



COMFort in the cabin DEMOnstrator

Deliverable D6.1: Dissemination, communication and exploitation plan

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¹ R=Document, report; DEM=Demonstrator, pilot, prototype; DEC=website, patent fillings, videos, etc.; OTHER=other

² PU=Public, CO=Confidential, only for members of the consortium (including the Commission Services), CI=Classified, as referred to in Commission Decision 2001/844/EC



ABSTRACT:

In ComfDemo, a system is built to record and predict comfort in a demonstrator of an interior of an airplane. This document concerns the planning of the dissemination, communication and exploitation activities regarding this ComfDemo project. The main activities in the first 6 months were:

-A workshop with 60 comfort experts on choosing comfort questionnaires and writing a scientific paper on the outcome.

-Meetings to define the comfort model, make the jacket and presenting this to students, researchers, aircraft interior industries and airlines.


KEYWORD LIST:

Dissemination, exploitation, communications, online communications, website, publications, audiences, messages, channels

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1 Executive Summary

Deliverable 6.1 outlines the initial dissemination, exploitation and communication strategy of the ComfDemo project. In the dissemination part it is shown that in the first 6 months several activities are undertaken by which 1030 persons did hear about ComfDemo. In the communication part the internal communication is described consisting of several meetings, where all partners participated and meetings focusing on the comfort model, the jacket and the questionnaires. In the exploitation part elements are described, which could be exploited, like the jacket and the software and elements that are open to all scientists, for instance the comfort model and the overview of comfort questionnaires.

2 Introduction

2.1 Purpose of this document

The purpose of this document is to show the activities that are done and the planned activities regarding dissemination, communication and exploitation for the ComfDemo project. This document aims to present and explain to the Topic Manager, the Project Officer and consortium members, the aims, objectives, audiences, messages and tools identified to achieve a successful dissemination and exploitation to ensure impact for the ComfDemo project.

2.2 Structure of the Deliverable

This deliverable consists of four main parts: condensing the ComfDemo message (1), dissemination (2), communication (3) and exploitation (4).

3 Description of Deliverable

3.1 Objectives

The overall objective of dissemination is to present concepts, outputs and benefits of the project, in an understandable and relevant manner to various external audiences. The dissemination, exploitation and communication strategy also aims to ensure that target audiences are convinced of the added value of European collaboration on this project, as well as to demonstrate the practical relevance and benefits of the project to the everyday lives of millions of European citizens. This strategy aims to ensure that communications are targeted and measurable.

The **dissemination** strategy will also aim to ensure that the ComfDemo project reaches key audiences in the aviation industry (e.g. aircraft interior industry and airlines) and the scientific community (e.g. scientific and popular journals). This will ensure the long-term impact of the project beyond its lifetime.

Communication: Another objective is to ensure ComfDemo project partners have a cohesive and clear understanding of the progress, outputs, benefits and implications of the project. Effective internal communications throughout the project helps to maintain focus on dissemination objectives and activities.

In the **exploitation** part IPR will be defined (e.g. on the approach) and the parts of the project that can be exploited (e.g. the jacket). Possibilities for exploitation will be studied. For instance, the software and the jacket can be exploited as a service to aircraft (and other vehicle) manufacturers or airlines. Only the topic manager and the involved partners (incl. a licence to TU-Delft) will have access to this software and the jacket.

3.2 Condense the message and create carriers

In order to start communicating and dissemination in the first 6 months a more condensed description of the project is defined illustrated in a video (see website www.comfdemo.com and appendix 1)). The video shows there is a need to improve comfort and with ComfDemo we try to predict comfort in an early stage of the development. This way innovation in the aviation industry can be tested before building a real airplane. Factors influencing comfort like temperature, noise, vibration, human movement and air quality are studied first using a jacket and questionnaires. This data is used to simulate an aircraft interior environment in a demonstrator and in the demonstrator the environment can be adapted to optimize the real airplane interior. Parallel to the simulation a digital twin is developed, which can also support the comfort improvement.

Additionally, a logo is developed as a point of recognition in the first 6 months. The logo is shown at the first page of this deliverable. It has a feather (association with comfort) and a cloud (association with being in the air). Further the feather has the form of a C and the cloud the form of a D from ComfDemo. The logo is designed to be coherent with the CleanSky logo.

3.2.1 Dissemination

Dissemination of the ComfDemo project will ultimately aim to ensure that the goals and the results of the project are comprehensive and accessible to specialist as well as general audiences. The main specialist audiences are:

- students
- researchers/scientists working on comfort
- industry working on aircraft interiors
- aircraft manufacturers
- airlines

As is described in the grant agreement “Each stakeholder will contribute to core dissemination activities by their unique inputs. “. In Figure 1 (also from the grant agreement) the contribution of each stakeholder is shown.



Figure 1 An overview of dissemination, communication & exploitation activities of the ComfDemo project for the different stakeholders.

Dissemination activities have been performed in the first 6 months and are planned for the coming 24 months. An overview of presentations on ComfDemo in different target groups the first 6 months is shown in Table 1. A ComfDemo YouTube channel has been created and is hosting the first video. This video is being played on screens in public Engineering space at NTU reaching about 500 students and staff. About 5830 other persons did hear about ComfDemo. Other dissemination activities are writing two scientific papers. These are submitted to the journal Work (a special issue on comfort). One paper was on comfort questionnaires. At the ICC2019 a ComfDemo workshop was organised in which all comfort experts rated the existing comfort questionnaires. The other paper is on the relationship between smell and comfort for which a separate experiment was arranged.

Table 1 An overview of presentations on ComfDemo for the different stakeholders (stud=students; sci=researchers/scientists; inter= industry working on aircraft interiors; aircr= aircraft manufacturers; airl=airlines; pub=general public)

date	activity	location	target audience						description
			stud	sci	inter	aircr	airl	pub	
15-aug	prejacket	VHP	x						6 students worked on 1st version jacket
29-aug	ICC2019	TUDelft		x	x	x	x		ComfDemo explained at comfort congres 75+ attendees
11-sep	NAG	Safran							NAG Dutch aircraft interior cluster lecture 25 attendees
15-oct	IQPC	Hamburg			x	x			aircraft seating congres 40 attendees
22-oct	comfort lecture	TUDelft	x						350 first years students Industrial design
23-oct	assignment	TUDelft	x						12 students program ComfDemo software
29-nov	HF	Soesterberg		x					Humanfactors.nl 30 attendeees
1-dec	webmovie	VHP						x	simplified ComfDemo message
1-dec	youtube chann	web						x	opening a ComfDemo youtube channel
dec	video shown	NTU	x	x				x	video played in public space at NTU (500 attendees)

The minimum of the planned dissemination activities is shown in Table 2. Additionally, as is described in the grant agreement, contribution to the JU project website will be made as well as contribution to possible newsletters. New movies will made as well to present the outcomes to the larger public, updates of the website will be made and the consortium will provide regular inputs upon request on the results (public) and dissemination activities. The objective being to ensure communication to stakeholders and wider public. Also at the ICC2021 workshops will be organized, which will include researchers and companies from different countries. Additional dissemination activities will consist of ad-hoc participation to conferences and trade fairs (AIX), as it is common for all partners. Every communication and dissemination opportunity will be used to present the project achievements and its added value regarding the development of modelling and simulation environments in general. One or more of the partners will also participate to common workshops organized by the JU.

Table 2 An overview of minimal number of dissemination activities on ComfDemo for different stakeholders (stud=students; sci=researchers/scientists; inter= industry working on aircraft interiors; aircr= aircraft manufacturers; airl=airlines; pub=general public,

date	planned activity	location	target audience						description
			stud	sci	inter	aircr	airl	pub	
2020-4	AIX Hamburg	Hamburg			x	x	x		presentation at the conference of AIX
2021-4	AIX Hamburg	Hamburg			x	x	x		demo of the jacket
2021-9	ICC2021	Nottingham		x	x	x	x		ComfDemo at comfort congres
2020-10	IQPC	Hamburg			x	x	x		aircraft interior congres
2021-6	IEA	Vancouver		x					international ergonomics congres ComfDemo presentati
2021-6	Paris airshow	Paris			x	x	x		demo of ComfDemo
2021-10	IQPC	Hamburg			x	x	x		aircraft interior congres
continuous	webmovies	VHP						x	simplified ComfDemo message
<2022	3 scientific papers			x					in Applied Ergonomics, Ergonomics and Work
<2022	2 popular papers				x	x	x		in 'Inflight' and 'Aircraft interior International' on test
<2022	presentation in courses		x						

3.2.2 Communication

WP6 aims to ensure that internal communications are structured and frequent, so as to allow effective and open communications among consortium members. As is described in the grant agreement the strategic objectives for all communication activities will include:

1. Ensuring that target audiences, i.e., academic researchers, the aircraft (interiors) manufacturers, airlines and the society, are convinced that as a result of European collaboration on the ComfDemo project, the cabin demonstrator is able to accelerate the design process and improve the aircraft interior. Here the ComfDemo project has created measurable financial and operational benefits to the end-users and other stakeholders;
2. Demonstrating that the outcomes of the COMFDEMO project are relevant to different groups of travellers;
3. Informing the outcomes of the COMFDEMO project to academic researchers, decision makers in the industry and the relevant scientific community;
4. Informing the approach of the COMFDEMO project to academic researchers on national and EU level, decision makers in the industry and the relevant scientific community. It is expected that the proposed approach can be expanded to many relevant industries.

The communication grid as described in the grant agreement is presented in Figure 2.

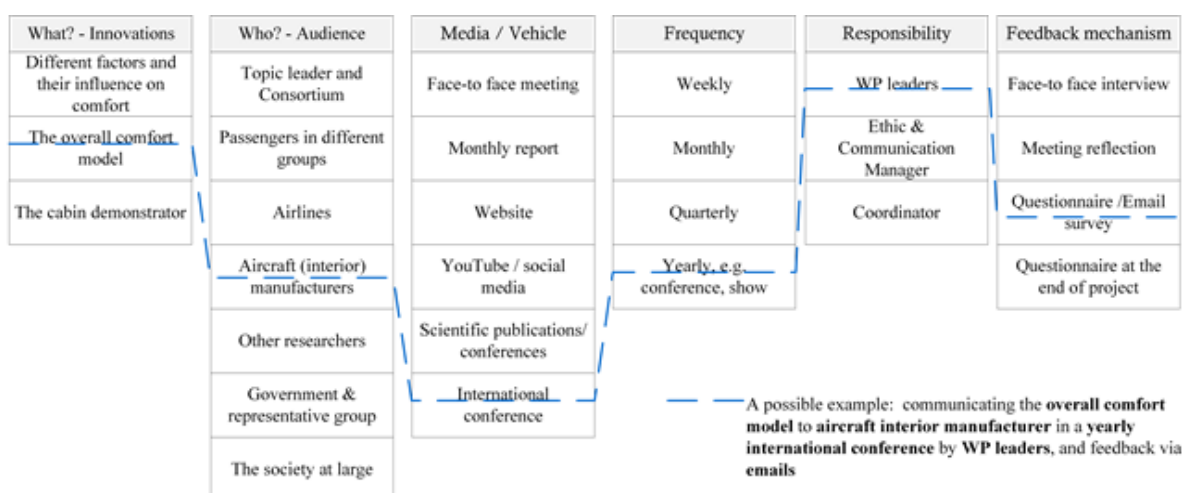


Figure 2 The communication grid showing the activities for different topics and channels.

Internal communication: At the concrete level of what is happening within the consortium an overview is made (see Table 3). For the whole consortium meetings are planned, but where needed bilateral meetings are held by phone or by email. Specifically, VHP consulted LMU by phone regarding the preliminary implications of the target group selection for the ethical approval. Also, face to face meetings are being held to go more into depth. In the second week of January VHP visited NTU and in the 3rd week of January VHP visited LMU to discuss the comfort model more precisely. Also, in January VHP visited ITAP to discuss the sensor characteristics of the jacket. The meetings with involvement of all partners is described in Table 3. Additional communication was also arranged with the topic manager apart from the kick-off. This was needed for minor practical matters, but also for important issues as it was decided to add Leonardo to the implementation plan and to get to know the shipment date of the demonstrator. The topic manager was also consulted by e-mail regarding the input on the potential target group.

Table 3 The meetings of the ComfDemo project where all partners were/are involved

date	where	type of meeting	participants	
29 8 2019	ICC2019	workshop on comfort questionnaire	VHP/NTU	done
3 9 2019	VHP	kick-off ComfDemo	all partners+TM	done
7-11 2019	skype	progress meeting	all partners	done
7 1 2020	skype	progress meeting	all partners	done
12 2 2020	Unott	face to face meeting	all partners+TM	planned
4 3 2020	skype	progress meeting	all partners	planned
9 4 2020	skype	progress meeting	all partners	planned
5 2020	skype	progress meeting	all partners	planned
6 2020	skype	progress meeting	all partners	planned
7 2020	skype	progress meeting	all partners	planned
9 2020	ITAP	face to face meeting	all partners+TM	planned
11 2020	skype	progress meeting	all partners	planned
etc				

The external communication is described in the dissemination part.

3.2.3 Exploitation

As is described in the grant agreement the exploitation of the ComfDemo project will be done by both research and industrial organisations, with their own business/industrial or development objectives and specialisation focus. All partners will exploit the project results according to these given factors. The motivation for all COMFDEMO partners in participating and investing in this research project are given by their nature as public bodies and industry. The products (could be software or hardware) developed in this project will be studied on their intellectual property. They could be exploited as a service to aircraft (and other vehicle) manufacturers or airlines. In principle only Fraunhofer, the partners and the TU-Delft delivering services to the project will have access to this software or hardware and will be able to use it. It is anticipated that the COMFDEMO partners will generate papers to be submitted in peer-reviewed scientific journals during the 3-year project (2 are already submitted and minimal 3 still to come) and presentations at conferences or industrial meetings (4 presentations are already done). In the proposal, it was planned that minimal 6 (e.g. 3 papers and 3 presentations) were foreseen. It is now clear that this number will be higher. The research institutes involved in the ComfDemo consortium have professional departments experienced in developing patent protection and exploiting intellectual property via licensing and contract research with industry. Currently the jacket and the software seem promising in terms of exploitation. The comfort model and the comfort questionnaire will be open source, which means that these will be freely accessible by other researchers. Exploitation can either be measured through the increase of scientific expertise or knowledge, or the contribution to the delivery of new products, functions, systems, devices, etc. on the market in the follow-on years. Implementation and impact will be followed by tracking the citations of papers, the use of the models and contribution to products. Table 4 is the list from the grant agreement regarding exploitation in the scientific domain and it is still valid.

Table 4 Dissemination and communication towards scientific community and towards students

Papers and scientific Publications that could be generated by the project	<p>Topics:</p> <p>Comfort</p> <p>Vibration measurement and control</p> <p>Structural acoustic control</p> <p>Passive-active noise vibration control</p> <p>Human perception of noise and vibration regional aircraft</p> <p>Targeted journals:</p> <p>International Journal of Aviation, Aeronautics, and Aerospace</p> <p>Applied Ergonomics</p> <p>Journal of Sound and Vibration,</p> <p>Journal of the Acoustical Society of America,</p> <p>The Aeronautical Journal,</p> <p>Journal of Computer Science and Information in Engineering</p> <p>Journal of Aviation Medicine</p> <p>The International Journal of Aviation Psychology</p> <p>AESCT - Aerospace Science and Technology</p> <p>Applied Acoustics</p> <p>Aircraft Interior International</p> <p>Work</p> <p>Number of publications: minimal 3</p>
Organize conference	<p>The 2nd International Comfort Congress in Delft, NL, 2019 is arranged and selected papers will be published in a special issue of the Journal “Work’</p> <p>The 3rd International Comfort Congress in Nottingham, UK, 2021 is planned and selected papers will be published in a special issue of a Journal.</p>
Participation to Scientific Congresses	<p>It is planned to visit minimal 3 congresses and trade fairs during the project duration. The following ones are of special interest:</p> <p>www.aircraftinteriorexpo.com (AIX)</p>

	<p>International Conference on Innovative Aircraft Seating</p> <p>International Conference on Aerospace Medicine</p> <p>International Congress of Applied Psychology</p> <p>IDETC/CIE: International Design Engineering Technical Conferences & Computers and Information in Engineering Conference</p> <p>AST - International Workshop on Aircraft System Technology</p> <p>International Congress on Acoustics ICA</p> <p>Forum Acusticum (European Acoustics Association, EAA)</p> <p>Euronoise (EAA + a national acoustic association)</p> <p>International Congress on Acoustics ICA</p> <p>International Ergonomics Association (IEA)</p> <p>CIEHF conference (Chartered Inst. Ergonomics and Human Factors)</p> <p>DAGA (Jahrestagung für Akustik)</p>
Dissemination through International and National bodies	<p>NAG – Netherlands Aerospace Group (done at sept 11 2019)</p> <p>EAA - European Acoustics Association</p> <p>ASA - Acoustical Society of America</p> <p>CIEHF - Chartered Institute of Ergonomics and Human Factors</p> <p>ASME - American Society of Mechanical Engineers</p> <p>IEEE- Institute of Electrical and Electronics Engineers</p> <p>Dutch Ergonomics Society</p> <p>German Society of Occupational and Environmental Medicine (DGAUM)</p> <p>German Psychological Society (DGPs)</p> <p>European Association of Work and Organizational Psychology (EAWOP)</p> <p>German Acoustical Society/ Deutsche Gesellschaft für Akustik (DEGA)</p>
Teaching courses for high-level students	Occupational and environmental medicine – TU

	<p>Munich (clinical training part)</p> <p>Occupational, social and environmental medicine – LMU Munich (clinical training part)</p> <p>Internship for hearing technology and audiometry - Jade University of Applied Science Oldenburg (Bachelor)</p> <p>Technical and medical acoustics - Jade University of Applied Science Oldenburg (Bachelor)</p> <p>Supervision of Master theses - University of Oldenburg - Physics (Master)</p> <p>Supervision of Bachelor and Master theses - Jade University of Applied Science Oldenburg - Physics (Bachelor)</p> <p>Advanced Embodiment Design – VHP cooperation with TU Delft (Master)</p> <p>Advanced Prototyping- VHP cooperation with TU Delft (Bachelor) - done 22 oct 2019</p> <p>Supervision of PhD, Master and Bachelor projects - NTU</p>
Promotion of the science to the society pre-university students	<p>Crystal Cabin Award (VHP)</p> <p>Dutch Design Week (VHP)</p> <p>Munich Public Science Days (Munich)</p> <p>Long Night of Universities (Munich)</p> <p>Open Day (NTU)</p> <p>NTU Research Conference STAR (Nottingham)</p> <p>ITAP is member of the Auditory Valley with several graduation activities (www.auditory-valley.com)</p>
Organization of specific workshop	<p>Organisation of a webinar or meeting in which COMFDEMO is explained to UAB (M6) to gather input</p> <p>Organisation of a webinar or meeting in which COMFDEMO results are presented to UAB (M33-M36)</p>
International industry conferences/meetings	<p>Paris air show</p> <p>Farnborough air show</p> <p>Aircraft Interior Trade Fair Hamburg (AIX)</p> <p>Cleansky meetings</p>

appendix 1 'some screen shots of the ComfDemo video'

