



FONDO EUROPEO DE DESARROLLO REGIONAL (FEDER)

Una manera de hacer Europa

ROH Ontology Classes, Object Properties and DataType Properties

1. Abstract.....	2
2. Ontologies used	2
3. Concepts modelled	3
3.1. vivo:AcademicDegree	3
3.2. roh:Accreditation	3
3.3. rohes:Account.....	4
3.4. roh:Activity	4
3.5. foaf:Agent	5
3.6. skos:Concept.....	5
3.7. roh:CurriculumVitae	6
3.8. roh:Expense	6
3.9. gn:Feature.....	7
3.10. roh:Funding, roh:FundingAmount, roh:FundingProgram & roh:FundingSource	7
3.11. roh:Infrastructure	7
3.12. roh:Metric.....	8
3.13. vivo:Project	8
3.14. vivo:Relationship	8
3.15. roh:ResearchObject	10
3.16. obo-bfo:Role	11
3.17. obo-ero:Service.....	12
3.18. rohes:Tax	12
3.19. obo-bfo:TemporalRegion.....	12

1. Abstract

The aim of this document is to provide a bird's eye view on the entities modelled within ROH. The document includes an overview in tabular form for each of the core entities of the network of ontologies ROH, giving details on the object and data properties supported by each of them. This document is meant to be useful when instances of ROH want to be created, since it clearly explains what entity types a given entity type relates with through an object property and what data properties are supported by a given entity type, including details about its associated object types.

This document should be read as a complement to the [ROH Tutorial document](#) which describes more verbosely the purpose of the core entities of ROH and their relationships with other entities in the ontology.

2. Ontologies used

The following table lists all ontologies created, i.e. those starting by namespace prefix roh, and those reused in the design of ROH. Notice that ROH network of ontologies is divided into 3 main parts.

- The generic ontology, named ROH, contains the most important entities and properties to model information in the academic domain. It contains the most important part of the network of ontologies. It covers the academic domain, being agnostic to the country or the research organization whose information wants to be modelled with.
- ROHES is a specialization of ROH for the Spanish science and research domain. It includes some additional entities which are only used in the Spanish science and research domain, e.g. rohes:Sexenio or rohes:ProfesorTitularDeEscuelaUniversitaria.
- Finally, ROHUM is a specialization to cater with the special modelling needs of University of Murcia. More concretely, a wide range of entities to support the accounting system and be able to model expense types are included, e.g. rohum:ArrendamientosYCanones or rohum:InversionNueva.

Prefix	Ontology name	Ontology namespace	Ontology website
bibo	Bibliographic Ontology	http://purl.org/roh/mirror/bibo#	http://bibilontology.com/
cito	CITO, the Citation Typing Ontology	http://purl.org/spar/cito#	https://sparontologies.github.io/cito/current/cito.html
foaf	FOAF: Friend of a Friend Ontology	http://purl.org/roh/mirror/foaf#	http://xmlns.com/foaf/spec/
gn	GeoNames Ontology	http://purl.org/roh/mirror/geonames#	http://www.geonames.org/ontology/documentation.html
obo-bfo	OBO Foundry, Basic Formal Ontology	http://purl.org/roh/mirror/obo/bfo#	http://www.obofoundry.org/ontology/bfo.html
obo-ero	OBO Foundry, eagle-i Research Resource Ontology (ERO)	http://purl.org/roh/mirror/obo/ero#	https://open.library.utoronto.ca/oh/eagle-i/ontology
obo-iao	OBO Foundry, Information Artifact Ontology	http://purl.org/roh/mirror/obo/iao#	https://github.com/information-artifact-ontology/IAO
obo-ro	OBO Foundry, Relations Ontology	http://purl.org/roh/mirror/obo/ro#	http://www.obofoundry.org/ontology/ro.html
owl	OWL Web Ontology Language	http://www.w3.org/2002/07/owl#	https://www.w3.org/TR/owl-features/
rdf	The RDF Concepts Vocabulary (RDF)	http://www.w3.org/1999/02/22-rdf-syntax-ns#	https://www.w3.org/TR/rdf-concepts/
rdfs	RDF Schema 1.1	http://www.w3.org/2000/01/rdf-schema#	https://www.w3.org/TR/rdf-schema/
roh	Red de Ontologías Hércules / Hércules Network of Ontologies	http://purl.org/roh#	https://github.com/HerculesCRUE/GnossDeustoOnto/tree/master/Documentation

rohes	Red de Ontologías Hércules / Hercules Network of Ontologies, Spanish specialization	http://purl.org/rohes#	https://github.com/HerculesCRUE/GnossDeustoOnto/tree/master/Documentation
rohum	Red de Ontologías Hércules / Hercules Network of Ontologies – University of Murcia Specialization	http://purl.org/rohum#	https://github.com/HerculesCRUE/GnossDeustoOnto/tree/master/Documentation
skos	SKOS Simple Knowledge Organization System	http://www.w3.org/2004/02/skos/core#	https://www.w3.org/TR/2008/WD-skos-reference-20080829/skos.html
uneskos	SKOS UNESCO Thesaurus	http://purl.org/umu/uneskos#	https://skos.um.es/unescothes/downloads.php
vcard	vCard Ontology - for describing People and Organizations	http://purl.org/roh/mirror/vcard#	https://www.w3.org/TR/vcard-rdf/
vivo	VIVO core ontology	http://purl.org/roh/mirror/vivo#	https://wiki.lyrasis.org/display/VIVO/The+core+ontology+and+its+annotations

3. Concepts modelled

3.1. vivo:AcademicDegree

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
vivo	AcademicDegree				vivo	abbreviation	rdfs:Literal	
					roh	title	xsd:string	

3.2. roh:Accreditation

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
roh	Accreditation	vivo	hasGoverningActivity	foaf:Organization	roh	title	xsd:string	
		vivo	hasSubjectArea	owl:Thing	vivo	description	xsd:string	
		roh	accreditationOf	foaf:Agent				
		roh	issuedBy	roh:AccreditationIssuer				
		vivo	dateIssued	vivo:DateTimeValue				
roh	AcademicAccreditation				roh	title	xsd:string	
	rohes AyudanteDoctor							
	rohes CatedráticoUniversidad							
	rohes ContratadoDoctor							
	rohes ProfesorUniversidadPrivada							
	rohes TitularUniversidad							
roh	Certificate				roh	title	xsd:string	
	roh Award							
	roh CourseCertificate							
	roh LanguageCertificate				roh	language	xsd:string	
					roh	listeningSkill	xsd:string	{"A1", "A2", "B1", "B2", "C1", "C2"}
					roh	readingSkill	xsd:string	{"A1", "A2", "B1", "B2", "C1", "C2"}
					roh	speakingSkill	xsd:string	{"A1", "A2", "B1", "B2", "C1", "C2"}
					roh	spokenInteractionSkill	xsd:string	{"A1", "A2", "B1", "B2", "C1", "C2"}
roh	DegreeHomologation	vivo	relates	vivo:AwardedDegree				
roh	License							

	roh	ResearchAccreditation							
		rohes	Sexenio	vivo	dateTimeInterval	vivo:DateTimeInterval			

3.3. rohes:Account

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
rohes	Account	rohes	charges	roh:Expense				
	rohes		ActivoNoCorriente					
		rohes	InmovilizacionesIntangibles					
		...						
	rohes		ComprasYGastosPorNaturaleza					
		rohes	Perdidas					
		rohes	ServiciosExteriores					
		...						
			rohes	Suministros				
		...						

3.4. roh:Activity

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
roh	Activity	roh	participatedBy	foaf:Agent	vivo	identifier	xsd:string	
		bibo	presents	bibo:Document	roh	description	xsd:string	
		vivo	relates	roh:Expense or obo-bfo:Role	vivo	freeTextKeyword	xsd:string	
		obo-bfo	realizes	obo-bfo:Role	vivo	contactInformation	rdfs:Literal	
		vivo	hasSubjectArea	skos:Concept	roh	title	xsd:string	
		vivo	dateTimeInterval	vivo:DateTimeInterval				
		gn	locatedIn	gn:Feature				
	vivo		Competition					
	bibo		Conference		vivo	abbreviation	rdfs:Literal	
	vivo		Course	obo-ro	partOf	vivo:AcademicDegree	xsd:int	
					vivo	courseHours	xsd:string	
	vivo		Exhibit					
	bibo		Hearing					
	vivo		Internship					
	vivo		Interview					
	vivo		Meeting					
	bibo		Performance					
	vivo		Presentation					
	vivo		InvitedTalk					
	roh		PanelTalk					
	roh		ThesisViva					
	bibo		Workshop					

3.5. foaf:Agent

Prefix	Class		Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
foaf	Agent		roh	hasContactInfo	vcard:Organization	vivo	freeTextKeyword	xsd:string	
			roh	hasAccreditation	roh:Accreditation				
			roh	hasRole	obo-bfo:Role				
			foaf	mBox	owl:Thing				
			vivo	relatedBy	vivo:Relationship				
	foaf	Organization	roh	hasKnowledgeArea	skos:Concept	vivo	identifier	xsd:string	
			vivo	affiliatedOrganization	foaf:Organization	vivo	abbreviation	rdfs:Literal	
			vivo	hasSuccessorOrganization	foaf:Organization	roh	description	xsd:string	
			vivo	hasPredecessorOrganization	foaf:Organization	roh	researchLine	xsd:string	
			obo-ro	hasPart	foaf:Organization	roh	foundationDate	xsd:string	
			roh	hasInfrastructure	roh:Infrastructure				
			foaf	homePage	foaf:Document				
			roh	participates	roh:Activity				
			roh	produces	roh:ResearchObject				
			roh	grantedBy	roh:FundingAmount				
			vivo	dateTimeInterval	vivo:DateTimeInterval				
			gn	locatedIn	gn:Feature				
	roh	AccreditationIssuer	roh	issues	roh:Accreditation				
	roh	FundingOrganization	roh	promotes	roh:FundingProgram or roh:FundingSource				
			roh	funds	roh:Funding				
	roh	ResearchGroup				roh	excellenceLabel	xsd:boolean	
	vivo	University	roh	awards	vivo:AwardedDegree				
	foaf	Person	roh	hasKnowledgeArea	skos:Concept	vivo	identifier	xsd:string	
			vivo	relates	vivo:AwardedDegree	vivo	researcherId		
			roh	spends	roh:PersonExpense	roh	birthdate	xsd:string	
			roh	hasContract	roh:PersonContract	vivo	eRACommonsId		
			roh	hasCV	roh:CurriculumVitae	roh	description	xsd:string	
			roh	hasPosition	vivo:Position	roh	firstName	xsd:string	
			roh	participates	roh:Activity	roh	gender	xsd:string	
			roh	elegibleFor	roh:Accreditation	roh	researchLine	xsd:string	
			foaf	homePage	foaf:Document	foaf	surname	xsd:string	
			foaf	image	foaf:Image	foaf	name	xsd:string	
			roh	correspondingAuthor		foaf	nickname	xsd:string	
			roh	supervisorOf	bibo:Thesis	roh	taxID	xsd:string	
						roh	title	xsd:string	
						roh	ORCID	xsd:string	
						vivo	scopusId		
						rohes	secondFamilyName	xsd:string	

3.6. skos:Concept

Prefix	Class		Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
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skos	Concept		roh	knowledgeAreaOf				
	roh	KnowledgeArea						
		roh	UNESCOKnowledgeArea					
		rohes	FECYTKnowledgeArea					
	roh	ProjectClassification						
		roh	European					
		roh	International					
		roh	National					
		rohes	PlanEstatad2017-2020					
		roh	Own					
		roh	Regional					
	roh	HRClassification						
		roh	TrainingStaffPlacement					
		roh	TechnicalSupportStaffGrant					
		roh	Mobility					
		roh	PostDocContract					
		roh	PostDocGrant					
		roh	PostDocContinuityGrant					
		roh	PreDocContract					
		roh	PreDocGrant					
		roh	PreDocGrantContract					
		roh	ResearchStartGrant					

3.7. roh:CurriculumVitae

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
roh	CurriculumVitae	roh	CVOf	foaf:Person	roh	cites	xsd:string	
					roh	factorH	xsd:string	
					roh	summary	xsd:string	

3.8. roh:Expense

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
roh	Expense	roh	spentBy		roh	currency	xsd:string	
		vivo	dateTimeValue	vivo:DateTimeValue	vivo	description	xsd:string	
					roh	monetaryAmount	xsd:float	
					roh	title	xsd:string	
	roh	PersonExpense			roh	expenseModality		
	roh	ProjectExpense						
	roh	ResearchObjectExpense						
		rohum	GastosCorrientesBienesYServicios					
		roh	ArrendamientosYCanones					
		roh	IndemnizacionesServicio					
		roh	MaterialSuministrosOtros					

		roh	ReparacionesMa ntenimientoCon servación							
		roh	InversionesReales							

3.9. gn:Feature

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
gn	Feature	gn	featureClass		gn	geonamesID	rdfs:Literal	
		gn	featureCode	gn:Code	gn	countryCode	rdfs:Literal	
		gn	parentAMD1	gn:featureCode	gn	name	xsd:string	
		gn	parentAMD2	gn:featureCode	gn	population	xsd:integer	
		gn	parentAMD3	gn:featureCode				
		gn	parentAMD4	gn:featureCode				

3.10. roh:Funding, roh:FundingAmount, roh:FundingProgram & roh:FundingSource

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
roh	Funding	obo-ro	hasPart	roh:FundingAmount	vivo	identifier	xsd:string	
		roh	fundedBy	roh:FundingProgram	vivo	description		
		vivo	dateTimeInterval	vivo:DateTimeInterval	vivo	freeTextKeyword		
		roh	financedBy	roh:FundingSource	roh	publicFunding	xsd:boolean	
		roh	hasContract	vivo:Contract				
		roh	supports	roh:PersonContract or roh:Project				
		roh	hasKnowledgeArea	skos:Concept				
		vivo	dateTimeInterval	vivo:DateTimeInterval				
	roh	Grant						
	roh	Loan						
	roh	Outsourcing						
	roh	RefundableAdvance						
roh	FundingAmount	roh	grants	foaf:Organization	roh	currency	xsd:string	
		obo-ro	partOf	roh:Funding	roh	monetaryAmount	xsd:float	
		vivo	dateTimeInterval	vivo:DateTimeInterval				
roh	FundingProgram	roh	promotedBy	roh:FundingSource	vivo	identifier	xsd:string	
		gn	locatedIn	gn:Feature	roh	title	xsd:string	
		vivo	dateTimeInterval	vivo:DateTimeInterval	vivo	description	xsd:string	
		obo-ro	hasPart	roh:FundingProgram				
roh	FundingSource	roh	promotedBy	vivo:FundingOrganization				
		roh	funds	roh:FundingProgram				

3.11. roh:Infrastructure

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
roh	Infrastructure	roh	infrastructureOf	foaf:Agent	roh	title	xsd:string	

					vivo	description	xsd:string	
	roh	Equipment			vivo	freeTextKeyword	xsd:string	
	roh	Facility	obo-ro	hasPart	roh:Facility			
	roh	Software	vivo	hasSubjectArea	skos:Concept			
			roh	correspondingAuthor	foaf:Person			

3.12. roh:Metric

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
roh	Metric	roh	metricOf	roh:ResearchObject	roh	metricName	xsd:string	
	roh	DegreeMetric						
	roh	ThesisMetric			roh	cumLaude	xsd:boolean	
					roh	mark	xsd:string	
		rohes	PhDThesisMetric		rohes	doctoradoEuropeo	xsd:boolean	
					rohes	doctoradoInternacional	xsd:boolean	
					rohes	mencionCalidad	xsd:boolean	
					rohes	premioExtraordinarioDoctorado	xsd:boolean	
	roh	PublicationMetric			roh	impactFactor	xsd:float	
					roh	quartile	xsd:string	{"Q1", "Q2", "Q3", "Q4"}
					roh	ranking	xsd:string	

3.13. vivo:Project

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
vivo	Project	roh	hasKnowledgeArea	skos:Concept	vivo	identifier	xsd:string	
		vivo	relates	roh:Audit or obo-bfo:Role	vivo	abbreviation	rdfs:Literal	
		roh	hasContract	vivo:ProjectContract	vivo	description	rdfs:Literal	
		obo-ro	hasPart	vivo:Project	roh	title	xsd:string	
		vivo	participates	roh:Activity	roh	projectStatus	xsd:string	{"CLOSED", "OPEN", "PROPOSED", "SUBMITTED", "REJECTED"}
		roh	spends	roh:ProjectExpense	vivo	freeTextKeyword	xsd:string	
		roh	produces	roh:ResearchObject	roh	modality	xsd:string	
		vivo	relatedBy	roh:Dossier or roh:Justification or obo-bfo:Role	roh	foreseenJustificationDate	xsd:dateTime	
		roh	isSupportedBy	roh:Funding	roh	needsEthicalValidation	xsd:boolean	
		gn	locatedIn	gn:Feature				
		vivo	dateTimeInterval	vivo:DateTimeInterval				
		roh	hasProjectCategorization	roh:ProjectClassification				
		roh	hasHRClassification	roh:HRClassification				

3.14. vivo:Relationship

Prefix	Class		Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
vivo	Relationship								
	vivo	AdvisingRelationship	vivo	dateTimeInterval	vivo:DateTimeInterval				
			vivo	hasSubjectArea	skos:Concept				
			vivo	relates	vivo:AdvisorRole or vivo:AdviseeRole or foaf:Person				
			vivo	degreeCandidacy	vivo:AcademicDegree				
	vivo	AwardedDegree	roh	awardedBy	vivo:University				
			vivo	relates	foaf:Person or roh:AcademicDegree				
			vivo	dateTimeValue	vivo:DateTimeValue				
	vivo	Contract	roh	contractOf		bibo	abstract	xsd:string	
			roh	contractSigningDate	vivo:DateTimeValue	roh	fileURI		
			vivo	assignedBy	foaf:Organization	roh	attachment	owl:Thing	
			vivo	hasSubjectArea	skos:Concept				
			vivo	relates	roh:Funding or bibo:Patent or foaf:Agent or obo-bfo:Role				
			vivo	dateTimeInterval	vivo:DateTimeInterval				
			vivo	supportedInformationResource	obo-liao:InformationContentEntity				
		roh	PersonContract	roh	hasHRCClassification	roh	HRCClassification		
		roh	ProjectContract						
	vivo	Position	vivo	relates	foaf:Organization	vivo	rank	xsd:int	
			vivo	relates	foaf:Person	vivo	hrJobTitle		
			vivo	dateTimeInterval	vivo:DateTimeInterval				
		vivo	FacultyAdministrativePosition						
		vivo	FacultyPosition						
			rohes	CuerpoDocente					
			rohes:	CatedraticoEscuelaUniversitaria					
			rohes:	CatedraticoDeUniversidad					
			rohes:	ProfesorTitularDeEscuelaUniversitaria					
			rohes:	ProfesorTitularDeUniversidad					
			rohes	PDICContratado					
			rohes:	Ayudante					
			rohes:	ProfesorAsociado					
			rohes:	ProfesorAyudanteDoctor					
			rohes:	ProfesorContratadoDoctor					
			rohes:	ProfesorEmerito					
			rohes:	ProfesorVisitante					
		vivo	LibrarianPosition	roh	produces	roh	DegreeThesis		
		vivo	NonAcademicPosition						
		vivo	NonFacultyAcademicPosition						
		vivo	PrimaryPosition						
		roh	ResearcherPosition						
	roh	SupervisingRelationship	vivo	dateTimeInterval	vivo:DateTimeInterval				

			roh	produces	roh:Thesis				
			vivo	relates	roh:SupervisorRole or roh:SuperviseeRole or foaf:Person				
		roh	DegreeSupervisingRelationship	roh	produces	roh:DegreeThesis			
		roh	MasterSupervisingRelationship	roh	produces	roh:MasterThesis			
		roh	PhDSupervisingRelationship	roh	produces	roh:PhDThesis			

3.15. roh:ResearchObject

Prefix	Class		Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
roh	ResearchObject		roh	hasKnowledgeArea	skos:Concept				
			roh	correspondingAuthor	foaf:Person				
			roh	producedBy	roh:Project				
	bibo	Collection				bibo	oclcnum	rdfs:Literal	
		roh	Dossier	vivo	relates	roh:ProjectContract or bibo:Report or roh:Project	vivo	identifier	xsd:string
				vivo	dateTimeInterval	vivo:DateTimeInterval	roh	title	
						vivo	description		
		bibo	Periodical	vivo	publisher	foaf:Organization	bibo	eissn	rdfs:Literal
						bibo	issn	rdfs:Literal	
		bibo	Journal	vivo	dateIssued	vivo:DateTimeValue	vivo	abbreviation	rdfs:Literal
		bibo	Magazine						
	bibo	Document	vivo	publishedIn	bibo:Collection or bibo:Book	bibo	doi	xsd:string	
			bibo	authorList	rdf:Seq	bibo	abstract	xsd:string	
			vivo	dateIssued	vivo:DateTimeValue	bibo	pageStart		
			bibo	editorList	rdf:Seq	bibo	pageEnd		
						bibo	volume	rdfs:Literal	
		vivo	Abstract						
		bibo	Article			bibo	issue		
		bibo	AcademicArticle						
			obo-iao:JournalArticle	roh	hasMetric	roh:PublicationMetric			
		vivo	ConferencePaper	bibo	presentedAt	bibo:Conference			
			roh:WorkshopPaper						
		vivo	EditorialArticle						
		bibo	Book	vivo	publisher	foaf:Organization	bibo	edition	rdfs:Literal
						bibo	isbn	rdfs:Literal	
						vivo	placeOfPublication	rdfs:Literal	
						bibo	iccn	rdfs:Literal	
		bibo	Proceedings						
		vivo	ConferencePoster						
		vivo	Dataset	cito	isCitedAsDataSourceBy	foaf:Document			
		bibo	DocumentPart	vivo	publisher	foaf:Organization	vivo	placeOfPublication	rdfs:Literal
		bibo	BookSection						
			bibo:Chapter						
		bibo	Patent	vivo	publisher	foaf:Organization	vivo	identifier	xsd:string
				gn	locatedIn	gn:Feature	roh	modality	xsd:string
				vivo	dateIssued	vivo:DateTimeValue			

				roh	ownerOrganization	foaf:Organization				
		bibo	Report	vivo	distributor	foaf:Organization	roh	status	xsd:string	["ACCEPTED", "REJECTED"]
				vivo	publisher	foaf:Organization				
			roh	EthicalReport						
				roh:	EthicalAudit					
				roh:	EthicalValidation					
			roh	EvaluationSummary			roh	evaluationStatus	xsd:string	["FINAL", "PROVISIONAL"]
			roh	Justification	vivo	relates	roh:Project			
			vivo	ResearchProposal	vivo	relates	roh:Justification or roh:ProjectContract or roh:Project or roh:ResearchProposal			
		bibo	Thesis				vivo	abbreviation	rdfs:Literal	
							vivo	placeOfPublication	rdfs:Literal	
			roh	DegreeThesis						
			roh	MasterThesis						
			roh	PhDThesis						
		bibo	Webpage							

3.16. obo-bfo:Role

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
obo-bfo	Role	vivo	dateTimeInterval	vivo:DateTimeInterval	roh	dedication	xsd:string	["PARTIAL", "TOTAL"]
		roh	inheresIn	foaf:Agent	vivo	description	xsd:string	
		vivo	relatedBy	roh:Project or vivo:Relationship				
		roh	hasKnowledgeArea	skos:Concept				
		obo-bfo	realizedIn	roh:Activity				
		roh	roleOf	foaf:Agent				
	vivo	AdministratorRole						
	vivo	AdviseeRole						
	vivo	AdvisorRole						
	vivo	AttendeeRole						
	vivo	AuditeeRole						
	vivo	AuditorRole						
	vivo	EditorRole						
	vivo	EducatorRole						
	vivo	EmployeeRole						
	vivo	ExternalMemberRole						
	vivo	FundingRole						
	vivo	LeaderRole						
	vivo	MemberRole						
	vivo	OrganizerRole						
	vivo	PresenterRole						
	vivo	ResearcherRole						
	vivo	ReviewerRole						
	vivo	StudentRole						
	vivo	SuperviseeRole						

vivo	SupervisorRole							
vivo	TeacherRole							
vivo	ThirdPartyContractorRole							

3.17. obo-ero:Service

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
obo-ero	Service	roh	isProvidedBy	foaf:Organization	vivo	identifier	xsd:string	
					roh	title	xsd:string	
					vivo	description	xsd:string	
	vivo AccessService							
	vivo AnalysisService							
	roh ExternalMemberRole							
	vivo ...							

3.18. rohes:Tax

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
rohes	Tax				rohes	rate	xsd:float	
	rohes IVA							
	rohes IRPF							
	rohes IRNR							

3.19. obo-bfo:TemporalRegion

Prefix	Class	Prefix	Object property (bold indicates explicit Domain, otherwise a Restriction)	Range Class	Prefix	Datatype Property (bold indicates explicit domain; otherwise a restriction)	Range Datatype (if typed)	Range values
obo-bfo	TemporalRegion							
	obo-bfo OneDimensionalTemporalRegion							
	vivo DateTimeInterval	vivo	start	vivo:DateTimeValue				
		vivo	end	vivo:DateTimeValue				
	obo-bfo ZeroDimensionTemporalRegion							
	vivo DateTimeValue				vivo	dateTime	xsd:dateTime	