

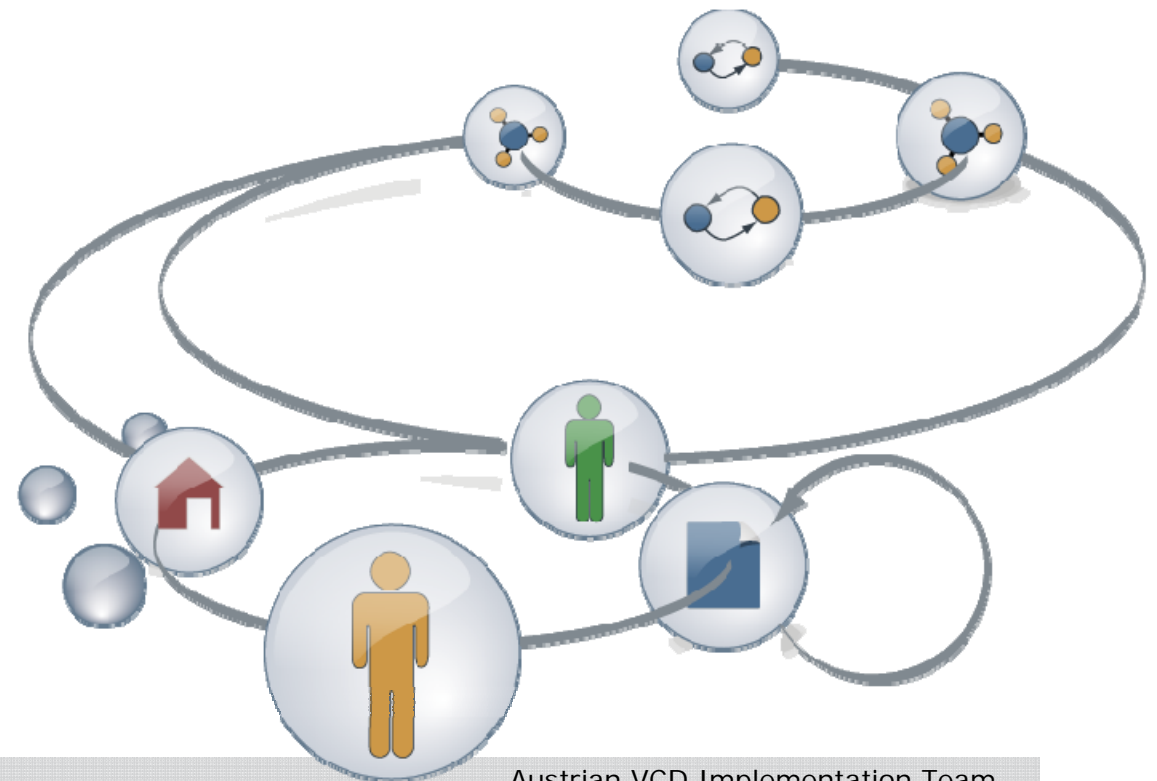
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# osSso

The Technical Basis for the Austrian VCD-Implementation

PEPPOL workshop, 7th Eastern European e|Gov Days

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Austrian VCD Implementation Team

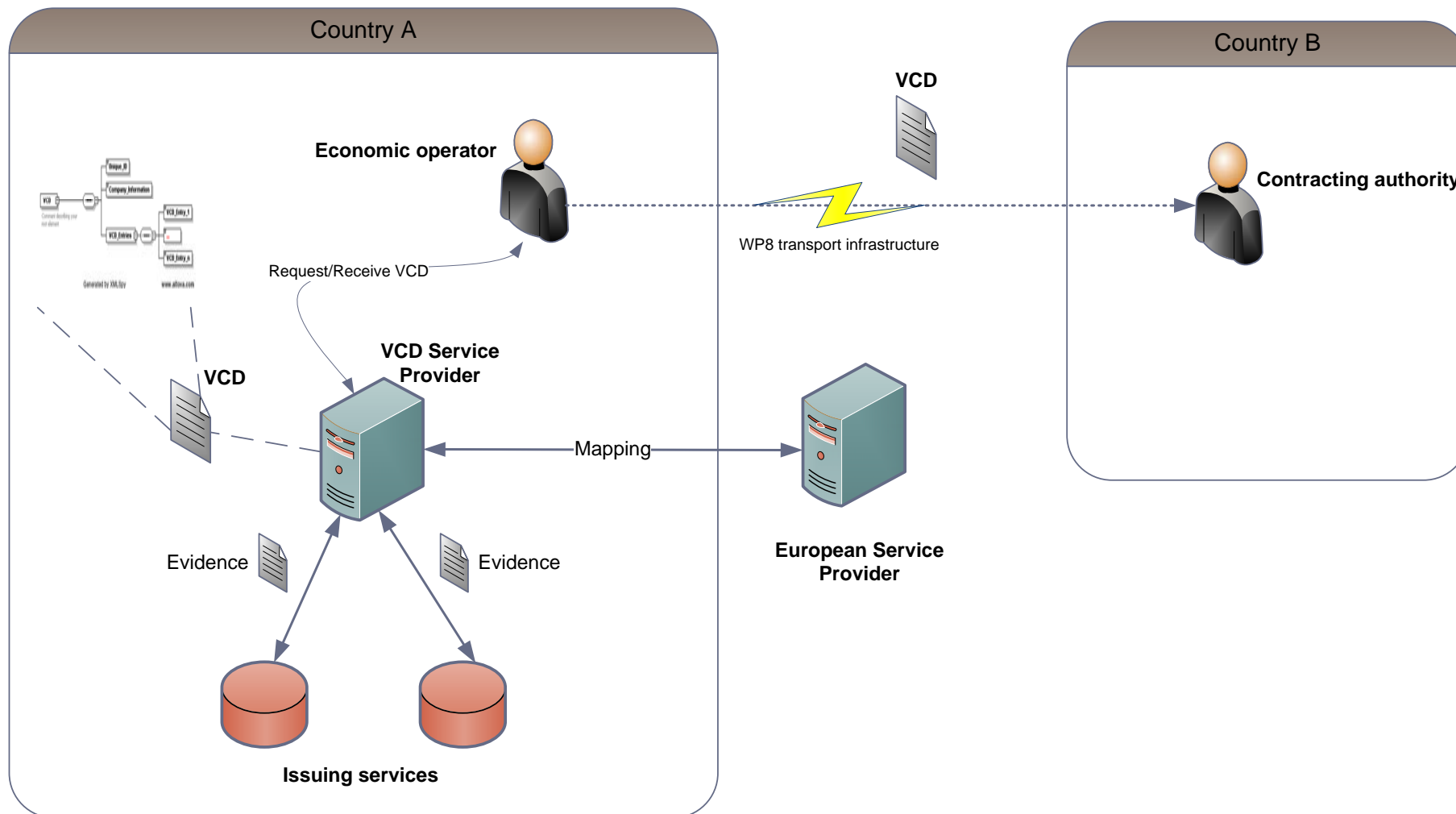


- Objectives
- Challenges and Requirements
- Semantic SOA
- Draft Ontology
- Overall Picture Austrian VCD System

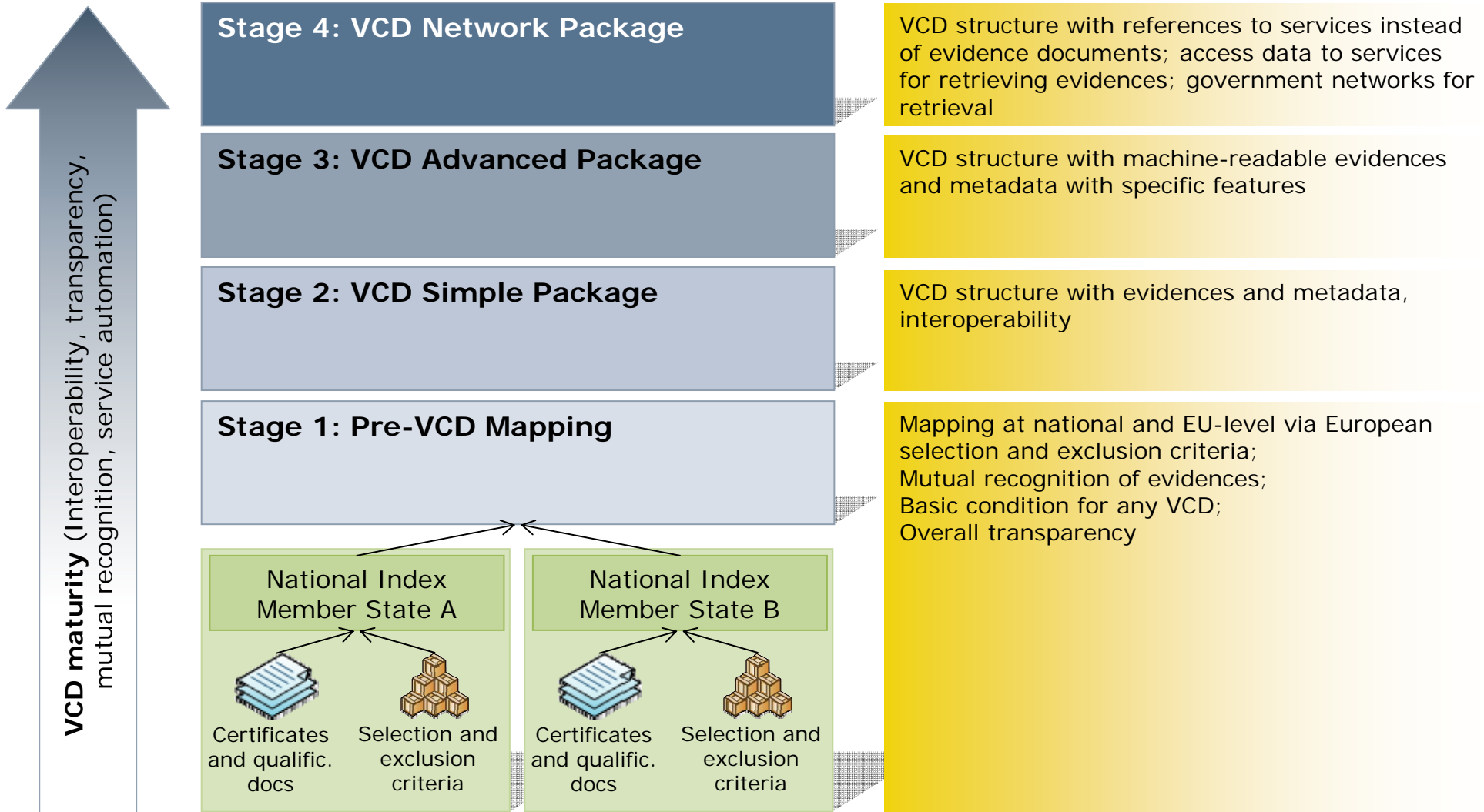
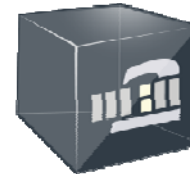
# VCD package overview



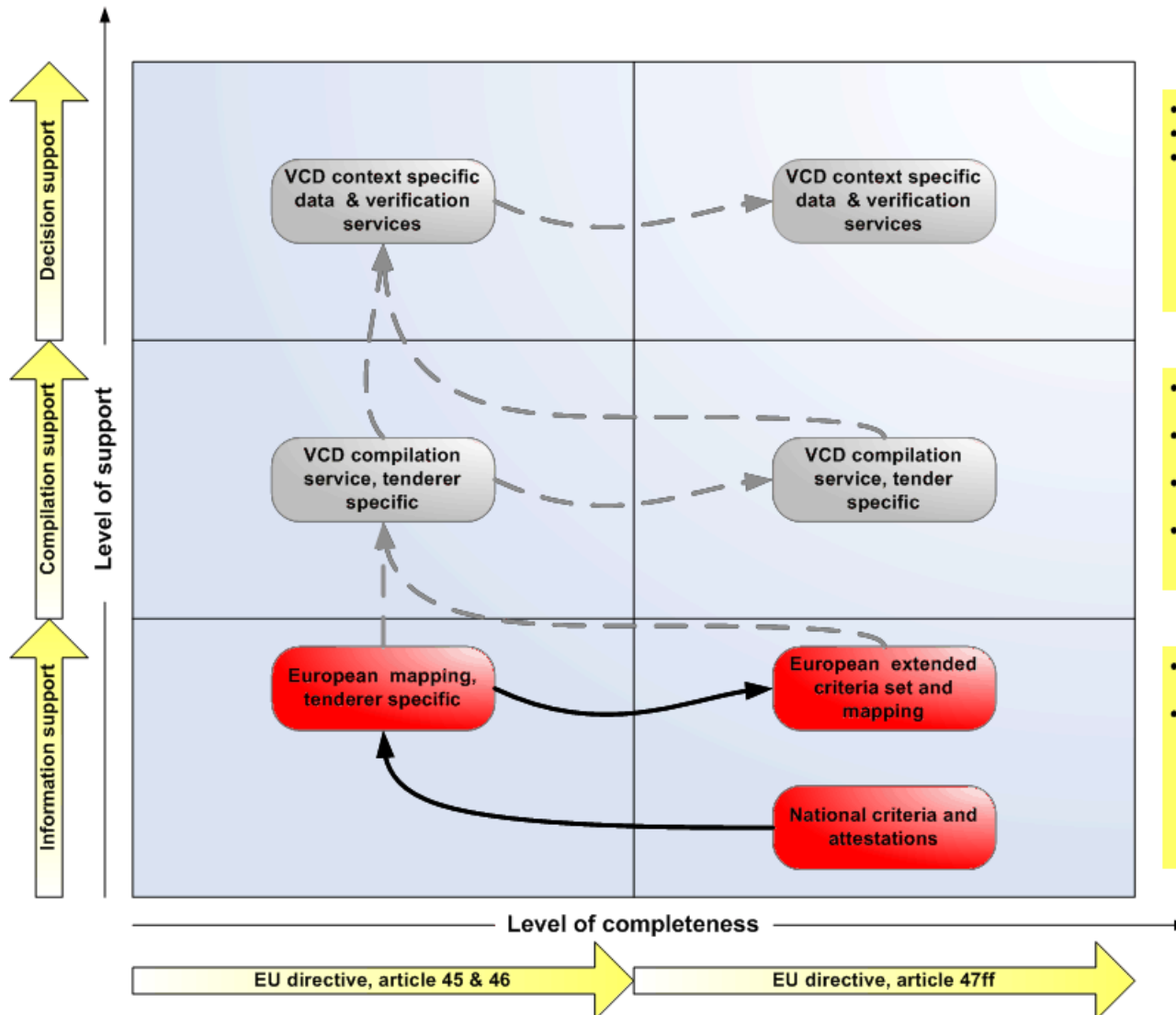
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# Vision of VCD (Staged Maturity Model)



# VCD Maturity Landscape



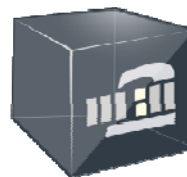
- Extraction or provision context specific data
- Interpretation of context specific data
- Verification and presentation of validity of criteria via context specific data

- Introduction of a VCD-service, which compiles the VCD for the tenderer
- Possibility of IT-support for the service execution
- VCD is established as an electronic container
- VCD includes structural data that describe evidences

- European agreed upon catalogue of (sub-) criteria
- European agreed upon mapping of (sub-) criteria and attestations

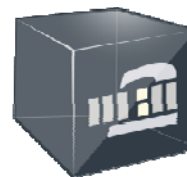


- **VCD = consolidated collection of all evidences an Economic Operator needs in order to participate in a Public Procurement Process (PPP) as a tenderer**
- Piloting of an Austrian Implementation of the VCD considering Pan-European dependencies
- Pilot-Implementation of stage 3 of official delivery D2.1
  - Running national IT-system
  - Process Context Specific Data (for selected services)
  - Hierarchical VCD Package
  - Reaching full completeness
- National legal requirements and international interoperability
  - Austrian tenderer participating in a PPP of
    - foreign Contracting Authority
    - Austrian Contracting Authority



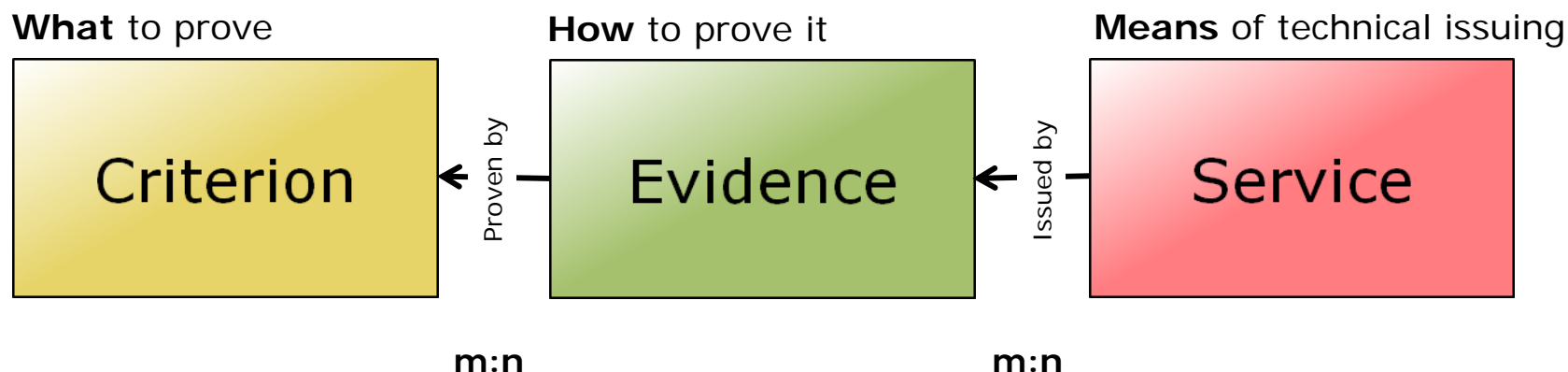
- **Heterogeneity**
  - Criteria, evidences and services
  - Certification authorities
  - Technical access
  - Issuing processes: automated, semi-automated, manually
  - Machine interpretability
  
- **Complex rule set defining the evidences to be furnished by tenderer, in Austria depending on:**
  - Nationality of contracting authority (via criteria)
  - Nationality of tenderer
  - Legal form (and professional field?) of tenderer
  - Organisational constellation of tenderer (via criteria)
  - (Will of the contracting authority)

# Criteria lead to services

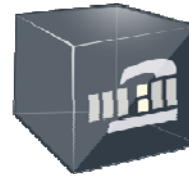


## Foundations:

- EU Directive 2004/17/EG & 2004/18/EG &
- Federal Public Procurement Act (BVerG 2006)
- Interpretation
  - The act does not always define, HOW evidence can be furnished,
  - just WHAT has to be proven,
  - E.g. non-bankruptcy can be proven by furnishing one of two different evidences, depending on the legal structure of the tenderer



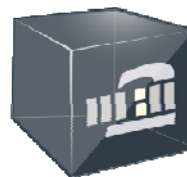
# Overall Requirements for Austrian VCD Implementation



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- Definition and execution of the necessary rule set to calculate which evidences are relevant for specific Tenderer (Structure Element)
- Definition of criteria (and further data) which enables the Contracting Authority to decide, whether a tenderer is suitable or not
- Optimisation of evidence retrieval
- Simple and decentralised maintenance of service descriptions and legal rule sets (avoiding language barriers)
- Usage of standards
- Conformance with PEPPOL-strategy (Pan-European Dependencies)
- This leads to:
  - Interoperability, management of national differences
  - Flexibility regarding changes and upgrades
  - Distribution and decentralisation



- **SOA seems to be state-of-the-art approach**
- **Limitations**
  - Service descriptions in SOAP/WSDL (functional syntactic)
  - The definition of services chain is done by the programmer
  - Implicit knowledge of the programmer about why the services are related in a specific manner
  - Human readably documentation (at best)
  - Change in service definition or regulation lead to manual adaption of service chains

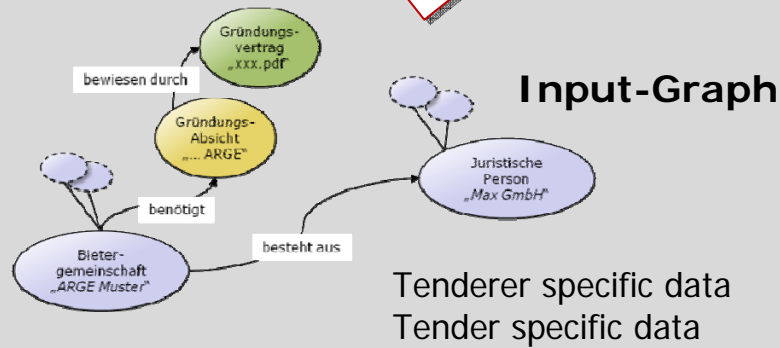
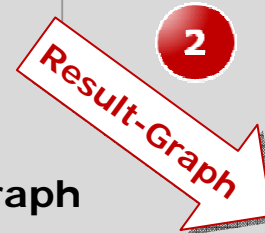
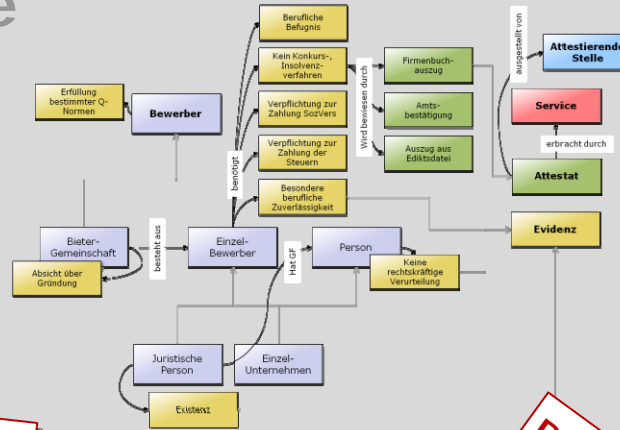


- Service-descriptions are augmented by semantics  
-> readable by human beings and machines
- Standardised isolation of descriptions and execution  
(isolation of rules and code -> maintenance!)
- The machine supports:
  - Search/find
  - Selection
  - Assembly and
  - Execution of services

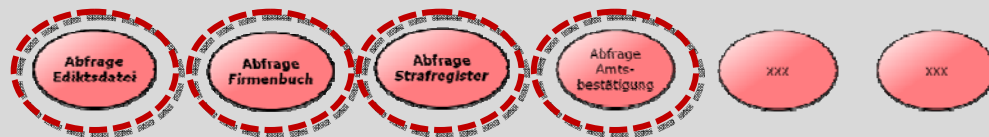
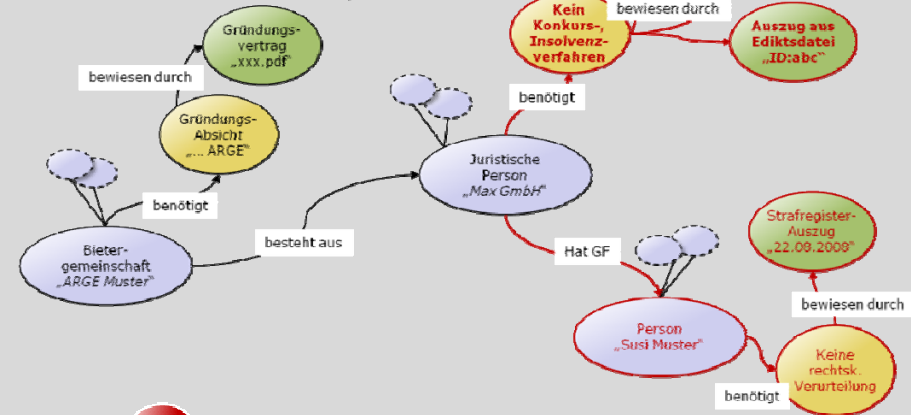


# Semantic Service Assembling

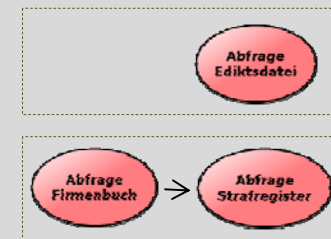
## RuleSet (Ontology)



### Output-Graph

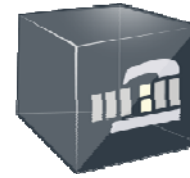


### Services

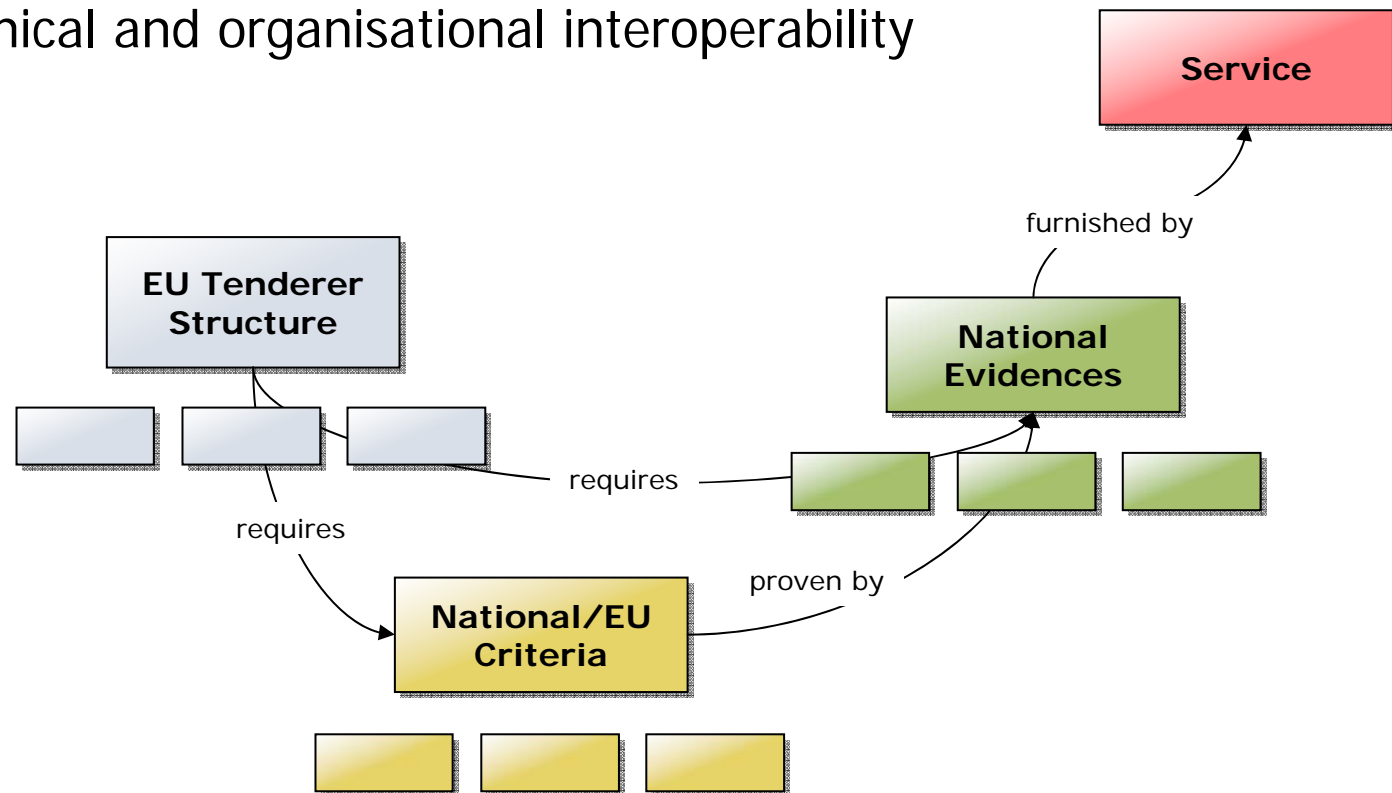


### Service Chain

# RuleSet (Ontology)



- Defines a semantically rich „language“ for all components
- Consists of explicit “rules” describing a valid target-status of the graph
- Upper-level, EU ontology and national specification
- Ensures technical and organisational interoperability



# Example of Specific Tender Setup

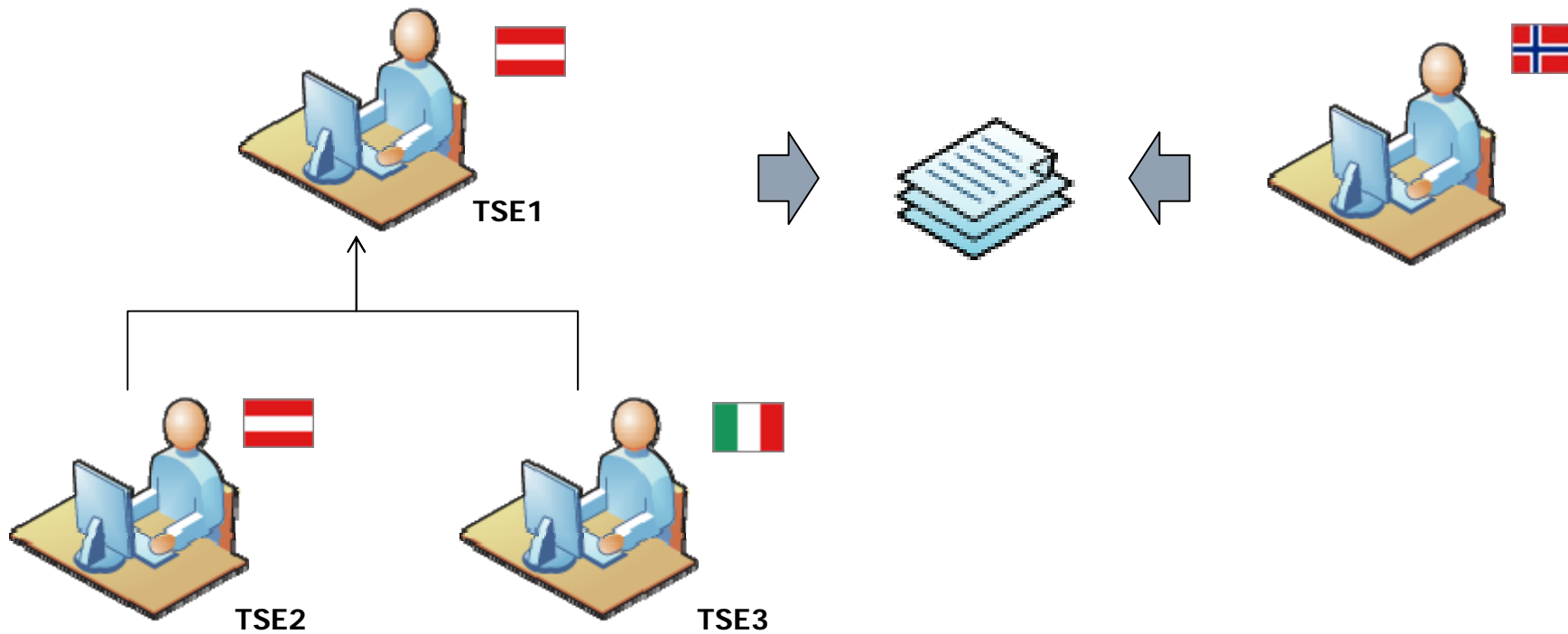


Tenderer Configuration  
TSE legal form  
TSE field of profession

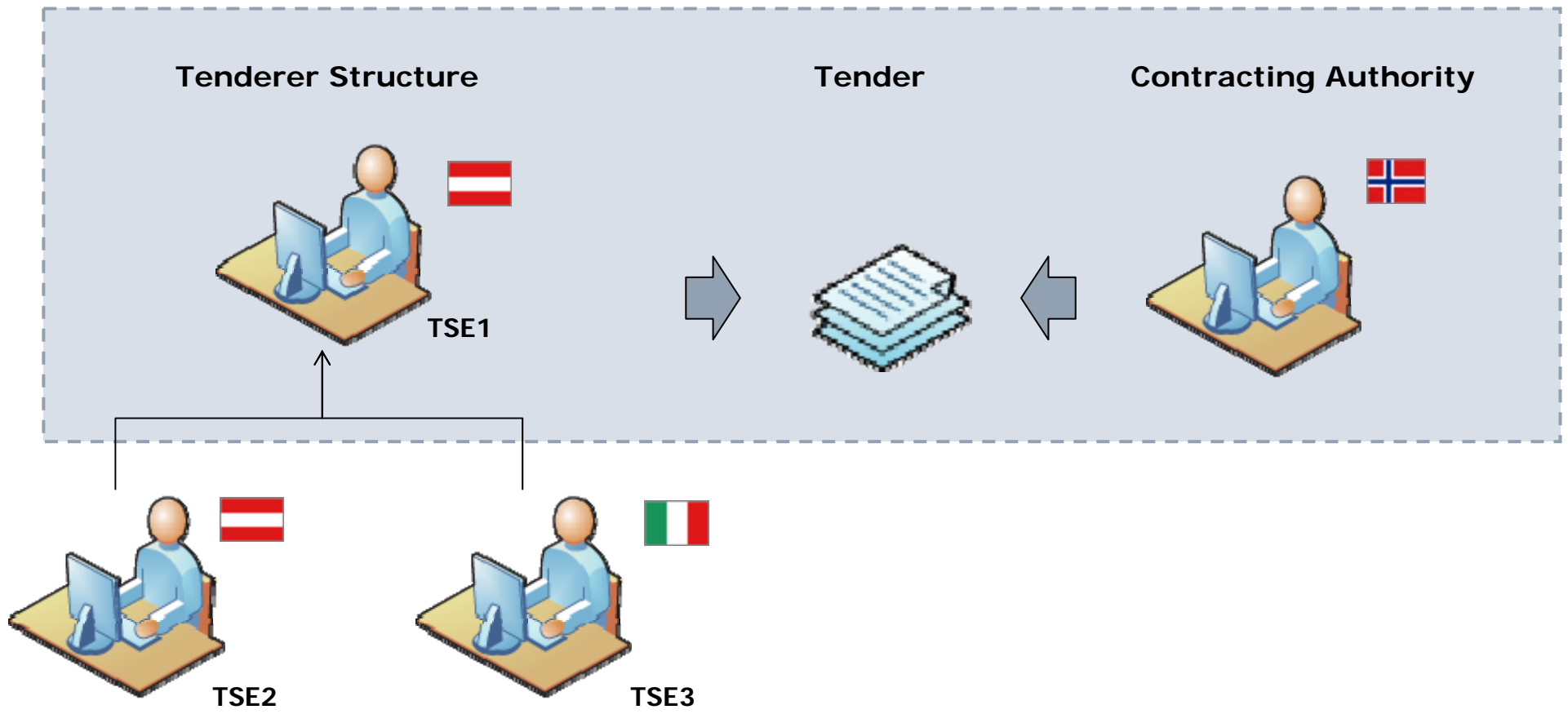
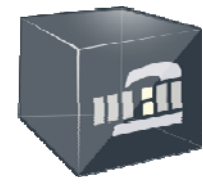
**Tenderer Structure**

**Tender**

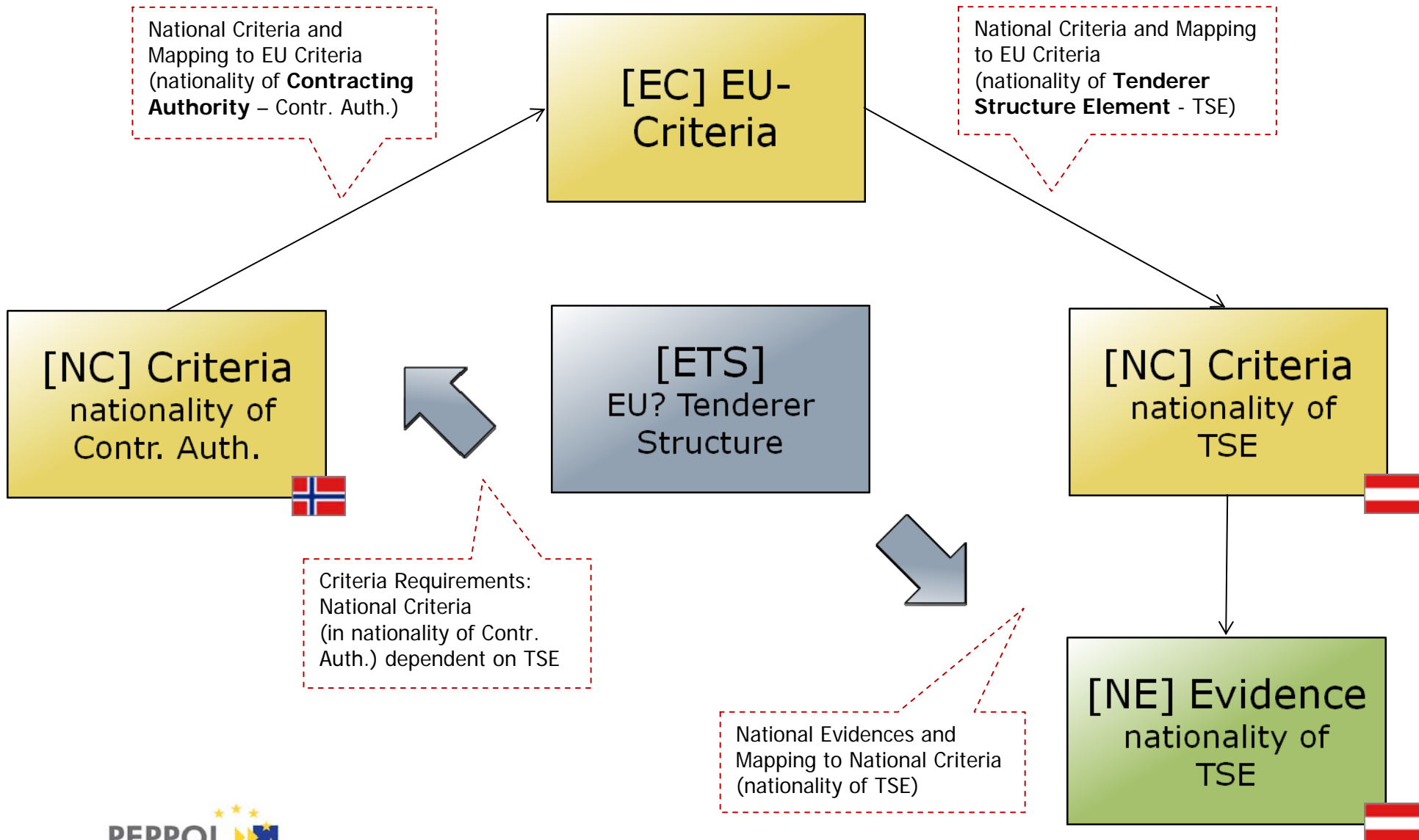
**Contracting Authority**



# Example of Specific Tender Setup



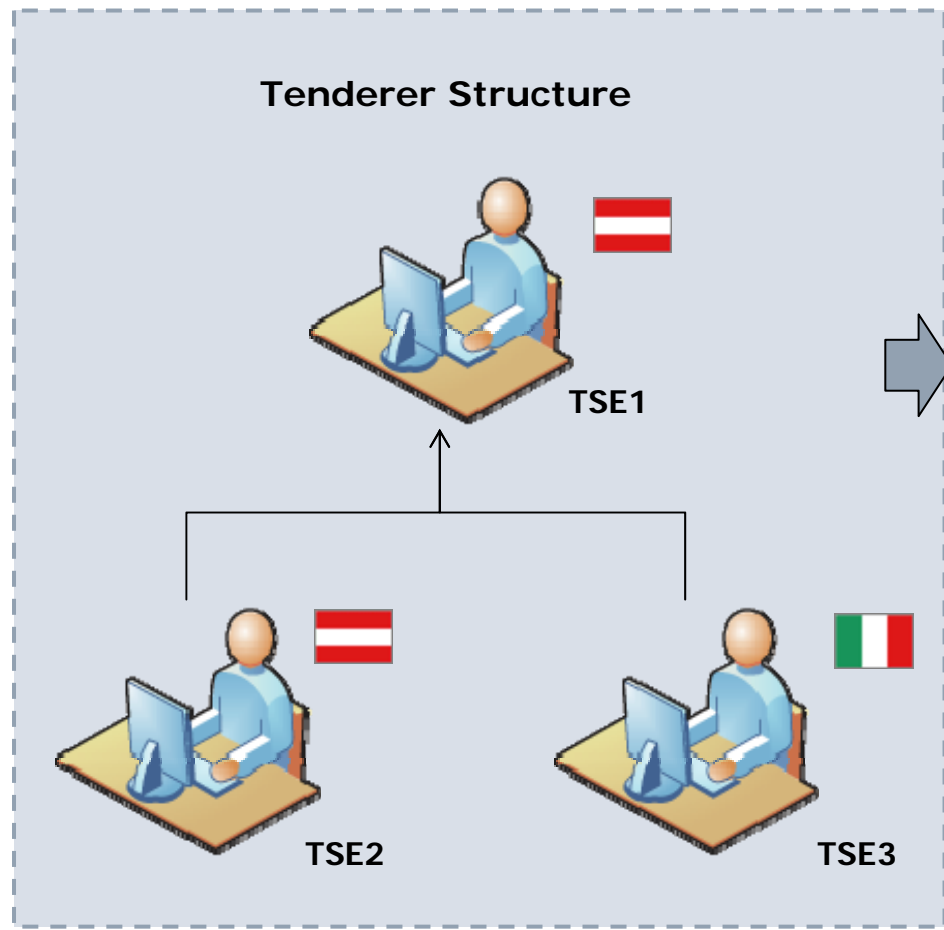
# Ensuring Pan-European Interoperability



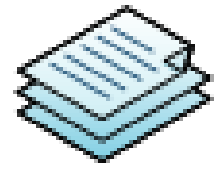




# Example of Specific Tender Setup



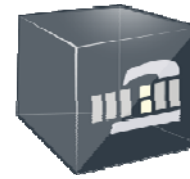
**Tender**



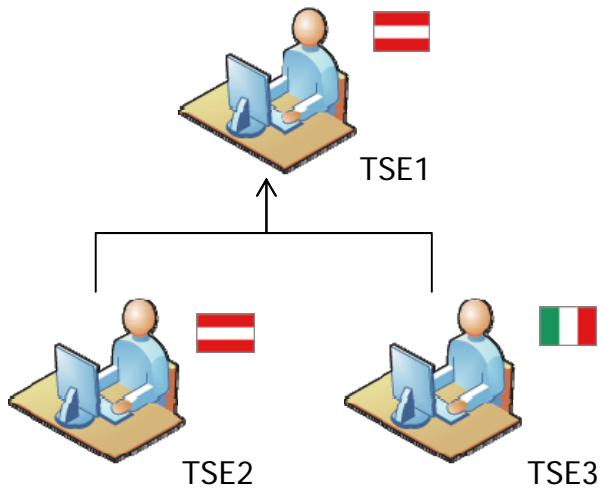
**Contracting Authority**



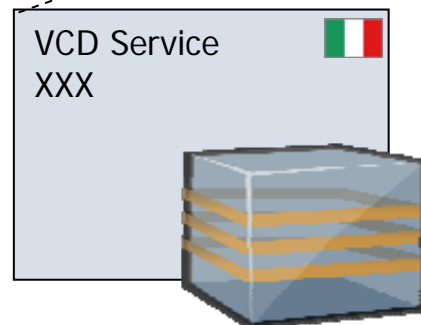
# Hierarchical VCD



## Specific (Pan European) Tenderer Structure



## National VCD Services



Service 1 TSE 1

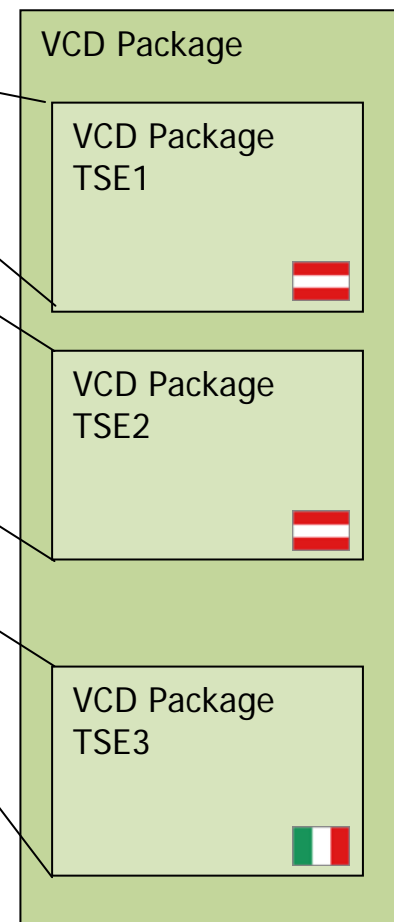
Service 2 TSE 2

Service 3 TSE 2

VCD Service Italy TSE3

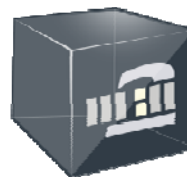
- > List of Austrian NC or Italien NC or EC
- > Structure of TSE

## VCD Package

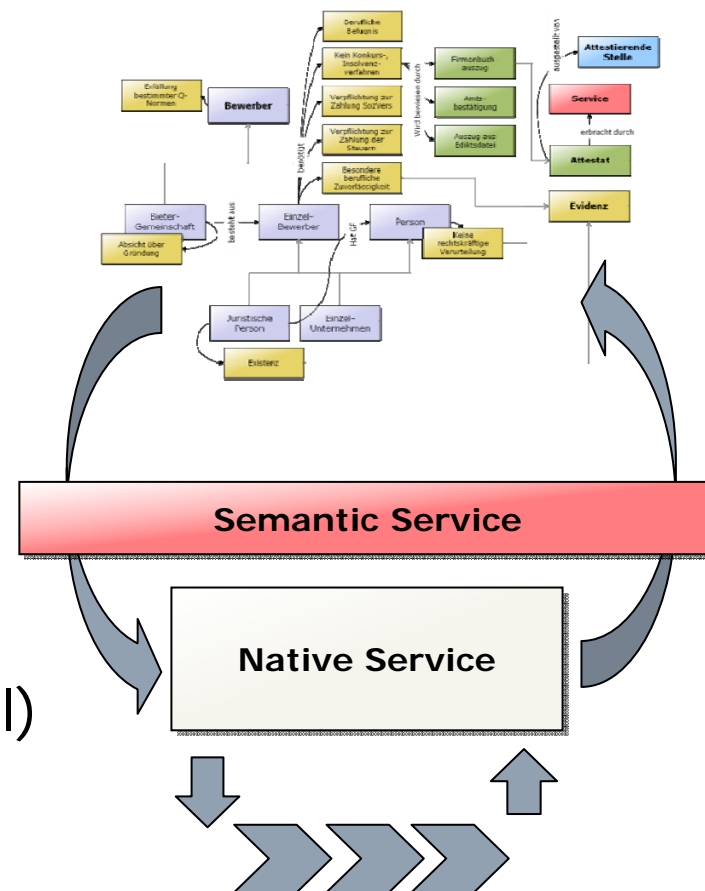


For each Legal Entity (TSE) a Sub-VCD is required

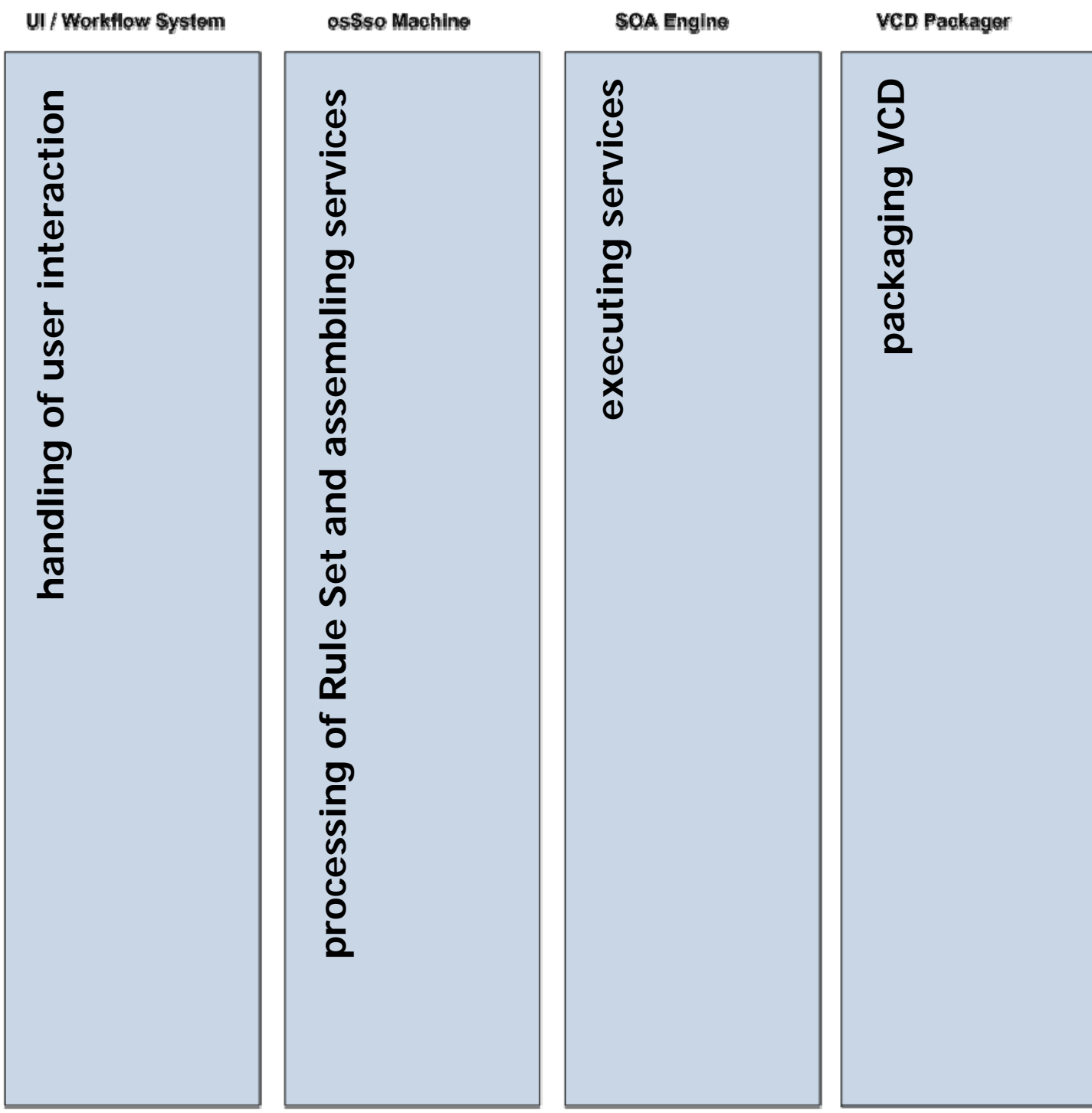
# Semantic Services



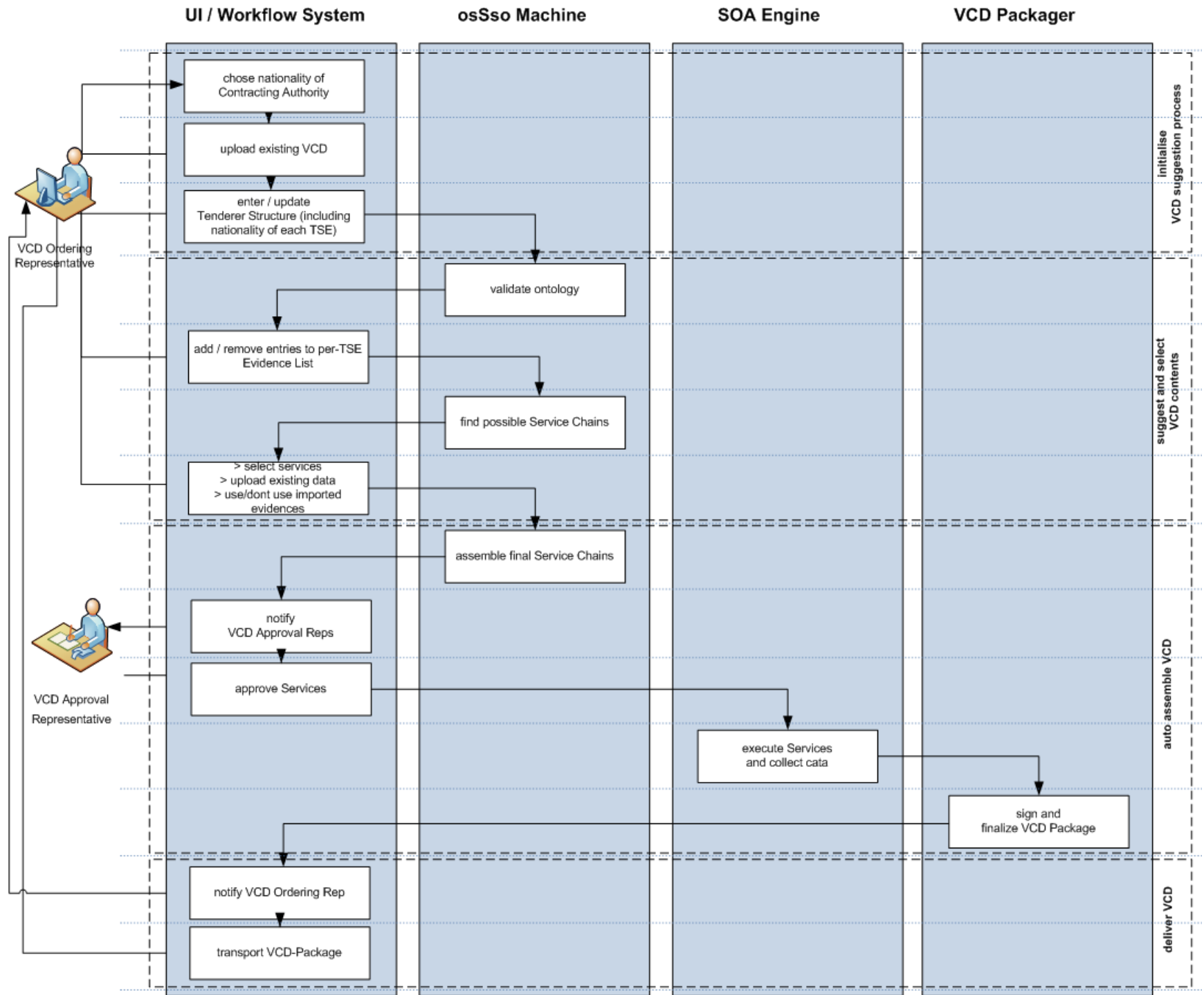
- A Semantic Service
  - provides any kind of Triple Patterns and artifacts as an **output**
  - can take action under certain **preconditions** (Triple Patterns)
- Preconditions (and input) and output are described in terms of the ontology
- Semantic Service Wrappers
  - translate input and output of the Native service into ontology vocabulary
- Services can trigger
  - fully automated processes
  - semi automated processes
  - manual processes
- Services can also be other countries' VCD Service calls (automated or manual)



# „Overall Picture“ Austrian VCD System



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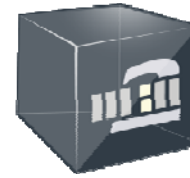
# Alignment with PEPPOL

## Some Examples

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- Pan-European Tenderer Structure
- RuleSet (Mapping of EC -> NC -> NE) for each MS
- Pan-European Mapping of context specific data (data fields of evidences)
- Schema-Definition for VCD Package
- Registries containing service specific Identifiers of Economic Operators
- Specification of VCD delivery
- Agreement between MS that VCD service outputs are trusted
- ...



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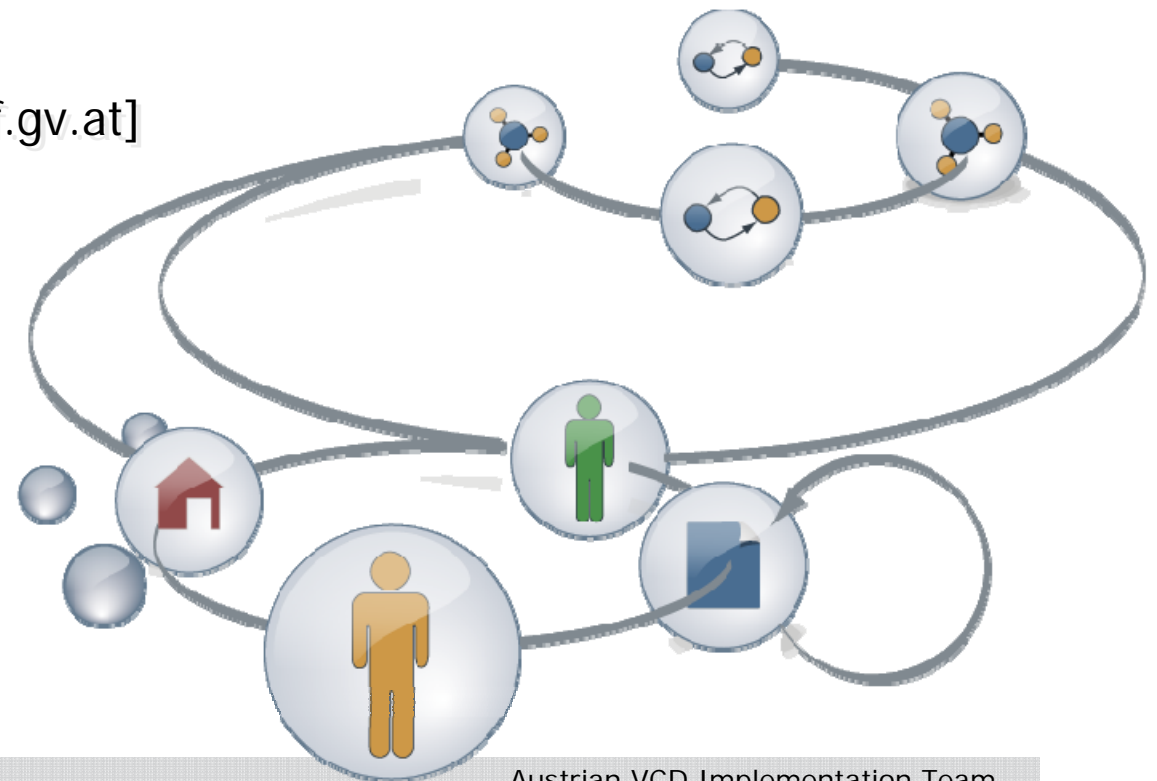
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