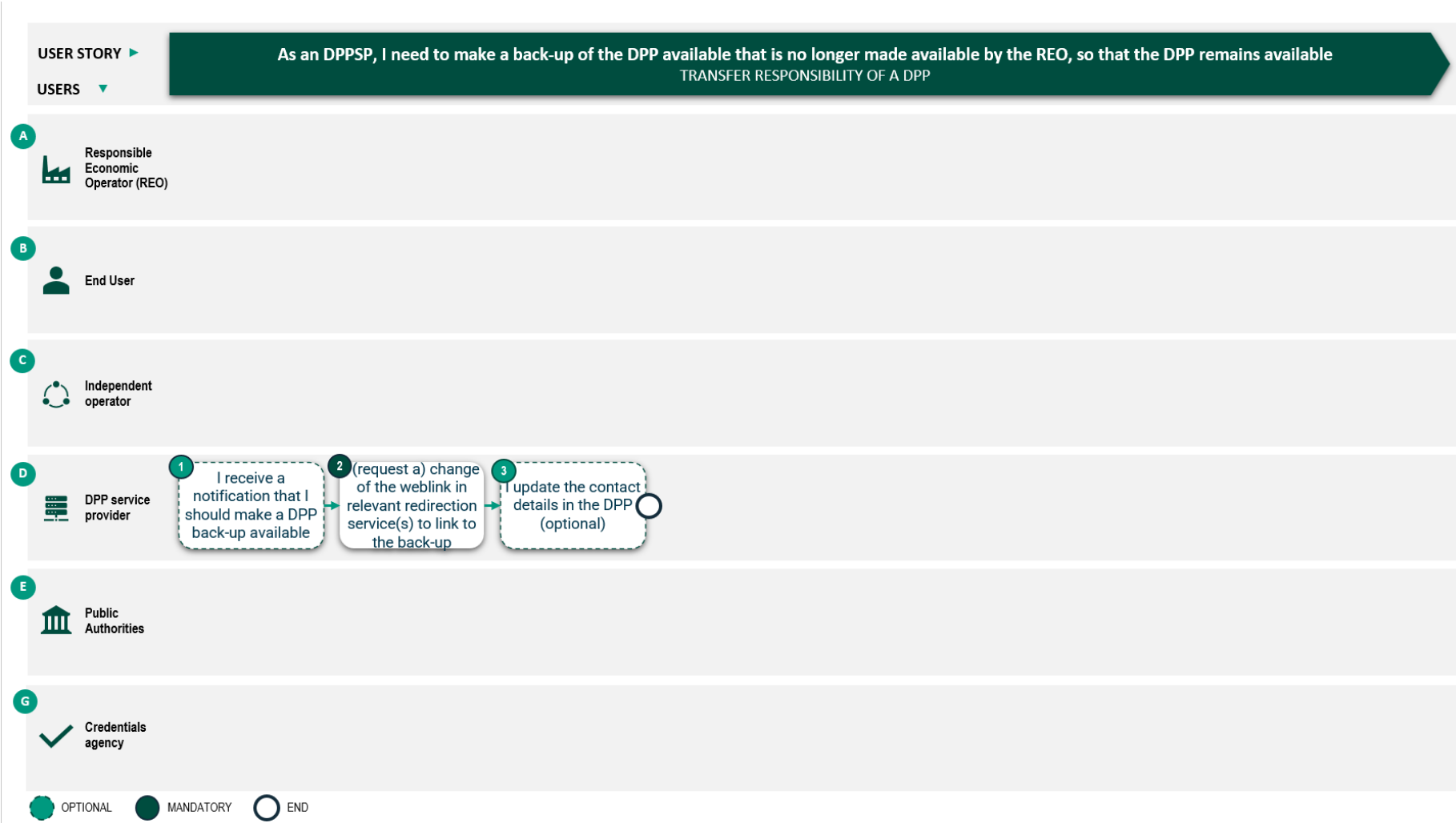


FIGURE 20. USER STORY 12

## TASKS AND ELABORATION

TABLE 13. USER STORY 12: TASKS AND ELABORATION

#	Role	Task	Elaboration
1	DPPSP	I receive a notification that I should make a DPP back-up available	Public Authorities, the rEO, or both, may notify the DPPSP that they need to start providing the back-up as the 'active' DPP. For example, in the case of insolvency of the rEO. This should not require any activity of the DPPSP, as the backup must be available even if the rEO is still providing the DPP.
2	DPPSP	I (request a) change of the web link in the relevant redirection service(s) to link to where I host the back-up	<p>This change may also have to be made at the redirection service previously under control of the rEO or a previous DPPSP. How this change should be made should be part of the agreement between the rEO and DPPSP. If a redirection service is used, it is essential that the DPPSP is able to make this change.</p> <p>If a domain not under control of the DPPSP is associated with the data carrier, it may be an option for the DPPSP to request rerouting of incoming requests to the active web link, so that access to the DPP via the data carrier remains possible. The EU Web Portal will always provide access to the backup DPP, but is not expected to be accessible directly through the data carrier.</p>
3	DPPSP	(optional) I update the contact details in the DPP	<p>The exact changes that are mandatory depend on the relevant delegated act.</p> <p>Updates are made so that the data remains up to date and stakeholders know who to contact. This may include removing the information to the previous rEO or DPPSP and adding information about the DPPSP.</p>

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## 3.6 DEACTIVATE A DPP

### USER STORY 13: END OF DPP AVAILABILITY

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#### User Story Description

*As an rEO, I want to stop making my DPP available when the expected lifetime of my product has passed, so that I no longer have to make the DPP available to other actors.*

#### Reason to adopt User Story

The ESPR does not explicitly define any scenario where a DPP might/should be deactivated or deleted. However, Art. 9 2(i) and 11 (e) mandate delegated acts to define the availability period for a DPP, thus raising the possibility that deactivation or deletion may be possible. This is further confirmed by the Battery Regulation, Art. 77(8), which states that “*A battery passport shall cease to exist after the battery has been recycled*”. This User Story therefore clarifies the process for such deactivation or deletion.

#### Assumptions and Considerations

- An rEO bears the cost of providing access to the DPP. The requirement from the ESPR (article 9.2i) states that the DPP must remain available for “...at least the expected lifetime of a specific product”. An rEO may decide to stop providing access to the DPP for a product when the “expected lifetime” (as defined in the relevant delegated act) has expired.
- This user story is also a further specification of user story 9 part 1, that defines the steps the rEO takes when an independent operator updates a DPP at the end of the product life (i.e. for remanufacturing or recycling) and notifies the former.
- The end of DPP availability means that the DPP can no longer be accessed, updated, or otherwise interacted with via the rEO. The rEO or the Web Portal or the EU Registry may still keep a copy of the DPP in their own systems.
- An rEO can mark/indicate their products’ DPP as unavailable in the EU registry after the DPP no longer has to be available.

Process diagram

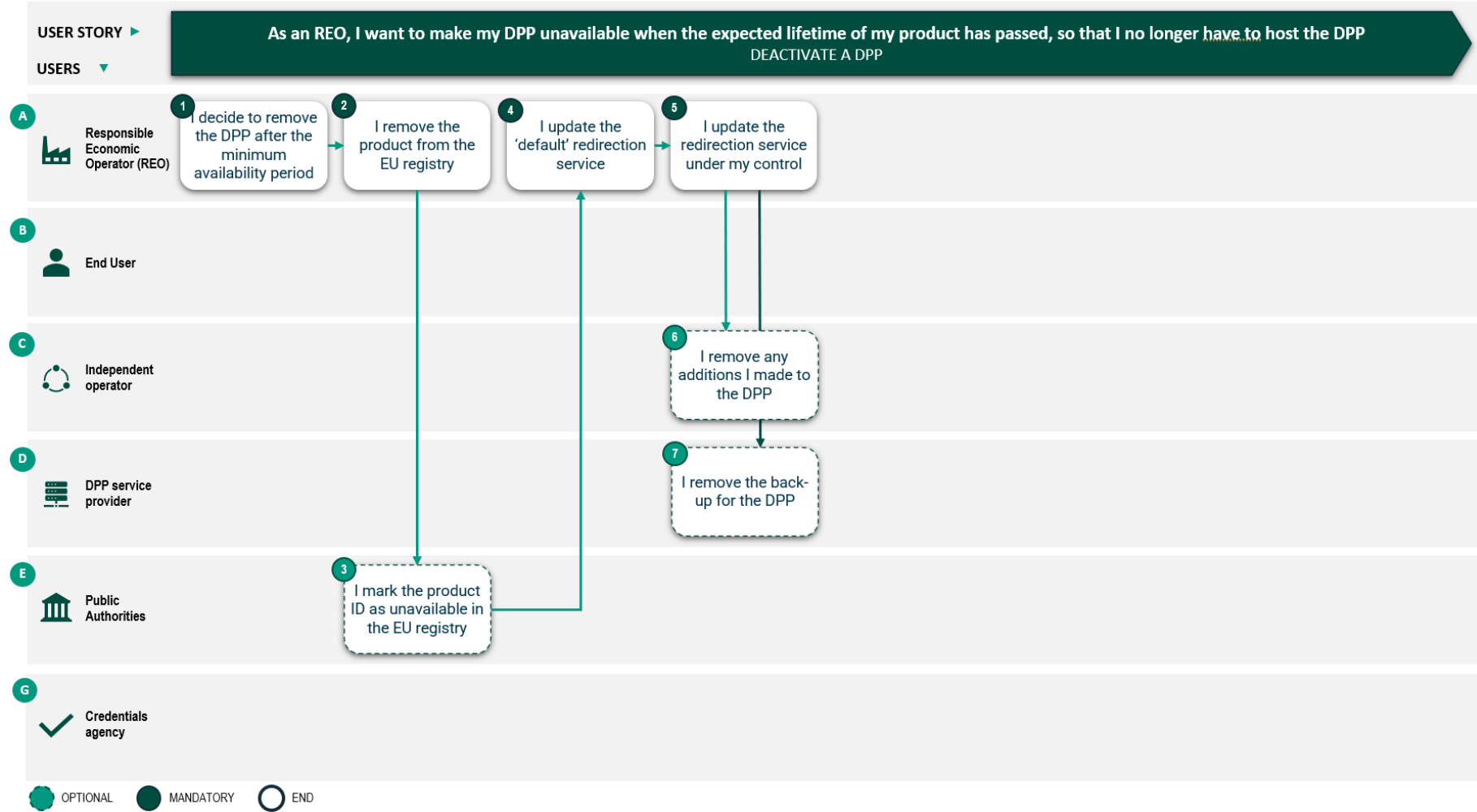


FIGURE 21. USER STORY 13

## Tasks and elaboration

TABLE 14. USER STORY 13: TASKS AND ELABORATION

#	Role	Task	Elaboration
1	rEO	I decide to remove the DPP after the minimum availability period	The ESPR requires the DPP to be available for "...at least the expected lifetime of a certain product". Keeping the DPP accessible bears a cost for the rEO, so the rEO may decide to delete the DPP once deletion is legally allowed.
		(optional)	
2	rEO	I remove the product from the EU registry	The rEO can mark the entry for their product in the EU registry as 'unavailable'/'deleted'.
		(optional)	
3	Public Authorities	I mark the product ID as unavailable in the EU registry	If the EC chooses to do so, the EU registry could reflect the correct state of products on the market, marking product ID's as 'unavailable'/'deleted' or actually deleting them is both possible.
4	rEO	I update the redirection service under my control	Searching for a DPP, using either the web link in the data carrier or based on the product ID, does no longer return a DPP. The rEO could consider to return a standard text explaining the product no longer exists.
		(optional)	
5	Independent operator	I remove any additions I made to the DPP	Independent operators may decide to delete their repairs of the product if the DPP is no longer available. How independent operators can be informed about this depends on how repair information is stored, as this is specific to the context this is out of scope of this document.
		(optional)	
6	DPPSP	I remove the back-up for the DPP	The backup of the DPP may be deleted by the DPPSP. This may depend on the agreements between the DPPSP and the rEO.

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## 4. ADDITIONAL DPP SYSTEM USER STORIES

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Digital Product Passports can be more than a regulatory tool. There is an opportunity for DPP system creators to add a wide variety of features to their systems, and for DPP users to expand on the mandatory DPP dataset to use DPP for a wide variety of use cases. A (non-exhaustive) set of potentially value adding interactions with the DPP system was collected and formulated as user stories.

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### 4.1 IMPROVE DPP QUALITY

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These user stories focus on enriching the Digital Product Passport (DPP) with comprehensive, accurate, and useful information,

1. As an rEO, I want to document additional voluntary information in my DPP, so that I can achieve my own ESG goals.
2. As an rEO, I want to access a data-driven overview of voluntary data points included in DPP in my industry, so I can conform to emerging (semantic) standards and future information requests.
3. As an rEO, I want to attach time-series data from my IoT sensors that measure aspects of a product to my DPP, so that I and others can have live updates of my product base.
4. As an rEO, I want to analyze the lifecycle of my products (based on item-level data), to gain insights for improving future product design and conducting durability analyses.
5. As an rEO (Manufacturer), I add advanced digital instructions (video, augmented reality) to the digital product passport, so that repair or remanufacturing can be performed more effectively
6. As an rEO, I want to understand which other DPPs my DPP has been linked to, to track how my product is used downstream.
7. As an rEO, I want to see a list of changes to my DPP made by others.
8. As an rEO, I want to remove changes made to my DPP by others.
9. As a rEO, I want to get an approximate location notification every time one of my products is scanned, so that I better understand the geographical spread of my products.
10. As an End User, I want to add my own data to the DPP of the product I own (e.g., to determine my climate impact, register modifications, add notes, or contact details in case the product is lost).
11. As an End User, I want to create a custom profile with preferences for which data is visualized and how, so that I always see data relevant to me when scanning a DPP.
12. As an End User with disabilities, I want DPP interfaces to be accessible (e.g., screen reader compatible), so that I can access product information without barriers.
13. As an End User, I want to access DPP information in my native language.
14. As an Independent Operator (recycler), I want to capture information about materials and the steps in the recycling process, so that I can provide valuable data downstream for the next life of the materials.
15. As an End User, I want to give feedback on the DPP system and propose improvements.

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## 4.2 INCREASE TRUST

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These user stories aim to build confidence by ensuring the authenticity, security, and reliability of DPP data.

1. As an rEO, I want to delete all relevant DPP information easily, including deleting destroyed product UID's from the EU registry, deleting links that point to data about destroyed products, deleting DPP data for a product from the decentralized DPP data repositories, redirecting the data carrier, writing into a deactivated DPP that it has been deactivated.
2. 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
3. As an End User, I want a trust score for the entities that create DPPs, so that I get an indication for how trustworthy a DPP is.
4. As an End User, I want to verify the authenticity of a product via its DPP, protecting myself from counterfeit goods.
5. As an Independent Operator, I want to acquire a digital 'role' and the associated access rights, so that I can operate within the DPP ecosystem as a repairer/remanufacturer/recycler for a specific product group and not have to verify myself every time for every rEO.
6. As the Public Authorities, I want to know about the tools, technologies, and processes that ensure that the DPP content has not been tampered with.
7. As a Supply Chain Actor, I want to retain data sovereignty over my DPP data, so that I know who accesses my data and I retain control
8. As a Researcher, I want to use aggregate DPP data to learn and teach about product lifecycles and sustainability, uncovering trends in material use and climate impact.
9. As the Public Authority (e.g. MSA), I want to write into a DPP to provide non-compliance, recall or product ban information to consumers, so that harm can be prevented

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## 4.3 INCREASE EFFICIENCY AND MANAGE RISKS

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These user stories focus on streamlining operations, reducing costs, and proactively managing potential risks throughout the product lifecycle.

1. As an rEO, I want to use DPP and IoT data to predict when a product will need maintenance, enhancing customer service and product longevity.
2. As an rEO, I want to follow specific product withdrawal/recall procedures with DPP data on model/batch/item level, so that when end users scan the product they know when, where, and why to return the product and any safety related notifications”
3. As an rEO, I want to use DPP data to identify and mitigate risks associated with suppliers (e.g., compliance issues, climate impact, or geopolitical risks)
4. As an rEO, I want to only accept updates to my DPP from repairers that I have contracts with, achieving vertical integration.(Whether such a restriction is (legally) acceptable is unclear)
5. As an rEO, I have a contractual agreement with another rEO of a product which already has a registered DPP, I want to create a new DPP for this product. I will reuse the product UID and data carrier previously defined by the rEO or I will reuse the product UID and attach a new data carrier embedding a new web link onto the product.

6. As a DPPSP, I want to quickly adapt to regulatory changes, ensuring ongoing compliance for my clients.
7. As a DPPSP, I want to apply to be certified as a DPPSP, so that I can offer trusted services

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#### 4.4 ENABLE CIRCULAR ECONOMY BUSINESS MODELS

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These user stories aim to promote sustainability by supporting circular economy activities that extend product lifecycles and improve environmental performance.

1. As a rEO, I want to use aggregated DPP data to assess and compare the environmental impact of my products.
2. As a rEO, I want to get information back from Independent Operators (recyclers) about end-of-life product status and recyclability, so that I can improve my product design.
3. As an End User, I want to have an overview of all the DPPs of my products (e.g., to determine my overall climate impact, share with an insurer, or authorities).
4. As an End User, I want to receive rewards or incentives for engaging with DPPs (e.g., recycling, providing usage data), encouraging sustainable behaviors.
5. As an Independent Operator outside the EU, I want an incentive to capture data for DPP, enabling responsible activities without disproportionate administrative burdens.
6. As a Certification Agency (climate impact calculation company), I want to add my label to the DPP, so that I promote my brand and can show end users they can trust the climate impact numbers
7. As an Independent Operator (e.g. urban miner), I want to view detailed information about the DPP, so that I know how to decouple the product from a larger more complex product
8. As an End User or Independent Operator, I want to seamlessly link my product's DPP to resale or rental platforms, facilitating product reuse and extending its lifecycle.
9. As an End User, I want to see the climate impact of remedies in case of product non-conformity, so that I can make environmentally conscious decisions.
10. As a DPPSP, I want to sign a contract with my clients that I can process and sell their data, so that I can create aggregate insights and create a new revenue stream
11. As a Credentials Agency, I want to update a DPP to add or withdraw a certificate, so that certificates reflect live rEO behavior.

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## 5. DISCUSSION

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In summary, in this document we have described the interactions between a DPP system and its intended users, based on the ESPR. In doing so, we have identified a variety of assumptions and interactions that should be taken into account. While the core of our findings here is in the User Stories themselves, the process of writing this document raised some open questions, considerations, and led to the formulation of recommendations. This section describes these open questions, considerations and recommendations, as well as a brief note on how this document links to the Battery regulation and proposed Construction Products Regulation. We acknowledge that insights will evolve, potentially requiring another iteration of this document. This may involve making changes to the core User Stories, refining technical details, and reducing assumptions and open questions.

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### 5.1 OPEN QUESTIONS AND RECOMMENDATIONS

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#### Open questions

The following is a list of open questions and considerations directed to policy makers and other stakeholders that arose during the process of writing of this document and of the user stories that form its focus.

1. **Question:** Regarding Articles 12(2) and 12(3), which mandate that the rEO must request a unique operator and/or facility identifier for a supply chain actor. What if multiple rEOs simultaneously / in parallel request a new unique identifier for the same operator or facility? How might an rEO check which unique operator identifiers and unique facility identifiers have been issued for a supply chain actor?
  - a. **Reflection:** While the reasoning behind this obligation is understandable and important in order to ensure that suppliers can and do comply with the provisions of the ESPR, it is also important to note that this this could lead to duplication and compromise data accuracy. Ideally, the best practice is that every responsible entity should obtain its own unique facility identifiers. Therefore, it may be helpful to provide further clarity and limitations on when and how companies are to be responsible for obtaining and providing their own unique identifiers or to specify further in delegated acts in which cases requesting identifiers on behalf of others would be mandatory, taking into account such risks.
2. **Question:** How should downstream serialization (creating an item level unique product identifier) be managed in cases where a product with only model-level or batch-level DPP data undergoes a lifecycle event—such as a repair—that necessitates item-level detail, but the 'unique product identifier' is available only at the model or batch level? Does the European Commission intend to provide guidance regarding the issuance of new identifiers for these instances, or will delegated acts require item-level identification at the time the product is placed on the market for categories that need to record such lifecycle events?
  - a. **Reflection:** Assigning new, finer-grained identifiers to products after they have been placed on the market can complicate traceability and data management within the supply chain. This complicates many aspects such as the data carrier, findability of the DPP, lack of visibility for the original rEO, etc. i.e. this process can be cumbersome and prone to errors.
  - b. **Version 3.01 update:** A feasible and recommended approach to this situation is to assign item-level product IDs for each product type where repairs or other lifetime events can reasonably be expected, even if this is not a regulatory requirement. It is not technically complex to have all product IDs initially resolve to a single DPP and later provide item level data for items with those types of events.

3. **Question:** What is the relationship between the EU registry established under Article 13 and the web portal described in Article 14? To what extent is there overlap in the data accessible through either? How are they connected, if at all?
  - a. **Reflection:** An integration between the Web Portal and EU Registry may streamline compliance monitoring processes. Furthermore, while the Registry seems to be intended exclusively for use by public authorities, the Web Portal is more public-oriented and may be particularly useful for consumers, SMEs and other private actors. The Web Portal implementation may therefore require/allow uploading by rEOs of different or additional data than that required for the EU Registry.
  
4. **Question:** How can continued access to DPP data, with the appropriate access rights, be ensured when the responsibility of the rEO has to be transitioned to a DPPSP due to the original rEO ceasing operation in the EU (e.g. becoming insolvent)? Furthermore, how should the IP of the protected DPP data be managed and protected in such cases?
  - a. **Reflection:** Managing the transition may require further clarification to ensure DPP availability, retain access rights, and protect IP rights. Consider that the rEO may have their own systems through which they give specific parties access, the back-up provider may not know which parties had access to which data after rEO insolvency. For actors that make updates to DPPs, ensuring the continuity of DPP access and tracking the DPPSP (and when this changes) may therefore be an important consideration.
  - b. **Version 3.01 update:** By basing access rights on the roles specified in Delegated Acts, regulatory compliance can be facilitated. Additional, rEO-specific rights, will required agreements between the rEO and the service provider.
  
5. **Question:** To what extent is it foreseen that, next to the ‘unique operator identifier’ organizations can attain a European ‘role credential’ (e.g. repairer, recycler) that provides them with certain rights and obligations, including that they can access DPP data associated with their ‘role’? Art. 11 hints at this possibility but further clarification would be very welcome.
  - a. **Reflection:** Without such assigned roles, the burden for evaluating whether a company requesting data should be allowed access lies on the rEO. This verification process might be disproportionately cumbersome and will be costly, including in terms of time, potentially decreasing the effectiveness of DPP (e.g. ability for independent actors to act effectively is reduced). This is particularly relevant for Independent Operators, especially SMEs.
  - b. **Version 3.01 update:** Our recommendation remains that ‘role credentials’ are issued by governments or government-backed organizations. Such roles and the associated access rights to DPP data should then be specified in Delegated Acts insofar as they are specific for a product type.
  
6. **Question:** What if the rEO cannot collect the required data due to a factor outside of their control? (e.g. a supply chain actor does not make the data available.) How should they proceed with making the DPP?
  - a. **Reflection:** the rEO might not always have the power to demand certain information to be made available to them, especially for supply chain actors that are outside the EU. They may also have to, for instance, apply for the Unique Facility Identifier on the behalf of their suppliers. If the REO cannot provide the data required, they do not fulfill the mandatory information requirements under the ESPR. If allowed in the relevant delegated act, it might be possible to provide a (reasonable and explainable) estimate or average to include in the DPP.
  
7. **Question:** It is common practice for several importers to place the same product (defined at model level) on a given market. We assume that the first importer that places the product on the EU market is responsible for creating the DPP. How can subsequent importers coordinate with the first importer?

- a. **Reflection:** Potential solutions are that the importers have joint responsibility, or that the first importer is the one placing the product on the market (i.e., the rEO), and the following importers are additional parallel importers. This would be similar to how some large marketplaces manage multiple sellers of the same product. A situation to avoid would be for the same model product to be treated as different models. This will require varied levels of coordination and cooperation between different importers (within the same sector).
8. **Question:** What will the legal obligations entail for DPPSP regarding making DPP back-ups available in case of, for instance, rEO insolvency?
  - a. **Reflection:** The ESPR requires (Recital 28, Art. 10) rEOs to arrange a back-up of each DPP with an independent third party (DPPSP), to guarantee the availability of a DPP, including after the rEO has ceased its operations on the European market or has become insolvent. An agreement between rEO and DPP service provider is a matter of private law, meaning that a different party may not have the *locus standi* to enforce this agreement if the rEO itself cannot or does not wish to. There is also a chance that the DPPSP itself becomes insolvent or otherwise ceases its operations in the EU. This presents a risk of DPPs becoming unavailable because of an rEO or DPPSP going out of business or acting in bad faith. It may be important to take this into account when designing the delegated acts setting the requirements for DPPSPs to be able to provide such services under Art. 11. Furthermore, it is unclear to what measures a DPPSP should have in place to prevent the loss of DPP back-up data, for example in the case of DPPSP insolvency, especially in cases that the rEO is already insolvent.
9. **Question:** Will economic operators wishing to create their own unique identifiers under Article 12 4b be also subject to the requirements of Article 12, 4a concerning organizations wishing to become an issuing agency?

## Recommendations

What follows is a list of recommendations directed to policy makers that arose during the process of writing.

1. Provide an automated service that runs DPP validation checks when the rEO registers a product identifier in the EU registry. The output of such a validation check should be easy to interpret and use for the rEO. This ensures a basic level of data quality in the EU registry and in the DPP (data completeness and validity check). All public authorities, in addition to the general public, could potentially be provided with the same automatic validation tools.
2. In case of a change of rEO, define procedures for how the rEO information may be updated and validated in the EU Registry.
3. Include a 'product state' attribute in the EU registry for each unique product identifier. (e.g. active, inactive, deleted), to provide insights on the products actually in use on the market. Define procedures for deactivating or archiving obsolete DPPs to maintain EU Registry (and web portal) data quality.
4. Make contact details of relevant Credentials Agencies readily and publicly available to users of DPP systems (including users that visit the Web Portal).
5. Create a DPP data portability right for the rEO in order to ensure recital 36 can be enforced through public law.
6. Consider mandating that the (back up) DPP data is available to European enforcement agencies, if need be by imposing strict rules on ensuring data availability in the EU.

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## 5.2 REGARDING THE BATTERY REGULATION AND THE PROPOSAL OF THE CONSTRUCTION PRODUCTS REGULATION

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The proposed revision of the Construction Products Regulation (CPR; TA(2024)0188) and the Regulation (EU) 2023/1542 concerning batteries and waste batteries ('Battery Regulation') are two sector-specific regulations that are relevant for the wider implementation of Digital Product Passports in the EU, and are discussed shortly below.

The proposal for a revision of the CPR regulates DPPs for construction products.<sup>11</sup> Since the CPR is in a proposal state as of the date of writing, changes before publication of the final text might impact the text and citations in this section. The CPR is in line with the ESPR and is considered the primary regulation for construction products, as it is adapted for the sectorial specificities (CPR, Recital 33, Art. 75). The CPR requires a 'digital product passport system' that should be aligned to the extent possible to the DPPs under the ESPR and is based upon the same system (CPR, Recital 92, Art. 75). Further details of the construction product passport can be found in CPR Chapter 10; Product Passport.

The Battery Regulation is also, similarly, in line with the ESPR and is considered to be the sector-specific regulation adapted for batteries. It requires the creation of 'Battery Passports', that are also to be aligned with the ESPR as far as possible (Battery Regulation Recital 126, Art. 78). Crucially, however, the Battery Regulation requires *dynamic* data to be added during the lifetime and usage of the battery (e.g., 'information and data resulting from its use, including the number of charging and discharging cycles and negative events...' Battery Regulation, Annex XIII(4)(d)), a requirement which is not mentioned explicitly in the ESPR. However, such dynamic data may be required under the respective delegated acts for other product groups, as relevant, as well.

Compatibility and interoperability of both the CPR and the Battery Regulation, and the DPPs created thereby, with the ESPR should be ensured (CPR, Recital 102, Art. 75, Battery Regulation Recital 126, Art. 78). For the user stories, we therefore intend to design for cross-sectoral application of the DPP core system, including the construction sector and battery passports. However, due to limited resources, a deep analysis of differences between the CPR, the Battery Regulation and ESPR has not been conducted for this document.

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<sup>11</sup> The Energy Performance for Buildings Directive (EPBD; 2024/1275) might be of interest to parties active in the construction sector as well, as it introduces optional 'Digital Building Logbooks', which could be considered a passport on a building level. The relation between the CPR and EPBD is not specified by the EC, however, it is conceivable that DPP of construction products would be included in a 'building passport', with at least the DPP and the quantity of the materials present in the building.

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## GLOSSARY

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Entries marked with “<sup>12</sup>” are based on their respective definition in Art. 2, ESPR.

**‘Actor’** means a legal or natural person (e.g. John Doe, TNO). One actor can take on multiple roles.

**‘Application Service’** means a specific technical service that the *DPP system* can perform. (e.g. DPP data service, redirection service).

**‘Credentials Agency’**<sup>12</sup> means a legal person that provides (professional) credentials to parties, which may be used to make and verify a variety of claims in the DPP (Art. 11, last paragraph).

**‘Commodity Code’** refers to a unique string of characters that identify a commodity, such as a TARIC code as defined by the Council Regulation (EEC) No 2658/87.

**‘Data carrier’**<sup>12</sup> “means a linear barcode symbol, a two-dimensional symbol or other automatic identification data capture medium that can be read by a device” (ESPR article 2(29))<sup>12</sup>, this does not imply a direct (web) link

**‘Data model’** means a “structured representation of data elements and relationships used to facilitate semantic interoperability within and across domains” as defined by DSSC<sup>13</sup>

**‘Delegated Act’** means a non-legislative act of general application. Delegated acts will supplement or amend parts of the ESPR, specifying, among others, obligations for economic operators, information requirements related to product aspects, requirements for specific product groups.

**‘Digital Product Passport’ (DPP)**<sup>12</sup> “means a set of data specific to a product that includes the information specified in the applicable delegated act, and that is accessible via electronic means through a data carrier” (Art. 2(28), ESPR).

**‘Digital Product Passport Service Provider’ (DPPSP)**<sup>12</sup> “means a natural or legal person that is an independent third-party authorised by the economic operator which places the product on the market or puts it into service and that processes the digital product passport data for that product for the purpose of making such data available to economic operators and other relevant actors with a right to access those data under this Regulation or other Union law” (Art. 2(32), ESPR).

**‘Digital Product Passport-as-a-Service’ (DPPaaS)** means a service consisting of, at least, the hosting of DPP data in place of the rEO.

**DPP Core System’** means a minimal set of services (application services and other services) and the roles that deploy or perform these services, as required for compliance with the ESPR’s requirements for Digital Product Passports (e.g., Art. 9 and 10, ESPR).<sup>14</sup> The DPP core system is based on the ESPR and therefore essential, meaning that every DPP system will need to provide an implementation of the application services of the DPP core system.

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<sup>12</sup> It is understood that the data carrier itself may contain only the unique product identifier or a web link which enables locating the DPP data. Should the data carrier not contain a web link, it is understood that dedicated means will be defined to construct one (e.g., a professional application used exclusively in B2B contexts or a DPP link search portal).

<sup>13</sup> [Data Models - Blueprint v1.0 - Data Spaces Support Centre \(dssc.eu\)](https://dssc.eu)

<sup>14</sup> The reason the DPP system and DPP core system are separated is because the term ‘DPP system’ is used in the market to mean substantially more than what is strictly required by law. The separation helps in preserving broad applicability of the term ‘DPP system’ and reserving the term ‘DPP core system’ for only that which is essential for ESPR compliance.

**‘DPP ecosystem’** means the set of actors and systems that create or use Digital Product Passports, and their interactions.

**‘DPP system’** means, at least, the DPP core system and optionally additional application services.

**‘DPP use case’** means a description of the use of a DPP and refer to *why* a DPP is being used. These are mainly concerned with the data points contained in the DPP.<sup>15</sup>

**‘Economic Operator’** <sup>ᄁᄁ</sup> “means the manufacturer, the authorized representative, the importer, the distributor, the dealer and the fulfilment service provider” (Art. 2(46), ESPR).

**‘End User’** <sup>ᄁᄁ</sup> “means any natural or legal person residing or established in the Union, to whom a product has been made available either as a consumer outside of any trade, business, craft or profession or as a professional end user in the course of its industrial or professional activities” (Art. 2(2), Market Surveillance Regulation (EU) 2019/1020, as cited by the Art. 2 ESPR).

**‘EU Registry’** <sup>ᄁᄁ</sup> means the digital product passport registry to be set up by the European Commission to store in a secure manner at least the unique identifiers linked to products placed on the market or put into service in the EU (Art. 13(1) and Recital 41, ESPR).

**‘Granularity level’** means the level at which DPPs are created, in accordance with the relevant delegated act. This can be at model, batch, or item level.

- **‘Model level’** means to a version of a product of which all units share the same relevant characteristics.
- **‘Batch level’** means a subset of a specific model composed of all items produced in a similar way. For instance, this could be a set of products made in the same factory within a specific timeframe.
- **‘Item level’** means a single unit of a model, i.e. an individual product.

**‘Interoperability’** means “the ability of organizations to interact towards mutually beneficial goals, involving the sharing of information and knowledge between these organizations, through the business processes they support, by means of the exchange of data between their ICT systems”<sup>16</sup>.

**‘Issuing Agency’** means an organisation tasked with providing identifiers to parties, in compliance and accordance with the appropriate requirements and standards, as required under Art. 12 (4).

**‘Link’** means “a conceptual construct” ... “that represent a connection between two resources”, enabling users to reach the second resource from the current document.<sup>17</sup>

**‘Product Group’** <sup>ᄁᄁ</sup> “means a set of products that serve similar purposes and are similar in terms of use, or have similar functional properties, and are similar in terms of consumer perception” (Art. 2(5), ESPR).

**‘Protected data’** means data in a DPP which is not publicly accessible but access to which is, either through a Delegated Act or by the rEO, limited to actors in a specific role.

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<sup>15</sup> In this document we reason primarily from the DPP use case to determine which interaction with the DPP core system is desired to fulfil the use case. Even though there might be many DPP use cases that require the same kind of interaction, once an interaction has been identified the other use cases are not included. The reason for this is that we focus on what the system should be able to do, rather than exhaustively listing all kinds of value its users might be able to derive.

<sup>16</sup> As defined in (European Commission, *New European Interoperability Framework*, [https://ec.europa.eu/isa2/sites/default/files/eif\\_brochure\\_final.pdf](https://ec.europa.eu/isa2/sites/default/files/eif_brochure_final.pdf) (2017))

<sup>17</sup> As defined in (World Wide Web Consortium, HTML5 A vocabulary and associated APIs for HTML and XHTML, W3C Recommendation, <https://www.w3.org/TR/2014/REC-html5-20141028/links.html> (2014)).

**‘Public Authorities’** means an entity or individual carrying out statutory duties or other public functions assigned to it by law, for instance a customs authority or a market surveillance authority.

**‘Redirection service’** means an application service that takes as an input a unique product identifier, or a web link based on a unique product identifier, and produces as an output an ‘active’ web link (or set of web links) that enable access to a (set of) DPP data service(s). There are two non-exclusive options for providing such redirection services:

- Redirection services other than the ‘fallback’ redirection service: this is any application on any device that is not the fallback redirection service but does take a unique product identifier, or web link based on a unique product identifier, as an input and produces the active web link (or set of web links) as an output. In case the redirection service does not work, the ‘fallback’ redirection service can be used.
- The ‘fallback’ redirection service: our position is that the EC should strongly consider providing a ‘fallback’ redirection service, through the Web Portal.<sup>18</sup> This service should provide the ‘active’ web link(s) for each unique product identifier. This would ensure accessibility to DPP data when only a unique product identifier, but no ‘active’ web link or functioning data carrier, is available to a DPP user.

**‘DPP data service’** means an application service that takes as an input an ‘active’ web link and produces as output the DPP data, potentially considering among other things, the access rights, data format, and multiple locations of DPP data.

**‘Responsible Economic Operator (rEO)’** means an economic operator that has the legal obligation to create a DPP, and all associated legal obligations.

**‘Role’** means a set of tasks typically performed by one *actor*. (e.g. Responsible Economic Operator, Independent operator).

**‘Supply Chain Actor’** means a legal person that performs an upstream activity or participates in a process of the product’s value chain, up to the point where the product reaches the end user.

**‘Unique facility identifier’** <sup>Art. 2(33)</sup> *“means a unique string of characters for the identification of locations or buildings involved in a product’s value chain or used by actors involved in a product’s value chain”* (Art. 2(33), ESPR).

**‘Unique operator identifier’** <sup>Art. 2(31)</sup> *“means a unique string of characters for the identification of an actor involved in a product’s value chain”* (Art. 2(31), ESPR).

**‘Unique product identifier’** <sup>Art. 2(30)</sup> *“means a unique string of characters for the identification of a product that also enables a web link to the digital product passport”* (Art. 2(30), ESPR). The term ‘enables’ is understood to mean that, if needed, the unique product identifier can be used by a redirection service.

**‘Unique registration identifier’** <sup>Art. 13(5)</sup> means a unique string of characters associated with the unique identifiers uploaded by the economic operator to the EU registry for a specific product” (Art. 13(5), ESPR).

**‘User’** means the actor which uses the DPP system to perform a task.

**‘User Story’** means a short description from the perspective of a user that describes a result the user would like to accomplish, and involves an interaction with the system. In this document a user story follows the format: “as a <role>, I want <goal>, so that <benefit>”.

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<sup>18</sup> See assumptions section 1.1 for elaboration. In short, we believe it would be too likely that there are many DPP users that would have no other way to access a DPP.

**'Voluntary data'** means data in a DPP which is not required by the ESPR or a delegated act, but is added by an rEO to the DPP.

**'Web link'** means a connection from one Web resource to another, also see 'link' on the previous page.

**'Web Portal'** <sup>416</sup> means the publicly accessible and user-friendly digital product passport web portal to be set up by the European Commission which guarantees stakeholders, such as customers, economic operators and other relevant actors, the ability to search for and compare data included in digital product passports in a manner consistent with their respective access rights (Art. 14 and Recital 42, ESPR).

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## APPENDIX A: A NOTE ON ACCESS TO DPP DATA BY PUBLIC AUTHORITIES

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Public authorities can be divided between:

- a) Legislative authorities: parties that write the legislation.
- b) Executive authorities: parties that will execute the legislation the purposes of carrying out their duties pursuant to Union law, including perform compliance monitoring.

The compliance monitoring activities performed by executive authorities, in regard to DPP, could be further be divided into:

- a) activities related to verifying that a product under the scope of the ESPR, a related delegated act, or other legislation that requires it to have a DPP, when placed on the internal market, is accompanied by an existing, registered DPP (this can be performed automatically),
- b) activities related to checking the validity of an existing DPP, i.e, the necessary data is available and it is structured according to the requirements of the harmonized standards (this can be performed automatically),
- c) activities related to verifying that the information content of a DPP associated with a product is correct and can be used to support the work of market surveillance authorities, e.g. risk assessment,
- d) activities related to checking whether the product complies with the regulations relevant to it using data, including DPP data (for instance, emissions regulations).

Two specific examples of such authorities, customs authorities and market surveillance authorities, are discussed below.

### Customs Authorities

Article 13(5) provides that, upon the uploading the information on the 3 unique identifiers (product, operator and facility) and in case of goods to be placed under release of free circulation also the commodity code (and any other information may be provided for in the delegated acts<sup>19</sup>), the registry will automatically communicate to that economic operator a **unique registration identifier**.

Article 15(1) provides that any person intending to place a product covered by a delegated act adopted pursuant to Article 4 under the customs procedure 'release for free circulation' shall provide or make available to customs authorities the **unique registration identifier** of that product referred to in Article 13(5).

Art. 15 requires Customs Authorities to verify electronically and automatically the existence of the unique registration identifier via the interconnection between the EU registry and the EU CSW-CERTEX and possibly also check whether the information provided or made available to them for the products intended to be released for free circulation into the Union corresponds to the data stored in the Registry. This could

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<sup>19</sup>ESPR Article 13(2) "The Commission shall, in the delegated acts adopted pursuant to Article 4, specify any other data which, in addition to being included in the digital product passport, are to be stored in the registry, taking into account at least the following criteria: (a) the need to allow for the verification of the authenticity of the digital product passport; (b) the relevance of information for improving the efficiency and effectiveness of market surveillance checks and customs controls; (c) the need to avoid a disproportionate administrative burden for economic operators and customs authorities."

include, e.g., the commodity code which is a necessary element of the customs declaration in all cases where products are placed under the customs procedure release for free circulation.

In the ESPR, key functionalities required for customs authorities from the DPP system are: a) verifying that a DPP exists for a product that is to be imported (Recital 44<sup>20</sup> and Article 15) b) possibly, a verification that the relevant information of the customs declaration corresponds to the information that is stored in the Registry<sup>[15]</sup>, and c) direct access to EU Registry via the EU CSW-CERTEX (Art. 15). Customs may also retrieve and use data included in the DPP or registry for carrying out their duties, including “customs controls and release for free circulation under Art. 15(4).

Some additional considerations related to customs are:

- 1) 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.
- 2) 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 using the products’ unique registration identifiers, as they will be provided or made available to custom e.g. on the customs declaration, they will have access to the unique product identifiers and other information in the EU registry and the DPP itself.

## Market Surveillance Authorities

Market surveillance authorities (MSA) perform product (and corresponding product information) compliance checks, for instance following a risk assessment or through random selection. Market surveillance authorities may perform checks of physical products: check labels, request information from economic operator (documentation, conformity assessment), or even 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 may be based on possibly limited information available on the website, and the products may be ordered for further checks.

DPP data can assist MSAs in performing these checks, for instance due to access to more complete information. It is expected that the default access to DPP data will be through the data carrier physically present on the product or provided online for instance with online marketplaces, or directly using the web link to the DPP. MSAs may also access DPP data through the EU Registry or the Web Portal.

In the future, the market surveillance authorities may also use data-driven approaches for deciding which products to check. The DPP system, the EU Registry and the Web Portal should be able to support this and support advanced analytics capabilities based on DPP data, as relevant. 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, EU Registry and the Web Portal should support this evolution as well. An important requirement for MSA is, for instance, the possibility to automatically import data from the DPP into their internal IT systems, perhaps through the EU Registry itself.

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<sup>20</sup> The delegated acts subjecting products or product groups under ESPR will also include the list of commodity codes as set out in Annex I to Council Regulation (EEC) No 2658/87 and product descriptions. This allows linking any measure applicable at EU borders to the customs classification, allowing thus for an easy identification of the goods and the applicable measures.