

# Values

This page is intended to support the process of improving and validating the use and representation of values across FIBO. Values in this regard may be distinguished from “entities”; values are immutable and non-temporal, their identity is fully defined by their immutable content. Values includes xsd defined literals, FIBO “Business Facing Types” (BFT) and OWL classes representing values. A common abstraction and representation for value classes is defined in the ontology “Values.rdf”, however that ontology has issues that must be resolved. A process is required to make FIBO consistently follow current policies.

## Factors to be considered

- Maintaining (and improving) consistency and validity across all of FIBO
- Changes impacting OMG specifications
- Changes impacting current use of FIBO
- Understandability & Simplicity
- Capture & use of stakeholder terms and concepts
- Consistency with referenced standards
- Semantic precision
- Technology and data representation independence
- Business Facing Types is now thought to be undesirable and should be deprecated
- Balancing consistency with ontologists preference

## Related Issues

- FND-91
- FND-151
- FND-99
- FND-103
- FND-107
- FND-157

## Current state of baseline (FIBO Master)

- There is a lack constancy across FIBO in the use and representation of FIBO values.
- The current Values.RDF redundantly defines concepts covered in established ontologies and has other issues previously documented.
- It has been established that a repaired Values.RDF should be use as the foundation for FIBO classes representing values.
- It has further been established that xsd literals and datatype properties may be used when there is insufficient semantic leverage in using value classes (noting that this is subjective)
- Existing use of BFT was mechanically changed to use Values.RDF across much of FIBO (101 Ontologies) resulting in undesirable patterns – arbitrary use of classes where literals are sufficient and failure of existing classes to subclass “Value”.

## Statistics to help evaluate scope and impact

(Some are approximate – raw data is available)

- Types in Values.rdf are used 560 times across 101 ontologies
- XSD data types are used 146 times across 102 ontologies
- BFTs are used 64 times across 15 ontologies
- There are also thousands of uses of XSD types in individuals and metadata

## Recommended changes

- Type substitutions as defines in the [\[Values Substitutions Page\]](#)
- Consistent use of Values as defined in the [\[Values Review Page\]](#)

## Process summary

- Come to agreement on the changes to be made (this page). Note decisions are required for items marked "Choice".
- Branch from "Master" and validate that it passes all tests as-is
- Ensure that CCM models are up to date with branch
- Make the substitutions detailed in the Substitution List
- Export impacted ontologies
- Review and validate Values.RDF
- Validate changes with Protégé
- Check into branch to kick-off full validation
- Inspect validation & review by FND team
- Further validate with use of individuals per Elisa's [Suggestions for validation](#)
- Check-in any modifications
- FND Team to review & modify each of the ontologies on the "Values Review Page"
- Check in and repeat validations
- Complete with pull request

## Other Choices

[To fold "Value" and "AtomicValue" into one class with an optional "hasValue" property.](#)

[Further review of ontologies using BFT](#)