# 1st Assessment of Dissemination and Exploitation Activities

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Short abstract: Future Sky Safety is a Joint Research Programme (JRP) on Safety, initiated by EREA, the association of European Research Establishments in Aeronautics. The Programme contains two streams of activities: 1) coordination of the safety research programmes of the EREA institutes and 2) collaborative research projects on European safety priorities.

This deliverable is produced by the Project P2 "Dissemination, exploitation and communication". The main objective is to report on the dissemination and exploitation activities carried out by the Future Sky Safety (FSS) Programme in its first phase of activity (January 2015 – June 2016).

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| **Grant Agreement No.** | 640597 |
| **Document Identification** | D2.8 |
| **Status** | Approved |
| **Version** | 2.0 |
| **Classification** | Public |

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## Document Change Log

| Version | Issue Date | Remarks |
|---------|-----------|---------|
| 1.0 | 28-06-2016 | First formal release |
| 2.0 | 29-06-2016 | Second formal release |

## Approval status

| Prepared by: (name) | Company | Role | Date |
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## Acronyms

| Acronym | Definition |
|---------|------------|
| ACARE | Advisory Council for Aviation Research in Europe |
| ACROSS | Advanced cockpit for reduction of stress and workload |
| ANSP | Air Navigation service providers |
| ATS | Air Transport System |
| CA | Consortium Agreement |
| CSA | Coordination and Support Action |
| EASA | European Aviation Safety Agency |
| EASp | European Aviation Safety Plan |
| ECCM | European Conference for Composite Materials |
| EREA | European Research Establishment Association |
| EU | European Union |
| FSS | Future Sky Safety |
| H2020 | Horizon 2020 |
| HCI | Human-Computer Interaction |
| IATA | International Air Transportation Association |
| ICAO | International Civil Aviation Organisation |
| IMG | Industry Management Group |
| JU | Joint Undertaking |
| OPTICS | Observation Platform for Technological and Institutional Consolidation of research in Safety |
| PM | Project Manager |
| PP | Project Plan |
| R&D | Reaserch and Development |
| R&TD | Research and Technology development |
| REA | Resilience Engineering Association |

# EXECUTIVE SUMMARY

## Problem Area

This document aims at assessing the dissemination, communication & exploitation activities for the FSS programme in the first period of activities (M1-M18, from January 2015 to June 2016). The goal is to check if the dissemination goals set in the dissemination plan for the first period have been achieved, as well as to verify if the exploitation activities are in line with the exploitation measures defined for each technical project.

## Description of Work

Key Performance Indicators (KPIs) are the measurements to identify the success of the dissemination process and the achievement of the communication objectives. The KPIs have been identified and described in the D2.5 "Criteria for Dissemination Assessment".

An assessment of the dissemination has been performed based on the identified KPIs to measure progress towards the goals established in the D2.2 "1st release of Communication Strategies and Dissemination Plan", while the exploitation assessment followed the measures reported in the D2.4 "1st Release of Exploitation measures". According to the progresses made and the criticalities identified, lessons learnt have been collected and corrective actions can be taken to better meet the dissemination goals in the next period of the Programme (M18-M36).

## Results & Conclusions

The first dissemination period was mainly dedicated to raise audience awareness about the Future Sky Safety programme, main objectives and projects. A good number of third parties events were attended, with FSS partners contributing to them with dissemination materials, presentations and papers. Considering that the programme was still in its initial phase and only preliminary results at low level maturity were available from the technical projects, the appreciation received shows that the research topics and the research performed so far are truly meaningful and appealing for both stakeholders and the research community.

Most of the events attended in the first period fall into P1/P2 activities, as the main goal of the communication/dissemination activity – particularly during the first year - was to present the Programme as a whole. However, as soon as the technical projects started producing preliminary results (i.e. in the beginning of the second year) the type of attended events changed from dissemination events to domain conferences.

Although not all the objectives set to monitor KPIs were reached, overall the Programme performed well. For example, attendance to external events concentrated on few big events attracting a good

network of participants, giving FSS the chance to present the programme to a wide specialised audience. In addition, the number of dissemination material produced and that of paper submitted to relevant events exceeded expectations. As for the KPIs concerning internal activities, all the goals were reached as expected. Parameters regarding the website are encouraging, both in terms of numbers, such as visits received and duration of the visits, and of visitors' behaviour: interest towards FSS emerges from visitors' interaction with the website (e.g. downloads, page views).

The first one of the qualitative criteria was also already reached: projects' key messages, disseminated via various materials, are evolving from a more general information to a more specific and technical one for both the programme and the projects.

As FSS is in its first period of activity, no mature results are available for exploitation. Therefore, the exploitation assessment is limited to check if, for each project result listed in the exploitation plan, the preliminary actions for exploitation preparation were accomplished, thus paving the way for the future exploitation of project outputs. However, all the technical projects have established direct contacts with their target stakeholders; this will facilitate the exploitation activities performed from the next reporting period on, and will improve the possibility that the proposed innovations/main results will be taken into account or taken on board by the aviation industry.

## Applicability

This deliverable applies to the whole FSS dissemination and exploitation, constituting a guide for future activities towards the key aviation stakeholders.

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**Project:**      Dissemination, exploitation and communication
**Reference ID:**   FSS_P2_DBL_D2.8
**Classification:**  Public

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# 1 INTRODUCTION

## 1.1. The Programme

FUTURE SKY SAFETY is an EU-funded transport research programme in the field of European aviation safety, with an estimated initial budget of about € 30 million, which brings together 33 European partners to develop new tools and new approaches to aviation safety, initially over a four-year period starting in January 2015. The two main objectives of Future Sky Safety Programme are:

- **Coordination of institutionally funded safety research**;
- **Collaborative safety research** on safety risk priority areas.

The Programme research focuses on four main topics:
- Building ultra-resilient vehicles and improving the cabin safety;
- Reducing risk of accidents;
- Improving processes and technologies to achieve near-total control over the safety risks;
- Improving safety performance under unexpected circumstances.

EU is funding specific **Collaborative Safety Research** projects:
- Perform breakthrough safety research to enable a significant reduction of runway excursion risk in the medium term.
- Develop a prototype risk observatory to assess and monitor safety risks throughout the Total Aviation System and allow frequent update of the assessment of risks.
- Reduce the likelihood of organisational accidents in aviation via development and implementation of a Safe Performance System (SPS).
- Define and apply the Human Performance Envelope for cockpit operations and design, and determine methods to recover crew's performance to the centre of the envelope, and consequently to augment this envelope, through HMI principles, procedures or training.
- Develop solutions to mitigate the risk of fire, smoke and fumes related (fatal) accidents.

**Coordination/cooperation of institutional safety research programmes** connects and drives the complementary in-house Safety R&D in the European aeronautical research establishments. This achieves significant leverage of the invested EU funding through a more efficient and effective use of resources.

The Programme will also help to coordinate the research and innovation agendas of several countries and institutions, as well as to create synergies with other EU initiatives in the field (e.g. SESAR, Clean Sky 2).

Future Sky Safety contributes to the EC Work Programme Topic MG.1.4-2014 Coordinated research and innovation actions targeting the highest levels of safety for European aviation in Call/Area Mobility for

Growth – Aviation of Horizon 2020 Societal Challenge Smart, Green and Integrated Transport. Future Sky Safety addresses Safety challenges of the ACARE Strategic Research and Innovation Agenda (SRIA).

## 1.2. Project Context

Dissemination, exploitation and communication of knowledge are a key ingredient for any successful research project. Future Sky Safety Project P2 is specifically dedicated to Dissemination, Exploitation and Communication; its goals are to:

- Develop a dissemination plan and communication strategies;
- Disseminate safety research findings to relevant target audience;
- Develop a plan for exploitation of results;
- Develop a knowledge and data management policy and approach;
- Assess dissemination activities.

Project P2 ensures that all aspects of dissemination are efficiently and effectively managed over the entire duration of the project, aiming at communicating in a consistent and distinctive way, while engaging and involving different categories of audiences. In this context, an appropriate strategy for the dissemination assessment, with specific quantifiable targets needs to be developed and implemented.

## 1.3. Research Objectives

FSS Project P2 ensures that all aspects of dissemination are efficiently and effectively managed over the entire duration of the project, aiming at communicating dynamically, in a consistent and distinctive way, while engaging and involving different categories of audiences. As this is a key aspect in the communication process, this document aims at monitoring dissemination and exploitation actions for FSS's first period of activities, to check if the information sharing is proceeding in the right direction and is achieving the expect targets.

## 1.4. Approach

In order to perform the assessment of FSS's dissemination and exploitation activities, P2 used Key Performance Indicators (KPIs) to measure to which lengths the communication objectives (established in the D2.2 "1st release of Communication Strategies and Dissemination Plan" and in the D2.4 "1st Release of Exploitation measures") were achieved.

P2 asked for and collected information from the whole Consortium to keep track of the dissemination and exploitation activities performed by each partner, then used this information to ascertain whether expectations towards the identified KPIs had been met or not. In order to verify this, P2 used both quantitative and qualitative parameters; a mere number count of the communication actions was performed along with a qualitative analysis to ensure their usefulness and effectiveness.

## 1.5.  Structure of the Document

The first part of the document (Section 1) introduces Future Sky Safety and the scope of this document.

Section 2 constitutes the core of the document, detailing all the quantitative and qualitative criteria previously set as dissemination goals and showing how the programme performed with respect to them. This section also provides a short description of the different activities implemented by Future Sky Safety and of the events attended or organised by the Programme. Finally, this section also lists the KPIs previously identified to measure the success of the communication and assesses FSS's compliance to each one of them.

Section 3 details the exploitation assessment for each of the technical projects within Future Sky Safety. The assessment is performed with respect to the set of measures identified and illustrated in the first release of the Exploitation Plan.

Conclusions and recommendations are highlighted in detail in Section 4.

Appendix A shows a table with updated KPIs: some modifications are included for those ones whose target was not reached during the first period of the Programme. Appendix B lists the next papers to be produced by the Future Sky Safety.

## 2   DISSEMINATION ASSESSMENT

The communication strategy of the entire Future Sky Safety Programme was defined in D2.2 "1st release of Communication Strategies and Dissemination Plan" [1]. The dissemination plan ensures that all aspects of dissemination are efficiently and effectively managed over the entire duration of the project, aiming at communicating dynamically, in a consistent and distinctive way, while engaging and involving different categories of audiences. To ensure that, it detailed all the aspects of the dissemination and communication strategy, including:

- the approach;
- the goals;
- the target audience;
- the dissemination package, which includes:
    - the project logo and graphical identity;
    - the web site;
    - deliverable and presentation templates;
    - official disclaimer statements;
    - brochure and flyers;
    - presentation and posters;
    - fact sheets, press releases, and on-line articles;
    - newsletters;
- the tailoring to the technical projects.

Based on the activities described in the dissemination plan, on the European guidelines for dissemination and on the review of other research projects dissemination actions, a set of criteria for the assessment of the dissemination activities performed by Future Sky Safety has been defined in D2.5 [2]. In this document, a set of quantitative and qualitative criteria has been identified to assess the dissemination activities and answer to the following questions:

- Are the dissemination activities performing as planned?
- Are the dissemination activities performing effectively?

While for the first one the track of the dissemination actions is sufficient, the second one is more difficult to assess, as it requires to measure success of communication: effective dissemination of results means that the right people get the right information in a timely manner and in the right format. Although no standardised criteria exists to monitor this, a set of criteria to be used to assess the dissemination performance were identified in advance, also defining the actions to monitor them and the targets to be achieved. Several consistent quantitative criteria emerged as indicators of effective dissemination, such as the number of visits to the website, the website visits duration, the number of

persons attending FSS presentations in external events and so on, representing people's interest in the project subject and their reception of project information. In addition, a set of qualitative criteria was also included, in order to support the comprehension of the impact of the communication actions on the target audience and thus perform an accurate assessment of the dissemination performance.

All these criteria have been transformed in KPIs, with specific targets defined for each assessment timeframe (M18 – M36 – M48) according to the different dissemination goals per each period (Raise Awareness – Disseminate knowledge and results – Involve stakeholders – Support impact). Periodical assessments of dissemination activities are not only necessary to measure progress towards the achievement of targets established in the dissemination plan, but also useful to spot criticalities, collect lessons learnt and identify aspects of the communication that can be improved in the subsequent period, in order to facilitate the goals achievement.

At each timeframe, the dissemination performance is evaluated to check if the different targets are achieved and, if not, put in place corrective actions. According to the dissemination plan [1] "The first year is devoted to properly identify the target audience and to tune the message to be delivered while promoting a general awareness about the programme domains and issues". Thus, between M1 and M18 the main focus of the dissemination is to raise audience awareness on the programme and respective projects. With this respect, higher targets have been set for the production of informative materials rather than for the production of more mature products such as scientific papers or articles.

**Table 1: Dissemination strategy for the first programme phase (M1-M18)**

| Period | Programme phase | Dissemination objectives | Dissemination activities |
|--------|-----------------|--------------------------|--------------------------|
| M1 - M18 | Initiation | Raise awareness | Graphical identity, website, brochure and flyer, presentations and posters, general events, press releases |

## 2.1. Quantitative Criteria

The quantitative criteria could be seen as the core of the dissemination assessment as they provide measurable targets that can be used to determine the trend of communication activities. The main criteria identified and used by Future Sky Safety are:

1. Third parties events/conferences attended;
2. Events organised by Future Sky Safety;
3. Academic publications;

4. Articles on magazines & press releases;

5. Website statistics, including:

-   o N° of visits to the website;
-   o Countries' visitors;
-   o Visitors' behaviour;
-   o Search channels;
-   o Time spent on the website;
-   o Search engine position;
-   o N° of periodical news on the website;
-   o N° of downloads of public documents.

Each criterion is presented in detail in the sections below.

## 2.1.1. Third parties events/conferences attended

Future Sky Safety partners are expected to attend third parties events to present the programme or a specific technical project and to create a network of contacts. A list of relevant events for Future Sky Safety has been set up, including Technical Conferences, Dissemination or Networking events organised by other projects/entities, Workshops, EU or SESAR Brokerage events, Exhibitions with strong accent on aviation safety or attended by main aviation stakeholders. Due to their strategic role, P1 and/or P2 are asked to attend the large networking and brokerage events, while the technical projects will mainly attend the events connected with their field of research.

In the first period (M1-M18), Future Sky Safety attended a number of external events:

- 1st OPTICS Dissemination Event "Aviation Safety Research and Innovation: Time to Take-Off!", December 2014, Brussels (P1-P2);
- 6th Resilience Engineering Association (REA) Symposium, June 2015, Lisbon (P5);
- Aerodays 2015, October 2015, London (P1-P2);
- ACROSS Public Forum, February 2016, Rome (P2);
- Runway Surface Conditions Assessment and Reporting Symposium, March 2016, Paris (P3);
- FAA/EUROCONTROL Action Plan 15 on Safety Research, March 2016 , Oklahoma City (P5);
- OPTICS 3rd Dissemination event "Air Safety Research and Innovation – Flightpath 2050 maintain heading!", April 2016, Cologne (P1-P2);
- Ergonomics & Human Factors 2016, April 2016, Daventry (P5);
- 7th European Conference for Composite Materials (ECCM17), June 2016, Munich (P7).

In addition to this, the progress of Future Sky Safety was regularly presented to the Board of EREA (the Association of European Research Establishments in Aeronautics), which has initiated the Future Sky initiative (http://www.futuresky.eu).

Some of the events attended in the first period – especially from M0 to M12 - fall into P1/P2 activities, as the main goal of the communication/dissemination activity was to present the Programme as a whole, and the results from the technical projects were still not mature enough to be reported in papers or presented during conferences. As it can be seen from the events listed, as the technical projects started to produce preliminary results (beginning of the second year), the type of attended events started to change from dissemination events to domain conferences.

Other example events that are planned to be attended in the near future are:

- **LISA - Laboratory of Ideas for the Safety in Aviation: Addressing Aviation and ATM Safety Challenges** (Summer School organised by the UPM GINA research group), July 2016, Madrid (Spain) – Joram Verstraeten, P4 Project Manager, will give a speech about the Total system risk assessment;

- **CRA's Risk Forum**, October 2016, Stratford-upon-Avon (UK) – a P6 presentation entitled "Pushing the human performance envelope - simulating challenging scenarios for pilots" will be given by Barry Kirwan;

- **International Aircraft Fire and Cabin Safety Research Conference**, October 2016, Atlantic City (USA) – abstract submitted by P7 has been accepted by FAA, agreement from EC is requested as soon as possible;

- **6th EASN International Conference**, October 2016, Porto (Portugal) – an abstract entitled "Development of the Human Performance Envelope Concept for Cockpit Operations", submitted by Deep Blue, ONERA and Eurocontrol, was accepted by the conference; the full paper will be submitted by September 2016;

- **Society of Aircraft Performance and Operations Engineers (SAPOE) Annual Conference 2016,** Los Angeles – P3 proposes to give a presentation about solutions for runway excursions.

- **Human Factors in Aviation Safety**, November 2016, Castle Donington (UK)
  - An abstract entitled "Can behavioural markers be a real support to indicate first signals of performance degradation into the cockpit?" was submitted by Deep Blue and Eurocontrol for P6;
  - An abstract entitled "Resolving the organisational accident in European aviation" was submitted by Eurocontrol to present P5 research results;
  - A second abstract on P5 – WP5.3 activities entitled "Airline safety culture: A pan-European survey study of over 7000 pilots" was submitted by London School of Economics and Eurocontrol;
  - Third abstract on P5 activities, connected to WP5.2 work, was submitted by Trinity College and Eurocontrol; the title of the abstract is "The 'Safety Mindfulness Approach': to enhance collective mind/knowledge to tackle safety in the workplace";

- **1st International Cross-industry Safety Conference (ICSC2016)**, November 2016, Amsterdam (Netherlands) - a paper entitled "The Risk Observatory: developing an aviation safety data sharing platform in Europe" was submitted by NLR to present P4 activities.

### 2.1.1.1. OPTICS First Dissemination event "Aviation Safety Research and Innovation: time to take-off!" - December 2014

One month before the official Future Sky Safety start, **Michel Piers** (NLR) – **Future Sky Safety Programme Manager** - gave a presentation on the Programme during the OPTICS First Dissemination Event held on December 17-18, 2014 in Brussels, at the European Commission Headquarters.

The presentation consisted in an outline of the Future Sky Safety programme, its connection with the ACARE roadmap, and its Coordination and Technical projects that tackle key areas from runway excursions to Human Factors and organisational resilience against accidents. Together with the presentation, a FSS poster was exposed in the poster area. The poster introduced the programme and summarised the main FSS research areas, and their connections with FlightPath 2050 Safety Goals and European Aviation Safety Plan main pillars.

Considering the audience in the room, the event represented an excellent opportunity to raise awareness on the new Future Sky Safety programme. In fact, more than seventy participants from aviation industry and research institutions including the European Commission, EASA, EUROCONTROL, the FAA, Airbus, Boeing, and Lufthansa, and including leaders from major aviation programmes such as Single Sky, Clean Sky, and SESAR attended the dissemination event. The event also represented an occasion to consolidate a strong connection with the OPTICS project, a Coordination and Support Action of the European Commission that is delivering a global vision of the aviation safety research landscape, offering strategic recommendations and support to establish safety research priorities. As Future Sky Safety is a direct result of the ACARE roadmap and OPTICS is assessing how much of the ACARE roadmap is covered by safety research, the mutual exchange of information and continuous interactions represent a benefit not only for the project activities themselves, but also for the ACARE Group and its work.

More details on the OPTICS Dissemination Event can be found in the Dissemination Event Press Release.

a)                                                                b)

**Figure 1: Poster (a) and presentation (b) given at the OPTICS Dissemination Event, December 2014**

### 2.1.1.2.  6th REA Symposium, June 2015

The Swedish Defence Research Agency FOI, as partner of **Project P5**, submitted and presented a paper at the 6th REA Symposium held in Lisbon from 22nd to the 25th of June 2015.

The paper, "An Overview of Agility and Resilience: from Crisis Management to Aviation", focussed on the concepts of agility and resilience in the management of complex safety- and security-critical operations. Its scope was to identify research tensions, opportunities for cross-over of research, and challenges for the successful practical application of both agility and resilience in relation to associated research disciplines. The paper also attempted to advance a focussed discussion of research progress of agility and resilience and its practical implications, and to provide implications for research on agility and resilience in aviation.

The programme of the event explored the relevant theme of managing resilience, learning to be adaptable and proactive in an unpredictable world from several perspectives, and experts from 27 countries presented their actual knowledge and views on it.  An industry panel – which included representatives of 5 organisations in industry, air traffic management and services – reported and communicated the industry views.

### 2.1.1.3.  Aerodays2015, October 2015

Aerodays is the European flagship event in aviation research and innovation, which takes place once during each EU Research Framework Programme. Aerodays2015 took place on 20-23 October 2015 at the QEII Centre, London.

Future Sky Safety took part in the event, which represented a unique opportunity to be up-to-date with the European aviation research activities and to network with a wide and influential audience, composed of key stakeholders from industry to universities, to policy and decision makers. In particular, Aerodays2015 were attended by 1000 delegates, 90 exhibitors including industrial groups like Boeing, Airbus, Thales, Embraer, Alenia, Zodiac, 280 key speakers including Aviation CEOs and heads of key Agencies, key organisations like the association of European Research Establishments in Aeronautics (EREA), and policy and decision makers such as the European Commission, SESAR JU, EUROCONTROL and EASA.

In this context, **Michel Piers** – FSS Programme Manager - presented Future Sky Safety during one of the parallel technical sessions dedicated to Enhancing Aviation System Safety on the 21st of October (8:30, room 3F). Also, a booth was set up together with the OPTICS and ASCOS projects. In the booth, managed by **P2 partners**, FSS was presented via two posters (one presenting the whole Programme, the other dedicated to the specific projects) and one video. 500 FSS brochures and flyers were also printed for the event, and distributed at the booth to the Aerodays participants. Despite the position of the booth, several participants showed interest for the Future Sky Safety programme, asking for more details to the booth managers and collecting the dissemination materials.
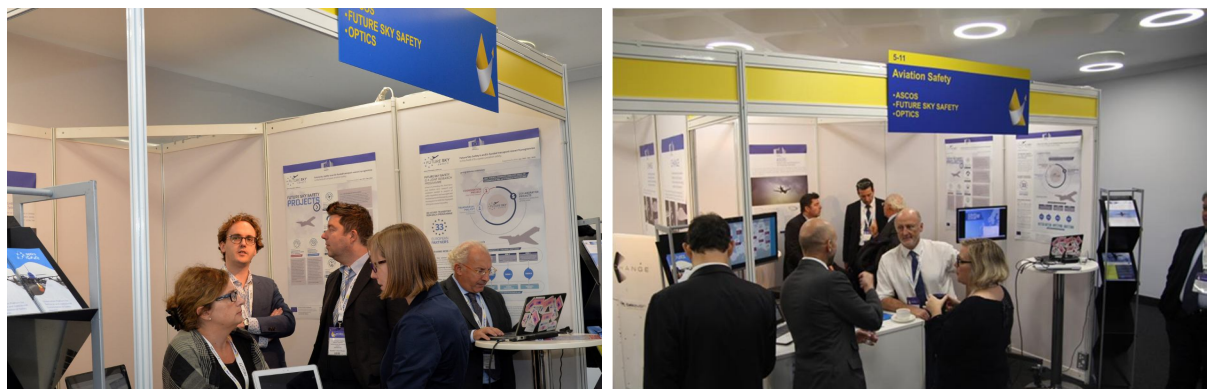


**Figure 2: FSS Stand at Aerodays 2015**

### 2.1.1.4.  ACROSS Public Forum, February 2016

On the 9th of February 2016 Deep Blue – as P2 representative – distributed Future Sky Safety's brochures during the ACROSS Forum and Exhibition held in Rome, at the "Casa dell'Aviatore". The brochures introduced the programme and summarised the main FSS research areas and their connections with FlightPath 2050 Safety Goals and European Aviation Safety Plan main pillars. They also describe the

projects coordinated by Future Sky Safety and their respective objectives. 50 copies were distributed at the event participants.

The ACROSS Forum and Exhibition was a good opportunity to raise awareness about FSS activities and provide information on the programme to the aviation industry. Around 110 people took part in the event, including not only aviation safety researchers and members of the industry, but also a number of experts in the field like pilots, ATM staff, flight operations managers and safety managers, national authorities and regulators.

More details on the ACROSS Forum and Exhibition are available on the ACROSS Project Website.

### 2.1.1.5. Runway Surface Conditions Assessment and Reporting Symposium, March 2016

Future Sky Safety's P3 "Specific solutions for runway excursion accidents" took part in the Symposium on Runway Surface Conditions Assessment and Reporting, hold on the 31st of March and 1st of April, 2016 in Paris, France. The Symposium was organised by the Civil Aviation Technical Center of DGAC and was chaired by Armann Norheim (CAA-Norway), rapporteur of the ICAO Friction Task Force. Hosting 25 keynotes, it presented the state of knowledge, the current research and innovation, and the forthcoming evolutions of the regulatory framework. The Symposium was divided in four sessions:

1. TALPA experimentations
2. Reporting solutions: procedures and systems
3. Round table: implementation issues of the Runway Condition Report
4. Maintenance

In this context, P3 had a slot on March 31st, during Session 2, to present both the state of current knowledge on tyre braking performance on flooded runways and new concepts and solution for runway excursions developed within the project. The presentation[1] was given by **Gerard van Es (NLR) - P3 Project Manager**. Also, **Frédéric Barbaresco - Thales Air Systems** (France) gave a presentation[2] on **New concepts to prevent excursions or the consequences of excursions**.

As the symposium was exclusively dedicated to runway safety, the audience was extremely specialised and included representatives of aerodrome operators, international organizations, professional bodies, civil aviation authorities, air navigation services, research organizations, airlines, aircraft manufacturers and equipment suppliers (sensors).

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[1] Presentation available at: www.stac.aviation-civile.gouv.fr/manifestation/friction_symposium_2016/CR_4/4.1_Review_state_current_knowledge_regarding_tyre_braking_performance_flooded_rwys_(Gerard_Van_Es_NLR).pdf
[2] Presentation available at: http://www.stac.aviation-civile.gouv.fr/manifestation/friction_symposium_2016/CR_4/4.2_FP8_Future_Sky_Safety_%28Frederic_Barbaresco_Thales_Air_System%29.pdf

### 2.1.1.6. *FAA/EUROCONTROL Action Plan 15 on Safety Research, March 2016*

The FAA/EUROCONTROL's Action Plan 15 (AP15) committee meeting was held on March 29 - April 1, 2016 at the Civil Aerospace Medical Institute (CAMI) in Oklahoma City, USA.

Action Plan 15 is an initiative based on Safety and Human Performance Research & Development, recognising the critical importance that Air Traffic Management (ATM) and Aviation Safety play in aligning R&D advancements to optimize air safety. During their meetings, AP15 committee members from both the FAA's Human Factors Division and EUROCONTROL share their experience about the implementation and deployment of Automated Systems on Safety and Human Performance for Integrated Safety Risk Management.

During the meeting in April Barry Kirwan, as P5 representative, gave the audience an overview of the FSS Programme.

### 2.1.1.7. *OPTICS Third Dissemination event "Air Safety Research and Innovation – Flightpath 2050 maintain heading!", April 2016*

Back-to-back with the EASA-OPTICS Conference, the Third OPTICS Dissemination Event "Aviation Safety Research & Innovation: Flightpath 2050 Maintain Heading!" was held on 14th of April in Cologne, at Radisson Blu hotel. The dissemination event saw representatives from the main European funding programmes (Clean Sky, SESAR - including SESAR long term research, Future Sky Safety and EC 7th Framework Programme) and from Aviation Safety research projects presenting their views and solutions to address the relevant safety challenges, providing a broad overview of what we are doing to move towards the achievement of the Flightpath 2050 safety vision. Around 60 experts from the aviation sector attended the event and exchanged opinions about the status of safety research in Europe.

As it happened at the First Dissemination event, the **Future Sky Safety Programme Manager Michel Piers** (NLR) provided an overview of the first year activities of FSS, and illustrated the proposal projects for FSS – Phase 2. Also, the numerous interactions with OPTICS were presented and discussed during the whole event. Particular interest in the audience was raised by P1 activities and ambition of coordination of Safety R&TD in the European aeronautical research establishments.

The event was also an opportunity to distribute the P5 White Paper "Keeping the Aviation Industry Safe – Safety Intelligence and Safety Wisdom" at the registration desk.

**Figure 3: P5 White Paper distributed at the OPTICS Dissemination event**

### 2.1.1.8.    Ergonomics & Human Factors 2016, April 2016

Barry Kirwan, representing P5, took part in the Ergonomics & Human Factors (EHF) 2016, held at the Staverton Park Hotel, Daventry (UK) from the 18th to the 21st of April 2016.

EHF is the annual international conference of the Chartered Institute of Ergonomics & Human Factors. It brings together academics and practitioners from all sectors to exchange ideas and information on the latest research, development and applications in ergonomics and human factors. EHF2016 featured over 80 presentations and workshops from leading ergonomists and human factors specialists across a wide variety of sectors including Aviation, Healthcare, Rail, Design, Safety, Occupational Health and Systems.

On the 19th of April, Kirwan gave a presentation on "Leading Safety Culture from the Top - Eight CEO Safety Culture Journeys" in order to illustrate findings from the P5 White paper "Keeping the aviation industry safe. Safety intelligence and safety wisdom"; in addition, 30 printed copies of the document were distributed to interested audience.

### 2.1.1.9.    17th European Conference for Composite Materials (ECCM17), June 2016

Future Sky Safety's P7 "Mitigating the risk of fire, smoke & fumes" participated in the 17th European Conference for Composite Materials (ECCM17) held in Munich (Germany) from June 26th to 30th, 2016. The conference is organised by the Institute for Carbon Composites of the Technische Universität München (TUM) and the Leading-Edge Cluster MAI Carbon, under the patronage of the European Society for Composite Materials (ESCM).

ECCM is Europe's leading conference on composite materials and attracts internationally renowned scientists and engineers in the field of aerospace, automotive and mechanical engineering, bringing

together the scientific and the application-oriented world. An attractive background programme complements the presentations and discussions, covering a wide scope of topics in composite technologies including Materials Science, Material and Structural Behavior, Experimental Techniques and Recycling and Sustainability.

P7 contributed to Topic 2 Materials Science, specifically during session 2.12 "Lightning Strike – Fire Behavior and Fire Retardancy or Fire Resistance of Composites". The project presented one paper in this mini-symposium, dealing with the investigation of temperature dependent material behaviour for thermo-mechanical analysis of composites.

In addition, the **P7 scientific manager** gave a short speech about Future Sky Safety projects and global objectives of the P7.

As the conference falls into the last days of M18, more details on the event as well as feedback received will be reported in the next dissemination assessment period.


## 2.1.2. Events organised by Future Sky Safety

FSS has planned a set of different events, organised by the programme, to maximise the impact of its results and facilitate the exchange of information and networking among projects.

The first one of these events was the **1st Consortium and P1 Coordination Workshop,** held on the 17th and 18th of February, 2016 in Brussels, Belgium at EC premises. The Consortium Workshop was the opportunity to provide all consortium members with a review of the progress to date of the first five collaborative projects initiated within Future Sky Safety. The workshop also aimed at identifying knowledge gaps and associated research needs. A detailed report of the event can be found in D2.7 "Dissemination material from first Future Sky Safety Internal Workshop" [3].

Another event jointly organised by Future Sky Safety and EREA was the **Wake vortex workshop 2016** that took place on Wednesday, 8 June 2016, hosted by DLR in Braunschweig (Germany). In the context of the joint research initiative Future Sky Safety, the EREA presented wake turbulence research, complemented by key notes on required research. The event was open publicly for participants and during the event, Maik Friedrich, as P1 representative, held a presentation on P1 "Coordination of Institutionally Funded Safety Research". 27 participants, mostly researchers that were close to the topic, attended the event. European research establishments presented their related research activities. Topics for future work and cooperation were discussed fruitfully, also with input from Eurocontrol, EASA, industry and universities. Presentations will be made publicly available at the workshop website www.dlr.de/ft/en/desktopdefault.aspx/tabid-1342/1841_read-45573.

### 2.1.3. Scientific publications

Number of publications and submission to scientific journals and specialised conferences is the most relevant indicator of the scientific dissemination of FSS. The technical Projects (i.e. P3, P4, P5, P6 and P7) are in charge of the scientific dissemination. The majority of publications are expected between the second and third period of assessment, when the technical projects will have preliminary or final results to be communicated to the scientific community.

The table below illustrates the scientific publications produced during the first phase of the programme.

**Table 2: Scientific publications**

| Event/Journal | Title | Author(s) | Project |
|---|---|---|---|
| **REA Symposium** 22/06/2015 | "An Overview of Agility and Resilience: from Crisis Management to Aviation" | Woltjer, R., Johansson, B. J. E., & Berggren, P. | P5 |
| **ECCM17** 26/06/2016 | "Investigation of temperature dependent material behaviour for thermo-mechanical analysis of composites" | Liebisch, M., Roese-Koerner, I., Rehbein, J., Wille, T. | P7 |
| **6th EASN International Conference** 18-21/10/2016 | "Development of the Human Performance Envelope Concept for Cockpit Operations" - Abstract submitted in June 2016 | Graziani, I., Bruno Berberian, B., Kirwan, B., Le Blaye, P., Napoletano, L., Rognin, L., Silvagni, S. | P6 |
| **Human Factors in Aviation Safety** 7-8/11/2016 | "Resolving the Organisational Accident in European Aviation" - Abstract submitted in June 2016 | Kirwan, B. | P5 |
| | "The 'Safety Mindfulness Approach': to enhance collective mind/knowledge to tackle safety in the workplace" - Abstract submitted in June 2016 | Callari, T.C, Mc Donald, N., Kirwan, B. | P5 |
| | "Airline safety culture: A pan-European survey study of over 7000 pilots" - Abstract submitted in June 2016 | Parand, A., Reader, T., Kirwan, B. | P5 |

| | | | |
|---|---|---|---|
| | "Can behavioural markers be a real support to indicate first signals of performance degradation into the cockpit?" - Abstract submitted in June 2016 | Silvagni, S., Graziani, I., Valbonesi, C., Kirwan, B. | P6 |
| **ICSC2016** November 2016 | "The Risk Observatory: developing an aviation safety data sharing platform in Europe" - Abstract submitted May 2016 | Verstraeten, J. ; van Baren, G.; Wever, R. | P4 |

### 2.1.4. Articles on magazines & press releases

Along with the scientific publications, FSS is expected to produce a set of news, articles and press releases for the general national press, magazines and media. The focus of these articles will be on the benefits of FSS research for the general/non specialised public and will be coordinated by P1 and P2. Specific EU channels could be exploited with this respect, in particular the Transport Research and Innovation Portal2 (TRIP). NLR, as the Coordinator of FSS, will communicate with the European Commission (INEA) on the selection of relevant FSS material. NLR will upload this material in the TRIP.

In March 2016, Future Sky Safety's P5 "Resolving the organisational accident" released a white paper, '**Keeping the aviation industry safe. Safety Intelligence and Safety Wisdom**', discussing how 16 aviation industry senior executives use safety intelligence to make safe business decisions. The white paper reports the results of a study performed by P5 in order to reach its objective of looking at how organisations stay safe in their day-to-day business operations. To explore this topic, P5 approached a number of organisations — representing the different key segments of the aviation system — and invited senior executives (typically CEOs or COOs) for interview. P5 interviewed sixteen top executives in total, to identify how they deal with safety and the types of information they seek in their daily job of running their business safely.

From the interview analysis, five key areas emerged:

1. Safety first – but not at any cost
2. Maintaining a safe organisation when under pressure
3. Being the one at the top – accountability and responsibility
4. Searching for evidence – identifying today's issues
5. Seeing around the corner – identifying the next threat

This study tried to expose some of the 'wisdom' that is being employed in identifying business decisions that protect safety, hoping that these ideas may help towards supporting safety wisdom across the industry. This paper could benefit many audiences in the aviation sector:

- For senior executives, it is a chance to see how their peers think and act concerning safety in business decision-making and judging safety risks.
- For policy-makers, it is a chance to hear unfiltered messages from industry leaders who are managing the business risks, to see the pressures they are under, and their perspectives on policy-making and how it affects their business and aviation safety.
- For safety professionals, it is a chance to see how senior executives make judgement calls on safety risks, what information sources they rely upon, and what they think about the safety numbers, KPIs, safety targets, etc.

FSS gave knowledge of this document via a dedicated news on its website, and distributed printed copies to the aviation industry senior executives interviewed by the project. Printed copies were also distributed at:

- ACARE WG4 meeting (SRIA workshop) in March, 2016;
- FAA-EUROCONTROL Action Plan 15 meeting in March, 2016;
- Ergonomics & Human Factors conference in April, 2016;
- OPTICS Dissemination event in April, 2016.

The white paper "**Keeping the aviation industry safe. Safety Intelligence and Safety Wisdom**" is also available for download on project website.

Another article on P5 outcomes from senior executives interviews was published in the May 2016 edition of **ENAV internal magazine "CLEARED"[3]**. The magazine, released monthly, is mostly dedicated to Air Traffic Control topics and presents the main outcomes of ENAV activities, research performed and innovations, and news that are relevant for the Group or for the operational activities. The magazine, written in Italian, is monthly distributed via email and on paper format to the ENAV Group personnel and Italian institutions. The title of the article is "**Resolving the organisational accident - entrare nella testa del vertice!**" (Resolving the organisational accident – get into the top management head!).

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[3] Article available at:
www.enav.it/portal/page/portal/PortaleENAV/Home/Comunicazione?CurrentPath=/enav/it/comunicazione/pubblicazioni

**Figure 4: White paper "Keeping the aviation industry safe"**

## 2.1.5. Other dissemination actions towards key aviation stakeholders

### 2.1.5.1. P4 interaction with EASA

In summer 2015 and spring 2016, NLR, as P4 leader, visited EASA. The purpose of both meetings was to provide an update of the status of P4 and get an update of the status of Data4Safety, the foreseen European aviation safety Big Data programme. Possibilities for cooperation were also discussed and are expected to continue in the future.

### 2.1.5.2. P5 interaction with EASA

Barry Kirwan, as P5 representative, took part in the ACARE WG4 2-day meeting concerning the update of the SRIA, which took place from the 15th to the 17th of March 2016. During the meeting, Kirwan distributed several printed copies of the White paper "Keeping the aviation industry safe. Safety intelligence and safety wisdom" to the 16 safety experts and the 26 security experts present. P5's

participation was relevant because the updating of the safety part of the SRIA includes 'governance' of safety, and some of the key messages from the White paper are informing the future safety research directions in the updated SRIA (Enabler 1).

### 2.1.5.3. *P6 interaction with NASA*

In January, 2016, Barry Kirwan, as P6 representative, had a meeting with Drs Tom Prevot and Tamsyn Edwards, NASA's Airspace Operations Lab, to update them on FSS P6 research activities to see if some alignment can take place. As a result of the meeting, a collaborative work for the HPE studies between NASA's Airspace Operations Lab and Future Sky Safety was agreed, with NASA investigating HPE from the ATC perspective and FSS working on cockpit side.

The collaboration with NASA's project linked to P6 schedule, and information and planning for each simulation were exchanged. Particular benefits of the collaboration for both sides are:

- Aligned approaches between Europe and the US research bodies;
- Wider area of investigation applicable;
- Potential for shared simulations/data gathering

### 2.1.5.4. *P7 Advisory group on cabin air in The Netherlands*

In June 2015 the Ministry of Infrastructure and Environment in The Netherlands announced the upcoming establishment of the "Nationale Adviesgroep Cabinelucht" (national advisory group on cabin air). This advisory group has produced a first year report (in Dutch) in May 2016. Future Sky Safety has been disseminated to the advisory group. Both the announcement and the first year report refer to Future Sky Safety as a relevant project for cabin air. The attention to on-board air quality in P7 is appreciated.

## 2.1.6. Promotional materials produced

Different kinds of promotional material were produced to support the transmission of dissemination messages. The type and amount of promotional material were counted, with particular attention to:

- Number of FSS presentations given during relevant conferences and third parties event;
- Number of FSS posters produced and submitted to third parties or internal events;
- Number of FSS brochures and flyers printed and distributed;
- Promotional videos produced.

Promotional materials illustrate the full programme or the single projects, and vary according to the type of event and objective of the communication. Table 3 illustrates the number count of material produced during the first period of the programme. The figures below (Figure 5, 6, 7 and 8) depict this material.

**Table 3: Number count of dissemination material produced**

| Material | Versions | Printed copies | Means of distribution |
|---|---|---|---|
| **Brochure** | 1 | 500 | Website, Internal Workshop, External Events |
| **Flyer** | 1 | 500 | Website, Internal Workshop, External Events |
| **Posters** | 3 | 3 | Website, Internal Workshop, External Events |
| **Hand-out** | 1 | 80 | Internal events |
| **White paper** | 1 | 150 | Website, External Events |
| **Videos** | 1 | Not applicable | Website, internal events, external events |
| **Presentations[4]** | 7 | Not applicable | External events:<br>• 1st OPTICS Dissemination Event, December 2014, Brussels;<br>• Visit to EASA, summer 2015;<br>• Aerodays2015, October 2015, London;<br>• Meeting with NASA, January 2016;<br>• Visit to EASA, spring 2016;<br>• 3rd OPTICS Dissemination event, April 2016, Cologne;<br>• ECCM17, June 2016, Munich. |



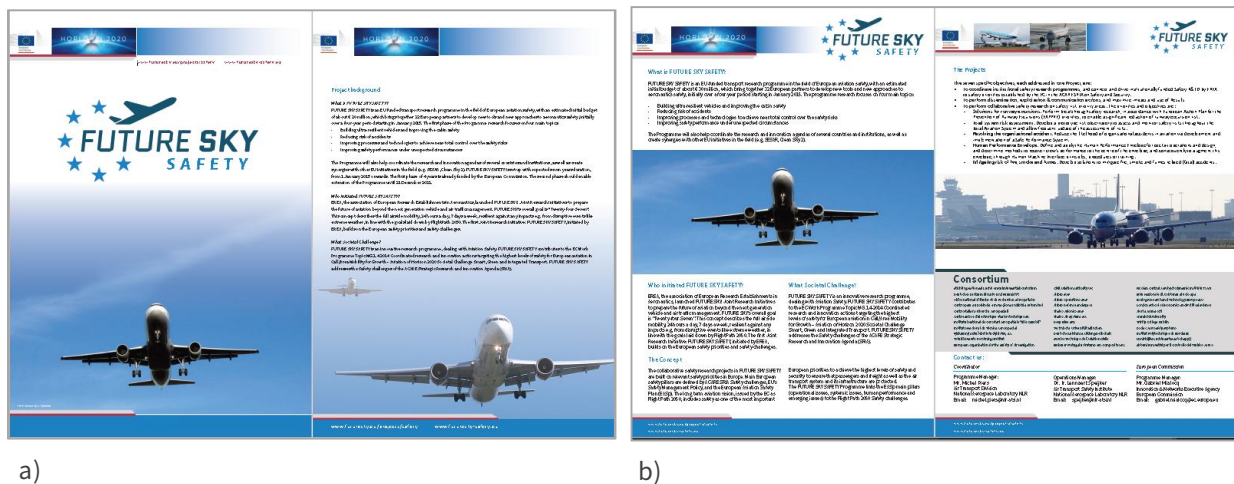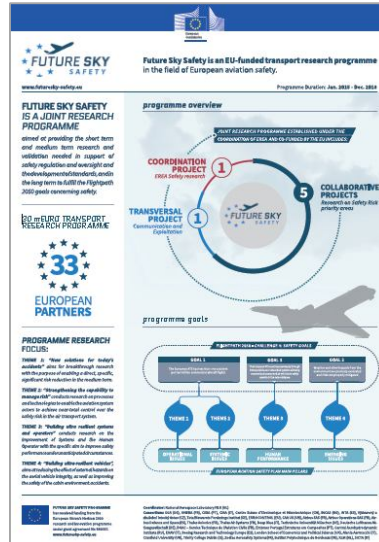a)                                                        b)
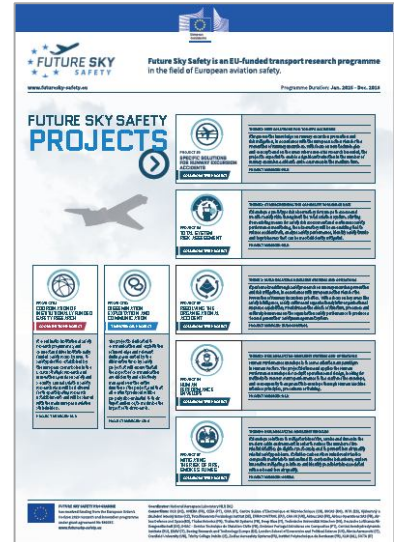
**Figure 5: FSS Brochure (a) and Flyer (b)**

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[4] This criterion applies to the Future Sky Safety programme-wide presentations given at third parties events.

**Figure 6: FSS Posters**

**Figure 7: FSS Handout**



**Figure 8: Frames from the FSS Video**

## 2.1.7. Website statistics

FSS website can be found at www.futuresky-safety.eu and is online since April 2015. Statistics on the number of visits to the Programme webpage and surfing behaviour help track and monitor external interest on the project. The analysis of website statistics was done through Google Analytics, which is able to provide the following data:

- N° of visits to the website;
- Countries' visitors;
- Visitors' behaviour;
- Search channels;
- Time spent on the website.

Other website parameters that were assessed are:

- Search engine position for specific keywords;
- N° of periodical news on the website;
- N° of downloads of public documents;
- Number of views of project videos.

In analysing website statistics, however, it has to be born in mind that since the beginning of 2015 a new online spam wave, known as Ghost referral traffic or Ghost referral spam[5] and affecting Google Analytics, has arisen. While not directly affecting websites, this spam deeply distorts Google Analytics data making them appear worse than they really are. Ghost referral traffic usually results in a (false) increase in traffic, coming along with a decrease in the time spent on the website, a higher bounce rate and visits from unusual locations. Existing statistics have to be interpreted in light of the Ghost traffic.

The figure below illustrates an overview of visits statistics.

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[5] See for example http://blog.analytics-toolkit.com/2015/howto-fix-ghost-traffic-spam-rubbish-google-analytics/
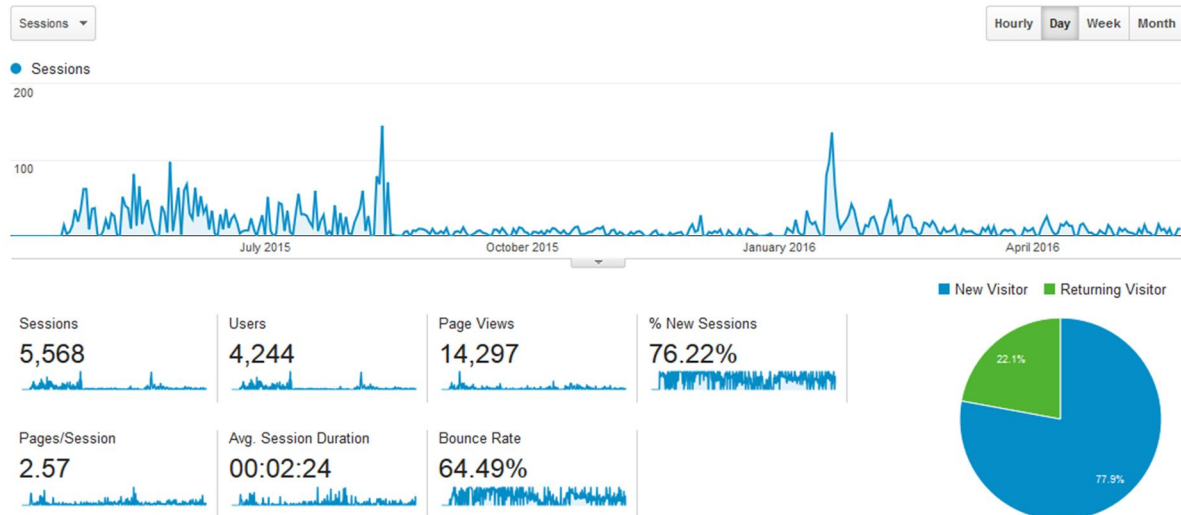
**Figure 9: Visits overview (01/04/2015-24/05/2016)**

- Sessions is the number of visits to the website.
- Users is the number of unduplicated (counted only once) visitors over the course of a specified period.
- Page Views is the total number of pages viewed. Repeated views of a single page are counted.
- Pages/Session (Average Page Depth) is the average number of pages viewed during a visit. Repeated views of a single page are counted.
- Avg. Session Duration is the average duration of a visit.
- Bounce Rate is the percentage of single-page visits (i.e. visits in which the person left the website from the entrance page without interacting with the page). The average bounce rate for a content website is around 50-60%; this data is highly affected by the Ghost traffic.
- % New Sessions is the percentage of visits that were first-time visits (from people who had never visited the website before).

The number of visits to the website (5568) largely exceeds the defined goal of 1000 visits, even if considering that 30-40% of them may be due to the Ghost traffic. In addition, the goal of having at least the 50% of new sessions during the first period was reached.

The website received visits from 105 different countries (the defined goal was 10). Figure 10 shows the first ten countries for number of visits.
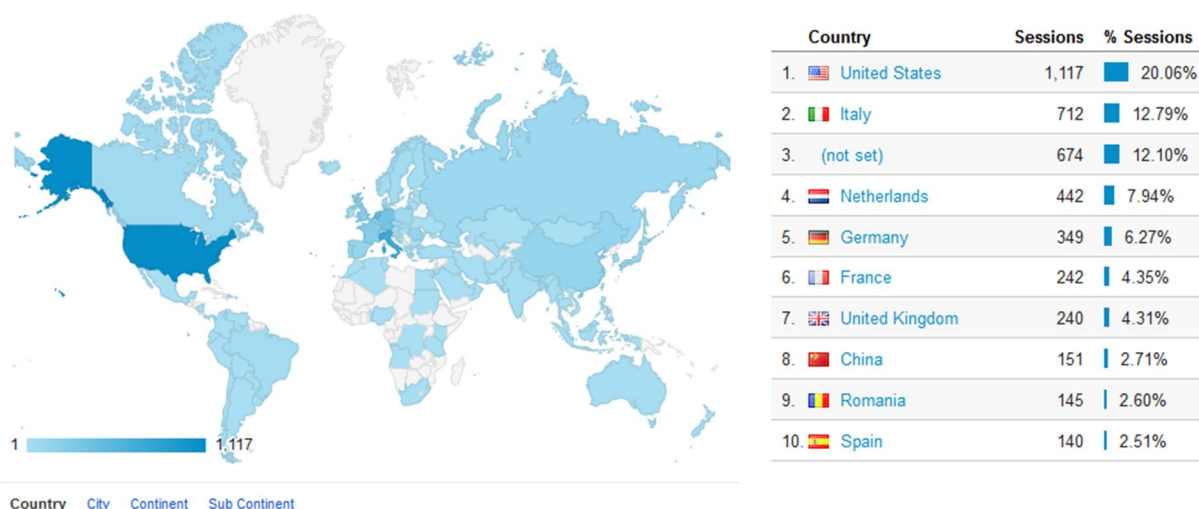
**Figure 10: Users geo-location**

Table 4 illustrates visitors' behaviour. Visitors that surf less than 30 seconds should be inferior to 40% to meet the indicated goal. As the table below shows, this percentage is much higher as it includes the Ghost traffic; the percentage of real visitors surfing less than 30 seconds may be around 50%.

**Table 4: Session duration**

| Session duration | Number of sessions |
|---|---|
| 0-10 seconds | 3849 |
| 11-30 seconds | 256 |
| 31-60 seconds | 180 |
| 61-180 seconds | 284 |
| 181-600 seconds | 414 |
| 601-1800 seconds | 204 |
| 1801+seconds | 85 |

Table 5 illustrates how website traffic directed to FSS website originates. Organic traffic generates as a search engines result (i.e. through Google, Bing or other search engines). Referral Traffic comes via a link from other sources that are referring Future Sky Safety website, like other websites, blogs, articles, social media, and so on. Direct traffic occurs when people directly type the website's name in the URL box.

**Table 5: Channels**

| Channel | 5568 Sessions |
|---|---|
| Referral | 2623 (47.11%) |
| Direct | 2380 (42.74%) |
| Organic Search | 532 (9.55%) |
| Social | 33 (0.59%) |

## 2.2. Qualitative Criteria

Three qualitative criteria are selected to support the quantitative ones for the dissemination assessment:

1. Evolution of key messages to be disseminated per project;
2. Target audience distribution;
3. Expected audience reaction.

With respect to the first one, P2 periodically performs a qualitative review of the material produced per programme or per project to monitor the progress – in terms of contents transmitted - in the projects' **key messages**, expecting an evolution from more general information to more specific and technical one.

As the key messages, the **distribution of the target audience** is expected to change during time, following the evolution of the communication goal from raising audience awareness to ensure dissemination impact. P2 monitors this evolution by keeping track of the audience attending the events where FSS is presented and the events organised by the programme itself.

An evolution in the **target audience's reactions** to FSS communication is also desirable. The achievement of the different dissemination goals reflects in different actions undertaken by the audience after the first contact. Emails exchange, follow up actions/discussions, invitation to third parties events, invited speech and re-use or exploitation of FSS results into personal or political research agendas indicates a progressive interest and stakeholder involvement into the project activities. P2 tracks actions undertaken by the target audience to understand their level of involvement and indirectly assess the effectiveness of FSS communication.

As the description of the three criteria suggests, their assessment could not consist of a simple statement of each criterion's status in a given period per se, but should be performed via a comparison between the three different programme periods, as this is the only measure capable of assessing the development of each criterion over the entire programme duration. However, some indication is

already available for the first criterion: in fact, it can be said that the desired messages were disseminated for the programme and each of its projects, as defined by D2.5 "Criteria for Assessment of Dissemination Activities".

## 2.3. KPIs

Key Performance Indicators are the measurements to identify the success of the dissemination plan and the achievement of the communication objectives. The KPIs have been identified based on the qualitative and quantitative criteria described in the previous section.

For each indicator, standards to be achieved have been set, the means of monitoring have been identified and the main responsible(s) for the target achievement have been specified. Finally, a list of corrective actions that can be executed by P2 to ensure the targets are achieved have been reported.

The section below thoroughly illustrates the KPIs and their targets, stating whether they were reached or not and, in this case, why and which corrective actions will be performed in the future to improve these results.

Regarding the **external activities**:

- The number of **posters** presented to third parties events was fully in line with the goal (3/3), while the number of **printed materials** highly exceeded expectations (500/100); therefore, no corrective action is needed for these indicators.
- The number of **relevant third parties events attended** was almost reached (7/10). Considering that technical projects started delivering initial results only after M6, the target was probably too ambitious for the first phase of the programme. As regarding P1 and P2, their participation concentrated on few big events (like Aerodays2015 and events organised by OPTICS, which attract a good network of participants) rather than on many small ones. A corrective action for this indicator is the identification of relevant events to be attended in the next future, activity in part already done. However, as the strategy of P1 and P2 attending only big events will continue, the target for the second period will be revised to consider this strategy.
- The number of **presentations** given to third parties relevant events was almost reached (7/10+) as the lower participation to external events was balanced by presentations specifically aimed at stakeholders, like EASA and NASA. As the number of external events to attend will be lowered, future target for this KPI will be revised accordingly.
- As for the number of **contacts asking for information** during/after the event, this data is difficult to systematically monitor in a quantitative way, and therefore to assess. Several questions, clarification requests, networking activity and contact exchanges followed each

presentation, especially during bigger events (like those organised by OPTICS and the Aerodays2015), but those were collected just in a qualitative form. Corrective actions will be performed to ensure that this KPI is measured.

- The number of **articles submitted to relevant conferences/events** highly exceeded expectations (8/5).

- The number of **academic publications** (0/3) was not reached. However, interesting journals have been identified; next actions have been planned and will be implemented in the second phase of the programme.

- As for the numbers of **press releases**, it was half met (1/2) due to the distribution of the "White paper" during OPTICS events. The same is true for the number of **articles on sector magazines** (1/3): a pending action on CAA UK of establishing contacts with the main magazines will be implemented in the next period; corrective actions include asking for EREA, EC or EC communication channels support (e.g. TRIP).

- There are no **stakeholders in the mailing list**, as this action was not performed. A subscription form will be implemented on project website to create the mailing list.

As for the **internal activities**:

- The number of **FSS Internal Workshops** was reached (1/1), as was the number of **FSS PMC** (7/7). During the Workshop, each project gave at least one presentation, thus reaching the goal set; the number of printed materials distributed (100+ including hand-outs, flyers and brochures) was also in line with the target.

- Regarding the **number of participants** at FSS internal events, the goal was reached as every partner attended each internal event. As for the **feedbacks** received during/after events, it can be said that the goal (30+ on average per event) was met even if it is difficult to quantify this criterion exactly. Each presentation generated feedback such as networking activities, questions, clarification requests, exchange of contacts between the projects and the involvement of partners from other projects and from the Consortium in those activities.

About the **website**:

- The goals regarding the number of **visits** to the website, the **search engine position** and the **geo-distribution of visitors** were largely met.

- The number of **downloads of public documents** (10+) was not clearly assessable due to the lack of a plugin to count downloads. As a rough measure, the download page was visited 631 times. As installing a plugin on FSS website is technically not possible, in the second period of activity of the programme, the number of visits the download page receives will serve as a rough measure to track downloads.

- The programme **video** was displayed during the last Aerodays2015, which were attended by 1000 delegates; however, website statistics suggest that it received no more than 80 visits. Corrective actions to increase online visibility include promoting the video link through the website and on other portals, such as Youtube, which has a counter.

- **Visitors' behaviour** is difficult to assess due to the Ghost traffic. The goal was to have no more than 40% of visitors surfing less than 30 seconds; however, this percentage may be around 50%. Corrective actions include creating links between pages to facilitate the website exploration and possibly set a different and more effective KPI to monitor the visits duration.

- The goal of publishing at least 1 **news** every two weeks was not reached, as was probably unrealistic with respect to the project status for the first period. Corrective action is for P2 to perform a periodic collection of materials from the other projects and increase the number of news not related to events.

Table 6 highlights suggested modification for specific KPIs, whose target was not reached during the first period (new KPIs are included in the Appendix A).

**Table 6: KPIs changes for the next period (cfr Appendix A)**

| ID | Indicator | Proposed changes |
|---|---|---|
| **External Events** | | |
| **E1** | Relevant third parties events attended | *Change the current target from 40+ to 30+* |
| **E2-a** | N° of presentations given to third parties relevant events | *Change the current target from 40+ to 30+* |
| **E2-b** | Number of contacts asking for information during/after the event | *Add corrective action:*<br>• *Collect business cards of people asking for information to keep track of this KPI* |
| **E3-b** | Number of contacts asking for information during/after the event | *Add corrective action:*<br>• *Collect business cards of people asking for information to keep track of this KPI* |
| **E6-a**<br>**E6-b** | N° of articles on sector magazines | *Add corrective action:*<br>• *Ask for EREA communication channels support* |
| **E7-b** | Number of contacts asking for information during/after the event | *Add corrective action:*<br>• *Collect business cards of people asking for information to keep track of this KPI* |
| **E8-a**<br>**E8-b** | N° of Press releases made | *Add corrective action:*<br>• *Ask for EREA communication channels support* |
| **E9** | N° of stakeholders in the mailing list | *Add corrective action:*<br>• *Put a subscription form on FSS website to start the mailing list* |

| Internal Events | | |
|---|---|---|
| **I12-b** | N° of feedbacks received during/after events | *Add corrective action:*<br>• *Use minutes of the event to keep track of the number of interactions* |
| **Website** | | |
| **W3** | N° of news on the website | *Add corrective action:*<br>• *Increase the number of news not related to events* |
| **W5** | Visitors' behaviour | *Change target/assessing measure from:*<br>• *Visitors which surf less than 30 seconds must be inferior to 30%*<br>*To:*<br>• *Average Time on Page at least 1 minute* |
| **W6** | N° of downloads of public documents | *Change assessing measure from:*<br>• *Word Press plugin to count download (e.g. WP Download Counter)*<br>*To:*<br>• *Use the number of visits to the download page as a rough measure to track downloads.* |
| **W7** | Number of views of project videos | *Add corrective action:*<br>• *Promote the video link on other portals, such as Youtube, which has a counter* |

Table 7 summarises the KPIs assessment at M18 and the proposed corrective actions for RP2 in case the target for RP1 was not achieved.

**Table 7: Future Sky Safety KPIs**

| External activities | | | | | | |
|---|---|---|---|---|---|---|
| *Indicator* | *N* | *Target per M0-M18* | *Means of monitoring* | *Status* | *Responsible(s)* | *Corrective actions for RP2* |
| Relevant third parties events attended | E1 | 10+ | Running total per period | 7 | P1, P2, P3, P4, P5, P6, P7 | • Identification of relevant events to be attended<br>• Periodic reminders to promote dissemination actions |
| N° of presentations given to third parties relevant events | E2-a | 10+ | Running total per period | 7 | P1, P2, P3, P4, P5, P6, P7 | • Periodic reminders to promote dissemination actions<br>• *Collect business cards of people asking for information* |
| | E2-b | At least 40% of participants (<50 people-event)<br><br>Less than 30% of participants (>50 people-event) | Number of contacts asking for information during/after the event | Feedback & contacts collected, but lack of quantitative data on % of participants | | |
| N° of posters presented to third parties relevant events | E3-a | At least 3 | Running total per period | 3 | P1, P2, P3, P4, P5, P6, P7 | Not needed |
| | E3-b | 30% of participants (<50 people-event)<br><br>Less than 25% of participants (>50 people-event) | Number of contacts asking for information during/after the event | Feedback & contacts collected, but lack of quantitative data on % of participants | | • *Collect business cards of people asking for information* |
| N° of articles submitted to relevant conferences/events | E4 | At least 5 | Running total per period | 8 | P3, P4, P5, P6, P7 | Not needed |

| | | | | | | |
|---|---|---|---|---|---|---|
| N° of academic publications | E5 | At least 3 | Running total per period | **0** | P3, P4, P5, P6, P7 | • Support the identification of key messages/main achievements<br>• Periodic reminders to promote dissemination actions |
| N° of articles on sector magazines | E6-a | At least 3 | Running total per period | 1 | P1, P2, P3, P4, P5, P6, P7 | • Establish contacts with the main sector magazines<br>• Support the identification of key messages/main achievements according to the magazine style and target<br>• Ask for EC or EC communication channels support (e.g. TRIP)<br>• *Ask for EREA communication channels support* |
| | E6-b | 1/2 | Targeted magazines | 1 | | |
| N° of printed materials | E7-a | 100+ | Running total per period<br>Mapping printed material/event | 1000 | P2 (printing)<br>P1, P2, P3, P4, P5, P6, P7 (distribution) | Not needed |
| | E7-b | 30% of participants (<50 people-event)<br>Less than 25% of participants (>50 people-event) | Number of contacts asking for information during/after the event | Feedback & contacts collected, but lack of quantitative data on % of participants | | • *Collect business cards/names of people asking for information* |
| N° of Press releases made | E8-a | At least 2 | Running total per period | 1 | P1, P2, P3, P4, P5, P6, P7 | • Establish contacts with press<br>• Support the identification of key |

| | E8-b | 1 | Targeted press | 1 | | messages/main achievements <br>• Ask for EC or EC communication channels support (e.g. TRIP) <br>• *Ask for EREA communication channels support* |
| N° of stakeholders in the mailing list | E9 | 50+ | Running total | **0** | P1, P2 | • Collects contacts from the technical projects <br>• *Put a subscription form on FSS website to start the mailing list* |

## Internal activities[6]

| Indicator | N | Target per M0-M18 | Means of monitoring | Status | Responsible(s) | Corrective actions for RP2 |
|---|---|---|---|---|---|---|
| N° of Future Sky Internal workshops | I1 | 1 | Count of Workshops | 1 | P2 | Not needed |
| N° of FSS PMC | I3 | 7 | Count of PMC | 7 | P1, P2, P3, P4, P5, P6, P7 | |
| N° of participants at FSS internal events | I4 | Every partner will attend at least ¾ of the events | Count of participants | Achieved | P1, P2, P3, P4, P5, P6, P7 | |
| N° of presentations given at internal events | I5 | At least one per project | Collection of presentations | One per project | P1, P2, P3, P4, P5, P6, P7 | |
| N° of printed materials | I10-a | 100+ | Running total - Mapping printed material/event | 100+ | P2 + P1, P3, P4, P5, P6, P7 | |
| N° of feedbacks received during/after events | I12-a | 30+ on average per event | Feedback collection | Achieved | P1, P2, P3, P4, P5, P6, P7 | Not needed |
| | I12-b | At least 60% of feedback will generate an action from the project | Counting of follow up actions (documents update, email exchanges etc.) | Achieved | | • *Use minutes of the event to keep track of the number of interactions* |

## Website

| Indicator | N | Target per M0-M18 | Means of monitoring | Status | Responsible(s) | Corrective actions for RP2 |
|---|---|---|---|---|---|---|
| N° of visits to the website | W1 | 1000+ visits per period and 50% of them must be exclusive visitors | Google Analytics statistics | 5.558 + 76,29% exclusive visitors | P2 | Not needed |
| Search engine position | W2 | At least in the search engine first page, when looking for "Future Sky Safety" | SEO tools | 2 position | P2 | Not needed |
| N° of news on the website | W3 | At least 1 news every two weeks | Running total per period | A bit less than 1 news per month | P2 | • Periodic collection of materials from the other projects<br>• *Increase the number of news not related to events* |
| Countries' visitors | W4 | At least 10 different Countries per period | Google Analytics statistics | 105 countries | P2 | Not needed |
| Visitors' behaviour | W5 | Visitors which surf less than 30 seconds must be inferior to 40% | Google Analytics statistics | Possibly around 50% | P2 | • Create links between pages to facilitate the website exploration<br>• *Average Time on Page at least 1 minute* |
| N° of downloads of public documents | W6 | 10+ | ~~Word Press plugin to count download (e.g. WP Download Counter)~~<br><br>*Use the number of visits to the download page as a rough measure to track downloads.* | Not clearly assessable without a download counter. N° of visits: 631 | P2 | • Improve documents research through use of keywords<br>• Publish news when a new document is uploaded |

| Number of views of project videos | W7 | 100+ | Youtube counter | Not clearly assessable without download counter (possibly 80 visits) | P2 | • Promote the video link through the website<br>• Promote the video link on other portals<br>• Promote the video link during external events<br>• *Promote the video link on other portals, such as Youtube, which has a counter* |
|---|---|---|---|---|---|---|

# 3  EXPLOITATION ASSESSMENT

The assessment of the Exploitation activities is performed comparing the activities developed by the technical projects with the set of measures identified and illustrated in the first release of the Exploitation Plan [4]. The document contained the exploitation policy and procedures/measures for each technical project, as established in the FSS programme.

The Exploitation Plan aimed at:

- Identifying technologies from the technical WPs of potential interest for innovation;
- Detecting potential users of WPs results and possible uses.

Thus, exploitation measures have been defined from the results of the each technical WP, and the definition of these measures is a support for the early involvement of the end users in the development of innovative technologies, processes and operations, accelerating the take-up in new industrial products and simplifying their certification path. A second release of the Exploitation Plan is foreseen for the end of the second year, when some consolidated results will be produced by the technical projects and a more accurate prediction of exploitation potential for each project will be possible.

As the exploitation activities require mature results or at least some preliminary findings to be performed, the assessment in the first period is limited to check if, for each project result listed in the exploitation plan, the preliminary actions for exploitation preparation were accomplished. These preliminary or preparation actions are mainly related with an early involvement of the end users. The performance of these preliminary actions will pave the way for the future exploitation of project outputs by the project partners after the project conclusion. The identification of these actions and the need for further preparation actions related to some project results that are still far from being presented (and exploited) will be used to feed the second release of the exploitation plan, where these preparation actions will be included.

During the second assessment period (M18-M36), when the research results will be available, it will be possible to evaluate if the projects will have undertaken all the actions to meet the targets of the exploitation plan for the development of innovative technologies, process and operations, accelerating the take-up in new industrial products and simplifying their certification path.

**Table 8: P3 Exploitation Assessment M0-M18**

| P3 | | | | |
|---|---|---|---|---|
| **Result** | **Estimated exploitation** | **Impacted users** | **Exploitation measures** | **Assessment** |
| **Ground control models** | New research paths to develop operational solutions | Airlines & aircraft manufacturers | End users involved in the FSS Programme will be able to grab new knowledge on aircraft ground control under crosswind and on slippery runways | End users such as Lufthansa, Boeing and Airbus saw P3 presentation during the 1st FSS Workshop; they are aware of the activities performed by the project and potential results to be exploited. |
| **Breaking performance analysis** | Braking performance improvement for modern tyres and antiskid systems | Aircraft manufacturers, pilots and airlines; Certification bodies; Airport management bodies | End users involved in the FSS Programme will be able to absorb the insight into the impact of water/slush covered runways on braking performance for modern tyres and antiskid systems. Exploitation measures will possibly have commercial impact, as well as policymaking, in terms of their pushing potential towards new standardization. | |

| | | | |
|---|---|---|---|
| **Veer-off risk algorithms** | Risk analysis process improvement | Airlines; System development experts | Airlines, as the main receptor of the veer-off excursions risk analysis using recorded flight data, are involved in the FSS Programme and will be able to assess the usability of the new tool. Furthermore, Systems development experts could also be involved so that new R&D paths could be drafted, bringing the algorithms closer to the commercial level. | |
| **Prevention or mitigation of runway excursions** | Feasibility studies and new paths for research | Aircraft systems; Air traffic control centres; Airports; Management bodies | Feasibility studies will be conducted for the most promising technologies, along with a definition of the R&D required to overcome obstacles to implementation. | |

**Table 9: P4 Exploitation Assessment M0-M18**

| P4 | | | | |
|---|---|---|---|---|
| *Result* | *Estimated exploitation* | *Impacted users* | *Exploitation measures* | *Assessment* |
| **Risk observatory** | Risk Observatory proof-of-concept | Authorities, Airlines, ANSPs Aircraft and aircraft systems manufacturers | P4 will develop a Risk Observatory proof-of-concept opening way for a fully developed risk observatory that will be of benefit to all aviation stakeholders – with a focus on stakeholders in commercial aviation. Future exploitation would eventually consist of a risk observatory organisation, perhaps contained within part of the existing European safety infrastructure. | P4 has been discussed during more than 20 stakeholders consultations. These consultations have been performed to acquire the needs and wishes of future risk observatory users and to validate the early prototype developed in year 1. Thus, a large set of P4 target stakeholders are aware of the project activities and potentially interested in testing or adopting the tool. |
| **Risk assessment** | Risk assessment process validation and assessment | ANSP ATM regulatory bodies Aircraft operators (including airlines and pilots) Aircraft manufacturers | The risk assessment models and the framework that combines the models can be applied by the different domains and authorities to translate safety data in actionable safety information. It provides the means to estimate accident and serious incident probabilities, and gives insights into the effectiveness of risk controls. The developed knowledge can also be applied in future research for the further refinement of the models. | |

**Project:**     1st Assessment of Dissemination and Exploitation Activities
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**Classification:**   Public

| | | | | |
|---|---|---|---|---|
| **FDM research tool and identification of trends and emergent hazards** | New tool for FDM analysis | Airlines | Awareness actions for the FDM research tool usage and how it could reduce risk. Once the tool benefits could be demonstrated, new research paths for an effective implementation and usage by the airlines could be exploited. | |
| **Identification of trends and emergent hazards** | Awareness actions | European Commission | Dissemination of emergent hazards and trending data to a selected group of aviation stakeholders that would be able to use it for safety improvement and to push for new research paths. | |

**Table 10: P5 Exploitation Assessment M0-M18**

| P5 | | | | |
|---|---|---|---|---|
| *Result* | *Estimated exploitation* | *Impacted users* | *Exploitation measures* | *Assessment* |
| **Safety Intelligence** | Guidance documents and electronic media with industry involvement | Top management of airports, airlines and ANSPs | Developing guidance using direct quotes and examples from CEOs, in visually-appealing and word-light documents and electronic media. The KPIs developed by FSS will allow managers to monitor their own performance, as well as understanding of how they can become Safety Dashboard KPI owners at their level. Dashboards & KPIs at European level will also highlight safety contributions (positive and negative) at the ATS sector level | The top management of a very wide plethora of the impacted users (KLM, SEA Milan Airports, NATS, CAA UK, Austrocontrol, Easyjet, EASA, Gatwick Airport etc.) were interviewed by P5 for the production of the guidance material - the P5 White Paper. The interviewed CEOs and COOs also received a printed copy of the paper. Printed copies of the white paper were also distributed at relevant sector safety events (such as ACARE WG4 meeting, FAA-EUROCONTROL Action Plan 15 meeting, Annual Human Factors meeting, and OPTICS Dissemination event), achieving other stakeholders and aviation safety research community. |
| **Safety Emergence** | Guidelines for "safety mindfulness" | Operational layer of airports, airlines and ANSPs | Future Sky provides the opportunity to take a practical intervention to support flight crew, air traffic managers and other aviation personnel in maintaining 'safety mindfulness'. | Middle management of the key stakeholders involved in the Safety Intelligence work have being interviewed to provide an overview of the operational layer perspective on maintaining safety mindfulness. Guidance material on safety mindfulness will be then distributed within the organisations that participated to the research. |

| Safety Culture | Improving the general awareness through workshops, etc. | Airports, airlines and ANSPs | Exploitation measures will focus on improving the general awareness of the effects on safety of workplace culture using the safety culture scorecard produced under FSS. | Safety culture surveys are ongoing & targeted for 2016 aimed at "stacks" across the aviation domain. On-going surveys in: Airbus designers; EasyJet; Luton; NATS; commercial pilots based in Europe. Once the surveys are closed, the project will organise Organize workshops for each segment, and press conference, academic conference, journal papers to promote the findings. |
|---|---|---|---|---|
| **Inter-organisational Safety** | Safe Performance System applications for safety mindfulness | Operations and operational decision-making | Developing applications for safety mindfulness within real work processes and practices and deploying this across the aviation industry, with the involvement of industrial partners in P5.<br><br>The agile Safe Performance System produced could be adopted by ATS organisations and mapped onto their operational management structure, processes and working arrangements. | Not yet applicable |

**Table 11: P6 Exploitation Assessment M0-M18**

| P6 | | | | |
|---|---|---|---|---|
| *Result* | *Estimated exploitation* | *Impacted users* | *Exploitation measures* | *Assessment* |
| **Guideline for HMI automation concept development** | Workshops and improved training and operational practices | Pilots | Testing technology and methods with users. Thus, a workshop will be organised with pilots, Human Factors experts, system designers to gain input for scenario development. | Several workshops with pilots have been performed within P6. Pilots from Lufthansa, Alitalia, KLM and Ryanair attended the workshops and made aware of P6 goals and potential impacts. |
| **Guidelines for envelope augmentation** | Evaluation in a test environment and future design concepts for cockpit design and operations | Flight-crew and pilots<br><br>Aircraft manufacturers<br><br>Systems developers | The produced guidelines will be exploited through an evaluation in a test environment, e.g. to identify future design concepts for 2035 and 2050 and to identify needs for future enhancements of a trajectory re-planner in order to support pilots in presence of unexpected hazards. | Lufthansa, Thales and Boeing R&T, as potential users of P6 results, are directly involved in the project activities. Thus, project results are immediately available for them, and can be exploited even at low maturity stages. |
| **Demonstration prototype of HPE monitoring** | Real time flight simulation experiments and recommendations for future augmenting the human performance envelope | Pilots<br><br>Aircraft manufacturers<br><br>Systems suppliers | The flight simulator environment will be used for evaluation of the recovery measures and principles and evaluation of the human performance envelope for the large scale simulation.<br>Exploitation activities will include real time flight simulation experiments and analysis of the results, allowing for recommendations for future recovery methods and principles and augmenting the human performance envelope. | |

**Table 12: P7 Exploitation Assessment M0-M18**

| P7 | | | | |
|---|---|---|---|---|
| *Result* | *Estimated exploitation* | *Impacted users* | *Exploitation measures* | *Assessment* |
| **Testing protocols** | Guidelines for the industrial development and testing of future materials | Aircraft manufacturers Testing facilities Materials producers Certification bodies | Draft proposal of the requirement for certification of fire behaviour of the Carbon Fibre in large airframe areas and related new testing protocols | End users such as EMBRAER and CASA are part of the P7 so that an additional requirement for certification could be drafted |
| **Materials database and New primary and cabin structures concepts** | Database to be used to develop advanced models | Research Engineering Industry / manufacturing | The new database and state-of-the-art models and simulation tools will provide information for new primary and cabin structures concepts to be developed under the FSS Programme. Envisaged exploitation results include the improvement on certification processes (such as testing procedures) that would lead to new materials solutions and possibly to new concepts of cabin and cockpits, resulting on less emissions and better safety standards for the passengers and crew. | Not yet applicable. |

| | | | | |
|---|---|---|---|---|
| **Sensors and on-board air quality** | Help for the industry to consider any OAQ issue at the very beginning of aircraft design | Airlines<br><br>Passengers<br><br>Aircraft manufacturers | New research paths leading to the introduction of new sensors' solution that will allow a better control and mitigation of air contaminants on-board. A map, or roadmap, for (potential) solutions for active control of environment systems in the case of air quality degradation will be drafted and discussed between academia and the industry. | Aircraft manufacturers (e.g. EMBRAER) are involved in the definition of requirements for sensor solutions for cabin air assessment |

# 4  CONCLUSIONS AND RECOMMENDATIONS

## 4.1.  Conclusions

In its first period of activity, FSS took part in a number of third parties events, contributing to them with dissemination material, presentations and papers. Considering that the programme was still in its initial phase and only preliminary results, with a low level of maturity, were available from the technical projects, appreciation towards FSS received when participating in these events shows that the research topics and the research performed so far are truly meaningful and appealing for both stakeholders and the research community.

Most of the events attended in the first period fall into P1/P2 activities, as the main goal of the communication/dissemination activity was to present the Programme as a whole. However, as soon as the technical projects started producing preliminary results (i.e. in the beginning of the second year) the type of attended events changed from dissemination events to domain conferences.

Although not all the objectives set to monitor KPIs were reached, overall the Programme performed well. For example, attendance to external events concentrated on few big events attracting a good network of participants, giving FSS the chance to present the programme to a wide specialised audience. In addition, the number of dissemination material produced and that of paper submitted to relevant events exceeded expectations. Academic publications have been planned and will be implemented in the second phase of the programme. As for the KPIs concerning internal activities, all the goals were reached as expected.

Parameters regarding the website are encouraging, both in terms of numbers, such as visits received and duration of the visits, and of visitors' behaviour: interest towards FSS emerges from visitors' interaction with the website (e.g. downloads, page views). More effort will be put in the future to ensure that the right number of news regarding the programme are spread, timely, via website.

The first one of the qualitative criteria was also already reached: projects' key messages, disseminated via various materials, are evolving from a more general information to a more specific and technical one for both the programme and the projects.

As FSS is in its first period of activity, no mature results are available for exploitation. Therefore, the exploitation assessment is limited to check if, for each project result listed in the exploitation plan, the preliminary actions for exploitation preparation were accomplished, thus paving the way for the future exploitation of project outputs. However, all the technical projects have established direct contacts with their target stakeholders; this will facilitate the exploitation activities performed from the next

reporting period on, and will improve the possibility that the proposed innovations/main results will be taken into account or taken on board by the aviation industry.

## 4.2. Recommendations

In the first phase of the Programme, not all the objectives set to monitor the achievement of dissemination KPIs were reached; therefore, to ensure that effective dissemination takes place, in the next period P2 will implement a set of corrective actions. Appendix A lists them, considering both the initial corrective actions already identified for each criterion and the new ones detailed in section 2.3.

Corrective actions will help, for example, establishing a stakeholders mailing list and increasing both the number of press releases made and of news posted on the website. They will also help keeping track of the number of contacts asking for information during and after internal and external events, and how many times someone downloads a document or watches a video.

In some cases, instead of identifying a corrective action, the target objectives have been reconsidered, as the initial one appeared to be too optimistic for the early (development) stage of the Programme. This applies to the number of relevant third parties events to attend (and therefore for the number of presentations to give based on initial/intermediate results), or for the website visitors' behaviour.

Regarding the exploitation, the second phase of the project will benefit of the preliminary actions for exploitation preparation accomplished in the first phase. During the second assessment period (M18-M36), when the research results will be available, the projects will undertake all the actions to meet the targets of the exploitation plan for the development of innovative technologies, process and operations, accelerating the take-up in new industrial products and simplifying their certification path.

To carry on and possibly improve the impact of the communication and exploitation activities, Future Sky Safety has planned to participate in the following next external events:

- **LISA - Laboratory of Ideas for the Safety in Aviation: Addressing Aviation and ATM Safety Challenges**, July 2016, Madrid (Spain);
- **CRA's Risk Forum**, October 2016, Stratford-upon-Avon (UK);
- **International Aircraft Fire and Cabin Safety Research Conference**, October 2016, Atlantic City (USA) - under discussion with the European Commission;
- **6th EASN International Conference**, October 2016, Porto (Portugal);
- **Human Factors in Aviation Safety**, November 2016, Castle Donington (UK);
- **1st International Cross-industry Safety Conference (ICSC2016)**, November 2016, Amsterdam (Netherlands);

- **Society of Aircraft Performance and Operations Engineers (SAPOE) Annual Conference 2016**, Los Angeles.

Next actions foreseen for the future include e.g.:

- CAA UK took the responsibility of writing an article for the general aviation public to be published on a magazine with a broad European coverage;
- FSS partners will submit a number of scientific papers to selected conferences (an initial list, which is planned to be extended further, is provided in Appendix B).

# 5   REFERENCES

[1]  Future Sky Safety D2.2 "1st release of Communication Strategies and Dissemination Plan", June 2015

[2]  Future Sky Safety D2.5 "Criteria for Assessment of Dissemination Activities", December 2015

[3]  Future Sky Safety D2.7 "Dissemination material from first Future Sky Safety Internal Workshop", May 2016

[4]  Future Sky Safety D2.4 "Exploitation measures (release 1)", August 2015

## Appendix A      Updated KPIs for the Next Period

| External activities | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Indicator** | **N** | **Target per period** | | | **Means of monitoring** | **Responsible(s)** | **Corrective actions (P2)** |
| | | **M0-M18** | **M18-M36** | **M36-M48** | | | |
| Relevant third parties events attended | E1 | 10+ | ~~40+~~ *30+* | 20+ | Running total per period | P1, P2, P3, P4, P5, P6, P7 | • Identification of relevant events to be attended<br>• Periodic reminders to promote dissemination actions |
| N° of presentations given to third parties relevant events | E2-a | 10+ | ~~40+~~ *30+* | 20+ | Running total per period | P1, P2, P3, P4, P5, P6, P7 | • Periodic reminders to promote dissemination actions<br>• *Collect business cards of people asking for information* |
| | E2-b | At least 40% of participants (<50 people-event)<br>Less than 30% of participants (>50 people-event) | At least 40% of participants (<50 people-event)<br>Less than 30% of participants (>50 people-event) | At least 40% of participants (<50 people-event)<br>Less than 30% of participants (>50 people-event) | Number of contacts asking for information during/after the event | | |
| N° of posters presented to third parties relevant events | E3-a | At least 3 | At least 6 | At least 6 | Running total per period | P1, P2, P3, P4, P5, P6, P7 | • Support the identification of key messages/main achievements<br>• Support posters design<br>• Periodic reminders to promote dissemination actions<br>• *Collect business cards of people asking for information* |
| | E3-b | 30% of participants (<50 people-event)<br>Less than 25% of participants (>50 people-event) | 30% of participants (<50 people-event)<br>Less than 25% of participants (>50 people-event) | 30% of participants (<50 people-event)<br>Less than 25% of participants (>50 people-event) | Number of contacts asking for information during/after the event | | |

**Project:** 1st Assessment of Dissemination and Exploitation Activities
**Reference ID:** FSS_P2_DBL_D2.8
**Classification:** Public

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| N° of articles submitted to relevant conferences/events | E4 | At least 5 | At least 15 | At least 15 | Running total per period | P3, P4, P5, P6, P7 | • Support the identification of key messages/main achievements<br>• Periodic reminders to promote dissemination actions |
|---|---|---|---|---|---|---|---|
| N° of academic publications | E5 | At least 3 | At least 15 | At least 15 | Running total per period | P3, P4, P5, P6, P7 | • Support the identification of key messages/main achievements<br>• Periodic reminders to promote dissemination actions |
| N° of articles on sector magazines | E6-a | At least 3 | At least 5 | At least 5 | Running total per period | P1, P2, P3, P4, P5, P6, P7 | • Establish contacts with the main sector magazines<br>• Support the identification of key messages/main achievements according to the magazine style and target<br>• Ask for EC or EC communication channels support (e.g. TRIP)<br>• *Ask for EREA communication channels support* |
| | E6-b | 1/2 | 2+ | 3+ | Targeted magazines | | |
| N° of printed materials | E7-a | 100+ | 500+ | 500+ | Running total per period<br>Mapping printed material/event | P2 (printing)<br>P1, P2, P3, P4, P5, P6, P7 (distribution) | • Distribution of the printed material to the other projects<br>• Identification of the proper material according to the event type<br>• Promotion of new materials according to the event goals<br>• Periodic reminders to promote materials distribution<br>• *Collect business cards/names of people asking for information* |
| | E7-b | 30% of participants (<50 people-event)<br>Less than 25% of participants (>50 people-event) | 30% of participants (<50 people-event)<br>Less than 25% of participants (>50 people-event) | 30% of participants (<50 people-event)<br>Less than 25% of participants (>50 people-event) | Number of contacts asking for information during/after the event | | |

| N° of Press releases made | E8-a | At least 2 | At least 3 | At least 3 | Running total per period | P1, P2, P3, P4, P5, P6, P7 | • Establish contacts with press<br>• Support the identification of key messages/main achievements<br>• Ask for EC or EC communication channels support (e.g. TRIP)<br>• *Ask for EREA communication channels support* |
|---|---|---|---|---|---|---|---|
| | E8-b | 1 | 2+ | 2+ | Targeted press | | |
| N° of stakeholders in the mailing list | E9 | 50+ | 100+ | 200+ | Running total | P1, P2 | • Collects contacts from the technical projects<br>• *Put a subscription form on FSS website to start the mailing list* |

## Internal activities

| Indicator | N | Target per period | | | Means of monitoring | Responsible(s) | Corrective actions (P2) |
|---|---|---|---|---|---|---|---|
| | | **M0-M18** | **M18-M36** | **M36-M48** | | | |
| N° of Future Sky Internal workshops | I1 | 1 | / | 1 | Count of Workshops | P2 | N/A |
| N° of focussed seminars organized by P2 | I2 | / | 10 focussed seminars in total, organised in strict cooperation with the Project Managers | | Count of Seminars | P2 + Technical projects | • Stimulate the technical projects for the identification of specific topics for the seminars |
| N° of FSS PMC | I3 | 7 | 6 | 4 | Count of PMC | P1, P2, P3, P4, P5, P6, P7 | • Plan in advance the PMC meeting dates |
| N° of participants at FSS internal events | I4 | Every partner will attend at least ¾ of the events | Every partner will attend at least ¾ of the events | Every partner will attend at least ¾ of the events | Count of participants | P1, P2, P3, P4, P5, P6, P7 | • Promote the partners participation through direct involvement in the event activities |

| N° of presentations given at internal events | I5 | At least one per project | At least one per project | At least one per project | Collection of presentations | P1, P2, P3, P4, P5, P6, P7 | • Promote the partners participation through direct involvement in the event activities |
|---|---|---|---|---|---|---|---|
| N° of External workshops organised by FSS | I6 | / | 1 | 1 | Count of Workshops | P2 | N/A |
| N° of invitations at FSS external events | I7 | / | 50+ | 70+ | Count of invitations per workshop | P2 | • Set up a list of backup contacts |
| N° of participants at FSS external events | I8-a | / | At least ¾ of the partners | At least ¾ of the partners | Count of partners per workshop | P2 | • Set up a list of backup contacts<br>• Mandatory participation for project partner or direct involvement in the event activities |
| | I8-b | / | 40+ external participants | 50+ external participants | Count of participants per workshop | | |
| N° of presentations given at external events | I9-a | / | At least one per project | At least one per project | Count of project presentations | P1, P2, P3, P4, P5, P6, P7 | N/A |
| | I9-b | / | 4+ from external parties | 4+ from external parties | Count of external presentations | | |
| N° of printed materials | I10-a | 100+ | 500+ | 500+ | Running total Mapping printed material/event | P2 + P3, P4, P5, P6, P7 | • Promote the use of dissemination material to the project partners<br>• Identification of the proper material according to the event type |
| | I10-b | / | 50+ | 50+ | Printed material from third parties | | |
| N° of materials submitted from third parties | I11 | / | 10+ | 10+ | Running total | P2 | • Periodic reminders to promote dissemination actions |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| N° of feedbacks received during/after events | I12-a | 30+ on average per event | 30+ on average per event | 30+ on average per event | Feedback collection | P1, P2, P3, P4, P5, P6, P7 | • Set-up interactive sessions (Q&A, roundtable, comments) during the event to collect feedback from the participants<br>• Send out on-line questionnaires to the participants to collect their feedback after the event<br>• *Use minutes of the event to keep track of the number of interactions* |
| | I12-b | At least 60% of feedback will generate an action from the project | At least 60% of feedback will generate an action from the project | At least 60% of feedback will generate an action from the project | Counting of follow up actions (documents update, email exchanges etc.) | | |
| | I12-c | / | 40% of external audience is keen on the project | 40% of external audience is keen on the project | Number of interactions and events attendance | | |
| External audience distribution | I13 | / | 70% of specialized audience & 30% of decision makers | 60% of specialized audience & 40% of decision makers | Counting of organizations attending the External Workshops | P2 | • Balance the stakeholder invitations according to the main target audience to be achieved through the event |

## Website

| Indicator | N | Target per period | | | Means of monitoring | Responsible(s) | Corrective actions (P2) |
|---|---|---|---|---|---|---|---|
| | | M0-M18 | M18-M36 | M36-M48 | | | |
| N° of visits to the website | W1 | 1000+ visits per period and 50% of them must be exclusive visitors | 1500+ visits per period and 30% of them must be exclusive visitors | 1500+ visits per period and 20% of them must be exclusive visitors | Google Analytics statistics | P2 | • Promote the website link on other portals<br>• Increase the third parties website linking to FSS website<br>• Promote the website during the External Workshop and third parties events<br>• Website link reported on all dissemination materials |
| Search engine position | W2 | At least in the search engine first page, when looking for "Future Sky Safety" | At least second result, when looking for "Future Sky Safety" | At least second result, when looking for "Future Sky Safety" | SEO tools | P2 | • Improve website visibility through keywords analysis<br>• Improve website visibility through SEO activities |
| N° of news on the website | W3 | At least 1 news every two weeks | At least 1 news every two weeks | At least 1 news every two weeks | Running total per period | P2 | • Periodic collection of materials from the other projects<br>• *Increase the number of news not related to events* |
| Countries' visitors | W4 | At least 10 different Countries per period | At least 20 different Countries per period | At least 20 different Countries per period | Google Analytics statistics | P2 | • Promote the website link on other portals<br>• Promote the website during international meetings and/or with non-EU stakeholders |

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|---|---|---|---|---|---|---|---|
| Visitors' behaviour | W5 | Visitors which surf less than 30 seconds must be inferior to 40% | ~~Visitors which surfer less than 30 seconds must be inferior to 30%~~<br><br>Average Time on Page at least 1 minute | ~~Visitors which surfer less than 30 seconds must be inferior to 20%~~<br><br>Average Time on Page at least 1.5 minute | Google Analytics statistics | P2 | • Create links between pages to facilitate the website exploration<br>• *Average Time on Page at least 1 minute* |
| N° of downloads of public documents | W6 | 10+ | 30+ | 30+ | ~~Word Press plugin to count download (e.g. WP Download Counter)~~<br><br>*Use the number of visits to the download page as a rough measure to track downloads.* | P2 | • Improve documents research through use of keywords<br>• Publish news when a new document is uploaded |
| Number of views of project videos | W7 | 100+ | 200+ | 200+ | Youtube counter | P2 | • Promote the video link through the website<br>• Promote the video link on other portals<br>• Promote the video link during external events<br>• *Promote the video link on other portals, such as Youtube, which has a counter* |

## Appendix B    FSS Foreseen Scientific Outputs

| Proj. | WP | Lead-author | Co-authors (expected) | When | Working title | Journal/conference |
|---|---|---|---|---|---|---|
| **P4** | | Verstraeten (NLR) | van Baren, G.; Wever, R. | Submission May 2016 | The Risk Observatory: developing an aviation safety data sharing platform in Europe | ICSC2016 |
| **P5** | WP5.1 | Kirwan (ECTL) | - | Submission June 2016 | Resolving the Organisational Accident in European Aviation | Human Factors in Aviation Safety |
| **P5** | WP5.2 | Callari, T.C. (TCD) | Mc Donald, N.; Kirwan, B. | Submission June 2016 | The 'Safety Mindfulness Approach': to enhance collective mind/knowledge to tackle safety in the workplace | |
| **P5** | WP5.3 | Parand, A (LSE) | Reader, T.; Kirwan, B. | Submission June 2016 | Airline safety culture: A pan-European survey study of over 7000 pilots | |
| **P5** | WP5.3 | Reader (LSE) | Parand, A.; Kirwan, B. | Submission Aug. 2016 | Testing a measure of safety culture for pilots | Accident Analysis & Prevention |
| **P5** | WP5.3 | Parand (LSE) | Reader, T.; Kirwan, B. | Submission Oct. 2016 | The relationship between perceptions of safety culture and working conditions amongst European Pilots | Journal of Occupational and Organisational Psychology |
| **P5** | WP5.3 | Reader (LSE) | Parand, A.; Kirwan, B. | Submission Feb. 2017 | Adopting a systems approach to measure safety culture in the aviation industry | Risk Analysis |
| **P5** | WP5.5 | Smeltink (NLR) | Stroeve, S.; et al. | Submission Dec. 2017 | Integrated organizational approaches for advanced safety management in air transport | Safety Science |

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| **P5** | WP5.4 | Woltjer (FOI) | Johansson, B. J. E., et al. | Submission June 2017 | Agility in the air transport system: Exercise lessons learned | 7th Resilience Engineering Association Symposium AND/OR Reliability Engineering & System Safety / Risk Analysis / Cognitive Engineering & Decision Making / Journal of Contingency & Crisis Management / Cognition, Technology & Work / … |
| **P5** | WP5.4 | Woltjer (FOI) | Johansson, B. J. E., et al. | Submission June 2017 | Agility in the air transport system: Guidance for organisations | 7th Resilience Engineering Association Symposium AND/OR Reliability Engineering & System Safety / Risk Analysis / Cognitive Engineering & Decision Making / Journal of Contingency & Crisis Management / Cognition, Technology & Work / … |
| **P5** | WP5.1 | C. Bieder (Airbus) | tbd | Submission Feb. 2017 | Considering safety into trade-offs: the 'in-between' position of middle managers | Safety science |
| **P6** | WP6.1 WP6.3 | Graziani, I. (DBL) | Bruno Berberian, B., Kirwan, B., Le Blaye, P., Napoletano, L., Rognin, L., Silvagni, S. | Submission June 2016 | Development of the Human Performance Envelope Concept for Cockpit Operations | 6th EASN International Conference |
| **P6** | WP6.1 WP6.2 WP6.3 | Silvagni, S. (DBL) | Graziani, I., Valbonesi, C., Kirwan, B. | Submission June 2016 | Can behavioural markers be a real support to indicate first signals of performance degradation into the cockpit? | Human Factors in Aviation Safety |
| **P7** | WP7.3 | WP7.3 partners | - | | On-board air quality - Effect of new materials | |

Deep Blue          Status: Approved          Issue: 2.0          **69/70**

**Project:**    1st Assessment of Dissemination and Exploitation Activities
**Reference ID:**    FSS_P2_DBL_D2.8
**Classification:**    Public

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| **P7** | WP7.3 | Cranfield University | WP7.3 partners | | Analysis of potential emissions from carbon fibre composites at typical and elevated aircraft cabin temperatures using GC-MS and TGA | |
| **P7** | WP7.3 | Cranfield University | WP7.3 partners | | Comparative study of GC-MS measurements with portable commercial gas sensor measurements of thermal degradation products of carbon fibre composites for optimisation of sensors manifold for aircraft cabin air monitoring | |
| **P7** | WP7.3 | Embraer | WP7.3 partners | | A conceptual framework study for air quality in aircraft cabins | |