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Welcome at the CEAS Air and Space Conference 2015!

It is a great pleasure to welcome you to this 5th CEAS Air and Space Conference in Delft as the follow-up of the successful CEAS Conferences in Berlin (2007), Manchester (2009), Venice (2011) and Linköping (2013). The theme of this year’s CEAS Conference is “Challenges in European Aerospace”.

Europe has made large progress in strengthening its aerospace industrial competitiveness, its air transport operations and infrastructure, its military cooperation, its research and research infrastructure and its educational system. Many more steps will have to be made to further enhance cooperation and integration to maintain and increase European Aerospace Competitiveness. I’m glad that distinguished European key-note speakers are willing to share their views and participate to panel discussions.

I’m proud to introduce this conference as organised and hosted by the Netherlands Association of Aeronautical Engineers (NVvL) with a great support and contributions from the Technical University Delft, the Society of Aerospace Students ‘Leonardo da Vinci’, ESA/ESTEC and the Netherlands National Aerospace Laboratory NLR. The CEAS Programme Committee did a wonderful job in selecting 225 excellent papers from more than 25 countries and in setting up attractive sessions for the conference.

So the CEAS Air and Space Conference 2015 will be a unique opportunity to communicate, share and debate the latest developments, innovative concepts and technical solutions in the aerospace domain and to meet and discuss with the keynote speakers, technical experts and students.

I look forward to welcoming you in Delft and I am certain you will enjoy the presentations and interaction with the many experts as well as the nice venue, technical tours, welcome reception and Conference dinner during a tour through the Rotterdam harbour.

Fred Abbink
President of Council of European Aerospace Societies CEAS
Background

CEAS – the Council of European Aerospace Societies – is the organisation bringing European national aerospace societies together for increased international strength. Today, CEAS comprises 12 member organisations and 4 corporate members with an outreach to roughly 35,000 European professionals in aerospace. Since 2007 CEAS hosts biennial conferences about aerospace and on yearly basis various thematic events in Europe.

CEAS 2015 will be a unique opportunity for aerospace industries, academia, organisations and associations to communicate, share and debate innovative concepts and technical solutions in the aerospace domain. CEAS 2015 will promote the establishment of knowledge and technical networks with the aim of increasing European competitiveness in the field of aerospace.

Participation from all major nations involved in aerospace across the world, a wide exhibition area, special sessions on selected topics and specific actions to facilitate student’s attendance will make CEAS 2015 one of the major European aerospace events.

CEAS 2015 is hosted by the Netherlands Association of Aerospace engineers NVvL in close cooperation with the Delft University of Technology (TU Delft) and the Society of Aerospace Students – Leonardo da Vinci VSV on behalf of the CEAS community.
Programme at a glance

The conference will be held in the Aula Conference centre of the Delft University of Technology. The combination of a Technical University, a pleasant old town, good accessibility and perfect equipment, makes the Aula Conference centre an outstanding location for this event.

The conference registration desk is at the ground floor of the building. It will be open on the first day of the conference from 8.00 – 17.00 hours and from 8.00 – 10.00 / 12.30 – 13.30 at all other days.

The opening event and plenary sessions will take place in the Auditorium. Papers will be presented during five parallel sessions in the Auditorium, the Senate room, the Van Hasselt room, Commission room 3 and Commission room 2 (all on the second floor).

A variety of companies, institutions and organisations will present themselves at the very spacious Foyer, where lunches will be served and networking opportunities exist during coffee and tea breaks (first floor).
On Friday 11 September technical tours will be organised to ESA-ESTEC (Noordwijk), NLR (Amsterdam), Fokker Aerostructures (Papendrecht) and TU Delft (Delft). Pre-registration is required.
Welcome Reception

Enjoy snacks and drinks and get to meet with your peers during the reception in the Delft Botanic Gardens (Monday 7 September 18.30 – 20.00 hours). The Gardens are at walking distance from the conference venue (Poortlandplein 6, 2628 BM Delft).

Conference dinner

Romantic boating aboard the largest paddle steamer of Europe "De Majesteit" with its steam engines, giant paddles and cosy saloons. Once welcomed on board of De Majesteit you will enjoy the nostalgic atmosphere and the conference dinner on Wednesday 9 September (18.45 – 23.00 hours), while cruising the impressive Rotterdam harbours. Busses will drive all delegates to Rotterdam (departure at 18.15 hours in front of conference centre) and back to Delft after the dinner.
Inspiring and influential speakers have chosen the CEAS 2015 Air & Space Conference to share perspectives that are relevant to you and your organisation. They will share their knowledge on various themes, give you a breadth of industry insight and provide real implementation stories during plenary sessions.
Plenary sessions

Every day there will be two plenary sessions kicking off the programme for that part of the day. Each plenary session has a challenging theme. The themes and the speakers are:

Challenges for the European Aeronautical Industry
- Axel Flaig (Head of R&T, Airbus)
- Hans Buethker (Chairman & CEO Fokker Technologies)

Challenges for European Access to Space
- Franco Ongaro (Director TEC & head ESA-ESTEC)
- Arnaud de Jong (CEO Airbus Defense and Space Netherlands)

Challenges to the European Airlines
- Athar Husain Khan (CEO Association of European Airlines AEA)
- Peter Hartman (Vice-chairman Board of AirFrance/KLM)

Challenges in realizing a Single European Sky
- Florian Guillermet (Director SESAR JU)
- Paul Riemens (CEO LVNL)

Challenges to the European Aerospace Research and Infrastructure
- Eric Dautriat (Executive Director CleanSky)
- Rolf Henke (Member DLR Executive Board)
- Michel Peters (CEO NLR)

Challenges to European Aerospace Education
- Hester Bijl (Dean TU Delft Aerospace Faculty)
- Frithjof Weber (Head of Knowledge and Competence Management Airbus)
- Franco Bernelli (Politecnico di Milano, Aerospace Science and Technology)

Challenges to the European Air Power in Asymmetric Conflicts
- CDRE Peter Round (Director Capability EDA)
- Lt-Gen Sander Schnitger (Commander Royal Netherlands Air Force).
Technical sessions

The CEAS International Programme Committee, with representation of 20 organisations, has reviewed the abstracts handed in.

205 Technical papers have been selected for publication and will be presented by aerospace scientists and engineers from 25 different nations around the world. They will share and disseminate the latest scientific knowledge and research in areas like Air Transport, Airworthiness, Clean Space, Collaborative engineering in system design, Future education and training needs, Virtual hybrid testing in aeronautics, Aircraft noise, Aerodynamics, Aero elasticity and Structural Dynamics, Space Sustainability, Aircraft handling / flight mechanics, Greenhouse gas emissions, Guidance & navigation, Modelling and simulation, Propulsion integration, Structures & Materials and Remotely Piloted aerial vehicles.

Conference panels

Conference panels are being held on subjects like Space Sustainability, the IXV project and the Future of Air Combat systems in Europe.

Future of Air Combat systems in Europe

Many experts in Europe are concerned that, apart from the British-French Future Combat Air System Demonstration Programme FCAS DP, presently no plans are being made to prepare the next generation of air combat systems beyond Eurofighter, Rafale and Gripen. The F35 programme, although serving a number of Air Forces in Europe, is US-led and will not secure the future of the European Air Combat industry. A number of studies have been conducted in recent years on this critical issue, such as the “FAST4Europe” study by an industrial consortium led by SAAB and by the Air and Space Academy’s as reflected in the white paper “Recommendations to avoid a strategic downgrading of Europe in the field of Combat Aviation” (published at the end of 2013).
The panel will contain presentations from high level actors in the field of Air Combat systems. The talks will address current reflections in Europe, the status of present and future Air Combat Systems across the world.

The session will be moderated by Gerard Brachet, former President of the Académie de l’Air et de l’Espace/Air and Space Academy (2009-2012), current Chairman of its Defense Commission.

**Workshops**

The *12th European Workshop on Aircraft Design Education* (EWADE) will be held on 10 September 2015. The workshop aims at enhancing collaboration between European lecturers concerned with aircraft design and discuss Aircraft Design problems from a research and educational perspective ([http://ewade.aircraftdesign.org/](http://ewade.aircraftdesign.org/)).

On 10 September 2015, the EU-funded project Active Flow, Loads & Noise control on next generation wing *AFLoNext* will organise a workshop as a partner in the CEAS 2015 conference. AFLoNext is a four-year integrated project (level 2) with the objective of proving and maturing highly promising flow control technologies for novel aircraft configurations ([www.aflonext.eu](http://www.aflonext.eu)).

The *Increasing young women’s participation in Science Studies and in the Aeronautic Industry IN2SAI* project intends to increase the participation of female students in higher education studies in scientific fields (especially those relevant for aeronautics) and to contribute to their integration into the aeronautic industry.

*PulCheR* (Pulsed Chemical Rocket with Green High Performance Propellants) is a three-year research project co-funded by the European Union ([http://www.alta-space.com/pulcher/](http://www.alta-space.com/pulcher/)). The project is mainly aimed at demonstrating the feasibility of a pulsed propulsion system in which the propellants are fed in the combustion chamber at low pressure and the thrust is generated by means of high frequency pulses, reproducing the defence mechanism of a notable insect: the bombardier beetle. As an added value, the new propulsion concept has been investigated using green propellants. The
current status of the project, its main achievements and the still open challenges will be discussed on 7 September 2015.

Project

European Strategic Wind tunnels Improved Research Potential ESWIRP achievements will be presented at the CEAS Air & Space Conference 2015.

The EU-ESWIRP project (http://www.eswirp.eu/) has been funded by the European Framework Programme 7 to support the integration of and access to research infrastructure of pan-European interest. It has significantly enhanced the interoperability of 3 key world-class European aeronautical wind tunnels, and harmonised, improved and optimised the scientific access conditions thereto: DNW-LLF, ETW and ONERA S1MA.

A central element of the project, besides networking and joint research activities, has been the transnational access (TNA), which has been provided to 4 consortia with a total of more than 100 scientists from 17 different nations.

Technical visits

CEAS 2015 is pleased to offer 4 technical tours to places of interest like major R&D centers (EAS-ESTEC and NLR), the TUDelft and aerospace industry (Fokker Aerostructures). A pre-registration is needed to attend the tours (max. 50 participants for each tour) and a photo ID is required to enter the premises.

Tour 1: ESA-ESTEC (Keplerlaan 1, 2201 AZ Noordwijk)

ESA has sites in several European countries, but the European Space Research and Technology Centre (ESTEC) is the largest. ESTEC is the technical heart - the incubator of the European space effort - where most ESA projects are born and where they are guided through the various phases of development.
Developing and managing all types of ESA missions: science, exploration, telecommunication, human spaceflight, satellite navigation and earth observation.

Providing all the managerial and technical competences and facilities needed to initiate and manage the development of space systems and technologies.

Operating an environmental test centre for spacecraft, with supporting engineering laboratories specialised in systems engineering, components and materials, and working within a network of other facilities and laboratories.

The technical tour will take you to the Telerobotics & Haptics Laboratory, the Planetary Robotics Laboratory, the Erasmus exhibition area and the Test Centre.

**Tour 2: National Aerospace Laboratory NLR (Anthony Fokkerweg 2, 1059 CM Amsterdam)**

NLR is the independent knowledge enterprise in the Netherlands on aerospace. The overall mission is making air transport and space exploration safer, more sustainable and more efficient. With its unique expertise and state of the art facilities NLR is bridging the gap between research and application. NLR covers the whole RDT&E (Research, Development, Test & Evaluation) range, including all the essential phases in research, from validation, verification and qualification to evaluation. NLR employs a staff of approx. 650 at the offices in Amsterdam and Marknesse in Flevoland province.

Highlights of the tour will be a visit to the simulation facilities for airport research (NARSIM) and cockpit operations (GRACE).

**Tour 3: Delft University of Technology (Kluyverweg 1, 2629 HS Delft)**

With 75 academic staff, 200 PhD and 2500 BSc and MSc students, the faculty of Aerospace Engineering at TU Delft is one of the world’s largest aerospace engineering communities. Approximately 40% of the student population and 35% of staff has an international background.

The technical tour at the faculty will show the state-of-the-art research facilities such as supersonic, hypersonic and subsonic wind-tunnels, a high-
sensitivity navigation simulator, and a materials testing laboratory. It will also give the participants the opportunity to work with them.

**Tour 4: Fokker Aerostructures (Industrieweg 4, 3351 LB Papendrecht)**

Fokker Aerostructures is a recognised, first-class specialist in the design, development and manufacturing of lightweight structures, modules and landing gear for the aerospace and defense industry. We operate at the forefront of today’s technology. Their highly skilled workforce includes professionals in the Netherlands, Romania, Mexico and the United States. Fokker Aerostructures is a Business Unit of Fokker Technologies.
Venue and accommodation

Delft University of Technology
Aula Conference Centre
Mekelweg 5, 2628 CC Delft (+31.15 278 9111)

Delft has a lot to offer! The city is well-known for its ties with the Dutch Royal family (tombs of William of Orange and members of the Netherlands Royal family) and the famous painter Vermeer. Delft is also world renowned for its Delft Blue earthenware and its lovely canals. Delft has a pleasant, well-preserved, lively historical centre, with characteristic canals, ancient merchant houses, old churches and the splendid city hall.

Delft is more than 750 years old. The city owes its name to the word ‘delving’, digging the oldest canal, the Oude Delft. In 1246, Delft received its city franchise from the Dutch Earl Willem II. Delft is nicknamed ‘de Prinsenstad’ (the Princes' City), because William of Orange, the first in the Dutch royal line, held court in Delft in the 16th century. In 1842 the Royal Academy for Civil Engineers was founded. The Academy used the building vacated by the
artillery school. The Academy of then is the TU Delft of today, which is also the largest employer in Delft.

Delft is synonymous with ceramics – ‘Delft Blue’ has been produced in this city for many centuries. At the end of the 16th century Flemish potters started to make imitations of southern European pottery. Because of the Spanish occupation, some of them fled from Antwerp to Delft and they provided the origins of the Delftware industry. Between the years 1600 and 1800 Delft was one of the most important ceramics producers in Europe.

General Information

Climate

The Netherlands climate is moderate, with warm but sometimes wet summers and mild winters. Daytime temperature varies between five and twenty degrees in spring and autumn, and between fifteen and thirty degrees during summer. Average rainfall accounts are 750 mm annually.

Currency

The local currency is Euro (divided into 100 cents). All major credit cards are accepted all over the Netherlands in department stores, museums, hotels, restaurants and most shops.

Electricity

Standard power supply in The Netherlands is 220V/50Hz (two-round-pin power outlet).

Emergency telephone number: 112

Health regulations

No vaccinations are required when entering the Netherlands from any other country.
CEAS 2015: Conference programme

Insurance

The organisers cannot be held responsible for injury to conference attendees or for damage to or loss of their personal belongings, regardless of the cause. Attendees are advised to make their own insurance arrangements.

Language

English is the official language of the conference. No simultaneous translation will be provided.

Liability

The CEAS 2015 Organising Committee cannot accept any responsibility for personal accidents or damage to private property of the participants. Participants are advised to take out insurance, as they consider necessary.

The participant acknowledges that he/she has no right to lodge damage claims against the organisers should the hosting of the conference be hindered or prevented by unforeseen political or economic events or by force majeure, or should non-appearance of speakers or other reasons necessitate Programme changes.

By his/her registration, the participant accepts this provision.

Mobile phones

Use of GSM mobile phones in frequency-bands 900 MHz or 1800 MHz. Use of UMTS mobile phones in the area of the venue is possible but no coverage guarantee can be given.

Passports and Visa

Please consult your local Netherlands Consulate concerning passport or visa requirements well ahead of time.
Telephone

The international dial code for the Netherlands is +31. For international calls: dial 00 followed by the country code and the individual telephone number. For cellular phone: refer to the instruction of your provider.

Time

The Netherlands is in the Central European Time Zone. Central European Standard Time (CET) is 1 hour ahead of Greenwich Mean Time (GMT+1). with daylight saving time during the period of the conference.

Travel information

Travelling to Delft by air is relatively easy. Amsterdam Schiphol Airport (http://www.schiphol.nl) services all major airlines. The train connection from Schiphol to Delft is a 40 minute train ride (www.ns.nl). Trains leave from Schiphol airport roughly every quarter of an hour. Road links from Schiphol are equally quick. Follow signs to Rotterdam and it should take you about 35 minutes. You can also fly to the smaller (though equally efficient) Rotterdam airport (http://www.rotterdamthe Hagueairport.nl). This is a 15-minute taxi ride from Delft.

Delft is on the main train line between Paris, Brussels, and Amsterdam. Although the high-speed trains do not stop in Delft, you can get off in either Rotterdam or den Haag HS and get a connecting train to Delft (10 minutes). Trains from Germany come via Utrecht and Amsterdam, both of which are about 50 minutes from Delft on a connecting train. For more information and time tables, see www.ns.nl.

To travel by public transport you need a so called OV chip card, which you can buy at any railway station. Before you can use the card you need to charge a credit onto the card. Staff at the railway stations can assist you.

The best website to plan your trip with public transport in the Netherlands is: http://9292.nl/en/
At Delft Central Station buses to Delft University leave roughly every 10 minutes. You can take bus 121 (to Zoetermeer) or bus 69 (to Station) and get out at bus stop 'Aula TU'. This will take about 10 minutes. From there it is a 1 minute walk to the Conference Venue. For more information about bus stops and time tables, see www.9292ov.nl (only available in Dutch, but easy to understand and use).

Taxi services in Delft: www.dtdeltax.nl or call +31 (0)15 2191919.

Within the Delft University campus area parking is free, but there are a limited number of parking spaces. Parking in the City of Delft is not free and limited; there are a few parking garages; see www.delft.nl.

Wifi

Free WiFi is offered to conference delegates

- wireless network SSID (Service Set Identifier) : Aula-Congress
- Wi-Fi Protected Access (WPA2) key : tudelft2015
Registration

All participants (including chairmen and speakers) have to register (online). Payments have to be made by credit card or bank transfer.

<table>
<thead>
<tr>
<th>Category</th>
<th>Fee</th>
</tr>
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<tbody>
<tr>
<td>Standard</td>
<td>€ 895,-</td>
</tr>
<tr>
<td>Session chairs, speakers, members of CEAS society*</td>
<td>€ 845,-</td>
</tr>
<tr>
<td>PhD students</td>
<td>€ 575,-</td>
</tr>
<tr>
<td>AFLoNext workshop attendee only</td>
<td>€ 150,-</td>
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<tr>
<td>EWADE workshop attendee only</td>
<td>€ 150,-</td>
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<tr>
<td>Accompanying person</td>
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<tr>
<td>Dinner ticket</td>
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<tr>
<td>Reception ticket</td>
<td>€ 25,-</td>
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</table>

* Council of European Aerospace Societies (3AF, AAAR, AIAE, AIDAA, DGLR, FTF, HAES, NVvL, PSAA, RAeS, SWFV, TsAGI, CzAeS, ESA, EUROAVIA, VKI), AFLoNext project members.

The conference fee includes for delegates:
- Attendance to conference, incl. AFLoNext & EWADE workshops
- Book of abstracts (on USB-stick)
- Conference proceedings (on USB-stick)
- Bag with conference programme and list of attendees
- Welcome reception
- Excursion
- Conference dinner
- Lunches and coffee / tea during breaks

For attendees of AFLoNext or EWADE workshop only:
- Attendance to AFLoNext or EWADE workshop
- Book of abstracts (on USB-stick)
- Bag with conference programme and list of attendees
- Lunch and coffee / tea during breaks

For accompanying persons:
- Welcome reception
CEAS 2015: Conference programme

- Excursion
- Conference dinner

Cancellation/Refund Policy

- Cancellations made before 15 August will receive a refund less € 50,- administration fee.
- No refunds will be granted after 15 August. No-shows will not be eligible for refunds.
- Refunds will be made after the conference.

Payments by direct bank transfer (in EUROs only):

- ABN-AMRO Bank, Rotterdam, the Netherlands
- Account number: 54.44.04.564 of TU Delft, SSC F&C, Delft, the Netherlands
- IBAN: NL 84 ABNA 0544404564, BIC: ABNANL2A

Please mention CEAS2015, GNF 874 and participant name.

Hotel accommodation

The organising committee of CEAS 2015 offers special hotel rates, when you book your hotel room together with your registration.

To guarantee your hotel reservation a hotel deposit of €100,- is required and will be charged together with the registration fee. The hotel deposit will be deducted from your hotel bill when checking out.

You will be notified by the CEAS2015 Conference Office in case accommodation in the hotel of your choice is not available anymore.

Recommended hotels in close vicinity of the conference with reduced rates:

- Hotel Johannes Vermeer: [www.hotelvermeer.nl](http://www.hotelvermeer.nl)
- Hotel Juliana: [www.hoteljuliana.nl](http://www.hoteljuliana.nl)
- Hotel Delft Centre: [www.hoteldelftcentre.nl](http://www.hoteldelftcentre.nl)
- Westcord hotel: [www.westcordhotels.nl](http://www.westcordhotels.nl)
- Hotel Campanille: [www.campanile-delft.nl](http://www.campanile-delft.nl)
Hotel de Plataan: www.hoteldeplataan.nl

Contact the Conference Office directly for questions about the registration and hotel reservation by email: CEAS2015-mc@tudelft.nl.

Contact

Netherlands Association of Aeronautical Engineers NVvL

Anthony Fokkerweg 2
1059 CM Amsterdam
The Netherlands
E-mail: info@ceas2015.org

Local Organising Committee

- Fred Abbink (Chairman), NVvL
- Christophe Hermans, German-Dutch Wind Tunnels DNW
- Piet Kluit, NVvL
- Joris Melkert, Delft University of Technology TU Delft
- Siggi Pokörn, German-Dutch Wind Tunnels DNW
- Corry van der Drift, Delft University of Technology Conference Office
- Els Bakker, Delft University of Technology Conference Office
- Anouk Scholtes, VSV Leonardo da Vinci
Monday 7 September 2015

08:00 – 10:00 Registration
10:00 – 11:00 Opening ceremony
11:00 – 11:30 Coffee/tea break
11:30 – 12:30 Keynote ‘Challenges for the European Aeronautical Industry’ (Auditorium)
12:30 – 13:30 Lunch
13:30 – 14:30 Keynote ‘Challenges for European Access to Space’ (Auditorium)
14:30 – 16:00 Parallel sessions
16:00 – 16:30 Coffee/tea break
16:30 – 18:00 Parallel sessions
18:30 – 20:00 Welcome reception

14:30 – 18:00 PulCheR workshop (Commission room 4)

Tuesday 8 September 2015

08:00 – 09:00 Keynote ‘Challenges to the European Airlines’ (Auditorium)
09:00 – 10:30 Parallel sessions
10:30 – 11:00 Coffee/tea break
11:00 – 12:30 Parallel sessions
12:30 – 13:30 Lunch
13:30 Keynote ‘Challenges in realising a Single European Sky’ (Auditorium)
14:30 – 16:00 Parallel sessions
16:00 – 16:30 Coffee/tea break
16:30 – 18:00 Parallel sessions
18:00 – 18:30 Coffee/tea break
18:30 – 20:00 Parallel sessions (tentative)

09:00 – 12:30 CEAS Trustee Board Meeting (Commission room 4)
14:30 – 17:00

Wednesday 9 September 2015

08:00 – 09:30 Keynote ‘Challenges to the European Aerospace Research
**CEAS 2015: Conference programme**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 - 10:30</td>
<td>Parallel sessions</td>
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<tr>
<td>10:30 - 11:00</td>
<td><strong>Coffee/tea break</strong></td>
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<tr>
<td>11:00 - 12:30</td>
<td>Parallel sessions</td>
</tr>
<tr>
<td>12:30 - 13:30</td>
<td><strong>Lunch</strong></td>
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<tr>
<td>13:30 - 14:30</td>
<td>Keynote ‘Challenges to European Aerospace Education’</td>
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<tr>
<td></td>
<td>(Auditorium)</td>
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<tr>
<td>14:30 - 16:00</td>
<td>Parallel sessions</td>
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<tr>
<td>16:00 - 16:30</td>
<td><strong>Coffee/tea break</strong></td>
</tr>
<tr>
<td>16:30 - 18:00</td>
<td>Parallel sessions</td>
</tr>
<tr>
<td>18:15</td>
<td>Departure of busses</td>
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<tr>
<td>18:45 – 22:30</td>
<td>Conference dinner (embarkment: Maasboulevard, Rotterdam)</td>
</tr>
<tr>
<td>22:30 – 23:00</td>
<td>Return trip to Delft by bus</td>
</tr>
<tr>
<td>09:00 – 18:00</td>
<td>IN2SAI events</td>
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**Thursday 10 September 2015**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:00 – 09:00</td>
<td>Keynote ‘Challenges to the European Air Power in Asymmetric Conflicts’ (Auditorium)</td>
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<tr>
<td>09:00 – 10:30</td>
<td>Parallel sessions</td>
</tr>
<tr>
<td>10:30 – 11:00</td>
<td><strong>Coffee/tea break</strong></td>
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<tr>
<td>11:00 – 12:30</td>
<td>Parallel sessions</td>
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<tr>
<td>12:30 – 13:30</td>
<td><strong>Lunch</strong></td>
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<td>13:30 – 15:00</td>
<td>Parallel sessions</td>
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<td>15:00 – 15:30</td>
<td><strong>Coffee/tea break</strong></td>
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<tr>
<td>15:30 – 17:00</td>
<td>Parallel sessions</td>
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<tr>
<td>17:00 – 18:00</td>
<td>Closing event, incl. best paper award ceremony</td>
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<tr>
<td></td>
<td>(Auditorium)</td>
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<tr>
<td>08:00 – 08:45</td>
<td>Registration for AFLoNext workshop</td>
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<tr>
<td>08:45 – 17:45</td>
<td>AFLoNext workshop (Senate room)</td>
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<tr>
<td>09:00 – 17:00</td>
<td>EWADE workshop (Commission room 4)</td>
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**Friday 11 September 2015**

<table>
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<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>09:15</td>
<td>Departure of busses from Delft</td>
</tr>
<tr>
<td>10:00 – 12:00</td>
<td>Technical visits</td>
</tr>
</tbody>
</table>
CEAS 2015: Conference programme

12:00 – 13:00                   Lunch at facility
13:00 – 14:00                   Return to Delft and Schiphol airport (by bus)

PulCheR workshop (7 September 2015)

14:30 – 15:00  Brief overview of the PulCheR Project Angelo Pasini\(^1\) (Sitael S.p.A.)

15:00 – 16:00  High frequency pulses: a feasible way of making propulsion? Angelo Pasini (Sitael S.p.A.)

16:00 – 16:30  Coffee/tea break

16:30 – 18:00  Green propellants: alternative to Hydrazine and its derivatives Angelo Pasini (Sitael S.p.A.)

IN2SAI events (9 September 2015)

Tbd

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\(^1\) Speaker
08:30 – 08:40  Welcome from Coordinator Martin Wahllich (Airbus Operations GmbH) and presentation of AFLoNext video

08:40 – 09:00  Key note lecture no. 1: Stepless and sustainable research for the aircraft of tomorrow. From AFLoNext to Clean Sky 2 by Markus Fischer (Airbus Operations GmbH)

09:00 – 09:20  Key note lecture no. 2: On the development of practical active flow control technologies – aspirations and realities by Clyde Warsop (BAE Systems)

Technical sessions

09:20 – 10:40  Technology Stream “Hybrid Laminar Flow Control on wing and fin”

Presentations:

- Overview on the HLFC activities in AFLoNext and beyond: Geza Schrauf Airbus Operations GmbH
- Aerodynamic design of an HLFC leading edge for a VTP: Heiko v. Geyr Deutsches Zentrum Fuer Luft - Und Raumfahrt EV, DLR
- Structural design of an HLFC leading edge for a VTP: Stéphane Debaisieux Societe Nationale De Construction Aerospatiale Sonaca SA
• Integrated HLFC design for the leading edge of a wing: James Aldermann Airbus Group Ltd, Alan Mann Airbus Defence and Space GmbH
• Preliminary Krüger design for an HLFC wing: Jochen Wild Deutsches Zentrum Fuer Luft - Und Raumfahrt EV, DLR

10:40 – 11:00 Coffee/tea break

11:00 – 12:15 Technology Streams “Active Flow Control on outer wing” and “Active Flow Control on wing / pylon”

Presentations:

• Strake Vortex Interaction with Active Flow Control Applied at the Engine/Wing Junction: Sebastian Fricke, Vlad Ciobaca, Jochen Wild, Anna Kröhnert Deutsches Zentrum Fuer Luft - Und Raumfahrt EV, DLR and Olivier Blesbois Airbus Defence and Space GmbH

12:15 – 12:30 Q&A

12:30 – 13:40 Lunch break

Discussion corners for each Technology Stream

13:40– 14:20 Technology Stream “Active Flow Control on wing trailing edge”

Presentations:

- Computational Fluid Dynamics benchmark on the tests of the EU-funded project AVERT: Petr Vrchota Vyzkumny A Zkusební Letecky Ustav A.S., VZLU
- SaOB/supercritical coanda device, current development and outlook: Avraham Seifert Tel Aviv University

14:20 – 15:00 Technology Streams “and “Vibrations mitigation / control in undercarriage area”

Presentations:

- Computational Fluid Dynamics results and outlook on Flight Test: Arthur Rizzi Kungliga Tekniska Hoegskolan, KTH
- Finite Element Model, Ground Vibration Test and outlook on Flight Test: Pascal Lubrina Office National d'Etudes et de Recherches Aerospatiales, ONERA
15:00 – 15:30 Coffee/tea break

15:30 – 16:30 Technology Streams “Noise reduction on flap and undercarriage”

Presentations:

- Overview of the aeroacoustic activities in AFLoNext and related contributions to flight testing: Michael Bauer Airbus Defence and Space GmbH
- Computational Fluid Dynamics based gear-wake flap flow interaction analysis: Alexander Büscher Airbus Operations GmbH
- Analysis of acoustic wind tunnel test in the NWB for gear-wake flap interaction: Michael Pott-Pollenske Deutsches Zentrum Fuer Luft - Und Raumfahrt EV, DLR
- Experimental results from AWB wind tunnel test on porous flap side edge for an A320 flap geometry: Johann Reichenberger Airbus Defence and Space GmbH

16:30 – 17:15 Q&A, Conclusions by Coordinator Martin Wahlich (Airbus Operations GmbH)
EWAD workshop (10 September 2015)

**tbd**
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