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Content list

1 Abstract

The present document describes the reflections carried out by the OSCAR project team partners and the decisions they have taken regarding the organization of / participation to some events. These events will involve stakeholders from all over Europe (and – if possible – beyond) and will allow participants to exchange views on Open Science. The key issues raised will be the potential benefits and constraints of the implementation of Open Science in the Aeronautics and Air Transport research.

The objective is to identify the potential benefits and challenges of Open Science for Air Transport Research and identify the specificities of implementing Open Science in that domain (including confidentiality, competitiveness, stakeholders, specificities public/private, research funding, publishing practices (Open Access Green, Gold, etc.).

All these elements will serve as a basis for the OSCAR Code of Conduct (WP4).

2 Executive Summary

Involving stakeholders for an exchange of views on Open Science is a key issue for the success of the OSCAR project, having in particular the ambitious goal of creating a paradigm shift towards implementation of Open Science in European Aviation research.

The definition and the appropriation of good practices in Open Science require the involvement and contribution of all stakeholders active in European aviation research, development and innovation. It is therefore essential to identify the relevant groups of stakeholders and communities likely to be interested in the results of the project and to interact directly with them in order to consider their opinions fears, constraints, expectations, etc.

Open Science is a movement that aims to make scientific research and associated data accessible to all at all levels of society. Launched over 30 years ago, the international movement for Open Science has experienced unprecedented development since digital transformation and the Internet have made it possible. By opening publications, data, processes, codes, methods and even protocols, Open Science offers a new way of doing science. The Open Science movement aims to build an ecosystem in which science will be more cumulative, more transparent, faster, of universal access and in which data will be generated according to FAIR principles, i.e. findable, accessible, interoperable, reusable. The international movement for Open Access as one sub-set of Open Science has been structured since the turn of the century, and has become unavoidable today. The European Union is committed to it and encourages all scientists to get involved.

The European project OSCAR (*O*pen *S*cien*C*e *A*eronautic & Air Transport *R*esearch) aims to answer the following two questions:

1. What Open Science practices can benefit aeronautics research and innovation and how can they be best implemented?
2. What aspects of Open Science could potentially have a negative impact on European aeronautics and how to avoid this?

To answer this last question, OSCAR team project has to analyse the current perception and acceptance of Open Science as well as the associated conditions and constraints in the field of aeronautical research and air transport. Its main objective is to initiate and propose a reasoned process for implementing Open Science in Europe in this field. The aim will be to promote the progressive implementation of Open Science without challenging neither alienating the protection of personal data, the protection of intellectual property, nor the protection of the nation's scientific and technical heritage. The objective will be to be "as open as possible" while remaining "as closed as necessary".

The core part of this document consists of the following sections:

- Section 3 introduces the OSCAR project and its main goals. A specific sub-section is dedicated to the Operationalization Open Science Principles Work Package.
- Section 4 presents the methodology followed by the OSCAR team to define the most appropriate strategy for collecting information and opinions from the stakeholders.
- Section 5 draws up a first list of physical events within which actions have been respectively will be organized to promote Open Science and to exchange information on Open Access with stakeholders.
- Section 6summarizes the results of the organisational work achieved so far.

3 OSCAR Project Overview

3.1 Project Description

The transport sector is a fast-growing sector of Europe and is associated with a wide range of economic and societal benefits – acting as a catalyst of technology transfer to many fields of mainly industrial application and vice versa taking up technologies from other sectors.

Today, the transport sector is confronted with many diverse challenges as climate change, dependency from fossil fuels, evolving mobility demands, increasing global competition, emergence of enabling technologies etc.

The transport sector as such is usually categorized by transport modes (car, road transport, rail, maritime, and aeronautics) and is also characterised by the production and the operation of transport equipment. Additionally, both production and operation of transport infrastructure, as well as aspects of inter-modality, need to be considered.

In this context, Open Science is considered as an important and promising opportunity to support the intended performance gain: “Open science, open innovation and open to the world – the so-called 3 O’s – are likely to impact European innovation performance, growth and international competitiveness”[1].

Traditional IPR management focuses on keeping intellectual property under lock and key. The basic idea of traditional IPR management is to allow a company to use the competitive advantages gained through innovation to gain an advantage over its competitors in the market.

One of the basic principles of Open Science is to open up the scientific process as much as possible and thus to open up the intellectual property associated with the same scientific process. The basic idea of Open Science is to make knowledge and other intellectual assets freely available to the scientific community for reasons of fairness, good scientific practice, reusability and responsibility towards society.

In this sense, conventional IPR management and Open Science are in a state of tension. If traditional IPR management and Open Science principles are described in this generic manner, one could assume a general relation (e.g. driven by Technology Readiness Levels (TRL)) between OS applicability and IPR management. In fact, the trade-off between OS and IPR management is affected by a variety of aspects like application field, system readiness, shares of academic and industrial research etc.

In the field of aeronautics and air transport (AAT) research, the OSCAR project aims to resolve this tension between Open Science and traditional IPR management and to harmoniously integrate both approaches.

European AAT research covers the scale of (TRL) from level 1 to level 6. As a first assumption, TRL is an important factor influencing the transparent trade-off between Open Science and protection of IPRs on basis of an appropriate Code of Conduct. Therefore, for the implementation of Open Science all aspects of the nature of projects needs to be considered.

OSCAR – *O*pen *S*cien*C*e *A*eronautic & Air Transport *R*esearch – addresses the issue of 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.

[1] European Commission: Europe’s Future: Open Innovation, Open Science, Open to the World, page 11; RISE HLG Report, Luxembourg, Publication Office of the European Union, 2017

The main goal of the OSCAR project is to initiate and deliver an optimized Open Science concept (through a Code of Conduct) to European transport with special focus on AAT research with initiating an implementation in aeronautics and air transport where:

- The concept of Open Science is widely known in European aviation sector, and it is even implemented in some pilot cases.
- A trade-off between Open Science and IPR protection will be achieved, which maximises beneficial, transparent, and fair openness without challenging competitiveness by developing and implementing an appropriate Code of Conduct.
- Project consortia dealing with AAT topics are well guided to efficiently apply the Open Science Code of Conduct customized to the characteristics of the individual project and to the individual researchers even in their daily work.
- A paradigm shift towards implementation of Open Science in European aviation research has been initiated.

The main issues of OSCAR need more than simply adapting an established approach to a specific field.

It requires an in-depth understanding of Open Science (principles, application, benefits) as well as of the European AAT landscape as it is. It also requires convincing stakeholders of the added value of Open Science and to guide them to the integration of Open Science in their daily research work beyond single European projects. Thus, the main goal of OSCAR as mentioned above means to pave the way towards Open Science in European aviation research by detailed analysis of the landscape and by developing, validating, and promoting a suitable Open Science concept.

3.2 Project structure

In order to realize the main goal and the related sub-goals, OSCAR will achieve the following Objectives and measurable results: Achieving the main goal of OSCAR requires (1) detailed understanding of knowledge and acceptance of Open Science in AAT research, (2) development of adapted implementation approaches and (3) their validation. While these three objectives provide tools and practical information to implement Open Science in AAT research projects it is also necessary to raise the motivation to implement Open Science within the AAT research community. Objective (4) addresses the latter.

- Objective 1 → WP2, WP3: An assessment of the development of Open Science in European AAT projects since the beginning of FP7, i.e. FP7 and Horizon 2020, considering also the AAT related JTIs Clean Sky and SESAR. To some extent projects which relate at least partly with “core AAT” will be considered. The assessment will be based on o a statistical analysis of estimated 1000 collaborative research respectively CSA projects. It shall reveal factors facilitating respectively hampering the acceptance of Open Science approaches; o an intense consultation phase with researchers and administrative / legal staff from IND, REC, HES to gather comprehensive first-hand experience about awareness of Open Science as such, perceived benefits and drawbacks of the idea and potentially concrete examples.
- Objective 2 → WP4: Objective 2 is a practically usable guidance for participants in AAT projects. It will be developed taking up the outcome of objective 1 and considering both legal frameworks and the need for an Open Science Code of Conduct.
- Objective 3 → WP5: As objective 3 the interim results in the course of objective 2 will be tested and iteratively matured. Finalized recommendations targeting legal aspects and the related Open Science Code of Conduct will be validated in pilot cases.
- Objective 4 → WP6: High quality of objectives 1 to 3 will contribute to a significantly increased implementation of Open Science in European AAT research. However, to achieve the ambitious goal of OSCAR, the acceptance of the idea as such, as well as of a

comprehensive practical guide – the Code of Conduct – by the AAT research community is crucial. Different complementary measures are foreseen to maximise the intended acceptance of and support for Open Science in AAT research as OSCAR objective 4.

OSCAR will achieve its goals in three consecutive steps:

Step 1: Information and opinion gathering

As a first step, the OSCAR consortium will analyse the European AAT research landscape with respect to the awareness and the perception of Open Science. OSCAR will focus on collaborative research projects (FP7: Level 1 and Level 2, Horizon 2020: Research and Innovation Actions, Innovation Actions) and Coordination and Support Actions as most common instruments in AAT research.

The landscape is described, on one hand, by the different research and innovation actors and on the other hand, by the technical fields on the other. In AAT, most research consortia consist of:

- industry (IND incl. SME; from OEMs and the whole supply chain → represented by the IMG4 group);
- research establishments (REC → represented by EREA);
- academia research (HES → represented by EASN);
- and – in some cases – other types of partners as e.g. public bodies (PUB).

Already a view on consortia allows to distinguish between more research driven and more application driven projects, although there will be a level of uncertainty. There is also some tendency to associate lower TRL with the Framework Programmes and being driven by REC and / or HES. Vice versa higher TRL may be associated with some projects in Clean Sky with more emphasize in the role of IND, which might affect the degree of openness.

Actually, in HORIZON 2020 there is no differentiation of the IPR and Open Access rules with reference to the TRL or the nature of projects and there are no specific rules applicable to public private partnerships as well and it will probably remain so in HORIZON EUROPE. So currently, these are strictly the same rules that apply to all situations, even where the risk of openness is greatest. To minimize the risk and with the objective of better acceptability and understanding of the Open Science approach, it would be necessary to be able to apply slightly different and adapted opening rules, depending on the type of project. One of the aims of OSCAR is to offer suggestions for more exact and diversified guidelines on how to implement IPR rules in coherence with Open Science.

The taxonomy of ACARE mentions in total 12 technical fields as Flight Physics, Aero-structures, Propulsion etc. which need to be dealt with in order to achieve the FlightPath 2050 goals. During FP7 the European Commission introduced the first elements of Open Science – namely Open Access and later the Open Data Pilot. Open Access became mandatory in Horizon 2020, while Open Data remains a pre-set option, but consortia may opt out.

Since the beginning of FP7 respectively Clean Sky estimated 1000 AAT research projects have been started. Considering the publication of calls and the usual project duration there are permanently 100 to 200 collaborative projects running in parallel. One can expect that clustering of projects by technical field and by other indicators provides sub-groups of enough size for statistical analysis of the acceptance of Open Access and Open Data. The primary focus will be on the timely evolution of Open Access and Open Data by cluster. This analytical part is addressed in **WP2 – Survey & Analysis on the Current "Open Science" Landscape in AAT-Research**.

The second outcome of WP2 – a pre-selection of projects and project coordinators for further investigation – will feed **WP3 – Best Practice for Operationalising Open Science Principles – The Forum**.

WP3 will use the services of WP6 (Networking, Dissemination & Exploitation) in order to spread publishable results to the research community and to attract project consortia for cooperation with OSCAR. Taking the projects pre-selected in WP2 and the feedback from contacted projects into account, the OSCAR consortium will down-select to about 20 target projects, which agree to contribute to OSCAR within the framework of a non-disclosure agreement (NDA). Consortia will be interviewed on their experience with and expectations of Open Science in general, and how to implement Open Science in concrete projects. Practical "hands-on experience" will reveal opportunities and drawbacks. Also, projects dealing with other transport modes, inter-modality and projects affecting indirectly AAT research shall be considered. WP3 will both address researchers executing these projects and administrative staff, i.e. representatives of the legal and the financial departments. Practical experience confirms – especially in medium and large organisations – the different points of view of researchers and administrative staff.

Step 2: Development of a preliminary Code of Conduct and considerations of legal constraints

WP4 – the OSCAR Code of Conduct – is the second step dealing with the iterative development of a methodology and a framework for the OSCAR Code of Conduct (OSCAR CoC). The results gained in step 1 show the inside view of participants in AAT research projects in terms of the level of -understanding and accepting Open Science as such, -conflicts of IPR and competitiveness with Open Science, -additional efforts which are expected to result from addressing Open Science duties, -benefits from usage of available Open Science data, etc. The outside view addresses aspects like Open Science infrastructure, i.e. accessibility of OS platforms, data formats, usage in practice etc. Here the different experiences of the consortium partners form IND, REC and HES will feed the discussion.

The result of WP4 is twofold. On the one, there is a legal framework to be developed, which addresses rights and obligations related to Open Science while maintaining the aforementioned aspects of IPR protection and competitiveness. Current Grant Agreement (GA) and Consortium Agreement (CA) models deal – amongst other – with IPR protection issues. Thus, practical implementation of OS should start with the development of "Next Generation CA models" (CA-NG) and demonstration of their applicability. Considering the long-lasting evolution of such models and their alignment with the different Framework Programmes this will turn out as a time-consuming step of OSCAR. It shall be emphasized, the OSCAR consortium is NOT mandated to change these models, but recommendations will be provided to the respective entities in charge. The remaining calls in Horizon 2020 and the preparation of FP9 together with the time schedule of OSCAR indicate that efforts should be spent rather with a view on FP9. Therefore, OSCAR will analyse the FP9 participation rules (once at least draft versions become available) and OSCAR will also get in touch with the teams working on CA models.

On the other, a practical guide – the OSCAR Code of Conduct – shall help researchers and engineers to integrate the idea of OS in their daily work, i.e. providing advice on how to e.g.

- access OS platforms and to benefit from useful information there,
- get familiar with the related workflows,
- improve project proposals by taking suitable OS material into account,
- establish workflows to identify research activities, data and results valuable for OS while respecting IPR constraints and maintaining competitiveness,
- practically feed OS platforms,
- etc.

It is important to achieve making rules of the Code of Conduct more “applicable” to consortia. A way can be to ask the EC to integrate the Code of Conduct as guidelines or recommendations of the implementation of the Rules for Participation.

In WP4 OSCAR will develop both recommendations which may be considered in CA-NG (and potentially in future GA models) and a CoC which will help to smoothly implement OS in concrete projects.

Step 3: Demonstration & validation

WP5 dealing with **Demonstration and Validation of the OSCAR Open Science Code of Conduct in Pilot Projects** is closely interacting with WP4 in order to feedback first experiences with interim WP4 results gathered in pilot projects. The iterative process will start with H2020 projects running at that time where application of the draft CoC will be simulated. Which impact of both the deliberation on the legal framework and on the CoC will be expected? Which suggestions will seem to be acceptable, which objections – be it regarding contractual aspects or regarding practical application – will come up? WP5 provides these remarks to WP4 in order to develop more mature versions of the CoC and of a set of recommendations for the CA-NG. Once the partners agree on an acceptable level of maturity, OSCAR aims at a test implementation in at least one suitable project, ideally in one of each RIA, IA, CSA. To achieve this ambitious goal the support of the European Commission will be needed, i.e. to identify such project(s) at an early stage of preparation. Due to the overall timing OSCAR will take care for the project(s) during their first months in order to assess the implementation and – to some extent – the impact achieved.

Supporting processes:

WP1 – Scientific and administrative management of OSCAR.

WP6 – Networking, Dissemination, and Exploitation

Typically, D&E measures of RTD projects (i.e. Level 1 and Level 2 projects in FP7, RIA and IA in H2020 etc.) focus on making use of project results. A support action as OSCAR benefits from D&E measures applied very early to gain and to improve results. As outlined above, “Openness” as a European idea which shall be implemented in European research projects requires an adapted legal framework, a concrete guidance to balance the different interests, and project consortia actively supporting Openness. Therefore, **WP6** shall also attract and motivate individuals, organisations and consortia to promote the process. Related NDE activities will address organisations from all sectors (IND incl. SME, REC, HES, PUB, OTH) and individuals in order to announce meetings, workshops, events, etc. and to attract the targeted audience to attend. The information gained in all NDE activities will help to adapt and to improve the OSCAR outcome. Therefore, all OSCAR NDE activities focus also on supporting the progress of OSCAR. Ethics: The analysis of the factual AAT research landscape requires: -An analysis of eCORDA data about FP7 and Horizon 2020 AAT research projects in order to efficiently derive an overview of projects in different categories of research content, start and target TRL, involvement of participant types (IND, SME, REC, HES …) etc. -Interviews with individuals from the aviation community in order to gather their personal opinion about Open Science, its applicability in aviation research, and – if available – the Open Science policy of their employing organisations. Thus, non-sensitive personal data from externals must be gathered and processed in compliance with GDPR 2016/679. WP7 – Ethics Requirements will provide a deliverable which describes the application of the legal regulations within OSCAR.

4 Objectives and tasks of OSCAR WP3

4.1 Best practices for operationalizing Open Science principles

WP3 focuses on the identification of national, European and international partners in the aeronautics field and through organization of forums, workshops and other events to be able to exchange ideas and best practices on Open Science principles. The consortium also considers the collaboration with other transportation modes to learn from each other and to exchange views. The activity is structured in three tasks.

T3.1: Preparation and implementation of the Forum

The objective of this task is to create a forum for national and European stakeholders – public and private – to exchange ideas and share best practices for operationalizing Open Science principles in transport research. ONERA and INCAS will use their contacts both national and European (both of them being full members of EREA and having a long participation in EU projects) to attract participation to forums, workshops and other kind of events where the participants could share their experiences, best practices and recommendations. Each of the OSCAR partners is involved in European AAT research projects. These projects are starting point for investigating options for Open Science in AAT research. Further projects will be contacted if deemed necessary to complement OSCAR investigations.

T3.2: Identification and engagement of international partners

In order to multiply the information sources, international partners outside the European Union will be identified and approached so as to provide input on their practices for operationalizing Open Science: Indeed, through their involvement in ICARE (https://icare-h2020.eu/cs/) and IFAR (http://www.ifar.aero/)., the project partners have access to a large network of international experts, even outside the EC. Both ONERA and INCAS are members of the prestigious International Forum for Aviation Research – IFAR. It is the world's only aviation research establishment network. IFAR aims to connect research organizations worldwide, to enable the information exchange and communication on aviation research activities and to develop among its members a shared understanding on challenges faced by the global aviation research community. IFAR members are coming from all over the world and they are national aviation research organizations, including universities active in aviation research. All major research institutes in Europe are members of IFAR (ONERA, INCAS, DLR, CIRA, CEIIA, VZLU, ILOT, TsAGI) and also research institutes and agencies all over the world: NASA in USA, JAXA in Japan, NRC in Canada, KARI in South Korea, CAE in China and many others. Taking advantage of their membership in IFAR, ONERA and INCAS could contact international partners in order to attract them to share their expertise and best practices in Open Science.

T3.3: Consideration of other transport modes and inter-modality

The OSCAR project considers collaboration with other projects acting also in the field of other transport modes, such as surface, rail or maritime transport and inter-modality in order to exchange views and maybe learn from each other experiences and best practices regarding the operationalizing Open Science. Two RIAs (EUNADICS-AV, GA 723896 and SafeClouds.eu, GA 724100) have been identified, which apply Open Science concepts as central elements of their solutions. The second CSA in topic MG-4-2-2018, BE OPEN GA 824323, considers the operational part of transport in all modes and complements the aeronautics focus of OSCAR. BE OPEN and OSCAR stay in touch with each other.

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

D3.2 is a public deliverable which introduces OSCAR and especially to WP3. Also, the approach of WP3 and the activities related to the organisation of an OSCAR event are described. As outlined in

sub-section 5.1, more than one OSCAR event turned out to be necessary. D3.2 addresses this change as well, thus giving comprehensive and relevant information about planned OSCAR events.

5 Approach and procedure

5.1 Introduction

The activities performed in WP2, i.e. survey and analysis of the current OS landscape in AAT research showed the need to approach the AAT research community via several complementary channels as e.g. the OS forum, personal contacts, web platforms, web-based surveys, interviews, discussions at public events etc.

5.1.1 Original approach

Therefore, OSCAR consortium partners attended and will further attend several public events as mentioned below in order to present their "Open Science message" in suitable side-events, workshops or similar. This allows also to continuously update the OS message and to address a larger audience.

The participation and organization of events and workshops represents one of the main dissemination tools for – on the one hand – effectively communicating project related information and findings to the wider European research and scientific community (including also more specialized OSCAR target groups, depending on the nature of each event), as well as – on the other hand – for promoting Open Science; for exchanging information on Open Access with relevant key stakeholders and experts, attending said events as well as for collecting important consultation input.

Events' attendance certainly constitutes an important opportunity for the OSCAR partners to both disseminating and refining the project work: they will not only share information with experts in the field, collect feedback from qualified audience, but also have the occasion to internally coordinate their work. For that matter, early in the project, the OSCAR dissemination manager, in collaboration with the other partners, has identified several relevant events that present good opportunities to demonstrate the presence of this CSA.

Furthermore, in close connection to public events, printed OSCAR trifold flyers have been designed and produced in Month 6 of the project to promote it in its initial phases. All members of the OSCAR consortium have accordingly received copies of these leaflets to distribute at relevant events and workshops.

It is also worth noting that announcements of upcoming relevant events, as well as detailed information on the performed OSCAR attendance and participation at said events and workshops, are regularly included on the OSCAR public website, under the "News" section.

The identification of national, European and international forums, workshops and other events that enable the exchange of ideas and best practices on Open Science principles, represents the core of OSCAR's approach to ensure maximum visibility and create a strong awareness. The identification of events suited to host OSCAR workshops starts by enlisting the help of its partners to provide information on well-known events that take place throughout the year. A comprehensive list of potential events can be put together and voted upon. Such list contains the requirements, the benefits and the overall cost of implementing or attending the event. All partners have selected the events mentioned in the following sub-sections.

5.1.2 Impact of Covid-19 shut-down

While in WP2 both short and big survey provided valuable results, which complement the activities of BE OPEN (GA 824323) focusing on the transport operation area the OSCAR approach of establishing a forum on the ARCPORT® platform did not work. Consequently, the events mentioned below should be used as platforms to personally attract members of the aeronautics community to attend the forum in terms of dedicated workshops. Also, collaboration with BE OPEN was planned.

In the meantime, nearly all events until late summer have been cancelled (e.g. ILA Berlin and TRA Helsinki – mostly relevant for BE OPEN), and no one can exclude an extension of the shutdown.

Therefore, a completely new concept had to be elaborated (see sub-section 5.6). The workshops hosted at the events needed to be assumed as cancelled, although this was announced so far for ILA Berlin (see sub-section 5.2) only. This concept has to be flexibly adapted to different scenarios, i.e. to work independently from events (if cancelled) but also on the spot if they take place. Ideally, a network dealing with OS issues in aeronautics can be established, combining personal meetings and workshops at events (if any) and virtual meetings.

5.2 ILA2020 – Berlin, Germany. 13th to 17th May 2020

Comment: the plans presented in this sub-section 5.2 are outdated due to Covid-19 cancellation of ILA2020 (https://www.ila-berlin.de/en).

5.2.1 The event and its organisers

In 2020, ILA Berlin is one of the most important hubs for the international aerospace industry within the European Union and abroad. With over 1,000 exhibitors from all over the world, ILA Berlin showcases the industry's very best in terms of high-tech products as well as research and development projects. More than 65,000 trade visitors and 115,000 members of the public attended the leading aerospace innovation fair in 2018 in Berlin, to experience this fascinating industry first-hand, right in the heart of Europe.

Eco-efficiency and digitalization are currently shaping the discourse within the aerospace industry. ILA Berlin displays pioneering innovations. For example, components made of novel materials such as ultra-light fiber composites allow for significant weight decrease and, therefore, fuel savings and hybrid-electric engines paired with alternative fuels are making aviation greener than ever. However, further, ground-breaking innovations are needed to achieve GHG emission goals in the domain of aviation, despite the increasing passenger numbers which compensate many achievements of previous research.

Thanks to digital technologies, innovative engines are able to recognize and report necessary maintenance and repair work in advance. These, as well as other pioneering aerospace developments can be seen at ILA Berlin, especially in the ILA Future Lab.

Autonomous flying air taxis could soon define the future of urban mobility and the industry is working hard on the required technologies. Drones have the power to unlock new possibilities for several sectors of the economy - from precision farming in agriculture, to maintenance of bridges and dams, to the delivery of medicines to remote areas or crisis regions. ILA Berlin is showcasing pioneering innovations and their vision for the future of mobility in the exhibition area UAS Innovation Hub (Unmanned Aerial Systems).

The presentation of space technology at ILA Berlin is unique. It is a place where agencies, scientists, established space companies and New Space start-ups cross borders and join forces to present innovations and developments for the good of mankind. Hardly any other industry relies so extensively on international cooperation as space. For example, programs to secure access to space, space exploration or satellite communications and earth observations are primarily implemented collaboratively. ILA Berlin's high calibre makes it the ideal platform for the international space community to further define joint projects and discuss future topics, from Big Data to Intelligent Mobility.

In the International Supplier Center ISC, more than 300 suppliers from all over the world gather to present their innovations in their very own hall – this is a unique experience where the largest suppliers' know-how in the world comes together in one place. The ISC also brings suppliers and buyers together, both individually and exclusively.

At ILA 2020, hundreds of aircraft could be admired both on the ground and in the air - from large jets to cargo planes, helicopters and drone to military aircraft. In a unique flying display program, all the different aircrafts can show off their skills.

5.2.2 OSCAR project at ILA2020

Fraunhofer will host OSCAR at its stand allowing the OSCAR forum to convene as well as to attract the ILA audience in general, gaining additional discussion input while spreading the OS idea (D&E) at the same time. Promotional material will be presented there, deploying the Fraunhofer stand as background.

There are also chalets planned like the North German one and the Fraunhofer aviation one. Usually these chalets are foreseen for bi- or tri-lateral discussion. However, OSCAR plans – together with the chalet hosts – to organize side events of 15 to 30 minutes duration, which contribute on the one to the chalet hosts in their efforts to apply a structured programme. On the other it is an opportunity to promote the OS issue as such and to raise awareness of the forum at Fraunhofer.

The EASN Association has an own stand, but there no individual projects shall be presented. Therefore, OSCAR is open to an on-the-spot action if this becomes possible.

The European Commission will also show up at ILA. Here details have to be discussed with EC and EC bodies.

The Second Berlin Aviation Summit does not seem to consider OS as an issue. The OSCAR consortium expects to address the issue verbally only on the spot.

5.2.3 Dissemination beyond ILA2020 and the events related to OSCAR

From March 2020 onwards early announcements on the OSCAR website, on ARCPORT®, Twitter and LinkeIn shall be published, coordinated by EASN-TIS. This will support the Forum activities, i.e. facilitating of discussions and development and distribution of ideas about implementation of OS in the aeronautics domain. Thus the forum complements the findings of WP2 (survey & analysis) and both WP2 and WP3 will provide input to WP4 (constraints and CoC).

5.3 10th EASN Internat. Conference in Salerno, Italy. 2nd to 5th September 2020

The EASN Conference will definitely take place. The current plan is to have a hybrid Conference allowing to participate physically or virtually through live streaming. In case things are developing not as good as we are all wishing the EASN Conference will be carried out fully virtually.

5.3.1 The event and its organisers

The aim of the 10th EASN International Conference on “Innovation in Aviation & Space to the Satisfaction of the European Citizens” is dual. First, to act as a forum where innovative ideas, breakthrough concepts and disruptive technologies are presented; while in parallel be the place for disseminating the knowledge and results achieved in the frame of research projects of the aviation and space field. The previous EASN International Conference, held in Athens, Greece in September 2019, has been the most successful amongst the events organized by EASN and was attended by more than 450 participants from various disciplines. Some members of the OSCAR project team attended to this event. Furthermore, an overview presentation of the project was made by the project coordinator and OSCAR leaflets were distributed to the conference participants.

The 10th EASN International Conference will include a number of Plenary Talks by distinguished personalities of the European Aviation and Space sectors from the academia, industry, research community and policy makers. It will also include Thematic Sessions, along with Technical Workshops where evolving ideas, technologies, products, services and processes will be discussed.

Furthermore, the conference is expected to be a major European Dissemination and Exploitation event of Aviation & Space-related research. The majority of the currently running research projects will exploit the 3-days technical program to present their activities and achieved goals, discuss on current trends and future needs of the aviation & space-related research and try to identify possible synergies with each other. Additionally, a number of policy development projects will also have the

floor to present the strategic priorities of the European aviation sector with regard to the challenges of FlightPath2050 and the expected "Horizon Europe" Framework Programme.

Last but not least, the 10th EASN International Conference will be accompanied by a small exhibition where the overview of the aviation & space ecosystem in Italy will be presented.

5.3.2 OSCAR project at the EASN conference

The presence of OSCAR will be shown during this event in a dual manner. Firstly, the overall OSCAR concept, objectives and main up-to-date progress and achievements will be presented in the frame of a session dedicated to support actions for coordinating research in the field of aviation. Several other relevant running projects and initiatives will be presented during this session.

Additionally, a dedicated OSCAR session is planned to be organized and held in the frame of the 10th EASN International Conference on *"Innovation in Aviation & Space to the Satisfaction of the European Citizens"*. During said session, the main news, activities and findings of the OSCAR project will be communicated, OS will be promoted and explained, as well as relevant exchanges will be made with the participants/audiences of the session. Within this framework, the next Forum workshop will take up the findings and positions gained so far in order to push the OS discussion further.

Furthermore, OSCAR will invite its "sister" project, BE OPEN, to also join this session and present its latest progress, achievements and results. As both projects are dealing with the issue of Open Science, this common participation will provide an ideal opportunity to further exchange, stay in touch, support each other and identify additional ways and means to collaborate, where possible and to mutually benefit and avoid duplications of effort.

Lastly, based on the OSCAR specific progress and needs at the time, dedicated dissemination material, such us updated leaflets, are planned to be created prior to the event to be displayed and/or distributed to the conference participants.

5.3.3 Dissemination beyond the conference

From May 2020 onwards early announcements on the OSCAR website, on ARCPORT®, Twitter and LinkeIn shall be published, coordinated by EASN-TIS. This will support the Forum activities foreseen at the 10th EASN International Conference, i.e. facilitating of discussions and development and distribution of ideas about implementation of OS in the aeronautics domain. Thus, the Forum complements the findings of WP2 (survey & analysis) and both WP2 and WP3 will provide input to WP4 (constraints and CoC).

5.4 IES2020 – Paris, France. 4th to 5th November 2020

5.4.1 The event and its organisers

The 15th edition of the Economic and Strategic Intelligence Forum of 3AF (IES 2020) will be held at the Chaptal space (https://www.espacechaptal.com/) in Paris on November 4th to 5th, 2020.

3AF (https://www.3af.fr/) is the French scientific society in the field of Aeronautics and Astronautics and IES is the biannual forum organised every two years by the Strategic and Prospective Intelligence Commission of 3AF.

3AF (Association Aéronautique et Astronautique de France) is the France's leading organization on the subject of scientific and technological expertise in the area of civil and military aviation and space.

Thanks to its High Scientific Council, its technical committees and to the organization of numerous national and international conferences/symposia, 3AF promotes the latest scientific and technological findings. Its mission is to bring together people on scientific and technical issues with the aim to create links between peers, produce excellence, convey passion, clarify aerospace scientific and technical challenges, put forward an expertise, make proposals to decision makers, represent its members within the French, European or overseas corresponding organizations, promote aerospace and encourage young people to join the domain.

Technical committees deal with: Aerodynamics – In flight testing Materials – Propulsion (both Space & Aeronautics) – Structure – Environment – On Board Energy – Optronics – Commercial Aviation – Light Aircraft – Helicopters Missiles – Unmanned Aerial Vehicle – Space Transportation (Launchers & Exploration Vehicles) – Space Exploration (Missions & Payloads).

Transversal committees deal with: Strategy & International Affairs – Business Intelligence – History – Intellectual Property & Rights – Unidentified Aerospace Phenomena

5.4.2 OSCAR project at IES2020

3AF Strategic and Prospective Intelligence Commission is a network of professionals whose professions are related to Business Intelligence: monitoring, analysis, intellectual property, prospective, strategy, etc. Its members work in different sectors: insurance, automobile, chemistry, electronics, energy, finance, mechanics, health, services, transport, etc. They maintain a relationship of trust between them. ONERA is a corporate member of 3AF and the Strategic and Prospective Intelligence Commission is chaired by SAFRAN. One member of the OSCAR project team is member of 3AF and participates in the work of this commission and in the organization of this forum.

Decision has been made to present a joint ONERA – SAFRAN oral communication on the topic "Open Science vs. Intellectual Property Requirement" at IES 2020 and to present OSCAR project in the exhibition area of the forum.

5.4.3 Dissemination beyond the forum

From July 2020 onwards early announcements on the OSCAR website, on ARCPORT®, Twitter and LinkeIn shall be published, coordinated by EASN-TIS. This will support Forum activities foreseen at IES2020, i.e. again facilitating of discussions and development and distribution of ideas about implementation of OS in the aeronautics domain. IES2020 will be the last public event within the Forum organizes a dedicated OS session. Thus, IES2020 indicates the final consolidation of Forum results.

The Forum will concludingly complements the findings of WP2 (survey & analysis) and both WP2 and WP3 will provide the last input to WP4 (constraints and CoC). It shall be emphasized that completing the Forum shall not stop the discussion within the aeronautics research community as this discussion is perceived as an ongoing process. However, the Forum will not organize further workshops beyond IES2020.

Marie-Claire Coët from ONERA is OSCAR consortium partner and member of IES program committee and she actively participates in the work of 3AF Strategic and Prospective Intelligence Commission. The synthesis she writes about each IES forum is systematically published in the association's journal, which is send to a network of over 1,500 individual members and 70 collective members.

5.5 AeroDays2020

Yet the intention is to have the AeroDays2020 in Berlin by the end of November as a physical event. However, the form that this event will actually take depends on the evolution of the pandemic.

- In case of a physical event the action that was initially planned for ILA 2020 will be adapted to AeroDays.
- In case of a virtual event the procedure specified in the following paragraph is envisaged.

5.6 Virtual event

According to necessity, virtual events could be organized. In such cases, they will feed the ARCPORT forum. These might be webinars, virtual meetings, AeroDays2020, etc. which are considered appropriate to achieve the objectives.

The Forum as a virtual place facilitating the discussion about implementation of OS in the aeronautics research community started as a discussion topic at ARCPORT®, the online platform designed specifically for the aviation research community. It promotes collaboration, content sharing and networking opportunities among its users. ARCPORT® is designed as a facilitator to the individual researcher, allowing him/her to locate other persons working on a specific technological area. At the same time, company-related profiles will be accommodated so as to allow the promotion of market-ready research results to potential end-users.

6 Results

In the beginning it was planned to use at least one major large public event – ILA2020 – to widen the discussion, to gather further feedback from the audience, and to disseminate interim results. As the virtual Forum hardly provided usable results, the Forum process was redesigned to a number of public events as described in sub-sections 5.2 to 5.5. The corona pandemic undermines this second approach. As a consequence, OSCAR had to go back to an online approach, different to the originally planned one and – in a flexible way – combinable with one or several public events. This third approach – still to be specified in its details – is briefly described in sub-section 5.6.

7 Quality

The work performed have been much more challenging and complex than originally planned, adaptations of the approach have been necessary.

D3.2 focusses on the description of the organisation of one event which is dedicated to a discussion in the aeronautics research community about OS in this area. The event should take up preparatory work done in a web-based forum, but this approach failed. Consequently, the Forum should be established in a couple of workshops within the framework of different events like ILA2020 Berlin. Due to the worldwide shutdown to the corona pandemic, also this approach failed.

At the editorial deadline of this deliverable, a new concept allowing flexible handling of combining online and public events was prepared and presented. These redesigns of the concept and their implementation required additional efforts, the results will be reported in D3.5 – organization of several events.