



**1<sup>st</sup> European Workshop**

on

## **MDO for Industrial Applications in Aeronautics – Challenges and Expectations**

*24-25 October 2017*

Hosted by DLR, Braunschweig, Germany

### **INFORMATION PACKAGE**

#### Contact Persons:

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# MEETING AGENDA

- Day 1 (24<sup>th</sup> of Oct 2017)

Day1; 24 <sup>th</sup> Oct	<b>Arriving and Coffee</b>		08:00-08:30
	<b>Welcome (Cord Rossow)</b>		08:30-08:40
<b>Overview of MDO Activities at Organizing Institutes</b>			
	DLR (Stefan Görtz)	Overview and main challenges of MDO at DLR	08:40-09:10
	IRT (Anne Gazaix)	Overview and main challenges of MDO at IRT	09:10-09:40
	ONERA (Michaël Méheut)	Overview and main challenges of MDO at ONERA	09:40-10:10
	<b>Coffee Break</b>		10:10-10:30
<b>MDO Status and Challenges at Industry</b>			
	Airbus (Fabien Mangeant)	MDO at AIRBUS Group; Status, challenges & bottlenecks	10:30-11:15
	SAAB (Christopher Jouannet)	SAAB's perspective on MDO, challenges and opportunities	11:15-11:45
	Rolls Royce (Peter Flassig)	MDO of Compressor Aerofoils: Perspectives from a jet engine manufacturer	11:45-12:15
	N. N. (needs confirmation)	Status, challenges and expectations	12:15-12:45
	<b>Lunch</b>		12:45-13:30
	<b>Keynote, Uni of Michigan (J.Martins): The Promise and Challenges of MDO for the Next Generation of Aircraft</b>		13:30-14:00
<b>Topic 1: Gradients in MDO</b>			
	DLR (Mohammad Abu-Zurayk)	Status of gradient-based MDO at DLR	14:00-14:20
	ONERA (Christophe Blondeau)	Status and challenges of high-fidelity aeroelastic gradients computation	14:20-14:40
	University of Kaiserslautern (Nicolas Gauger)	Efficient Computation of Pareto Optimal Points	14:40-15:00
	Airbus D&S (Fernass Daoud)	Using sensitivities in MDO	15:00-15:20
	<b>Coffee Break</b>		15:20-15:40
<b>Topic 2: MDO Concepts, Methods and Algorithms</b>			
	IRT (François Gallard)	GEMS: creation, automation and reconfiguration of MDO processes	15:40-16:00
	ONERA (Sylvain Dubreuil)	Towards an efficient global MDO based on surrogate models	16:00-16:20
	TU Delft (Imco van Gent)	Recent developments for MDO system formulation: KADMOS and CMDOWS	16:20-16:40
	IRIT/CERFACS (Serge Gratton/Selim Guroi)	Domain decomposition inspired algorithms for MDO and their application	16:40-17:00
	DLR (Caslav Ilic)	The DLR strategy for MDO: computationally and collaboration intensive MDO	17:00-17:20
	<b>Coffee Break</b>		17:20-17:40
<b>Panel Discussion Session</b>			
	DLR (Cord Rossow) ONERA (Stéphane Andrieux) IRT (Anne Gazaix) Airbus (N.N.) Dassault (Gilbert Roge) SAAB (Christopher Jouannet) Airbus D&S (Fernass Daoud)	Organizational bottlenecks Technical bottlenecks What industry expects from research	17:40-18:20
	<b>DINNER</b>		Starting 20:00

# MEETING AGENDA

- Day 2 (25<sup>th</sup> of Oct 2017)

Day2; 25 <sup>th</sup> Oct	<b>Arriving and Coffee</b>		08:00-08:30
	<b>Keynote Lecture, University of Clarkson (Pat Piperni) : MDO: A Disruptive Technology?</b>		08:30-09:00
<b>Topic 3: Collaborative MDO, Architectures, Data Management and IT Aspect</b>			
	IRT (Vincent Gachelin)	Data management and MDO supervision	09:00-09:20
	DLR (Pier Davide Ciampa)	Management and reconfiguration of MDO workflow in the EU project AGILE	09:20-09:40
	Airbus (Sanjiv Sharma)	TOICA European project	09:40-10:00
	Airbus (N.N.)	Eclipse-RCP based MDO architecture ( <i>needs confirmation</i> )	10:00-10:20
	<b>Coffee Break</b>		10:20-10:40
<b>Topic 4: CAD and Parameterization for MDO</b>			
	DLR (Arno Ronzheimer)	CAD for gradient-based MDO	10:40-11:00
	Queen's University of Belfast (Cecil Armstrong)	Parametric CAD-Based design optimization using adjoint methods	11:00-11:20
	Queen Mary Uni. (Shenren Xu)	CAD-based parametrizations for industrial MDO	11:20-11:40
	Airbus (Holger Barnewitz)	Airbus parameterization strategies	11:40-12:00
	<b>Lunch</b>		12:00-13:00
<b>Topic 5: Loads and Structure Sizing for MDO</b>			
	Queen's University of Belfast (Cecil Armstrong)	An alternative approach to loads – structural assessment	13:00-13:20
	ISAE (Joseph Morlier)	Recent advances in structural and multidisciplinary optimization in SUPAERO	13:20-13:40
	ONERA (Marco Tito Bordogna)	Aeroelastic tailoring of composite wing box with manufacturing and aerodynamic performance constraints	13:40-14:00
	DLR (SR/AE/FA/BT)	T.B.D.	14:00-14:20
	Airbus D&S (Fernass Daoud)	Integration of loads in a MDO process	14:20-14:40
	Airbus (Lucian Iorga)	MDO Max Performance project	14:40-15:00
	<b>Coffee Break</b>		15:00-15:20
<b>Topic 6: Uncertainty in MDO</b>			
	ONERA (Mathieu Balesdent)	Dealing with uncertainties at early stage of multidisciplinary design	15:20-15:40
	Airbus (Fabien Mangeant)	Mathematical formalization for collaborative margin management	15:40-16:00
	Airbus (Sanjiv Sharma)	Uncertainty in MDO	16:00-16:20
	<b>Coffee Break</b>		16:20-16:40
<b>Special Topic</b>			
	Airbus (Murray Cross)	Airbus Challenge Test Case	16:40-17:00
<b>Summary and assessment of the workshop</b>			
	Pat Piperni	Summary , assessment and outlook	17:00-17:30

# SITE MAP DLR Braunschweig

address: Lilienthalplatz 7, 38108 Braunschweig (Germany)



- ★ Gate; Identification & Registration
- ★ Workshop (Building 106: Hermann-Blenk Saal)



How to find DLR Braunschweig by CAR:

Car parking: Due to ongoing construction work on the DLR site we have only a limited number of parking lots available on-site. Additional free parking is available outside of DLR at Braunschweig airport (2 minutes walking).

[http://www.dlr.de/dlr/en/desktopdefault.aspx/tabid-10273/378\\_read-227/](http://www.dlr.de/dlr/en/desktopdefault.aspx/tabid-10273/378_read-227/)

# How to come to DLR by public transport

Link:

[Travel info from Steigenberger Hotel to DLR on 24 Oct](#)

## Station/Stop

Braunschweig, Nimes-Straße 2,  
walk 7 min. to  
Friedrich-Wilhelm-Platz,

## Date

## Time

Bus 413, Direction: Beberbachau, BS

Tu, 24.10.17

dep 07:35

Braunschweig  
(D.L.R),

Tu, 24.10.17

arr 08:02

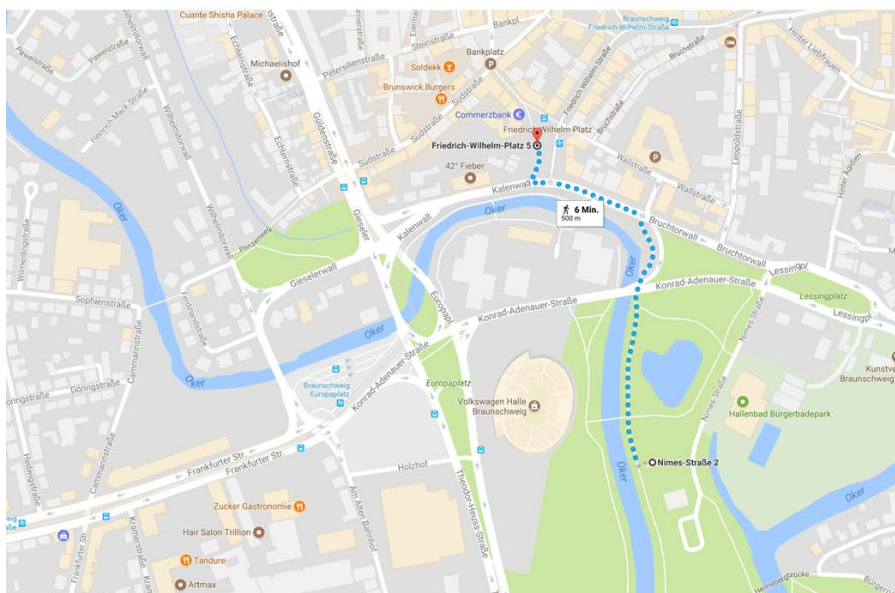
## Please note

Duration: 0:34; price single route: 2,50€ 1 adult.

All information is issued without liability. Before traveling, please inform yourself briefly on possible changes in the timetable on the Internet via

Link:

[walk from Steigenberger to bus station](#)



The bus connection to the DLR has only a limited number of seats. Taxes must be reserved if necessary.

Some telephone numbers of taxi companies in Braunschweig:

+49-531/55555 or +49-531-/666666

city map and information of Braunschweig: <http://www.braunschweig.de/english/index.html>

# HOTELS

Since we arranged a special rate for the MDO workshop , we recommend the following hotel

- **Steigenberger Parkhotel Braunschweig**  
Nîmes-Straße , 38100 Braunschweig  
<https://www.steigenberger.com/en/hotels/all-hotels/germany/brunswick/steigenberger-parkhotel-braunschweig>

DLR-price per night incl. breakfast: 119,00€ **if reserved until 6.10.2017**

Please contact the hotel directly via email ([braunschweig@steigenberger.de](mailto:braunschweig@steigenberger.de)) or telephone (+49 531 48222-0).

**Please, don't forget to mention the keyword „MDO Workshop“!**

Other hotels are:

- **B&B Hotel Braunschweig City**  
Frankfurter Straße 289, 38122 Braunschweig  
<https://www.hotelbb.de/en/braunschweig-city/overview>  
  
internet price per night excl. breakfast: (+8,50€): 54,00€  
It is close to the hotel Steigenberger, where the dinner will take place.
- **Intercity Hotel Braunschweig** (at the main station)  
Willy-Brandt-Platz 3, 38102 Braunschweig  
<https://www.intercityhotel.com/en/hotels/all-hotels/germany/brunswick/intercityhotel-braunschweig>  
  
internet price via: 89,90€per night  
but  
DLR-price per night incl. breakfast: 79,00€ if you visit hrs  
  
<https://www.hrs.de/web3/searchWeb1000.do?activity=showHotellistWithPromotion&showOverlay=true&clientId=ZGVfX0RMUKVW&cid=57-1&clientConfigId=a06f33da-8677-34bc-8db8-3f633638a506#initialLoaded>

There you can also chose other vacant hotels. If you have questions, don't hesitate to contact [cornelia.delfs@dlr.de](mailto:cornelia.delfs@dlr.de).

# Dinner on 24th October 2017

The dinner will take place at Steigenberger Parkhotel Braunschweig, starting at 20:00.

## **Steigenberger Parkhotel Braunschweig**

Nîmes-Straße , 38100 Braunschweig

tel.: +49 531 48222-0

<https://www.steigenberger.com/en/hotels/all-hotels/germany/brunswick/steigenberger-parkhotel-braunschweig>

## How to come to Steigenberger Hotel with public transport:

From Braunschweig, DLR, station: „D“

- Bus 413, direction: Braunschweig Eutschenwinkel
- Departure: 18:35
- Arrival: 19:05

to Braunschweig Holzhof (Volkswagen Halle)

We can recommend the Steigenberger website, location&direction:

<https://www.steigenberger.com/en/hotels/all-hotels/germany/brunswick/steigenberger-parkhotel-braunschweig/location-direction>

## **Other Information**

Lunch: All registered workshop participants are cordially invited for a light lunch on both workshop days.

Dinner: All registered workshop participants are cordially invited for dinner on October 24.

The workshop is free of charge

but a registration is mandatory

**(registration deadline: 10th of October, 2017):**

workshop secretary Cornelia Delfs, [Cornelia.Delfs@dlr.de](mailto:Cornelia.Delfs@dlr.de)

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