DELIVERABLE D2.1

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Identification of the spectrum of stakeholders and set-up of communication channels

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Lead partner for this deliverable: **Panepistimio Patron (UPAT)**
Lead partner for the related work package: **Panepistimio Patron (UPAT)**

Name, title and organisation of the scientific representative of the project's coordinator:
Dipl.-Ing. Gerhard Pauly
Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM
Fraunhofer-Gesellschaft zur Förderung der Angewandten Forschung e.V.

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CI	Classified, information as referred to in Commission Decision 2001/844/EC.	

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	Name	Organisation Short Name, Department, Function	Date	Signature	Comments
Author(s)	Dr. Martin SPIECK	Thelsys CEO	2020-04-17		
	Sabine SPIECK	Thelsys researcher	2020-04-16		
	Diana PENZIEN	Thelsys researcher	2020-02-26		
Approval(s)	Gerhard PAULY	Fraunhofer IFAM	2020-04-30		
Authorization(s)					

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Content list

1 Summary

The objective of WP2 is an assessment of the current status and the development of Open Science in European AAT projects since the beginning of FP7 and H2020. The focus lies on AAT-related EC-funded research projects and the joint undertakings Clean Sky 1&2 and SESAR.

Task T2.1 makes the preparations necessary to conduct, in an efficient, well structured approach, an intense consultation phase with researchers and administrative / legal staff from industry, research and higher education. The aim is to gather comprehensive first-hand experience about awareness of Open Science as such, perceived benefits and drawbacks of the idea and potentially concrete examples.

Key to this structured approach is an appropriate identification of the spectrum of stakeholders and the focused set-up of communication channels to reach out to the targeted community.

The work performed in T2.1 was:

- to perform a preliminary identification of European AAT stakeholders,
- to systematically assess the interrelations and network connections between these stakeholders,
- to data mine European research project data for further information,
- to assemble and combine the findings and to further analyse the integrated data set,
- to freeze the list of European AAT stakeholders,
- to identify individuals and groups/teams at the stakeholders to get in touch with, and
- to set up the appropriate communication channels.

The achieved main results are a map of the European AAT research landscape, a compendium of the most relevant stakeholders from all areas of the AAT sector, and contact data of individuals to connect with at those stakeholders.

This deliverable D2.1 represents the corresponding report on the activities performed mainly in T2.1 and the achieved results. D2.1 is comprised of this text document and two Excel data bases, specified as attachments to this document:

- OSCAR GA 824350 Deliverable D2.1 v1-0 2020-04-17.docx
- D2.1 - Attachment 1 - Analysis of the European AAT Research Community.xlsx
- D2.1 - Attachment 2 - Identification of stakeholders.xlsx

A third attachment is confidential. To comply with the European data protection law (GDPR), its use is limited to OSCAR partners who need the data for actual work and contributions, and who (a) have agreed to the Code of Conduct of OSCAR, and (b) did affirm to take all necessary steps to keep the sensitive personal data contained in this file restricted to the required circle of personnel to achieve the objectives of OSCAR, and to use the data exclusively for activities of the project:

- D2.1 - Attachment 3 - List of Contacts and Communication Channels.xlsx

2 Objectives and task

The European AAT sector is one of the best organised and structured sectors in Europe. With the exception of SMEs, there is at least one if not several associations, clusters, hubs or other representations to bundle and advance the specific interest of any group active in aviation and air transport. Academia is represented by EASN and PEGASUS, research organisations by EREA, large industry (mainly OEMs and tier 1 / tier 2 suppliers) by ASD and IMG4. SMEs are represented – amongst others – in clusters and hubs. Earlier approaches like AeroSME, SCRATCH, AeroPortal as CSAs in FP6 / FP7 couldn't establish a self-sustaining pan-European SME platform.

The European AAT sector should be understood as a complex and intertwined landscape. While it is easy and straightforward to identify the relevant stakeholder groups(s) for each particular thematic topic, it is much more difficult to achieve a balanced answer for a multifaceted challenge which impacts all stakeholder groups across the sector, and it does this with individual aspects for each group.

The objective of this deliverable is to ensure that the project addresses the right stakeholders, at the right status of work, with the right topics. For this, the spectrum of AAT stakeholders is analysed, broken down to a map of the AAT research landscape, and supplemented with an overview of the appropriate communication channels.

2.1 Objectives of the related OSCAR WP2 and OSCAR task T2.1

Deliverable D2.1 is an outcome of work package WP2 “Survey & analysis on the current Open Science landscape in AAT research”, conducted in task T2.1 “Identification of the spectrum of stakeholders and set-up of communication channels”.

Work package WP2 is a preparatory work package for the work to be performed in the following work packages WP3 to WP5. The overall objective is to capture the current extent in which Open Science principles are already established or applicable in the AAT research performed in Europe.

The main objective of task T2.1 in this context is to create a detailed map of the aeronautical research sector in Europe, which

a) identifies important associations, clusters and hubs,
b) highlights the interrelations between them, and
c) uses this map to identify stakeholder which are relevant for OSCAR and ways to contact the appropriate persons at these organisations.

2.2 Relevance and contribution of the deliverable to the objectives of OSCAR

The project OSCAR – *O*pen *S*cien*C*e *A*eronautic & air transport *R*esearch – addresses the current perception, acceptance, and implementation of Open Science in the field of European AAT research and in those fields where European AAT research issues interact with e.g. other transport modes and technology exchange. The main goal of the OSCAR project is to initiate and deliver an optimized Open Science concept to European transport with special focus on AAT research with triggering an implementation in aeronautics and air transport.

In this context, deliverable D2.1 identifies the spectrum of AAT research stakeholders and proper communication channels to reach out to them. A detailed map of the landscape of the aeronautical research sector in Europe contains the aeronautical related associations, clusters and hubs, their synergies and overlaps. This map consists of a graphical view of the landscape, comprising three figures of the main view levels, and a data base of several spreadsheets.

The above research structure will be exploited in order to ensure that the view point of the various stakeholders will be included in the survey to be performed in the frame of T2.2 by accounting for the interests, constraints and sensitivities of each of these groups.

3 Approach and procedure

3.1 Approach & methodology

To achieve the objectives of this deliverable, the OSCAR team designed a 5-step-approach to identify the spectrum of stakeholders and to set up the communication channels.

3.1.1 Step 1: Identification of European AAT stakeholders

In the first step the European research community in aviation and air transport was investigated and all relevant and potential stakeholders were identified on the basis of their participation in European projects, in European communities and associations which are relevant for AAT research, etc.

3.1.2 Step 2: Network connections

In the second step the interconnections such as formally organised (or informal but well established) networks and other interrelation between those stakeholders was investigated and assembled in a map or a landscape in the AAT sector.

3.1.3 Step 3: Data mining of European research project data

In a third step it was planned to research the European Commission's eCORDA data base and other sources on EC-funded research in order to quantify the qualitative results of step 1 and step 2. As it was not possible to gain permission to access eCORDA for this project, the scope of work which could be done in step 3 was limited.

3.1.4 Step 4: Merging and further analysis of achieved results

In the fourth step, basing on the results of the first three steps the most relevant stakeholders for further investigation got finally identified. Step 4 reviewed the list of potential stakeholders of step 1 and used the findings of step 2 and step 3 to identify the most relevant and representative stakeholders for the European AAT research community. Also, in step 4, potential or promising points of contact at those contacts were already shortlisted in a separate compendium.

3.1.5 Step 5: Identification of communication channels

In step 5 this tentative list of point of contacts was then completed in a systematic manner. In a subsequent analysis, the best ways to approach these points of contacts and stakeholders were identified.

3.2 Work performed

The OSCAR project team went through the five-step-approach outlined in section 3.1.

The preliminary findings were presented at the M06 project meeting in Athens. Discussion among the participants revealed that for the map/landscape to be clear and simple, straightforward and free of any misunderstandings, an additional iteration of the graphical representation of the landscape was needed.

Due to the complexity of the European AAT landscape, is was necessary to extend the map from one to three schematic diagrams, covering the different levels, respectively points of view of the European aviation research community.

The mapping of the European AAT landscape was finalised at the M12 project meeting in Bucharest. In a subsequent effort, the compiled data base of stakeholders and the associated communication channels was reworked to suit the final mapping of the AAT research sector.

4 Analysis of the European AAT Research Community

In order to gain a systematic over the European research community in aviation & air transport, the OSCAR team gathered information from a wide variety of sources, such as websites, publicly available data bases, reports of relevant FP7/H2020 projects, memberships in RTD-related clusters, associations and other interest groups, and last not least personal experiences of team members.

The findings were assembled in a data sheet which was then processed to a preliminary list of potential stakeholders, see attachment 1[1].

A screenshot of the integrated main spreadsheet is depicted below.

No.	Member	Full name	Country	Network	FP7	additional in	2016	2019	Website	Cluster
8	Airbus	0	France	ACARE	FP7	0	x	x	https://www.airbus.com/	Industry
22	CIRA	Centro italiano Riecerche Aerospaziali	Italy	ACARE	FP7	0	x	x	https://www.cira.it/en	National / Public
26	Dassault Aviation	0	France	ACARE	FP7	0	x	x	https://www.dassault-aviation.com/fr/	Industry
35	DLR	Deutsche Zentrum für Luft- und Raumfahrt	Germany	ACARE	FP7	0	x	x	https://www.dlr.de/dlr/desktopdefault.aspx/tabi	National / Public
79	NLR	Netherland Aerospace	Netherlands	ACARE	FP7	0	x	x	https://www.nlr.org/	Association National
80	ONERA	Office National d'Etudes et Recherches Aérospatiales	France	ACARE	FP7	0	x	x	https://www.onera.fr/fr	Industry
86	Safran	0	France	ACARE	FP7	0	x	x	https://www.safran-group.com/	Industry
110	VZLU	Czech Aerospace Reseach Center	Czech Republic	ACARE	FP7	non profit makir	x	x	https://www.vzlu.cz/en/company-c1/	National / Public
1	CIRA	Centro italiano Riecerche Aerospaziali	Italy	GARTEUR	FP7	0	0	x	https://www.cira.it/en	National / Public
2	DLR	Deutsche Zentrum für Luft- und Raumfahrt	Germany	GARTEUR	FP7	0	0	x	https://www.dlr.de/dlr/desktopdefault.aspx/tabi	National / Public
6	NLR	Netherland Aerospace	Netherlands	GARTEUR	FP7	0	0	x	https://www.nlr.org/	National / Public
7	ONERA	Office National d'Etudes et Recherches Aérospatiales	France	GARTEUR	FP7	0	0	x	https://www.onera.fr/fr	National / Public
8	Airbus Defense & Space	0	France	GARTEUR	FP7	0	0	x	https://www.airbus.com/defence.html	Industry
9	Airbus Operations GmbH	0	Germany	GARTEUR	FP7	0	0	x	https://www.airbus.com/company/worldwide-p	Industry
10	Airbus Operations S.A.S	0	France	GARTEUR	FP7	0	0	x	https://www.airbus.com/	Industry
11	Airbus Group Innovations	0	France	GARTEUR	FP7	0	0	x	https://www.airbus.com/innovation.html	Industry
12	Leonardo Company	0	Italy	GARTEUR	FP7	0	0	x	https://www.leonardocompany.com/	Industry
13	Dassault Aviation	0	France	GARTEUR	FP7	0	0	x	https://www.dassault-aviation.com/fr/	Industry
1	0	0	France	ASD	0	0	0	x	https://www.airbus.com/	Industry
3	Dassault Aviation	0	France	ASD	0	0	0	x	https://www.dassault-aviation.com/en/	Industry
8	Leonardo	0	Italy	ASD	0	0	0	x	https://www.leonardocompany.com/en	Industry
15	SAFRAN	0	France	ASD	0	0	0	x	https://www.safran-group.com/?lang=en	Industry
2	NLR	Netherland Aerospace	Netherland	EREA	FP7	0	x	x	https://www.nlr.org/	Public National
3	DLR	Deutsche Zentrum für Luft- und Raumfahrt	Germany	EREA	FP7	0	x	x	https://www.dlr.de/	Public National
4	ONERA	Office National d'Etudes et Recherches Aérospatiales	France	EREA	FP7	0	x	x	https://www.onera.fr/fr	Public National
7	CIRA	Centro italiano Riecerche Aerospaziali	Italy	EREA	FP7	0	x	x	https://www.cira.it/en	Public National
10	VZLU	Czech Aerospace Reseach Center	Czech Republic	EREA	FP7	0	x	x	https://www.vzlu.cz/en/company-c1/	Public National
15	DLR	Deutsches Zentrum für Luft- und Raumfahrt	Germany	EASN	0	0	0	x	https://www.dlr.de/dlr/desktopdefault.aspx/tabi	Public / National
16	CIRA	Italian Aerospace Research Centre	Italy	EASN	0	0	0	x	https://www.cira.it/en	Public / National
17	ONERA	Office National d'Etudes et Recherches Aérospatiales	France	EASN	0	0	0	x	https://www.onera.fr/en	Public / National
23	Airbus	0	France	EASN	0	0	0	x	https://www.airbus.com/	Industry
24	SAFRAN	0	France	EASN	0	0	0	x	https://www.safran-group.com	Industry
1	Leonardo MW Limited (ex AgustaWestland Limited)	0	Italy	Clean Sky 2	0	Leader	0	x	https://www.leonardocompany.com/	Industry
2	Airbus Defence and Space GmbH	Bremen	Germany	Clean Sky 2	0	Leader	0	x	https://www.airbus.com/defence.html	Industry
3	Airbus Defence and Space SAU	0	0	Clean Sky 2	0	Leader	0	x	https://www.airbus.com/	Industry
5	Airbus Operations GmbH	Finkenwerder	Germany	Clean Sky 2	0	Leader	0	x	https://www.airbus.com/company/worldwide-p	Industry
6	Airbus Defence and Space GmbH	Bremen	Germany	Clean Sky 2	0	Participating Affi	0	x	https://www.airbus.com/	Industry
7	Airbus Group Limited	Toulouse	France	Clean Sky 2	0	Leader	0	x	https://www.airbus.com/	Industry
8	Airbus Operations S.A.S.	Toulouse	France	Clean Sky 2	0	Leader	0	x	https://www.airbus.com/	Industry
9	Airbus Group SAS	Bremen	Germany	Clean Sky 2	0	Participating Affi	0	x	https://www.airbus.com/	Industry
11	Airbus Helicopters SAS	Marignane	France	Clean Sky 2	0	Leader	0	x	https://www.airbus.com/	Industry
12	Airbus Helicopters Deutschland GmbH	Donauwörth	Germany	Clean Sky 2	0	Leader	0	x	https://www.airbus.com/	Industry
13	Airbus Helicopters Polska Sp z o.o.	0	Poland	Clean Sky 2	0	Participating Affi	0	x	https://www.airbus.com/	Industry
14	Airbus Helicopters España	0	Spain	Clean Sky 2	0	Leader	0	x	https://www.airbus.com/	Industry
15	Airbus Operations Limited	Bristol	UK	Clean Sky 2	0	Leader	0	x	https://www.airbus.com/	Industry
16	Airbus Operations SL	Madrid	Spain	Clean Sky 2	0	Leader	0	x	https://www.airbus.com/	Industry

... OVERVIEW-MATRIX | ACARE | GARTEUR | ASD | EACP | EREA | EASN | PEGASUS | EASA | Clean Sky | SESAR | Future Sky | AirTN | Hamburg Aviation | GOOGLE | EU Ministerien | Glossar für Matrix

[1] File: "D2.1 - Attachment 1 - Analysis of the European AAT Research Community.xlsx"

5 Mapping of the AAT research sector

With the identification of potential stakeholders completed, the analysis was then extended to the specific fields of activity of and the interrelations between them.

Starting from the results of a brainstorming session at Thelsys, a graphical representation of the landscape was then circulated within the project team. After intense discussion at the M06 project meeting at Athens, an extended and improved version of the landscape, created by EASN, was then presented to the OSCAR partners at the M12 meeting at Bucharest. The landscape of European AAT research was finalised after a constructive discussion of the entire OSCAR team at this meeting.

5.1 Map of the European AAT Landscape

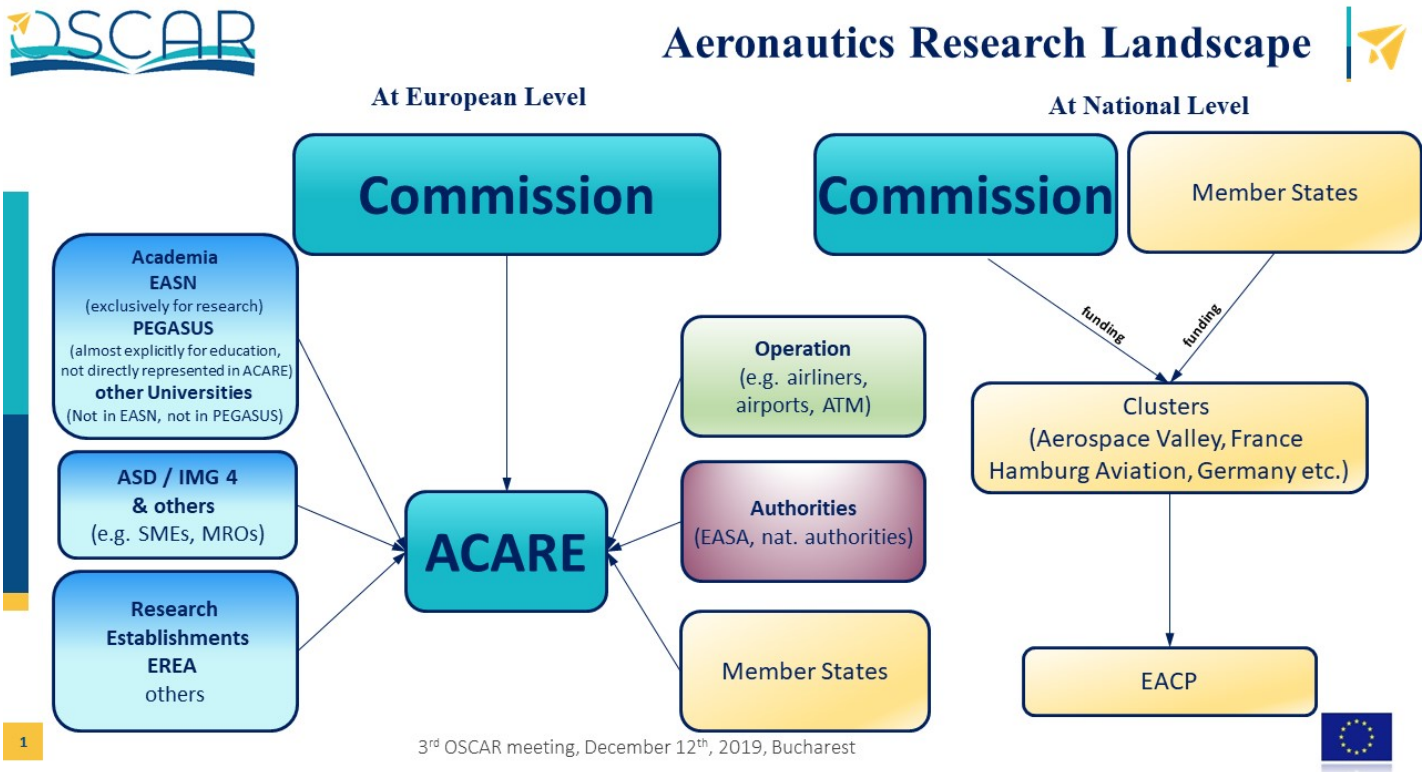
Sub-sections 5.1.1 to 5.1.3 show the graphical representations of the three "dimensions" of the European AAT landscape:

Dimension A: Associations and network organisations of aeronautics research

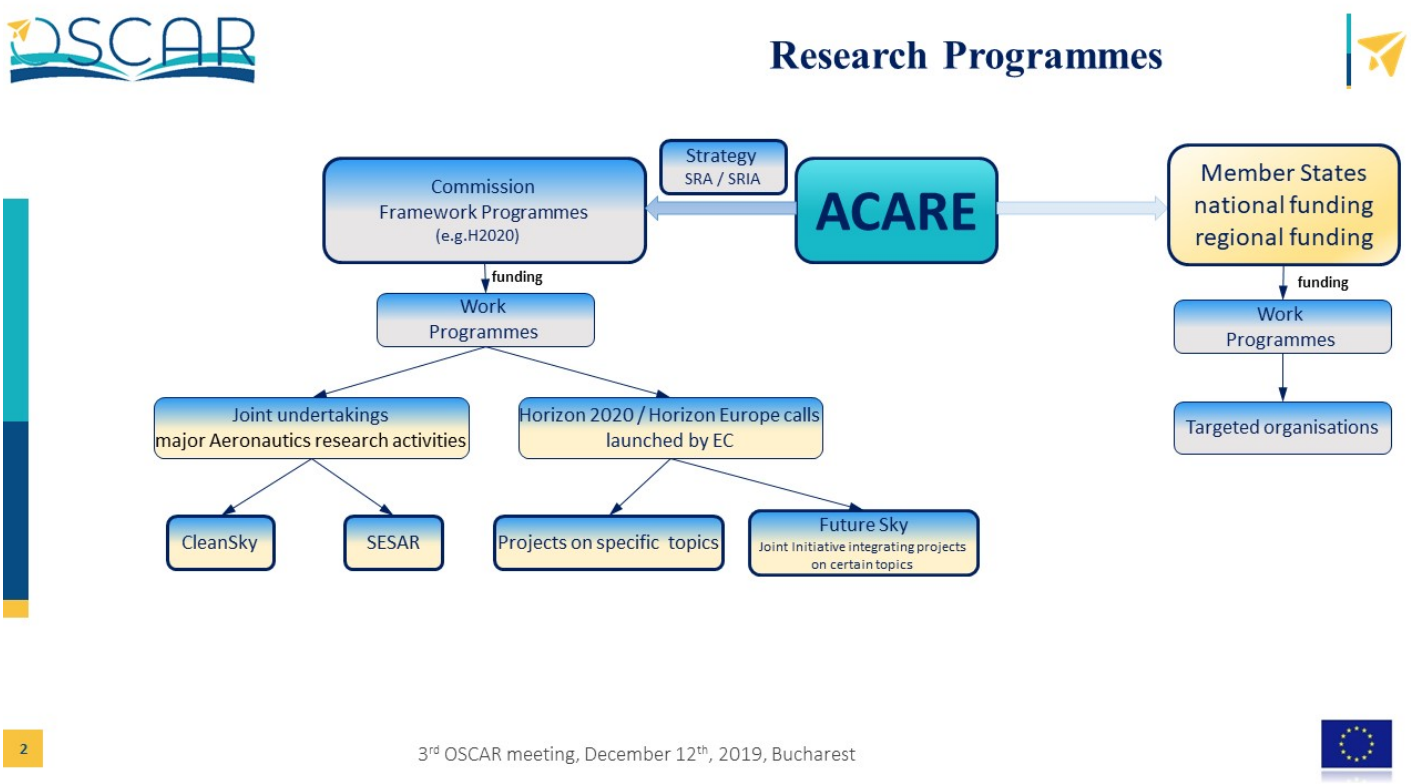
Dimension B: Research programmes and joint RTD programs

Dimension C: Aeronautic dissemination initiatives and networking events

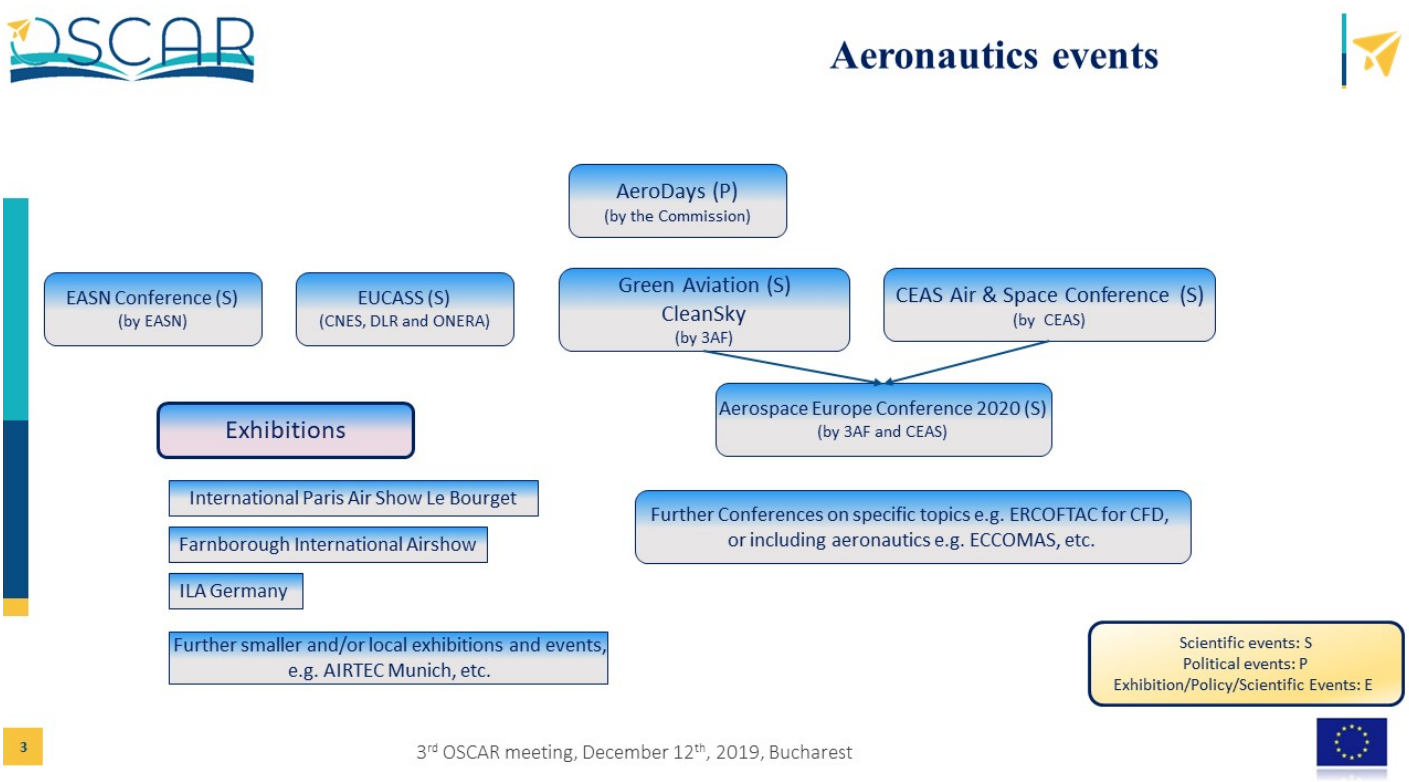
5.1.1 Dimension A: Associations and network organisations of aeronautics research



5.1.2 Dimension B: Research programmes and joint RTD programs



5.1.3 Dimension C: Aeronautic dissemination initiatives and networking events



6 Research on data bases

6.1 Research of eCORDA and related data bases

As a consecutive step, the project plan of OSCAR foresaw a detailed study of the eCORDA data base to get a deeper and more thorough picture from past and ongoing EC-funded research project. Although two OSCAR partners had been granted access to eCORDA for another research project[2], permission to access and analyse eCORDA data for OSCAR could not be obtained.

A limited analysis of EC research projects in AAT was nevertheless conducted via the CORDIS website of the Commission and other publicly accessible sources.

6.1.1 CORDIS

CORDIS is a data base which contains a huge amount of information on EU projects. Some information are free and openly available on the EU websites. As a substitution for a tool-driven analysis and data mining of the eCORDA data base, information available in CORDIS was used. This approach gave a rough impression, but the findings obtained this way are limited and cannot be considered as fully representative.

Important limitations were:

- No systematic available to find relevant information on Open Science
- No direct information on Open Science in CORDIS (with the exception of links to general information about the Commission's Open Science policy)
- Researching EC-funded research projects of FP7 and H2020 which were known by project partners to contain considerable and important contributions to Open Science revealed that Open Science content cannot be found or reasonably accessed via CORDIS or linked project information.

[2] Project: Facilitating Collaboration in *R*ese*A*rch and *D*evelopment to Foster Further *I*nnovation in European *A*ero*N*autics (RADIAN), GA 724109, Call / Topic: H2020-MG-1-5-2016

6.1.2 CORDIS section with free access

An example of a CORDIS search can be accessed by the following link:

https://CORDIS.europa.eu/search/de?q=contenttype%3D%27project%27&p=1&num=10&srt=contentUpdateDate:decreasing

The overall results of this analysis are highlighted in the table below:

Retrieved keywords	Open …			Public …			Free …		
Date of retrieval	15.05.19	01.08.19	17.04.20	15.05.19	01.08.19	17.04.20	15.05.19	01.08.19	17.04.20
… science	473	125	6.690	63	18	13.342	0	0	2.191
… source	4366	961	3.385	9	0	4.965	22	6	1.127
… platform	294	141	3.877	18	7	6.080	6	3	906
… access	2547	588	4.073	437	119	6.604	441	83	982
… knowledge base	5	0	3.213	2	1	6.086	0	0	993
… software	112	46	3.082	18	7	3.985	128	36	798
… tool	-	6	5.439	-	1	10.100	-	3	1.565
… notebooks	-	1	14	-	0	18	-	0	3
… peer review	-	4	2.905	-	0	9.826	-	0	1.073
… educational resources	-	14	2.208	-	0	4.792	-	0	596
… methodology	-	3	2.827	-	0	5.869	-	0	763
… infrastructure	-	9	2.505	-	14	4.443	-	1	544
… metrics	-	0	365	-	0	608	-	0	93
Citizen science	-	77	525	-	0	1.189	-	0	118

6.2 Other open data sources

Similar to the analysis of CORDIS, open and freely available data sources were researched for relevant links between AAT research and Open Science. This included the most important contributors, major contributions, national distribution within Europe, main thematic topics, Technological Readiness Level of the associated RTD projects, and many more.

During this time-consuming exercise, the OSCAR team became aware of the fast pace in which the "market of Open Science" is changing. As a consequence, several searches were conducted multiple times. The OSCAR team will continue to do so at M27 and at the end of the project again.

The whole documentation is stored at the IFAM-Server[3].

The procedure list of the 2019-09 search is given below:

[3] See file „OSCAR_retrieval-of-keywords.xls" in project documentation on IFAM server

Search criteria	Sources	Links
Aviation research projects	DLR	https://www.dlr.de/dlr/desktopdefault.aspx/tabid-10007/
	DLR - NKS Nationale Kontaktstelle Luftfahrtforschung	https://www.dlr.de/pt-lf/desktopdefault.aspx/tabid-8409
	Förderberatung des Bundes Forschung und Innovation	https://www.foerderinfo.bund.de/de/luftfahrt-186.php
	Bundesministerium für Wirtschaft und Energie	https://www.bmwi.de/Redaktion/DE/Artikel/Technologie/luftfahrttechnologien-02.html
	Helmholtz Spitzenforschung für große Herausforderungen	https://www.helmholtz.de/forschung/luftfahrt_raumfahrt_und_verkehr/
	Airportzentrale / Flughafenmagazin für Deutschland	http://www.airportzentrale.de/seit-20-jahren-foerdert-der-bund-luftfahrt-forschungsprojekte/40129/
	Bundesverband der Deutschen Luft- und Raumfahrt e.V.	https://www.bdli.de/innovation/forschungsfoerderung
	ZAL Innovation	
	European Commission	http://ec.europa.eu/research/leaflets/aeronautics/page_24_de.html
	Das Fluglärm Portal / Fluglärmforschung	https://www.fluglärm-portal.de/laerm-vermeiden/forschungsprojekte/
	TU Braunschweig	https://www.tu-braunschweig.de/forschung/zentren/nfl/projekte
Aerospace research and development	NASA	https://spinoff.nasa.gov/spinoff1997/ar.html
	Czech Invest	http://www.czech-research.com/rd-environment/research-organizations/aerospace-research-and-test-establishment/
	GKN	https://www.gkn.com/en/our-divisions/gkn-aerospace/about-gkn-aerospace/research-and-development/
	apan.org	https://community.apan.org/wg/afosr/w/researchareas/11156/european-office-of-aerospace-research-and-development/
	Kari / Korea	https://www.kari.re.kr/eng/sub03_01.do
Aviation publications	Luftfahrt Bundesamt - Publikationen	https://www.lba.de/DE/Presse/Publikationen/Publikationen_node.html

Search criteria	Sources	Links
	DLR Publikationen	https://www.dlr.de/dlr/desktopdefault.aspx/tabid-10087
	Uni-Kiel	https://www.tf.uni-kiel.de/~fp/fliegerei/ausbildung/publikationen.html
	BDL Bundesverband der Deutschen Luftverkehrswirtschaft	https://www.bdl.aero/de/
	ZEW Branchenreport Innovation für Schiff- und Luftfahrt	https://www.zew.de/de/publikationen/2017-schiff-und-luftfahrt/
	Bauhaus Luftfahrt - Neue Wege.	https://www.bauhaus-luftfahrt.net/de/forschung/publikationen/
Aeronautical Information publication	ICAO - International Civil Aviation Organization (ICAO) is a UN	https://www.icao.int/ESAF/FISS/Pages/Aeronautical-Information-Publication.aspx
	Skybrary	https://www.skybrary.aero/index.php/Aeronautical_Information_Publications_(AIPs)
	Experimental Aircraft Info	https://www.experimentalaircraft.info/flight-planning/aviation-info.php
	Eurocontrol	https://www.eurocontrol.int/articles/ais-online
	Portal für Luftfahrtveröffentlichungen	https://www.milais.org/

6.3 EU Search

A third line of research was to investigate the references to Open Science on aviation-related information from official EU web presences.

Retrieved keywords	Open …			Public …			Free …		
Date of retrieval	15.05.19	01.08.19	17.04.20	15.05.19	01.08.19	17.04.20	15.05.19	01.08.19	17.04.20
… science	2.026	3.263	29.117	24	49	44.388	0	4	5.531
… source	1.707	3.792	16.491	46	74	34.287	24	57	10.030
… platform	326	507	10.186	15	29	38.824	4.865	6.577	10.139
… access	25. 061	33.984	41.441	1.316	3.816	121.133	8.016	14.136	22.080
… knowledge base	0	1	2.045	1	2	9.060	0	0	658
… software	45	104	11.511	0	6	10.013	88	135	1.686
… tool	6	14	9.733	0	8	17.865	13	25	4.860
… notebooks	0	2	31	0	0	61	-	0	11
… peer review	13	25	7.106	1	3	10.571	-	0	1.857
… educational resources	317	420	1.064	0	0	518	2	1	1.857
… methodology	1	3	12.268	1	5	21.636	0	0	4.778
… infrastructure	9	31	14.693	683	1.251	49.463	2	6	7.003
… metrics	0	1	302	0	0	605	0	0	152
Citizen science	0	1	705	0	6	698	0	0	170

The term „Citizen Science“ is special. It could not be retrieved in combination with open, public or free in May 2019. On its own it got 319 hits. In the second search in August 2019, „open citizen science“ got 1 hit and on its own 665 hits. We can also observe an “explosion” in the number of hits in the latest search.

6.4 European Open Science Cloud

The EU already offers an Open Science Cloud where you can upload and search project data. For details visit the reference document to EOSC[4]. The idea behind the EOSC is having a European place to search for real data. Here any institution can provide the cloud with a link to their data base. No registration is needed for the cloud, but one has to register for the data base offered at https://www.eosc-portal.eu/.

It was not possible in the scope and limit of time and resources of OSCAR to “reverse-engineer” the connection between the Open Science cloud and the identified stakeholders in the AAT research community.

6.5 Project dissemination in the World Wide Web

Scientific presentations on conferences are generally published and available to all persons that had access to the conference. With some delay, which may range from few months to many years, these can also be found on various portals via the internet for free or to buy at reasonable costs. There is no guarantee on completeness. But searching the world wide web for places of scientific publications showed various opportunities. This is not a complete list. It is simply the result of searching some places that could be of interest. They document the availability of scientific information with the status of today.

4 https://ec.europa.eu/commission/news/european-open-science-cloud-becomes-reality-2018-nov-23_en

This is a growing and developing area of free scientific information. Therefore the document connected[5] will grow with the project.

Search engines and platforms which give free access are listed below.

Name	Born in…	Website	Topic	Kind of Content 8/2019
Scholar google		scholar.google.de	Various	Results: 298.000.000
Microsoft Academic Search		academic.microsoft.com/home	Academic	Abstracts to papers and journals Papers: 225.572.477 Authos: 244.499.947 Topics: 664.891 Journals: 48.758 Conferences: 4.397 Institutions: 25.554
Worldwidescience – since 2008		Worldwidescience.org	Research report about aviation	Papers: 443 Multimedia: 37 Data/Software: 91
Explore	EU	explore.openaire.eu/search/find	European Commission, + other	Articles in fulltext
science.gov	USA	www.science.gov/	federal science information incl. Research and development results	Database: 60 Scientific Websites: 2.200 Pages: 200.000.000
Catalogues of universities				
Publikationsserver der RWTH Aachen University	Germany	publications.rwth-aachen.de	Academic, Forschungsdatenmanagement	Articles in fulltext Publikationsserver Open Access: 14.637
Universitätsbibliothek TU	Germany	mediatum.ub.tum.de	Academic, MINT	Articles in fulltext
		ub.tum.de/aktuelles/open-apc-2018	OPEN ACCESS Förderprogramm	open-access@ub.tum.de
Journals & Papers				
DOAJ	Sweden	doaj.org/	Directory of Open Access Journals e.g. Medicine and Science	Journals: 13.627 Searchable at article level: 10.673 Countries: 131 Articles: 4.186.201
Open Grey	EU	opengrey.eu	Medicine, Science, Technology, Biomedical Science, Economics, Social Science and Humanities	technical research reports, docotral dissertations, some conference papers Biobliographical references: 700.000
Freefullpdf		freefullpdf.com	Life siences, health sciences, physics sciences, social sciences	
Repositories / document server				
arXiv	UK	arxiv.org	MINT	Open Access: 1.574.565
slideshare	UK	slideshare.net	lectures of universities	
TIB Leibniz-Informationszentrum	Germany	tib.eu/de	Technik und Naturwissenschaften	Open Access (Förderung): 5.000
Base-search (Bielefeld	Germany	base-search.net	wissenschaftliche Web-	Dokumente: 150.000.000 (davon 60%
Social netzworks for scientific work, where authors publish their material themself				
ResearchGate	2008	researchgate.net	Academic, student, corporate, gov, ngo, medical	Publicationen: 130.000.000 Researcher: 15.000.000 Nobel Laureates: 68
Mendeley		mendeley.com		References: 30.000.000 Researcher: 6.000.000
Academia	2014	academia.edu	Academics, research paper. Only with login	Academics: 92.298.200 Paper: 23.000.000

[5] See file „OSCAR_Research of publications in common project dissemination_2019-08-14.xls“ in the project documentation on IFAM server

6.6 Commercial data bases

Commercial data bases offer a variety of data. They have pay services and usually to some extend they offer also parts with free access to everyone.

Name	Born in…	Website	Topic
1. Commercial databases, which have free and/or pay services			
FIZ-Karlsruhe (Leibnitz-Institut für Informationsinfrastruktur)	Germany	fiz-karlsruhe.de	Erforschen von Methoden und Prozessen und Dienste für eine nachhaltige Informationsstruktur
Springer		springer.com/de/open-access	all open access articles and books are subject to high-quality peer review, editorial and production processes
Springer Open		https://www.springeropen.com/journals	science, technology, medicine, the humanities and social sciences
Elsevier		elsevier.com/de-de/about/open-science/open-access	
Worldcat		www.worldcat.org	
Leuphana Universität Lüneburg		leuphana.de/forschung/transparenz-in-der-forschung/open-access.html	
Open Access Der freie Zugang zu wissenschaftlicher Information	2007	open-access.net https://open-access.net/informationen-zu-open-access/positionen	

At the first glance, it appears that commercial data base providers consider Open Science as direct (and annoying) competition. Experience from other commercial sectors which became under pressure from free and/or open accessible sources suggests that this will change rapidly once a “critical mass” of information is available through Open Science, in which commercial providers embrace and utilise the outreach of the Open Science content and complement the inherent shortcomings of “free & open” by payed content.

The OSCAR project team monitors the ongoing development in this area throughout the project.

7 Identification of stakeholders and associated points of contact

A second, more thorough and extensive analysis of the AAT landscape and the list of potential stakeholders was used to identify the most relevant and representative stakeholders.

In this activity, potential points of contact (PoCs) and individual “multiplicators” at many of these stakeholders could already be added to the list - a task that then was continued in a comprehensive approach of all OSCAR partners in the step of identifying communication channels (see next chapter).

1	Nr.	Member Name	Fullname	Global Name	Orgt	Kategory	Kategor	Country	Network	FP7	add	2016	2019	Webs	publication	Cluster	membersh
543	113	Siemens Spa		Siemens	IND	Manufactur	1st Tier	Germany	Clean Sky 2		Participating Affilia		x			Industry	
544	623	SIL Deutschland		SIL Deutschland				Germany	Hamburg Aviation				x				
545	124	Silver Atena	a member of assystem	Silver Atena	IND	Manufactur	2nd Tier	Germany	Hamburg Aviation				x				
546	624	SINTEF		SINTEF				Norway	EASN				x			Public / National	
547	625	Skyguide		Skyguide				Switzerland	SESAR				x	https://www.skyguide.ch/de/			
548	335	Skywin	Aerospace cluster of W	Skywin	OTH	Cluster	regional	Belgium	EACP				x	http://www.skywin.be/frfno-back			
549	626	SLM Solutions		SLM Solutions				Germany	Hamburg Aviation				x				
550	627	Societe de Motorisations Aeronautiques (Safran		Societe de Motorisations Aeronautiques (Safran)					Clean Sky 2		Leader		x	https://www.safran-group.com/			
551	628	SOCIETE NATIONALE DE CONSTRUCTION AEROSP		SOCIETE NATIONALE DE CONSTRUCTION AEROSPATIALE SONACA SA					Clean Sky 2		Core Partner		x			Association National	
552	629	SOFF	Swedish Security and D	SOFF				Sweden	ASD				x	https://soff.se/en/		Association National	
553	630	Segeclair Aerospace		Segeclair Aerospace				Germany	Hamburg Aviation				x				
554	631	Segetl High Tech		Segetl High Tech				Germany	Hamburg Aviation				x				
555	632	Solutioon pro Maintenance		Solutioon pro Maintenance				Germany	Hamburg Aviation				x				
556	633	SPEU		SPEU				Germany	Hamburg Aviation				x				
557	225	Spritzner Engineers		Spritzner Engineers	IND	Services	SME	Germany	Hamburg Aviation				x				
558	634	Steffen Heuser		Steffen Heuser				Germany	Hamburg Aviation				x				
559	114	STELIA AEROSPACE	Tochterunternehmen v	STELIA AEROSPACE	IND	Manufactur	1st Tier	France	Clean Sky 2		Participating Affilia		x	http://www.stelia-ae		Industry	
560	635	STEP SUD MARE Srl		STEP SUD MARE Srl					Clean Sky 2		Core Partner		x				
561	420	Stichting National Lucht-en Ruimtevaartlaborat		NLR	REC	Research	public	Netherlands	Clean Sky 2		Core Partner		x			Association National	
562	636	Stute with passion for logistic		Stute with passion for logistic				Germany	Hamburg Aviation				x				
563	312	Suderelbe AG	Metropolregion Hambi	Suderelbe AG	OTH	Cluster	regional	Germany	Hamburg Aviation				x				
564	300	Swedish Transport Agency		Swedish Transport Agency	PUB	Certifier	-	Sweden	EASA				x	https://transportstyr		National Association	
565	313	Swiss Aerospace Cluster		Swiss Aerospace Cluster	OTH	Cluster	regional	Switzerland	EACP				x	https://swiss-aerospace-cluster.ch/			
566	226	Synerteticon		Synerteticon	IND	Services	SME	Germany	Hamburg Aviation				x			Startups	ja
567	637	SZEL-TECH		SZEL-TECH					Clean Sky 2		Core Partner		x				
568	213	Taguori		Taguori	IND	Services	2nd Tier	Germany	Hamburg Aviation				x				
569	227	tbs Technische Berartung Szake		tbs Technische Berartung Szake	IND	Services	SME	Germany	Hamburg Aviation				x				
570	282	TECHNI-MODUL ENGINEERING SA		TECHNI-MODUL ENGINEERING SA	IND				Clean Sky 2		Core Partner		x				
571	115	Technion		Technion	IND	Manufactur	1st Tier	Israel	EASN				x	https://www.technic?			
572	22	TECHNISCHE UNIVERSITEIT DELFT		TECHNISCHE UNIVERSITEIT DELFT	HES	Research	University	Netherlands	Clean Sky 2		Core Partner		x			University	
573	638	Techno System Development		Techno System Development					Clean Sky 2		Core Partner		x				
574	186	TECNAM		TECNAM	IND	Manufactur	OEM		Clean Sky 2		Core Partner		x				
575	200	tedae	Spanish Association fo	tedae	OTH	Cluster	national	Spain	ASD				x	https://www.tedae.c	Association National		
576	639	TEKEVER -TECNOLOGIAS DE INFORMACAO, S.A.		TEKEVER -TECNOLOGIAS DE INFORMACAO, S.A.					Clean Sky 2		Participating Affilia		x				
577	228	Testfuchs		Testfuchs	IND	Services	SME	Germany	Hamburg Aviation				x				
578	640	Testing and Engineering of Aeronautical Materia		Testing and Engineering of Aeronautical Materials and Structures SL					Clean Sky 2		Core Partner		x				
579	80	THALES		THALES	IND	Manufactur	1st Tier	France	ASD				x	https://www.thales		Industry	
580	81	THALES		THALES	IND	Manufactur	1st Tier	France	SESAR				x	https://www.thales		Industry	
581	82	Thales Avionics Electrical Systems SAS		THALES	IND	Manufactur	1st Tier	United Kingc	Clean Sky 2		Leader		x			Industry	
582	83	Thales UK Limited		THALES	IND	Manufactur	1st Tier	United Kingc	Clean Sky 2		Participating Affilia		x			Industry	
583	361	The Icelandic Transport Authority		The Icelandic Transport Authority	PUB	Certifier	-	Iceland	EASA				x	https://www.icetra.i	National Association		
584	641	THE MANUFACTURING TECHNOLOGY CENTRE Lim		THE MANUFACTURING TECHNOLOGY CENTRE Limited					Clean Sky 2		Core Partner		x				
585	23	THE UNIVERSITY OF SHEFFIELD		THE UNIVERSITY OF SHEFFIELD	HES	Research	University	United Kingc	Clean Sky 2		Core Partner		x			University	
586	642	thebeautyofunderstanding ?		thebeautyofunderstanding ?				Germany	Hamburg Aviation				x				
587	216	Thelsys GmbH		Thelsys GmbH	IND	Services	SME	Germany	Hamburg Aviation				x				
588	217	Threenet		Threenet	IND	Services	SME	Germany	Hamburg Aviation				x				
589	643	Torino Piemonte Aerospace		Torino Piemonte Aerospace				Italy	EACP				x	https://www.tpaflytech.com/it			
590	353	Transport Malta, Civil Aviation Directorate		Transport Malta, Civil Aviation Dir	PUB	Certifier	-	Malta	EASA				x	http://r https://www.	National Association		
591	229	Treo Labor für Umweltsimulation		Treo Labor für Umweltsimulation	IND	Services	SME	Germany	Hamburg Aviation				x				
592	283	Triumph Actuation Systems -UK, Ltd.		Triumph Actuation Systems -UK, L	IND			United Kingc	Clean Sky 2		Core Partner		x				
593	408	TsAGI	Central Aerohydrodyn	TsAGI	REC	Research	public	Russia	EREA	FP7	x		x	http://www.tsagi.com	Public National		
594	644	TSB	Technology Strategy Bo	TSB				United Kingc	AirTn				x	https://www.gov.uk/government/organisation			
595	645	TTTECH COMPUTERTECHNIK AG		TTTECH COMPUTERTECHNIK AG				Germany	Clean Sky 2		Core Partner		x				
596	24	TU Berlin		TU Berlin	HES	Research	University	Germany	PEGASUS	FP7	x		x	https://www.tu-berl	University		
597	25	TU Braunschweig		TU Braunschweig	HES	Research	University	Germany	PEGASUS	FP7	x		x	https://www.tu-brau	University		
598	26	TU Delft		TU Delft	HES	Research	University	Netherlands	PEGASUS	FP7	x		x	www.lr.tudelft.nl	University		
599	27	TU Dresden		TU Dresden	HES	Research	University	Germany	PEGASUS		x		x	https://tu-dresden.d	University		
600	28	TUHH	Technische Universität	TUHH	HES	Research	University	Germany	Hamburg Aviation				x			Hochschuler	ja
601	214	TÜV Nord		TÜV Nord	IND	Services	2nd Tier	Germany	Hamburg Aviation				x				
602	354	UK Civil Aviation Authority		UK Civil Aviation Authority	PUB	Certifier	-	United Kingc	EASA				x	https://www.caa.co.	National Association		
603	378	UK Department of Transport		UK Department of Transport	PUB	Regulator	-	United Kingc	EASA				x	https://www.gov.uk/	National Association		
604	284	ULTRA ELECTRONICS LIMITED		ULTRA ELECTRONICS LIMITED	IND				Clean Sky 2		Core Partner		x				
605	285	ULTRATECH Sp zoo		ULTRATECH Sp zoo	IND				Clean Sky 2		Core Partner		x				
606	646	Ulyanovsk Avia		Ulyanovsk Avia				Russia	EACP				x	https://www.tpaflytech.com/it			
607	286	Umbra Cuscinetti Spa		Umbra Cuscinetti Spa	IND				Clean Sky 2		Core Partner		x				
608	29	Uni of Zilina	University of Zilina	Uni of Zilina	HES	Research	University	Slovakia	AirTn				o	not available 404 /ht	University		
609	202	UNITED TECHNOLOGIES RESEARCH CENTRE IRELA		UNITED TECHNOLOGIES RESEARCH	IND	Services	1st Tier		Clean Sky 2		Core Partner		x				
610	230	UNITY Consulting & Innovation		UNITY Consulting & Innovation	IND	Services	SME	Germany	Hamburg Aviation				x				
611	30	Universidad Politécnica de Madrid		Universidad Politécnica de Madric	HES	Research	University	Spain	Clean Sky 2		Core Partner		x			University	
612	31	Università degli Studi di Napoli		Università degli Studi di Napoli	HES	Research	University	Italy	PEGASUS	FP7	x		x	http://www.unina.it	University		
613	32	Università degli Studi di Napoli Federico II		Università degli Studi di Napoli Fe	HES	Research	University	Italy	Clean Sky 2		Core Partner		x			University	

As the list of stakeholders with their respective PoC(s) contains confidential, respective protected personal information, an overview of the assembled data will be given in this report, but without the confidential/personal information. Attachment 2[6] gives an overview of the compiled listing of stakeholders, see screenshot above.

This list, enhanced by contact data for PoCs already identified at the various stakeholders, was made available only to OSCAR partners who needed this information for their contribution and after a Code of Conduct was agreed upon.

7.1 Structure of the Stakeholders

The stakeholder list includes about 600 members of organisations or clusters. For the further proceedings, the OSCAR team attempts to find as balanced a selection of contacts, e.g. for the structured interviews, as possible. This includes the specific sector of industry/research the organisation is active in, the main responsibility/occupation of the contact person and hierarchical level he or she is at, and the national distribution across Europe.

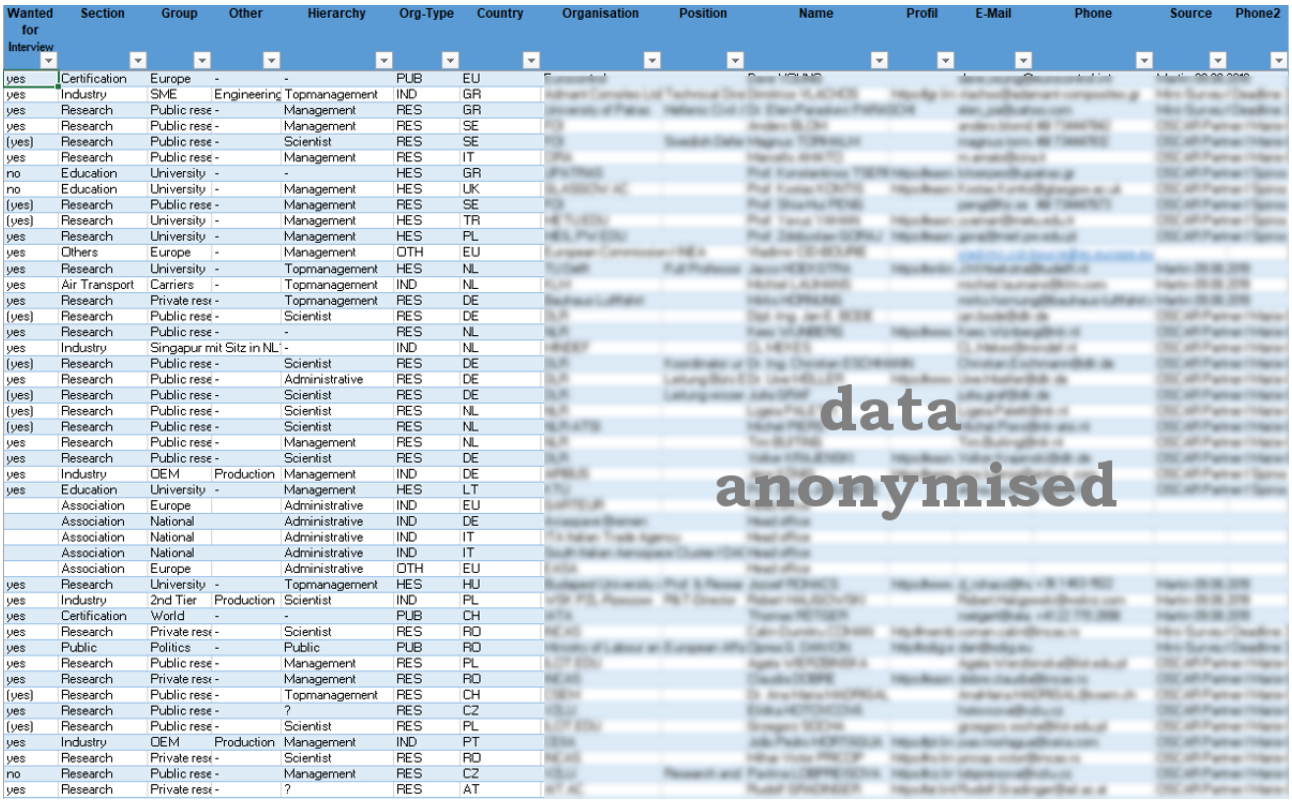
To put it briefly, a well-established CEO of a commercial organisation from Romania will probably have different a picture of Open Science than a young, ambitious professional researcher at a Swedish university. It is the ambition of the OSCAR team to identify and take into account as many diverse views as possible, while at the same time making sure that the findings are somewhat representative for a defined (sub)group of the AAT research community.

7.2 Points of contact

The pool of possible points of contact at the identified stakeholder was filled from various sources, among them:

- representing his/her organisation in one of the European AAT associations, clusters and established networking activities, or having a similar function in one of these,
- taking a relevant position or contributing suitable content in EC-funded research activities,
- identified during one of the searches described in sections 6.1.1 to 6.5,
- nomination by a member of the OSCAR team,
- holding a position at a stakeholder organisation which has direct (positive or negative) impact on the organisation's practices and performance in Open Science activities, ranging from the legal department over public relations and outreach, IT management, finances and controlling to general management.

[6] File: „D2-1 – Attachment 2 – Identification of stakeholders.xlsx“



Wanted for Interview	Section	Group	Other	Hierarchy	Org-Type	Country	Organisation	Position	Name	Profil	E-Mail	Phone	Source	Phone2
yes	Certification	Europe	-	-	PUB	EU								
yes	Industry	SME	Engineering	Topmanagement	IND	GR								
yes	Research	Public rese	-	Management	RES	GR								
yes	Research	Public rese	-	Management	RES	SE								
(yes)	Research	Public rese	-	Scientist	RES	SE								
yes	Research	Public rese	-	Management	RES	IT								
no	Education	University	-	-	HES	GR								
no	Education	University	-	Management	HES	UK								
(yes)	Research	Public rese	-	Management	RES	SE								
(yes)	Research	University	-	Management	HES	TR								
yes	Research	University	-	Management	HES	PL								
yes	Others	Europe	-	Management	OTH	EU								
yes	Research	University	-	Topmanagement	HES	NL								
yes	Air Transport	Carriers	-	Topmanagement	IND	NL								
yes	Research	Private rese	-	Topmanagement	RES	DE								
(yes)	Research	Public rese	-	Scientist	RES	DE								
yes	Research	Public rese	-	-	RES	NL								
yes	Industry	Singapur mit Sitz in NL		-	IND	NL								
(yes)	Research	Public rese	-	Scientist	RES	DE								
yes	Research	Public rese	-	Administrative	RES	DE								
(yes)	Research	Public rese	-	Scientist	RES	DE								
(yes)	Research	Public rese	-	Scientist	RES	NL								
(yes)	Research	Public rese	-	Scientist	RES	NL								
yes	Research	Public rese	-	Management	RES	NL								
yes	Research	Public rese	-	Scientist	RES	DE								
yes	Industry	OEM	Production	Management	IND	DE								
yes	Education	University	-	Management	HES	LT								
	Association	Europe		Administrative	IND	EU								
	Association	National		Administrative	IND	DE								
	Association	National		Administrative	IND	IT								
	Association	National		Administrative	IND	IT								
	Association	Europe		Administrative	OTH	EU								
yes	Research	University	-	Topmanagement	HES	HU								
yes	Industry	2nd Tier	Production	Scientist	IND	PL								
yes	Certification	World	-	-	PUB	CH								
yes	Research	Private rese	-	Scientist	RES	RO								
yes	Public	Politics	-	Public	PUB	RO								
yes	Research	Public rese	-	Management	RES	PL								
yes	Research	Private rese	-	Management	RES	RO								
(yes)	Research	Public rese	-	Topmanagement	RES	CH								
yes	Research	Public rese	-	?	RES	CZ								
(yes)	Research	Public rese	-	Scientist	RES	PL								
yes	Industry	OEM	Production	Management	IND	PT								
yes	Research	Private rese	-	Scientist	RES	RO								
no	Research	Public rese	-	Management	RES	CZ								
yes	Research	Private rese	-	?	RES	AT								

7.3 Communication channels

The list of Points of Contact referred to in section 7.2 contains information on how to directly address the individual, in particular by e-mail and phone / mobile. This is mainly helpful for addressing and communicating with stakeholders for the structured interviews.

But OSCAR will also undertake other activities which cannot be served through these direct channels. Other modes of communication and channels to reach out to the aviation and air transport community have been identified as well, depending on the purpose and scope of the contact to be communicated.

The table below gives an overview of the different channels and their target group.

Channel	Target audience	Content	Objective
E-mail	selected individuals	extensive discussion of aspects of Open Science	gaining detailed information on OS
Phone / mobile	selected individuals	extensive discussion of aspects of Open Science	gaining detailed information on OS
Web meeting (dialogue)	selected individuals	extensive discussion of aspects of Open Science	gaining detailed information on OS
Web meeting (group meet)	individuals and teams at stakeholders	communication of information, brief discussion of OS	stimulate thought and discussion, gaining information

Conferences (papers/presentations)	conference participants, readers of proceedings	selected aspects of Open Science	distributing information, raising awareness
Conferences (booth)	conference participants	general information of Open Science	distributing information, raising awareness
Conferences (discussions)	conference participants (panels), individual attendees (conversation at conference)	communication of information, brief discussion of OS	distributing information, raising awareness, preparing follow-up activities
Scientific papers (conferences, journals, etc.)	scientific community	communication of results and scientific information	communicating detailed information on OS
Newsletter	interested AAT community	selected aspects of Open Science	distributing information, raising awareness
Webinar	interested AAT community	selected aspects of Open Science	distributing information, raising awareness
ARCPORT®	interested AAT community	repository of selected and general information on OS	distributing information, getting people involved
LinkedIn	interested AAT community	general information of Open Science	raising interest and awareness

The channels highlighted with a blue background will be used for the further activities of WP2. The channels highlighted by a light-grey background will be served by other work packages, but information about stakeholders and people of interest gathered in T2.1.and laid out in this deliverable can be used to enhance the outreach, to better target the addresses and to improve the level of participation.

8 Conclusions

8.1 Contribution to the project

The work performed in T2.1 and documented in this deliverable, including the attached data bases, lies the foundation for the further activities in WP2 and the other work packages.

In particular, it gives a clear guideline of

- … whom to address…
- … at which organisation…
- … that is active in which part of the AAT sector…

in order to…

- … gain a significant and, to a certain extent representative opinion on Open Science, and…
- … determine where in the overall picture the received information will fit.

8.2 Results, preliminary findings and remarks

Additionally to the direct results achieved by this work, as listed above as contributions to the project, the following points are notable:

- In the landscape of European AAT research, all conceivable interest groups have their dedicated representation – except SMEs (small & medium enterprises). This is not due to a lack of effort. There were various initiatives, by the Commission as well as independent, to create a European SME representation, but none of these proved to be permanent or sustainable.

  The best voice SMEs currently have in the European RTD arena appears to be through their local (national or regional) clusters, respectively the clusters' European partnership EACP.

- The suitable internet presences of the European Union (EU website at *ec.europa.eu*), respectively of the European Commission (CORDIS - Community Research and Development Information Service), apparently do not explicitly support the dissemination and exploitation of Open Science achievements from EC-funded projects.

  In the analysis performed for this deliverable, it was attempted to find known Open Science content from completed FP7 and H2020 projects via those portals. Even for projects which had been particularly acknowledged and praised for their valuable free and open contributions to aviation research, no reference could be found in these repositories.

- The environment of Open Science, and its various principles and "flavours", is highly dynamic, and may significantly change within months. This adds another aspect, or dimension, to this project which was not regarded that dominant prior to this analysis: time.

  The subsequent activities of OSCAR will now take this aspect into consideration.

- The dynamics of the development in Open Science is aggravated by the most popular approach of most users to research the Open Science landscape: internet search. Most search engines deliver their results according to a very complex (and non-transparent) set of internal criteria, including location of the user and his/her type of internet access, type and model of hardware, operating system, installed browser, stored cookies and browser history, and many more.

  Care was taken in the analyses which included internet searches (e.g. chapters 6.1.2 and 6.3) that all queries were made in the same configuration, such as internet access point, hardware, empty browser cache, etc. Of course, other aspects which are beyond the control of the user, such as changes to the internal search engine criteria, could not be precluded. Comparison with internet searches on other topics, which were made as a test to determine the latter influence, proved to deliver much more stable and consistent results. This allows to conclude that it is in fact mainly the Open Science arena which is so dynamic.

Additionally, this aspect underlines the necessity of a broad and consistent approach and a stable access to Open Science. It is hard to image how professional collaboration in Open Science-enabled AAT research is possible if each researcher sees a completely different landscape when navigating through the world of Open Science, depending on where, when and how he or she is online.

- There is an impressive number of Open Science platforms, data bases and comparable portals, gateways and archives available and accessible. Some of them attempt to cover Open Science as broad and general as possible with the ambition to have “something on everything”, while others carve out a very specific and focuses niche, targeting the “everything on something” approach.

  Both approaches have their own advantages and disadvantages, and as far as it can be seen at this point in time, aviation research will need both. (The perception and opinion of users from all areas of the AAT community will be covered in detail in the “big survey” and the structured interviews to be conducted later in WP 2.).

  However, the sheer number of access points and the lack of interlinkage, connectivity and continuity leads to a very fractured and heterogeneous environment, which impairs efficiency and raises doubts if valuable contributions to Open Science really receive the attention they deserve. If Open Science is to play a vital role in future European research, it appears reasonable that a balanced and sustainable concept is found to allow easy and efficient access to both, breadth and depth of knowledge.