

# Welcome to EWADE 2017

**13<sup>th</sup> European Workshop on Aircraft Design Education**  
on 19<sup>th</sup> October 2017

linked with the

**2<sup>nd</sup> Asian Workshop on Aircraft Design Education (AWADE2017)**  
**7<sup>th</sup> Symposium on Collaboration in Aircraft Design (SCAD2017)**

Dieter Scholz

Hamburg University of Applied Sciences

**Aerospace Europe, CEAS 2017 Conference**

Palace of the Parliament, Bucharest, 16 - 20 October 2017





## Abstract

The European Workshops on Aircraft Design Education (EWADE) is a forum for academic staff active in aircraft design education at European universities. The first workshop was held 1994 in Madrid on invitation only. In 2017 academic staff convene – open to everyone – in Bucharest for the 13th European Workshops on Aircraft Design Education (EWADE2017). EWADE is the education related activity in the Technical Committee Aircraft Design (TCAD) under the Council of European Aerospace Societies (CEAS). Information is given under the URL <http://www.AircraftDesign.org>. Available presentations from EWADE reach back to the year 2000. In some cases full papers were written after the workshop. EWADE2017 is linked with the 2nd Asian Workshop on Aircraft Design Education (AWADE2017) via video conferencing and includes the 7th Symposium on Collaboration in Aircraft Design (SCAD2017). EWADE2017 consists of three sessions dealing with aeronautical education case studies, student projects, concepts, methods, software tools, new ideas in aircraft design, aerospace history, drag, noise, certification in aeronautical design, and publications in aircraft design. Final part of the workshop is a discussion about steps towards collaboration in the future.

**Keywords:** aircraft design, education, research, collaboration, Europe, university, workshop

Creative Commons copyright license for the public:

Attribution 4.0 International (CC BY 4.0)

<https://creativecommons.org/licenses/by/4.0>





Welcome to EWADE 2017

## Contents

- Program – Overview
- **EWADE History**
- **EWADE on the Web**
- CEAS & TCAS on the Web
- SCAD on the Web
- **EWADE 2017 –**
  - Overview
  - Program (PDF)
  - Detailed Program (Excel > HTML)
  - Authors (Excel > HTML)
  - **Book of Abstracts** (PDF/A)
  - **Archiving Strategy**
- **EWADE 2013 – Archiving Example**
- INCAS Bulletin
- **Special Greetings**





## Program – Overview

*Thursday, 19th October 2017*

**10:45 - 12:45 Session 1:**

**Welcome, Aero Education Case Studies. Concepts, Tools, and New Ideas in Aircraft Design**

Lunch

**13:45 - 15:45 Session 2:**

(Video conferencing from **AWADE 2017** at Nanjing University of Aeronautics and Astronautics, China):  
**Aero Education Case Studies. History, Drag, Noise and Certification in Aerospace Design**

Coffee

**16:00 - 18:00 Session 3:**

**Aero Education Case Studies. Student Projects, Tools and Concepts in Aircraft Design. Publications in Aircraft Design. Discussion about EWADE 2019**

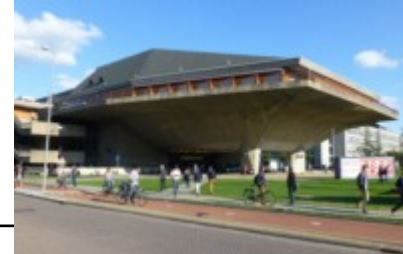






## EWADE History

13th Workshop: 2017 Bucharest  
12th Workshop: 2015 Delft  
11th Workshop: 2013 Linköping  
10th Workshop: 2011 Naples  
9th Workshop: 2009 Sevilla  
8th Workshop: 2007 Samara  
Meeting: 2006 Hamburg  
7th Workshop: 2005 Toulouse  
6th Workshop: 2004 Brno  
5th Workshop: 2002 Linköping  
4th Workshop: 2000 Turin  
3rd Workshop: 1998 Bristol  
2nd Workshop: 1996 Berlin  
1st Workshop: 1994 Madrid





PERGAMON

Aircraft Design 3 (2000) 205–206

# AIRCRAFT DESIGN

[www.elsevier.com/locate/aides](http://www.elsevier.com/locate/aides)



Editorial

**EWAD History**

## Aircraft design education in Europe

In 1993 an initiative was taken by Professor Rodrigo Martínez-Val of ETSIA (Madrid, Spain) and Dr. Kevin Knowles of Cranfield University (Shrivenham, UK) to organize a workshop for academic staff active in aircraft design education at European universities. Although before that time there had been contacts between design educators — for example at international conferences, in research programs and within the framework of educational (exchange) programs subsidized by the European Union (ECATA, COMETT) — it was felt that the quality of teaching aircraft design could benefit from more regular exchanges of experience between a much larger (in fact unlimited) number of representatives from various countries and universities on their own budgets, avoiding the complication of formal applications for external funding.

The first European Workshop on Aircraft Design Education was held in Madrid in 1994 and was hosted by the University of Madrid (ETSIA). There were approximately 25 participants from the Czech Republic, France, Germany, Italy, the Netherlands, Poland, Russia, Spain, Sweden and the UK. It lasted 2½ days and had an informal character, with many opportunities for personal

E. Torenbeek

*Faculty of Aerospace Engineering, Delft University of Technology, Kluyverweg 1, 2629  
HS Delft Netherlands*

*E-mail address: [torenbeek@delft.nl](mailto:torenbeek@delft.nl)*



**<http://EWAD2000.AircraftDesign.org>**



## EWADE on the Web



### European Workshop on Aircraft Design Education (EWADE)

"The European Workshops on Aircraft Design Education" have formed a forum for academic staff active in aircraft design education at European universities.

#### EWADE 2017 - 13th European Workshop on Aircraft Design Education

EWADE 2017 will be a [Workshop at CEAS 2017](#). As such, EWADE 2017 will be part of the [6th CEAS Air & Space Conference, AEROSPACE EUROPE 2017, Bucharest, Romania, 16th - 20th October 2017](#). EWADE 2017 will take place during the **4th** conference day - **Thursday, 19th October 2017, from 10:45 to 18:00**. The workshop will discuss recent advances in aircraft design (research and teaching).



The workshop is organized by **Prof. Dr.-Ing. Dieter SCHOLZ**, MSME from Hamburg University of Applied Sciences.

##### Program:



[EWADE2017\\_Program.pdf](#)



Please find further details on the [Homepage of EWADE 2017](#).

#### EWADE 2015 - 12th European Workshop on Aircraft Design Education

EWADE 2015 took place at TU Delft, the Netherlands from **9th to 11th September 2015**. It was co-located with [CEAS 2015](#). The workshop was organized by Assistant Professor [Dr. Gianfranco La Rocca](#) from TU Delft.

Please get further information about [EWADE 2015](#).



**EWADE on the Web**

[ewade.AircraftDesign.org](http://ewade.AircraftDesign.org)

Go to:  
[SCAD](#)

Back to:  
[CEAS TCAD](#)  
[EWADE](#)

[EWADE 2017](#)

[EWADE 2015](#)

[EWADE 2013](#)  
[Presentations](#)

[EWADE 2011](#)  
[Presentations](#)



<http://EWADE.AircraftDesign.org>



## EWADE as Part of CEAS & TCAD on the Web

CEAS TCAD on the Web

[www.AircraftDesign.org](http://www.AircraftDesign.org)

Education Activity:

EWADE

Research Activity:

SCAD

# CEAS Technical Committee Aircraft Design (TCAD)

**Harmonize research in aircraft design in combination with education!**

## CEAS Technical Committee Aircraft Design (TCAD)

The CEAS Technical Committee Aircraft Design (TCAD) started with the aim to better **harmonize research** in aircraft design and **combine this with education in aircraft design** by establishing a dedicated Technical Committee at CEAS.

In the past there was an [Aeronautical Network](#) called "Vehicle Design". TCAD was formed out of this network. The activities of "Vehicle Design" had so far been equivalent to the activities of the [European Workshop on Aircraft Design Education](#) (EWADE). The [DLR](#) had already organized three Symposia on Collaboration in Aircraft Design (SCAD). These two activities (research and education) - carried by *one* Aircraft Design community - is what has become the CEAS Technical Committee Aircraft Design.

The committee manifests itself by means of its two regular activities (Figure 1):

- Symposium on Collaboration in Aircraft Design --- [SCAD](#)
- European Workshop on Aircraft Design Education --- [EWADE](#)

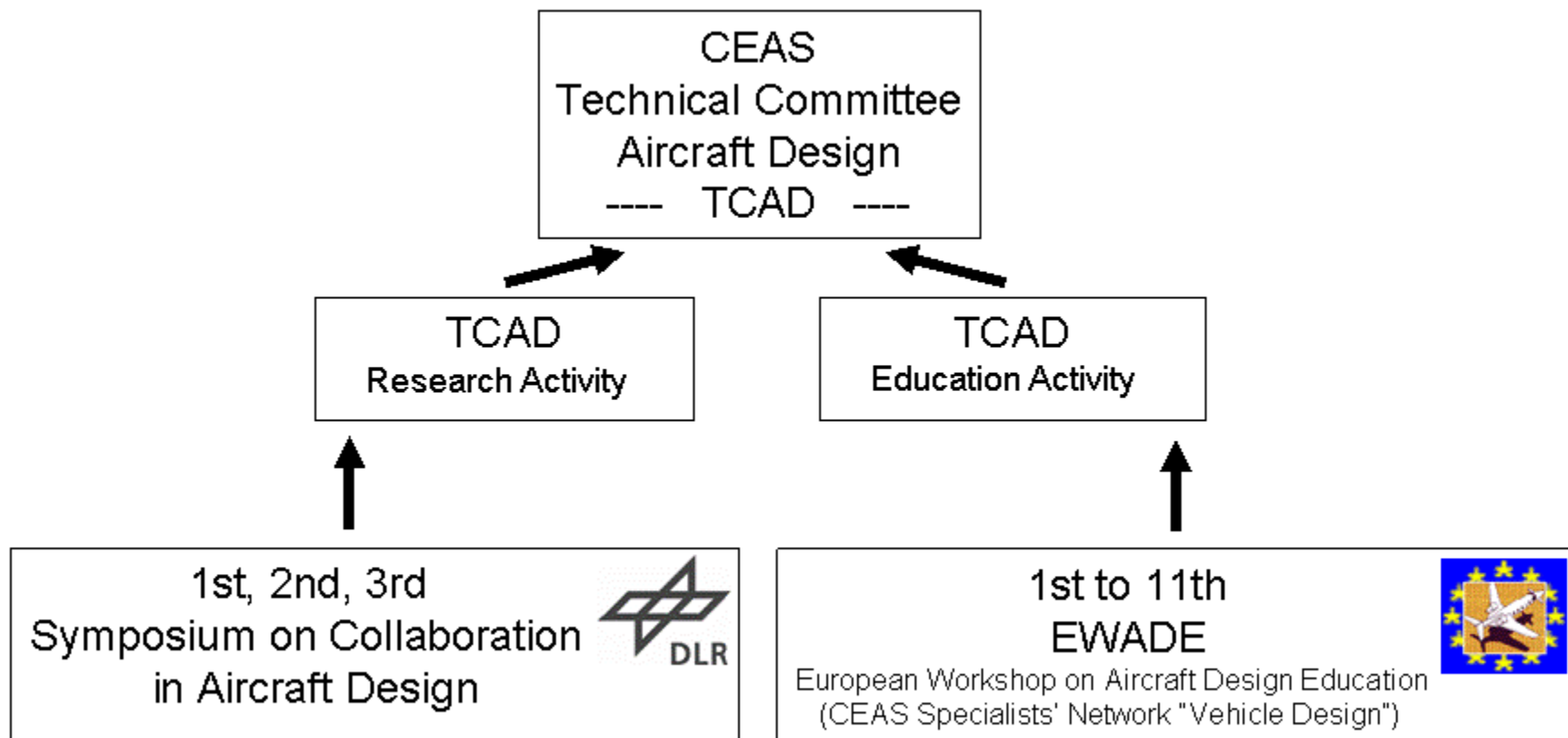


<http://AircraftDesign.org>





## EWADE as Part of CEAS & TCAD on the Web



<http://AircraftDesign.org>



## SCAD as Part of CEAS & TCAD on the Web

CEAS TCAD  
Research Activity SCAD  
on the Web

[SCAD.AircraftDesign.org](http://SCAD.AircraftDesign.org)

Go to:  
[EWADE](#)

Back to:  
[CEAS TCAD](#)  
[SCAD](#)

[Symposium 2017](#)

[Symposium 2016](#)  
[Presentations](#)  
[Papers](#)

[Symposium 2015](#)  
[Presentations](#)

[Symposium 2014](#)  
[Presentations](#)

[Symposium 2013](#)

### CEAS Technical Committee Aircraft Design (TCAD) Research Activity (SCAD)

Information exchange, collaboration, cross-validation, harmonization of research in aircraft design.

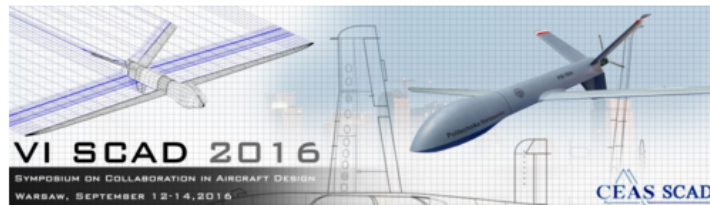
**7th SCAD - Symposium on Collaboration in Aircraft Design**  
**19th October 2017, Bucharest**

SCAD co-located with [EWADE](#)

Please see details (organization, application, ...) on <http://ewade2017.AircraftDesign.org>.

**6th SCAD - Symposium on Collaboration in Aircraft Design**  
**12th to 14th September 2016, Warsaw**

SCAD co-located with READ



Please consult the [Homepage of READ/SCAD 2016](#). There a special [Page for SCAD 2016](#).



<http://SCAD.AircraftDesign.org>



## EWADE 2017 – Overview of Online Information



### 13th European Workshop on Aircraft Design Education (EWADE 2017)

EWADE 2017 will be a [Workshop at CEAS 2017](#). As such, EWADE 2017 will be part of the [6th CEAS Air & Space Conference, AEROSPACE EUROPE 2017, Bucharest, Romania, 16th - 20th October 2017](#). EWADE 2017 will take place during the **4th conference day - Thursday, 19th October 2017, from 10:45 to 18:00** in Nicolae Iorga Hall No 2. The workshop will discuss recent advances in aircraft design (research and teaching).

#### Organization

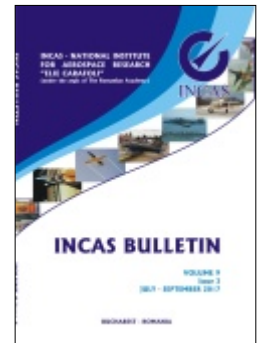
The workshop is organized by **Prof. Dr.-Ing. Dieter SCHOLZ**, MSME from Hamburg University of Applied Sciences.

**EWADE on the Web**  
[ewade.AircraftDesign.org](http://ewade.AircraftDesign.org)



<http://EWADE2017.AircraftDesign.org>

- Invitation
- **Program** (PDF/A)
- **Details of Program and Authors** (from Excel converted to HTML)
- **Book of Abstracts** (PDF/A)
- Hints towards the preparation of the presentations
- **Archiving Strategy**
- Information for Authors: Producing PDF/A
- Recommendation to **publish the presentation** in form of a **paper** in the **INCAS Bulletin !**
- Background





# EWADE 2017 – Program



## 13th European Workshop on Aircraft Design Education (EWADE 2017)

EWADE 2017 will be a [Workshop at CEAS 2017](#). As such, EWADE 2017 will be part of the **6th CEAS Air & Space Conference, AEROSPACE EUROPE 2017, Bucharest, Romania, 16th - 20th October 2017**. EWADE 2017 will take place during the **4th conference day - Thursday, 19th October 2017, from 10:45 to 18:00** in Nicolae Iorga Hall No 2. The workshop will discuss recent advances in aircraft design (research and teaching).

### Organization

The workshop is organized by **Prof. Dr.-Ing. Dieter SCHOLZ**, MSME from Hamburg University of Applied Sciences.

**EWADE on the Web**

[ewade.AircraftDesign.org](http://ewade.AircraftDesign.org)



<http://EWADE2017.AircraftDesign.org>

## 13th European Workshop on Aircraft Design Education (EWADE 2017)

### Program

**Date:** 19 October 2017

**Venue:** Palace of the Parliament, 2-4 Izvor St., Sector 5, 050563, Bucharest, Romania.

**Room:** Nicolae Iorga Hall No. 2

CEAS 2017 - Session 45  
13th European Workshop on Aircraft Design Education (EWADE 2017)

**EWADE II:**  
Aero Education Case Studies. Concepts, Tools and New Ideas in Aircraft Design

Session chair: **Dieter Scholz** (Hamburg University of Applied Sciences, DE)

10:45 - 11:05	3001	Welcome to EWADE 2017	<b>Dieter Scholz</b> Hamburg University of Applied Sciences, DE
11:05 - 11:30	3002	Education in Aerospace Engineering at the University "Politehnica" of Bucharest	<b>Octavian Pleter</b> and <b>Sterian Dănilă</b> University "Politehnica" of Bucharest, RO
11:30 - 11:55	3003	Aircraft Systems Engineering and Concept Evaluation	<b>Petter Krus</b> Linköping University, SE
11:55 - 12:20	3004	Innovative Tools for Aircraft Preliminary Design – Development, Applications and Education	<b>Fabrizio Nicolosi</b> University of Naples "Federico II", IT
12:20 - 12:45	3005	Specific Fuel Consumption of Jet Engines – Implications in Aircraft Design and Performance Calculations	<b>Dieter Scholz</b> Hamburg University of Applied Sciences, DE
12:45 - 13:45	Lunch Take Ionescu Hall		



CEAS 2017 – Session 52 13th European Workshop on Aircraft Design Education (EWADE 2017)			
<b>EWADE II:</b> Video conference from: 2nd Asian Workshop on Aircraft Design Education (AWADE 2017), 17 – 20 October 2017 at Nanjing University of Aeronautics and Astronautics, China Aero Education Case Studies, History, Drag, Noise and Certification in Aerospace Design			
Session chair: <b>Oleksiy Chernykh</b> (Nanjing University of Aeronautics and Astronautics, CN)			
13:45 - 14:00	3006	Welcome to Asian AWADE and European EWADE	<b>Jihou Lai</b> Nanjing University of Aeronautics and Astronautics, CN
14:00 - 14:25	3007	Aerospace Engineering Education at Nanjing University of Aeronautics and Astronautics	<b>Pingqi Xia</b> Nanjing University of Aeronautics and Astronautics, CN
14:25 - 14:45	3008	The 60th anniversary of the Launch of the First Satellites – Historical and Technical Analysis	<b>Zhijin Wang</b> and <b>Anatoly Kretov</b> Nanjing University of Aeronautics and Astronautics, CN
14:45 - 15:05	3009	Generation of the Drag Map and Derivative Plots for Commercial Aircraft	<b>Anthony Hays</b> Aircraft Design and Consulting, US California State University, US
15:05 - 15:25	3010	Aircraft Noise Sources and Analysis of Possibilities for Noise Reduction	<b>Dmitry Timakov</b> and <b>Yuliya Babenko</b> National Aerospace University, Kharkiv Aviation Institute, UA
15:25 - 15:45	3011	Airworthiness Knowledge Comes into Focus of Chinese Aviation Education	<b>Oleksiy Chernykh</b> Nanjing University of Aeronautics and Astronautics, CN
15:45 - 16:00	Coffee break		

CEAS 2017 – Session 59 13th European Workshop on Aircraft Design Education (EWADE 2017)			
EWADE II: Aero Education Case Studies, Student Projects, Tools and Concepts in Aircraft Design, Publications in Aircraft Design, Discussion about EWADE 2019			
Session chair: <b>Petter Krus</b> (Linköping University, SE)			
16:00 - 16:25	3012	Review of aircraft design activities at ISAE-SUPAERO / ONERA	<b>Emmanuel Bécard</b> Institut Supérieur de l'Aéronautique et de l'Espace, FR <b>Peter Schmolgruber</b> The French Aerospace Lab (ONERA), FR
16:25 - 16:50	3013	Award-winning innovative aircraft design projects at Politecnico di Milano	<b>Lorenzo Trainelli</b> and <b>Carlo Riboldi</b> Politecnico di Milano, IT <b>Diane Chelangat Uyoga</b> Moi University, KE
16:50 - 17:15	3014	Aerospace education in Kenya – The case of Moi University	<b>Tomasz Goetzendorf-Grabowski</b> Warsaw University of Technology, PL
17:15 - 17:25	3015	Results of READ/SCAD 2016 – Proposal of a joint READ/EWADE/SCAD Workshop 2018	
17:25 - 18:00	Discussion – Next EWADE and Cooperation with AWADE, READ, SCAD and CEAS 2019		
18:00 - 18:10	Coffee break		
CEAS 2017 – Session 60 CEAS 2017 Closing Session Human Rights Hall			
18:10 - 18:20	34	CEAS 2017 Closing Address	<b>Valentin Silvestru</b> National Research and Development Institute for Gas Turbines (COMOTI), RO



## EWADE 2017 – Detailed Program



### 13th European Workshop on Aircraft Design Education (EWADE 2017) *Program*

Session Number	Authors (presenter underlined) E-Mail	University Department / Research Group / Second Affiliation	Title Keywords, Link
<b>Session 1 (45)</b> Aero Education Case Studies. Concepts, Tools and New Ideas in Aircraft Design			
Session chair: <b>Dieter Scholz</b> – Hamburg University of Applied Sciences (HAW Hamburg), DE			
<b>Video: Buchare</b>			
Presentation 1.1 10:45 - 11:05	Dieter Scholz <a href="mailto:info@profscholz.de">info@profscholz.de</a>	Hamburg University of Applied Sciences (HAW Hamburg), DE Aircraft Design and Systems Group (AERO)	<b>Welcome to EWA</b> EWADE 2017 prog
Presentation 1.2 11:05 - 11:30	<u>Octavian Pleter</u> , Sterian Dănăilă <a href="mailto:octavian.pleter@upb.ro">octavian.pleter@upb.ro</a>	University Politehnica of Bucharest (UPB), RO Faculty of Aerospace Engineering	<b>Education in Aero</b> aerospace, educat
<div><div>Program</div><div>Authors</div></div>			



<http://EWADE2017.AircraftDesign.org>





## EWADE 2017 – Detailed Author Information

### EWADE 2017 - Author Details

Prof. Dr.-Ing. **Dieter Scholz**, MSME

Hamburg University of Applied Sciences (HAW Hamburg), DE

Aircraft Design and Systems Group (AERO)

Head: Aircraft Design and Systems Group (AERO)

[info@profscholz.de](mailto:info@profscholz.de)

<http://ProfScholz.de>

<http://english.ProfScholz.de>

<http://AERO.ProfScholz.de>

<http://cv.ProfScholz.de>

<https://www.haw-hamburg.de/english/research/mobility-transport.html>

Prof. **Octavian Pleter**, PhD, PhD, MBA (MBS)

University Politehnica of Bucharest (UPB), RO

Faculty of Aerospace Engineering

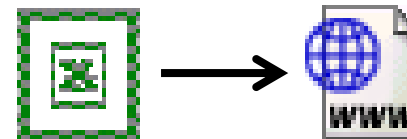
Dean: Faculty of Aerospace Engineering

[octavian.pleter@upb.ro](mailto:octavian.pleter@upb.ro)

[octavianpleter@yahoo.com](mailto:octavianpleter@yahoo.com)

<http://www.upb.ro/en>

Program Authors



<http://EWADE2017.AircraftDesign.org>



## EWADE 2017 – Book of Abstracts

Dieter Scholz (Ed.)

# Book of Abstracts

**13th European Workshop on Aircraft Design Education  
(EWADE 2017)**

in co-operation with the  
2nd Asian Workshop on Aircraft Design Education  
(AWADE 2017)



© by authors



<http://EWADE2017.AircraftDesign.org>



## EWADE 2017 – Archiving Strategy

- **Available** (stored, archived): **Zenodo** (CERN)



- **Discoverable** (citable): **DOI**



- **Reproducible** (readable): **PDF/A**



- Creative Commons **copyright license for the public**: **CC BY**  
© by authors



<http://EWADE2017.AircraftDesign.org>



Dieter Scholz (Ed.)  
**Proceedings of the 11th European Workshop on Aircraft Design Education**  
EWADE 2013  
17.-19.09.2013  
Linköping, Sweden



(Pages: 527, Size: 86M, Fast Web Viewing)

DOI: [10.15488/1448](https://doi.org/10.15488/1448)



The Proceedings are also stored in the  
[German National Library of Science and Technology \(TIB\)](https://opac.tib.eu/PPN?PPN=883876450)  
<https://opac.tib.eu/PPN?PPN=883876450>

and the

[Repository of the LU Hannover](https://doi.org/10.15488/1448)  
<https://doi.org/10.15488/1448>

Access to the Proceedings is also via

[Direct TIB Download](#)  
[Metadata in the GVK](#)  
[Metadata at Google Scholar](#)






**EWADE 2013 – Archiving Example**



**<http://ProceedingsEWADE2013.AircraftDesign.org>**



## Single Presentations and Papers

Authors (presenting author underlined)	Title	EWADE Presentation / DOI	Size	CEAS Paper / DOI	Size
<b>EWADE 1 - Presentations from EWADE Founders and Hosts</b>					
Egbert Torenbeek	The New Textbook "Advanced Aircraft Design – Conceptual Design, Technology and Optimization of Subsonic Civil Airplanes"	 DOI <a href="https://doi.org/10.5281/zenodo.18916">10.5281/zenodo.18916</a>	2.0M	---	---
Sergio Chiesa, Giovanni di Meo, <u>Marco Fioriti</u> , Roberta Fusaro	Contributions from Educational Activities to Research about Hybrid Propulsion Opportunities for Light Aircraft	 DOI <a href="https://doi.org/10.5281/zenodo.21440">10.5281/zenodo.21440</a>	1.0M	---	---
Christopher Jouannet	MidJet a Personal Jet - A Student Project	 DOI <a href="https://doi.org/10.5281/zenodo.546412">10.5281/zenodo.546412</a>	1.9M	 DOI <a href="https://doi.org/10.5281/zenodo.546634">10.5281/zenodo.546634</a>	521K
Ed Obert	Static Directional Stability and Control of Transport Aircraft	 DOI <a href="https://doi.org/10.5281/zenodo.21443">10.5281/zenodo.21443</a>	5.9M	---	---

**EWADE 2013 – Archiving Example**



<http://ProceedingsEWADE2013.AircraftDesign.org>



September 18, 2013

Presentation

Open Access

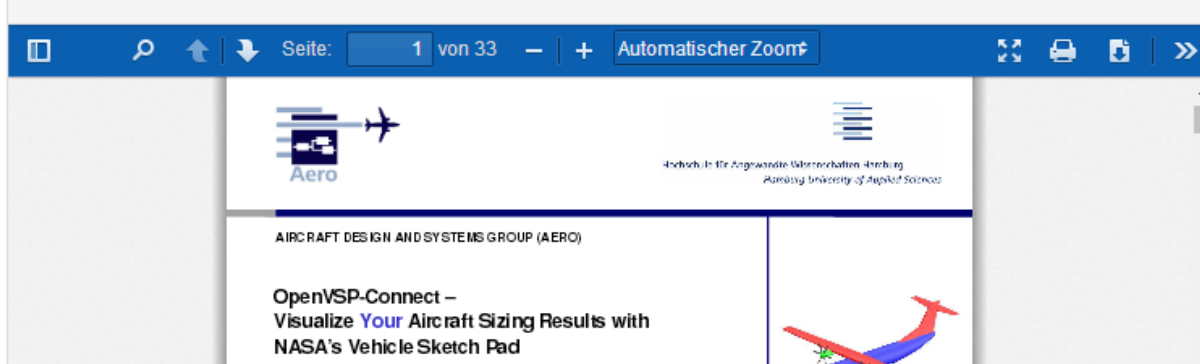
# OpenVSP-Connect - Visualize Your Aircraft Sizing Results with NASA's Vehicle Sketch Pad

Scholz, Dieter; Sousa, Tahir

A 3D visualization is missing for many aircraft preliminary sizing tools. NASA's Open Vehicle Sketch Pad (OpenVSP) is easy to use, but lacks an interface to input consistent aircraft data. Such an interface has been programmed and is called OpenVSP-Connect. Aircraft are sketched from about 50 parameters. If these are not known to the user, the interface calculates them as good as possible based on simple equations from aircraft design or statistics. Taken this to the extreme, a decent looking aircraft is drawn from as few as two or three input parameters.

<http://EWADE.AircraftDesign.org> — <http://ProceedingsEWADE2013.AircraftDesign.org>

Preview



Indexed in

OpenAIRE

**Publication date:**

September 18, 2013

**DOI:**

DOI 10.5281/zenodo.546617

**Keyword(s):**

EWADE2013 aircraft design sizing conceptual  
open sketch interface Excel NASA teaching  
education research Europe workshop

**Meeting:**

11th European Workshop on Aircraft Design Education (EWADE 2013), Linköping, Sweden, 17.-19.09.2013 (Session EWADE Contribution Presented in a CEAS Session)

**Communities:**

European Workshop on Aircraft Design Education

**License (for files):**

Creative Commons Attribution 4.0

**EWADE 2013 – Archiving Example**

<http://doi.org/10.5281/zenodo.546617>



## EWADE 2017 – Recommendation: Papers Published with INCAS Bulletin

### INCAS Bulletin

<https://bulletin.incas.ro>

Open Access

Peer-reviewed

ISSN

DOI (CrossRef)

Indexed

Archiving: ?

Journal System: ?

Start: 2009, 23 volumes, **200...300 articles**

**No APC**

Sponsor: INCAS

Romania



<http://bulletin.incas.ro>



## EWADE 2017 – Special Greetings



**Prof.ir. Egbert Torenbeek**  
Emeritus Professor



**Welcome to EWADE 2017**

## **Contact**

[info@ProfScholz.de](mailto:info@ProfScholz.de)

<http://www.ProfScholz.de>