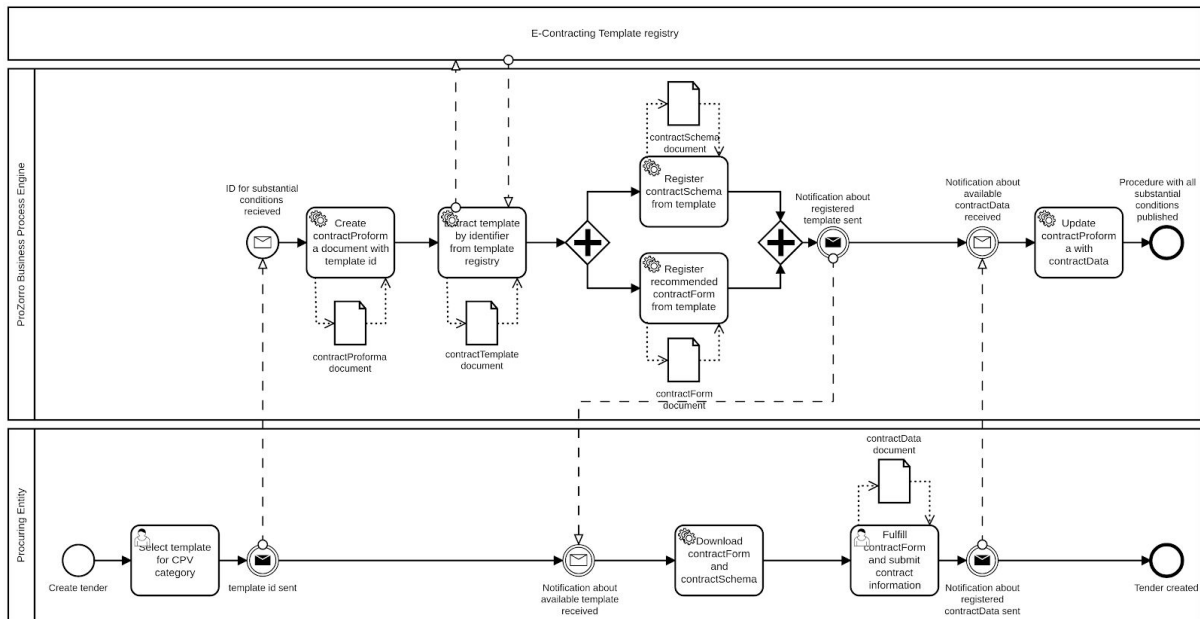


The e-Contracting solution consist out of three components:

1. Functionality for usage of templates or functionality of templateRegistryBot.
2. Functionality for data collection, contract generation and preview or functionality of rendererBot.
3. e-Contract signing process.

Functionality for usage of templates

Figure 12. Business process of functionality for usage of templates



BPMN: <https://cawemo.com/share/7da6af9d-20f2-4f70-8a1a-01ff12f869aa>

ProZorro e-Contracting enables the Contracting Authority with the option to choose one of ready to use contract templates according to CPV category while preparing tender notice.

After the contract template was selected ProZorro Business Process Engine receives template **ID** and registers draft **contractProforma** document.

contractProforma document serves as a placeholder for different Contract Proforma revisions. Throughout the tender procedure **contractProforma** document can be updated several times:

Table 18. contractProforma progress through tender process

Event	Version	Purpose
Tender creation	Blank document with	Draft Contract Proforma placeholder

	template ID	
contractData <i>submission of Contracting Authority (can happened multiple times through tenderPeriod)</i>	Updated with contractData about Contracting Authority and purchased product	<i>Initial Contract Proforma required for tender documentation</i>

Afterwards system automatically extract template document from e-Contracting template registry and generates following documents based on data extracted from template:

contractTemplate - contract template document;

contractSchema - document with required contract data schema for template;

contractForm - document with recommended JSON form.

! Note: All documents are associated with the **contractProforma** by new reference type **documentOf** and attribute **relatedItem** which indicates document **ID** of the documents collection.

The marketplaces of Contracting Authority and Economic Operators are extracting **contractSchema** and **contractForm** to render convenient and simple online forms, collect extra contract information within the procurement process (notice publishing, bid submission, contract preparation) and validate inputs on their own user interfaces.

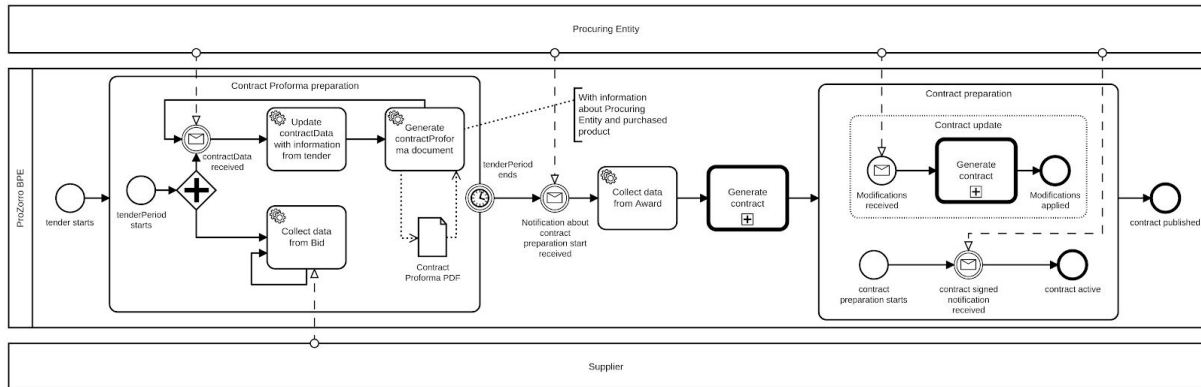
! Note: Information required for the contract is defined by the structure of the template prepared by government legal experts (for example from Central Purchasing Bodies).

Contracting Authority marketplace uploads JSON document with **contractData** type with acquired data linked with **contractProforma** by providing **document** as value of **documentOf** attribute and **relatedItem** equal to corresponding **contractProforma** document **id**.

Information on the Contracting Authority, Economic Operators, corrections from the Contracting Authority are additional attachments of **contractData** type to **documents** collections of **Tender**, **Bid** and **Contract**.

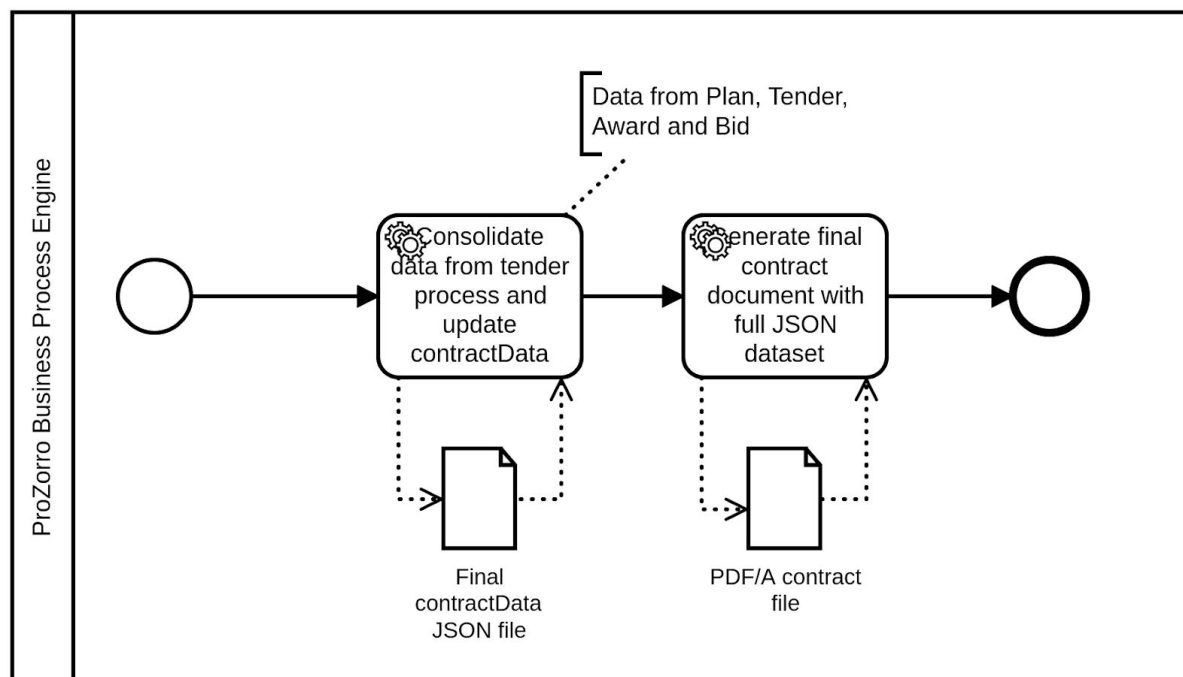
Functionality for data collection, contract generation and preview

Figure 13. Business process of data collection, contract generation and preview



BPMN: <https://cawemo.com/share/d0d7de0c-76de-4894-b615-qfecc1e5abb6>

Figure 14. Business process of Contract document generation



BPMN: <https://cawemo.com/share/0d757fca-8560-4acd-b597-86edaa748137>

Within **tenderPeriod** marketplace of Contracting Authority performs following steps:

Obtains documents of type **contractForm** and **contractSchema** for data collection;
 Acquire data about Contracting Authority according to **contractSchema** with **role** equal to **buyer**;

Uploads JSON document with **contractData** type with acquired data linked with **contractProforma** by providing **documentOf** attribute equal to document and

relatedItem equal to corresponding **contractProforma** document **id**. Document is uploaded into tender **documents** collection;

Auxiliary component renderer bot (rBot):

Supplements **contractData** with information about purchased product from procedure;
Generates initial PDF/A file of **contractProforma** with information about Contracting Authority and purchased product;
Updates tender with new version of document **contractProforma**.

At the bid submission stage, marketplace of Economic Operator performs following steps:

Obtain documents of type **contractForm** and **contractSchema** for data collection;
Acquire data about Economic Operator according to **contractSchema** with **role** equal to **supplier**;
(Optional) Generates **contractData** document and PDF/A file of contract as if Economic Operator awarded as a *winner*, available for **preview**;
Uploads JSON document with **contractData** type with acquired data linked with **contractProforma** by providing **documentOf** attribute equal to document and **relatedItem** equal to corresponding **contractProforma** document **id**. Document is uploaded into submitted bid **documents** collection;

e-Contracting signing process

At the beginning of the contracting process auxiliary component rBot (renderer) generates a JSON **contractData** document based on aggregated data from various procedure objects, such as: **Plan**, **Tender**, **Bid**, **Award** and **Contract** and forms **PDF/A** version of contract based on this file.

! **Note:** Process data related to **Plan**, **Tender**, **Award** and **Bid** at the time of contract generation are complete and can not be modified.

In case of errors in aggregated **contractData** (from tender announcement or bid submission stages), Procuring Entity can upload updates for **contractData** to the contract document until activation of the contract.

To do this marketplace of Contracting Authority performs following steps:

Obtains documents of type **contractForm** and **contractSchema** for data collection;
Updates data about Contracting Authority and/or Economic Operator according to

contractSchema with role equal to **buyerCorrigenda**;

Uploads JSON document with **contractData** type with acquired data linked with **contractProforma** by providing **documentOf** attribute equal to document and **relatedItem** equal to corresponding **contractProforma** document **id**.

In result Contracting Authority and Economic Operator would see following list of documents in contract:

JSON file of **contractData** based on which contract was created;

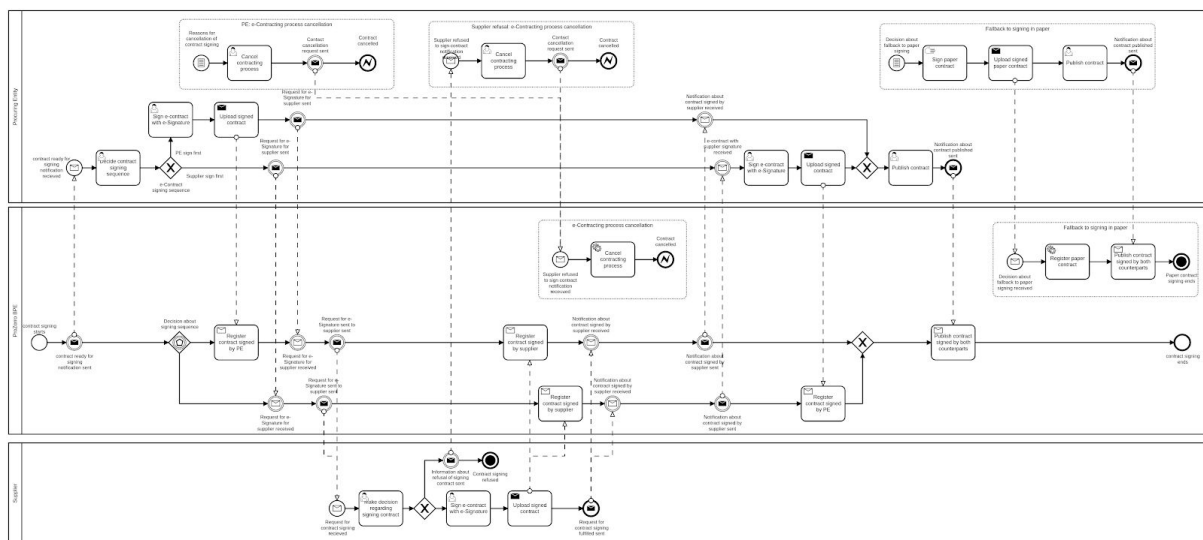
PDF/A file of the final contract version. Such file include following documents inside:

contractProforma;
contractTemplate;
contractSchema;
contractForm;
contractData.

The contract signing procedure will take place in the **Contract** object during **status: pending**.

Workflow:

Figure 15. Business process of contract e-signing



BPMN: <https://cawemo.com/share/05b1e66e-4724-4e14-ade6-eb8716683a19>

Option A

The generated contract is transferred to the Economic Operator for signing. Then it is signed by the Contracting Authority and with all signatures is transferred to **status: active**.

Option B

The generated contract is transferred to the Contracting Authority for signing. Then it is signed by the Economic Operator and with all signatures is transferred to **status: active**.

Error Option

The generated contract is transferred to the Economic Operator for signing. If the contract is not signed within the expected period of time or if refused to be signed, the Contracting Authority may cancel the signing by transferring the Award to **status: cancelled**.

After activating the contract, the ASIC container of the contract is formed and sent to the contract registry.

An electronic signature is applied next to PDF:

Table 19. E-Signature structure

Field	Description
document:type: contractSignature	Determines the appropriate document type
document:author: winner	Identification of a document author
document:documentOf: document	Reference type of relation to the contract
document:relatedItem: {id}	Identifier of contract document