



Project No. 605007



## **PROMO-AIR**

Promoting Aeronautics Innovation and Research

# **Final Report**

May 1<sup>st</sup> 2013 – April 30<sup>th</sup> 2015





## Table of Contents

<b>1</b>	<b>EXECUTIVE SUMMARY</b> .....	<b>4</b>
<b>2</b>	<b>PROJECT CONTEXT &amp; MAIN OBJECTIVES</b> .....	<b>5</b>
<b>3</b>	<b>MAIN S&amp;T RESULTS/FOREGROUNDS</b> .....	<b>8</b>
3.1	WP2: INFORMATION SURVEY AND ANALYSIS.....	8
3.2	WP3: DIGITAL MATERIAL PREPARATION.....	15
3.3	WP4: DISSEMINATION.....	22
<b>4</b>	<b>IMPACT</b> .....	<b>31</b>
4.1	DISSEMINATION ACTIVITIES.....	33
4.2	PROPOSAL FOR FOLLOW-UP ACTIVITIES.....	38



## 1 EXECUTIVE SUMMARY

**Promo-Air – Promoting Aeronautics Innovation and Research** ([www.promo-air.eu](http://www.promo-air.eu)) was a CSA project within the 5<sup>th</sup> call of the European Union's 7<sup>th</sup> Framework Programme (FP7). The project has been prepared in response to the call:

### **AAT.2013.7-3**

*“Communication of EU funded RTD project results to targeted audience”*

CSA-SA-Call: FP7-AAT-2013-RTD-1

Promo-Air primarily aimed at raising the interest of young Europeans and promoting scientific and technical studies and careers in aeronautics and air transport research and industry. In order to accomplish this target, attractive digital educational material has been prepared, by incorporating state-of-the-art research results of past and ongoing Aeronautics and Air Transport related projects. The effective communication and broad dissemination of such material within secondary and engineering schools made the close collaboration of experts of imperative importance. The consortium of Promo-Air fulfilled this requirement by including experts from both the aviation and education sectors. The actions performed, which were also the main objectives of this project, are summarized as following:

- ✓ Identification of representative Aeronautics and Air Transport RTD projects, and establishment of a contact point with each one of the selected projects.
- ✓ Analysis and selection of the main research results to be used as input for the educational material.
- ✓ Preparation of digital educational material. The material included: a) films highlighting the cutting-edge technologies of the Aeronautical industry, b) a quiz game giving the opportunity to secondary and technical schools students to explore and interact with the “World of Aeronautics” and c) e-Brochures illustrating the major technological innovations of AAT research.
- ✓ Development of policies for disseminating and communicating the produced educational material through forums, internet, schools & universities.



## 2 PROJECT CONTEXT & MAIN OBJECTIVES

Europe has succeeded to have a relatively large and steadily increasing share of the civil Aeronautics and air transport market. A significant portion of this success should be attributed to the highly skilled aeronautical engineers and researchers, being part of the demanding field of the Aeronautical industry. In order to maintain and further strengthen the competitiveness of Europe in the global market, it is imperative that European Aeronautical sector (industry, research centers etc.) will sustain the volume and quality of aeronautical engineers and researchers on a high level.

During recent years it has been realized that Aeronautics related studies are not considered as “prestigious” as other fields such as medicine, law etc. As a result, the number and quality of engineering students is decreasing with time, to the point where the European Aeronautics industry has a shortage of high quality engineers. **ACARE Human Resources Group (AHRG)** has recognized this problem and has also, among others, identified the following Terms of Reference:

- Ensuring the Future workforce for European Aerospace
- Improve the image of a career in the air transport sector

As it may be seen in Figure 1, the motivation of the next generation to get interested in Aeronautics has been pointed out as one of the main issues to be addressed, during a workshop organized by the ACARE Human Resources Group with the cooperation of the European Commission (EC) in Brussels, on February 25<sup>th</sup> 2010. Amongst the different organizations that have participated in this workshop were Rolls-Royce, Eurocopter, Airbus, DLR, NLR, Dassault Aviation, ONERA, CIRA and others.



Figure 1: Main conclusions of the AHRG workshop

It has been recognized that a potential aeronautics related career should become more fascinating and faced more or less as a “mission” by the European secondary and technical schools students. The “exploration” of the “World of Aeronautics”, by combining fundamental theory and practice, could become the key-factor for motivating the next generation to get interested in this field. It should be mentioned that several Universities in Europe are hosting events on a regular basis, in



order to raise the interest of young students, with very promising results. Representative examples of such events are:

- The “International paper-plane contest Hamburg”. The event was a partnership between the City State of Hamburg, Lufthansa Technik AG and the German Society for Aeronautics and Astronautics (DGLR), attracting the interest of more than 5000 secondary school students in theoretical and practical classes of “Aircraft Design” and “Fluid Mechanics”.
- The “Bremen Rocket Launch Bay”. The event was a partnership of the City State of Bremen, OHB System AG, EADS Astrium and the German Society for Aeronautics and Astronautics (DGLR), attracting the interest of more than 3000 secondary school students in theoretical and practical classes of “Rocket Design”.

**The concept of Promo-Air project was to raise the interest of young Europeans and promote scientific and technical studies and careers in aeronautics and air transport research and industry through the production of attractive educational material, by incorporating state-of-the-art research results of recent and current Aeronautics and Air Transport projects.** The communication of such material within secondary and engineering schools makes the close collaboration of experts of imperative importance. The consortium of **Promo-Air** fulfills this requirement by including experts from both aviation and education. The foreseen actions, which are also the main objectives of this project, are summarized as following:

- Identification of representative Aeronautics and Air Transport RTD projects, and establishment of a contact point.
- Analysis and selection of the main research results to be used as input for the educational material.
- Preparation of digital educational material. The material included: a) films highlighting the cutting-edge technologies of the Aeronautical industry, b) a quiz game giving the opportunity to secondary and technical schools students to explore and interact with the “World of Aeronautics” and c) e-Brochures illustrating the major technological innovations of AAT research.
- Development of policies for disseminating and communicating the produced educational material through forums, internet, schools.

The project activities can be classified into three main areas. These are:



- The collection of information, namely:
  - identification of the project pool for projects to be selected into the scope of Promo-Air,
  - setting up the methodology of an objective and comprehensive selection,
  - selecting at least 20 projects for processing,
  - creating the communication messages to be transferred via the dissemination material
  - Creation of digital products, including:
    - translation of the messages into working material (filming scripts, game specification, etc),
    - creation of films, 2d and 3d animations accordingly,
    - creation of presentations and e-brochures
    - creation and testing of a web-enabled quiz game
    - Dissemination, such as:
      - Distributing the material created
      - Spreading the information about the project itself
      - Promoting and raising interest in the quiz game

Proper validation steps have been included throughout the overall project process. Since there was complete dependency between the Work Packages of specification and production, validation steps were built into each of the WPs so that output delivered to an upstream WP can be considered as fully validated and usable by the upstream WP.

The quality of the output was further enhanced by ensuring that products in the development phase were checked by experts and when they reach a mature stage, another validation was carried out by another set of people representative of the intended final user community (e.g. students). The feedback received was then used to improve the products before finalization.



### **3 MAIN S&T RESULTS/FOREGROUNDS**

This section will provide information about the main S&T results achieved during the whole period of the project. The results will be presented for the "technical" work packages, namely WP2, WP3 & WP4

#### **3.1 WP2: Information Survey and Analysis**

The main objective of the work package was, firstly to ensure a routine interaction with the Input Group (i.e. a group which will consist from the coordinators or the dissemination managers of the selected projects. The Consortium will communicate them continuously during the compilation of the projects materials) and then to prepare the input information for WP3 and WP4. The objective was achieved in a step by step manner. First of all the appropriate projects in terms of their input were selected using various criteria. To achieve efficient work flow and balanced end results, a simple and consistent methodology was created and applied. . The application of this methodology has led to the selection of the most suitable and interesting projects for creating educational material for the Promo-Air project. .

The leaders / dissemination managers of the selected projects were contacted and the input materials were collected while the Input Group was established.

The analysis of the collected material made it possible not only to formulate the short well aimed messages for the target group, but also to decide upon the topics and media to be used for the particular topics.

This work package provides general information for the whole project. In the first Task the most promising projects of the FP7 which were considered to have the potential to catch the interest of the high-school students, were analysed. A careful and strategic selection has taken place by the Promo-Air consortium, leading to the ultimate assortment of 20 consortiums. After the compilation of the Project list, the Consortium contacted the leaders/ dissemination managers of these projects who formed the Input Group. The goal of the Input Group was to assist the Promo-Air Consortium's work towards the compilation of the project's main message and forms of dissemination. With the help of the Input Group, the Consortium decided upon the ways and content of dissemination for each selected project. In what follows the main results are briefly described.

The pre-selected projects were evaluated by a dedicated score system taking into account the following parameters:

- Number of Partners



- Geographical coverage within the EU countries
  - Number of different represented EU countries
  - Geographical distribution of the different countries
- Type of outcome
  - Website
  - Films
  - Animations
  - Photos
  - Demonstrators
  - Flyers/posters
  - Presentations
- Attractiveness of research results

A ranking list of all 187 FP7 AAT projects has been created based on the above mentioned score system. In order to create the preliminary list of projects (**D2.1**) the first 25 ranked projects have been included, as depicted in the following table.

ACRONYM	ACTIVITY	1 TECHNICAL FIELD
SARISTU	Improving Cost Efficiency	Aero structures and Materials
ALICIA	Increasing Time Efficiency	Avionics, Human Factors and Airports
MAAXMUS	Improving Cost Efficiency	Aero structures and Materials
CRESCENDO	Improving Cost Efficiency	Design Too/s and Production
LEMCOTEC	The Greening of Air Transport	Propulsion
HIRF SE	Protection of Aircraft and Passengers	Systems and Equipment
OPENAIR	The Greening of Air Transport	Noise and Vibration
SCARLETT	Ensuring Customer Satisfaction & Safety	Systems and Equipment
GABRIEL	Pioneering the Air Transport of the Future	Breakthrough and Novel Concepts
TITAN	Increasing Time Efficiency	Avionics, Human Factors and Airports
ACROSS	5th Fp7 Call	Avionics, Human Factors and Airports
SANDRA	Improving Cost Efficiency	Systems and Equipment
DREAM	The Greening of Air Transport	Propulsion
GREEN-WAKE	Ensuring Customer Satisfaction & Safety	Systems and Equipment
2050AP	Pioneering the Air Transport of the Future	Breakthrough and Novel Concepts
ACTUATION2015	Improving Cost Efficiency	Systems and Equipment



ACRONYM	ACTIVITY	1 TECHNICAL FIELD
ATOM	Protection of Aircraft and Passengers	Avionics, Human Factors and Airports
AirTN-FP7	Cross Cutting Activities	Cross-cutting activities
ASSET	Increasing Time Efficiency	Avionics, Human Factors and Airports
ESPOSA	Improving Cost Efficiency	Propulsion
ALFA-BIRD	Pioneering the Air Transport of the Future	Propulsion
MAAT	Pioneering the Air Transport of the Future	Breakthrough and Novel Concepts
PPLANE	Pioneering the Air Transport of the Future	Breakthrough and Novel Concepts
HAIC	5th Fp7 Call	Design Too/s and Production
X- NOISE EV	The Greening of Air Transport	Noise and Vibration

Since some of the projects were already finalized without any resources to provide communication materials and relevant animations, Promo-Air consortium ended up with a restricted list of 20 projects, having confirmed their interest for collaboration and their provision of suitable materials.

The final list is detailed in the table below:

#	ACRONYM	TOTAL SCORE	ACTIVITY DOMAIN	TECHNICAL FIELD
1	CLEANSKY			
2	SESAAR			
3	SARISTU (EASN, UPATRAS involved)	16,50265	Improving Cost Efficiency	Aerostructures and Materials
4	ALICIA	16,39228	Increasing Time Efficiency	Avionics, Human Factors and Airports
5	OPENAIR	12,69692	The Greening of Air Transport	Noise and Vibration
6	GABRIEL (SLOT involved)	12,52207	Pioneering the Air Transport of the Future	Breakthrough and Novel Concepts
7	TITAN (SLOT, BLUSKY involved)	12,19395	Increasing Time Efficiency	Avionics, Human Factors and Airports
8	SANDRA (SLOT involved)	12,00513	Improving Cost Efficiency	Systems and Equipment
9	2050AP (SLOT involved)	11,36698	Pioneering the Air Transport of the Future	Breakthrough and Novel Concepts
10	ACTUATION2015	11,27968	Improving Cost Efficiency	Systems and Equipment
11	ESPOSA	11,07192	Improving Cost Efficiency	Propulsion
12	ALFA-BIRD	11,02422	Pioneering the Air Transport of the Future	Propulsion
13	MAAT	10,97181	Pioneering the Air Transport of the Future	Breakthrough and Novel Concepts
14	HAIC (EASN involved)	10,74317	Unclassified 5th Fp7 Call	Design Tools and Production
15	QUICOM (EASN, UPATRAS involved)	10,38591	Unclassified 5th Fp7 Call	Aerostructures and Materials
16	HIKARI (EASN involved)	10,13476	Unclassified 5th Fp7 Call	Breakthrough and Novel Concepts
17	ACFA 2020	10,08512	The Greening of Air Transport	Flight Physics
18	AISHA II		Improving Cost Efficiency	Design Tools and Production
19	ASSET (SLOT in Advisory Board, EuroFast involved))	11,15716	Increasing Time Efficiency	Avionics, Human Factors and Airports
20	PPlane	10,75628	Pioneering the Air Transport of the Future	Breakthrough and Novel Concepts



The results of this task have been documented in detail in deliverables **D2.1** & **D2.2**.

Based on the list of the selected projects the consortium has set up a number of web conferences with the representatives of the projects. On each teleconference the majority of the Promo-Air consortium and one or two representatives of the targeted project were involved.

Main Topics of the teleconferences were as follows:

- Introduction of the Promo-Air project (goals)
- Introduction of the consortium partners (general and relevant competences)
- The willingness of cooperation with the Promo-Air project
- The available promotional or other material that could be used for the creation of the promotional material
- Type of the materials and possible ways of exploitation of the materials
- IPR and copy rights

To ensure the best results after the initial communication there were several follow ups organised in the form of similar web conferences or individual communication via phone or even individual meetings.

In order to prepare high quality educational material, able to catch the interest of young people for the aeronautical and air transport sector, Promo-Air consortium set up an Input Group (IG), consisted of the coordinators and/or the dissemination managers of the selected projects. The goal of the Input Group is to help the Consortium's work with input materials in regard to their project.

Special attention was paid to EDUCAIR and Fly-Higher projects taking into consideration their field of activities and the knowledge accumulated. As their research field is higher education and Aeronautical studies their input has been different from the other projects contacted. Promo-Air project consortium is counting on obtaining valuable information on needs and interests of target group of the project.

The 20 projects selected have been analysed in order to identify pieces of information of potential interest from the perspective of the target audiences of Promo-Air. In this context, deliverable **D2.3** has been prepared, including comprehensive information about the most important results of each of the selected projects, as well as information about the type of dissemination material that has been prepared in the frame of each project.



As an example of the work performed in this task, the analysis of SARISTU project is presented below:

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**Project Acronym:** SARISTU

**Project full title:** Smart Intelligent Aircraft Structures

**Activity Domain:** Improving Cost Efficiency

**Start/End Date:** 01/09/2011 – 31/08/2015

**The Project:** SARISTU is a large-scale integrating project which aims at achieving reductions in aircraft weight and operational costs, as well as improvement in the flight profile specific aerodynamic performance. The project focuses on integration activities in three distinct technological areas: a) airfoil conformal morphing, b) self-sensing and c) multifunctional structures through the use of nano-reinforced resins. Coordinated by Airbus, the SARISTU Consortium brings together 64 partners from 16 European countries.

**High level project objective:** SARISTU focuses on the **cost reduction of air travel** through a variety of individual applications as well as their combination. For the first time ever in smart material concepts, SARISTU offers the opportunity to virtually and physically assess the interaction of different technological solutions and their combined effects at aircraft level.

**Achieved end results:** The following technology streams are in progress:

- Aerodynamic Conformal Morphing
  - a) Enhanced adaptive droop nose for a morphing wing
  - b) Adaptive structural tailoring of trailing edge for enhanced aircraft performance
  - c) Wingtip morphing trailing edge
- Integrated Sensing
  - a) Fibre optic based monitoring system
  - b) Wing damage detection employing guided waves techniques
  - c) Impact damage assessment by self-sensing structures using integrated ultrasonic sensors
  - d) Multi-site damage assessment of CFRP (Carbon Fibre Reinforced Polymers) structures
  - e) Sensitive coating for impact detection
- Multifunction Materials
  - a) Enhancement of primary structure robustness by improved damage tolerance
  - b) Improvement of the electrical isotropy of composite structures



- *Integration and Validation*
  - a) *Wing assembly integration and testing*
  - b) *Fuselage assembly integration and testing*

***KPIs the project plans to achieve or contribute to:***

a. *The joint integration of different conformal morphing concepts in a laminar wing is intended to improve **aircraft performance** through a 6% drag reduction, with a positive effect on fuel consumption and required take-off fuel load. A side effect will be a decrease of up to 6dB (A) of the airframe generated noise, thus reducing the impact of air traffic noise in the vicinity of airports.*

b. *Another important objective is to **limit the integration cost** of Structural Health Monitoring (SHM) systems by moving the system integration as far forward in the manufacturing chain as possible. In this manner, SHM integration becomes a feasible concept to enable in-service inspection cost reductions of up to 1%.*

c. *Finally, the incorporation of Carbon Nanotubes into aeronautical resins is expected to **enable weight savings of up to 3%** when compared to the unmodified skin/stringer/frame system, while a combination of technologies is expected to decrease Electrical Structure Network installation costs by up to 15%.*

***Available material:*** *Public/Dissemination material:* *Project poster, leaflet and newsletters are available at the official website ([www.saristu.eu](http://www.saristu.eu)). Furthermore, several scientific publications and conference presentations are also available. No dynamic material has been produced in the frame of the project.*

*Other confidential material:* *Finite Element (FE) simulations based on ABAQUS software, as well as 3D CATIA models have been and will be produced in the frame of the project.*

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After completing the analysis for each one of the selected projects, one or more motto is given which best describes the main goal of the project and can pick up young's interest. Similarly a motto is given on domain level as well. The internal term "motto" defines a one-sentence description that will characterize the project and its objectives. Additionally to the motto, a short description is given in case of each project that shortly summarizes the main aim of the specific project.

An example of the prepared messages included in **D2.4** can be seen below:



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**ACTIVITY DOMAIN: “Pioneering the Air Transport of the Future”**

General summary: of the domain:

**‘The flight of the future is waiting for your ideas!’**

**MAAT**

It aims to **investigate an airship cruiser-feeder** global transport system for medium and long range transport. The overall transport system is composed by two elements:

1. One PTAH (Photovoltaic Transport Aerial High altitude system) is the central hexagonal airship cruiser which looks like the corolla of a flower.
2. Six ATENs (Aerial Transport Elevator Network) or feeder ships which connect to the PTAH and have the aspect of hexagonal petals.

The ATENs can join the PTAH cruiser rigidly and together they constitute the multi-body modular cruiser.

General summary:

- The story of the ‘Never Landing Airplane’.
-



### 3.2 WP3: Digital Material Preparation

The objective of the present WP was to prepare the digital educational material. According to the DoW, four types of digital material were foreseen:

- Animations
- Films
- Serious games
- e-Brochures

Originally, a number of presentations were also shown as a separate product but with the e-Brochures being a multipurpose product, and as such fully satisfying the requirement for presentations, no separate presentations were created with the exception of the overall presentation of project (prepared for the participation to conferences/workshops).

As the serious game, a quiz was developed. In respect of animations, it was agreed early in the project that these could not be seen as stand-alone products. An animation on its own is of little use and is not really suitable to convey the desired message. At the same time, an animation inserted in another product by way of illustrating what the product is trying to say will of course fulfil its role perfectly. For this reason, animations are integral parts of the quiz, the videos and the e-Brochures.

As already mentioned, Promo-Air selected 20 projects to be included in the overall work, i.e. one or more digital products had to be created for each of the selected projects.

The “content” of the digital products was determined and driven by the messages synthesized from the projects in **D2.4**. In WP3 the messages were interpreted, and then the material available for each of the projects was surveyed. This material was sourced from the projects themselves, from the project websites as appropriate and eventually also from information available from the public domain from other sources.

An important step was the allocation of digital products to individual projects. A number of rules had been set up and agreed and these were then applied to the selection.

The rules were the following:

- Each of the 20 projects must have at least one product allocated to it;
- A quiz element must be created for each of the projects;



- The choice between creating an e-Brochure or video for a given project was to be made based on the subject matter, the message and a determination of which product would best convey the message;
- The use of animations was to be limited to cases where these added value;
- Unnecessary jazzy elements were to be avoided in order to keep the message focused;
- The products must keep in mind the age characteristics of the target audience;
- The production schedule must be such that WP4's dissemination activities are fully supported.

The next step was the creation of a product allocation matrix showing which project would receive which products and a delivery schedule, showing in which order the products would be delivered to support the dissemination.

The product allocation matrix looked like this:

HOT AREA	PROJECT	PRODUCT
<b>ENVIRONMENT</b>	Clean Sky	Quiz Video
	ACFA2020	Quiz Video
	Gabriel	Quiz
<b>ENGINES</b>	ESPOSA	Quiz Video
	Open Air	Quiz
<b>FUELS</b>	Alfa-Bird	Quiz
<b>AIRFRAME</b>	MAAT	Quiz
	ACTUATION 2015	Quiz eBrochure
	QUICOM	Quiz
	SARISTU	Quiz Video
	AISHA II	Quiz eBrochure
<b>AVIONICS</b>	ALICIA	Quiz eBrochure
<b>COMMUNICATIONS</b>	SANDRA	Quiz eBrochure



<b>AIRPORT</b>	AP2050	Quiz eBrochure
	ASSET	Quiz
<b>FUTURE AIR TRANSPORT</b>	PPLANE	Quiz eBrochure
	HIKARI	Quiz eBrochure
<b>SAFETY</b>	HAIC	Quiz eBrochure
<b>AIR MANAGEMENT      TRAFFIC</b>	TITAN	Quiz eBrochure Video
	SESAR	Quiz Video

It shall be noted that Promo-Air had made a decision early on in the project that the overall research picture will be shown in terms of what we called “Hot Areas”. The reason for this was the realization that the attention of secondary school children was unlikely to be caught by the rather formalistic project organization; they would be far more receptive to things that they understand immediately, have eventually seen already or at least they can relate to, based on previous experience. Realisation of this approach was greatly helped by the fact that the selected projects themselves could be “bundled” on the basis of their focus and activities into the “hot areas” mentioned above. Hot areas were defined as being Airframe, Avionics, Engines, Fuels, etc.

So, all projects dealing with engines were bundled under the Engines hot area, those concerned with fuels under the Fuels hot area, and so on. The Promo-Air website opens with a picture of an airport and each of the hot areas can be easily identified. Clicking on an aircraft engine will open the Engines hot area, making all the corresponding projects and related information and products available. This way children are introduced to the project organisation via a “back door” that is attractive form them without being discouraging as a result of being too rigid and official.

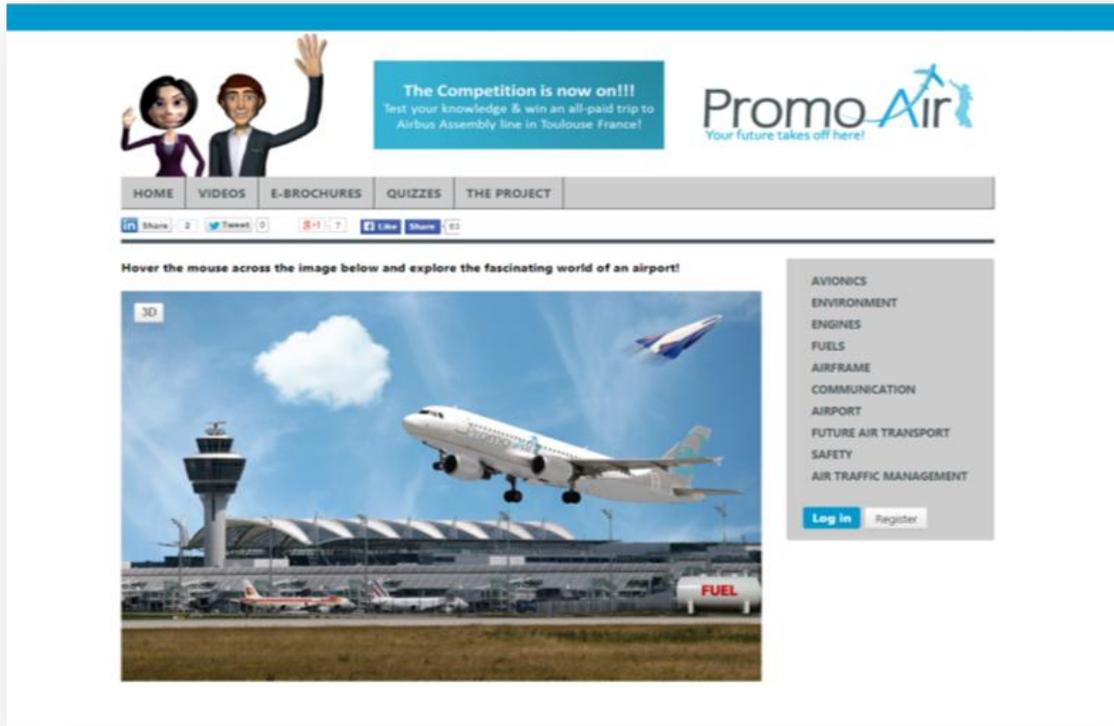


Figure 2: Entry point of Promo-Air website

It is worth mentioning that this concept of the hot areas and their representation on the Promo-Air opening page is seen as one of the legacies of Promo Air. In the future, it will be easy to define and add new hot areas as required. Projects will come and go but the hot areas are constant and provide a permanent, easily understandable framework into which new hot areas can be incorporated even if there is no specific project but only some kind of relevant activity that needs to be made known.

Timely delivery of the products to WP4 was extremely important. The Hot Areas described above were “activated” on the website by WP4 on a precisely planned schedule which included also the opening up for perusal of the quiz elements related to the projects in the given hot area. Obviously, if material agreed for a given hot area was not available on time, the hot area could not be activated. This in turn would cause a delay in the completion of the competition which used the quiz as its selection mechanism.

Inside WP3 itself, the creation of the products had two main phases. For each video and e-Brochure, a script was created and approved first by the WP members and then by the complete consortium. The scripts were considered mature enough so that while the approval process was

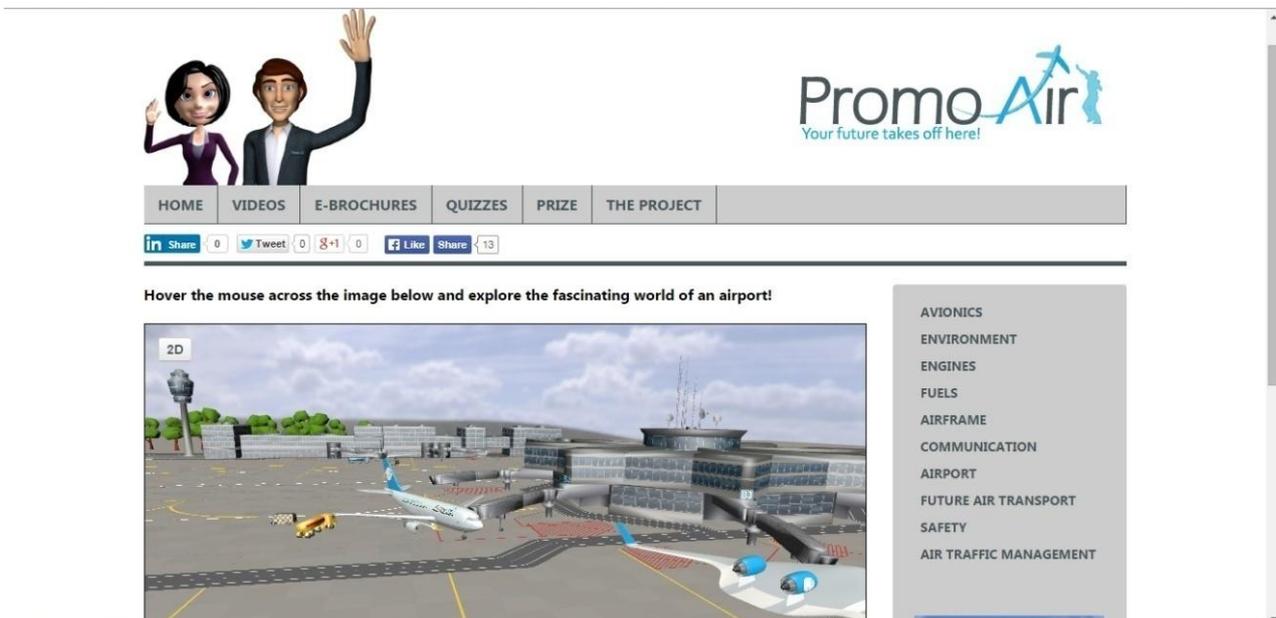


running, the visual and aural design of the products were already started. This did result in substantial time saving and only a minimum of extra effort if the review resulted in slight changes in the draft material. Details regarding the so called "draft" products can be found in **D3.2, D3.3 & D3.4.**

The design of the products was such that it carried the Promo Air identity throughout while also being sufficiently individual to avoid the material being boring for the students.

Once the script was approved, a first version of the product was created. This was not a draft in the traditional sense of the word. These first version were much more mature than what one would expect from a draft article, for instance. The first versions were submitted to a review by the consortium and eventual comments were incorporated into the final version which was subsequently released to WP4 for posting.

In terms of time planning, an interactive process together with WP4 has been used. WP4 delivered a desired publication schedule which we then compared with the production possibilities in WP3 and made a counter proposal. This counter proposal was, on the main, only marginally different from that proposed by WP4. Once the delivery dates were agreed, we worked backwards from them and set up the production schedule in a way that was to ensure timely delivery (at or earlier than the agreed delivery date). In setting up this schedule, the time needed for the internal and external reviews has been incorporated. Details regarding the final delivered products can be found in **D3.5, D3.6, D3.7 & D3.8.** A number of representative screenshots of the produced material is depicted in the following images.

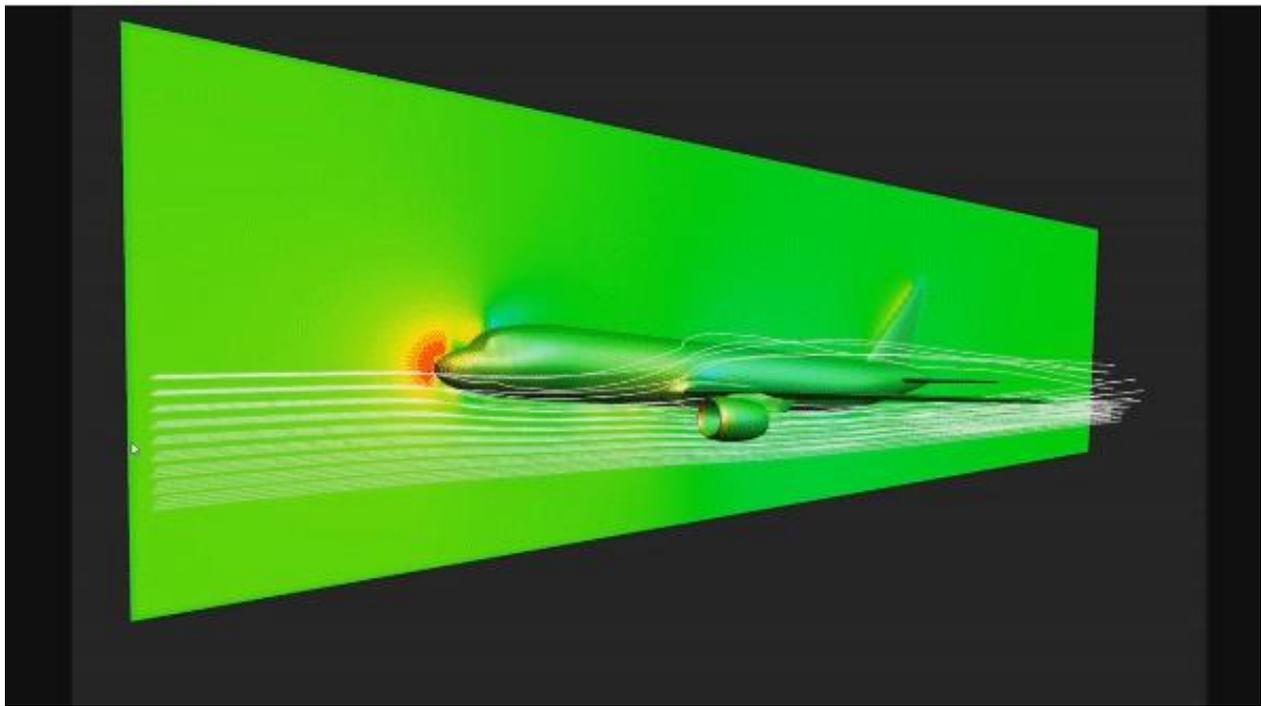




PromoAir powered by 30 Issue

**ACTUATION 2015**

TRADITIONALLY, AIRCRAFT USED HIGH PRESSURE HYDRAULIC SYSTEMS TO EFFECT THE DISPLACEMENT OF MOVABLE PARTS. THOSE SYSTEMS ARE HEAVY, EXPENSIVE AND MAINTENANCE INTENSIVE. THIS MEANS THEY COST A LOT TO MAKE AND TO OPERATE.



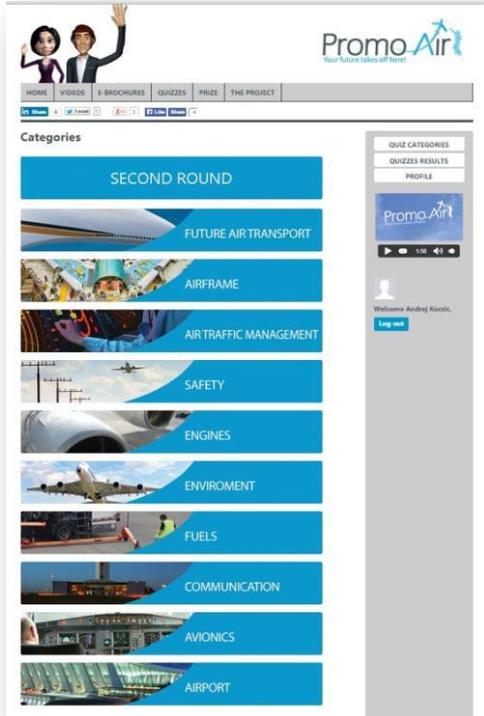


Figure 3: Representative screenshots of the produced material



### 3.3 WP4: Dissemination

WP4 deals with the dissemination of the Promo-Air products. Wide dissemination was the key to ensure that all the material produced in the project would be widely disseminated to the largest possible number of European Secondary and Engineering School students. The extended use of the communication channels ensured that these materials would be approached by high school students all over Europe and the Academia in order to attract more potential University students.

However it is equally important to raise and maintain the interest and support of the European Aeronautics Community and create a link among schools and academia regarding aeronautical sciences. Therefore the planned dissemination activities during the project focused on the following high level objectives:

- Creation, maintenance and extension of the appropriate communication environment for each Promo-Air targeted group so that the various audiences (students and adults technical and not) get informed about the project's initiative, namely the "Promo – air community".
- Efficient definition and use of the appropriate communication tools and guidelines so as to achieve the maximum impact by disseminating effectively either the produced educational material and the overall concept of the Promo – Air project.
- Promotion of the project's results through the organization of major events such as, the European Aeronautics Science Week and the Promo – Air final workshop so as to further guide future activities and to support strategic research policy decisions.

The efficient dissemination of the important results produced within the project was one of the key objectives of the Promo-Air Consortium. The aim of the Dissemination Plan was to report on the envisaged dissemination activities of the project results. It summarised the consortium's strategy and concrete actions to disseminate, exploit and protect the foreground generated by the project. The Dissemination Plan was continuously updated in order to be used as a point of reference for the performed dissemination activities. Even though the official delivery of the related deliverable (**D7.1**) was on M10 of the project lifetime, the Promo-Air Draft Dissemination Plan has been continuously monitored and updated by the Dissemination managers throughout the project lifetime. In particular, the Promo-Air Dissemination Plan has been circulated to the Promo-Air consortium for updates, corrections and/or amendments on a regular basis. Moreover, information has been also added according to the performed and planned dissemination activities during the entire project lifetime.



The Promo - Air dissemination plan aimed at defining the management and distribution of the project results after the project closure so as to safeguard the sustainability of the project findings and recommendations.

Based on the input received by the partners, the majority of the planned dissemination activities had two main directions: 1. Students and 2. Adulated target groups. Through the Dissemination Plan target groups and Dissemination Channels have been identified. Hence, communicating the right information to the right people, at the right time, using the right language, while taking into account the dissemination needs of the project at each stage of its lifetime, was the key to a successful and strategic dissemination of results. In this context, Promo – Air dissemination and exploitation strategy can be depicted through the Dissemination and Exploitation Plan as follows:

Dissemination and Exploitation Activities performed within the Promo - Air duration:			
Initial Awareness phase		Targeted Awareness Phase	Full Awareness Phase
M1-M6		M7-M12	M13-M24
<b>Needs</b>	Create the project visual identity, develop the main dissemination tools (e.g. design the project logo, templates & initial set of leaflets; set up the project website), and identify some initial dissemination opportunities.	Perform dissemination activities and networking actions towards the relevant and defined target groups of the project in order to increase awareness about the Promo – Air activities, progress and expected impacts to each of its groups of audience.	Perform dissemination activities in order to keep the project members and targets updated and informed about Promo - Air and increase the potential of market uptake and of maximum use of the project's results including research, commercial, investment, policy making, educational training.
<b>Objectives</b>	<p><b>Raise Awareness</b> Present general information about the project. Introduce its concept, major objectives and expected results.</p> <ul style="list-style-type: none"> <li>Inform about the project's activities to stimulate the participation and active involvement of the full range of potential Promo-Air targeted audiences.</li> </ul>	<p><b>Generate Understanding</b> about the project, its goals, main progress/news and expected impact to its various specific target groups <b>and Engage:</b></p> <ul style="list-style-type: none"> <li><b>Perform dedicated networking activities</b> with the list of Promo-Air network members and targets, thus gradually establish a solid and ongoing routine of interaction.</li> <li><b>Perform outreach actions towards students</b> to show them how interesting careers in aeronautics and air transport are.</li> </ul>	<p><b>Keep the full range of Promo - Air established target groups and end users informed</b> about the project's activities and achievements and <b>Ensure impact:</b></p> <p><b>Intensify the existing networking activities</b> (i.e. boost the existing communication) with the Promo - Air network members and targets</p> <p>Understanding the importance of personal contacts in establishing networks, as well as in properly disseminating results and/or collecting input, the <b>organization of the European Aeronautics Science Week event and Promo Air final workshop.</b></p> <p><b>Intensify outreach actions</b></p>



Activities	<p><b>Agree on the “Dissemination Plan - DP” organisational details.</b></p> <p><b>Create the project logo, presentation &amp; deliverable templates and first set of leaflets</b></p> <p><b>Set up the project public website:</b> through the Promo-Air website the appropriate communicative environment for each targeted group shall be created so that different audiences will become clearly informed of the project's concept and impact.</p> <p><b>Include a Promo-Air brief summary in the EASN website.</b></p> <p><b>Identify preliminary dissemination opportunities</b></p>	<p><b>Update the Promo – Air DP</b></p> <p><b>Dissemination in strategic boards of the participating associations/networks</b></p> <p><b>Dissemination within the EASN members</b></p> <p><b>Opening &amp; start exploitation of the project website(Update &amp; Enrichment)</b></p> <p><b>Perform Promo-Air Publications</b></p> <p>•<b>Promo-Air participation to relevant Events/Workshops</b>          •<b>Organization of the 1<sup>st</sup> Promo – Air workshop</b>to discuss the initially identified standards for the project.          • Outreach activities towards EU Universities and students, aiming to attract young top talents into following studies leading to aviation careers.</p>	<p><b>Update the Dissemination Plan</b> based on the project's specific needs at this specific phase  <b>Dissemination in strategic boards of the participating associations</b>  <b>Dissemination within EASN members</b>  <b>Collaboration events/actions with similar EU and national projects</b>  <b>Enrichment of the Promo - Air public website</b>  <b>Performance of additional publications</b>  <b>Participation in Events/Workshops</b>  <b>Organization of Events and Workshop</b>to present to the EC and ACARE as well as to the Promo – Air Community the results of the project; discuss recommendations and corrective measures to implement before the end of the project.  <b>Perform additional Outreach activities</b> to attract young minds</p>
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One major aim of the Promo – Air project was to constitute and organize the so-called Feedback Channels. Feedback channels were consisted of the Advisory Board (representatives of the Academia and the Industry), the Input Group (coordinators and/or the dissemination managers of the selected FP7 projects) and the Mirror Groups (MGs) (high school students around Europe). Feedback channels have been defined as the validation groups in which the draft education materials produced (e-brochures, videos, serious games) have been presented by the consortium for the scopes of the project.

The communication channels settled for achieving results of the task 4.2 varied with regards to the differentiation of the audiences. For this reason a distinct strategy using targeted means has been performed:

*A) Organization and participation at workshops and relevant events*

*B) Communication with the targeted mirror groups*

The valuable opinion of the feedback channels was tracked in order to provide feedback mainly for the improvement of the WP3 activities and for the monitoring of the augmented interest of students for Aeronautics. Interesting results were extracted in the frame of the differentiation of views, locations, as well as type and the level of education. Additional comments and analytics has been tracked through the Social Media Pages and the European Aeronautics Science Week.

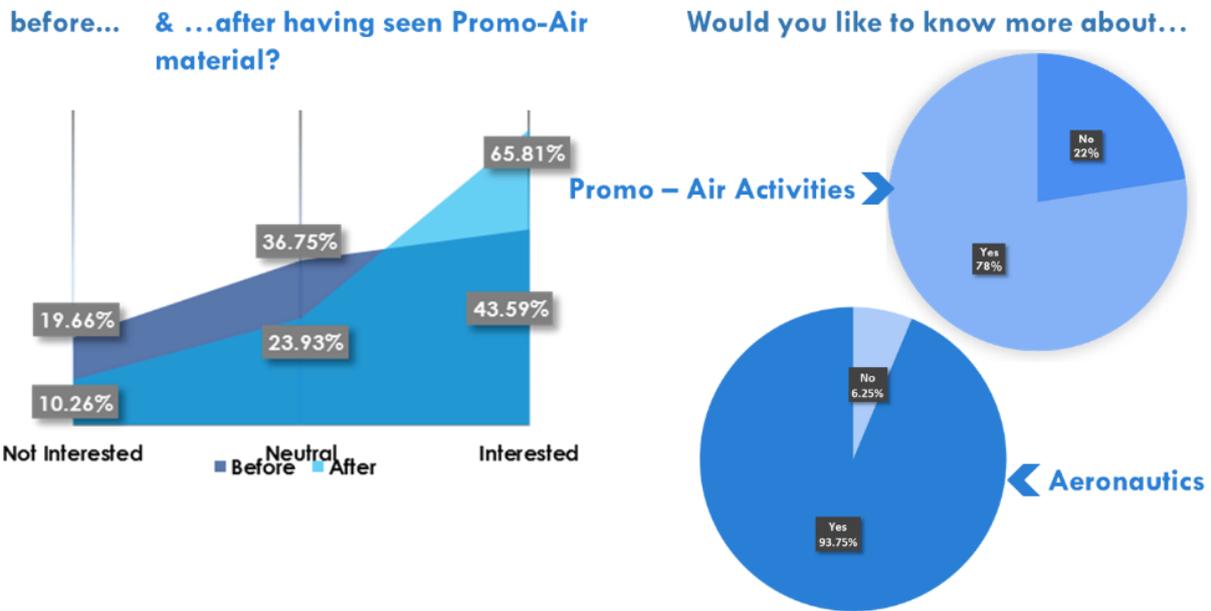


Figure 4: Important feedback after the communication with the mirror groups

“Dissemination Packages” have been prepared and used for the better understanding of the visual material. The “Dissemination Packages” created, were bundles with similar and homogenous information and guidelines related to the educational material produced within Promo-Air, prepared in a manner that they will be short, descriptive and easy to understand. They provided an initial step for the upcoming creation and promotion of the digital educational material. The form of these materials was digital and delivered to the relevant target audiences through mail and direct communication.

The events where these dissemination packages have been used were the following:

- School visits in the frame of reaching mirror groups
- Open – day events in the frame of the European Aeronautics Science Week.

The communicated packages are referred to the following items:

- Creation of Adam the Aviator updated character and Claire the Air Traffic Manager in order to administrate the main toll of the social media pages, targeted to students
- Promo – Air descriptive final brochure, targeted to the adulated target groups of Promo – Air.
- FTP address (private web-space) through which Universities can download the material presented to the open – day event.
- Guidelines for Universities regarding European Aeronautics Science Week.



Another objective of Promo – Air was the continuous presence of the project in the social media pages, where young students could be regularly informed about the progress and the release of the Promo-Air educational material. Social media pages provided a powerful tool for engaging and motivating the targeted audiences to the scopes of the Promo – Air project and they form a significant part of the project's dissemination activity, integrating alongside the more traditional communication channels. A social media policy has been produced, based on the scheduled production of the educational material, following discussion and agreement among the consortium partners. The following concrete activities had been performed:

- All social media pages have been created during the first year of the project and have been maintained and continuously updated throughout and after the end of the project aiming to serve multiple goals: to publish the created visual materials, to establish a direct feedback channel with the project consortium, to announce event dates or competitions and to generally build social traction for the Promo Air project material.
- The Social Media Strategy plan had been implemented and was continuously monitored in order to be in-line with the material production.
- The effective use of social media has been performed with aim to maximise the effects of the project's dissemination efforts, to allow for direct feedback and engagement with the target audiences and to boost the Promo – Air website publicity throughout the duration of the project.

In order to maximize the estimated benefits of an active social media presence, the Promo-Air Project Consortium has created 8 social media accounts. The Promo-Air social media pages have been addressed primarily addressed to younger age groups.

Social Media	Name	Link
Facebook	Promo-Air Project Page	<a href="https://www.facebook.com/PromoAirProject">https://www.facebook.com/PromoAirProject</a>
	Adam the Aviator Profile	<a href="https://www.facebook.com/adam.theaviator.5">https://www.facebook.com/adam.theaviator.5</a>
Twitter	Promo-Air Project Page	<a href="https://twitter.com/PromoAirProject">https://twitter.com/PromoAirProject</a>
LinkedIn	Promo-Air Project Page	<a href="http://www.linkedin.com/groups?home=&amp;gid=5081486&amp;trk=anet_ug_hm">http://www.linkedin.com/groups?home=&amp;gid=5081486&amp;trk=anet_ug_hm</a>
	Adam the Aviator Profile	<a href="de.linkedin.com/pub/adam-the-aviator/75/767/87/">de.linkedin.com/pub/adam-the-aviator/75/767/87/</a>
YouTube	Promo-Air Project Channel	<a href="http://www.youtube.com/user/PromoAirProject">http://www.youtube.com/user/PromoAirProject</a>
Google+	Promo-Air Project Page	<a href="https://plus.google.com/b/114875969863554170880/114875969863554170880">https://plus.google.com/b/114875969863554170880/114875969863554170880</a>
	Adam the Aviator Profile	<a href="https://plus.google.com/u/0/116850871327588835342/posts">https://plus.google.com/u/0/116850871327588835342/posts</a>



The communication strategy that was decided to be followed by the relevant social media pages had been measured and evaluated in order to enable the consortium to benchmark and refine its methodology and approach. The metrics and role of each dissemination tool has been summarised in monitoring the number of Friends / Followers, Likes, Views / Shares, Discussions/Topics created.

It is worth mentioning that a common dissemination campaign has been followed for all the Promo – Air social media channels. However, Facebook, through its relevant statistics, has been identified as **the most convenient social media channel** for approaching high school students, as its popularity to these target groups, so it became the main dissemination tool for promoting the project. (Link: <https://www.facebook.com/PromoAirProject>).

More details related to the social media pages can be reached through the Deliverable **D4.3: Social media profiles**.

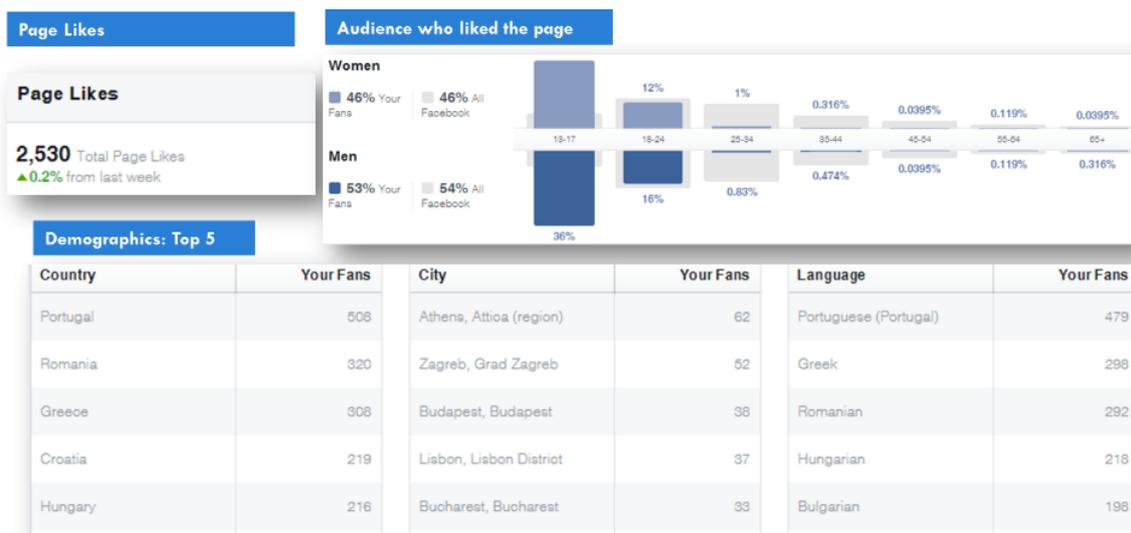


Figure 5: Analytics for the Facebook Promo - Air page

As far as the European Aeronautics Science Week is concerned, the objective was widely disseminate the produced educational material to high school students. Within the frame of the Aviation Week, open days have been held at 17 of Universities from 15 EU Countries where students from local high schools have been invited. Following a tour and a short introduction to the facilities, the digital material was presented to the students and combined with some hands-on experience. University professors answered questions from the students.



Taking into consideration the above mentioned process of organizing the European Aeronautics Science week has been divided into three main phases:

**Phase 1:** Identification of the European Universities related to aeronautical sciences, with main aim to represent all 28 EU Countries.

**Phase 2:** Direct communication and follow – up with the identified Universities

**Phase 3:** Implementation of the Promo – Air open day event in the frame of the “European Aeronautics Science Week”.

In order to successfully identify the Universities throughout Europe which offer studies related to Aeronautical Sciences a detailed list has been set up per country, discipline and level of education.

In parallel, by making use of the infrastructures of EASN Association, a correlation has been made in order to identify at least one institution from each European Country that was active in Aeronautics and could host the event.

A first important induction of the above mentioned correlation was the fact that a worth mentioned number of the EU countries have been identified as inactive in the field of Aeronautics (e.g. Cyprus, Malta, Iceland, Luxembourg) or with very limited involvement (e.g. Serbia, Bulgaria, Romania, Finland) which could hamper the organization of the European Aeronautics Science Week in the respective countries.

During the first year of the project, the wide communication and dissemination of the main Promo-Air findings and achievements, through the EASN network to universities and research institutes across Europe, has been initiated through the following tools:

- Distribution of Promo-Air news, progress and future actions to a large number of scientists and professionals throughout Europe has been performed through the EASN newsletters. This initiative started at the beginning of the project. In particular, the latest project developments and achievements were included in the last three issues of the EASN newsletter (July and November 2013 and April 2014 issues) and links to the project website were provided for further information. The aforementioned issues of the EASN newsletter are available for on-line viewing at the following links respectively:
- [http://www.easn.net/newsletters/easn\\_newsletter\\_july\\_2013\\_files/EASN\\_Newsletter\\_July\\_2013.html](http://www.easn.net/newsletters/easn_newsletter_july_2013_files/EASN_Newsletter_July_2013.html)
- [http://www.easn.net/newsletters/EASN\\_Newsletter\\_November\\_2013.html](http://www.easn.net/newsletters/EASN_Newsletter_November_2013.html)
- [http://www.easn.net/newsletters/EASN\\_Newsletter\\_April\\_2014.html](http://www.easn.net/newsletters/EASN_Newsletter_April_2014.html)



- [http://www.easn.net/newsletters/EASN Newsletter July 2014.html](http://www.easn.net/newsletters/EASN_Newsletter_July_2014.html)
- [http://www.easn.net/newsletters/EASN Newsletter December 2014.html](http://www.easn.net/newsletters/EASN_Newsletter_December_2014.html)
- [http://www.easn.net/newsletters/EASN Newsletter April 2015.html](http://www.easn.net/newsletters/EASN_Newsletter_April_2015.html)

In the final phase of this task, in total 17 Universities from 15 EU countries participated to the European Aeronautics Science Week and 2 more will host the event after the end of the project (Queen Mary University, London, UK and Vrije University Brussels, Belgium) establishing a link between high school students and Academia.



Figure 6: Universities around Europe which hosted the European Aeronautics Science Week

It should be underlined that a number of Universities active in the field of Aeronautics have already scheduled open-days in their institutes in order to invite students and inform them about career opportunities. Due to the fact that this schedule could not match with the period of EASW, the organization of an open-day dedicated to Promo-Air was not feasible. In that case, the respective universities were provided with the visual educational material and the physical material as well in order to disseminate it to students even after the end of the Promo – Air project.

More details regarding the organization of the EASW can be found in **D4.4**.



The Promo – Air public website (<https://promo-air.eu>), which has been developed in the first year of the project and maintained up to date by SLOT, is one of the main communication tools used in order to disseminate the educational material produced within the project. During this period the Promo - Air public website was regularly updated with the progress and dissemination activities performed within the project.

Based on the Promo-Air “visual identity”, which is followed in all public and internal documents of the project (banner, leaflets, newsletters, etc.), the Promo-Air public website was created. Its main objective has two directions. Concerning the adult target group, the main aim is to raise public awareness about the project, its objectives, challenges, and expected results. Regarding the students, the main goal is to attract their interest and in the same time to provide important information for the aeronautical sector through the description of the 20 selected FP7 projects. In addition, it will be regularly updated with the finalized educational material and any other progress of the Promo-Air project.

While initially targeted to adults, Promo – Air website was updated during the second year of the project in order to host the produced educational material and to acquire a more attractive for high school students, infrastructure. More specifically, the activities performed during the last two updates of the publically visible information were the following:

- 3D Airport implementation and Hot Areas description
- Updated Promo – Air website layout more detailed regarding the Promo – Air Competition and the European Aeronautics science weekand targeted to younger target groups.
- Continuous Update of the sections related to the educational material, namely “Videos” and “E-brochures” sections.
- Continuous update of the Quizzes Section, namely “Round 1” and “Final Round 2” section.
- Eye-catching banner for attracting visitors to follow the Quiz link
- Updated “Prize” section with details regarding the sponsored by Airbus and EASN award (a trip to Airbus premises in Toulouse, France)
- Updated homepage with the Promo – Air overall video publication

#### *A) Monitoring the Promo-Air Public Website*

Detailed statistics about the website’s traffic and traffic sources are generated through the embedded Google Analytics tool. Google Analytics can track visitors from all referrers, including search engines, direct visits and referring sites.

More details regarding the Promo – Air website can be found in **D4.2**.



## 4 IMPACT

**Promo-Air** addressed the following topic of the 6<sup>th</sup> AAT call: AAT.2013.7-3. Communication of EU funded RTD project results to targeted audience. The expected impact according to the call was: *“The action is expected to raise the interest of young Europeans and promote scientific and technical studies and careers in aeronautics and air transport research and industry.”*

The Consortium strongly believes that **Promo-Air** has paved the road in order to bring the above mentioned impact. Based on the implementation of the dissemination campaign of the project, it can be concluded that the message that the world of aeronautics and air transport is fascinating has been well received by the European high-school students. All the materials (animations, brochures, films, presentations, serious games) produced by the project have been designed in an attractive way and were continuously validated by young students and aeronautical experts as members of the so called mirror groups. Appropriate dissemination channels (e.g. social media, teachers, website, open days etc.) have been chosen to ensure that the message gets to the right audience.

By raising the interest of young European for the aeronautical sector, the scientific, technical studies and careers in aeronautics and air transport research and industry will be further promoted. With the help of **Promo-Air** activities including the European Aviation Week, more students realised how interesting careers in aeronautics and air transport could be. It is also the consortium's belief that by the higher interest among secondary school students, there will be more applicants to aeronautics related college and university faculties and so it will be ensured that a larger number of the best students will be available for aeronautics.

The reported - by the major Aeronautics industries - shortage of talented and bright engineers and scientists was the major driving force of this project. The increasing competition in the Aeronautics industry from the “traditional” aeronautics competitors but also from emerging players makes it imperative for Europe to do anything in its power to maintain and extend its global leadership. To do this, an essential step is to ensure a steady and high-quality supply of human resources to the Aeronautics industry. Driven to a large extent by the need for a secure future and a prestigious career, bright and talented students are tempted and often follow careers with a better image, such as medicine, law, management etc. **Promo-Air** is also expected to contribute to an increase, both in terms of quality and quantity of students towards scientific and technical studies and careers in the areas of aeronautics and air transport research by raising the interest and improving the image of an Aeronautics-related career. In turn, in the short term this is expected to have an impact on



the number and quality of students choosing to follow an Aeronautics-related career. In the medium and long-term, this will reflect on the competitiveness of the European aeronautics industry, as it is a field which strongly relies on innovative thinking which in turn strongly depends on the quality and effectiveness of the people active in it. **Promo-Air** contributes to the overall European Union goals and to those which are set for aeronautics and air transport. Promo-Air is strictly in line with some of the objectives of Flightpath2050:

*"...attracting the best people and talents: celebrating and publicising the success of the sector to create and sustain excitement around the European aviation vision..."*

*-Students are attracted to careers in aviation."*

One of the main objectives of the Strategic Research and Innovation Agenda is totally in line with Promo-Air's objective and the project contributes to the success of the following key action area:

**"A skilled workforce:** possessing the quality, skills and motivation to meet the challenges of the future, and being supported by a harmonised and balanced approach covering the entire scope: from **attracting talent** over primary and secondary **education** to apprenticeship, academia and life-long professional development."

The **Promo-Air** objectives were also in line with the Terms of Reference set by the ACARE Human Recourses Group (AHRG) and its successor, ACARE WG5, namely:

- *Ensuring the Future workforce for European Aerospace*
- *Improve the image of a career in the air transport sector*

Based on all the above, it is clear that there is a definite and commonly recognised need for an increase in the number and quality of students choosing to follow an Aeronautics-related career and **Promo-Air managed to build on these two discrete targets.**

**Promo-Air** was also in line with the main priorities of the EASN Association, with respect to promoting upstream and innovative research in Europe. **Upstream and breakthrough ideas**, both much needed to reach the targets set by ACARE for 2020 and 2050, require excellent minds. By increasing the image of Aeronautics related studies and promoting aeronautics related careers, more and smarter students are expected to be attracted to this fascinating field. This will inevitably increase the innovation factor in Aeronautics related research which, in turn, will lead to increased competitiveness of the European Aeronautics Industry, with all the associated benefits including but not limited to increased employment, a stronger position in the global economic competition



etc. A side effect of this will be the qualitative increase of the global standing of European Universities, as this is much depended on the quality of active researchers and doctoral students.

#### **4.1 Dissemination activities**

As already mentioned above, the wide dissemination was the key to ensure that all the material produced in the project would be efficiently communicated to the largest possible number of European Secondary and Engineering School students. The success of the project relied heavily on the effective implementation of the dissemination campaign. The **Promo-Air** consortium worked close in order to prepare and implement a suitable dissemination plan. The extended use of the communication channels ensured that these materials would be approached by high school students all over Europe and the Academia in order to attract more potential University students. It should be also mentioned that during the duration of the project updates and amendments of the initial dissemination plan have been performed, based on the feedback received from the different communication channels.

A detailed description of the dissemination campaign has been already discussed in a previous chapter of this document, as well as in the relative deliverables. In summary, the main dissemination activities of **Promo-Air** could be listed as following:



A/A	Type of Activities	Leader	Title	Date	Place	Type of Audience	Size of Audience	Countries Addressed
1	Oral presentation to a scientific event	UPATRAS	3rd EASN Workshop on Aerostructures	10-10-13	Milan, Italy	SC, Industry, Policy Makers	100	European
2	Flyers	UPATRAS	3rd EASN Workshop on Aerostructures	10-10-13	Milan, Italy	SC, Industry, Policy Makers	100	European
3	Posters/Banners	UPATRAS	3rd EASN Workshop on Aerostructures	10-10-13	Milan, Italy	SC, Industry, Policy Makers	100	European
4	Oral presentation to a scientific event	UPATRAS	4th EASN Workshop on Flight Physics and Aircraft Design	29-10-14	Aachen, Germany	SC, Industry, Policy Makers	150	European
5	Flyers	UPATRAS	4th EASN Workshop on Flight Physics and Aircraft Design	29-10-14	Aachen, Germany	SC, Industry, Policy Makers	150	European
6	Posters/Banners	UPATRAS	4th EASN Workshop on Flight Physics and Aircraft Design	29-10-14	Aachen, Germany	SC, Industry, Policy Makers	150	European
7	Presentations	UPATRAS - EASN	7th High School of Patras - Mirror	Apr-14	Patras Greece	SC, Civil Society	40	Greece
8	Presentations	UPATRAS - EASN	9th High School of Patras - Mirror	Apr-14	Patras Greece	SC, Civil Society	15	Greece
9	Presentations	UPATRAS - EASN	5th High School of Patras - Mirror	Apr-14	Patras Greece	SC, Civil Society	25	Greece
10	Presentations	SLOT	High School Karinty	Feb-14	Budapest, Hungary	SC, Civil Society	37	Hungary
11	Organization of Workshops	UPATRAS	1st Promo - Air Workshop	30-04-14	Brussels, Belgium	SC, Industry, Policy Makers	20	European
12	Flyers	EASN	1st Promo - Air Workshop	30-04-14	Brussels, Belgium	SC, Industry, Policy Makers	20	European
13	Posters/Banners	EASN	1st Promo - Air Workshop	30-04-14	Brussels, Belgium	SC, Industry, Policy Makers	20	European
14	Organization of Workshops	UPATRAS	Promo - Air Final Workshop	24-04-15	Brussels, Belgium	SC, Industry, Policy Makers	25	European
15	Flyers	EASN	Promo - Air Final Workshop	24-04-15	Brussels, Belgium	SC, Industry, Policy Makers	25	European
16	Presentations	UPATRAS, EASN	European Aeronautics Science Week	12-03-15	Patras Greece	SC, Civil Society	200	Greece
17	Flyers	UPATRAS, EASN	European Aeronautics Science Week	12-03-15	Patras Greece	SC, Civil Society	200	Greece
18	Posters/Banners	UPATRAS, EASN	European Aeronautics Science Week	12-03-15	Patras Greece	SC, Civil Society	200	Greece
19	Press Releases	EASN	European Aeronautics Science Week	16-03-15	<a href="http://blogs.sch.gr/lyk-aei/2015/03/16/%CE%B5%CF%85%CF%81%CF%89%CF%80%CE%B1%CF%8A%CE%BA%CE%AE-%CE%B5%CE%B2%CE%B4%CE%BF%CE%BC%CE%AC%CE">http://blogs.sch.gr/lyk-aei/2015/03/16/%CE%B5%CF%85%CF%81%CF%89%CF%80%CE%B1%CF%8A%CE%BA%CE%AE-%CE%B5%CE%B2%CE%B4%CE%BF%CE%BC%CE%AC%CE</a>	SC, Civil Society, Medias	n/a	Greece
20	Press Releases	EASN	European Aeronautics Science Week	05-03-15	<a href="http://www.thebest.gr/ne">http://www.thebest.gr/ne</a>	SC, Civil Society, Medias	n/a	Greece



21	Articles Published in the popular press	EASN	European Aeronautics Science Week	05-03-15	Peloponnisos NewsPaper	SC, Civil Society, Medias	n/a	Greece
22	TV Clips	EASN	European Aeronautics Science Week	05-03-15	Lepanto TV	SC, Civil Society, Medias	n/a	Greece
23	Films	BLUSKY services	Promo - Air Video	Feb-15	<a href="https://promo-">https://promo-</a>	All	n/a	European
24	Web-based project information / public	EASN	Promo - Air introduction	Jun-13	<a href="http://www.easn.net/new">EASN TIS Public website</a>	All	30 visits/day	European
25	Web-based project information / public	EASN	Promo - Air introduction	Jun-13	Indexation of <a href="http://www.promo-">www.promo-</a>	All	n/a	European
26	Web-based project information / public	EASN	European Aeronautics Science Week (EASW) Information	30-10-14	EASN Website: <a href="http://www.easn.net/new">http://www.easn.net/new</a>	SC, Industry, Policy Makers	15000	European
27	Web-based project information / public	EASN	Promo - Air Final Workshop Invitation	Apr-14	Easn Newsletter - News Section <a href="http://www.easn.net/ne">http://www.easn.net/ne</a>	SC, Industry, Policy Makers	15000	European
28	Web-based project information / public	EASN	Progress Updates of the Promo - Air project in the EASN periodic newsletter	Jul-13	Promo - Air section in the EASN Newsletter <a href="http://www.easn.net/ne">http://www.easn.net/ne</a>	SC, Industry, Policy Makers	15000	European
29	Web-based project information / public	EASN	Progress Updates of the Promo - Air project in the EASN periodic newsletter	Nov-13	Promo - Air section in the EASN Newsletter <a href="http://www.easn.net/ne">http://www.easn.net/ne</a>	SC, Industry, Policy Makers	15000	European
30	Web-based project information / public	EASN	Progress Updates of the Promo - Air project in the EASN periodic newsletter	Apr-14	Promo - Air section in the EASN Newsletter <a href="http://www.easn.net/ne">http://www.easn.net/ne</a>	SC, Industry, Policy Makers	15000	European
31	Web-based project information / public	EASN	Progress Updates of the Promo - Air project in the EASN periodic newsletter	Jul-14	Promo - Air section in the EASN Newsletter <a href="http://www.easn.net/ne">http://www.easn.net/ne</a>	SC, Industry, Policy Makers	15000	European
32	Web-based project information / public	EASN	Progress Updates of the Promo - Air project in the EASN periodic newsletter	Dec-14	Promo - Air section in the EASN Newsletter <a href="http://www.easn.net/ne">http://www.easn.net/ne</a>	SC, Industry, Policy Makers	15000	European
33	Web-based project information / public	EASN	Progress Updates of the Promo - Air project in the EASN periodic newsletter	Apr-15	Promo - Air section in the EASN Newsletter <a href="http://www.easn.net/ne">http://www.easn.net/ne</a>	SC, Industry, Policy Makers	15000	European
34	Press releases	EASN	European Aeronautics Science Week Introduction to EASN members	11-07-14	Promo - Air newsletter	SC, Industry, Policy Makers	340	European
35	Press releases	EASN	European Aeronautics Science Week Introduction to EASN members	04-11-14	Promo - Air newsletter	SC, Industry, Policy Makers	340	European
36	Press releases	EASN	Join the European Aeronautics Science	13-01-15	Promo - Air newsletter	SC, Industry, Policy Makers	50	European
37	Presentations - Flyers	EASN	European Aeronautics Science Week (EASW): RWTH Aachen University	Jun-15	RWTH Aachen University, Aachen, Germany	SC, Civil Society	30	Germany
38	Presentations	EASN	European Aeronautics Science Week (EASW): University of Zagreb	24-03-15	University of Zagreb, Zagreb, Croatia	SC, Civil Society	100	Croatia



39	Flyers	EASN	European Aeronautics Science Week (EASW): University of Zagreb	24-03-15	University of Zagreb, Zagreb, Croatia	SC, Civil Society	100	Croatia
40	Press releases	EASN	European Aeronautics Science Week (EASW): University of Zagreb	24-03-15	<a href="https://www.fsb.unizg.hr/">https://www.fsb.unizg.hr/</a>	SC, Civil Society	100	Croatia
41	Presentations - Flyers		European Aeronautics Science Week (EASW): Budapest University of	Jun-15	Budapest University, Budapest, Hungary	SC, Civil Society	50	Hungary
42	Presentations	EASN	European Aeronautics Science Week (EASW): Riga Technical University	25-03-15	Riga Technical University, Riga, Latvia	SC, Civil Society	60	Latvia
43	Flyers	EASN	European Aeronautics Science Week (EASW): Riga Technical University	25-03-15	Riga Technical University, Riga, Latvia	SC, Civil Society	60	Latvia
44	Banner	EASN	European Aeronautics Science Week (EASW): Riga Technical University	25-03-15	Riga Technical University, Riga, Latvia	SC, Civil Society	60	Latvia
45	Press releases		European Aeronautics Science Week (EASW): Riga Technical University	25-03-15	FOCUS web-portal: <a href="http://www.focus.lv/content/nakotnes-aviatori-">http://www.focus.lv/content/nakotnes-aviatori-</a>	All	n/a	Latvia
46	Press releases		European Aeronautics Science Week (EASW): Riga Technical University	25-03-15	RTU web-portal: <a href="http://galerija.rtu.lv/index">http://galerija.rtu.lv/index</a>	All	n/a	Latvia
47	Press releases		European Aeronautics Science Week (EASW): Riga Technical University	25-03-15	AERTI facebookpagewith Promo Air photos:	All	n/a	Latvia
48	Presentations	EASN	European Aeronautics Science Week (EASW): Warsaw University of	28-03-15	Warsaw University of Tech	SC, Civil Society	1000	Poland
49	Flyers	EASN	European Aeronautics Science Week (EASW): Warsaw University of	28-03-15	Warsaw University of Tech	SC, Civil Society	1000	Poland
50	Presentations - Flyers	EASN	European Aeronautics Science Week (EASW): Brno University of Technology	Jun-15	Brno University of Technology, Brno	SC, Civil Society	50	Czech Republic
51	Presentations - Flyers	EASN	European Aeronautics Science Week (EASW): University of Limerick	Jun-15	University of Limerick, Limerick, Ireland	SC, Civil Society	50	Ireland
52	Presentations	EASN	European Aeronautics Science Week (EASW): University of Glasgow	31-03-15	University of Glasgow, Gla	SC, Civil Society	100	UK
53	Flyers	EASN	European Aeronautics Science Week (EASW): University of Glasgow	31-03-15	University of Glasgow, Gla	SC, Civil Society	100	UK
54	Presentations - Flyers	EASN	European Aeronautics Science Week (EASW): Queen Mary University,	Jun-15	Queen Mary University, London, UK	SC, Civil Society	50	UK
55	Presentations	EASN	European Aeronautics Science Week (EASW): University of Manchester	26-03-15	University of Manchester, Manchester, UK	SC, Civil Society	32	UK
56	Flyers	EASN	European Aeronautics Science Week (EASW): University of Manchester	26-03-15	University of Manchester, Manchester, UK	SC, Civil Society	32	UK



57	Presentations	EASN	European Aeronautics Science Week (EASW): Politecnico di Milano	27-03-15	Politecnico di Milano, Milano	SC, Civil Society	100	Italy
58	Flyers	EASN	European Aeronautics Science Week (EASW): Politecnico di Milano	27-03-15	Politecnico di Milano, Milano	SC, Civil Society	100	Italy
59	Presentations	EASN	European Aeronautics Science Week (EASW): Politecnico di Torino	23-04-15	Politecnico di Torino, Torino	SC, Civil Society	100	Italy
60	Flyers	EASN	European Aeronautics Science Week (EASW): Politecnico di Torino	23-04-15	Politecnico di Torino, Torino	SC, Civil Society	100	Italy
61	Presentations - Flyers	EASN	European Aeronautics Science Week (EASW): Katholieke Universiteit	Jun-15	Katholieke Universiteit Leuven, IEUVEN, Belgium	SC, Civil Society	50	Belgium
62	Presentations	EASN	European Aeronautics Science Week (EASW): Circle Aeronautique de	14-04-15	ESTACA, Paris, France	SC, Civil Society	50	France
63	Flyers	EASN	European Aeronautics Science Week (EASW): Circle Aeronautique de	14-04-15	ESTACA, Paris, France	SC, Civil Society	50	France
64	Oral presentation to a scientific event	ID Partners	European Aeronautics Science Week (EASW): Circle Aeronautique de	14-04-15	ESTACA, Paris, France	SC, Civil Society	50	France
65	Presentations	EASN	European Aeronautics Science Week (EASW): Universidade do Porto	28-04-15	Universidade do Porto, Porto, Portugal	SC, Civil Society	50	Portugal
66	Flyers	EASN	European Aeronautics Science Week (EASW): Universidade do Porto	28-04-15	Universidade do Porto, Porto, Portugal	SC, Civil Society	50	Portugal
67	Poster	EASN	European Aeronautics Science Week (EASW): Universidade do Porto	28-04-15	Universidade do Porto, Porto, Portugal	SC, Civil Society	50	Portugal
68	Flyers	EASN	European Aeronautics Science Week (EASW): Universitat Autònoma de	04/05/2015`	Universitat Autònoma de Barcelona, Barcelona,	SC, Civil Society	50	Spain
69	Presentations	EASN	European Aeronautics Science Week (EASW): Universitat Autònoma de	04/05/2015`	Universitat Autònoma de Barcelona, Barcelona,	SC, Civil Society	50	Spain
70	Flyers	EASN	European Aeronautics Science Week (EASW): FH JOANNEUM Graz (University	29-04-15	FH JOANNEUM Graz, Graz, Austria	SC, Civil Society	77	Austria
71	Presentations	EASN	European Aeronautics Science Week (EASW): FH JOANNEUM Graz (University	29-04-15	FH JOANNEUM Graz, Graz, Austria	SC, Civil Society	77	Austria



## 4.2 Proposal for follow-up activities

Taking into account that **Promo-Air** project was the first initiative aiming at attracting young Europeans in aeronautics, as well as the fact that this high level objective is difficult to be fully accomplished within the short period of a 2-years project, it is the belief of the consortium that additional and continuous activities should be scheduled and implemented in the near future in order to increase appreciably the success level of the current project and further work on bringing the described impact. It should be also underlined that the Advisory Board of the project shares this viewpoint in their final evaluation report, recommending follow-up activities. In this context, the consortium prepared a proposal which includes the lessons learned during the lifetime of the project, suggestions for additional activities and an estimation of the required financial support. This proposal is presented below.

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### **Introduction**

*Responding to the identified need of stimulating and attracting more talented students to follow aeronautical related studies and careers, the Promo-air CSA was supported by the EC within the 7<sup>th</sup> Framework Programme from May 2013 to April 2015. During its implementation, Promo-air created a number of attractive promotional material and initiated the concept of the “European Aeronautics Science Week” (EASW), during which a pan-European event with the participation of 17 Universities from 15 EU countries, was organised. In this event, students were presented with the material prepared by Promo-air and obtained hands-on experience during their visit at labs dealing with aeronautics related research. A number of valuable tools were also developed during the implementation of the project such as the Promo-air website, the social media accounts which managed to obtain several thousands of student followers and an initial base of Universities which would be potentially interested in repeating this activity.*

### **Rationale**

*The significance of the Promo-Air objective, namely to attract young engineers, as well as the positive feedback received for the tools developed and the actions performed make it worthwhile to try to maintain and further strengthen this activity. In this context, the momentum created with the implementation of the Promo-air project could serve as the base for a permanent activity, aiming at attracting talented young Europeans to follow a career in aeronautics. A first action would be to establish the “European Aeronautics Science Week” as a pan-European event on an annual basis. With investing the necessary effort, this activity could be extended to several more European*



Universities reaching a greater number of students every year. In order to do this, the established tools should be maintained and further improved, while at the same time the event should be promoted so as to attract more participants. It is worth noticing that if the activity could continue for a time period of 3-4 years, some first indications of its true impact would then be obtained (e.g. by following up with the students participating at the annual EASW and evaluating the number of students following aeronautics related studies). At that time, should it prove to have a significant impact on the students, it would be an ideal starting point for making it a permanent, self-sustaining action.

### **Lessons learned and additional activities**

- Aeronautics related careers are not considered by high school students as “prestigious” as other fields. It is therefore necessary to boost the image of Aeronautics by conveying the right messages and highlighting the possibilities of a rewarding career.
- The Promo-air activities were followed and endorsed to different degrees in different parts of Europe. The reason for this has to be understood and, depending on the outcome, a different approach may need to be planned and implemented on a country-specific basis.
- Living in the world of social media, it was proven that they can become a very useful tool for influencing the decisions of students with respect to their future careers. Therefore, the tools developed need to be maintained and further enhanced to reach an even wider audience.
- The positive comments received by students who attended the lab visits, has proven that the establishment of a link between high school students and Academia, via the EASW, can be further exploited and upgraded in the near future, in order to continuously attract young Europeans in Aeronautics. Furthermore, a working group within EASN could be established, acting as an advisory board for making the EASW more efficient.
- Competitions connected to appealing prizes can be a valuable tool for catching the attention of students and trigger their interest in specific fields. Building on Promo-Air's Quiz Competition, different kind of student competitions can be organized. This activity can be done in coordination with the European Aeronautics industry, which would provide ideas and competition concepts (e.g. innovative design concepts), as well as attractive prizes (e.g. cockpit simulators, Rolls-Royce museum etc.).

### **Required support**

In order to effectively support the above mentioned activities, an annual budget of €50.400 would be required. This budget is required to cover the labor costs as well as other costs related to these



actions (e.g. physical dissemination material, travels etc.). From this budget, the partners involved could cover labor costs of €10.000. Should a funding source be available able to cover the remaining €40.400, this activity could continue. An indicative breakdown of the required budget is presented in the table below.

<b>Cost category</b>	<b>Total budget</b>	<b>Self-funding</b>	<b>Required funding</b>
<b>Labor</b>			
<i>EASW/Competitions organization</i>	15K€ (~3PM)	5 K€ (~1PM)	10K€ (~2PM)
<i>Social Media / Website maintenance</i>	15K€ (~3PM)	5 K€ (~1PM)	10 K€ (~2PM)
<b>Other</b>			
<i>Travels</i>	4K€	-	4K€
<i>Dissemination material</i>	6K€	-	6K€
<i>Consumables</i>	2K€	-	2K€
<b>Overheads (20%)</b>	8.4 K€	-	8.4 K€
<b>TOTAL</b>	<b>50.4K€</b>	<b>10K€</b>	<b>40.4K€</b>