Topic	Comment

▼ D02.01 Styleguide standards (cv + ap) — iteration 1: human readable guidelines / iteration 2: implemented guidelines (schematron, …)

- ▼ **D02.01 Styleguide standards (cv + ap)** — *iteration 1: human readable guidelines* / *iteration 2: implemented guidelines (schematron, …)*
  - ▼ Part I: General
    - ▼ Chapter 1: Introduction
      - ▼ Context and scope
        - ▼ Semantic Interoperability
          - What
          - Why
          - ▼ Semantics
            - human oriented
            - machine applicable
        - ▼ Core vocabularies
          - What
          - Why, Aim
          - Overview of SEMIC core vocabularies
        - ▼ (Application) Profiles
          - What
          - Why, Aim
            - cf. profile guidance doc
          - ▼ Difference with core vocabs
            - compare with different levels of data modeling
          - Example: DCAT-AP
        - ▼ Linked (Open) Data
          - What
          - Why
          - ▼ Vocabs used on the web
            - Examples
      - ▼ Rationale for the guidelines
        - ▼ family of standards
          - same modeling approach, notation, guidelines + rules, exports, documentation
          - …
        - ▼ ownership, governance
          - own namespace
        - ▼ pragmatic, simple
          - understandable for non-semweb literate people
        - ▼ broadest possible reuse
          - low ontological commitment
          - ▼ limited constraints
            - constraints in AP's (of AP's)
      - ▼ Modeling approach
        - Introduction
        - ▼ Open World Modeling
          - ▼ Features
            - ▼ AAA
              - attributes and relationships first class citizens
            - Open World
            - NUN
          - Model for inference
          - ▼ Formalism used
            - RDFS versus OWL
            - ▼ Market feedback
              - RDFS+
              - no/little reasoning/inferencing done in the LOD world
        - ▼ Closed World (OO)
          - ▼ Features
            - attributes and relationships contained
            - constraints on attributes, relationships and their values
          - Model as template
          - ▼ Expression in RDFS
            - ▼ mismatch solving
              - RDFS-
              - SHACL/ShEx
          - ▼ Expressions for the broader (non-semantic) world
            - XML, JSON, DDL, …
        - ▼ Choice made
          - ▼ Closed but in alignment with Open
            - ▼ UML with some restrictions
              - same style
              - for the easiest alignment
            - UML master to generate the other artefacts
          - ▼ CV: 2 artefacts + 1 optional
            - core cv: terms + description + usage notes + sub + disjointness -> RDFS (little bit of OWL)
            - OPTIONAL separate semantics, importing core cv -> RDFS + OWL
            - separate OOmodel with constraints importing core cv -> SHACL
          - ▼ AP: 1 artefact + 1 optional — TBR: AP from AP
            - only SHACL, if no additional classes or properties are needed.
            - OPTIONAL RDFS in case of additional classes/properties needed
      - ▼ Required to be published artefacts

Topic	Comment

- ▼ Human consumption
  - ▼ UML Class Diagram
    - ▼ different levels of detail
      - • concept model
      - • information model
    - ▼ Documents — generate automatically !!!
      - ▼ types
        - • Vocabulary glossary (terms used + definition)
        - • Specification — TBR: W3C's RSpec
        - • Guidance
      - • Formats: HTML, PDF
  - ▼ Machine readable
    - ▼ RDFS
      - • formats: turtle, json-ld
    - ▼ SHACL
      - • formats: turtle
    - • XSD
- ▼ Chapter 2: Generic styleguide
  - ▼ Standards
    - • naming
    - ▼ namespaces
      - ▼ for RDFS
        - ▼ naming conventions — TBD
          - ▼ internal
            - • cv
            - • ap
          - ▼ external
            - • examples
        - • dereferenceability requirement
      - • for XSD (targetnamespace) — link between RDFS and XSD namespace
    - ▼ metadata — based on ADMS, additional from prov-o, voID, voaf, profiles vocab ? Waiting for ADMS
      - ▼ vocabulary
        - • ADMS(AP)
      - ▼ application profile
        - • ADMS + profiles vocab?
          - adms:Asset, prof:Profile, but prof:Profile is not a dcat:Dataset
    - ▼ reuse of foreign/external vocabs
      - • when
      - • why
      - • why not
      - ▼ position: limited
        - • ownership, governance
        - • XSD imports not available
  - ▼ Artefacts
    - • file naming and file extension guidelines
    - • linking between voc/ap and artefacts — with profiles voc?
- ▼ Part II: Specific Styleguides
  - ▼ Chapter 3: UML Class Diagrams styleguide
    - ▼ Approach
      - • guidelines on how to use UML as source for generating the aimed artefacts, UML as servant source
      - • NOT UML as master and then fitting the rest into/onto it.
    - • Generic UML guidelines
    - • Generic UML Class Diagram guidelines
    - ▼ Guidelines
      - ▼ Framework
        - ▼ artefact usage
          - • when to use
          - • why to use
          - • how to use
          - • restrictions applicable — example: association class
        - • graphing conventions — example: use role on association
        - • naming conventions
        - ▼ properties
          - ▼ required
            - • guidelines on use
        - ▼ annotations
          - ▼ required
            - • guidelines on use
          - ▼ optional
            - • guidelines on use
      - ▼ specific guidelines per type of artefact
        - ▼ Packages
          - • cf. guidelines framework
        - ▼ Classes
          - • cf. guidelines framework
          - • disjointness
        - ▼ Attributes
          - • cf. guidelines framework

- ▼ Associations
  - • Generalisation
  - • Aggregation/Composition
  - • *cf*. guidelines framework
- ▼ Data Types
  - • Enumerations
- • …
- ▼ Chapter 4: RDFS styleguide
  - ▼ core vocabs in RDFS
    - ▼ Situating
      - • one RDFS file with human aimed semantics + subclass, subproperties and disjointness
      - • **optional** a separate RDFS/OWL file with machine aimed semantics for inferencing — domain and range + OWL
      - • a SHACL file for OO oriented constraints
    - ▼ Define namespace
      - • SEMIC: Use namespace https://TBD/{vocab} — TBD
    - ▼ Generic
      - • All subjects (in RDF terms) related to ontology/vocab, classes, properties need to be in the own vocab namespace
      - • There needs to be one ontology declared.
      - • All subjects from the own namespace need to have a type.
      - ▼ If using classes/properties from other vocabs, do import, do not copy and past. — Issue: import scope (doable for small vocabs, but way too expensive for larger ones, example (schema.org)
        For convenience copy/paste may happen in the generated documentation.
        - ▼ No ns highjacking allowed, meaning not to change semantics of externally defined artefacts
          - • Example: changing a rdfs:range from rdfs:Class to skos:Concept on an externally defined property
        - ▼ Only allowed to add (language specific versions of) annotation properties — less relevant for core vocabs
          - • Example: add rdfs:labels and rdfs:comments for languages other than English or those available in the source
        - • Do not put usagenotes on the original external uri because these become global
    - ▼ Core vocabulary itself — Should use the latest and the bravest ADMS-AP
      - • is_a: owl:Ontology, voaf:Vocabulary, dct:Standard, adms:Asset, dcat:Dataset — ISSUE: voaf not dereferenceable. Decision not to use non-dereferencable uri's.
      - • minimum 1 dct:title
      - • only 1 dct:title per language
      - • dct:title in English required (or rdfs:label)
      - • minimum 1 dct:description
      - • only 1 dct:description per language
      - • dct:description in English required (or rdfs:comment)
      - • vann:preferredNamespaceUri required — ISSUE: vann not dereferenceable. Decision not to use non-dereferencable uri's.
      - • Idem vann: preferredNameSpacePrefix
      - • 1 dct:license is required
      - • 1 dct:publisher is required
      - • 1 dcat:contactPoint is required
    - ▼ Classes and Properties
      - • minimum 1 rdfs:label
      - • only 1 rdfs:label per language
      - • rdfs:label in English required
      - • minimum 1 rdfs:comment
      - • only 1 rdfs:comment per language
      - • rdfs:comment in English required
      - • Usage note in English required — ISSUE: see above
      - • rdfs:isDefinedBy required
    - ▼ Class specific
      - • Naming convention: UpperCamelCase
      - • Tip: indicate disjointness of classes
      - • Tip: indicate subclasses
    - ▼ Properties (rdf:Property)
      - • Give advice to be more specific: or Object or Datatype
    - ▼ AllProperties (rdf:Property, owl:DatatypeProperty, owl:ObjectProperty)
      - • Naming convention: lowerCamelCase
      - • Warning on domain use, suggest SHACL shape
      - • Tip: indicate subproperties
    - ▼ Object properties (owl:ObjectProperty)
      - • Warning on range use, suggest SHACL constraint
      - • Severe warning on setting ranges on external properties
    - ▼ Datatype properties (owl:DatatypeProperty)
      - • Warning on range use, suggest SHACL constraint
      - • Severe warning on setting ranges on external properties
  - ▼ semanticss in RDFS/OWL
    - • import vocab
    - • add deduction rules
    - • test semantics
  - ▼ application profiles in RDFS

Topic	Comment

- ▼ Define namespace
  - SEMIC: Use namespace https://TBD/{ap}
- Import the base vocabulary or application profile you want to further develop upon. — TBD
- ▼ Add, only if appropriate or needed, in own namespaces
  - Additional classes
  - Additional properties/relationships
- ▼ Do not add context specific usage notes for foreign classes/properties in the RDFS
  - no use of vann:usageNote on foreign classes and properties — Move to corresponding SHACL shape
- Do not change semantics of source vocabularies
- If you want to add further constraints or restrictions, use SHACLShapes
- ▼ Chapter 5: SHACL styleguide
  - ▼ Generic
    - ▼ cardinalities
      - on cv level keep it open
      - define at ap level
  - ▼ SHACL level
    - 1 dct:title in english required
    - 1 dct:description in english required
    - imports
    - ▼ namespaces
      - namespace declaration
  - ▼ Shape guidelines
    - shape naming
    - use of sh:targetClass for every Class
    - required use sh:name
    - required use sh:description — usagenotes should go here
    - recommended use sh:message
  - Test if shapes are triggered.
  - Test if added constraints or refinements are still within the source semantics of reused external vocabs.
- ▼ Chapter 6: XSD styleguide — Based on UML XSD profile
  - ▼ Generic guideliness
    - ▼ annotation
      - ▼ documentation
        - label
        - description
      - ▼ appinfo
        - usagenote
    - ▼ namespaces
      - same as in RDFs
      - import xsd's of external namespaces — ISSUE: not much available
    - ▼ Container element for multiple instances
      - naming convention ?
  - ▼ Class
    - ▼ xsd:element
      - naming same as in RDFS
      - UpperCamelCase
    - ▼ xsd:complexTypeDefinition
      - *cf*. attributes
      - *cf*. relationships
      - ▼ required attribute for identification
        - value xsd:anyURI
    - ▼ Class Inheritance
      - Extension
  - ▼ Attribute
    - ▼ translate into element
      - naming same as in RDFS
      - lowerCamelCase
    - ▼ Attribute Values
      - ▼ simpleType
        - enumerations
  - ▼ Relationship
    - ▼ General
      - ▼ element
        - naming same as in RDFS
        - lowerCamelcase
    - ▼ In case of Associations
      - ▼ Association End, element with refID to instance
        - naming same as in RDFS — ISSUE: depending on reused vocabs
        - UpperCamelCase
    - ▼ In case of Compositions/Aggregations?
      - ▼ Association End, element with content
        - naming same as in RDFS
        - UpperCamelCase
- ▼ Part III Validation of the Artefacts — In iteration 2
  - Chapter 7: Validating UML Class Diagrams
  - ▼ Chapter 8: Validating RDFS — see vcab.shacl.ttl
    - ▼ SHACL translation of rules/guidelines

Topic	Comment

- ▼ Generic
  - ▼ All subjects (in RDF terms) related to ontology/vocab, classes, properties need to be in the own vocab namespace
    - • code
  - ▼ All subjects need to have a type
    - • code
  - ▼ reuse guidelines — *cf.* below
    - • do import, do not copy and past — only in integrated dcumentation for convenience
    - ▼ no ns highjacking allowed, meaning not to change semantics of externally defined artefacts
      - • Example: changing a rdfs:range from rdfs:Class to skos:Concept
    - • no vann:usageNotes on external classes and properties — TBD: need to come up with a better solution
    - ▼ only additional translations of annotation properties
      - • Example: add rdfs:labels and rdfs:comments for languages other than English or those available in the source
    - • semantic testing
  - ▼ Vocabulary
    - • is_a: owl:Ontology, voaf:Vocabulary, dct:Standard, adms:Asset, dcat:Dataset — ISSUE: voaf not dereferenceable
    - • minimum 1 dct:title
    - • only 1 dct:title per language
    - • dct:title in English required (or rdfs:label)
    - • minimum 1 dct:description
    - • only 1 dct:description per language
    - • dct:description in English required (or rdfs:comment)
    - • vann:preferredNamespaceUri required — ISSUE: vann not dereferenceable
    - • Idem vann: preferredNameSpacePrefix
    - • 1 dct:license is required
    - • 1 dct:publisher is required
    - • 1 dcat:contactPoint is required
  - ▼ Classes and Properties
    - • minimum 1 rdfs:label
    - • only 1 rdfs:label per language
    - • rdfs:label in English required
    - • minimum 1 rdfs:comment
    - • only 1 rdfs:comment per language
    - • rdfs:comment in English required
    - • Usage note in English required — ISSUE: see above
    - • rdfs:isDefinedBy required
  - ▼ Class
    - • Naming convention: UpperCamelCase
    - • Tip: indicate disjointness of classes
  - ▼ Properties (rdf:Property)
    - • Give advice to be more specific: or Object or Datatype
  - ▼ AllProperties (rdf:Property, owl:DatatypeProperty, owl:ObjectProperty)
    - • Naming convention: lowerCamelCase
    - • Warning on domain use, suggest SHACL shape
  - ▼ Object properties (owl:ObjectProperty)
    - • Warning on range use, suggest SHACL constraint
    - • Warning on setting ranges on external properties
  - ▼ Datatype properties (owl:DatatypeProperty)
    - • Warning on range use, suggest SHACL constraint
    - • Warning on setting ranges on external properties
  - • Validate RDFS
    `<rdfs:isDefinedBy rdf:resource= "https://www.w3.org/TR/vocab-dcat-2/#Property:data_service_serves_dataset " />`
- ▼ Chapter 9: Validation of RDFS/OWL semantics
  - • human translation
    use CNL
    Public-Comments-Core-Business-Vocabulary-V-02[<https://joinup.ec.europa.eu/asset/core_busin#>] is a forum[sioc].
    Every legal-entity is a formal-organization.
    Every-single-thing is-registered-address nothing-but address[locn].
    Every-single-thing has-legal-entity nothing-but legal-entity.
    Every-single-thing has-company-type nothing-but concepts[skos].
    Every-single-thing has-legal-identifier nothing-but identifiers[adms].
    Every-single-thing that is-registered-address is a legal-entity.
    Every-single-thing that has-legal-identifier is a legal-entity.

  - • inference/reasoning
    2 examples of the Flemish
  - • Chapter 10: Validating SHACL
  - ▼ Chapter 11: Validating XSD
    - • schematron implementing rules
- ▼ Part IV: Publishing guidelines
  - ▼ Chapter 11: Artefacts
    - ▼ Spec homepage in catalogue
      - • HTML
    - ▼ Spec documentation
      - • Template structure to be defined
      - ▼ formats
        - • HTML
        - • PDF

Topic	Comment

- Spec guidance — examples etc.
- ▼ Vocab glossary
  - ▼ formats
    - HTML
    - PDF
- ▼ UML Class Diagram
  - ▼ format
    - picture (SVG, …)
- ▼ Machine readable Files
  - XMI (optional)
  - RDFS (turtle, json-ld)
  - SHACL
  - XSD
- ▼ Chapter 12: As LOD resource
  - how to
  - ▼ guidelines
    - all uri's shown by their human readable label (based on rdfs:label)
    - all labels representing uri's clickable as link
    - ▼ presentation
      - label
      - description
      - usage note
      - relationships
- Glossary
- Annexes
- ▶ D02.04 Toolchain