Transfer energy data

Based on IEC 62559-2 edition 1
Generated from UML Use Case Repository with Modsarus® (EDF R&D Tool)

1. Description of the use case

1. Name of use case

Use case identification		
ID	**Area(s)/Domain(s)/Zone(s)**	**Name of use case**
	Access to data,Balance management,Market for flexibilities,Operational planning and forecasting,Services related to end customers	Transfer energy data

2. Version management

Version management				
Version No.	**Date**	**Name of author(s)**	**Changes**	**Approval status**
1	2018-04-12	Richárd Balog (Mavir), Kalle Kukk (Elering)		
2	2018-07-13	Ricardo Jover (EDF), Eric Suignard (EDF)		
3	2018-07-19	Ricardo Jover (EDF), Eric Suignard (EDF)		
4	2018-08-02	Eric Suignard (EDF)	Scenario names changed. First scenario restructured.	
5	2018-09-21	Eric Suignard (EDF), Ricardo Jover (EDF)	Remarks from Innogy and EirGrid.	
6	2018-10-04	Eric Suignard (EDF)	Version post WP5&9 physical meeting in Tallinn	
7	2018-10-17	Eric Suignard (EDF)	Version reviewed by WP5&9 partners	
8	2019-05-07	Eric Suignard (EDF)	WP6-7-8 demos alignment and miscellaneous changes	
9	2020-06-16	Eric Suignard (EDF)	innogy's and Elering's review	

3. Scope and objectives of use case

Scope and objectives of use case	
Scope	Transfer of different types of energy related data. The system use case describes the data flow through data exchange platform from the data provider (data hub or any other data source) to data user (data owner) or to a third party application (supplier, aggregator, ESCO), who has consent or legal mandate to use the data. Data transfer does not necessarily need a central storage.
Objective(s)	To support business use cases and to ensure access to needed data for the relevant processes.
Related business case(s)	

4. Narrative of Use Case

Narrative of use case

Short description
The granularity of data and frequency of data transfer could be different depending on the business use case, but the purpose is the same: ensuring the needed data in order to support business processes. Some other system use cases (data collection, authentication of data users, authorization, anonymization of data, aggregation of data) are strongly connected to this use case, which are considered as preconditions.
Complete description

<div align="center">

Summary of use case

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- **Request data through DEP API and publish data to subscribed applications**
  Description: Data can be sent to an application if the application has requested for the data through DEP API or if it has subscribed to publications of this data.

  - Request data
    Description: An application requests for data from a Data Source.

  - Check authorization from data owner to request specific data
    Description: According to "Manage access permissions" SUC, an application can receive authorization from a Data Owner to request data from a Data Source.

  - Authorization check
    Description:

  - Authorization check
    Description:

  - Forward request for data
    Description: The Data Exchange Platform forwards to the Data Source the request for data.

  - Check the request for data
    Description: The Data Source checks whether there is valid authorization for the requesting application.

  - Process the request for data
    Description: The Data Source makes data available to the requesting application, in a "publish-stream" mode.

  - Publish data to authorized applications
    Description: The Data Source publishes data to all applications with valid authorization.

  - Forward data
    Description: The Data Exchange Platform forwards the published data to authorized applications.

- **Download data through DEP customer portal**
  Description: An authenticated user can check and download the data through DEP from any Data Hub, depending on the type of data (to be defined).

  - Process the request for data
    Description:

  - Authenticate to DEP
    Description: Data users authenticates to Data Exchange Platform via a web-based customer portal or through 3rd party application.

  - Verify authentication information
    Description: The Data Exchange Platform verifies the authentication information and the representation rights.

- ▪ Request data
  Description: Data users request for data via a DEP web-based portal or through 3rd party applications.

- ▪ Process request
  Description: If the Data User and the Data Source are not in the same country, the Data Exchange Platform forwards the request to the Foreign Data Exchange Platform.

- ▪ Process the request for data
  Description: The Data Source can create different kinds of file (e.g. Excel, PDF, XML).

5. Key performance indicators (KPI)
6. Use case conditions

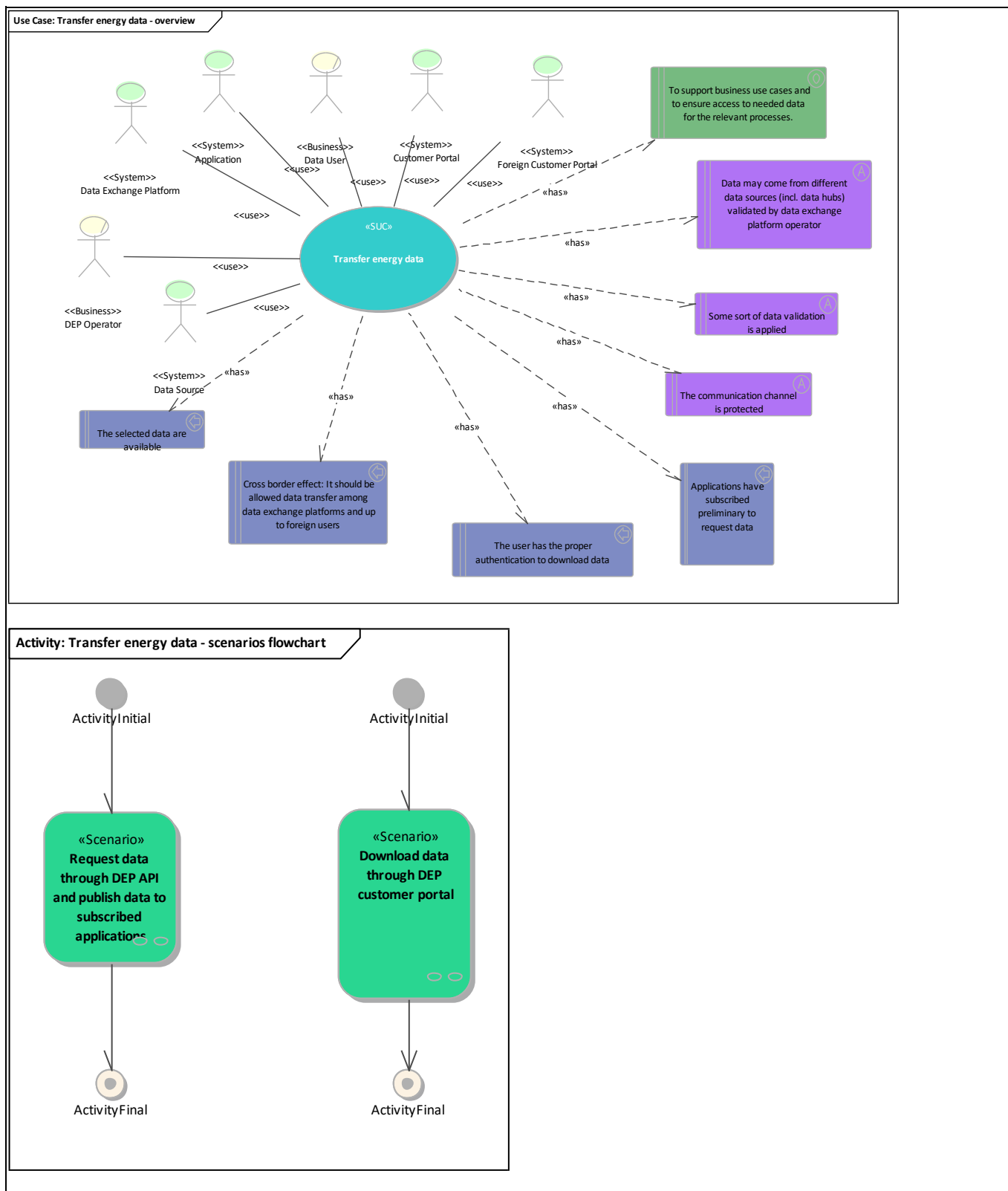| Use case conditions	
Assumptions	
1	Some sort of data validation is applied: Example: data quality check.
2	Data may come from different data sources (incl. data hubs) validated by data exchange platform operator
3	The communication channel is protected
Prerequisites	
1	The user has the proper authentication to download data
2	Cross border effect: It should be allowed data transfer among data exchange platforms and up to foreign users
3	The selected data are available
4	The granularity and the completeness of the selected data is adequate
5	Applications have subscribed preliminary to request data

7. Further information to the use case for classification/mapping

Classification information
Relation to other use cases
Level of depth
Prioritisation
Generic, regional or national relation
Nature of the use case
SUC
Further keywords for classification

8. General remarks

2. Diagrams of use case

Diagram(s) of use case

Use Case: Transfer energy data - overview

Activity: Transfer energy data - scenarios flowchart

3. Technical details

1. Actors

Actors

Grouping (e.g. domains, zones)		Group description		
Actor name	Actor type	Actor description		Further information specific to this use case
Data Exchange Platform	System	Data exchange platform (DEP) is a communication platform the basic functionality of which is to secure data transfer (routing) from data providers (e.g. data hubs, flexibility service providers, TSOs, DSOs) to the data users (e.g. TSOs, DSOs, consumers, suppliers, energy service providers). DEP stores data related to its services (e.g. cryptographic hash of the data requested). The DEP does not store core energy data (e.g. meter data, grid data, market data) while these data can be stored by data hubs. Several DEPs may exist in different countries and inside one country.		
Data Source	System	Any kind of system used to store data (including Data Hub and Flexibility Platform).		
Application	System	Any kind of system connected to a Data Exchange Platform and used by a market participant who wishes to receive data.		
Data User	Business	Any person who uses data. Can be a Data Owner or a Data Delegated Third party.		
Foreign Customer Portal	System	Customer Portal for another country. Can also mean a separate portal in the same country.		
Customer Portal	System	Customer Portal manages data users' authentication, access permissions and data logs. Customer Portals store data related to its services (e.g. authentication information, representation rights, access permissions, data logs).		
DEP Operator	Business	Data exchange platform operator owns and operates a communication system which basic functionality is data transfer.		

2. References

4. **Step by step analysis of use case**
1. **Overview of scenarios**

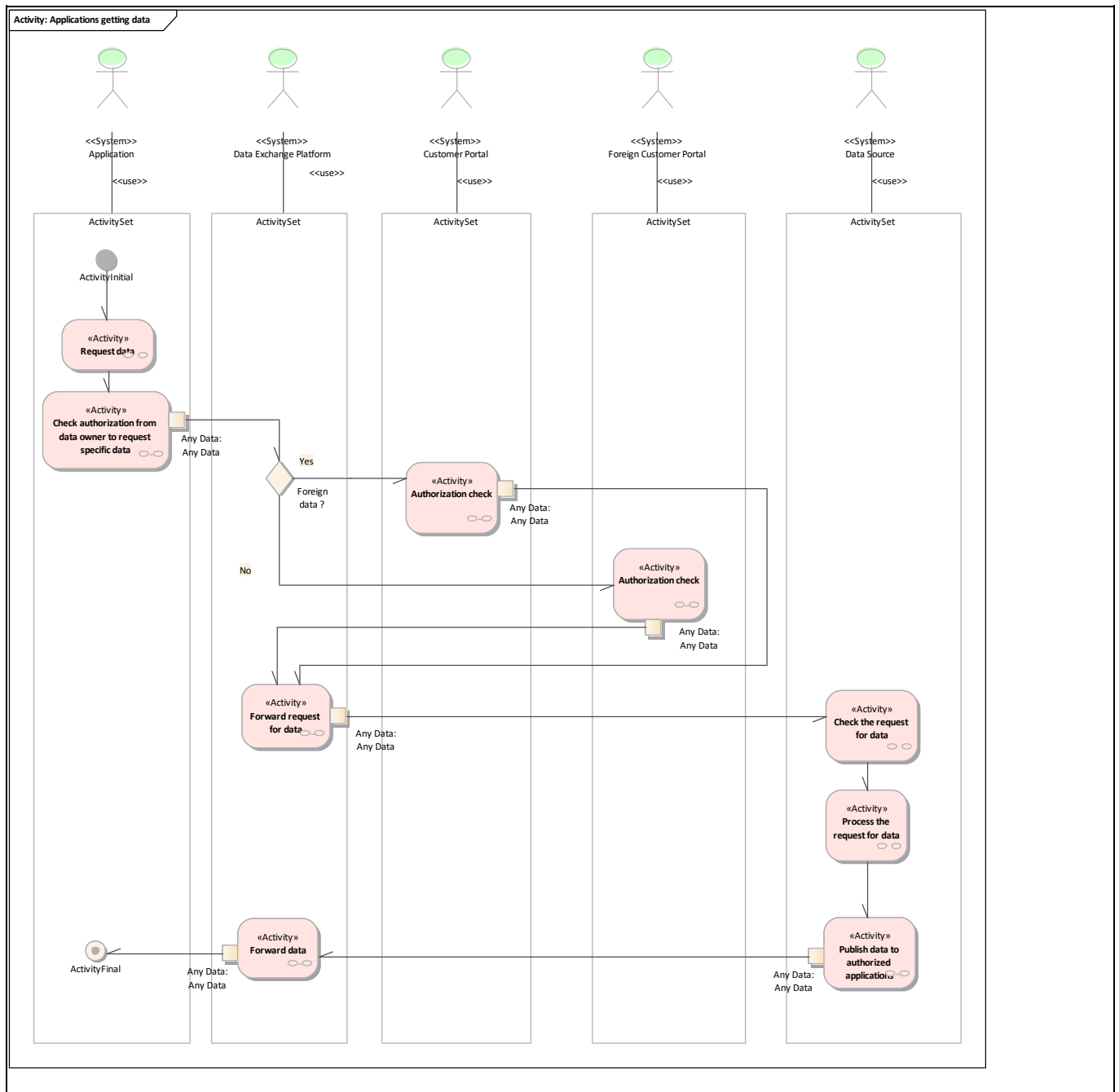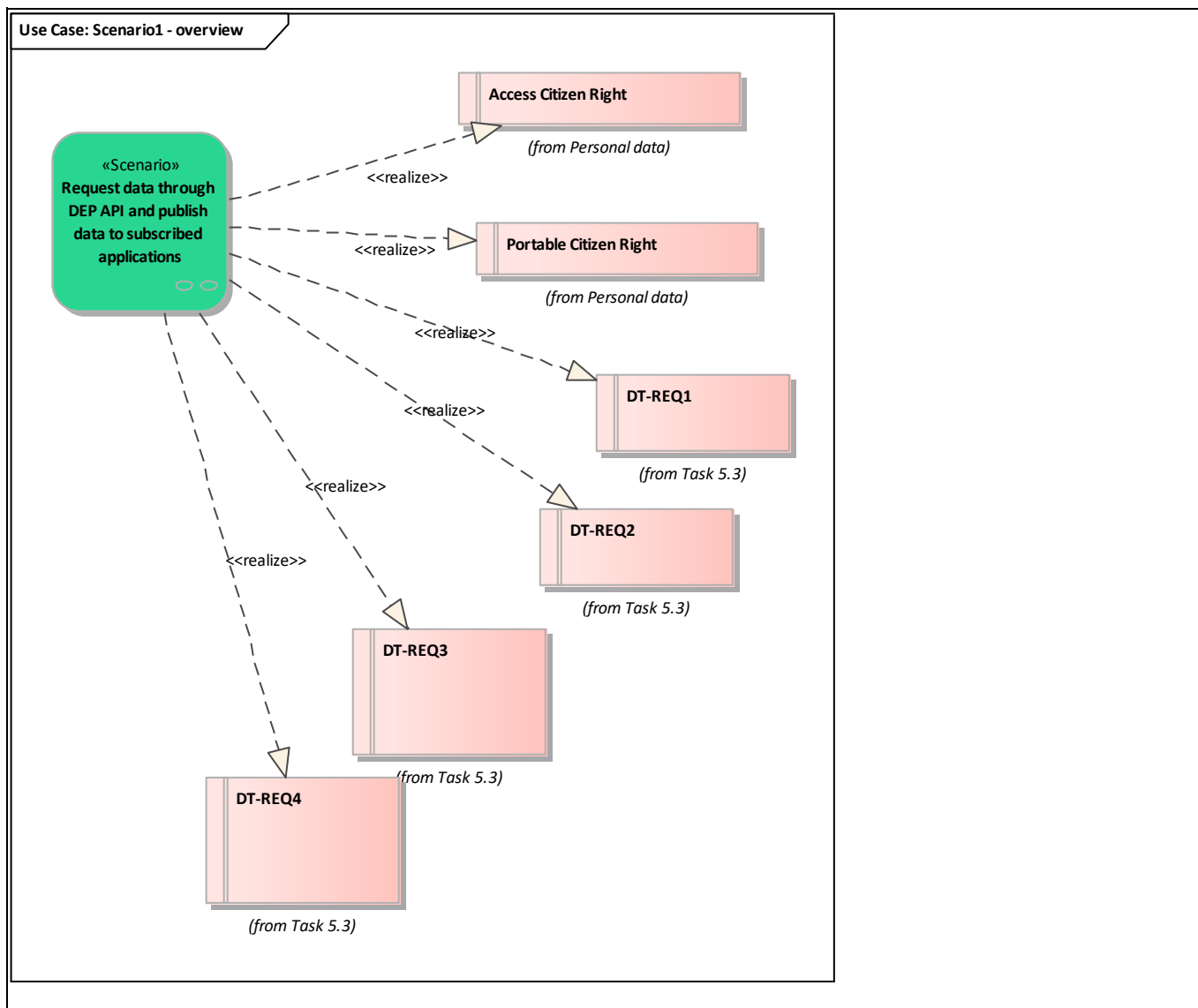|	Scenario conditions					
No.	Scenario name	Scenario description	Primary actor	Triggering event	Pre-condition	Post-condition
1	Request data through DEP API and publish data to subscribed applications	Data can be sent to an application if the application has requested for the data through DEP API or if it has subscribed to publications of this data.				
2	Download data through DEP customer portal	An authenticated user can check and download the data through DEP from any Data Hub, depending on the type of data (to be defined).				

2. **Steps - Scenarios**
▪ **Request data through DEP API and publish data to subscribed applications**

Data can be sent to an application if the application has requested for the data through DEP API or if it has subscribed to publications of this data.

Requirement list (refer to "Requirement" section for more information)	
Requirement R-ID	Requirement name
Cat1.Req1	Access Citizen Right
Cat1.Req2	Portable Citizen Right
Cat2.Req3	DT-REQ1
Cat2.Req4	DT-REQ3
Cat2.Req5	DT-REQ4
Cat2.Req6	DT-REQ2

Activity: Applications getting data

EU-SysFlex

Use Case: Scenario1 - overview

Scenario step by step analysis

Scenario								
Scenario name	Request data through DEP API and publish data to subscribed applications							
Step No	**Event**	**Name of process/activity**	**Description of process/activity**	**Service**	**Information producer (actor)**	**Information receiver (actor)**	**Information exchanged (IDs)**	**Requirement, R-IDs**
1.1		Request data	An application requests for data from a Data Source.		Application			
1.2		Check authorization from data owner to request specific data	According to "Manage access permissions" SUC, an application can receive authorization from a Data Owner to		Application	Customer Portal, Foreign Customer Portal	Info1-Any Data	

			request data from a Data Source.				
1.3		Authorization check			Customer Portal	Data Exchange Platform	Info1-Any Data	
1.4		Authorization check			Foreign Customer Portal	Data Exchange Platform	Info1-Any Data	
1.5		Forward request for data	The Data Exchange Platform forwards to the Data Source the request for data.		Data Exchange Platform	Data Source	Info1-Any Data	
1.6		Check the request for data	The Data Source checks whether there is valid authorization for the requesting application.		Data Source			
1.7		Process the request for data	The Data Source makes data available to the requesting application, in a "publish-stream" mode.		Data Source			
1.8		Publish data to authorized applications	The Data Source publishes data to all applications with valid authorization.		Data Source	Data Exchange Platform	Info1-Any Data	
1.9		Forward data	The Data Exchange Platform forwards the published data to authorized applications.		Data Exchange Platform	Application	Info1-Any Data	

- ## 1.2. Check authorization from data owner to request specific data

  Business section: Request data through DEP API and publish data to subscribed applications/Check authorization from data owner to request specific data
  According to "Manage access permissions" SUC, an application can receive authorization from a Data Owner to request data from a Data Source.
  Information sent:

Business object	*Instance name*	*Instance description*
Any Data	Any Data	

- ## 1.3. Authorization check

  Business section: Request data through DEP API and publish data to subscribed applications/Authorization check

  Information sent:

Business object	*Instance name*	*Instance description*
Any Data	Any Data	

- 1.4. Authorization check

  Business section: Request data through DEP API and publish data to subscribed applications/Authorization check

  Information sent:

Business object	Instance name	Instance description
Any Data	Any Data	

- 1.5. Forward request for data

  Business section: Request data through DEP API and publish data to subscribed applications/Forward request for data
  The Data Exchange Platform forwards to the Data Source the request for data.
  Information sent:

Business object	Instance name	Instance description
Any Data	Any Data	

- 1.8. Publish data to authorized applications

  Business section: Request data through DEP API and publish data to subscribed applications/Publish data to authorized applications
  The Data Source publishes data to all applications with valid authorization.
  Information sent:

Business object	Instance name	Instance description
Any Data	Any Data	

- 1.9. Forward data

  Business section: Request data through DEP API and publish data to subscribed applications/Forward data
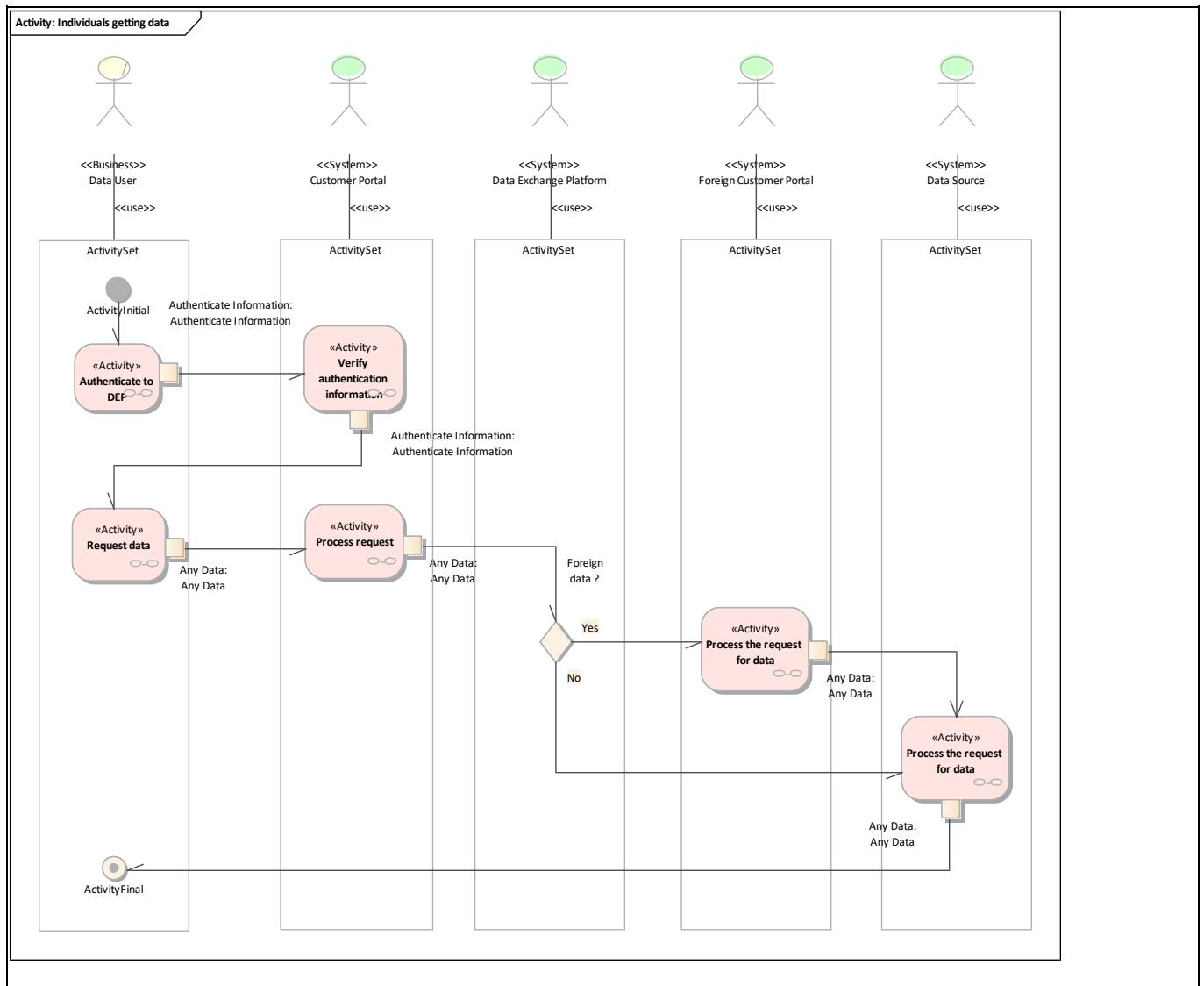 The Data Exchange Platform forwards the published data to authorized applications.
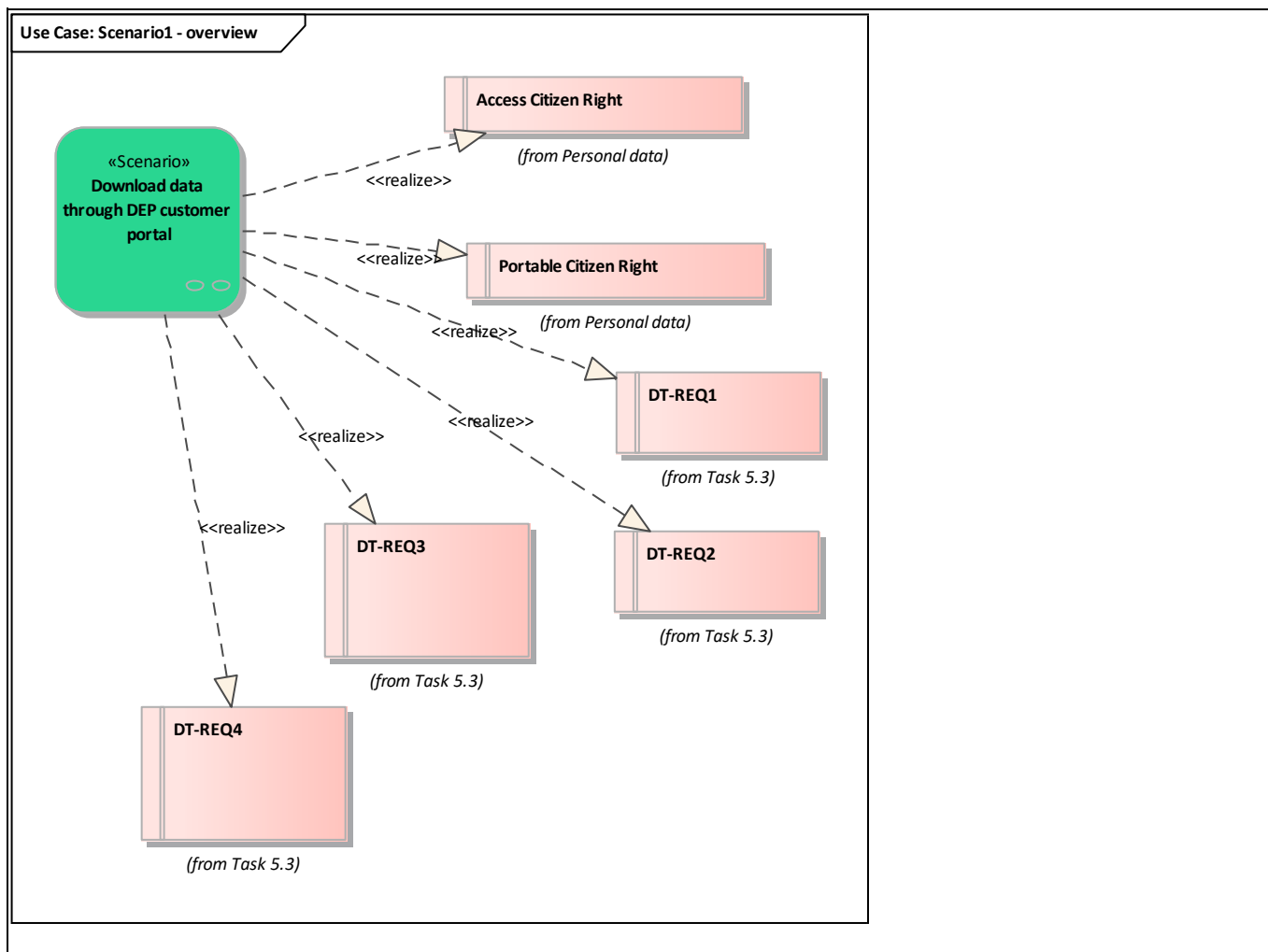 Information sent:

Business object	Instance name	Instance description
Any Data	Any Data	

- **Download data through DEP customer portal**

An authenticated user can check and download the data through DEP from any Data Hub, depending on the type of data (to be defined).

Requirement list (refer to "Requirement" section for more information)	
Requirement R-ID	Requirement name
Cat1.Req2	Portable Citizen Right
Cat1.Req1	Access Citizen Right
Cat2.Req3	DT-REQ1
Cat2.Req4	DT-REQ3
Cat2.Req5	DT-REQ4
Cat2.Req6	DT-REQ2

Activity: Individuals getting data

Scenario step by step analysis

Scenario								
Scenario name	Download data through DEP customer portal							
Step No	**Event**	**Name of process/activity**	**Description of process/activity**	**Service**	**Information producer (actor)**	**Information receiver (actor)**	**Information exchanged (IDs)**	**Requirement, R-IDs**
2.1		Process the request for data			Foreign Customer Portal	Data Source	Info1-Any Data	
2.2		Authenticate to DEP	Data users authenticates to Data Exchange Platform via a web-based customer portal or through 3rd party application.		Data User	Customer Portal	Info2-Authenticate Information	
2.3		Verify authentication information	The Data Exchange Platform verifies the authentication information and the representation rights.		Customer Portal	Data User	Info2-Authenticate Information	

2.4	Request data	Data users request for data via a DEP web-based portal or through 3rd party applications.		Data User	Customer Portal	Info1-Any Data	
2.5	Process request	If the Data User and the Data Source are not in the same country, the Data Exchange Platform forwards the request to the Foreign Data Exchange Platform.		Customer Portal	Data Source, Foreign Customer Portal	Info1-Any Data	
2.6	Process the request for data	The Data Source can create different kinds of file (e.g. Excel, PDF, XML).		Data Source	Data User	Info1-Any Data	

- ## 2.1. Process the request for data

  Business section: Download data through DEP customer portal/Process the request for data

  Information sent:

Business object	Instance name	Instance description
Any Data	Any Data	

- ## 2.2. Authenticate to DEP

  Business section: Download data through DEP customer portal/Authenticate to DEP
  Data users authenticates to Data Exchange Platform via a web-based customer portal or through 3rd party application.
  Information sent:

Business object	Instance name	Instance description
Authenticate Information	Authenticate Information	

- ## 2.3. Verify authentication information

  Business section: Download data through DEP customer portal/Verify authentication information
  The Data Exchange Platform verifies the authentication information and the representation rights.
  Information sent:

Business object	Instance name	Instance description
Authenticate Information	Authenticate Information	

- ## 2.4. Request data

  Business section: Download data through DEP customer portal/Request data
  Data users request for data via a DEP web-based portal or through 3rd party applications.
  Information sent:

Business object	Instance name	Instance description

Any Data	Any Data	

- ## 2.5. Process request

Business section: Download data through DEP customer portal/Process request
If the Data User and the Data Source are not in the same country, the Data Exchange Platform forwards the request to the Foreign Data Exchange Platform.
Information sent:

Business object	Instance name	Instance description
Any Data	Any Data	

- ## 2.6. Process the request for data

Business section: Download data through DEP customer portal/Process the request for data
The Data Source can create different kinds of file (e.g. Excel, PDF, XML).
Information sent:

Business object	Instance name	Instance description
Any Data	Any Data	

5. Information exchanged

Information exchanged			
Information exchanged, ID	**Name of information**	**Description of information exchanged**	**Requirement, R-IDs**
Info1	Any Data		
Info2	Authenticate Information		

6. Requirements (optional)

Requirements (optional)		
Categories ID	**Category name for requirements**	**Category description**
Cat1	Personal data	
Requirement R-ID	**Requirement name**	**Requirement description**
Req1	Access Citizen Right	Right to secure direct access of own personal data and to any processing, storage or sharing details
Req2	Portable Citizen Right	A copy of the data held may be requested by the individual in a portable format
Requirements (optional)		
Categories ID	**Category name for requirements**	**Category description**
Cat2	Task 5.3	Requirements integrated from Task 5.3.
Requirement R-ID	**Requirement name**	**Requirement description**
Req3	DT-REQ1	Transfer of data must be secured, by means of encryption or communication protocol
Req4	DT-REQ3	Data owner's access to data through DEP (and foreign DEP)
Req5	DT-REQ4	Application's access to data through DEP (and foreign DEP)

Req6	DT-REQ2	Data portability (applies to personal data - Article 20 of the GDPR)

7. Common terms and definitions

8. Custom information (optional)