Report D3.1
"Report on communities interested in domain-specific semantics"

Grant Agreement: 958371

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Report D3.1
"Report on communities interested in domain-specific semantics"

Work Package	WP3 | Industrial Domain Ontologies
Task	T3.1 | Networking and consultation
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Communities, Stakeholders, Semantic Assents, Domain ontologies, Domain specific sematics

Disclaimer

Executive Summary

The core objective of Work Package 3 is to collect community input to formulate guidance and agreements concerning the harmonisation of domain ontologies. In this document we provide a first definition of the relevant domains for the project based on the Description of Actions and the demonstrators. Further relevant domains have been investigated with the help of **ENIT**. Still, the provided list of domains might not be complete and will be further elaborated in the course of the project. The present list of domains is mainly based on the focus of the OntoCommons project as described in the Grand Agreement. Further relevant domains have been selected, if work on semantic assets were visible and if the domains were similar to the ones mentioned in the Description of Actions. For this, the following platforms have been harvested

- Ontologies registered in Taxonda[1].
- Semantic assets collected by the RDA group[2].
- Domains listed on the EMMO GitHub page[3].

Furthermore, all members of the consortium have been asked to modify the list of domains and add further semantic assets to the list. The domains will be further refined in the upcoming activities in WP3, most importantly in the semantic landscape analysis (T3.2), the upcoming survey (See Chapter 4) and the focussed workshop FW3.1.

For every domain, we present the communities interested in it. These communities consist of organizations and projects, but most importantly of people. For each domain, we collected the relevant people active in the field and interested in domain ontologies, as well as interesting projects and organizations.
We asked all partners in the consortium to provide us with potential stakeholders and relevant people who might be interested in semantics for each domain. These people can be contacted during the project by the OntoCommons partner who added them in this document. In this manner we can ask the stakeholders to register on the OntoCommons Website. Afterwards, the project can invite them to activities, like workshops, which are most relevant to each of them.
For each identified stakeholder in a domain, we provide the name, affiliation, affiliation country, contact info, if available, as well as groups to which the stakeholder is associated. Due to privacy reasons, we will not publish names and contact information despite the public nature of the deliverable. Instead, we will only publish a censored version, while submitting the original to the European Commission. For each semantic asset, we provide the name, the author/owner or contact together with the intended scope and a download link or a link to material describing the asset in more detail. If there is a demonstrator planned in a domain, we mention it to indicate the importance of the domain for the project.

For the organizations and projects, we reduced the list of D1.1 developed by **GCL** to those entries which deal with specific domains. We asked the partners to provide relevant contacts for each

[1] https://emmc.info/taxonda-dashboard/

[2] https://materials.registry.nist.gov/explore/keyword/

[3] https://github.com/emmo-repo

organization and project. We refer to D1.1 and the provided links to the website for more information and details.

With the important members of the communities and relevant domains identified, the next step is to gather input from the stakeholders. For that matter, a survey is currently being prepared by **E-SDF** in collaboration with all Work Package partners. The results of the survey will be input for Deliverable 3.2, for which a semantic landscape analysis is performed. In the semantic landscape analysis, the field is scanned for existing and ontologies and semantic assets in much greater detail than in this first document. In the analysis, special attention lies in identifying the gaps in the current domain ontology landscape. **UKRI** currently prepares a focused workshop for direct interaction with stakeholders. This workshop will be an extended event, divided into two parts. The first part will be held in March and will be a kick-off workshop, aimed at discussing the survey results. It will contain a brainstorming activity as preparation for the second follow-up event. The second part is the DORIC-MM workshop co-located at the ESWC 2021 conference[4], to reach a broad stakeholder audience. For DORIC-MM, experts in the field are invited as keynote speakers and participants can discuss their current challenges in digitisation and data interoperability using domain ontologies.

The document is organised in five chapters. The first chapter reports on the communities in the direct focus of OntoCommons, as they are explicitly mentioned in the Description of Action or as there exists an OntoCommons demonstrator for the domain. These mainly include the domains of materials and manufacturing as well as their subdomains. The second chapter contains domains which we consider also relevant, despite not being explicitly mentioned in the Description of Actions. We discovered these domains as described above, by harvesting several registries for semantic assets. In the third chapter we focus on communities, which are not in the direct focus of the project. Nevertheless, these communities have shown large interest in domain-specific semantics, so that we consider it very plausible to approach them for cooperation the future. In the fourth chapter we present the next steps in more detail and provide a first look at our current survey draft. This survey will be sent to potential stakeholders very soon and its results will be valuable input for the first focussed workshop in March. Finally, the conclusions of this work are shown in chapter five.

This deliverable has a public status and contains confidential information (names and emails of stakeholders) in its original form. In this public version we removed everything confidential. The unfiltered version is only shared with the consortium and submitted to the EC.

[4] https://2021.eswc-conferences.org/

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1.Communities in the focus of OntoCommons

In the first chapter, we focus on the domains which are mentioned in the Grant Agreement as well as domains which are dealt within one of the demonstrator cases. We consider these domains the most important ones for the project. Since these domains are still relatively broad, we think it might be necessary to refine them by means of collaborative actions with the identified stakeholders. As in all chapters, we present relevant people for each domain at the top, followed by related organizations, projects as well as semantic assets. The input for these lists were mostly the projects partners' networks, including the lists collected in Deliverable 1.1. Furthermore, several web collections for semantic assets have been harvested, including Taxonda[5], the assets the RDA group collected[6] as well as the assets which are on the GitHub page of EMMO[7].

1.1 Materials

With at least 4 demonstrators mostly about materials, the materials community is at the heart of OntoCommons. In the last couple of years, this community has put great efforts into developing ontologies to advance digitisation and to overcome innovation bottlenecks.

The demonstrators focussing on materials include "European Virtual Marketplace Framework", "Feedstock Quality Assurance", "Cu/Al Data", and "NanoMaterials Characterisation" as described in the Grant Agreement.

The persons presented here are generally interested in domain ontologies for the materials domain. Further people interested in the materials domain will be presented in the subsections below.

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Fraunhofer	Germany		
	Fraunhofer	Germany		
	Duke university	USA		
	US Airforce	USA		RDA, Materials and Ontology Engineer
	University of Sheffield	USA		

[5] https://emmc.info/taxonda-dashboDard/

[6] https://materials.registry.nist.gov/explore/keyword/

[7] https://github.com/emmo-repo

	Association for Computing Machinery	Japan		
	The University of Queensland			
	Karlsruhe Institute of Technology	Germany		
	FRAUNHOFER	Germany		MarketPlace, StahlDigital, STREAM
	ACCESS	Germany		MarketPlace, EMMC
	EPFL	Swizerland		RDA, Marketplace, OptiMaDe, Materials Cloud, Intersect
		Switzerland		
	NIST	USA		Metadata Librarian
	Technion	USA, Israel		IEEE, INCOSE, IAPR, ISO

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
MatOnto	Previous: Queensland university now: NCOR	Materials	GitHub
MPDS and PAULING FILE hierarchy of the materials properties		organizing the physical properties data, excerpted from the peer-reviewed publication	Website
Adhesive Bonding Technology Taxonomy	Fraunhofer IFAM	materials and process (and material-process interdependencies) visualisation	Website
SKOS version of Materials Data Vocabulary	Andrea Medina-Smith	A version of the Materials Data Vocabulary structured as Simple Knowledge Organization System (SKOS)	Download
Object-Process Methodology – OPM ISO 19450:2015		Universal Ontology - applicable to physics, chemistry, biology, technology, industry, complex	ISO

		socio-technical systems, and many other domains	
Open Terms and Definitions for Materials, Manufacturing, and Design		This vocabulary is comprised of terms and definitions related to materials, manufacturing and design and may be reused without any distribution limitation. However, the definitions of some terms require attribution.	GitHub

Organizations and projects:

Name	Link	Contact
RDA/CODATA Materials Data, Infrastructure & Interoperability IG	Website	
CFPC - Carbon Fibres & Advanced High-Performance Cluster	Website	
EUMAT - European Materials Platform	Website	
A4M-Alliance for Materials	Website	
NIST - National Institute of Standards and Technology	Website	
DECOAT	Website	
MaterialDigital	Website	
SMARTFAN	Website	
NFDI4Cat	Information	
ENTENTE	(not yet available)	
OptiMaDe	Website	
Materials Cloud	Website	
STREAM	Website	

1.1.1 Materials characterisation

The materials characterisation community is very active in developing domain ontologies. OntoCommons includes the demonstrator Cu/Al Data to show the benefits of ontologies as well as standardised methodologies and tools for the ontology development in this domain.

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	The University of Nottingham	China		
	School of Materials Science and Engineering	China		
	Xi'an Jiaotong University	China		
	University of Ottawa	Canada		
	Fraunhofer IWM	Germany		
	UROMA3	Italy		
	SINTEF	Norway		EMMC, Marketplace
	Fraunhofer IWM	Germany		APACHE, ReaxPro, UrWerk
	Fraunhofer IWM	Germany		Domain expert, UrWerk

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
Materials Characterization	NTUA	standard for characterization of materials	Taxonda
EMMO-crystallography	SINTEF	A crystallography domain ontology based on EMMO and the CIF core dictionary	GitHub
EMMO-mechanical-testing	Fraunhofer IWM	A domain ontology for mechanical testing based on EMMO	GitHub
Allotrope Ontology	Allotrope Foundation	Scientific lab data, analytical chemistry	AFO

Organizations and projects:

Name	Link	Contact
ElvalHalcor Hellenic Copper and Aluminim Industry	Website	
EMCC - The European Materials Characterization Council	Website	
CCDC – Cambridge Crystallographic Data Centre	Website	
i-TRIBOMAT	Website	
Allotrope Foundation	Website	
Oyster	Website	
Intellitest		

Guide for tensions tests from CEN:
ftp://ftp.cencenelec.eu/CEN/WhatWeDo/Fields/ICT/eBusiness/WS/WS-ELSSI-EMD/CWA16200_2010_ELSSI.pdf

1.1.2 Nanotechnologies

Nanotechnologies are explicitly mentioned in the Grant Agreement and one of the demonstrators included in OntoCommons, NanoMaterials Characterisation, deals with this domain.

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	IRES	Belgium		
	IRES	Belgium		
	IRES	Belgium		
	IRES	Belgium		
	IRES	Belgium		

	Mahatma Gandhi University	India		
	Mahatma Gandhi University	India		
	Mahatma Gandhi University	India		
	UNIROMA3	Italy		Oyster
	Maastricht University	Netherlands		

Organizations and projects:

Name	Link	Contact
EPPN - European Network for Pilot Production Facilities and Innovation Hubs	Website	
NSC - NanoSafety Cluster	Website	
NanoCommons	Website	
NanoMeCommons		
Oyster	Website	
SUSNANOFAB CSA	Website	

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
eNanoMapper ontology	The eNanoMapper project	nanosafety	GitHub

1.1.3 Computational modelling

The community of materials modelling is among the most active in terms of domain ontology development. There are several demonstrators of collaborating projects mentioned in the proposal which focus on this area:

- **SIMDOME**: Materials and Nano-Materials Synthesis; Molecular Spectroscopy
- **ONTOTRANS**: Post-launch analysis of pouch detergents

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	HLRS	Germany		
	TU Kaiserslautern	Germany		
	University of Glasgow	Canada		
	The Royal Society	United Kingdom		
	Manchester Metropolitan University	United Kingdom		
	UKRI, STFC, HLRS	United Kingdom		
	TU Berlin	Germany		
	TU Kaiserslautern	Germany		
	HZG	Germany		
	Fraunhofer ITWM	Germany		
	SINTEF	Norway		
	SINTEF	Norway		
	Uni Stuttgart	Germany		
	Fraunhofer IWM	Germany		
	Netherlands eScience Center	Netherlands		
	Netherlands eScience Center	Netherlands		
	UNIBO	Italy		
	Max Planck Institute for Polymer Research	Germany		
	NTUA	Greece		

	Max Planck Institute for Polymer Research	Germany		

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
SimPhoNy-0.1	The SimPhoNy Project	materials modelling, computational materials state representation	Website
MolMod Database Nomenclature		nomenclature to be employed for intermolecular pair potentials	Website
Translation2Modeling		Nomenclature for Materials Modelling Translation processes	Website
VIMMP Ontologies		Virtual marketplace infrastructure and services, representation of simulations of materials (particle based, continuum, etc).	Taxonda
MarketPlace EMMO Extensions	The MarketPlace consortium	Translation, workflows, materials representation, standard for characterization of materials	Website
EMMO-atomistic	SINTEF	An EMMO-based domain ontology for atomistic and electronic modelling.	GitHub
Force BDSS ontology	The FORCE project	materials representation, workflows, optimisation	Website
VIMMP Ontology of Variables (VOV)	VIMMP consortium	variables that appear in modeling and simulation	Zenodo
Ontology for Simulation, Modelling, and Optimization (OSMO)	VIMMP consortium	Models and simulation workflows (ontology version of MODA)	Zenodo

VIMMP Software Ontology (VISO)	VIMMP consortium	Solvers in materials modelling (features, licensing, etc.)	Zenodo
EngMeta		metadata schema for computational engineering	Paper

Organizations and projects:

Name	Link	Contact
EMMC - The European Materials Modelling Council	Website	
KMM-VIN - The European Virtual Institute on Knowledge-based Multifunctional Materials	Website	
BNN BioNanoNet	Website	
OntoTrans	Website	
OpenModel		
SimDOME	Website	
VIMMP	Website	
EXC 2075 SimTech	Website	
ReaxPro	Website	

1.1.4 Materials development

With the OntoTrans project, we collaborate on the Composite Prepreg use case. Find below relevant members of the materials development community:

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	U. Linköping	Sweden		
	U. Linköping	Sweden		

	U. Linköping	Sweden		
	East China University of Science and Technology	China		
	East China University of Science and Technology	China		
	Georgia Institute of Technology	United States		
	isim	Poland		
	University of Twente	Netherlands		
	University of Twente	Netherlands		
	University of Twente	Netherlands		
	University of Massachusetts	USA		
	University of Massachusetts	USA		
	University of Massachusetts	USA		
	University of Massachusetts	USA		
	Northwestern University	USA		
	Northwestern University	USA		
	Duke University	USA		
	Duke University	USA		
	Rensselaer Polytechnic Institute	USA		
	Rensselaer Polytechnic Institute	USA		
	Northwestern University	USA		
	Rensselaer Polytechnic Institute	USA		
	University of Vermont	USA		
	Duke University	USA		

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
Metal-alloy		materials representation	Download
Material Type vocabulary	Australian Research Data Commons (ARDC)	The Material Class vocabulary describes broad categories of earth materials (eg, rock, sediment, water, vegetation) that may be observed or sampled.	NMMR

The Plinius ontology of ceramic materials		ceramics	Paper
A semantic knowledge management system for laminated composites		composites	Paper
NanoMine		Polymer Nanocomposites	Paper
Materials Design Ontology (MDO)		materials design	Paper

1.2 Manufacturing

The manufacturing domain the second big focus area of OntoCommons. We are confident to show the benefits of domain semantic in at least 4 manufacturing demonstrators. These include the demonstrators "SeDIM", "Tribomat", "EngDemonstrator", "Product Service Systems and Complex Equipment". Find below the relevant stakeholders, including organizations and projects working the domain. We also collected a first number of manufacturing ontologies that we list below.

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Ecole Centrale de Nantes	France		Domain Expert
	CRAN CNRS	France		Domain expert, ontology developer
	École Centrale of Nantes	Italy		Ontologist
	University of Pannonia	Hungary		
	Shanghai Jiao Tong University	China		
	ATB Bremen	Germany		IOF

	ATB Bremen	Germany		
	ATB Bremen	Germany		IOF
	EPFL	Switzerland		
	EPFL	Switzerland		IOF
	Fraunhofer IWM	DE		Domain expert
	Tekniker	Spain		Semantic web, computer science
	Control 2K Limited	United Kingdom		domain expert
	Loughborough University	United Kingdom		domain expert
	Loughborough University	United Kingdom		domain expert
	Loughborough University	United Kingdom		domain expert
	Loughborough University	United Kingdom		domain expert
	Loughborough University	United Kingdom		domain expert
	Loughborough University	United Kingdom		Scientist, Domain Expert, Ontologist,
	Loughborough University	United Kingdom		Scientist, Domain Expert, Ontologist, IOF
	Rolls-Royce Plc	United Kingdom		Domain Expert, Ontologist
	Fraunhofer Institute Production Systems and Design Technology	Germany		Scientist, Domain Expert,
	IASI-CNR	Italy		Scientist, Domain Expert, Ontologist
	Texas State University	USA		IOF

	University of Ploiesti,	RO		Domain Expert, ontologist
	National Institute of Standards and Technology	USA		IOF
	National Institute of Standards and Technology	USA		IOF
	The University of Western Australia	Australia		IOF
	The University of Western Australia	Australia		IOF
	The University of Western Australia	Australia		IOF
	National Institute of Standards and Technology	USA		IOF
	University of Toronto	Canada		IOF
	Ohio University	USA		IOF
	Ohio University	USA		IOF
	National Research Council, STIIMA-CNR	Italy		IOF
	Johns Hopkins University Applied Physics Laboratory	USA		IOF
	Clemson University International Center for Automotive Research	USA		Domain expert
	Dassault system	USA		IOF
	Pontifical Catholic University of Parana, Industrial and Systems Engineering Graduate Program	Brazil		Domain expert,
	NCOR	USA		IOF

	Pontifical Catholic University of Parana, Industrial and Systems Engineering Graduate Program	Brazil		Domain expert
	Université de Bordeaux	France		Domain Expert
	Salzburg Research Forschungsgesellschaft	Austria		Interoperability
	University of Twente	Netherlands		Interoperability
	Univeristé de Lyon	France		Domain epxert, ontologist
	Fraunhofer IPK	Germany		Domain epxert, interoperability
	ESTIA	France		Domain expert
	University of Minho	Portugal		Domain Expert, interoperability, Ontologist
	University of Minho	Portugal		Domain Expert, interoperability, Ontologist
	University of Minho	Portugal		Domain Expert, interoperability
	UNINOVA	Portugal		Domain Expert, interoperability
	Uninova	Portugal		Domain Expert, interoperability
	Pontifical Catholic University of Parana, Industrial and Systems Engineering Graduate Program	Brazil		Domain expert
	Universitat Politècnica de València	Spain		domain expert
	Universitat Politècnica de València	Spain		domain expert

	Information Catalyst for Enterprise Limited	United Kingdom		
	Instituto Tecnológico de Informática	Spain		
	kerlan Technology Research Centre	Spain		
	CIGIP, Universitat Politecnica de Valencia	Spain		
	AlgoWatt	Italy		
	Ascora GmbH	Germany		
	FIDIA S.p.A	Italy		
	SIMAVI	Romania		
	CTS	Portugal		
	CTS	Portugal		
	CTS	Portugal		
	Information Catalyst for Enterprise (ICE)	United Kingdom		
	Ascora Gmbh	Germany		
	CIGIP	Spain		
	Profactor GmbH	Austria		
	engineeringsemantics	USA		IOF
	Ceteck	Spain		
	Ikerlan Technology Research Center	Spain		
	Video Systems Srl	Italy		
	Instituto Tecnológico de Informática	Spain		
	IT Innovation Centre	United Kingdom		
	IT Innovation Centre	United Kingdom		
	IT Innovation Centre	United Kingdom		
	Chalmers University	Sweden		
	Chalmers University	Sweden		

	Chalmers University	Sweden		
	Johannes Kepler University	Austria		
	IT Innovation Centre	United Kingdom		
	LGIPM, RPK -Universität Karlsruhe (TH)	France		
	LGIPM	France		
	LGIPM	France		
	RPK -Universität Karlsruhe (TH)	Germany		
	CERTH/ITI	Greece		
	CERTH/ITI	Greece		
	CERTH/ITI	Greece		
	CERTH/ITI	Greece		
	POLIMI	Italy		
	POLIMI	Italy		
	POLIMI	Italy		
	Université de Lorraine	France		
	Université de Lorraine	France		
	POLIMI	Italy		
	TNO	Netherlands		
	TNO	Netherlands		
	UPM	Spain		
	UPM	Spain		
	UPM	Spain		
	KIT IMI	Germany		
	LITIS laboratory	France		ontologists, ontology users

Organizations and projects:

Name	Link	Contact
IOF – Industrial Ontology Foundry	Website Case Studies	
OPC Foundation - The Industrial Interoperability Standard TM	Website	
Confirm Centre for Smart Manufacturing	Website	
Industrial Value Chain Initiative	Website	
BLM Group/Adige	Website	
Interop-VLab	Website	
OAS AG	Website	
Trygonal	Website	
M3DLoC	Website	
SMART 4.0	Website	

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
MASON		Manufacturing	Download
Manufacturing Marketplaces Ontology	Centre for Research and Technology Hellas - Information Technology Institute (CERTH/ITI)	1. Representation of manufacturing resources (machines, tools, materials etc) and services. 2. Representation of supply chain entities that participate in a manufacturing related Marketplace.	Paper
VARM	Tekniker	Research development	Website
MSO: Manufacturing System Ontology		the physical aspect, the technological aspect, the control aspect, the visualization aspect	Paper
P-PSO		Manufacturing	Paper
Ontology-based system		Manufacturing sustainability	Paper

for supporting manufacturing sustainability			
Factory		Manufacturing systems design, management and control	Paper Link
SAREF4INMA	ETSI (owner) non-ETSI authors	Industry and manufacturing	Downlodad Paper
SERENE – Smart and IntEgRated ENergy efficiency Evaluation		Materials related to product, process, and resources	Paper

1.2.1 Process industries

The process industries domain is explicitly mentioned in the Grant Agreement and with the "EngDemonstrator" use case, we also include a demonstrator for this domain in the project. There is also the Section Mill demonstrator about Process Control in the OntoTrans project, on which the two projects will collaborate.

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	FLUOR	USA		Ontology, Process Engineering
	TU Braunschweig	Germany		
	CO-LaN	France		
	Universidad Austral de Chile	Chile		
	Hamadan University of Medical Sciences	Iran		
	Bu-Ali-Sina University	Iran		
	RWTH Aachen	Germany		
	RWTH Aachen	Germany		
	RWTH Aachen	Germany		

Organizations and projects:

Name	Link	Contact
SPIRE – Sustainable Process Industry through Resource and energy Efficiency.	Website	
CO-LaN	Website	
NFDI4Cat	Information	
NFDI4Chem	Website	
Inprodat e.V. - Innovation Centre for Process Data Technology	Website	
FACTLOG	Website	

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
iso-15926	ISO	ISO 15926-4 constitutes a Reference Data Library for the Process Industries.	Wikipedia
OntoCAPE	Marquardt et al.	computer-aided process engineering	Paper

1.2.2 Factories of the future

With the Complex Equipment demonstrator and the two demonstrators of the of the collaborating H2020 Big-Data innovation action IoTwins, the domain "factories of the future" is an essential part of the OntoCommons project. Please find below some of the key players in the field:

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Case Western Reserve University	United States		
	INSA Strasbourg - ICube Laboratory	France		

	INSA Strasbourg - ICube Laboratory	France		
	Fraunhofer Institute for Production Systems and Design Technology	Germany		
	Fraunhofer Institute for Production Systems and Design Technology	Germany		
	Fraunhofer Institute for Production Systems and Design Technology	Germany		
	Centre for Research and Technology Hellas	Greece		
	Centre for Research and Technology Hellas	Greece		
	Centre for Research and Technology Hellas	Greece		
	Centre for Research and Technology Hellas	Greece		

Organizations and projects:

Name	Link	Contact
EFFRA – European Factories of the Future Research Association	Website	
WEF Global Future Council on Advanced Manufacturing and Production	Website	
BOOST 4.0	Website	
IoTwins	Website	

QU4LITY	Website	
Eur3ka	Website	

1.2.3 Equipment industry

Our "Product Service Systems" demonstrator will show the usefulness of OntoCommon's results in the Equipment industry. Below you can find relevant stakeholders, we can try to get in touch with to achieve this goal.

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Trade and Industry and Center for International Development			
	West Viriginia University	USA		
	University of São Paulo	Brazil		

Organizations and projects:

Name	Link	Contact
Weld Galaxy	Website	
GF Machining Solutions	https://www.gfms.com/country_CH/en.html	

1.2.4 Product development

For the product development domain, there exists one interesting demonstrator in collaboration with the OntoTrans project, called "Detergent Pouch Systems".

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	School of Mechanical Engineering	China		
	LiuGong Machinery Co.	China		
	Purdue University			

1.3 Engineering

The Engineering domain is one of the most important one for OntoCommons. At the same time the project should use its collaborative means like the focussed workshop FW3.1 to find out more fine-grained sub-domains the stakeholders are interested in ontologising.

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Wolfson School of Mechanical and Manufacturing Engineering, Loughborough University	United Kingdom		Domain expert, ontologist
	University of South Australia	Australia		Domain expert, ontologist
	Japan Advanced Institute of Science and Technology	Japan		Domain expert, ontologist
	The John Paul II Catholic University of Lublin	Poland		Ontologist
	Dassault Systems; No-Magic	USA		Ontologist, domain expert, software engineer
	Università Politecnica delle Marche	Italy		Domain expert
	Univ. Bourgogne Franche-Comté, UTBM, Belfort, France	France		Ontologist, domain expert

	Loughborough University - Lough, Wolfson School of Mechanical, Electrical and Manufacturing Engineering	United Kingdom		Ontologist, domain expert
	University of Derby College of Engineering and Technology	United Kingdom		Ontologist, domain expert
	University of Twente	Netherlands		Ontologist, domain expert
	Netherlands Energy Research Foundation ECN	Netherlands		Ontologist, domain expert
	Agro-Technological Research Organization ATO-DLO	Netherlands		
	RWTH Aachen University	Germany		
	AIRBUS	France		Aerospace system engineering
	Northrop Grumman Corp.	USA		Domain exeprt

Organizations and projects:

Name	Link	Contact
RDA Research Data Management in Engineering IG	Website	
South China University of Technology	Website	

1.4 Maintenance

There is the "Ontology-based Maintenance" demonstrator in the OntoCommons project that deals with maintenance. Furthermore, there is one more demonstrator in the IoTwins project.

IoTwins is one of the projects that already committed to OntoCommons and it contains a demonstrator called "AI-based predictive maintenance of wind farm".

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Politecnico di Milano	Italy		IFAC, A-MEST
	University of Sevilla	Spain		ISEAM (https://iseam.org/)
	University of Western Australia	Australia		IOF
	University of Western Australia	Australia		IOF
	University of Western Australia	Australia		IOF
				IOF
	Texas State University	USA		IOF
	University of South Australia	Australia		IOF
	University of Toronto	Canada		IOF
	University of California	USA		IOF
	York St John University	USA		IOF
	Isadeus	France		
	EDF	France		
	University of Patras	Greece		
	Uni Bremen	Germany		
	Uni Bremen	Germany		

	University of Versailles St Quentin	Germany		
	University of Versailles St Quentin	France		
	University of Versailles St Quentin	France		
	EFNMS			

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
IMAMO	INPT-ENIT	Maintenance	
ROMAIN		industrial maintenance	GitHub
Z-BRE4K semantic model	EPFL	Predictive maintenance	Website
Z-BRE4K ontology	EPFL	Predictive maintenance	Website

1.5 Biotechnology

As mentioned in the Grant Agreement, OntoCommons will also deal with the digitisation needs of the Biotechnology domain. Find below interested stakeholders.

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Sun Yat-sen University	China		
	Stanford University	France		
	Stanford University			
	University of Surrey	United Kingdom		

	University of Surrey	United Kingdom		
	University of Surrey	United Kingdom		
	University of Surrey	United Kingdom		
	University of Surrey	United Kingdom		
	University of Stuttgart	Germany		

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
BiOnto		Biomass materials described along with processing technologies	Website
EnzymeML		Biocatalysis & biochemical reaction kinetics	Website

Organizations and projects:

Name	Link	Contact
UFRGS – Universidade Federal Do Rio Grande Do Sul	Website	
UNIST – Ulsan National Institute of Science and Technology, Korea	Website	
EVOLOPRO	Website	

1.6 Regulatory and risk assessment

The following table shows relevant stakeholders in the regulatory and risk assessment domain, which will be relevant for OntoCommons as mentioned in the Grant Agreement.

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Institute of Geography	Germany		

	Cardiff University	United Kingdom		
	Cardiff University	United Kingdom		
	Steinbeis	Germany		Materials and Nanomaterials risk

1.7 Aerospace

With the "IRIS" demonstrator of UIO and AIRBUS, we include a demonstrator that deals with the Aerospace domain.

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	AIRBUS SAS	France		Industrial System Digital Continuity
	M&M Aeronauticos	Spain		Aerospace Assembly
	AIRBUS	France		Aerospace system engineering
	Boeing	USA		
	Boeing	USA		
	Boeing	USA		
	Boeing	USA		
	Schaeffler	Germany		MAVO UrWerk

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
Crystal Artemis project	Website	automotive, aerospace, rail and health sector	Deliverable

Organizations and projects:

Name	Link	Contact
STIMULANT	Website	
Airbus	Website	
QU4LITY	Website	
MAVO UrWerk	Website	

1.8 Quality management

The OntoCommons demonstrator "Feedstock Quality Assurance" deals with quality management.

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	University of Toronto	Canada		

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
The Quality ontology VB	Gruninger, University of Toronto	Quality	Paper

Organizations and projects:

Name	Contact
QU4LITY	

1.9 People, Organization and projects generally interested in domain ontologies

The following people and organizations could not be assigned to one of the above domains by the partners. These are interested in domain ontologies in general, including the domains OntoCommons deals with.

Name	Affiliation	Country	Contact	Stakeholder groups
	TU Darmstadt	Germany		
	TIB	Germany		

Organizations and projects:

Name	Link	Contact
IAOA	Website	
forschungsdaten.info	Website	
NFDI e.V.	Website	
metadata4ing working group	Website	
RDA VSIG	Website	
ORKG	Website	
NFDI4Ing	Website	
Research Data Management in Engineering IG	Website	
EMMC Focus Area Interoperability	Website	
EMMC Focus Area Digitalization	Website	
RDA Domain Repositories IG	Website	

2.Communities relevant for OntoCommons

In the second chapter we concentrate on domains that, although not being explicitly mentioned in the Grant Agreement or addressed by demonstrators, we think they might still be very relevant due to the similarity to the domains of the first chapter. We divide the following domains in two broad categories. In section 2.1 we list more general domains, that might potentially also fit in a middle-level ontology. Section 2.2 is about more specific industrial domains.

2.1 General domains

2.1.1 Supply Chain

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Texas State University	USA		Ontologist, Domain Expert
	Manufacturing Department, School of Applied Sciences, Cranfield University	United Kingdom		Domain Expert
	Manufacturing Department, School of Applied Sciences, Cranfield University	United Kingdom		Domain Expert
	Technische Universität München	Germany		Domain Expert
	IBM Haifa Research Lab	Israel		
	IBM Haifa Research Lab	Israel		
	SRDC Software Research & Development and Consultancy Corp	Turkey		
	SRDC Software Research & Development and Consultancy Corp	Turkey		

	IBM Haifa Research Lab	Israel		
	IBM Haifa Research Lab	Israel		
	AIDIMME	Spain		
	AIDIMME	Spain		
	AIDIMME	Spain		
	Salzburg Research	Austria		
	Salzburg Research	Austria		
	Salzburg Research	Austria		
	Boeing			
	CTS	Portugal		
	CTS	Portugal		
	CTS	Portugal		
	CTS	Portugal		
	CTS	Portugal		
	CONICET Santa Fe	Mexico		
	CONICET Santa Fe	Mexico		
	cognizant	United Kingdom		
	Instituto Tecnológico de Orizaba	México		
	Instituto Tecnológico de Orizaba	México		
	Instituto Tecnológico de Orizaba	México		
	Instituto Tecnológico de Orizaba	México		

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
RosettaNet PIP		Supply Chain Management	Website
SCONTO	CONICET Santa Fe	Supply Chain Management	Website
Cognizant		Using Ontology to Capture Supply Chain Code Halos	Booklet
Simple Knowledge Organization System (SKOS)		knowledge; linked data; management; semantic; SKOS; supply chain	Paper

2.1.2 Transportation

Relevant people are:

Name	Affiliation	Country	Contact	Stakeholder groups
	Dipartimento di Ingegneria e Scienza dell'Informazione (DISI), University of Trento, Ital	Italy		Domain Expert
	Dipartimento di Ingegneria e Scienza dell'Informazione (DISI),University of Trento, Ital	Italy		Domain Expert
	SRDC	TR		Domain Expert
	University of Valenciennes and Hainaut-Cambrésis	France		
	University of Valenciennes and Hainaut-Cambrésis	France		
	Mir@cl Lab	Tunisia		
	University of Valenciennes and Hainaut-Cambrésis	France		
	University of Munich	Germany		
	University of Munich	Germany		
	University of Munich	Germany		

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
Transportation ontology	De Oliviera et al. Univeristy Of Valenciennes	Transportation	Paper
Ontology of Transportation Networks		Transportation Networks	Deliverable

2.1.3 Scheduling

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	University of Firenze	Italy		Domain Expert
	Ohio University	USA		domain epxert, ontologist
	NIST	USA		
	CNR	Italy		domain expert, ontologist
	Carnegie Mellon University	USA		
	Carnegie Mellon University	USA		

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
OZONE		Scheduling	Download

2.1.4 Product types

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	National Scientific and Technical Research Council	Argentina		Domain Expert
	National Scientific and Technical Research Council | conicet · INTEC Instituto de Desarrollo Tecnológico para la Industria Química	Argentina		Domain Expert
	Universidad Tecnologica Nacional - CONICET · Ingeniería en Sistemas de Información - Instituto de Desarrollo y Diseño (INGAR)	Argentina		Domain Expert

	University of Auckland	NZ		
	University of Auckland	NZ		
	Universität der Bundeswehr München	Germany		

Organizations and projects:

Name	Link	Contact
ECLASS / eCl@ss	Website	

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
UNSPSC	United Nations	Product types	Website
productontology-eCl@ss	E-Business and Web Science Research Group. Universität der Bundeswehr München	Product types	Website
Ontology-Aided Product Classification: A Nearest Neighbour Approach		Reasoning system for classifying products	Paper
The Product Types Ontology			Website

2.1.5 Product information

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	KR&KM Research Group University of Mannheim	Germany		Domain Expert
	KR&KM Research Group	Germany		Domain Expert

	University of Mannheim			
	EPFL	Switzerland		
	CONICET/UTN	Argentinia		
	CONICET/UTN	Argentinia		
	CONICET/UTN	Argentinia		
	NIST	USA		
	NIST	USA		
	Engisis	Italy		
	EERE	USA		
	NIST	USA		
	University of Lorraine	France		
	Politecnico di Bari	Italy		
	University of Lorraine	France		

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
PRONTO	ONICET/UNL, Argentina	Product information	Website
ontoSTEP	NIST	Product information	Website
ontoPDM	CRAN, FR	Product information	
SOM	EPFL	Product information	Website

2.1.6 Product life cycle

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Leibniz Institute of Information Infrastructure & Karlsruhe	Germany		Ontologist

	Institute of Technology (KIT)			
	Otto-von-Guericke-Universität Magdeburg	Germany		Domain Expert
	SIEMENS	AT		Domain Expert
	SIEMENS			Domain Expert
	EPFL	Switzerland		Domain expert, Ontologist
	UTC	France		Domain expert
	Université Paris 8	France		Domain expert
	AIRBUS	France		Domain expert, ontologist
	Univeristé de Lyon	France		Domain expert
	ESTIA	France		Domain expert
	M&M	Spain		Domain expert, ontologist
	Univeristé Lyon 2	France		Domain expert
	Fraunhofer IWM	DE		Domain expert
	Fraunhofer IWM	DE		Domain expert, ontologist
	Fraunhofer IWM	DE		Domain expert, ontologist
	Fraunhofer IWM	DE		Domain expert, ontologist
	Fraunhofer IWM	DE		Domain expert, ontologist

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link

reference PLM ontology	Politecnico Torino	Product lifecycle management	
An Ontological Approach to Representing the Product Life Cycle	University of Buffalo, EPFL	PLC ontology	Website
An ontology for Assembly representation	NIST	Assembly representation	Paper

Organizations and projects:

Name	Link	Contact
ORIENTING	Website	
Fraunhofer IWM Digital Hub	Website	
DMD4Future	Website	

2.1.7 Design

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	University of Miami	USA		Ontologist
	Senior UX Designer na Alchemy Machines	United Kingdom		Ontologist
	Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb	Croatia		Ontologist
	Wayne State University	USA		

	University of Pittsburgh	USA		
	Chonnam National University	South Korea		
	LIRIS	France		
	LIRIS	France		
	LIRIS	France		
	LIRIS	France		

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
AsD Ontology	Kim et al, Wayne State University	Design	Paper
CDFO Common Design Features Ontology	S. Abdul-Ghafour, P. Ghodous, B. Shariat and E. Perna,	Design	Paper

2.1.8 Industrial processes

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	University of Toronto	Canada		Ontologist
	TU Darmstadt	Germany		
	NIST	USA		Ontologist, Domain Expert
	NTNU	Norway		
	EPFL	Swiss		

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
PSL	NIST	Processes	Colore ontology repository
MultiDisciplineModelOntology		anything that is based on balances thus extensive quantities	Paper
Semantic framework for Industry 4.0	EPFL	Industry 4.0	Website

2.1.9 Green & Sustainable production

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	School of Computing and DigitalTechnology	United Kingdom		Ontologist
	ENIT	France		ontologist
	Fraunhofer IWM	DE		domain expert

Organizations and projects:

Name	Link	Contact
ORIENTING	Website	

2.1.10 Project management

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
PROMONT	Abels et al, Univeristy of Oldenburg Germany	Project Management	Paper

2.1.11 Organization

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Harbin Institute of Technology	China		
	IMS	France		
	University of Toronto	Canada		
	University of Toronto	Canada		
	University of Toronto	Canada		
	University of Toronto	Canada		
	HP Labs	United Kingdom		

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
Organization ontology for enterprise modelling	Univ ot Toronto	Organization	Paper
ORG	Epimorphics Ltd. UK Government Linked Data Working group	Organization	Download

2.1.12 Virtual marketplaces

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	EnginSoft	Italy		
	Fraunhofer IWM	Germany		MarketPlace
	Fraunhofer IFAM	Germany		VIMMP

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
European Virtual Marketplace Ontology (EVMPO)	Joint development by the VIMMP Consortium and the MARKETPLACE Consortium	Virtual marketplaces related to modelling and simulation of materials and their properties and behaviour	Taxonda
VIMMP Communication Ontology (VICO)	VIMMP consortium	Communication between users of digital marketplaces in materials modelling	Zenodo
Marketplace-Accessible Computational Resource Ontology (MACRO)	VIMMP consortium	Computational resources, file formats, etc., relevant to digital marketplaces in materials modelling	Zenodo
Materials Modelling Translation Ontology (MMTO)	VIMMP consortium	"Translation" process in materials modelling as formalized by EMMC ASBL (business cases, "industrial cases," "translation cases," etc.)	Zenodo
Ontology for Training Services (OTRAS)	VIMMP consortium	Training services, events, documents, etc., including a formalism for describing competencies and a taxonomy of topics relevant to materials modelling	Zenodo
VISO – VIMMP Software Ontology	VIMMP consortium	describe software, addressing mostly its capabilities, but also licensing, requirements (as libraries and operating systems) and compatibility with other tools.	Slides

Organizations and projects:

Name	Link	Contact
DOME4.0		
Market4.0	Website	
MarketPlace	Website	
ViMMP	Website	

2.1.13 Digital Twin

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Ecole centrale Nante	France		Domain Expert
	EPFL	Switzerland		INCOSE (https://www.incose.org/)
	University of Bordeaux	France		Domain Expert
	IMT Mines-ales	France		Domain Expert
	Salzburg Research Forschungsgesellschaft	Austria		Domain Expert
	Tekniker	Spain		Domain Expert

Organizations and projects:

Name	Link	Contact
SEIIA - Swedish Industrial Interoperability Association	Website	
UK National Digital Twin Programme - ACTIVE	Website	
FACTLOG	https://www.factlog.eu/	

2.2 Specific industrial domains

This chapter is about specific industrial domains, which we consider relevant for the OntoCommons project.

2.2.1 Gas and Oil

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Total	France		Domain Expert, Ontology User

Organizations and projects:

Name	Link	Contact
Aibel AS	Website	
Total		

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
ISO 15926		Gas and Oil	Website
Aibel MMD			https://github.com/Sirius-sfi/aibel-mmd-ontology

2.2.2 Electronics

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Siemens	Germany		System Integrity and Usability
	TU Dresden			

Organizations and projects:

Name	Link	Contact
	Website	
	Website	
	Website	
	Website	

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
CEO: Consumer electronics Ontology		Electronics	Website
	monenergy project.eu	Appliance	Website
INDISET	Bob Young et al, FLEXINET project	Appliance	Pdf
GRACE ontology	SIEMENS, WHIRLPOOL	Appliance	Paper
Ericsson	Siemens, Blumbach	Product Documentation	N/A

2.2.3 Automotive

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Universität der Bundeswehr Munich	Germany		
	ALA	Italy		
	EADS-IW			
	PoliTO	Italy		

Organizations and projects:

Name	Link	Contact
	Website	
	Website	

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
Volkswagen Vehicles Ontology	Volkswagen	Automotive	Website
Automotive ontology working group	W3C working group	Automotive	Website

Crystal Artemis Project		Automotive, aerospace, rail and health sector	Deliverable

2.2.4 Architecture and Construction

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	TU Eindhoven	Netherlands		Domain expert, ontologist
		United Kingdom		
	French National Centre for Scientific Research	France		
	Semantic Arts	International		People with data
	Semantic Arts	International		People with data
	TU Braunschweig			
	KIT	Germany		
	KIT	Germany		
	Niras Technical University of Denmark	Denmark		
	École Nationale Supérieure des Mines de Saint-Étienne	France		
	Schaeffler	Germany		

	CNR	Italy		domain expert, ontologist
	TU Dresden	Germany		
	TU Dresden	Germany		
	SUITE5	Cyprus		
	SUITE5	Cyprus		
	UPM	Spain		
	UPM	Spain		
	UPM	Spain		
	UFRGS	Brazil		
	UFRGS	Brazil		
		France		
	UFRGS	Brazil		
	Tekniker	Spain		Domain Expert
	Ramon Llull University	Spain		Domain Expert, ontologist

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
KnoHolEM Ontology	Institute for Information Management in Engineering, Karlsruhe Institute of Technology	Materials on building parts	Paper
Building Toplogy Ontology	Mads Holten Rasmussen, Pieter Pauwels, Maxime Lefrançois, Georg Ferdinand Schneider	minimal ontology for describing the core topological concepts of a building.	Specification

ifcOWL	Pieter Pauwels and Walter Terkaj	standard for representing building and construction data	Website
DICO-BuildingMaterials	Janakiram Karlapudi, Prathap Valluru	building materials	Specification
DICO-EnergySystems	Kostas Tsatsakis, Spiros Kousouris	energy systems	Specification
Brick	?	semantic descriptions of the physical, logical and virtual assets in buildings and the relationships between them	Specification
SAREF4BLDG	ETSI (owner) non-ETSI authors: María Poveda-Villalón, Raúl García-Castro	Building devices from IFC	Specification
BIMERR ontology network	María Poveda-Villalón, Serge Chavez-Feria	Building renovation and construction	website
Gist Ontology	Semantic Arts		https://www.semanticarts.com/gist/
GeoCore ontology	Luan Fonseca Garciaa, Informatics Institute, UFRGS, Bento Gonçalves 9500, Porto Alegre, Brazil and Geosiris Company (France)	General core ontology	Paper Github

Organizations and projects:

Name	Link	Contact
BIMERR	Website	
National Digital Twin Programme	Website	
COGITO	Website	
W3C Linked Building Data CG	Website	

2.2.5 Chemistry

Cooperation Demonstrator: [SIMDOME] Chemical Kinetics

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Univ Florida	USA		Ontology development, Chemical science
	Wellcome Trust Genome Campus	United Kingdom		EBI
	Wellcome Trust Genome Campus	United Kingdom		EBI
	Wellcome Trust Genome Campus	United Kingdom		EBI
	Wellcome Trust Genome Campus	United Kingdom		EBI
	Wellcome Trust Genome Campus	United Kingdom		EBI
	Wellcome Trust Genome Campus	United Kingdom		EBI

	Wellcome Trust Genome Campus	United Kingdom		EBI
	Wellcome Trust Genome Campus	United Kingdom		EBI
	Wellcome Trust Genome Campus	United Kingdom		EBI
	University of Cambridge	United Kingdom		EBI
	University of Ottawa	Canada		EBI
	Maastricht University	Netherlands		EBI
	Uni Jena	Germany		EBI
	Maastricht University	Netherlands		EBI
	Department of Standardization in Laboratory Medicine	Denmark		

Organizations and projects:

Name	Link	Contact
RDA Chemistry Research IG	Website	
CCDC	Website	
IUCr	Website	

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
CHMO		Chemical methods	GitHub
RXNO		Chemical reactions	GitHub
ChEBI		Small chemical compounds	Website

CHEMINF		representing chemical information	GitHub
OntoKin/Ontochem		The modelling, representation, management and querying of Chemical Kinetic Reaction Mechansims, on the basis of OntoCAPE	Taxonda
IUPAC ontology		An Ontology on Property for Physical, Chemical and Biological Systems	Paper Code

Communities:

Name	Link	Contact
NFDI4Chem	Website	
NFDI4Cat	Information	

2.2.6 Human Resources

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Actonomy	Belgium		Ontology, Expert in HR Automation domain
	Université de Savoie, France	France		Ontologist
	Birzeit University	Palestine		Ontologist, Semantic Web expert

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
HRM Ontology	Ontology Engineering Group, Polytech Madrid	Human resource ontology	Website
Job Ontology		Improved search and matching results for the	Website

		labour market using semantic web	
OOA - The Ontology Outreach Advisory		Semantic challenges and opportunities in the Human Resources Domain	Website

2.2.7 Clean energy

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Wrocław University of Science and Technology	Poland		Engineer
	Mondragon University	Spain		Engineer
	Mondragon University	Spain		Engineer
	National University of Ireland Galway	Ireland		Engineer
	Sohar University	Austria		Computer Science
	ENEA	Italy		Computational Physics, materials
	Tekniker	Spain		Informatics, Artificial intelligence, ontologist
	SIEMENS	Austria		Electrical Engineer
	Institut Mihajlo Pupin	Serbia		Electrical Engineer

Organizations and projects:

Name	Link	Contact
REACT	https://react2020.eu/	

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
SAREF	ETSI (owner)	Smart applications	Downlodad

	non-ETSI authors:		
CIM	DMTF	Smart Grid modelling	https://www.dmtf.org/standards/cim
EEPSA	Tekniker	Energy Efficiency and Thermal Comfort	http://w3id.org/eepsa
RESPOND ontology	RESPOND H2020 consortium	Demand Response	http://w3id.org/respond

3.Other Communities interested in domain specific semantics

The following domains are characterised by their large efforts in digitisation and development of ontologies. Despite being only mildly relevant, we also report on these domains because of that. We consider it to be very plausible and fruitful to have collaborations in the future.

3.1 Internet of Things

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Netherlands Organisation for Applied Scientific Research (TNO)	Netherlands		Ontologist
	Warsaw University of Technology	Poland		Interoperability IoT
	University of Surrey	United Kingdom		Engineer
	University of Surrey	United Kingdom		Engineer
	University of Surrey	United Kingdom		Software Developer
	University of Granada	Spain		Engineer
	Universitat Ramon Llull	Spain		Engineer
	Universitat Ramon Llull	Spain		Engineer
	Universitat Ramon Llull	Spain		Engineer
	SIEMENS	Austria		Engineer
	SIEMENS	Austria		Engineer

	Fraunhofer Institute Production Systems and Design Technology	Germany		

Organizations and projects:

Name	Link	Contact
AIOTI Alliance for Internet of things	Website	
ETSI	Website	
oneM2M - Standards for M2M and the Internet of Things	Website	
Enable	Website	
Project Haystack	Website	

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
SAREF	See project team	Smart Appliances REFerence (SAREF) ontology	Website

3.2 Robotics

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Instituto de Informática, UFRGS	Brazil		Computer Scientist
	Instituto de Informática, UFRGS	Brazil		Computer Scientist
	Instituto de Informática, UFRGS	Brazil		Computer Scientist

	Instituto de Informática, UFRGS	Brazil		Engineer
	Instituto de Informática, UFRGS	Brazil		Computer Scientist
	University of Maryland	USA		System Researcher
	University of Genova	Italy		Computer Scientist
	Technical University of Lisbon	Portugal		Engineer
	Distributed Systems Lab, UFBA	Brazil		Computer Scientist
	The American University in Cairo	Egypt		Full Professor
	LISSI Lab., Université Paris-Est Créteil	France		Computer Scientist
	CEA LIST Institute	France		Engineer
	LISSI Lab., Université Paris-Est Créteil	France		Computer Scientist
	Intelligent Systems Division, NIST	USA		Engineer
	Tekniker	Spain		Computer Scientist

Organizations and projects:

Name	Link	Contact
euRobotics AISBL	Website	
1872-2015 - IEEE Standard Ontologies for Robotics and Automation	Specification	

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
A review and comparison of ontology-based approaches to robot autonomy	Olivares-Alarcos et al.	Review about ontologies for robotics	Paper

Organizations and projects:

Name	Link	Contact
KnowRob and KnowRob 2.0	Website GitHub Paper	

3.3 Cultural heritage

Relevant people:

Name	Affiliation	Country	Contact	Stakeholder groups
	Foundation for Research and Technology - Hellas (FORTH)	Greece		
	Foundation for Research and Technology - Hellas (FORTH); Takin.solutions Ltd.	Greece		
	Institute of Heritage Sciences, Spanish National Research Council (CSIC)	Spain		
	National Research Council of Italy (CNR)	Italy		

	University of Bologna	Italy		
	The University of Sydney	Australia		Information Technology scientist
	The University of Sydney	Australia		Information Technology scientist
	The University of Sydney	Australia		Information Technology scientist
	Istituto Centrale per il Catalogo e la Documentazione (ICCD-MiBACT)	Italy		Ontologist
	Sapienza University of Rome	Italy		Architect
	Sapienza University of Rome	Italy		Engineer
	Sapienza University of Rome	Italy		Engineer
	Sapienza University of Rome	Italy		Architect
	Fraunhofer IWM	Germany		APACHE
	UNIVE	Italy		APACHE
	Mirabile	France		APACHE

Semantic assets in the domain:

Name	Author / Owner / Contact	Scope	Link
CIDOC Conceptual Reference Model (CRM)	CIDOC CRM Special Interest Group - a volunteer community dedicated to the development and maintenance of a common standard for integrating cultural heritage data.	A theoretical and practical tool for information integration in the field of cultural heritage.	Website Specification
EMMO-Cultural Heritage Preservation	The APACHE Project (Fraunhofer IWM)	The main objective of this ontology is to model the underlying information of the APACHE Decision Support System (DSS), related to the conservation of cultural heritage. This	GitHub

		extension involves mainly the representation of museums and cultural heritage objects, preventive measures and agents of deterioration.	
ARCO ontology suit		Italian Cultural heritage	Website

Organizations and projects:

Name	Link	Contact
APACHE	Website	
ARCO	Website	
DARIAH	Website	
Europeana	Website	

4.Next step: Survey

To gather input from the identified stakeholders, a survey will be sent to them. See the current draft of the survey, which is aimed at getting information from the person and the ontologies they have worked with.

Metadata for OntoCommons ontology catalogue

This survey is oriented to people who are aware of any ontology that could be useful for materials, manufacturing or related domains.

Our final goal is to develop an ontology catalogue in order to provide the materials and manufacturing communities with the most suitable ontologies in this area. In addition the catalogue also contains general domain ontologies frequently used across domains.

The estimated time required to complete the questionnaire is of XXX minutes. Once the form about an ontology is submitted it will be manually assessed and automatically processed. After this, the ontology will be included in the OntoCommons Catalogue available at XXXXXX . Please note that there is a manual component in the process, therefore the on-line catalogue will not be updated immediately after the submission.

The questionnaire does not include any personal question and the confidentiality of the answers will be preserved. We only ask for an email address just in case you want to obtain information about the results we produce.

If you don't have time to fill all the data, you can also propose ontologies to be included in the catalogue through a very short form XXXXXXXXX

This questionnaire is being performed in the context of the OntoCommons HORIZON2020 project (WEBSITE).
If you have any question or comment about the questionnaire contact XXXXXX
* Erforderlich

1. Name *
   The name given to the ontology.

2. URI *
   The URI of the ontology.

3. Description *

A free-text account of the ontology.

4. Domains *

The different domains covered by the ontology. If the ontology covers more than one domain, please separate them by commas. Example: manufacturing, material science, maintenance, AEC industry, marketing,...

5. Scope

The scope of the ontology in a particular domain e.g. predictive maintenance, stakeholder description, product nomenclature, sensor, building

6. Namespace

The preferred namespace URI to use when using terms from this vocabulary.

7. Version

The version of the ontology.

8. Creation date

The date of formal issuance of the ontology.

Beispiel: 7. Januar 2019

9. Last update

Most recent date on which the ontology was changed, updated or modified.

Beispiel: 7. Januar 2019

10. Contact person

The person(s) primarily responsible for making the ontology. Please include name and email address of the contact persons whenever possible. If there is more than one contact person, please separate them by commas.

11. Publisher

The organization that published the ontology.

12. Ontology language

The language in which the ontology is implemented.

Wählen Sie alle zutreffenden Antworten aus.

- [ ] OWL
- [ ] RDF-S
- [ ] SKOS
- [ ] SUO-KIF
- [ ] Isabelle (FOL)
- [ ] OBO format
- [ ] UML

Sonstiges: [ ] _____

13. Format

The format(s) of the ontology.

Wählen Sie alle zutreffenden Antworten aus.

- [ ] RDF/XML
- [ ] Turtle
- [ ] N3
- [ ] N-Triples
- [ ] TriX
- [ ] TriG

Sonstiges: [ ] _____

14. Use of top level ontologies ?

Wählen Sie alle zutreffenden Antworten aus.

- [ ] Basic Formal Ontology
- [ ] DOLCE
- [ ] SUMO
- [ ] EMMO
- [ ] Unified Foundational Ontology
- [ ] YAMATO
- [ ] CYC
- [ ] General Formal Ontology

Sonstiges: [ ] _____

15. License

The license of the ontology. Example: CC BY-SA, MIT, etc.

Wählen Sie alle zutreffenden Antworten aus.

- [ ] All rights reserved / no license (No Open)
- [ ] CC0 1.0 Universal - "Creative Commons public domain waiver" (Open) http://creativecommons.org/publicdomain/zero/1.0/
- [ ] CC-BY Creative Commons Attribution International (Open) http://creativecommons.org/licenses/by/4.0/
- [ ] CC-BY Creative Commons Attribution Unported (Open) http://creativecommons.org/licenses/by/3.0/
- [ ] CC-BY-SA Creative Commons Attribution-ShareAlike International (Open) http://creativecommons.org/licenses/by-sa/4.0/
- [ ] CC-BY-SA Creative Commons Attribution-ShareAlike Unported (Open) http://creativecommons.org/licenses/by-sa/3.0/
- [ ] CC-BY-ND CreativeCommons Attribution-NoDerivs International (No Open) http://creativecommons.org/licenses/by-nd/4.0/
- [ ] CC-BY-NC CreativeCommons Attribution-NonCommercial International (No Open) http://creativecommons.org/licenses/by-nc/4.0/
- [ ] CC-BY-NC-SA Creative Commons Attribution-NonCommercial-ShareAlike International (No Open) http://creativecommons.org/licenses/by-nc-sa/4.0/
- [ ] CC-BY-NC-ND Creative Commons Attribution-NonCommercial-NoDerivs International (No Open) http://creativecommons.org/licenses/by-nc-nd/4.0/
- [ ] GNU Free Documentation License (GFDL) (Open) http://www.gnu.org/copyleft/fdl.html
- [ ] MIT (Open) http://opensource.org/licenses/MIT
- [ ] PDDL: Public Domain Dedication and License (PDDL) - "Public Domain for data/databases" (Open) http://www.opendatacommons.org/licenses/pddl/
- [ ] ODC-By: Open Data Commons Attribution (ODC-By) - "Attribution for data/databases" (Open) http://www.opendatacommons.org/licenses/by/
- [ ] ODBL: Open Database License (ODC-ODbL) - "Attribution Share-Alike for data/databases" (Open) http://www.opendatacommons.org/licenses/odbl/
- [ ] W3C software license (Open) http://www.w3.org/Consortium/Legal/2002/copyright-software-20021231
- [ ] Unknown

Sonstiges: [ ] _____

16. Language

The ISO 639-1 code(s) of the language(s) of the resource. If the ontology is implemented in more than one language, please separate them by commas. Example: es, en, (See http://en.wikipedia.org/wiki/List_of_ISO_639-1_codes for a full list of codes).

Wählen Sie alle zutreffenden Antworten aus.

- [ ] en - English
- [ ] es - Spanish
- [ ] fr - French
- [ ] de - German
- [ ] it - Italian
- [ ] bg - Bulgarian
- [ ] nl - Dutch
- [ ] no - Norwegian
- [ ] ru - Russian
- [ ] Sonstiges: _____

17. Available documentation

URLs for the documentation of the ontology

_____

18. Is the ontology stored and indexed in a dedicated repository/registry?

Please

_____

19. Does the ontology follow one of the following established best practices or principles?

Wählen Sie alle zutreffenden Antworten aus.

- [ ] OBO Foundry
- [ ] Industry Ontology Foundry principles
- [ ] Sonstiges: _____

20. Development methodology and knowledge sources

Please provide a short description of the methodology and knowledge sources used to develop the ontology as a comma separated list

21. Is the ontology an outcome of a European project?

If so, please indicate the project name and the website if possible.

22. Comments

Further information about the ontology that might be revelant.

23. References

Resources that might provide additional information (documents, deliverables, papers, etc.).

24. Your contact information

You can let us know who you are so that we know to whom to be thankful for the contribution. In addition we might occasionally contact you in case we need any further information about the ontology you submitted (In this case we will need your name and email adress).

5.Conclusion

The present document, while being only a first step towards examining the entire domain ontology landscape relevant for the OntoCommons project, already identifies key players and stakeholders. We were able to collect many stakeholders especially in the domains of materials and manufacturing as well as engineering. Thanks to all contributors, we were able to collect over 250 stakeholders for the domains in the focus of OntoCommons (chapter 1). In the second chapter we reported over 150 stakeholders and in the third one almost 50. In total we collected about 450 different stakeholders in this document. We organized them in 39 different domains and plan to refine these domains in the course of the project. The collected over 100 semantic assets and ontologies can be direct input for a follow up semantic landscape analysis. Together with the collected persons, the over 100 mentioned organizations and projects can be invited to focused workshops and other means of collaborations. We need their input to successfully examine the field and gain a complete picture of what is already out there in terms of semantic assets.

This document will be updated when we encounter new interested stakeholders through the OntoCommons Website. The stakeholders identified in this document will be invited to register on the project website and to be part of OntoCommons community. The list of ontologies will be updated in the next Deliverable (3.2).