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VCD Criteria Definition and Validation Specification – Requirements Analysis



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1 Introduction

The currently specified PEPPOL WP2 solutions for creating VCD containers give Economic Operators (Tenderers) the possibility to select the relevant criteria of qualitative selection which a Contracting Authority is requesting proof for in a specific tendering process. In this process the European VCD system is supporting Economic Operators by suggesting the most frequent requested criteria in public tenders. Although the basis for such functionality is already contained in the current solution, it does not adequately meet the requirements concerning the collaboration between Contracting Authorities and Economic Operators. The PEPPOL WP2 solutions do not contain functionality for Contracting Authorities to specify these criteria beforehand in a computable way. Instead the European VCD system proposes a fixed set of criteria to Economic Operators that are frequently requested in public tenders. The Economic Operator still has to interpret the tender requirements defined in the Call for Tender in order to select the appropriate criteria.

Thus the currently provided functionality takes the role of a generic guideline for Economic Operators but it does not reflect the terms of a specific tender. The specification of criteria of qualitative selection is a tender-specific process which belongs to the preparations of the Call for Tender or Contract Notice that is typically done by the Contracting Authority. In order to support the communication between Contracting Authorities and Economic Operators with respect to criteria selection, PEPPOL WP2 would like to propose a solution how a Contracting Authority can specify relevant criteria of qualitative selection and in the same time to let the Economic Operator use this criteria as a basis for the VCD preparation. As this part of the collaboration belongs to the Call for Tender or Contract Notice preparations it can be seen as a subactivity and should in the long run be adequately integrated into existing behaviors, specifications or applications.

In autumn 2010, a structural WP2 target for such a solution for Contracting Authorities has been introduced by the POO with the following goals:

- ▶▶ **Support Contracting Authorities** in order to foster acceptance of the VCD Solutions
- ▶▶ **Improve efficiency** in the whole tender process (e.g. by minimizing changes in format)
- ▶▶ **Reduce uncertainty** whether the Criteria in the CfT have been interpreted correctly and are proven in the Tender
- ▶▶ Provide **interoperable solutions** with regard to the existing VCD solutions and specifications

In order to support all European countries with an adequate and interoperable method the following two cases have to be distinguished:

- ▶▶ the criteria of a legal domain/country have been modeled in the EVS as ontology
- ▶▶ the criteria of a legal domain/country have not been modeled in the EVS as ontology

It is crucial, that the solution is constructed in a way, that the resulting output information of this solution is a valid and interoperable input to the existing other VCD solutions, which construct a VCD container.

2 Business Process

The process currently targeted by the VCD solution focuses primarily on the Economic Operator's ability to create a VCD package but does not support the Contracting Authorities in defining relevant qualification criteria electronically. Thus there is no common electronic format to specify and exchange criteria that are relevant for a tender. Currently the Economic Operators have to choose the requested criteria manually (based on a textual description of the requested criteria in the Call for Tender, e.g. on paper).

The following figure shows the current process:

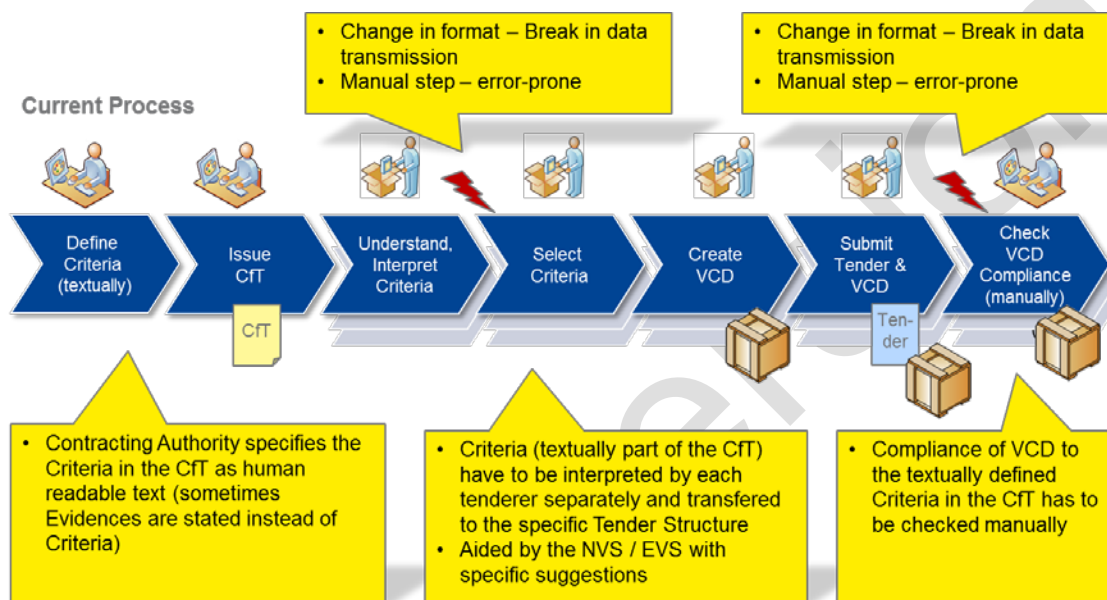


Figure 1: Current VCD process.

This implies the following weaknesses in the current process:

- ▶▶ Multiple changes in (data) format and break in data transmission during criteria definition and selection.
- ▶▶ The collaboration between Contracting Authority and Economic Operator is not specified and electronically supported with regard to the tender-specific criteria definition needed for the VCD creation process.
- ▶▶ The interpretation of the Criteria in the CFT is done manually and separately for each Economic Operator.
- ▶▶ No automated support for checking VCD compliance against requested criteria.
- ▶▶ Current solutions provide mainly support for Economic Operators but not for Contracting Authorities which may result in lower acceptance of the current VCD solutions.

To eliminate these weaknesses and provide better support for Contracting Authorities and Economic Operators the available processes should be enhanced and enriched as described in the following figure. The extended process reduces manual steps (and the number of process steps in total) and fosters electronic data submission to avoid data format changes. The blue symbol ("C1, C2 and C3") represents a "Criteria Template" that defines tender-specific criteria requested by a Contracting

Authority. This “Criteria Template” is an interoperable electronic data package which can be used as an input for the VCD creation process:

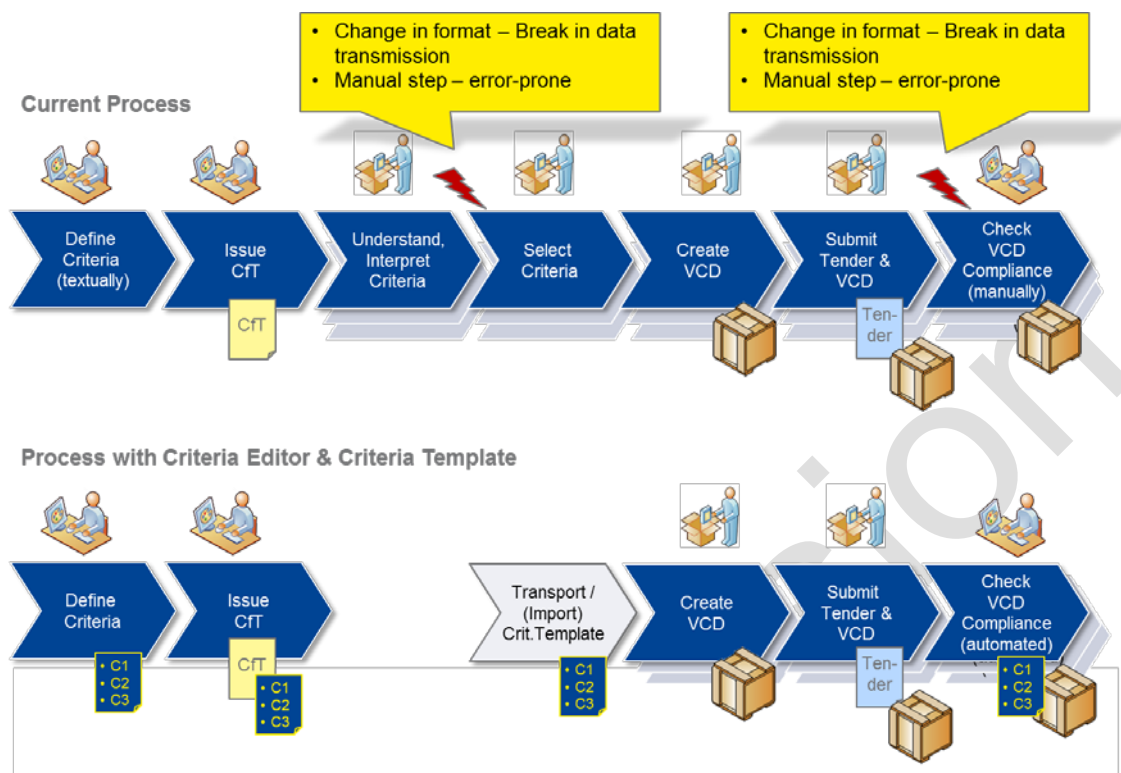


Figure 2: Current VCD process versus new VCD process.

The main advantages of this new process are the following:

- ▶▶ The Contracting Authority defines the requested criteria early in the process in an interoperable electronic data format (instead of defining them only in written free text).
- ▶▶ The Economic Operator does not need to "select" the criteria manually (based on the written free text statement of the Contracting Authority) but can use an interoperable electronic data package containing the requested criteria (Criteria Template). The steps "Understand, Interpret Criteria" and "Select Criteria" of the Economic Operator are therefore no longer necessary.
- ▶▶ The validation of a VCD package can be done automatically by checking the received evidences against the requested criteria instead of a manual check by the user of Contracting Authority. This automated check can not only prove the technical compliance of a VCD package but also the validity of supplied evidences according to the common legal ruleset (Ontology).
- ▶▶ The breaks in data transmission and data format changes are eliminated and the number of manual steps are reduced to improve the process quality and reduce the process cycle time.

2.1 Dependencies with Call for Tender / Contract Notice

As clarified in the previous section there are several dependencies between the Call for Tender / Contract Notice on the one hand and the Criteria Template on the other hand. These dependencies can also be found in the Catalogue Template developed by WP3.

Both WPs came to the conclusion that the catalogue template or criterion template should as much as possible be a stand-alone document. Thereby it must include the information typical of its own nature

(e.g. for the VCD criteria template to define relevant information entities with regard to qualification requirements) and avoid duplications of information that can be found in other documents (e.g. the CfT).

This design strategy also leads to the conclusion that the criteria template should be used and promoted together with the Call for Tender in order to get a complete picture of the requirements. An example for such dependency is the information about the tendering platform and supported signature methods. These information entities are not targeted in the criteria template but are an integral part of the Call for Tender. Nevertheless these elements might be necessary to create the VCD correctly and to provide the VCD into the right directory.

Also standardization initiatives like CEN BII have identified the importance to separate the different elements of a Call for Tender supporting their modularization into subparts as well. As the standardization concerning Call for Tenders is very complex and as a result of this neither mature nor complete data models are available it is possible to encourage the adoption of such standards by defining mature and complete subparts of the Call for Tender. Currently the CEN BII workshop is elaborating possibilities to support modularization with regard to the Call for Tenders.

2.2 Legal Clarifications

This chapter is based on the document "Legal Specification: Clarifying of Evidence types and User stories" in Version 0.3, date 25.08.2011.

In Deliverable 2.1 the term "Evidence" was defined within a taxonomy clarifying the different aspects of this term. This definition has been further clarified and simplified by the Legal Team (see document "Legal Specification: Clarifying of Evidence types and User stories" in Version 0.3, date 25.08.2011) to the following evidence type tree.

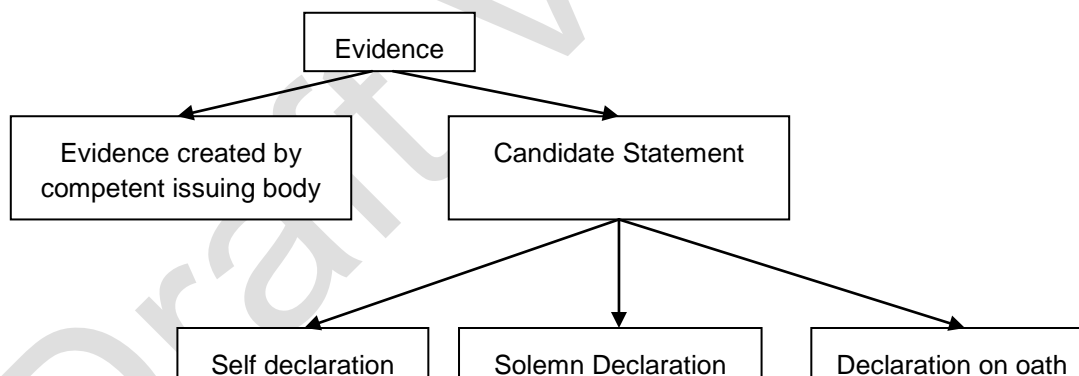


Figure 3: New Taxonomy of the term evidence

The taxonomy of the concept "evidence" differentiate between

- » evidences provided by the candidate himself (e.g. self-declaration, declaration on oath, solemn statement) or
- » evidence where the issuer is not the candidate (e.g. certified authorities and/or [authorized] third parties).

At first the term "attestation" was redefined as "*evidence created by competent issuing body*". The legal group has chosen the name "competent" because it refers to any kind of body (public or private) that has the competence or power for providing statements in a particular domain. In contrast to the old terminology "*an attestation where the issuer is not the candidate*" was ambiguous as it does not necessarily refer to a specific body that competence for providing statements. Also the term "*attestation*" seemed to be ambiguous as it refers to "the act of witnessing a signature for the purpose

of declaring that a document (like a will) was properly signed and declared by the signer to be his or her signature”¹. In contrast the term evidence is more generic: “Evidence in its broadest sense includes everything that is used to determine or demonstrate the truth of an assertion. Giving or procuring evidence is the process of using those things that are either (a) presumed to be true, or (b) were themselves proven via evidence, to demonstrate an assertion's truth. Evidence is the currency by which one fulfills the burden of proof”².

Secondly the term “*candidate statement*” was chosen as a high level concept refereeing to a number of sub-concepts like self-declaration, solemn statement, declaration on oath or declaration of honour. The legal group has chosen the name “*candidate statement*” as it was most neutral to the different statements that can be produced by an economic operator and to reflect different quality aspects of *candidate statements*.

All concepts have been defined by the legal group in the following hierarchy which reflects the rules that apply with regard to substitution rules (cascades) for evidence:

Category	Short name	Definition
1	Evidence created by competent issuing body	A document issued by an authority or trusted third party (public and private) that has the competence for providing statements in this particular domain. A competent issuing body is any entity or organization (either public or private) that has the capacity or power to perform a designated function. Whether an authority is competent or not depends upon the domain or more specifically the criteria to be proven.
2	Declaration on oath	A candidate statement to be declared under the presence of a judicial or administrative authority, notary or professional organisation. False declaration on oath is itself a criminal offence.
3	Solemn Statement	Solemn Statements are candidate statement where a competent body (e.g. notary) confirms (as a witness) the identity of the person making the self declarations. This raises credibility but does not have further legal implications than a self declaration.
4	Self Declaration	A self-declaration is an informal candidate statement which has in principle no further legal consequence apart from offences like fraud etc

Figure 4: Categories and differences among evidence types

The list above shows the different types of evidences that can be provided by an economic operator. The descending order introduced by the different categories is the basis for finding the best possible match in terms of evidence provision. Thereby two different contexts have to be taken into consideration:

- ▶▶ The first context is that the rules of the Contracting Authority apply and provide the information about the minimum standard or requirements and which category would be accepted by the Contracting Authority. These are firstly the requirements outlined in the Call for Tender and secondly the cascading rules within the national legislation.
- ▶▶ The second context is the available options (categories: 1-4) in the country of the Economic Operator.

The first context (Requirements of the CfT/CA and Cascading rules) has to be taken into consideration when looking at the second context (Options). If the cascading rule defines 1-3 as accepted proof of evidence then it has to be checked against the options an Economic Operator has. If (1) is available in

¹ <http://legal-dictionary.thefreedictionary.com/attestation>

² <http://en.wikipedia.org/wiki/Evidence>

the country of the Economic Operator it has to be taken. If the Economic Operator only could provide option (2) it has to provide this option.

Summing up, we can identify the following two concepts that should be distinguished within the criterion editor:

- Evidence created by competent issuing body
- Candidate statement

2.2.1 Declaration of honour or candidate statement for many/all criteria

A declaration of honour is similar to a candidate statement (note that it is not part of the taxonomy in Figure 4) and serves the purpose of proving several/all criteria instead of the usually requested evidences.

A contracting authority that expects candidate statements for many/all criteria of the contract instead of the original evidences points to special procedure. No evidence created by competent issuing body will be required as a proof but a declaration of honour. In this case the rules of the EVS or the rules of the national legislation are overruled. A template for a declaration of honour is usually provided by the contracting authority.

In this case, the suggestions and options usually presented by the NVS/VCD Builder are overruled by presenting the use of the (to be filled in) template for a declaration of honour as the only possible evidence for the specific criteria.

2.2.2 Usage of Predefined templates in Criterion Editor

As described in the previous example the criterion editor should provide the capability to the contracting authority to include or reference predefined document templates for providing candidate statements. It should be possible to link such predefined document templates to a specific subset of criteria (one or more) or to all criteria (in case of a single declaration of honour for all criteria).

3 User Stories und Requirements

The detailed requirements for solutions supporting Contracting Authorities are described in this chapter. As precondition (PreC) the following scenarios must be supported by the solution:

- ▶▶ **PreC 001:** the country and legal domains of a CA are modeled as ontology in the European VCD system
- ▶▶ **PreC 002:** the country and legal domains of the CA are not modeled as ontology in the European VCD system. A European reference ontology, criteria code lists or "initial basic ontology"³ is present that can be used instead.

The existence of an ontology in the country of the Economic Operator is not a precondition for the Criteria Editor.

3.1 Requirements

3.1.1 Functional Requirements

The following list describes all requirements:

ID	Requirement	Remark
Req 001	A CA user must be able to define those CA national criteria, which are relevant for a specific tender and shall be proved by the Economic Operators.	
Req 002	If no CA national ontology exists, the CA user must be able to choose atomic EU criteria.	
Req 003	The system must provide the capability to the CA user to define the criteria for each type of tenderer/legal form (consortium, subcontractor, other contractor, main contractor) preferably by allowing them to construct a single list of criteria and provide per-criterion exceptions/selection of the tenderer type (e.g. criterion X has only to be proven by consortium leaders).	
Req 004	<p>The system must guide the CA user to define the appropriate evidence type which will be a sufficient proof for a criterion thereby differentiating between documents issued by competent issuing body and candidate statements.</p> <ul style="list-style-type: none"> ▶▶ Req 004a: The CA can define if a translation is required and which translation type, e.g. none, simple translation, certified translation, notarised translation. ▶▶ Req 004b: The CA can define if a certification of the authenticity is required and which type, e.g. none, Legalization or apostille. ▶▶ Req 004c: The CA can define what kind of copy is required, e.g. unqualified copy or certified copy. 	
Req 005	If the CA requests the proof through candidate statement it should be	

³ This basic form of an ontology is also known as "footprint ontology" (see document "Footprint Ontologies - Supporting Tenderers and Contracting Authorities from countries without fully modeled ontologies" (see BSCW <https://bscw.uni-koblenz.de/bscw/bscw.cgi/1841552>).

	possible to define/include a predefined template document for providing the candidate statement.
Req 006	A CA must be able to provide annotations, additional information or complementary information for a criterion as a free text.
Req 007	A CA must be able to provide relevant information regarding lots for a criterion as a free text.
Req 008	Optionally a CA must be able to define additional criteria which are not part of the criteria defined in the EVS ontologies and give them a CA national name/description.
Req 009	The system must be able to construct a criterion template out of these CA user choices which can be provided as an input to the EVS or a NVS/VCD builder/VCD editor. Therefore the granularity, structure and IDs of the criteria in the package must be compatible with the VCD package schema and the VCD schema.
Req 010	In order to meet Req 009 the CA criterion editor can operate on the rule set (criteria and evidence information) stored in the VCD ontology (either on EU or on CA national level).
Req 011	The system should provide the CA the possibility to select (CA national) evidences instead of/additionally to selecting criteria in order to derive the criteria that relate to these evidences.
Req 012	<p>The EVS should provide the following capabilities to the CA where no national legal domain of a CA exist or is modelled in the EVS as ontology.</p> <ul style="list-style-type: none"> ▶▶ Req 012a: The user should be enabled to work with EU criteria instead. The user should be enabled to define the minimum substitution level for each eu-criterion-acting-as-national-criterion. ▶▶ Req 012b: The user should be enabled to work with EU criteria instead. The EVS should therefore differentiate between eu-criteria relating to a natural persons or organisations (legal entities).
Req 013	<p>The system must provide the resulting data package to interested parties (either through Req 013a - Req 013c)</p> <ul style="list-style-type: none"> ▶▶ Req 013a: The CA user must be able to retrieve the data package from the system and distribute it with the CfT. ▶▶ Req 013b: The system must be able to be integrated into or made accessible to e-procurement platforms like a tendering solution (either national, or TED, or...) by using a system interface.
Req 014	Req 013 must be fulfilled also for countries where no NVS exists.
Req 015	Rules, like suggestion indicators must be derived from the ontology in order to provide the same results when using the CA criteria template enabled scenario and the non CE criteria template scenario.
Req 016	A CA must be able to define criteria that need not be proven by national Economic Operators the central ruleset.
Req 017	A CA must be able to define allowed pre-qualification or evidence-delivering agencies that the CA can use to retrieve Evidences for itself (so the Economic Operator need not provide them in the VCD package).

3.1.2 Non-functional Requirements

- ▶▶ User Interface: The user interface must adhere the defined "common gui" for VCD solutions but may have some aberration for specific use cases currently not covered by the common graphical user interface.

3.2 Epics

The following Epics have been identified during analysis and are described in further details in the User Stories. All these epics relate to the definition, usage and validation of criteria and the concept of a Criteria Template - but not all epics need to be implemented in a single system as some of them may be included in existing components (e.g. the existing VCD Viewer, VCD Designer, etc).

Epic ID	User Story	User
Epic 1	As a Contracting Authority I want to specify relevant qualification criteria when preparing the call for tender so that the requirements/terms for participation in that call are transparent to everybody.	Contracting Authority
Epic 2	As a Contracting Authority I want to check a received VCD package against the requested qualification criteria when evaluating tenders so that the validity of the VCD package is tested.	Contracting Authority
Epic 3	As an Economic Operator I want to import the criteria template to the VCD solution so that the VCD solution can interpret and select the relevant criteria and suggest the appropriate evidences to me.	Economic Operator
Epic 4	As an Economic Operator I want to check a VCD package against the requested qualification criteria so that the validity of the VCD package is tested.	Economic Operator

3.3 User Stories

The User Stories describe the Epics in detail. The numbering of the User Stories reflects their belonging to the Epic (e.g. User Story 1.3 belongs to Epic 1).

3.3.1 User Stories Epic 1

User Story ID	User Story	Priority
US 1.1	As a Contracting Authority I want to define the relevant qualification criteria for specific types of economic operators (contractors, subcontractors, consortia) so that each type of economic operator has its specific terms for participation.	High
US 1.2	As a Contracting Authority I want to define the type of evidence (Document issued by competent issuing body, Candidate Statement, candidate statement in predefined form/template) for each criteria so that the economic operator knows which type of evidence will be a sufficient proof for this criterion.	High

User Story ID	User Story	Priority
US 1.4	As a Contracting Authority I want to define the relevant requirements with regard to lots of the call for tender in a free text field ⁴ so that economic operators have a guideline to upload the relevant evidences for each criterion.	Medium
US 1.2.1	As a Contracting Authority I want to optionally define the quality requirements or attributes for satisfying criteria requested in cross border tendering according to a predefined list (translations, certification of authenticity and copies) so that economic operators know which (supporting) documents they have to supply in which quality in order to qualify for the contract.	Medium
US 1.3.1	As a Contracting Authority I want to define the criteria that can be proven with a candidate statement.	
US 1.3.2	As a Contracting Authority I want to define the criteria that can be proven with a candidate statement (single declaration of honour/self declaration) that is provided by the contracting authority as a document template so that the economic operator can use this document template in order to provide his evidence.	Very low
US 1.3.3	As a Contracting Authority I want to define the criteria that can be proven with a single declaration of honour that is provided as electronic metadata template (instead of a document template) within the VCD so that the economic operator can use the VCD system in order to provide his evidence by means of context specific metadata.	Very low
US 1.6.1	As a Contracting Authority I want to define the relevant qualification criteria (selection out of a list of suggested criteria ONLY) and display a list of corresponding evidences for all selected criteria so that I can easily define the necessary criteria and get an overview (a list) of relevant national evidences to prove.	High
US 1.6.2	As a Contracting Authority I want to define the relevant qualification criteria by choosing the necessary national evidences so that the list of relevant/corresponding criteria will be generated automatically from the evidences I have selected.	Low
US 1.7	As a Contracting Authority I want to use the result of the criteria selection process (electronic criteria specification) as a part of the call for tender/contract notice in a procurement procedure either manually (download) or automatically (interface to procurement/tendering solutions e.g. TED) so that the result of the criteria selection process can be used in an electronic way.	High
US 1.8	As a Contracting Authority I want to insert annotations/additional information/complementary information to a criterion as a free text so that I can add additional information with regard to a specific criterion.	Medium
US 1.9	As a Contracting Authority I want to define additional criteria that are not explicitly defined in the national ontology so that I can make a complete list	High

⁴ The optional information about Procurement Lots can be described in a free text field and the information about the relation between a lot and specific criteria should be maintained. The concept of Lots does not affect the reasoning of criteria nor needs the ontology to be changed. Based on user selection the final list of required criteria can be created. But the VCD Schema needs to be adjusted to store the relevant relation information.

User Story ID	User Story	Priority
	of required (atomic) criteria.	
US 1.11.1	As a Contracting Authority I want to define certain modes of evidence retrieval/submission supported by a given national infrastructure (pre-qualification agencies, pull-mechanisms for evidences ⁵) so that Economic Operators can get this information during creation of a VCD.	High
US 1.11.2	As a Contracting Authority I want to set a pre-qualification indicator for a specific criterion referring to a corresponding national infrastructure description so that economic operators from the same country can make use of the pre-qualification service (Reference to Article 52).	High
US 1.11.3	As a Contracting Authority I want to set a pull-indicator for a specific criterion referring to a corresponding national infrastructure description so that the economic operators from the same country can make use of this specific national service.	High

3.3.2 User Stories Epic 2

User Story ID	User Story	Priority
US 2.1	<p>As a Contracting Authority I want to check the evidences in a received VCD package against the requested qualification criteria and according to the agreed central legal ruleset.</p> <p>At least the following data items have to be checked:</p> <ul style="list-style-type: none"> • Proven vs. requested criteria • Mapping of evidence to the criteria • Provided documents for the evidences vs. the required document types for the evidences (e.g. translations, legal copies, ...) 	High

3.3.3 User Stories Epic 3

User Story ID	User Story	Priority
US 3.1	As an Economic Operator I want to import the criteria template to the VCD solution so that the VCD solution can interpret and select or pre-select the relevant criteria and suggest the appropriate evidences to me .	High

3.3.4 User Stories Epic 4

User Story ID	User Story	Priority
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⁵ Pull-mechanisms for evidences refer to stage 4 of the VCD vision where an economic operator does not have to provide the evidence (push) to the contracting authority but the contracting authority retrieves the evidence directly from the source or competent issuing authority (pull) through a national infrastructure.

User Story ID	User Story	Priority
US 4.1	As an Economic Operator I want to check the evidences in a VCD package against the requested qualification criteria so that the validity of the VCD according to the agreed central legal ruleset package and the request of the CA is tested.	High

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4 Conceptual Design

This chapter describes the Criteria Editor component which will provide a Criteria Template to be used as input to create a VCD using VCD solutions. The chapter thereby describes the changes necessary to existing VCD solutions as well as possible architectural designs. The following figure shows the use of the Criteria Template as part of the VCD creation process. The figure thereby clarifies the involved systems and elements (the newly introduced elements are marked in red color).

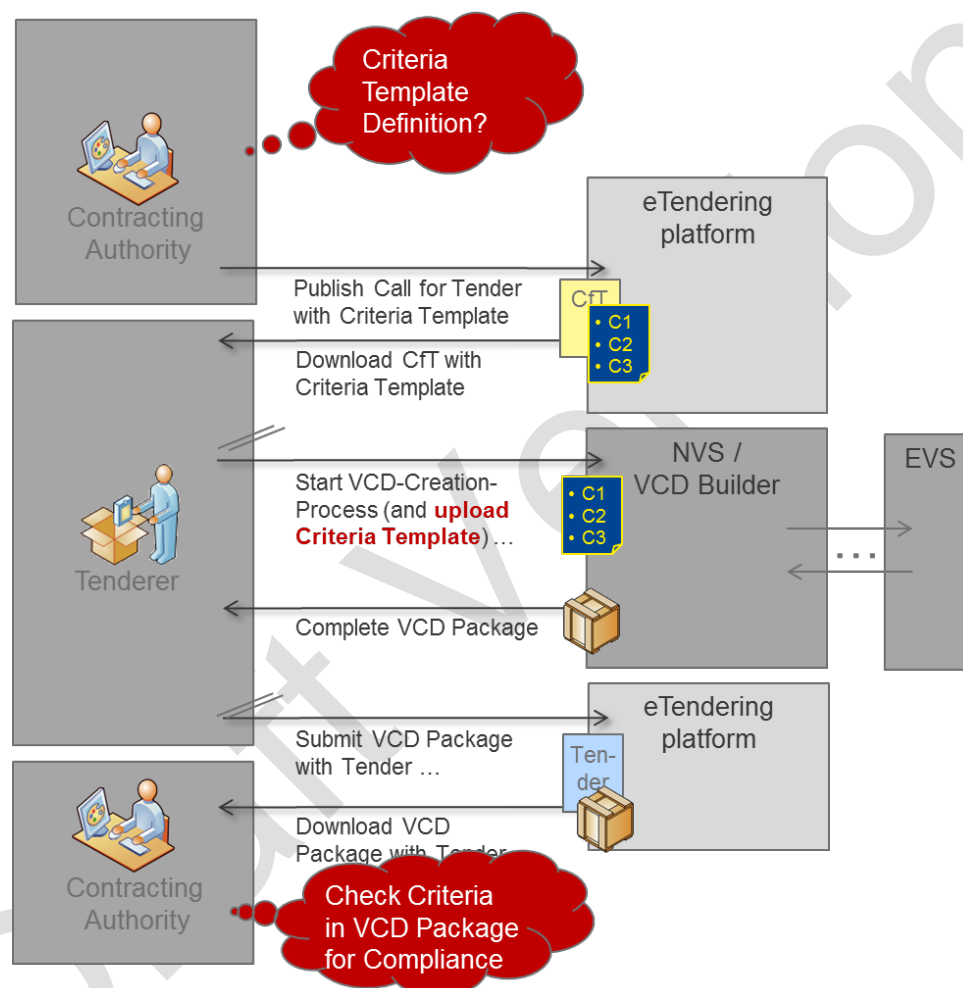


Figure 5: VCD sequence diagram.

The solution requires the following additional specifications and functionality:

- ▶▶ Specification of a data model and schema for the Criteria Template (electronic data package)
- ▶▶ VCD Criteria Editor functionality (to define/create a Criteria Template) that shall be available for the following three architectural alternatives:
 - ▶ Alternative 1: Criteria Editor functionality provided as central component with local service provision through the EVS (reasoning) for countries that do not have a national system to provide Criteria Editor functionality.
 - ▶ Alternative 2: Criteria Editor functionality provided as decentral component with central service provision through the EVS (reasoning) by providing a system-interface to integrate functionality in different systems like National VCD Systems (similar to VCD

Designer), other VCD building systems, National Tendering Platforms, European Tendering Platform (TED) and others.

- ▶ Alternative 3: Criteria Editor functionality provided as decentral component with local service provision to provide full capability to a decentral system like National VCD Systems (similar to VCD Designer), other VCD building systems, National Tendering Platforms, European Tendering Platform (TED) and others.
- ▶▶ VCD Compliance Validator functionality
 - ▶ VCD conformance testing by calling the validation test systems
 - ▶ Comparison of Criteria Template with VCD Package
 - ▶ Compliance validation via reasoning the requested criteria in the Criteria Template to the specific national evidences and compare then with the received evidences in the VCD Package

The following existing components are affected by the Criteria Editor solution:

- ▶▶ Amendments to the EVS, the Ontology and the reasoning:
 - ▶ Include “pull evidences” (e.g. evidences that can be retrieved by the contracting authority through national infrastructure/ networks) to the evidences defined in a national ontology. This change will not affect the criteria but increase the number of evidence for a specific criterion. The change can be done by duplicating evidences and differentiating the duplication through push and pull attributes (e.g. criminal record provided by EO (push) vs. criminal record retrieved by CA (pull). The following rules can potentially improve the automation with regard to pull mechanisms in particular when they are being combined.
 - Pull rule (suggestions): The ontology has to be extended to include a “general pull indicator” for criteria of a legal domain, for which the EO always may skip the provision of evidence. The reasoning of the EVS must take this indicator into consideration.
 - Pull rule (TCE-construction): The EVS introduces a “pull rule” that refers to the pull indicator activated by the CA in the criteria template. If this indicator is activated by the CA the corresponding evidences in the ontology can be suggested to the economic operator (otherwise they are not displayed).
 - Nationality Rule: The EVS introduces a “nationality rule” defining that a document (e.g. criminal record (retrieved through CA)) is only available in case the CA and the EO are from the same country.
 - ▶ Complete the European ontology in the EVS so that it can be used in cases where no national legal domain is defined in the EVS. The following two amendments should be done
 - Define the relevant cascading/substitution rules for each criterion on European level according to the Directive 2004/18/EC
 - Distinguish European criteria that reference to natural persons from European criteria that reference to legal entities.
 - ▶ Include “pull evidences” for pre-qualification documents. This change will not affect the criteria but increase the number of evidences for a specific criterion. The change can be done by modelling new evidences for the “pre-qualification id” of the economic operator in the ontology and referring them in the criteria. These evidences are marked with a special evidence type e.g. “pre-qualification evidence”

- Pre-qualification rule: The EVS introduces a “pre-qualification-rule” that uses to the pre-qualification indicator activated by the CA in the criteria template. If this pre-qualification indicator is activated by the CA the corresponding evidences in the ontology can be suggested to the economic operator (otherwise they are not displayed). The indicator has three values:
 - CA does not accept a pre-qualification evidence for a criterion
 - CA accepts a pre-qualification evidence for a criterion
 - CA accepts only a pre-qualification evidence for a criterion and no other evidences

If there are several pre-qualification agencies in a country (legal domain) and the CA wants to just receive pre-qualification evidences from a specific pre-qualification agency, there two possibilities existing:

- Either the CA provides this information as a free text
- For each pre-qualification agency a separate pre-qualification evidence is modeled in the ontology

- Nationality Rule: The nationality-rule (see above) is also important in this case, as the evidences are just applicable, if the EO is from the same country as the CA.

- ▶▶ Ammendmend to NVS–EVS system-interface (cf. section 4.5)
 - ▶ affecting the VCD Designer or the part of the VCD Designer that implements the NVS-EVS system-interface to compute the evidences based on a Criteria Template
 - ▶ affecting the EVS User Interface (that provides the functionality via a GUI, e.g. to upload a Criteria Template)
- ▶▶ VCD Viewer (to validate a VCD Package/Container according to the requested criteria, see VCD Compliance Validator functionality above)

These additional components and the affected existing components are described in detail in the following chapters.

4.1 Criteria Template

The Criteria Template is a structured information package that contains the atomic criteria selected / requested by a CA. It can be issued with a Call for Tender (CfT), placed on an eTendering platform, send per mail, etc.

A Criteria Template includes selected atomic criteria for a specific tender to be proven by economic operators that wish to participate in the tender. A Criteria Template is „Call for Tender“-specific but not tenderer-specific which differentiates it from the VCD Container (the Criteria Template is therefore not a VCD & VCD Package derivate). A Criteria Template may include multiple variants of atomic criteria sets, e.g.

- ▶▶ by distinguishing criteria with regard to the different tenderer types (e.g. Legal Entity vs. Natural Person). This differentiation should not be necessarily made by the CA but be should derived from the rule set
- ▶▶ by enabling the CA to define criteria with regard to the different tenderer roles that have to proof it (e.g. main contractor, other contractor, subcontractor, consortium)
- ▶▶ by displaying the appropriate substitution/cascading rule per criterion

A simplified illustration of the information in a Criteria Template is given below. The structuring in different hierarchical levels shows dependent information and the cardinality (in square brackets).

- ▶▶ **VCD Criteria Template information** [1..1]
 - ▶ Legal Domain of the Contracting Authority [1..1]
 - ▶ VCD Ontology version [0..1]
- ▶▶ **Call for Tender information** [0..1]
 - ▶ Reference ID of the Call for Tender [0..1]
 - ▶ Name/Description of the Call for Tender [0..1]
 - ▶ **General information** as free text (e.g. regarding procurement lots) [0..1]
- ▶▶ **Criteria information per economic operator type and role**⁶ requested by the CA [1..*]
 - ▶ **Economic operator type and role** [1..1]
 - **Economic operator type** [1..1]
 - **Economic operator role** [1..1]
 - ▶ **Requested Criteria** [1..*]
 - **CA-national criterion** [1..1]
 - Criterion ID [1..1]
 - National Title [1..1]
 - English Title [0..1]
 - Legal reference [1..1] (national language)
 - Description / further information in different languages [0..*]
 - **EU criterion** [1..1]
 - Criterion ID [1..1]
 - CA-national Title [0..1]
 - English Title [1..1]
 - Legal reference [1..1] (english)
 - Description / further information in different languages [0..*]
 - **Required type of evidence** [1..1]: candidate statement versus document issued by competent issuing body
 - **Minimum substitution level** [1..1] (with values SelfDeclaration, SolemnStatement, DeclarationOnOath in ascending order)
 - **Required translation of evidence** [1..1]: none, simple translation, certified translation, notarised translation
 - **Certification of the authenticity of evidence** [1..1]: No copy (original document), Legalization, Apostille

⁶ Types of economic operators and tenderer roles (e.g. contractors, subcontractors, consortia, main contractor, etc.) that have to prove a specific criterion. See also chapter 4.1.1 *Criteria Template Data*.

- **Required minimum type of copy** [1..1]: unqualified copy or certified copy.
- A **single proof indicator** for criteria that reference to a proof through a single declaration of honour/self declaration in two phased tendering [0..1]
- **Evidence provision information** [0..1]
 - **Marker "No need to provide evidence for national economic operators"** [1..1] [Y/N]
 - **Reference to document template** that shall be used to prove a specific criterion [0..1]. See section "Document references".
 - **Pre-qualification agencies** [0..*]
 - **Name of prequalification agency** as free text [1..1]
 - **Only for national economic operators?** [1..1] [Y/N]
- **Procurement lot information** as free text [0..1]
- **Additional Information** as free text [0..1]
- ▶▶ **Document references** to templates/forms to be used to provide candidate statements and template for a declaration of honour/self declaration covering all criteria. May be included in the Criteria Template Container or be external references [0..*]

4.1.1 Criteria Template Data

This chapter lists additional information on data types and/or values of Criteria Template elements.

4.1.1.1 Tenderer Types

The following types can be used in order to classify an Economic Operator (as part of a consortium) concerning his legal nature:

- ▶▶ Consortium
- ▶▶ Legal Entity⁷
- ▶▶ Natural Person
 - ▶ Sole Proprietor
 - ▶ Representative
- ▶▶ Any Type

4.1.1.2 Tenderer Roles

The following roles can be used in order to classify an Economic Operator (as part of a consortium) concerning his role in the tenderer structure:

- ▶▶ Main tenderer
- ▶▶ Subcontractor
- ▶▶ Roles in a Consortium:

⁷ Legal Entity means "juristic persons", e.g. Corporations like GmbH, AG, Ltd, ...

- ▶ Consortium Leader
- ▶ Consortium Member
- ▶▶ Any Role

4.1.1.3 Business Rule Matrix for Tenderer Types and Roles

The following table shows the valid combinations of tenderer roles and tenderer types:

Roles/Types	Consortium	Legal Entity	Sole Proprietor	Representative (as representative of Consortium or Legal Entity)
Main tenderer		X	X	X
Subcontractor		X	X	X
Consortium Leader		X	X	X
Consortium Member		X	X	X

4.2 VCD Criteria Editor

The Criteria Editor functionality shall be realized in different VCD components or architectural alternatives (see Alternatives 1-3 chapter 4: Conceptual Design), providing the capability to the CA to

- ▶▶ ...select or define criteria to be proven by tenderers and to
 - ▶ ...display the different tenderer types (e.g. natural person vs. legal entity)
 - ▶ ...specific relevant tenderer types (e.g. main contractor, other contractor subcontractor, consortium) that have to proof a criterion
 - ▶ ...specify eligible proofs (either candidate statements or document issued by competent issuing bodies)
 - ▶ ...display the substitution levels per criterion
 - ▶ ...specify the quality requirements for evidences with regard to cross border procedures (e.g. quality of copy, translation, apostille etc.)
 - ▶ ...place indicators for pre-qualification, pull mechanisms and single-proofs and to clarify these indicators through a national infrastructure description
 - ▶ ...provide additional information for a criteria
 - ▶ ...specify relevant information about lots for a criteria
 - ▶ ...add additional document, templates and forms to be used by applicants

- ▶ ...generate a tender-specific "criteria template" based on the criteria template data model and schema to ensure interoperability and validity
- ▶ ...provide a criteria template to the Economic Operator that can be used with existing VCD Solutions in order to create a tender- and tenderer-specific VCD Package

4.3 Architectural alternatives

4.3.1 Alternative 1: Criteria Editor functionality provided as central component with local service provision

The following figure shows the Alternative 1 of the Criteria Editor functionality provided as central component with local service provision for countries that do not have a national system to provide Criteria Editor functionality.

The Criteria Editor will be implemented as part of the EVS, available to all Contracting Authorities regardless of national implementation. The user may use his/her national part of the ontology (PreC 001) or the EU criteria to specify a Criteria Template (PreC 002).

The user interface will implement the defined "Common GUI" for VCD solutions but may need some aberration for specific use cases.

The Criteria Editor functionality should deliver the Criteria Template via download (but will not store Criteria Templates).

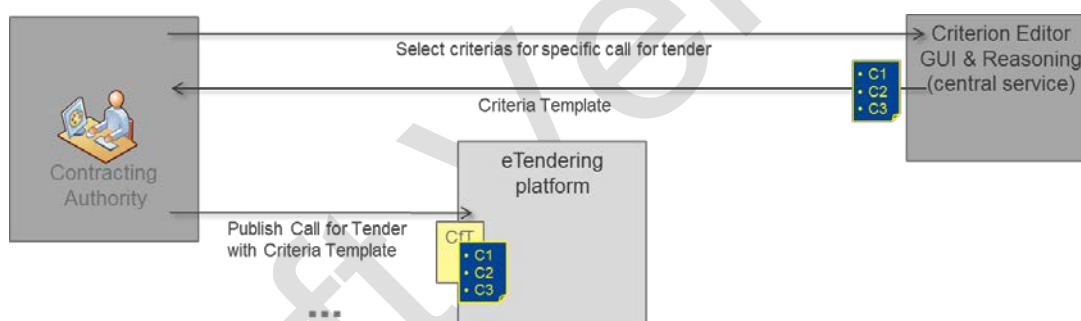


Figure 6: Alternative 1 - Criteria Editor with central GUI and reasoning

4.3.2 Alternative 2: Criteria Editor functionality provided as decentral component with central service provision

Alternative 2 implements the Criteria Editor functionality as decentral component with central service provision by providing a system-interface to the EVS. The system-interface will allow the integration of Criteria Editor functionality in different systems like National VCD Systems (similar to VCD Designer), other VCD building systems, National Tendering Platforms, European Tendering Platform (TED) and others. The following figure shows one example of such a scenario.

The Criteria Editor system-interface to the EVS enables different systems to provide Criteria Editor functionality through a central service. These systems may provide different graphical user interfaces, different languages and may enhance the user experience with additional features (e.g. storage of Criteria Template package).

The resulting Criteria Template may be provided as a downloadable file or may be processed further by the requesting system, e.g. to directly include the template to an electronic Call for Tender.

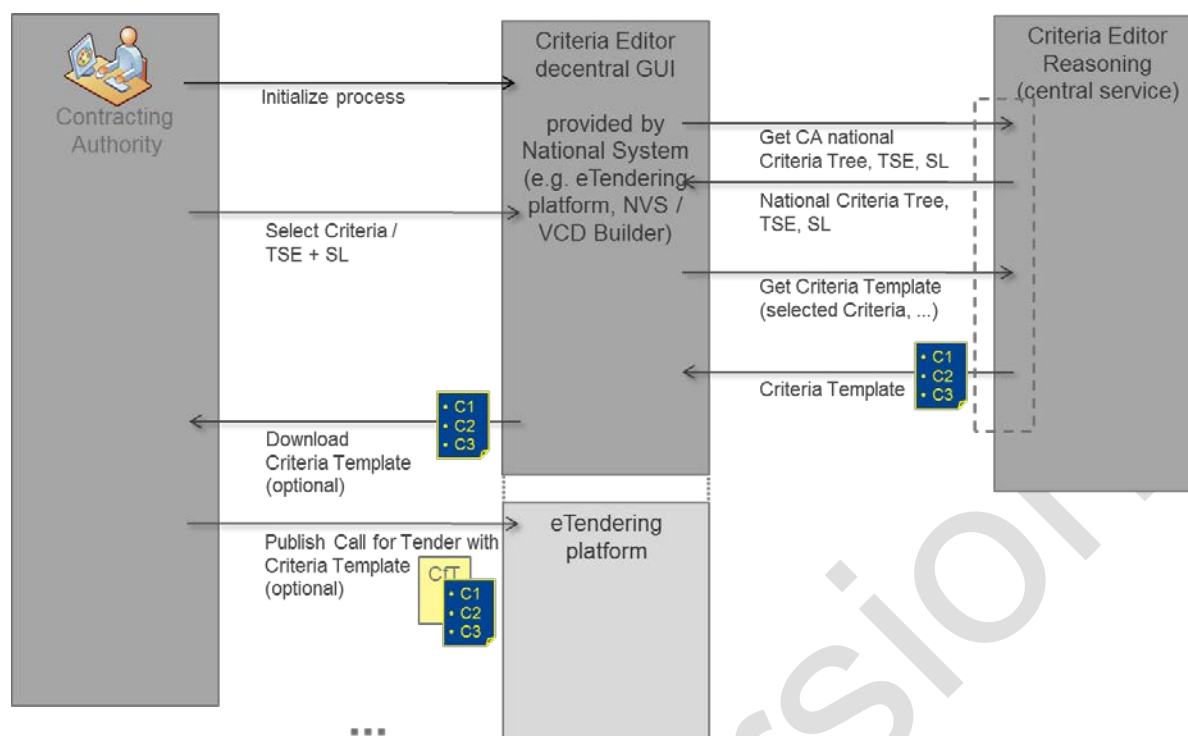


Figure 7: Alternative 2 – Criterion Editor with local GUI and reasoning as a service

4.3.3 Alternative 3: Criteria Editor functionality provided as decentral component with local service provision

Alternative 3 is currently evaluated within a review of the current VCD architecture. The aim of the VCD architecture review is to strengthen the capabilities of local or decentral systems, minimizing the dependencies with a central service provision. A decentralized service provision can be easily realized for the criterion editor as no mapping between criteria and evidences is necessary in this component.

The decentralized approach should show that different implementation technologies can be used in order to fully integrate Criteria Editor functionality and thereby to harmonize an existing solution with the PEPPOL VCD solutions. A decentral Criteria Editor implementing a local service provision could be realized for example by using a list of criterion codes, a relational database that holds the criterion information or simply to integrate the EVS locally. Thus the major focus of this architecture alternative lies in the data alignment among varying technologies or the replication of the VCD ontologies in a local EVS system.

As the architectural review is not finalized yet there is no further specification available yet.

4.3.4 Remarks

The scope of the specification in the following chapters is to specify the artefacts and functionality necessary to realize Alternative 2.

4.4 VCD Compliance Validator

The VCD Compliance Validator is a functionality that allows checking compliance of a VCD Package against a Criteria Template. The functionality should be encapsulated into a reusable component so

that different systems may incorporate this feature, e.g. e-tendering Platforms. The functionality should also be included in the VCD Viewer and VCD Builder to target both CAs and EOs.

There are different levels of depth for VCD compliance validation:

- ▶▶ Criteria Validation: Criteria in VCD Package are checked against the criteria defined in the Criterion Template via Criteria-ID comparison. This validation can ensure that all criteria that were requested in the Criterion template are correctly defined in the VCD Package. Potentially additional validation rules can check whether suitable evidences have been selected with regard to eligible proofs (either candidate statements or documents issued by competent issuing bodies). Also further validation mechanism with regard to quality attributes are imaginable (e.g. to check whether the user has uploaded a translations or apostille that has been requested in the criterion template).
- ▶▶ Evidence mapping validation: Criteria and evidences defined in a VCD Package are checked against the legal domains/rule sets defined in the EVS to ensure the correctness of the reasoning (Criteria-to-Evidence-reasoning). The evidence mapping validation can ensure a limited check on the evidences. It can for example identify whether an evidence description defined in the ontology has been used in its predefined form or if it has been altered or rejected. In contrast this validation cannot validate whether an evidence document really matches the evidence description, except it is retrieved directly from the issuing service.

According to the requirements of Austria and France, at least evidence mapping validation should be possible.

4.5 Amendment to NVS-EVS system-interface

The existing NVS-EVS system interface needs to be amended to allow an alternative approach to the reasoning that is currently implemented as T-C-E process which implements the activities of defining the tenderer structure (T), retrieve and select relevant criteria (C) and retrieve and select evidence suggestions (T). With an existing Criteria Template the Economic Operator does no longer need to retrieve and select criteria. The criterion template will also lower the need to retrieve and select evidence suggestions. The manual criteria selection is obsolete because the CA defines the requested criteria in the Criterion Template. The manual evidence selection becomes easier or obsolete for those criteria where the CA provides additional information about suitable proofs, quality attributes or pull-indicators in the Criteria Template.

This results in a simplified NVS-EVS interaction which uses the tenderer structure and a Criteria Template as input for the EVS reasoning (TC to TCE reasoning).

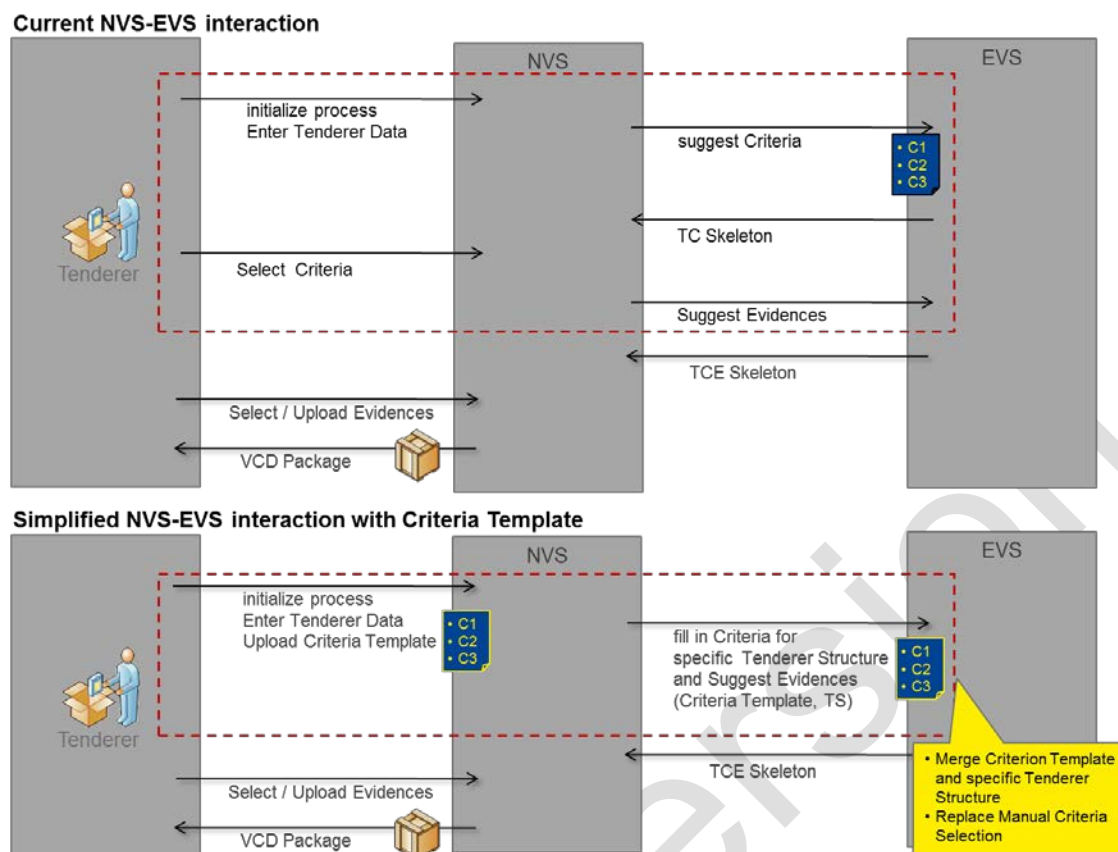


Figure 8: Effect on NVS-EVS Service Interface (applicable in both Alternatives)

The changes in the NVS-EVS system-interface affect the VCD Designer (that implements the NVS-EVS system-interface) and the EVS-User-Interface (that provides the functionality via a GUI).

4.6 Summary

The PEPPOL WP2 Technical Taskforce has specified the following artefacts taken from the conceptual design in this chapter:

- VCD Criteria Template Schema
- Functional specification of VCD Criteria Editor
- VCD Criteria Editor GUI
- Amendmend of NVS-EVS Interface
- Interface specification for Alternative 2
- Criteria Template BIS

Annex A: Glossary and Abbreviations

Term	Description
CA	Contracting Authority
CfT	Call for Tender
EO	Economic Operator.
EVS	European VCD System for reasoning the criteria and evidences according to the legal ruleset stored in the ontology
NVS	National VCD System
T	Tender (usually includes the VCD Package)
TC	Tenderer-Structure and Criteria
TCE	Tenderer-Structure, Criteria and Evidences
Tenderer	→ see EO, Economic Operator
VCD	Virtual Company Dossier