2nd 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 second phase of activity (July 2016 – December 2017).

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Grant Agreement No.	640597
Document Identification	D2.12
Status	Approved
Version	2.0
Classification	Public

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Future Sky Safety has received funding from the EU's Horizon 2020 Research and Innovation Programme, under Grant Agreement No. 640597.

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Document Change Log

Version No.	Issue Date	Remarks
1.0	21-03-2018	First formal release
2.0	24-04-2018	Second formal release

Approval status

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Acronyms

Acronym	Definition
ACARE	Advisory Council for Aviation Research in Europe
ANSP	Air Navigation Service Provider
ATS	Air Traffic Services
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
HMI	Human-Machine Interface
IATA	International Air Transportation Association
ICAO	International Civil Aviation Organisation
IMG	Industry Management Group
JU	Joint Undertaking
PM	Project Manager
PMC	Programme Management Committee
PP	Project Plan
R&D	Research and Development
R&TD	Research and Technology development
REA	Resilience Engineering Association

EXECUTIVE SUMMARY

Problem Area

Dissemination, exploitation and communication of knowledge are key ingredients for a successful research project. Future Sky Safety Project P2 is specifically dedicated to this; 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.

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 audiences. In this context, a strategy for dissemination assessment, with specific quantifiable targets needs to be developed and implemented.

Description of Work

This document aims at assessing the dissemination, communication & exploitation activities for the FSS programme in the second period of activities (M19-M36, from July 2016 to December 2017). The goal is to check if the dissemination goals set in the dissemination plan for the second 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.

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” [1] and lately have been updated in the D2.8 “1st Assessment of Dissemination and Exploitation Activities” [2] .

The assessment of the dissemination activities 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 final period of the Programme (M36-M48).

Results & Conclusions

Overall, the performance of the Programme in its second phase was more than satisfactory.

The quantitative KPIs’ achievement rate highlights that most of the activities have been accomplished as planned, in some cases even exceeding expectations.

The Google Analytics shows that the website is in good health; the project reached its objectives and the publication of news has improved compared to the first period. FSS needs to continue keeping the website up-to-date, in terms of news/events published and material uploaded (e.g. deliverables, dissemination materials) as it is the main means of communication for different audiences.

With regard to external events, FSS took part in a number of them, meeting the ambitious goal set. On the other hand, in order to improve effectiveness of the communication, the Programme could customise dissemination materials to the events attended.

The internal event workshop surely raised stakeholders' interest, leading to a high number of registered participants and to a much appreciated public event. In the future, FSS should further widen external participation in order to ensure an even more effective communication.

The qualitative criteria, related to the evolution of the key messages to be disseminated, of the target audience distribution and of the expected audience reaction, were met as well.

The analysis of the communication activities shows that key messages conveyed by the Programme did evolve in time, just like it was expected. The technical projects started communicating more specific information than before, focusing on promoting the results of their research; overall, the desired messages were disseminated for the programme and each of its projects.

The distribution of the target audience evolved as well, shifting more and more from the general audience towards specialised experts and decision makers.

Finally, an evolution in the targeted audience's reactions was also expected, and reached, as a sign of the effectiveness of the different dissemination activities. Stakeholders' engagement at a personal or even political level was clearly achieved; therefore, the desired impact was accomplished for all the three qualitative KPIs established to monitor the effectiveness of FSS dissemination.

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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Future Sky Safety has received funding from the EU's Horizon 2020 Research and Innovation Programme, under Grant Agreement No. 640597.

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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, over a four-year period starting in January 2015. The two main objectives of Future Sky Safety Programme are:

- **Coordination of institutional safety research programmes**, funded by EREA institutes;
- **Collaborative safety research** on safety risk priority areas (co-funded by the EC).

The Programme research focuses on four main topics:

- Building ultra-resilient vehicles and improving 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 key ingredients 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 simple 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 [3][1].

Conclusions and recommendations are highlighted in detail in Section 4.

Appendix A shows a table with the compliance rate to KPIs. Appendix B lists the next papers to be produced by 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 [4]. 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 exist 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, corrective actions are put in place.

The D2.5 also states that "Increasing involvement of the audience is expected for the second period, when projects produce some preliminary results to be communicated and open discussion with stakeholders on those results is desirable. In this timeframe, P2 foresees an increase in the production of technical related materials (papers, articles, posters & presentations for conferences) promoting the preliminary achievements to a specialised audience".

Therefore, the majority of the activities between M18 and M36 is directed towards the objectives of **disseminating knowledge and results, and involving stakeholders**. The Specialised Audience and Decision Makers constitute the main target audience for this phase.

Table 1: Dissemination strategy for the second programme phase (M18-M36)

Period	Programme phase	Dissemination objectives	Dissemination activities
M18 – M36	Preliminary results	Disseminate knowledge and results Involve stakeholders	Papers, press releases, articles on sector magazines thematic conferences, presentations, Internal and External Workshops, Seminars

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:
    - N° of visits to the website;
    - Countries' visitors;
    - Visitors' behaviour;
    - Search channels;
    - Time spent on the website;
    - Search engine position;
    - N° of periodical news on the website;
    - 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 mainly attend the events connected with their field of research.

In the second period (M18-M36), Future Sky Safety attended a number of external events:

- INTERFLAM2016 (London, UK, 4-6th of July, 2016)
- LISA summer school (Madrid, Spain, 11-14th of July 2016)
- SAPOE Conference (Long Beach, California, 6-7th of October 2016)
- CRA Risk Forum 2016 (Stratford-upon-Avon, UK, 6-7th of October 2016)
- EASN Conference 2016 (Porto, Portugal, 18th of October, 2016)
- Fire and Cabin Safety Conference (Atlantic City, New Jersey, 24th of October, 2016)
- ICSC 2016 (Amsterdam, Netherlands, 4th of November, 2016)

- Human Factors in Aviation Safety 2016 (Castle Donington, UK, 7-8th of November, 2016)
- NetWork Workshop "Exploring Resilience" (Paris, France, 5-6th of May, 2017)
- SM-ICG Industry Day (Gatwick, UK, 15th of May, 2017)
- EBACE 2017 (Geneva, Switzerland, 24th of May, 2017)
- AIAA Flight Testing Conference (Denver, Colorado, 5-9th of June, 2017)
- EASA FDM Conference 2017 (Cologne, Germany, 12-13th of June, 2017)
- OPTICS Final Dissemination Event (Brussels, Belgium, 12-13th of June, 2017)
- ECRM conference (Dublin, Ireland, 22-23rd of June, 2017)
- REA Symposium (Liège, Belgium, 26-29th of June, 2017)
- 20ème journées nationales sur les composites 2017 (Champs-sur-Marne, France, 28-30th of June, 2017)
- FRMP17 (Manchester, UK, 3-7th of July, 2017)
- AHFE Conference (Los Angeles, California, 17-21st of July, 2017)
- SFTE European Chapter Symposium (Milan, Italy, 13-15th of September, 2017)
- Socio-technical System Engineering course (Linkoping, Sweden, 19-20th of September, 2017)
- International Aircraft Cabin Air conference (London, UK, 19-20th of September, 2017)
- EASN Conference 2017 (Warsaw, Poland, 26-29th of September, 2017)
- CRA Risk Forum 2017 (Gloucestershire, UK, 5-6th of October, 2017)
- Clinical Audit meeting (Dublin, Ireland, 05th of October, 2017)
- IASS Summit (Dublin, Ireland, 23-25th of October, 2017)
- Rail Human Factors Conference (London, UK, 6-9th of November, 2017)
- Human Factors in Aviation Safety 2017 (London, UK, 13-14th of November, 2017)
- Modelling and Simulation in Air Traffic Management conference (London, UK, 14-15th of November, 2017)
- SGEM 2017 (Vienna, Austria, 27-30th of November, 2017)
- ICISM 2017 (Paris, France, 11-13th of December, 2017)
- Safety in Health Systems (Dublin, Ireland, 13th of December 2017)

With respect to the first phase of the programme, in the second one the type of events attended kept changing from dissemination events to domain conferences. In fact, the technical projects increased the number of presentations of their preliminary results, delivered both in papers and with presentations.

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

Table 2: Next events planned

Location and date	Event	Project	Activity
Vienna, Austria 16-19/04/2018	**Transport Research Arena (TRA)**	P4	Presentation

2.1.1.1. INTERFLAM2016

On the 4-6th of July, 2016 P7 attended the *14th International Conference and Exhibition on Fire Science and Engineering* (INTERFLAM2016), held in London, UK.

The project presented a paper on the "Analysis of delamination onset and growth induced by laser decomposition within carbon/epoxy composite laminates" to an audience of 300 people from the Fire Safety community.

2.1.1.2. LISA summer school

P4 attended the *LISA - Laboratory of Ideas for the Safety in Aviation: Addressing Aviation and ATM Safety Challenges*, a summer school organised by the Air Navigation Research Group (GINA) of the Universidad Politécnica de Madrid. The Summer School was held in Madrid, Spain on the 11-14th of July 2016.

On the 12th of July, P4 delivered a speech about P4 Total system risk assessment entitled "The Risk Observatory: Developing a Platform to Share Aviation Safety Data and Intelligence in Europe". Around 30 students attended the course.

ASDA, EUROCONTROL, UPM, IBERIA, ANSPs, and other relevant research agents in the Aviation Safety Arena sponsored the course, which aimed at understanding key challenges that aviation and ATM safety will have to face in the medium /long term.

2.1.1.3. SAPOE Conference

On the 6-7th of October 2016, Future Sky Safety attended the *Society of Aircraft Performance and Operations Engineers (SAPOE) Annual Conference* held in Long Beach, California (USA).

SAPOE is a member-based organization promoting the safety and efficiency of flight through knowledge of aircraft performance and weight and balance principles.

During the annual conference, P3 presented the results of its flight testing on flooded runways to an audience of 90 people, mainly aircraft performance engineers from airlines (worldwide) and aircraft manufacturers (from Airbus, Boeing, Mitsubishi Aircraft, Fokker Services, Bombardier, Embraer). Numerous attendants gave positive feedback on the P3 presentation.

2.1.1.4. CRA Risk Forum 2016

On the 6-7th of October, 2016 P6 joined the CRA Risk Forum held in Stratford-upon-Avon, UK.

The project held a presentation entitled "Pushing the human performance envelope - simulating challenging scenarios for pilots" to an audience mainly composed of safety experts.

2.1.1.5. EASN Conference 2016

On the 18th of October, 2016 Future Sky Safety took part in the *6th European Aeronautics Science Network (EASN) Conference on Innovation in European Aeronautics Research* held in Porto, Portugal.

The conference was designed to be the year's leading forum for discussion and exchange of information about state-of-the-art research and development activities in Aeronautics and Air Transport.

During the session dedicated to *Crew & Cockpit*, P6 presented a paper on the "Development of the human performance envelope concept for cockpit operations". The paper focused on the preliminary results of the simulations held in Braunschweig, at DLR facilities, with 10 pilots to test the Human Performance Envelope concept and identify potential physiological and behavioural indicators of pilot's performance decrement.

The presentation raised the interest of the 30 experts attending the session, and resulted to be particularly attractive for the aircraft manufacturers and airlines in the room, wanting to explore the method and measures developed in P6 with their own pilots.

2.1.1.6. Fire and Cabin Safety Conference

On the 24th of October, 2016 Future Sky Safety participated in the *8th Triennial International Aircraft Fire and Cabin Safety Research Conference* organised by the FAA and held in Atlantic City, New Jersey (USA).

P7 gave a presentation entitled "Future Sky Safety – P7: Study of temperature and fire exposure effects on Carbon Fibre Reinforced Plastic mechanical behaviour and chemical degradation", illustrating the study of temperature and fire exposure effects on carbon reinforced plastic mechanical behaviour to an audience of around 250 people, who showed a great interest in the FSS framework description.

2.1.1.7. ICSC 2016

On the 3-4th of November, 2016 Future Sky Safety was in Amsterdam, Netherlands for the *1st International Cross-industry Safety Conference (ICSC2016)*.

P4 attended and presented a paper entitled "The Risk Observatory: developing an aviation safety data sharing platform in Europe" to an audience of around 100 people from university and academia. The presentation raised the interest of the audience attending, resulting in a number of conversations afterwards.

2.1.1.8. Human Factors in Aviation Safety

Future Sky Safety took part in the *Human Factors in Aviation Safety* held on the 7-8th of November, 2016 in Castle Donington, UK.

P5 delivered three presentations:

1. "Resolving the organisational accident in European aviation", a general presentation of P5 activities;
2. "Airline safety culture: A pan-European survey study of over 7000 pilots", specifically focused on the activities performed within WP5.3;
3. "The 'Safety Mindfulness Approach': to enhance collective mind / knowledge to tackle safety in the workplace", regarding the WP5.2 work.

In addition, P6 presented the paper "Can behavioural markers be a real support to indicate first signals of performance degradation into the cockpit?".

The presentations were delivered to 100 people, mainly Human Factors and safety experts and representatives of the civil and military aviation industry (including airlines, manufacturers, and airports).

2.1.1.9. NetWork Workshop "Exploring Resilience"

On the 5-6th of May, 2017 Future Sky Safety attended the *NetWork Workshop "Exploring Resilience"* held in Paris, France.

P5 gave a presentation entitled "Exploring Resilience at Interconnected System Levels in Air Traffic Management", mentioning the WP5.4 approach with reference to the D5.3 "Agile Response Capability (ARC) best practices" and to the paper entitled "An Overview of Agility and Resilience: from Crisis Management to Aviation", presented at the Resilience Engineering Association (REA) Symposium 2015.

Two dozen academics with an interest in resilience in safety-critical domains attended the session and showed interest in FSS; subsequently, they were referred to upcoming deliverables and the FSS website for further information.

2.1.1.10. SM-ICG Industry Day

On the 15th of May, 2017 P4 attended the *Safety Management International Collaboration Group (SM-ICG) Industry Day* held in Gatwick, UK.

At the presence of around 150 people from industry and regulators, P4 provided a speech about P4 Total system risk assessment. The presentation was well received and led to many interactions with the audience afterwards.

The Safety Management International Collaboration Group (SM ICG) is a joint cooperation between many regulatory authorities, promoting a common understanding of safety management and

Safety Management System (SMS) principles and requirements, facilitating their implementation across the international aviation community. It was founded by the United States Federal Aviation Administration (FAA), the European Aviation Safety Agency (EASA) and Transport Canada Civil Aviation.

2.1.1.11. EBACE 2017

On the 24th of May, 2017 Future Sky Safety took part in the *European Business Aviation Convention & Exhibition (EBACE)* held in Geneva (Switzerland).

EBACE is a premier event for the European business aviation community, bringing together business leaders, government officials, manufacturers, flight department personnel, avionics firms, fractional providers, charter/lease companies and all manner of people involved in nearly every aspect of business aviation.

P5 gave a presentation on "Safety Culture vs. The Illusion of Safety", illustrating the work performed within WP5.3 to around 60 business jet safety specialists from all over the world.

2.1.1.12. AIAA Flight Testing Conference

On the 5-9th of June, 2017 Future Sky Safey attended the *AIAA Flight Testing Conference* organised by the AIAA Aviation Forum and held in Denver, Colorado (USA).

P3 presented a paper entitled "Braking Capabilities on Flooded Runways: Flight Test Results Obtained with a Business Jet". 50 people attended the presentation, mainly aircraft engineers and manufacturers, members of universities, regulators and research institutes.

2.1.1.13. EASA FDM Conference 2017

Future Sky Safety took part in the *EASA Flight Data Monitoring (FDM) Conference*, held on the 12-13th of June, 2017 in Cologne (Germany).

The EASA FDM conference aimed at promoting the implementation and development of the most advanced use of Flight Data and related analysis techniques for the improvement of Aviation Safety.

- P4 held a presentation entitled "The Risk Observatory. Strengthening the ability to monitor safety performance".
- P3 gave a presentation on the "Reconstruction of cross- and tailwind components from flight data" to an audience of around 100 people, mainly safety officers and flight data specialists from airlines (worldwide), aircraft manufacturers, aircraft accident investigators, research institutes, and regulators (e.g. EASA).

Many airlines requested additional information on both of the topics presented.

2.1.1.14. OPTICS Final Dissemination event

On the 12-13th of June, 2017 P7 took part in the *OPTICS Final Dissemination event*, held in Brussels, Belgium.

P7 gave a general presentation, citing FSS as collaboration project on Safety R&D in Europe to an audience composed by OPTICS partners and invited speakers, Airliners, R&D Institutions and decision makers like EASA and the FAA.

2.1.1.15. ECRM conference

On the 22-23rd of June, 2017 Future Sky Safety joined the *16th European Conference on Research Methodology for Business Management (ECRM)* held in Dublin, Ireland.

P5 attended the event with a paper on "The Emerging Safety Mindfulness Model: from Concept Definition into Requirements Collection".

The paper was discussed towards an audience of 50 people.

2.1.1.16. REA Symposium

On the 26-29th of June, 2017 P5 attended the *7th Resilience Engineering Association (REA) Symposium* held in Liège, Belgium.

P5 presented a poster on WP5.4 activities "Organisational capability of agile response to crises". More than one hundred academics and industry practitioners with an interest in resilience in safety-critical domains attended; several participants (academics as well as practitioners) expressed interest in FSS and were referred to upcoming deliverables and to the programme website, with potential for follow-up discussions.

2.1.1.17. 20ème journées nationales sur les composites 2017

On the 28-30th of June, 2017 P7 joined the 20ème Journées Nationales sur les Composites 2017, held in Champs-sur-Marne, France.

The project presented a paper on "Thermal degradation influence on the effective mechanical properties of CFRPs".

2.1.1.18. FRMP17

On the 3-7th of July, 2017 Future Sky Safety took part in the *16th European Meeting on Fire Retardant Polymeric Materials* (FRMP17), held Manchester, UK.

P7 presented a paper on the "Extrapolation of thermochemical kinetics from conventional thermogravimetric analysis at very high heating rates for composites" to an audience of around 300 experts from the Fire Safety community.

2.1.1.19. AHFE Conference

P6 took part in the *8th International Conference on Applied Human Factors and Ergonomics (AHFE)*, held in Los Angeles, California on the 17-21st of July, 2017.

P6 gave a presentation entitled "What the pilots see is what I get: how pilot's gaze can increase the Human Performance Envelope to improve safety" to an audience composed mainly by Human Factors experts.

On the 26-29th of June, 2017 P5 attended the *7th Resilience Engineering Association (REA) Symposium* held in Liège

2.1.1.20. SFTE European Chapter Symposium

Future Sky Safety attended the *28th Society of Flight Test Engineers (SFTE) European Chapter Symposium* held in Milan, Italy on the 13-15th of September, 2017.

P3 presented a paper on the flight tests performed on wet/flooded runways surfaces, entitled "NLR's experience with flight testing on wet and flooded runways". The 60 attendees composing the audience were mainly aircraft flight test engineers from aircraft manufacturers (Airbus, Boeing, Bombardier and Embraer), research institutes, and universities. Numerous attendants gave positive feedback on the work presented, and requested additional information.

2.1.1.21. Socio-technical System Engineering course

On the 19-20th of September, 2017 Future Sky Safety took part in the *Socio-technical System Engineering course* organised by the Human Factors Network and held in Linkoping, Sweden. The two-day course addressed safety-critical industries and people responsible for managing risk; change; safety; quality; planning; system design.

P5 attended the event with a presentation on the "Challenges of the novel Mindfulness Model" and on "Productive Governance and the CUBE methodology". 25 practitioners from Sweden industry took part in the course and interacted with the project.

2.1.1.22. International Aircraft Cabin Air conference

On the 19-20th of September, 2017 P7 attended the International Aircraft Cabin Air conference held in London, UK. The event was the occasion for the project to meet and network with more than 300 experts of cabin air matters.

2.1.1.23. EASN Conference 2017

On the 26-29th of September, 2017 Future Sky Safety took part in the *7th EASN International Conference on "Innovation in European Aeronautics Research"* held in Warsaw, Poland.

P4 presented a paper entitled "Aircraft Safety Model Development and Integration in a Risk Observatory" to an audience of around 20 people from academia.

2.1.1.24. CRA Risk Forum 2017

On the 5-6th of October, 2017 Future Sky Safety took part in the *CRA Risk Forum* held in Gloucestershire, UK. The Forum brought together industry experts to discuss next generation risk analysis.

P5 attended the event with a presentation entitled "Advances in Aviation Safety Culture Practices", delivered to around 100 nuclear safety professionals.

2.1.1.25. Clinical Audit meeting

On the 5th of October, 2017 Future Sky Safety was in Dublin, Ireland at St. Vincent's Hospital to take part in a *Clinical Audit meeting*.

P5 joined the meeting and held a presentation on the "Mindful Governance in the Health Sector" to around 100 researchers and practitioners from the Health Sectors.

2.1.1.26. IASS Summit

Future Sky Safety attended the *International Aviation Safety Summit (IASS)* held on the 23-25th of October, 2017 in Dublin, Ireland.

P5 delivered a presentation entitled "Moving towards joined-up safety culture across different aviation players" to around 350 aviation safety professionals from around the world.

2.1.1.27. Rail Human Factors Conference

On the 6-9th of November, 2017 Future Sky Safety took part in the *6th International Rail Human Factors Conference 2017* held in London (UK).

P5 attended with a presentation entitled "The safety culture stack – building inter-organisational resilience in the aviation industry", delivered to around 100 rail safety professionals.

2.1.1.28. Human Factors in Aviation Safety 2017

On the 13-14th of November, 2017 Future Sky Safety took part in the *Human Factors in Aviation Safety Conference 2017* held in London Gatwick Airport, UK. The conference featured presentations and discussion on the latest research and practice in the "ultra-safe" sector of aviation, trying to answer the question, How do we improve human performance in today's aviation business? The audience was composed of Human Factors and safety experts.

P6 organised and chaired a session dedicated to adaptive automation, entitled "Is adaptive automation still a useful concept?". Keynotes included Kathy Abbott (FAA) with a presentation on "Automation, Autonomy and Artificial Intelligence: Where are we, and what does this mean for aviation?"; Fiona Cayzer (BAE Systems) on "Autonomous systems: designing pilots out of the loop or back into the loop?"; Stefano Bonelli (Deep Blue), presenting the STRESS project; and Sylvain Hourlier (Thales Avionics) offering "A cockpit designer's perspective on adaptive automation".

2.1.1.29. Modelling and Simulation in Air Traffic Management

On the 14-15th of November, 2017 Future Sky Safety took part in the *Modelling and Simulation in Air Traffic Management* conference, jointly organised by AIAA and Royal Aeronautical Society (RaeS) and held in London, UK.

P6 presented a paper on "How eye tracking data can enhance human performance in tomorrow's cockpit. Results from a flight simulation study in Future Sky Safety" to an audience of Human Factors, operational and safety experts.

2.1.1.30. SGEM 2017

On the 27-30th of November, 2017 P7 took part in the *17th International Multidisciplinary Scientific GeoConference* held in Vienna, Austria.

The project presented a paper on "Geopolymer Laminate Peel Resistance of Adhesive Bonds with Foam and Honeycomb Cores".

2.1.1.31. ICISM 2017

On the 11-13th of December, 2017 Future Sky Safety took part in the *2nd International Conference on Innovative and Smart Materials (ICISM 2017)* held in Paris, France.

The project presented a paper on "Mechanical Properties of Fibre Reinforced Geopolymer Composites Exposed to Operating Fluids".

2.1.1.32. Safety in Health Systems

On the 13th of December, 2017 Future Sky Safety participated in the Safety in Health Systems conference held in Dublin, Ireland.

P5 held a presentation on the "Governance of System Risk and Improvement".

2.1.2. Events organised by Future Sky Safety

Throughout the programme duration, FSS has planned four different events (two public, two internal) to maximise the impact of its results and facilitate the exchange of information and networking among projects and towards the external audience.

2.1.2.1. 1st Public Workshop

The 1st Public Workshop "Future Sky Safety: a Joint Programme for Aviation safety" was held on the 8-9th of March, 2017 in Brussels, Belgium at EC EUROCONTROL Headquarters.

This workshop was the opportunity to discuss emerging safety issues and trends with a wide audience and provide it update on the latest research progress reached within Future Sky Safety. More than 110 people registered to the event; 70 of them actually attended: 43 from the Consortium, and 27 external guest (of which 24% were decision makers, 76% experts from a specialised audience).

The workshop opened with an overview of the institutional safety projects coordinated by the European Research Establishments in Aeronautics, provided by EREA; then, five sessions explored key topics related to the technical projects explored by the programme. Future Sky Safety's Project Managers chaired the discussion, while renowned external speakers gave presentations on each topic. Speakers included members of the industry and SMEs (Abbink Aviation Consultancy, Airbus, EasyJet, ONERA, Safe-Runway GmbH, Thales), research centres (CSEM, DLR, INCAS, London School of Economics, NLR, University of Lille), and institutions (EASA, ENAC, Eurocontrol, INEA, NASA).

The workshop was complemented by a poster session revolving around these topics, hosting posters by projects such as RETINA, P4, P5 and P7. On this occasion, Future Sky Safety prepared and printed a handout describing the work performed by the technical projects, highlighting the results they achieved and the contribution they brought to the aviation safety research. The handout is now available on the programme website.

The D2.11 "Dissemination material from first Future Sky Safety Public Workshop" [5] details the dissemination materials prepared for the event; these materials, and the presentations made during the workshop, are available on the programme website[1].

2.1.2.2. 2nd Internal Workshop

The 2nd Consortium Workshop was held in Cologne, at DLR Headquarters, on the 6-7th of December, 2017. The workshop, reserved to Future Sky Safety members, was the opportunity to provide them with progress and results to date of the five technical projects, and discuss the latest research developments on the topics they explore. In addition, the workshop focused on offering a vision for future exploitation possibilities and on providing the 38 FSS partners taking part in the event with a chance for networking.

[1] https://www.futuresky-safety.eu/1st-future-sky-safety-public-workshop/

Each technical project provided three presentations; a poster session complemented them. The posters and the presentations are now available on EMDESK[2].

Additional copies of the handout were printed for this workshop; in addition, each participant received a save-the-date for the next Public workshop that will be held on the 6-7th of November 2018. The D2.13 "Dissemination material from second Future Sky Safety Internal Workshop" [6], to be released at the end of January 2018 will report on the materials produced for this workshop.

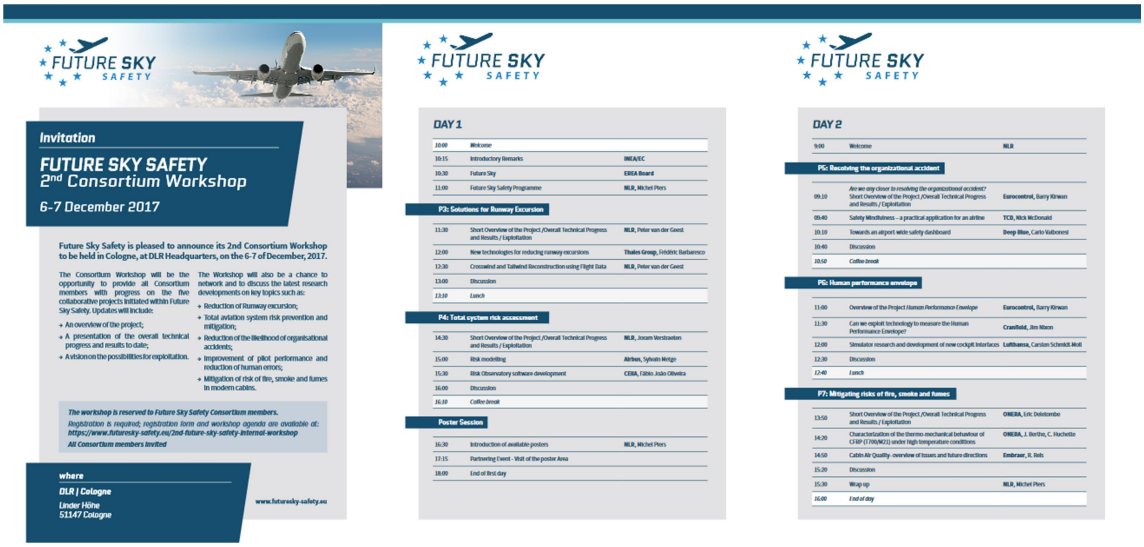

Figure 1: Invitation and agenda for the 2nd Internal workshop

[2] In the Workshops Dissemination → Internal Workshop 2 (T37) folder.

Figure 2: Save-the-date for the 2nd Public workshop

2.1.2.3. Future Events

Table 3 lists the next events Future Sky Safety plans to organise.

Table 3: Next events by Future Sky Safety

Location and date	Event	Project
Spring 2018	Final event	P6
Summer 2018	Internal workshop	P6
6-7/11/2018 Brussels, Belgium	Final Future Sky Safety Public Workshop	All the projects

2.1.3. Other dissemination actions towards key aviation stakeholders

2.1.3.1. Netherlands National Advisory Group on Cabin Air

P7 met with the Netherlands National Advisory Group on Cabin Air to present them with general information on FSS and specific information on the project's results about research on cabin air. This meeting was the occasion to meet the Advisory Group of the Ministry of Infrastructure and Environment and representatives of the stakeholders involved in the Advisory Group.

2.1.3.2. Presentation to key aviation stakeholders

On the 30th of November, 2016 P5 presented the work on safety culture performed by the project to six key aviation stakeholders: Luton Airport, EasyJet, IDDS, Airbus, Menzies and NATS.

The scope of the meeting was to present them their individual safety culture results and the ECA study results, and to give feedback on six independent surveys. Twelve people representing the different organisations were present. The event led to the formation of the Luton Safety Stack. So far, four workshops with 15 organisations at Luton Airport are working together on safety (e.g. via harmonisation of ground handling activities).

2.1.3.3. Webex with EASA and CANSO

On the 20th of January, 2017 P5 held a Webex with EASA and CANSO on safety culture in regulations. During the Webex, pros and cons of regulating safety culture, and best practise in

safety culture measurement were discussed with 10 people, mainly from EASA plus one CANSO representative.

The scope of this action was to inform the EASA and ICAO working panels on the issue of regulating safety culture. The conversation had an impact on EASA's safety promotion strategy, leading to the inclusion of insights from the P5 European Cockpit Association (ECA) survey into EASA guidance on risk identification with new business models (e.g. low cost airlines).

2.1.3.4. 10th International Center for Applied Computational Mechanics (ICACM)

Future Sky Safety sent an abstract to the *10th International Center for Applied Computational Mechanics (ICACM) "Dynamic Damage, Fracture and Fragmentation of Materials"* conference, held in Walton Beach (USA) on the 17-19th of May, 2017.

Although no results were presented, the FSS framework was mentioned to the 100 people audience in the summary of the event, now available on the University of Florida's website.

2.1.3.5. Presentation to the EUROCONTROL Safety Team

On the 12th of October, 2017 P5 held a presentation on the safety dashboard work (WP1) to European ATM safety directors and managers (EUROCONTROL Safety Team). Forty people took part in the presentation.

This action aimed for the proposed exploitation work to generate a prototype generic dashboard for ANSPs. As a consequence of the presentation, nine ANSPs have signed up to be partners in the Safety Dashboard exploitation activity.

2.1.3.6. ESDU aircraft performance committee meeting

During the second phase of the project, P3 periodically met the *Engineering Sciences Data Unit (ESDU) aircraft performance committee* in London, UK for briefings and updates on P3 activities on flooded runways. The committee meets every two months (the last meeting being on the 27th of September 2017) and is composed by eight members, who requested test data in order to help develop new aircraft performance engineering methods.

2.1.3.7. Meetings with EASA

During the second phase of the project, P4 had three meetings with EASA (the last one occurring on the 4th of October 2017) to discuss FSS P4 and Data4Safety projects.

2.1.4. 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. In line with expectations, compared to the eight papers produced in the first phase of the programme, Future Sky Safety improved the number of papers presented by technical projects to the scientific community in order to present preliminary or final results.

Table 4 illustrates the scientific publications produced during the second phase of the programme.

Table 4: Scientific publications

Event/Journal	Title	Author(s)	Project	
14th International Conference and Exhibition on Fire Science and Engineering (INTERFLAM2016) 4-6 July, 2016	Analysis of delamination onset and growth induced by laser decomposition within carbon/epoxy composite laminates	Leplat, G., Huchette, C., Mavel, A., Nunez, P.	P7	Link
CRA Risk Forum 6-7 October, 2016	Pushing the human performance envelope - simulating challenging scenarios for pilots	Kirwan, B.	P6	
6th EASN International Conference on Innovation in European Aeronautics Research 18-21 October, 2016	Development of the Human Performance Envelope Concept for Cockpit Operations	Silvagni, S., Graziani, I., Berberian, B., Grossenbacher, O., Kirwan, B., Le Blaye, P., Lemkaddem, A., Napoletano, L., Rognin, L., Valbonesi, C., Wies, M.	P6	Link
1st International Cross-industry Safety Conference (ICSC2016) 3-4 November, 2o16	The Risk Observatory: developing an aviation safety data sharing platform in Europe	Verstraeten, J., van Baren, G., Wever, R.	P4	Link

Human Factors in Aviation Safety Conference 13-14 November, 2016	Can behavioural markers be a real support to indicate first signals of performance degradation into the cockpit?	Silvagni, S., Graziani, I., Valbonesi, C., Kirwan, B.	P6	
American Institute of Aeronautics and Astronautics, AIAA AVIATION Forum, AIAA Flight Testing Conference 5-9 June, 2017	Braking Capabilities on Flooded Runways: Flight Test Results Obtained with a Business Jet	van Es, G.W.H.	P3	Link
16th European Conference on Research Methodology for Business Management ECRM 22-23 June, 2017	The Emerging Safety Mindfulness Model: from Concept Definition into Requirements Collection	Callari, T. C., McDonald, N., Baranzini, D., & Mattei, F.	P5	Link
20ème journées nationales sur les composites 2017 28-30 June, 2017	Thermal degradation influence on the effective mechanical properties of CFRPs (Influence de la dégradation thermique des CMO sur les propriétés mécaniques effectives)	Huchette, C.	P7	
16th European Meeting on Fire Retardant Polymeric Materials (FRMP17) 3-7 July, 2017	Extrapolation of thermochemical kinetics from conventional thermogravimetric analysis at very high heating rates for composites	Leplatt, G.	P7	
8th International Conference on Applied Human Factors and Ergonomics (AHFE) 17-21 July, 2017	What the pilots see is what I get: how pilot's gaze can increase the Human Performance Envelope to improve safety	Biella, M., Wies, M.	P6	Link

28th Society of Flight Test Engineers (SFTE) European Chapter Symposium 13-15 September, 2017	NLR's experience with flight testing on wet and flooded runways	van Es, G.W.H., Koks, P.	P3	
7th EASN International Conference on "Innovation in European Aeronautics Research". 26-29 September, 2017	Aircraft Safety Model Development and Integration in a Risk Observatory	Verstraeten, J.	P4	
Joint AIAA and Royal Aeronautical Society (RaeS) Fall Conference on Modelling and Simulation for ATM 14-15 November, 2017	How eye tracking data can enhance human performance in tomorrow's cockpit. Results from a flight simulation study in FUTURE SKY SAFETY	Biella, M., Wies, M., Charles, R., Maille, N., Berberian, B., Nixon, J.	P6	
Cognition, Technology & Work 1-12. 10.1007/s10111-017-0431-5."	Understanding the human performance envelope using electrophysiological measures from wearable technology	Nixon, J., Charles, R.	P6	Link
17th International Multidisciplinary Scientific GeoConference (SGEM 2017) 27-30 November, 2017	Geopolymer Laminate Peel Resistance of Adhesive Bonds with Foam and Honeycomb Cores	Hron, R., Martaus, F., Kadlec, M., Růžek, R.	P7	

2nd International Conference on Innovative and Smart Materials (ICISM 2017) 11- 13 December, 2017	Mechanical Properties of Fibre Reinforced Geopolymer Composites Exposed to Operating Fluids	Hron, R., Martaus, F., Kadlec, M.	P7	

2.1.5. Articles on magazines & press releases

Along with the scientific publications, FSS is expected to produce news, articles and press releases for the general national press, magazines and media, focusing on the benefits of FSS research for the general/non specialised public.

2.1.5.1. Media coverage of the "European pilots' perceptions of safety culture in European Aviation" survey

Following the publication of P5's **report on *European pilots' perceptions of safety culture in European Aviation [7]*** (which surveyed 7,239 pilots from across Europe in an effort to measure their perception of safety culture), Future Sky Safety **received wide media coverage** and was mentioned by a number of online international newspapers:

- The London School of Economics and Science, 06/12/2016
- European Commission, 12/12/2016
- ECA (European Cockpit Association), 07/12/2016
- BALPA (British Airline Pilots' Association), 07/12/2016
- The Telegraph, 06/12/2016
- The Times, 07/12/2016
- The Guardian Conversation, 07/12/2016
- The Daily Mail, 07/12/2016
- The Economist, 08/12/2016
- The Irish Independent, 08/12/2016
- The New Zealand Herald, 08/12/2016
- Travel Weekly, 07/12/2016
- Air & Cosmos International, 07/12/2016
- BlueSky, 08/12/2016
- Londynek, 08/12/2016
- Energy voice, 08/12/2016
- Flying in Ireland, 11/12/2016

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.

Promotional materials illustrate the full programme or the single projects, and vary according to the type of event and objective of the communication. Table 5 **Table 5: Number count of dissemination material produced**illustrates the number count of material produced during the second period of the programme. , Figure 4 and Figure 5 depict this material.

Table 5: Number count of dissemination material produced

Material	Versions	Printed copies	Means of distribution
Brochure	1	Digitally distributed	Website, Internal Workshop, External Events
Flyer	1	Digitally distributed	Website, Internal Workshop, External Events
Posters	12	12	Website, Internal Workshop, External Events
Hand-out	1	140	Website, Internal Workshop, External Event
Presentations	31	Not applicable	External events

Figure 3: Project brochure (2017)

What is FUTURE SKY SAFETY?

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 bring together 32 European partners to develop new tools and new approaches to aeronautics safety, initially over a four year period starting in January 2015. 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

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

Who initiated FUTURE SKY SAFETY?

EREA, the association of European Research Establishments in Aeronautics, launched FUTURE SKY Joint Research Initiatives to prepare the future of aviation beyond the next generation vehicle and air traffic management. FUTURE SKY's overall goal is "Twenty-four Seven". This concept describes the full airside mobility, 24 hours a day, 7 days a week, resilient against any impacts e.g. from disruptive events like extreme weather, in line with the goals laid down by FlightPath 2050. The first Joint Research Initiative: FUTURE SKY SAFETY, initiated by EREA, builds on the European safety priorities and safety challenges.

What Societal Challenge?

FUTURE SKY SAFETY is an innovative research programme, dealing with Aviation Safety. 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 the Safety challenges of the ACARE Strategic Research and Innovation Agenda (SRIA).

The Concept

The collaborative safety research projects in FUTURE SKY SAFETY are built on relevant safety priorities in Europe. Main European safety pillars are defined by ACARE SRIA Safety challenges, EU's Safety Management Policy, and the European Aviation Safety Plan (EASp). The long term aviation vision, issued by the EC as Flight Path 2050, includes safety as one of the most important European priorities: to achieve the highest levels of safety and security to ensure that passengers and freight as well as the air transport system and its infrastructure are protected. The FUTURE SKY SAFETY Programme links the EASp main pillars (operational issues, systemic issues, human performance and emerging issues) to the Flight Path 2050 Safety challenges.

www.futuresky.eu/projects/safety
www.futuresky-safety.eu

e Projects

s seven specific objectives, each addressed in one Project, are:
To coordinate institutional safety research programmes, and connect and drive institutionally funded Safety R&TD by EREA to safety priorities established by the EC in the ACARE SRIA on Safety and Security.
To perform dissemination, exploitation & communication actions, and maximise impact and use of results
To perform collaborative safety research on safety risk priority areas. The priorities and objectives are:

- Solutions for runway excursions. Perform breakthrough safety research, in accordance with European Action Plan for the Prevention of Runway Excursions (EAPPRE) priorities, to enable a significant reduction of runway excursion risk.
- Total system risk assessment. 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.
- Resolving the organizational accident. Reduce the likelihood of organisational accidents in aviation via development and implementation of a Safe Performance System.
- Human Performance Envelope. 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 Human Machine Interface principles, procedures or training.
- Mitigating risk of fire, smoke and fumes. Develop solutions to mitigate fire, smoke and fumes related (fatal) accidents.

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Figure 4: Project flyer (2017)

Figure 5: Project handout (2017)

2.1.7. Website statistics

FSS website (www.futuresky-safety.eu) has been online since April 2015. Statistics on the number of visits to the Programme webpage and surfing behaviour help track and monitor external interest in the project. Website statistics were generated using 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 video.

2.1.7.1. Overview of visits

Starting in July 2017, the Google Analytics tracking code stopped functioning. P2 noticed the malfunction in early September and fixed it by mid of October. In order to offer a more realistic overview of website statistics, below two sets of data are provided: in the left column, real raw data deriving from existing statistics (covering 13 months); on the right, estimated data obtained by projecting the monthly average on all the 18 months that constitute the second phase.

Table 6: Visits overview

Parameter	Raw existing data (covering 13 months)	Estimated data for the whole period (projected on 18 months)
Sessions	3205	4191
Users	1850	2439
Page views	9321	12.189
Pages/session	2.91	≈ 2.97
Avg. Session duration	2:54 minutes	≈ 3:06 minutes
Bounce rate	47.93%	≈ 47%
% New sessions	56.66%	≈ 58%

Figure 6 provides a visual overview of visits statistics.

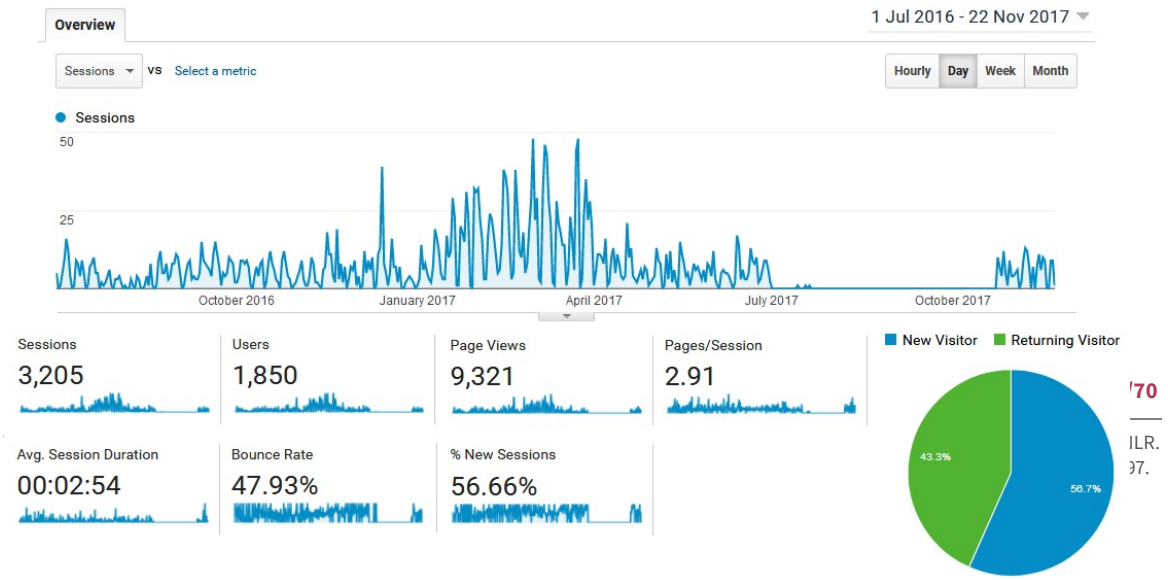


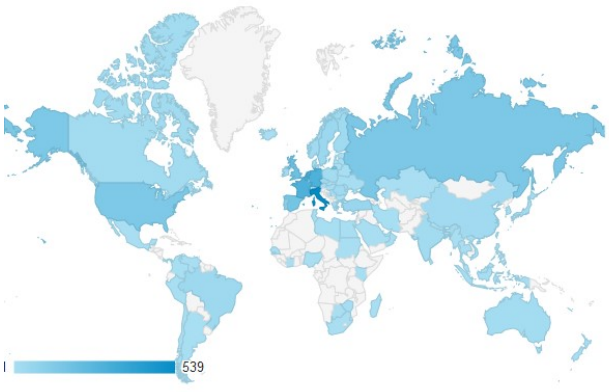
Figure 6: Visits overview (01/07/2016-22/11/2017)

- 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 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. The objective set for the second period of Future Sky Safety is 1 minute.
- 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%.
- % New Sessions is the percentage of first-time visits (from people who had never visited the website before).

The number of visits to the website (3205) doubles the defined goal of 1500 visits. In addition, the goal of having at least the 30% of new sessions was reached.

2.1.7.2. Geo-location of visits

The website received visits from 86 different countries (the defined goal was 20). Figure 7 shows the first ten countries for number of visits.



	Country	Sessions	% New Sessions	New Users
1.	Italy	539 (16.82%)	29.87%	161 (8.87%)
2.	Belgium	313 (9.77%)	66.13%	207 (11.40%)
3.	Netherlands	308 (9.61%)	70.45%	217 (11.95%)
4.	Germany	297 (9.27%)	62.96%	187 (10.30%)
5.	France	294 (9.17%)	52.04%	153 (8.43%)
6.	United Kingdom	196 (6.12%)	66.84%	131 (7.21%)
7.	Spain	173 (5.40%)	51.45%	89 (4.90%)
8.	Russia	149 (4.65%)	35.57%	53 (2.92%)
9.	United States	143 (4.46%)	78.32%	112 (6.17%)
10.	Portugal	97 (3.03%)	40.21%	39 (2.15%)

Figure 7: Users geo-location

2.1.7.3. Source of visits

Table 7 illustrates where website traffic directed to FSS website originates.

Referral traffic comes via a link from other sources that are referring Future Sky Safety website, like other websites, blogs, articles, and so on. Direct traffic occurs when people directly type the website's name in the URL box. Organic Search traffic generates as a search engines result. Social refers to visit deriving from links put on Social Media.

Compared to the previous period, there was an increase in Organic Search, which is now the first source of visits. Overall, visits are equally distributed between Organic, Direct and Referral source. Referral visits had a huge diminishing as the Ghost Traffic Attack[3] ceased, while the Social source had a significant rise (with visits mainly coming from Twitter, followed by ResearchGate, LinkedIn and Facebook).

Table 7: Channels

Channel	5568 Sessions	3205 Sessions
Organic Search	9.55% (532)	33.07% (1060)
Direct	42.74% (2380)	32.44% (1040)
Referral	47.11% (2623)	30.35% (973)
Social	0.59% (33)	4.11% (132)

[3] Starting at the beginning of 2015, Future Sky Safety's Google Analytics data were affected by a new online spam wave, known as Ghost referral traffic or Ghost referral spam. The attack distorted Google Analytics data making them appear worse than they actually were (for further details, see Future Sky Safety D2.2 "1st release of Communication Strategies and Dissemination Plan", June 2015).
However, the attack seems to have ceased before the second phase of the programme started, therefore data presented here are to be considered not affected by the Ghost referral spam.

2.1.7.4. Keywords

The position of the website on Google when looking for "Future Sky Safety" was checked with a specific tool, the "Google Ranking Check - Ajax Release 3.1". The position is in line with expectations, showing FSS as second result. Additional information regarding Search Engines can be derived from the list of keywords used by users to reach the site (see Table 8).

Table 8: Most used keywords

Keywords
Future Sky Safety / Future Safety Sky / futureskysafety
Aerodays 2017
Aviation white paper
Big data EUROCONTROL
Download Future Sky
INEA Future Sky Safety
EU Future Sky Safety
EUROCONTROL 1st Future Sky Safety public ws
European Commission DG RTD Future Sky Safety
Future Sky h2020 / Future Sky Horizon 2020 / Horizon 2020 Future Sky Safety
Future Sky Safety flyer
Future Sky Safety programme
Solution for runway excursions
Team Future Sky دانلـــود
Thales runway symposium DGAC STAC
Thesis on causes/solutions of aircraft accidents Future Sky Safety

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.

The assessment of the qualitative criteria must be performed via a comparison between the different programme periods, as the objective is achieved if there is an evolution throughout time.

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. Analysing the communication activities (both the kind of events attended and the products created to be brought at those events), it appears that the key messages did evolve. As expected, the projects engaged in a process to communicate more specific and technical information than before, focusing on promoting their (preliminary or more consolidated) results instead of just publicising their research. Overall, the desired messages were disseminated for the programme and each of its projects.

The distribution of the target audience was expected to change during time as well, following the evolution of the communication goal from raising audience awareness to ensure dissemination impact. P2 monitored this evolution by keeping track of the audience attending the events where FSS was presented and the events organised by the programme itself. Again, the target audience evolved as expected, shifting more and more towards the specialised audience and decision makers.

Finally, an evolution in the target audience's reactions to FSS communication was 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, invitations to third parties events, invited speeches and re-use or exploitation of FSS results into personal or political research agendas indicate a progressive interest and involvement of stakeholders into the Programme activities. Examples of this engagement are given by FSS's participation into the UK ESDU aircraft performance committee and into the Netherlands National Advisory Group on Cabin Air, the establishment of the Luton airport safety stack, and the different meetings with EASA that, in the end, had a direct impact on EASA's safety promotion strategy.

Overall, the desired changes were achieved for all the three qualitative criteria, as defined by D2.5.

2.2.1. Impact on EASA's safety promotion strategy

In August 2017, EASA published a practical guide to the management of hazards related to new business models of commercial air transport operators.

This guide was developed by a group of dedicated safety management managers from Europe's airline industry as part of EASA's safety promotion strategy. It includes a number of easy to use and practical examples for Safety Management Systems managers for hazard identification and management in five areas:

- outsourcing of safety critical services,
- leasing agreements,
- interoperability, where several airlines belong to the same parent company or holding,
- different employment models within the airline,
- increased mobility & turnover of pilots.

Future Sky Safety's P5 contributed to this document: section 3.3 of the EASA practical guide, dedicated to how different contractual arrangements amongst crews impact on the operator's safety culture and affect the number of reports of occurrences obtained by an operator, fed on the 'ECA' safety culture survey [8] to which P5 contributed.

2.3. KPIs achievement rate

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. These parameters were first set in the Criteria for Assessment of Dissemination Activities [1] and then revised in the 1st Dissemination Assessment [2].

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 relevant third parties events attended by the projects was reached fully (32/30+); and so was the number of presentations given to third parties relevant events (31/30+). The number of contacts interacting and asking for information about FSS during events was deemed satisfactory and in line with expectations. Several questions, clarification requests, networking activity and contact exchanges followed each presentation.
- The number of posters presented to third parties events, instead, was very low, compared to the goal (1/6). Therefore, corrective actions are required to P2, like supporting the technical projects in identifying key messages/main achievements to communicate, supporting posters design and reminding to promote dissemination actions. Similarly, the distribution of printed materials (e.g. flyers, brochures) did not meet expectations (>50/500). The main reason for this was the will to print less paper and make materials available in digital format on the project's website instead.
- The number of articles submitted to relevant conferences/events was reached (15/15+); among these scientific articles, at conferences or as open access publications, one is an academic publication on a journal.
- The number of articles on sector magazines, instead, was reached thanks to the wide media coverage of P5's report on European pilots' perceptions of safety culture in European Aviation.

- As for the numbers of press releases, it was met (3/3) due to the press coverage on the survey conducted by P5 on European pilots' perceptions of safety culture in European Aviation. Both general and targeted press covered the survey. In addition, communication of the FSS Public Event was made through the EC communication channels.
- There are currently more than 100 stakeholders in the mailing list (the goal was 100+).

As for the internal activities:

- The number of FSS Internal Workshops was reached (1/1), as was the number of FSS PMC (6/6). During the Workshop, each project gave three presentations, thus exceeding the goal set. Regarding the number of participants at FSS internal events, 63% of partners (companies) attended (63/75%).
- With regards to the focused internal seminars, P1 held 2 seminars and P7 organised 1 mini-symposium (3/10). However, each project held a series of teleconferences whose total number largely exceeds the ten planned.
- The expected external workshop was successfully organised, and the objective for the number of invitations (50+) was met. The number of external participants was not met (27/40+), even though 47 of them had confirmed their participation shortly prior to the event. The same applies to the number of partners participating to the event (55%/75%); therefore, in the future a corrective action has to be implemented in order to ensure higher participation. Three presentations per project were given at the external event, thus exceeding the goal of 1 per project; also the objective for external parties presentations was met (5/4+). The number of printed materials distributed (480/500+) was also in line with the target. Number of printed material from third parties should be improved in the next Public Workshop, as there was only one copy of a poster (1/50+) produced by a third party.
- As for the feedback received with regards to the public event, the objectives were met. Feedback received will be taken into consideration when organising the next Public event. The objective on the audience distribution (to have 70% of specialized audience & 30% of decision makers) was also met, with the presence of a 76% of specialised audience and 24% of decision makers respectively.

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; so was the objective set for visitors' behaviour, with an average time spent on the website of more than three minutes.
- As for downloads of public documents (30+), the number of visits to the download page is over 600. This is not the number of times contents have been downloaded, but the number of visits received by the page, which serves as a yardstick of the interest raised by downloadable contents.

- The programme video was displayed during the last Aerodays2015, which were attended by 1000 delegates; website statistics (combined with views on Youtube) suggest that it received the number of views expected (200+).
- The goal of publishing at least 1 news item every two weeks on average was reached in quantity, even though the distribution of news related to events was not homogeneous throughout the year.

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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, since the second release has not yet been issued. 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 each technical WP. At the first release of the Exploitation Plan the exploitation measures defined were 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. At the second release of the Exploitation Plan a more accurate prediction of exploitation potential for each project will be presented, where an exploitation strategy is presented and exploitation actions are detailed for the fourth year of the project, including budget needs for an adequate implementation.

During the second assessment period (M18-M36), a stronger involvement of external stakeholders and end-users was made. This stronger involvement was achieved mainly through public presentations of intermediate and final project results. These were made to airliners and other attendees at international congresses and conferences. In some cases, dedicated presentations to end-users, including in specific cases CEOs and COOs, were made which allowed for a first result exploitation even at low maturity stages.

During the last period of the project (M36 – M48), specific exploitation actions are planned which are included in the second release of the Exploitation Plan. These planned exploitation actions to take place during the last year of the project will be performed around the final project results which include innovative technologies, processes and operations.

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P3 Exploitation Assessment M18-M36

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. Additional presentations have been made at public conferences such as the EASA FDM conference, the American Institute of Aeronautics and Astronautics AIAA conference, the conference of the Society of Aircraft Performance and Operations Engineers, and the annual conference of the European Society of Flight Test Engineers. The attendees at these
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; FDM software providers	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. FDM software providers will finally be resposinble of ingerating the new algorithems in their software products used by airlines.	conferences varied from aircraft performance experts from airlines, aviation regulators, aircraft manufacturers and research institutes.
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.	

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P4 Exploitation Assessment M18-M36

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.	
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.	

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P5 Exploitation Assessment M18-M36

P5				
Result	***Estimated exploitation***	***Impacted users***	***Exploitation measures***	***Assessment***

Safety Intelligence	Guidance documents and electronic media with industry involvement A safety dashboard prototype system developed for air navigation service providers. Guidance for middle managers on safety intelligence and leadership.	Top management of airports, airlines and ANSPs Safety managers (SDB) and executive boards. Middle managers in aviation organisations (managers who manage other managers).	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 aim is to see different ANSPs use safety dashboards at their executive board level, as well as a safety dashboard for the LTN Stack. A white paper on SDB usage will be produced. A white paper on guidance for middle managers will be developed.	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. 5 ANSPs have helped FSS develop safety dashboard guidance and a further 9 ANSPs will work with P5 to develop a safety dashboard prototype. 48 middle managers have been interviewed from 10 aviation organisations leading to a model and associated guidance.

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Safety Emergence	Guidelines for "safety mindfulness"	Operational layer of airports, airlines and ANSPs Pilots, ATCOs, and in the future potentially ground handlers and other operational staff and their supervisors.	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'. An 'App' is being developed and applied with the Maastricht Upper Airspace Centre (MUAC) and Alitalia ground handlers.	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. The App should energise safety information sharing at the operational layer reaching up into middle management.

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Safety Culture	Improving the general awareness through workshops, etc.	Airports, airlines and ANSPs, and airport organisations as well as airframe manufacturers.	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. SC surveys have now occurred with pilots, 2 major airlines, Airbus design and Boeing Europe, and the LTN Stack, which started with 6 surveys and now involves 15 organisations. A white paper will be developed showing how surveys can proceed, and highlighting the Stack concept as the next logical evolution of safety culture in aviation.	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 crisis decision-makers; European Aviation Crisis Coordination Cell (EACCC), Airbus, ENAV and LFV.	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. The agile Safe Performance System produced could be adopted by ATS organisations and mapped onto their operational management structure, processes and working arrangements. Guidance wil be produced on how to challenge organisations and crisis exercises to lead to better organisational resilience and preparedness for pan-European crises.	This is still a work in progress, as it has taken a lot longer than planned to gain access to these kinds of crisis simulations.

P6 Exploitation Assessment M18-M36

P6				
Result	***Estimated exploitation***	***Impacted users***	***Exploitation measures***	***Assessment***

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Sensors for Human Performance Envelope (HPE) measurement	Workshops Evaluation in a test environment Evaluation in real time flight simulation experiments	Pilots	Exploitation measures will focus mainly on testing technology and methods with users. Thus, a workshop will be organized with pilots, Human Factors experts, and system designers to gain input for scenario development. The relevant phase of flight (e.g. descent, approach, and landing) and simulation environment (e.g. type of aircraft) will be defined. Furthermore, possible incidents and degradation (e.g. input from pilot experience for pilot task analysis; data from experienced pilots; in-depth case studies) will be identified. Subsequently, the relevant flight tasks and their characteristics for the simulator trials will be identified. The impact will primarily be through improved training and operational practices. Finally, simulator experiments will be conducted with pilots to measure and validate the Human Performance Envelope.	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.

Development of Human Machine Interfaces (HMI) for augmentation of the Human Performance Envelope	Evaluation in a test environment	Pilots Aircraft manufacturers System developers	The new HMIs will be exploited through an evaluation in a test environment. Furthermore, requirements for future design concepts for 2035 and 2050 will be identified in order to support pilots in presence of unexpected hazards and in order to identify further possibilities for augmenting the Human Performance Envelope.	Lufthansa, Thales, Airbus and Boeing, 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.
Prototype for evaluation of the New Human Machine Interfaces	Evaluation in real time flight simulation experiments	Pilots Aircraft manufacturers System suppliers	A flight simulator environment will be used for evaluation of the effectiveness of the new HMI. Thus, exploitation activities will include second 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.	

P7 Exploitation Assessment M18-M36

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 Passengers 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
New material solutions	Propose new solutions to mitigate risk of fire, smoke and fumes in Cabin (*)	Passengers Aircraft Manufacturers	Structural prototype with new material solutions, to evaluate TRL and maturity level, confirm cost-benefit elements, identify transfer difficulties to industry.	Aircraft Manufacturers involved in exploitation measures (LEONARDO)

(*) Exploitation measure still waiting for budget approval.

4 CONCLUSIONS AND RECOMMENDATIONS

Overall, the performance of the Programme in its second phase was more than satisfactory.

The quantitative KPIs' achievement rate highlights that most of the activities have been accomplished as planned, in some cases even exceeding expectations.

The Google Analytics shows that the website is in good health; the project reached its objectives and the publication of news has improved compared to the first period. FSS needs to continue keeping the website up-to-date, in terms of news/events published and material uploaded (e.g. deliverables, dissemination materials) as it is the main mean of communication for different audiences.

With regard to external events, FSS took part in a number of them, meeting the ambitious goal set. On the other hand, in order to improve effectiveness of the communication, the Programme could customise dissemination materials to the events attended.

The internal event workshop surely raised stakeholders' interest, leading to a high number of registered participants and to a much appreciated public event. In the future, FSS should further widen external participation in order to ensure an even more effective communication.

As for the qualitative criteria, they were met as well.

The analysis of the communication activities shows that key messages conveyed by the Programme did evolve in time, just like it was expected. The technical projects started communicating more specific information than before, focusing on promoting the results of their research; overall, the desired messages were disseminated for the programme and each of its projects.

The distribution of the target audience evolved as well, shifting more and more from the general audience towards specialised experts and decision makers.

Finally, an evolution in the targeted audience's reactions was also expected, and reached, as a sign of the effectiveness of the different dissemination activities. Stakeholders' engagement at a personal or even political level was clearly achieved; therefore, the desired changes were accomplished for all the three qualitative KPIs established to monitor the effectiveness of FSS dissemination.

P2 should put special attention into the organisation of the last Public Workshop, as it is a major dissemination event for FSS and the occasion to spread its results widely. It is necessary to improve external participation and, also, to involve third parties as active contributors to our event (e.g. asking them to submit posters, to bring brochure and flyers of relevant projects etc.). In order

to have a proper number of external participants at the final Public workshop, it is recommended that P2 implements a mailing list by collecting from Project leaders stakeholders' contacts. On the other hand, all companies in the Consortium should be encouraged to attend the internal events.

5 REFERENCES

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

[2] Future Sky Safety D2.8 “1st Assessment of Dissemination and Exploitation Activities”, June 2016

[3] Future Sky Safety D2.4 “1st Release of Exploitation measures”, June 2015

[4] Future Sky Safety D2.5 “Criteria for Assessment of Dissemination Activities”, October 2015

[5] Future Sky Safety D2.11 “Dissemination material from first Future Sky Safety Public Workshop”, January 2017

[6] Future Sky Safety D2.13 “Dissemination material from second Future Sky Safety Internal Workshop”, January, 2018

[7] Future Sky Safety D5.4 “European pilots’ perceptions of safety culture in European Aviation”, December 2016.

[8] London School of Economics (LSE) / EUROCONTROL “European pilots’ perception of safety culture in European Aviation”.

Appendix A Compliance to KPIs for the Second Period

External activities						
Indicator	***N***	***Target per period (M18-M36)***		***Means of monitoring***	***Responsible(s)***	***Corrective actions (P2)***
		Expected	***Reached***			
Relevant third parties events attended	E1	30+	32	Running total per period	P1, P2, P3, P4, P5, P6, P7	• Identification of relevant events to be attended • Periodic reminders to promote dissemination actions
N° of presentations given to third parties relevant events	E2-a	30+	31	Running total per period	P1, P2, P3, P4, P5, P6, P7	• Periodic reminders to promote dissemination actions • Collect business cards of people asking for information
	E2-b	At least 40% of participants (<50 people-event) Less than 30% of participants (>50 people-event	Reached	Number of contacts asking for information during/after the event		
N° of posters presented to third parties relevant events	E3-a	At least 6	1	Running total per period	P1, P2, P3, P4, P5, P6, P7	• Support the identification of key messages/main achievements • Support posters design • Periodic reminders to promote dissemination actions • Collect business cards of people asking for information
	E3-b	30% of participants (<50 people-event) Less than 25% of participants (>50 people-event)	Reached	Number of contacts asking for information during/after the event		

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N° of articles submitted to relevant conferences/event; N° of academic publications	E4-E5	At least 15	16	Running total per period	P3, P4, P5, P6, P7	• Support the identification of key messages/main achievements • Periodic reminders to promote dissemination actions
N° of articles on sector magazines	E6-a	At least 5	6	Running total per period	P1, P2, P3, P4, P5, P6, P7	• Establish contacts with the main sector magazines • Support the identification of key messages/main achievements according to the magazine style and target • Ask for EC or EC communication channels support (e.g. TRIP) • Ask for EREA communication channels support
	E6-b	2+	2	Targeted magazines		
N° of printed materials	E7-a	500+	>50	Running total per period Mapping printed material/event	P2 (printing) P1, P2, P3, P4, P5, P6, P7 (distribution)	• Distribution of the printed material to the other projects • Identification of the proper material according to the event type • Promotion of new materials according to the event goals • Periodic reminders to promote materials distribution • Collect business cards/names of people asking for information
	E7-b	30% of participants (<50 people-event) Less than 25% of participants (>50 people-event)	Not assessable	Number of contacts asking for information during/after the event		
N° of Press releases made	E8-a	At least 3	3	Running total per period	P1, P2, P3, P4, P5, P6, P7	• Establish contacts with press • Support the identification of key

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	E8-b	2+	3	Targeted press		messages/main achievements • Ask for EC or EC communication channels support (e.g. TRIP) • Ask for EREA communication channels support
N° of stakeholders in the mailing list	E9	100+	100+	Running total	P1, P2	• Collects contacts from the technical projects • Put a subscription form on FSS website to start the mailing list

Internal activities

Indicator	***N***	***Target per period (M18-M36)***		***Means of monitoring***	***Responsible(s)***	***Corrective actions (P2)***
		Expected	***Reached***			
N° of Future Sky Internal workshops	I1	1	1	Count of Workshops	P2	N/A
N° of focused seminars organized by P2	I2	10 focused seminars in total, organised in strict cooperation with the Project Managers	The seminars should be held by the end of the project	Count of Seminars	P2 + Technical projects	• Stimulate the technical projects for the identification of specific topics for the seminars
N° of FSS PMC	I3	6	6	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	63% of partners attended the Internal event (21/33)	Count of participants	P1, P2, P3, P4, P5, P6, P7	• Promote the partners participation through direct involvement in the event activities

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N° of presentations given at internal events	I5	At least one per project	Three 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+	50+	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	55% of partners attended the external event (55/75%)	Count of partners per workshop	P2	• Set up a list of backup contacts • Mandatory participation for project partner or direct involvement in the event activities
	I8-b	40+ external participants	27	Count of participants per workshop		
N° of presentations given at external events	I9-a	At least one per project	Three per project	Count of project presentations	P1, P2, P3, P4, P5, P6, P7	N/A
	I9-b	4+ from external parties	5	Count of external presentations		
N° of printed materials	I10-a	500+	480	Running total Mapping printed material/event	P2 + P3, P4, P5, P6, P7	• Promote the use of dissemination material to the project partners • Identification of the proper material according to the event type
	I10-b	50+	1	Printed material from third parties		

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N° of materials submitted from third parties	I11	10+	1	Running total	P2	• Periodic reminders to promote dissemination actions
N° of feedbacks received during/after events	I12-a	30+ on average per event	30+ (both in person and via feedback questionnaire)	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 • Send out on-line questionnaires to the participants to collect their feedback after the event • 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	Feedback are being used to plan the next external event	Counting of follow up actions (documents update, email exchanges etc.)		
	I12-c	40% of external audience is keen on the project	At least 40% of external audience positively impressed	Number of interactions and events attendance		
External audience distribution	I13	70% of specialized audience & 30% of decision makers	76% specialised audience and 24% 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

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Website						
Indicator	***N***	***Target per period (M18-M36)***		***Means of monitoring***	***Responsible(s)***	***Corrective actions (P2)***
		Expected	***Reached***			
N° of visits to the website	W1	1500+ visits per period and 30% of them must be exclusive visitors	< 4000 visits; 59% are exclusive visitors	Google Analytics statistics	P2	• Promote the website link on other portals • Increase the third parties website linking to FSS website • Promote the website during the External Workshop and third parties events • Website link reported on all dissemination materials
Search engine position	W2	At least second result, when looking for "Future Sky Safety"	Second result	SEO tools	P2	• Improve website visibility through keywords analysis • Improve website visibility through SEO activities
N° of news on the website	W3	At least 1 news every two weeks (36)	36	Running total per period	P2	• Periodic collection of materials from the other projects • *Increase the number of news not related to events*
Countries' visitors	W4	At least 20 different Countries per period	86 different Countries	Google Analytics statistics	P2	• Promote the website link on other portals • Promote the website during international meetings and/or with non-EU stakeholders

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Visitors' behaviour	W5	Average Time on Page at least 1 minute	Average Time on Page 2:54 minutes	Google Analytics statistics	P2	• Create links between pages to facilitate the website exploration • Average Time on Page at least 1 minute
N° of downloads of public documents	W6	30+	587 visits	Use the number of visits to the download page as a rough measure to track downloads.	P2	• Improve documents research through use of keywords • Publish news when a new document is uploaded
Number of views of project videos	W7	200+	>200 (80 views on the website; 132 views on YouTube)	Youtube counter	P2	• Promote the video link through the website • Promote the video link on other portals • Promote the video link during external events • Promote the video link on other portals, such as Youtube, which has a counter

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Appendix B FSS Foreseen Scientific Outputs

Proj.	WP	Lead-author	Co-authors (expected)	When	Working title	Journal/conference
P6	WP 6.4	CRANFIELD	-	Submission 2018		*Applied Ergonomics*
P7	WP 7.2	DLR	TBD	2018	Compression under Fire behaviour of Fibre Metal Laminates	*Journal TBD*
P7	WP 7.2	DLR	TBD	2018	Compression under Fire behaviour of Fibre Metal Laminates	*Conference, e.g. MSE, September 25th - 27th 2018, Darmstadt*

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