



Public Website

Deliverable 7.6

Author: Magali Mares
Date: 17/10/2017
Version: VF



Grant Agreement number: 723167
Project acronym: ACASIAS
Project title: Advanced Concepts for Aero-Structures with Integrated Antennas and Sensors
Funding scheme: RIA
Start date of the project: 01/06/2017
Duration: 36 months
Project coordinator (organisation): Harmen Schippers (NLR)
Phone: 0031 (0)88-5114635
E-mail: Harmen.Schippers@nlr.nl
Project website address: www.acasias-project.eu



DOCUMENT INFORMATION

Document Name	Public website
Version	VF
Version Date	17/10/2017
Author	Magali Mares
Security	Public

APPROVALS

	Name	Company	Date	Visa
Coordinator	Harmen Schippers	NLR		
WP Leader	Magali Mares	L-UP	17/10/2017	

DOCUMENTS HISTORY

Version	Date	Modification	Authors
V1	09/10/2017	Document creation	Magali Mares
V2	17/10/2017	Corrections from NLR	Harmen Schippers, Jaco Verpoorte
VF	17/10/2017	Final Version	Magali Mares

LIST OF AUTHORS

Full name	Organisation
Magali Mares, Andy Hoque	L-UP
Harmen Schippers	NLR
Jaco Verpoorte	NLR

DISTRIBUTION LIST

Full Name or Group	Organisation
ACASIAS consortium	
PO	INEA

LIST OF CONTENT

1. EXECUTIVE SUMMARY	4
1.1. Introduction	4
1.2. Brief description of the work performed and results achieved	4
1.3. Deviation from the original schedule	4
2. WORK PERFORMED	4
2.1. Main objective	4
2.2. Implementation schedule	4
2.3. Website structure and content	5
2.4. Social network	15
3. CONCLUSION AND OUTLOOK	17

1. EXECUTIVE SUMMARY

1.1. Introduction

This deliverable report describes the design and implementation of the lay-out, content and features of the ACASIAS public website.

1.2. Brief description of the work performed and results achieved

The public website presents the features and functionalities that are aligned with the current state of the art technologies e.g. web 2.0 technologies, CSS3, and HTML 5. The website has also been optimized for mobile devices (screen resolution: 979 pixels), making it responsive for touchpads.

1.3. Deviation from the original schedule

The preparation of the content of the website started in July 2017. The layout of the proposed website structure and images has required several modification and validation loops in order to achieve the desired result. In the meantime, several novel images have been created by the multimedia department at NLR to illustrate the innovations and impact. This preliminary work was delayed by the holidays period in August 2017. Therefore, the development of the website started in September 2017. The offline version of the website was made available on 22/09/2017 for review and comments by the partners. The public website was released on 5/10/2017 with one month delay compared to the original schedule.

2. WORK PERFORMED

2.1. Main objective

The main objective of the ACASIAS website is to provide updated online information about the project, its goals and progress, the consortium partners and their communication / dissemination activities.

This information can be found at: www.ACASIAS-project.eu

The ".eu" domain has been used to highlight the EU initiative underlying the activities of the project. The name of the domain is registered for 2 years beyond the project's end date in accordance with the EC recommendations.

2.2. Implementation schedule

Initially, the ACASIAS website was to be released in M03 of the project (September 2017). The creation of this communication channel and its internal review by the partners was extended: the consortium released the website publicly in October 2017.

2.3. Website structure and content

The design of the website respects the usual structure and organisation used by most public websites. The menu of the ACASIAS website has been designed as shown in Figure 1. The main sides of the home page are Overview, Consortium, Knowledge, and News and events.

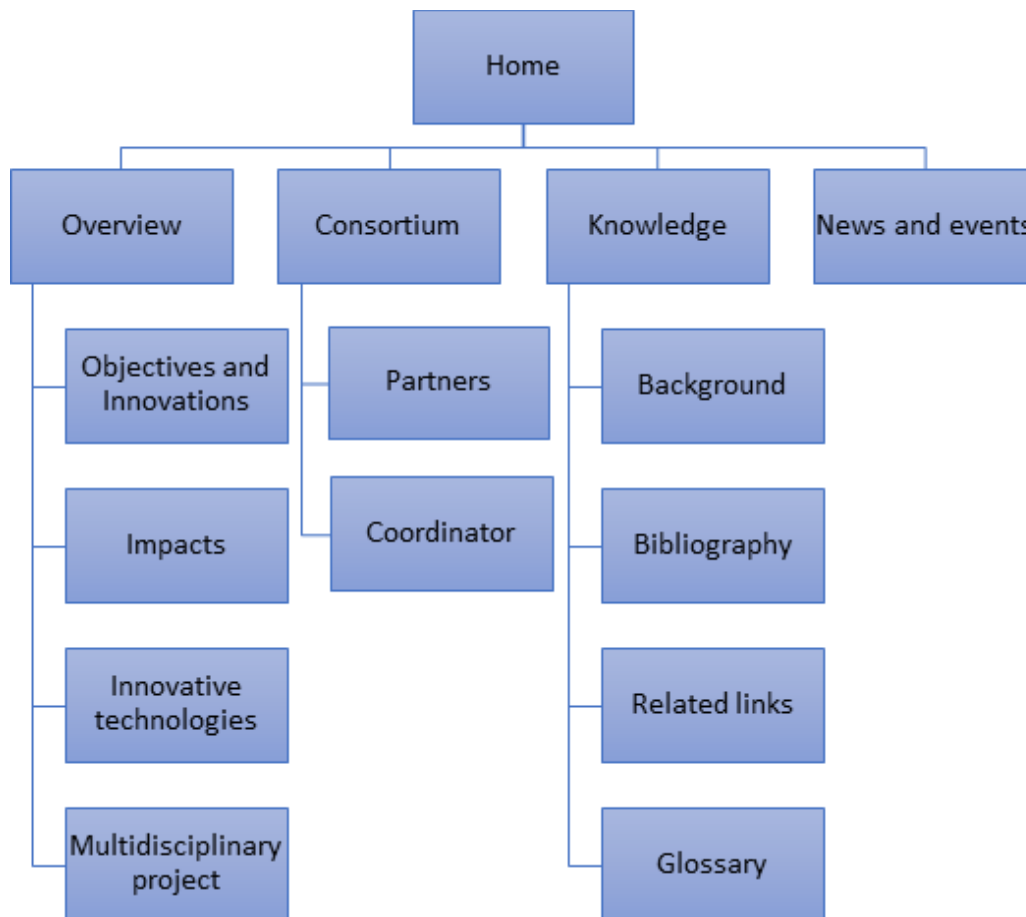


Figure 1: ACASIAS website architecture

Each page has a unique title tag in the header section of the page's HTML code. This benefits the ranking of project web pages in search engines.

The following sections will briefly describe each web page.

2.3.1. Homepage

The Homepage is the most viewed page of the website since most visitors start their navigation from this page.

The plan is to acquaint an initial visitor with the overview of the project while making sense to a "technically literate" individual outside the ACASIAS immediate community. The homepage aims to briefly tell the "project story" i.e. to outline the real-world scenario and benefits that are expected of this research and innovation action.

The Homepage contains a short introduction to the ACASIAS main objective, expected impacts, objectives and innovations and consortium. The sub-areas introduce "key" pages of the website (links re-directing to relevant pages):

- ▲ Expected impacts;

- ▲ Innovations and consortium;
- ▲ Consortium.

Additionally, the bottom of the page includes a line with the link to the most recent piece of news re-directing to a more elaborated description of the related item on the dedicated pages.

Full imprint and disclaimer are also mentioned on this page.

The bottom of the page includes an access to the private project platform. The image below shows the Homepage of the website:



Figure 2: Homepage

2.3.2. Page “Objectives and innovations”

This page presents the main innovations of the project ACASIAS summarized in dynamic and interactive image. The four project innovations are indicated by a window on an aircraft, and are dynamically displayed underneath:

ACASIAS | HOME | **OVERVIEW** | CONSORTIUM | KNOWLEDGE | NEWS AND EVENTS

OBJECTIVES AND INNOVATIONS

The overall objective of ACASIAS is to contribute to the reduction of energy consumption of future aircraft by improving aerodynamic performance and by facilitating the integration of novel efficient propulsion systems such as contra-rotating open rotor (CROR) engines.

FOUR INNOVATIVE AERO-STRUCTURES WITH INTEGRATED SYSTEMS ARE DEVELOPED AND EVALUATED:

4

A Fibre Metal Laminate (FML) GLARE (Glass Laminate Aluminium Reinforced Epoxy) panel with integrated VHF communication slot antenna and GPS patch antennas

- Glass fiber layer
- Metal layer with slot antenna
- Glass fiber layer
- Smart Metal layer with High Impedance Surface
- Glass fiber layer

INNOVATIVE TECHNOLOGIES

ACASIAS innovations will encompass several domains and disciplines involved in the project, such as Antenna design, Composite process manufacturing, Radio-Frequency (RF) and Structural analysis, leading to:

- New technology manufacturing process**
for assembling two different materials carbon and transparent dielectrics into a hybrid composite structure for the realization of RF transparent skins and embedded antennas.
- New process for manufacturing of grid stiffened panels**
for fuselage structures with integrated antennas and smooth aerodynamic quality.
- New concepts for installation**
of antennas integrated into composite structures with a very high MTBF (Mean Time Between Failures).
- New concepts for integration**
of wiring, sensors and actuators in composite fuselage panels for active structure acoustic noise level reduction with minimal impact on weight.

DISCOVER EXPECTED IMPACTS

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 733167.

CONTACT Mail : contact@acasias.eu
Project Coordinator : Harmen Schippers (NLR)
Dissemination : Magali Maras (L-up)

PRIVATE ACCESS
to EMDISK platform

Imprint / Disclaimer | Conète : Agence de communication Lyon

Figure 3: Objectives and innovations page

2.3.3. Page “Impacts”

The objective of this page is to present the expected impacts from the ACASIAS research work. These impacts are summarized and several images are dynamically displayed to show the evolution before and after the project.

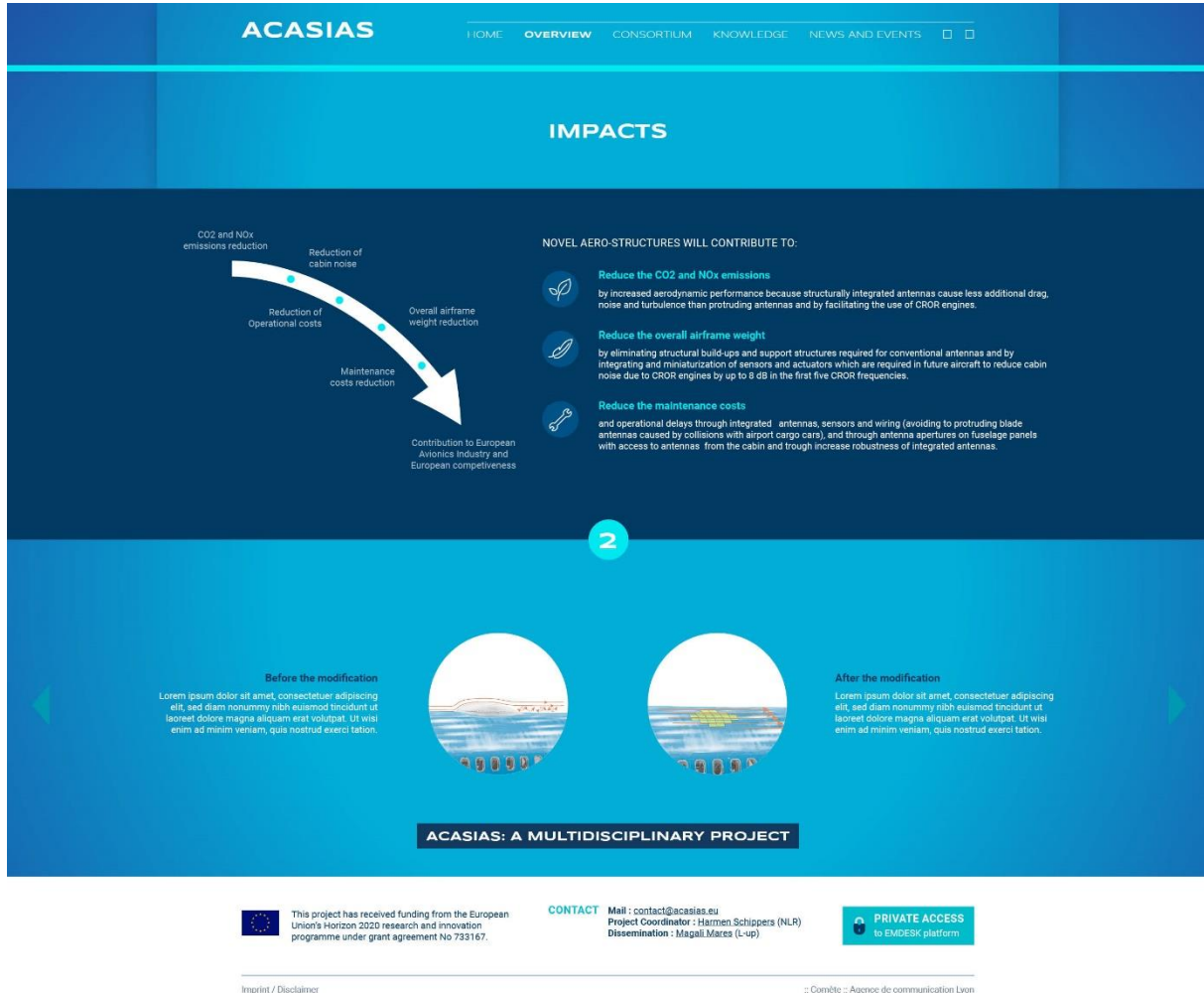


Figure 4: Impacts pages

2.3.4. Page “Multidisciplinary Project”

The objective of this page is to introduce the expertise gathered to achieve the ACASIAS research and the development steps planned for each innovation. The image below shows the screenshot of the “Multidisciplinary Project” page:



Figure 5: Multidisciplinary project page

2.3.5. Page “Partners”

This page presents the logos of the 11 partners of the ACASIAS consortium. A click on a partner’s logo re-directs the visitor to the short partner description. A click on the logo in the partner description redirects to the homepage of the partner organisation. The image below shows the screenshot of the “Partners” page:





ACASIAS
HOME OVERVIEW CONSORTIUM KNOWLEDGE NEWS AND EVENTS



PARTNERS
The ACASIAS consortium is composed by 11 partners from 6 different countries.




RESEARCH INSTITUTES


INDUSTRY

SME
















NLR (NL)
Research centre in aerospace with a broad scope. NLR develop and evaluate ortho-grid stiffened panels, test the structural and RF performance of panels with integrated antennas, and support RF and thermal design of structures and integrated antennas.




DLR (DE)
Research centre in aeronautics and space with broad scope which has extensive knowledge in CFRP and acoustic testing facilities. DLR will design and evaluate CFRP panels with integrated ASAC system.




VZLU (CZ)
research centre in aeronautics and has excellent facilities in CFD and simulations for structural properties.




CIMNE (SP)
Research centre in numerical methods and computational techniques which includes innovative constitutive models for composite materials and structures.




FOKKER AERO-STRUCTURES (NL)
FAE is a first-class specialist in the design, development and manufacturing of lightweight structures. They will support design and evaluation of smart panels with integrated antennas.




EVEKTOR (CZ)
Aerospace industry covering complete product development, testing and certification including installations of avionics systems and their protection against EM environmental effects.




FOKKER ELMO (NL)
FE is a leading specialist in the design, development of electrical system integration as well as production. FE will develop robust electrical interfaces (including connectors) for smart FAE panels and ensure the integrity of the electrical interconnections.




IMST (DE)
SME company has experience in R&D and more specifically supporting the RF-circuits and active antenna technology.



INVENT (DE)
A pan-European engineering company specialised in the development and manufacture of fibre composite structural and functional components, mainly for the aerospace industry.




TRACKWISE (UK)
SME company specialised in the manufacture of antennas using printed circuit technology.



L-UP (FR)
Will support the Project Coordinator in technical, financial, administrative and legal management, coordination as well as in the dissemination and exploitation activities.

COORDINATOR


This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 733167.

CONTACT
Mail : contact@acasias.eu
Project Coordinator : Harmen Schlipers (NLR)
Dissemination : Magali Mares (L-up)


PRIVATE ACCESS to EMESIX platform

Imprint / Disclaimer
Agence de communication Lyon

Figure 6: Partners page

2.3.6. Page “Coordinator”

This section depicts NLR expertise and the coordinator curriculum.

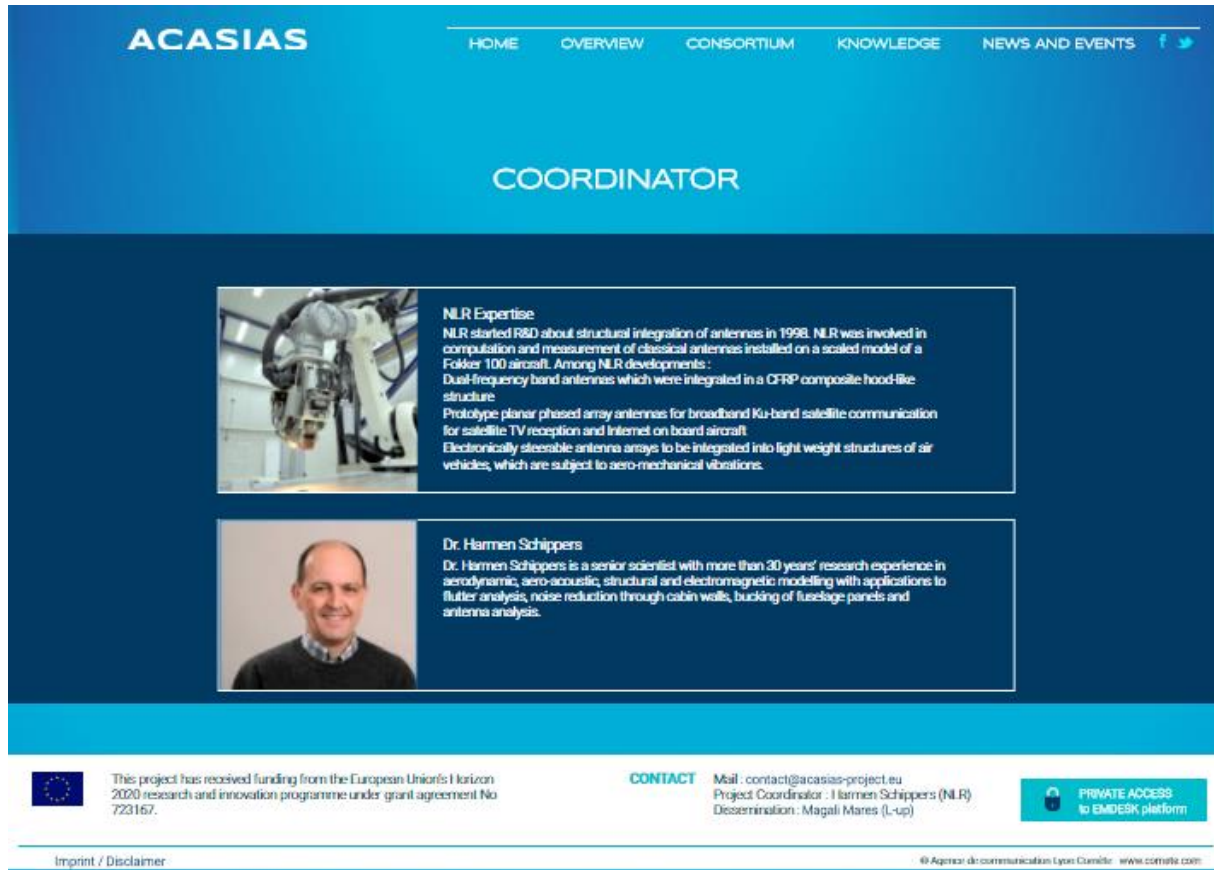


Figure 7: Coordinator page

2.3.7. Page “Background”

This page provides the previous projects useful in the context of the project.



Figure 8: Background page

2.3.8. Page “Bibliography”

This page provides the State of the Art bibliography useful in the context of the project.



The image shows a screenshot of a document page titled "BIBLIOGRAPHY" in a blue header. Below the header, there is a list of 17 references, numbered 1 through 17. The references are formatted in a standard academic style, including author names, titles, and publication details. The page has a dark blue background for the header and a white background for the main content area.

BIBLIOGRAPHY

1. H. Schippers, J. Verpoorte, A. Huijings, C. Rosloffzen, and R. Baggen, "Towards structural integration of airborne Ku-band SatCom antenna," in *Antennas and Propagation (EuCAP), 2013 7th European Conference on*, 2013, pp. 2963-2967.
2. J. Verpoorte, H. Schippers, P. Joma, A. Huijings, C. G. H. Rosloffzen, D. A. I. Marpaung, et al., "Development of the SANDRA antenna for airborne satellite communication," in *Aerospace Conference, 2011 IEEE*, 2011, pp. 1-15.
3. J.M. Müller, R. Journee and M.J. Otto, Advanced core material for thermoplastic sandwich structures, *SAMPE Journal* 2013, Vol. 49, No.4, July/August 2013.
4. J.M. Müller and W.M. van den Brink, "Comparison of Integrated Rib Stiffened and L-Blade Stiffened Composite Panels Manufactured using Simple Tooling Methods", *SAMPE Long Beach* 2016, May 26, 2016.
5. Algemissen, S.; Meyer, S.; Appel, C. & Monner, H. P. (2014), 'Experimental Synthesis of Sound Pressure Fields for Active Structural Acoustic Control Testing', *Journal of Intelligent Material Systems and Structures* 25(7), 881 – 889.
6. Algemissen, S.; Misol, M. & Urruh, O. (2012), Reduction of Turbulent Boundary Layer Noise with Actively Controlled Carbon-Fiber-Reinforced-Plastic Panels, in Michael Sinapius & Martin Wiedemann, ed., 'Adaptive, tolerant and efficient composite structures', Springer, pp. 417 - 425.
7. Hasse, T.; Algemissen, S.; Urruh, O. & Misol, M. (2014), 'Experiments on Active Control of Counter Rotating Open Rotor Interior Noise', *Acta Acustica united with Acustica* 100(3), 448 – 457.
8. Hasse, T.; Urruh, O.; Algemissen, S. & Pohl, M. (2016), 'Active control of counter-rotating open rotor interior noise in a Dornier 728 experimental aircraft', *Journal of Sound and Vibration* (JouVol.org).
9. Misol, M.; Algemissen, S. & Monner, H. P. (2012), 'Experimental investigation of different active noise control concepts applied to a passenger car equipped with an active windshield', *Journal of Sound and Vibration* 331(10), 2209 - 2219.
10. F. Otero, X. Martínez, S. Oller, O. Salomón. An efficient multi-scale method for non-linear analysis of composite structures. *Composite Structures*, Vol. 131, pp. 707-719, 2015.
11. M.A. Pérez, X. Martínez, S. Oller, L. Gil, F. Rastellini, F. Flores. Impact damage prediction in carbon fiber-reinforced laminated composite using the matrix-reinforced mixing theory. *Composite Structures*. Vol. 104, pp. 239-248, 2013.
12. X. Martínez, F. Rastellini, S. Oller, F. Flores, E. Oñate. Computationally optimized formulation for the simulation of composite materials and delamination failures. *Composites Part B: Engineering*. Vol. 42, Num. 2, pp. 134-144, 2011.
13. R Rossi, J Colella, NM Lafontaine, P Dadvand, SR Idelsohn. Parallel adaptive mesh refinement for incompressible flow problems, *Computers & Fluids*, 80, 342-355, 2013.
14. P Dadvand, A. Coll Sans, R. Rossi, R. Wüchner, E. Oñate. Paper: Efficient parallel algorithms for embedded fluid structure interaction with unstructured mesh. 11th World Congress on Computational Mechanics (WCCM), 2014.
15. O. Heintze, S. Steeger, A. Falken, J. Heckmann. Enhanced Adaptive Droop Nose - from Compute Model to Multi-functional Integrated Part, in Smart Intelligent Aircraft Structures (SARISTU), Proceedings of the Final Project Conference, Piet Christof Wolkien and Michael Papadopoulos (eds.), Springer, 2016.
16. Vichota, P., Prachar, A.: Using wing modal deformation for improvement of CFD results of ESMRP project", 5th CEAS Air & Space Conference, Delft, Netherlands, 2015.
17. Prachar, A.: Local Low Speed Preconditioning in Rotating Reference Frame", *Applied Mathematical Sciences* 9(5):209-218, January 2015.

Figure 9: Bibliography page

2.3.9. Page “Related links”

This page provides the related links useful in the context of the project.

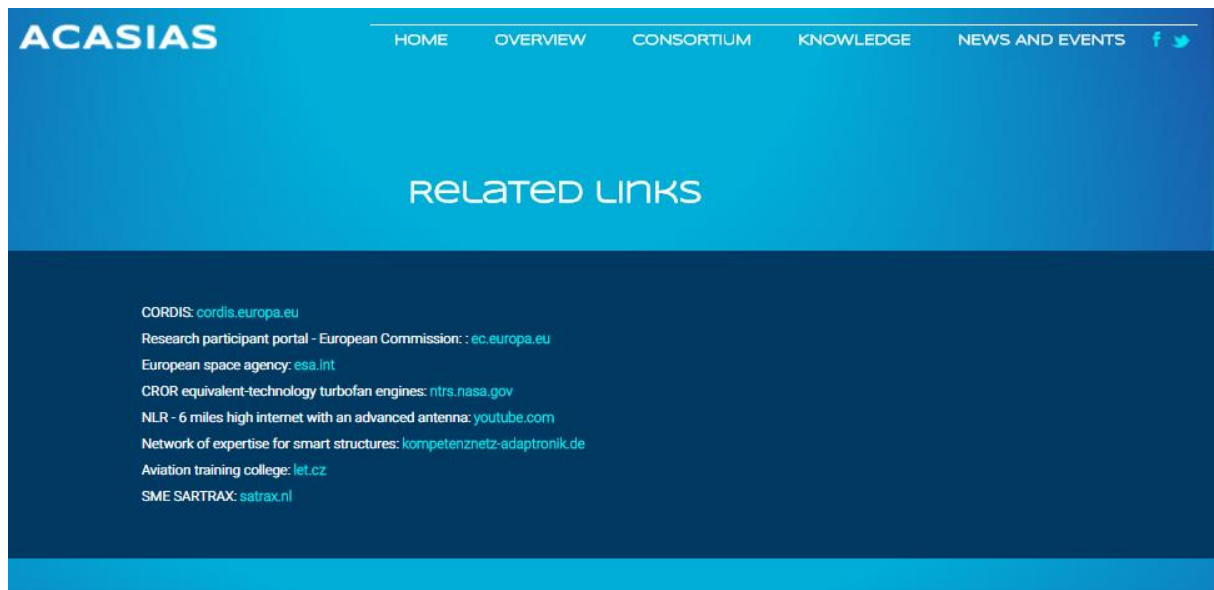


Figure 10: Related links

2.3.1. Page “Glossary”

This page provides the acronyms useful in the context of the project.



Figure 11: Glossary page

2.3.2. Page “News and events”

This page provides the list of the project-related pieces of news in a reverse chronological order (i.e. most recent items are located on top of the page). The image below shows the screenshot of the “News and Events” page:

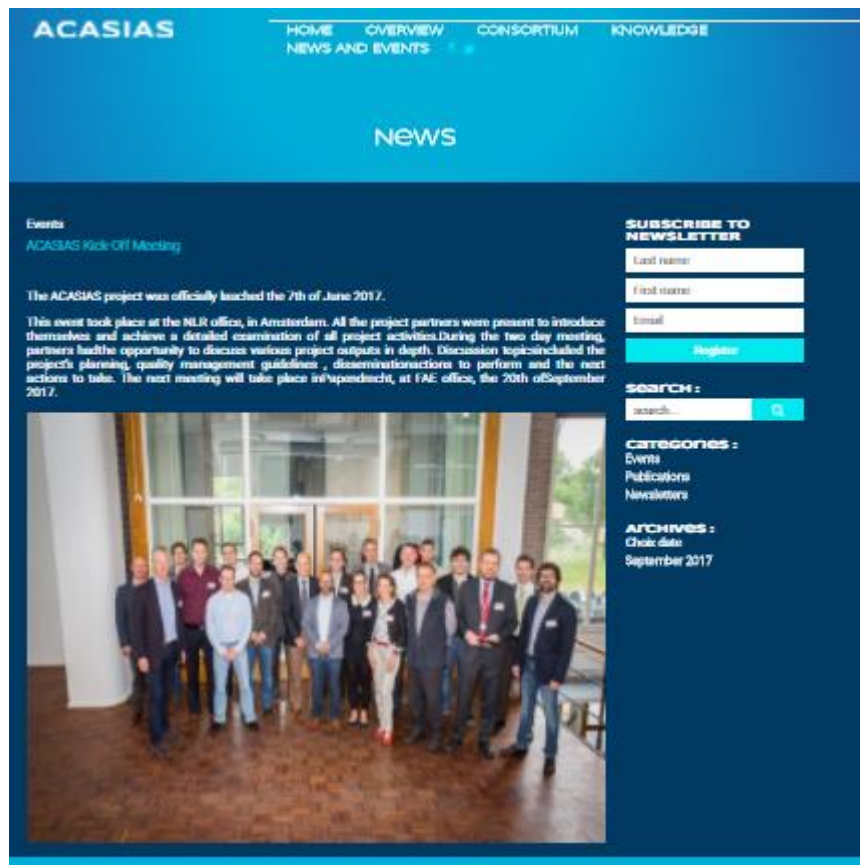


Figure 12: News and events page

2.4. Social network

The ACASIAS social network pages have been created on Facebook and Twitter (https://twitter.com/Acasias_Project, <https://www.facebook.com/Acasias-120113045374698/>) in order to notify its network members about future events related to the project and to animate discussion around the project. The pages on LinkedIn and Research Gate are going to be created. The social network pages are accessible from the ACASIAS website.

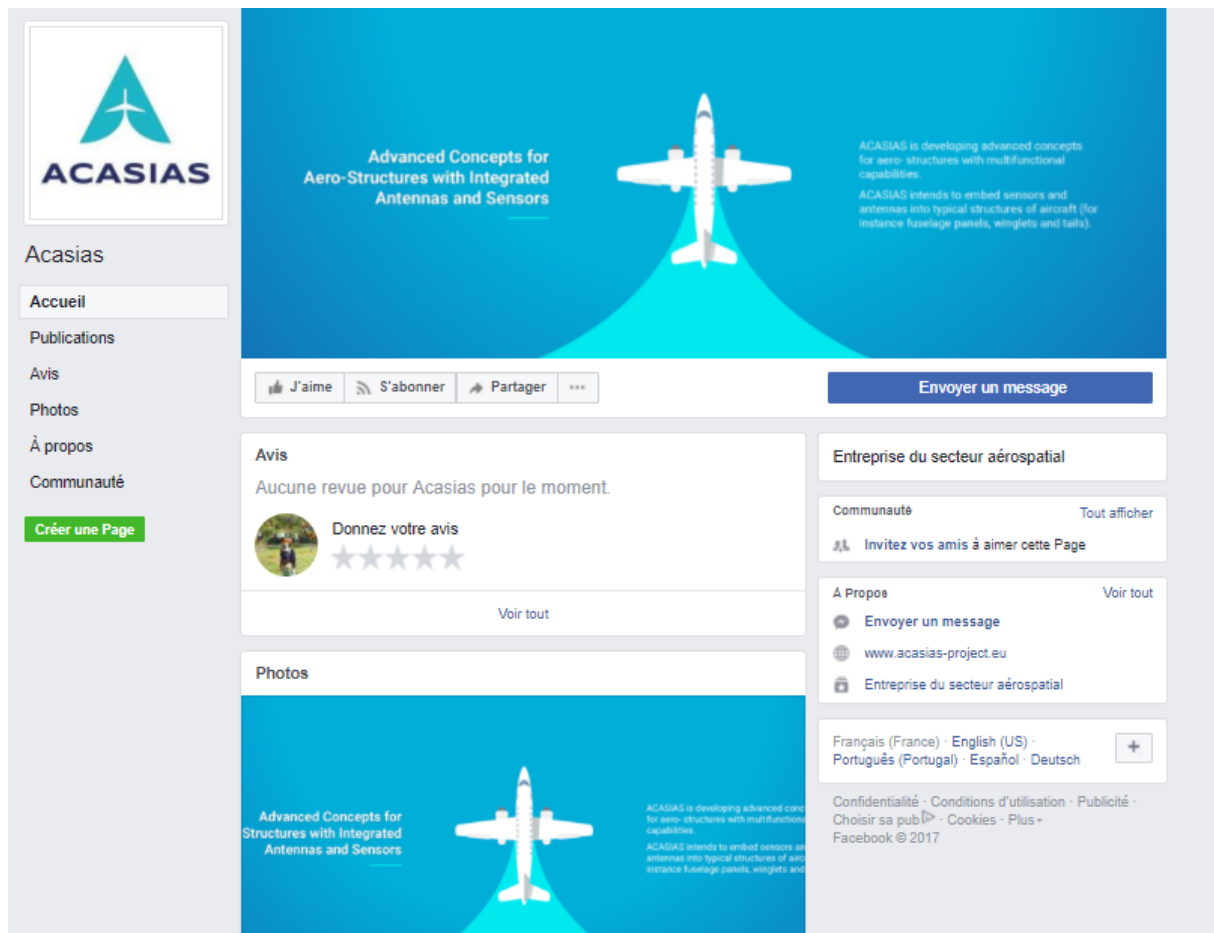


Figure 13: Facebook page

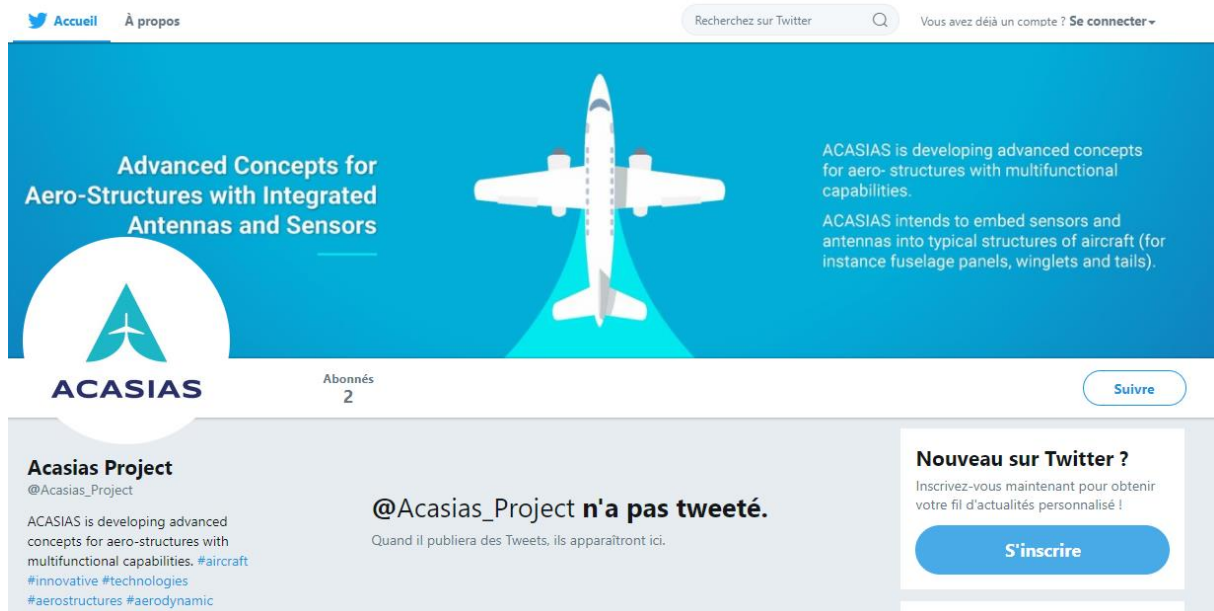


Figure 14: Tweeter page

3. CONCLUSION OUTLOOK

AND

The objective is to regularly update and enrich the website through the section "News and Events" which is the traditional conveyor of the project life. However, other sections are also planned to be developed:

- ▲ A page results will be created to inform on the progress and achievements of each WP;
- ▲ Other possible improvements that will be brought to our knowledge by the consortium itself or by the "ACASIAS community" created around the project.

The modifications and improvements of the website will be periodically reported in the updates of the Dissemination Action Plan. In case of major modifications, the proposals will be brought to the attention of the members of the General Assembly. Their approval will be requested in conformity with the Consortium Agreement.