<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08.30</td>
<td>Registration / Tea &amp; Coffee</td>
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<tr>
<td>09.15</td>
<td>Welcome and Introduction</td>
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<tr>
<td>09.30</td>
<td><strong>KEYNOTE ADDRESS</strong></td>
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<tr>
<td></td>
<td>A Realizable Approach to High Fidelity Computational Science and</td>
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<tr>
<td></td>
<td>Engineering Driving the Early Design Process</td>
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<tr>
<td></td>
<td>Dr Scott Morton, Kestrel Principal Software Developer, US Department</td>
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<td></td>
<td>of Defense High Performance Computing Modernisation Program</td>
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<tr>
<td>10.00</td>
<td><strong>SESSION A: INDUSTRIAL DESIGN AND APPLICATION 1</strong></td>
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<tr>
<td></td>
<td>Chairman: Professor Clyde Warsop, Executive Scientist, BAE Systems</td>
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<tr>
<td>10.30</td>
<td>(A1) Application of Hybrid Computational Fluid Dynamics Tools to the</td>
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<tr>
<td></td>
<td>A350 Aircraft: Challenges and Lessons Learned</td>
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<tr>
<td></td>
<td>Dr Scott Shaw, Head of Hybrid CFD Department, Airbus, Germany</td>
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<tr>
<td>11.00</td>
<td>Networking Break</td>
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<tr>
<td>11.30</td>
<td>(A2) Assessment of CFD Modelling Methods for Predicting the Effects</td>
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<tr>
<td></td>
<td>on Aircraft Performance of Parasitic Drag Features</td>
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<tr>
<td></td>
<td>Miss Alexandra Stefanescu, Intern in Flight Physics, Airbus, UK</td>
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<tr>
<td>12.00</td>
<td>Lunch</td>
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<tr>
<td>12.30</td>
<td>(A4) Future Simulation Concept</td>
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<td></td>
<td>Mr Murray Cross, Technology Product Leader - Future Simulation, Airbus</td>
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<tr>
<td></td>
<td>UK</td>
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<tr>
<td>13.00</td>
<td>Lunch</td>
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<tr>
<td>14.00</td>
<td><strong>LECTURE THEATRE</strong></td>
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<td></td>
<td><strong>PARALLEL SESSION B: DESIGN PROCESSES 1</strong></td>
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<tr>
<td>14.30</td>
<td>(B1) EnGAM – Integrating CFD into the Concept Design Process</td>
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<tr>
<td></td>
<td>Mr Nick Leppard, Senior Research Scientist, Computational Engineering</td>
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<td>Capability, BAE Systems, Advanced Technology Centre, UK</td>
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<tr>
<td>15.00</td>
<td>(B2) Interactive Aircraft Design for Undergraduate Teaching</td>
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<tr>
<td></td>
<td>Dr Rashid Ali, Senior Lecturer, University of Hertfordshire, UK</td>
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<tr>
<td>15.30</td>
<td>Networking Break</td>
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<tr>
<td>16.00</td>
<td><strong>PARALLEL SESSION D: CONFIGURATION DESIGN 1</strong></td>
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<tr>
<td>16.30</td>
<td>(D1) The Stability and Control Dataset for Eurofighter Typhoon</td>
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<td></td>
<td>Mr Simon Eccleston, Lead Aerodynamicist, BAE Systems, Military Air</td>
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<td>and Information, UK</td>
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<td></td>
<td>(D2) High-Lift Aerodynamics of Uninhabited Combat Air Vehicle</td>
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<td></td>
<td>Configurations with Reduced Radar Cross-Section Characteristics</td>
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<td></td>
<td>Dr Leslie Johnston, Reader in Aerospace Engineering, University of</td>
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<td></td>
<td>Salford, UK</td>
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<td>17.00</td>
<td>(D3) Control Response of an Articulated Wing Aircraft</td>
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<td>Ms Emily Leylek, Georgia Institute of Technology, USA</td>
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<td>17.30</td>
<td>Conference Close</td>
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<tr>
<td>18.00</td>
<td><strong>LANCHESTER LECTURE</strong></td>
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<td></td>
<td>Aerodynamics and Aerodynamic Research in Formula 1</td>
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<td>Mr Willem Toet, Head of Aerodynamics, Sauber F1 Team</td>
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<td><strong>ROOM 1</strong></td>
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<td><strong>PARALLEL SESSION C: INDUSTRIAL DESIGN AND APPLICATION 2</strong></td>
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<tr>
<td>14.00</td>
<td>(C1) Modelling of Unsteady Aerodynamics of Helicopter Underslung</td>
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<td>Loads</td>
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<td>Dr Douglas Greenwell, Reader in Flight Dynamics, City University</td>
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<td>London, UK</td>
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<td>14.30</td>
<td>(C2) CFD-Generated Brimstone Missile Grid Loads on Bore-Sight</td>
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<td>Trajectories Passing Under TIALD</td>
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<td>Mr David Kirkham, Lead Aerodynamicist, BAE Systems, Military Air</td>
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<td>&amp; Information, UK</td>
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<td>15.00</td>
<td>(C3) FloEFD Simulation of Micro-Turbine Engine</td>
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<tr>
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<td>Mrs Tatiana Trebunskikh, QA/Test Engineer, Mentor Graphics Corporation,</td>
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<td>15.30</td>
<td>Networking Break</td>
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<tr>
<td>16.00</td>
<td>**PARALLEL SESSION E: INDUSTRIAL DESIGN AND APPLICATION 2 CONT...</td>
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<tr>
<td></td>
<td>(E1) Reviewing Over-Surface Scarfed Intakes, Design &amp; Integration on</td>
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<td>Military Configurations</td>
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<td>Dr Raj Nangia, Nangia Aero Research Associates, UK</td>
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<tr>
<td>16.30</td>
<td>(E2) Internal Flow Simulation of Dump Diffusers with Airfoil Shaped</td>
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<td>Flame Tube for Modern Aircraft Engines</td>
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<td>Mr Padmanabhan Sathyen, Undergraduate Student, Kumaraguru College of</td>
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<td></td>
<td>Technology, India</td>
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<tr>
<td>17.00</td>
<td>(E3) CFD Prediction of Unsteady Tail Loads for a CC130 Aircraft</td>
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<td>with the Ramp Door Open</td>
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<td>Dr Ali Bedmenddour, Senior Research Officer, National Research Council</td>
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<td></td>
<td>Canada (NRCC), Canada</td>
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<td>18.00</td>
<td>Conference Close</td>
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**Proceedings**
Proceedings from this event are included in delegate fees. If you are unable to attend and would like to purchase a copy, then additional copies can be purchased from the Royal Aeronautical Society.

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## PROGRAMME - 18 JULY 2012

### ROOM 1

#### 09.00
**LECTURE THEATRE**
**PARALLEL SESSION F: APPLIED COMPUTATIONAL METHODS 1**

(F1) On Achieving Aerodynamic Lateral Stability for the Fastest Car on the Planet, Bloodhound SSC  
Mr Chris Hannon, Research Engineer, Swansea University/ Bloodhound Programme Ltd, UK

(F2) Modelling and Analysis of a High Lift System for a Blended Wing Body Aircraft  
Mr Daniel Paulus, Research Scientist, Ph.D. Student, Institute of Aircraft Design, Technische Universität München, Germany

(F3) Aerodynamic Performance Analysis of A Non Planar C Wing Using Experimental and Numerical Tools  
Mr Mana Prakash Rajaparaksh, Recent Postgraduate, UK

#### 10.00
**PARALLEL SESSION G: WING IN GROUND EFFECT**

(G1) Scale Effects on a Single-Element Inverted Wing in Ground Effect  
Mr Joao Correia, PhD Student, Aeromechanical Systems Group, Cranfield University, UK

(G2) Studies on External Flow Choking at Wing in Ground Effect  
Mr Dheepan Iyyampillai, Undergraduate Student, Kumaraguru College, India

### 11.00
**PARALLEL SESSION H: FLOW CONTROL 1**

(H1) Transonic Drag Reduction for a Supercritical Wing Section Using Shock Control Bumps  
Mr Mohsin Khalil Ahmad, Student, Lucian Blaga University of Sibiu, Romania

(H2) Passive Control of Swept Shock Wave Turbulent Boundary Layer Interaction using Micro-Vortex Generators  
Miss Roschelle R Martis, Senior Research Fellow, Defence Institute of Advanced Technology, India

(H3) Passive Control of Transonic Cavity Aero-Acoustics  
Mr David Roberts, PhD Researcher, Cranfield University, UK

(H4) Large Eddy Simulation (LES) of a Delta Wing and Automotive Vortex Generator in Ground Effect  
Ms Lara Schembri Puglisevich, PhD Student, Loughborough University, UK

#### 13.00
Lunch

#### 14.00
**PARALLEL SESSION J: DESIGN OPTIMISATION 1**

(J1) Automatic Optimisation of Aerofoil Sections Using Inbuilt Mesh Morphing Technology and Optimisation Methods within the Commercial CFD Code ANSYS Fluent  
Mr David Mann, Automotive & Aerospace Team Leader, ANSYS UK Ltd, UK

(J2) Flight Envelope Balanced Aerofoil Design via Meta-Model Assisted Adaptive Design Space Exploration  
Mr Lee Cameron, Postgraduate Research Student, Queen’s University Belfast, UK

(J3) Study of Aerofoil Aerodynamics Optimisation Based on a Novel Genetic Algorithm  
Prof Dehua Chen, Deputy Chief Engineer & Prof Dawei Liu, Engineer, High-Speed Aerodynamics Institution, China

#### 16.00
**PARALLEL SESSION L: DESIGN OPTIMISATION 2**

(L1) Development of CST Geometric Parameterisation Method for an Entire Transport Aircraft  
Mr Feng Zhu, PhD Student, University of Sheffield, UK

(L2) Wing Twist Optimisation Using Rapid Computational Methods  
Mr Christian Agostinelli, Research Engineer for Airbus UK, The Systems Centre, University of Bristol, UK

(L3) Parametric Geometry Modelling Method for Multidisciplinary Design Optimisation of Airbreathing Hypersonic Vehicle  
Dr Dajun Xu, Lecturer, Beihang University, China

(L4) Approximate Analytical Expressions for the Ideal Loading on Multiple Lifting Surface Configurations  
Mr Roger Doe, Retired Aerodynamicist, UK

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The Conference will focus on the application of modelling and simulation in the aerodynamic design process and cover both current state-of-the-art and future prospects. It is intended to cover applications across a broad spectrum ranging from civil and military aircraft to automotive aerodynamics.

The Conference is targeted at aerodynamics researchers and programme managers from academia, industry and research establishments worldwide with the aim of bringing together aerodynamics professionals across a range of industrial sectors for a balanced perspective of fundamental science issues, and technological challenges identifying areas needing additional research and development.

This is in addition to presenting new ideas, research results, and technology integration and validation, providing a forum for the presentation and discussion of results and experiences with a view to the future enhancement of capabilities.

### Registration Fees:

<table>
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<tr>
<th>Description</th>
<th>Fee (£)</th>
<th>VAT 20% (£)</th>
<th>Total (£)</th>
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<tr>
<td>Non-Member</td>
<td>450.00</td>
<td>90.00</td>
<td>540.00</td>
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<tr>
<td>RAeS Corporate Partner * (inc. Armed Forces)</td>
<td>375.00</td>
<td>75.00</td>
<td>450.00</td>
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<td>Academic</td>
<td>375.00</td>
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<tr>
<td>RAeS Member</td>
<td>325.00</td>
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<td>390.00</td>
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<tr>
<td>Speaker / Session Chairman</td>
<td>190.00</td>
<td>38.00</td>
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<tr>
<td>RAeS Student Member</td>
<td>135.00</td>
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