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**e-TrustEx – Asynchronous service Use Case Specification**

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# Use Case description

This Use Case describes the service offered by the e-TrustEx system to exchange any type of business document.

This Use Case includes other Use Cases that correspond to the generic components (e.g. components that do authentication, validation) and is extended by other Use Cases that describe the business document specific processing.

# Flow of events

# Basic flow

# System receives the message

* This use case starts when the user submits a message to the adequate entry point. In case the User is outside of EC internal network, this opens an https connection between the User and the System;

# System routes the message to the right channel and transforms the message

* The message is routed to the write message channel;
* The system performs following checks based on the information carried in the HTTP request and the SOAP message;

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ID | Description | Element path | Severity | Category | Subcategory |
| RULE60 | Payload type validation. | N/A | Hard | Message body check | Payload type |
| RULE264 | SOAP body service validation. The system validates element against the service type expected by the service. | N/A | Hard | Message body check | Payload type |

* The system transforms the message in the e-TrustEx structure and performs the checks based on the configuration settings (e.g. Message size check);

# System authenticates the User

* The systems authenticates the User;
* At this step include [UC1\_15\_1 User Access Use Case Specification](https://webgate.ec.europa.eu/CITnet/svn/ETRUSTEX/trunk/001%20e-TrustEx/002%20Requirements/Use%20Case%20Model/UC1_15_1%20User+Access+Use+Case+Specification.docx);

# System validates the document ID

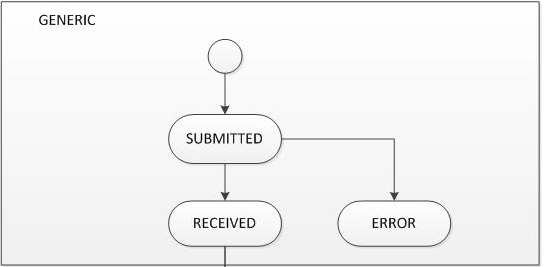
* For all documents, the systems checks the following:
* The Document ID is not empty
* The length of the Document ID is not longer than 250 characters
* The Document ID only has ASCII characters
* These checks, though are part of the core checks, as they are registered with different IDs, these checks are further detailed in the specific Validation Use Cases (see Table Business Document, Validation Use Case and specific Use Case).

# System performs the Synchronous validation

* If synchronous validation has been enabled for the business document type, the system performs the necessary validation;
* At this step include the Validation Use Case for the submitted business document, in particular the section “Synchronous validation“. The right Validation Use Case for the business document is presented in the table Table. 1 Business Document, Validation Use Case and specific Use Case;

# System stores the message

* The system checks if the message was not submitted before and it finds that there is no message submitted before with the same ID
* After the synchronous validation, the systems stores the message
* The system persists the message and records the following information:
* The date and time when the message was created
* The reference to the message binary stored in the Binary table
* The ID of the document
* The status of the document is set to “SUBMITTED”
* The ID of the agreement that corresponds to this document
* The ID of the Issuer of the document
* The ID of the transaction
* The Issue date and the Receipt date
* The ID of the Receiver
* The ID of the Sender
* The message document type
* At this step the system checks if the ID of the message is unique (see Table 2 Generic unicity check of the message)
* Concerning the status, if all the processing is ok, the status will the “RECEIVED” otherwise it will be “ERROR”.



# System acknowledges the message

* The system creates the technical acknowledgment and sends it back to the Requester.
* The acknowledgment is digitally signed and contains the following information:

|  |  |
| --- | --- |
| **Element** | **Xpath** |
| **SOAP Body** | |
| **AckIndicator** | *AckIndicator – Boolean value* |
| **Timestamp** | *The timestamp, used to offer long-term and independent proof that the information existed at a particular point in time and has not been altered since and can be expressed as :*   * *A digital signature* * *RFC3161TimeStampToken* |
| **IssueDate** | *In the case where a Timestamping Authority is not available, the IssueDate is present instead of the Timestamp. The IssueDate is the system date of reception.* |
| **ID of the message** | *AcknowledgedDocumentReference.DocumentReference.ID* |
| **DocumentTypeCode** | *AcknowledgedDocumentReference.DocumentReference.DocumentTypeCode ( e.g. “BDL”)* |
| **SenderPartyID** | *AcknowledgedDocumentReference.DocumentReference.SenderParty.EndpointID – the Sender Party ID from the business header* |
| **ReceiverPartyID** | *AcknowledgedDocumentReference.DocumentReference.ReceiverParty.EndpointID - the Receiver Party ID from the business header* |

# System performs the asynchronous validation

* After the acknowledgment of the message was successfully executed, the system performs the asynchronous validation;
* At this step include “Validation Use Case” for the submitted business document, in particular the section “Asynchronous validation“. The right Validation Use Case for the business document is presented in the table Table. 1 Business Document, Validation Use Case and specific Use Case

# System performs the business specific processing

* Based on the business document type, the system performs the business specific processing;
* The business specific checks are configurable and include at least the following types:
* XSD validation
* Schematron validation
* Parent document check validation. Common to all types of documents are the following parent document related checks:
* The parent document referred in the document submitted exists ( based on the ID and the DocumentTypeCode)
* The Sender of the submitted document and the parent document are the same
* The Table. 1 Business Document, Validation Use Case and specific Use Case summarizes the types of business documents support by e-TrustEx and the corresponding Use Case that extends this Use Case;
* At this step, the current Use Case is extended by the specific Use Case; (e.g. [UC1\_3\_1.Submit+Document+Bundle+Use+Case+Specification](https://webgate.ec.europa.eu/CITnet/svn/ETRUSTEX/trunk/001%20e-TrustEx/002%20Requirements/Use%20Case%20Model/UC1_3_1.Submit+Document+Bundle+Use+Case+Specification.docx))

# System dispatches the message

* The system checks the corresponding profile configuration for forwarding and notification settings
* If needed, the message is forwarded by calling the adequate adapter
* If the system is configured to send a notification after the business specific processing, the system calls the notification service from the Requester side, using the following parameters:
  + The ReferenceID – the ID of the message;
  + The Response Code “DocumentTypeCode”+”:”+”8”;
  + A description may be added “Notification: processing OK”;
* **The Use Case ends.**

# Exceptional flows

### E1 at Step "2.1.2 System routes the message to the right channel and transforms the message" and the system is down

* The User receives a 503 Service Unavailable or Connection Refused;
* The Use Case ends.

### E2 at Step “2.1.2 System routes the message to the right channel and transforms the message” and the message body does not contain only one direct child element

* System submits a SOAP Fault [5] with the following description: “Undefined operation”;
* This closes the https connection between the User and the system;
* The Use Case ends.

### E3 at Step “2.1.2 System routes the message to the right channel and transforms the message” and the operation XML wrapper element does not contain one and only one element

* System submits a SOAP Fault [7];
* This closes the https connection between the User and the system;
* The Use Case ends.

### E4 at Step “2.1.4 System performs the Synchronous validation” and an error occurs

* The errors are described in the specific “Validation Use Case”, section “2.Errors” (see Table 1 Business Document, Validation Use Case and specific Use Case).

### E5 at Step “2.1.5 System stores the message” and the message was already submitted

* System submits a SOAP Fault [19] with Response Code “DocumentType:3”;
* An additional description may be added;
* This closes the https connection between the User and the system;
* The Use Case ends.

### E6 at Step “2.1.6 System acknowledges the message” and a technical error is reported

* The system detects when a sender closes its connection. In this case the system cannot respond to the subsequent request;
* The Use Case continues at the next step.

### E7 at Step “2.1.7 System performs the asynchronous validation”

* The errors are described in the specific “Validation Use Case”, section “2.Errors” (see Table 1 Business Document, Validation Use Case and specific Use Case).
* The type of error generate is Application Response.

### E8 at Step “2.1.8 System performs the business specific processing”

* The errors are described in the specific Use case per business document (see Table 1 Business Document, Validation Use Case and specific Use Case).
* The type of error generate is Application Response.

### E9 For all the steps when a technical failure is reported

* For any technical failure in the synchronous part a SOAP fault is generated.
* For any technical failure in the asynchronous part an Application response is generated.
* The initial message is saved in both cases.

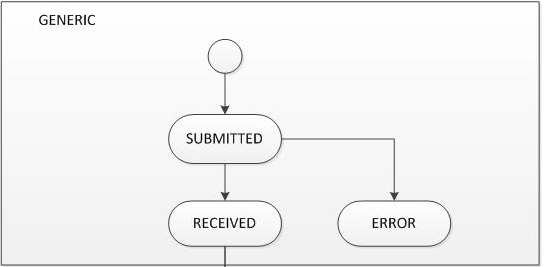
### E10 at Step “2.1.4 System validates the document ID” and the validations fails

* The system performs subflow **2.3.1 S1. Persist message upon failure**
* The following parameters are added to the Application Response:
  + A Response Code is added "DocumentCode:4"
  + A Description may be added
  + The Status of the message is “ERROR”
* The use case ends.

# Subflow

# S1. Persist message upon failure

* The system creates an Application Response
* The system persists the Application Response and records the following information in the message table etr\_tb\_message:
* The date and time when the message was created
* The reference to the message binary stored in the Binary table
* The ID of the document
* The ID of the agreement that corresponds to this document
* The ID of the Issuer of the document
* The ID of the transaction
* The Issue date and the Receipt date
* The ID of the Receiver
* The ID of the Sender
* The message document type
* An additional entry in the binary table etr\_tb\_message\_binary is created, storing the Application Response xml. This xml would include information regarding the document which failed during the validation process:
* If available, the ID of the document is added
* Its DocumentTypeCode is added
* The Issue Date of the document is added
* The status of the document which failed during the validation process changes to “ERROR”



# Special Requirements

N/A.

# Preconditions

N/A.

# Post conditions

The status of the message is “RECEIVED” for successful submission and processing and “ERROR” for failed submission.

# Additional Information

Table 1 Business Document, Validation Use Case and specific Use Case

|  |  |  |
| --- | --- | --- |
| Business document | Validation Use Case | Specific Use Case |
| Document Bundle | [UC1\_3\_2 Validation Document Bundle Use Case Specification](https://webgate.ec.europa.eu/CITnet/svn/ETRUSTEX/trunk/001%20e-TrustEx/002%20Requirements/Use%20Case%20Model/UC1_3_2.Validation+Document+Bundle+Use+Case+Specification.docx) | [UC1\_3\_1 Submit Document Bundle Use Case Specification](https://webgate.ec.europa.eu/CITnet/svn/ETRUSTEX/trunk/001%20e-TrustEx/002%20Requirements/Use%20Case%20Model/UC1_3_1.Submit+Document+Bundle+Use+Case+Specification.docx) |
| Application Response | [UC1\_4\_2 Validation Application Response Use Case Specification](https://webgate.ec.europa.eu/CITnet/svn/ETRUSTEX/trunk/001%20e-TrustEx/002%20Requirements/Use%20Case%20Model/UC1_4_2.Validation+Application+Response+Use+Case+Specification.docx) | [UC1\_4\_1 Submit Application Response Use Case Specification](https://webgate.ec.europa.eu/CITnet/svn/ETRUSTEX/trunk/001%20e-TrustEx/002%20Requirements/Use%20Case%20Model/UC1_4_1.Submit+Application+Response+Use+Case+Specification.docx) |
| Attachement | [UC1\_14\_2 Validation Attachment Use Case Specification](https://webgate.ec.europa.eu/CITnet/svn/ETRUSTEX/trunk/001%20e-TrustEx/002%20Requirements/Use%20Case%20Model/UC1_14_2.Validation+Attachment+Use+Case+Specification.docx) | [UC1\_14\_1 Submit Attachment Use Case Specification](https://webgate.ec.europa.eu/CITnet/svn/ETRUSTEX/trunk/001%20e-TrustEx/002%20Requirements/Use%20Case%20Model/UC1_14_1.Submit+Attachment+Use+Case+Specification.docx) |

Table 2 Generic unicity check of the message

|  |  |  |  |
| --- | --- | --- | --- |
| DocumentType | ID | Description | Severity |
| DocumentBundle | **RULE268** | DocumentBundle.ID  Must not have been sent previously by the same SenderParty to the same ReceiverParty.  A message is uniquely identified by its ID, Type, Sender Party, and Receiver Party. | Hard |
| ApplicationResponse | **RULE306** | Document ID  Must not have been sent previously by the same SenderParty to the same ReceiverParty.  A message is uniquely identified by its ID, Type, Sender Party, and Receiver Party. | Hard |
| Attachment | **RULE40** | Attached Document. Identifier  Must not have been received previously. | Hard |