3rd International Air Transport & Operations Symposium

Sustaining Value in Air Transport & Operations

ATOS

TUDelft Delft University of Technology — IMAPP — ASDA Association for the Scientific Development of ATM in Europe — ComplexWorld.eu

Programme Book

KLM Engineering & Maintenance — AIRBUS — SEVENTH FRAMEWORK PROGRAMME — European Union

DUTCH INSTITUTE WORLD CLASS MAINTENANCE — WOODWARD — NLR — innaxis — Fokker — ROYAL AERONAUTICAL SOCIETY — AIAA The World's Forum for Aerospace Leadership

ATOS 2012 - FINAL PROGRAMME

Monday, June 18, 2012				
8:00 - 8:45	**Registration with coffee**			
8:45 - 9:00	**Opening Ceremony by Jacco Hoekstra & Ricky Curran (LR-B)**			
9:00 - 10:00	**Keynote Speech 1 & 2 (LR-B)** Rene de Groot(KLM) & Pierre Bachelier (Airbus)			
	Session 1 : Academic			
10:00 - 11:15	**1.1 (LR-B)** IMAPP: Health monitoring	**1.2 (LR-C)** Value Driven Design	**1.3 (LR-D)** ATM ComplexWorld 1	
11:15 - 11:30	Coffee Break (Location: LR Restaurant)			
	Session 2: Panel Session (LR-B) **Role of integration in future air transport**			
11:30 - 12:30	Akbar Sultan (NASA), Pablo Perez Illana (EU), Rene de Groot (KLM E&M), J.P Clarke (GeorgiaTech), Mark Hansen (Berkeley)			
12:30 - 13:30	Lunch			
13:00 - 14:00	**Keynote Speech 3** Akbar Sultan (NASA)			
	Session 3: Industry			
14:00 - 15:00	**3.1 (LR-B)** IMAPP: NFF now and in the future	**3.2 (LR-C)** KLM / Kenya Airlines operations	**3.3 (LR-D)** KLM	**3.4 (LR-F)** KLM
15:00 - 15:30	Coffee Break (LR Restaurant)			
	Session 4: Academic			
15:30 - 17:10	**4.1 (LR-B)** IMAPP: No Fault Found	**4.2 (LR-C)** Air Transport Safety	**4.3 (LR-D)** ATM ComplexWorld 2	**4.4 (LR-F)** Airport operations
17:10 - 17:40	**Keynote Speech 4 (LR-B)** Christiane Bruynooghe (EU)			
17:40 - 19:00	**Airbus Welcome Reception**			
19:30 - 23:00	Organising Committee Meeting			

Tuesday, June 19, 2012				
8:45 - 9:00	**Opening Day 2 (LR-B)**			
9:00 - 10:00	**Keynote Speech 5 & 6 (LR-B)** NLR Henk Akkermans (UvT / World Class Maintenance)			
	Session 5: Industry			
10:00 - 11:00	**5.1 (LR-B)** NASA	**5.2 (LR-C)** Royal Netherlands Air Force	**5.3 (LR-D)** ComplexWorld	**5.4 (LR-F)** Stall Shield
11:00 - 11:30	Coffee Break			
	Session 6: Academic			
11:30 - 13:10	**6.1 (LR-B)** IMAPP: Life cycle management	**6.2 (LR-C)** Value Operations Methodology	**6.3 (LR-D)** ATM Performance	**6.4 (LR-F)** ComplexWorld
13:10 - 14.15	Lunch or Travel to Schiphol (plus packed lunch during journey)			
14:15 - 16:15	**Visit to Schiphol / KLM**	**Visit TU Delft Faculty of AE**	**Visit City of Delft**	
16:15 - 16:45	Travel to Delft Centre			
17.00 - 18.30	**Canal tour Delft**			
18:30 - 19:15	Transportation to banquet			
19:30 - 23:00	**KLM Banquet (Lindenhof, Delft)**			
21.00 - 22:00	ATOS Awards Ceremony			

Wednesday, June 20, 2012				
9:00 - 9:10	**Opening Day 3 (LR-B)**			
9:10 - 10:10	**Keynote Speech 8 & 9 (LR-B)** *ASDA (2)*			
	Session 7: Industry			
10:10 - 11:10	**7.1 (LR-B)** Introduction to fast, selective and highly mobile aircraft paint stripping	**7.2 (LR-C)** Introduction to VDD (Paul Collopy)	**7.3 (LR-D)** ASDA Keynotes	**7.4 (LR-F)** NASA (Banavar Shridar)
11:10 - 11:40	Coffee Break			
	Session 8: Academic			
11:30 - 13:10	**8.1 (LR-B)** IMAPP: Flying Testbeds	**8.2 (LR-C)** Airline operations	**8.3 (LR-D)** ASDA	**8.4 (LR-F)** IMAPP: NFF panel
13:10 - 13:40	Lunch			
13:40 - 14:10	**Keynote Speech 10 (LR-B)** Mark Hansen (Berkeley University)			
	Session 9: Industry			
14:10 - 15:15	**9.1 (LR-B)** Fokker SPA	**9.2 (LR-C)** IATA Air Mercury NG	**9.3 (LR-D)** ASDA panel discussion	**9.4 (LR-F)** Systems Engineering
15:15 - 15:45	Coffee Break			
	Session 10: Academic			
15:45 - 17:25	**10.1 (LR-B)** IMAPP: Special Purpose Aircraft	**10.2 (LR-C)** Value Engineering	**10.3 (LR-D)** ASDA+Airport	
17:25 - 17:55	**Keynote Speech 11 (LR-B)** John-Paul Clarke (GeorgiaTech)			
17:55 - 19:00	**Closing Reception** (LR Atmosphere)			
18:00 - 23.00	Organising Committee final debrief			

Note: Activity locations are given between parentheses!
The main location for ATOS 2012 is TU Delft, Faculty of Aerospace Engineering, Kluyverweg 1, 2629 HS Delft, The Netherlands

Academic Session 1	Academic Session 1	Academic Session 1	Academic Session 1
Session 1.1: IMAPP: Health monitoring **Monday 18-06, 10:00 - 11:15** *Jens Strahmann (Airbus Bremen) & Stephan Hollmann (Pacific Aviation & Lease Management, Inc)*	**Session 1.2: Value Driven Design** **Monday 18-06, 10:00 - 11:15** *Danielle Soban (Queens University Belfast)*	**Session 1.3: ATM ComplexWorld 1** **Monday 18-06, 10:00 - 11:15** *Hartmut Helmke (German Aerospace Center (DLR)) & Henk Blom (NLR & Delft University of Technology)*	
10:00 **Nico B. Hölzel, Christopher Schröder, Thomas Schilling and Volker Gollnick** Nico Hölzel (German Aerospace Center (DLR)) *A Maintenance packaging and scheduling optimization method for future aircraft*	**Paul Collopy and Cristina Poleacovschi** Paul Collopy (University of Alabama in Huntsville) *Validating Value-Driven Design*	**Tibor Bosse, Alexei Sharpanskykh, Jan Treur, Henk Blom and Sybert Stroeve** Alexei Sharpanskykh (VU University Amsterdam) *Modelling of Human Performance-Related Hazards in ATM*	
10:25 **Paul van der Zwet** Paul van der Zwet (Delft University of Technology) *A comparative study including reliability and maintainability analysis and reliability growth modelling to accurately predict the sheet metal repair workload on Boeing 747-400 C-checks*	**Seng Seng Heng, Mark Price, Roy Douglas and David Thornhill** Seng Heng (Queens University Belfast) *Value Driven Design in Automotive Transport Systems*	**Andreas Heidt and Olga Gluchshenko** Andreas Heidt (FAU Erlangen-Nürnberg) *From uncertainty to robustness and system's resilience in ATM: a case study*	
10:50	**Ron Van Baaren** Ron van Baaren (ADSE consulting and engineering) *How improve operational availability and cost effectiveness using a pragmatic RAMS Value Driven Design effort: a Military Helicopter Case Study.*	**Soufiane Bouarfa, Henk Blom and Ricky Curran** Ricky Curran (Delft University of Technology) *Airport Performance Modeling using an Agent-Based Approach*	

Academic Session 4	Academic Session 4	Academic Session 4	Academic Session 4
Session 4.1: IMAPP: No Fault Found **Monday 18-06, 15:30 - 17:10** *Lori Fischer (AIAA-PSTC (IMAPP) - Woodward) & Adel Ghobbar*	**Session 4.2: Air Transport Safety** **Monday 18-06, 15:30 - 17:10** *Ron van Baaren (ADSE consulting and engineering)*	**Session 4.3: ATM ComplexWorld 2** **Monday 18-06, 15:30 - 17:10** *Henk Blom (NLR & Delft University of Technology) & Hartmut*	**Session 4.4: Airport operations** **Monday 18-06, 15:30 - 17:10** *Jesper Bronsvoort (Airservices Australia)*
15:30 **Bernhard Meyer** Bernhard Meyer (Philotech) *NFF - Who is to be blamed? Unravelling the Mysteries of NFF*	**Marco Franke, Dennis Gerke, Carl Hans and Klaus-Dieter Thoben** Marco Franke (BIBA - Bremer Institut für Produktion und Logistik) *Method-driven test case generation for functional system verification*	**Mariken Everdij, Henk Blom, Hicham Zmarrou and Bert Bakker** Mariken Everdij (National Aerospace Laboratory NLR) *Agent-Based Safety Risk Analysis of Time Based Operation in Future TMA*	**Michael Arntzen** Michael Arntzen (NLR) *Flyover noise synthesis for the Virtual Community Noise Simulator*
15:55 **Jim Saltigerald** Jim Saltigerald (Air Wisconsin) *Managing the NFF Phenomenon – A Practical Structured Approach*	**Veit Voges and Gerhard Hüttig** Veit Voges (Institute of Technology Berlin, (TU Berlin)) *Aviation Security in the Digital Age: Can Security Benefit from Wireless Communication Technologies in Passenger Air Transport Processes?*	**Nataliya Mogles, Sybert Stroeve and Bert Bakker** Nataliya Mogles (VU University Amsterdam) *Analysis of accident risk related events and the roles of agents in conflict recognition and resolution during a runway incursion scenario*	**Maximilian Richter, Fisch Florian and Florian Holzapfel** Maximilian Richter (Technische Universität München, Institute of Flight System Dynamics) *Noise-minimal landing and take-off trajectories under procedural and safety regulations*
16:20 **Mitch Klink** Mitch Klink (FedEx) *USING AN LRU QUARANTINE PROGRAM TO REDUCE COSTS ASSOCIATED WITH NO FAULT FOUND*	**John Stoop and Jan De Kroes** John Stoop (Delft University of Technology) *Stall shield devices, an innovative approach to stall recovery?*	**Lorenzo Castelli, Luca Corolli and Guglielmo Lulli** Lorenzo Castelli (University of Trieste) *The impact of airlines' collaboration in Air Traffic Flow Management*	**Yu-Hern Chang, Kitty Wu and Ya-Chi Lin** Kitty Wu (Department of Transportation and Communications Management Science, National Cheng Kung University) *Traveler expectation and airport service improvement: Kaohsiung International Airport, Taiwan*
16:45 **Chris Rijsdijk** Adel Ghobbar (Delft University of Technology) *An attempt to quantitatively underpin the rationality of maintenance support*		**Natalia Alexandrov** Natalia Alexandrov (NASA Langley Research Center) *Control of Future Air Traffic Systems via Complexity Bound Management*	**Ashley Nunes and Ian Cook** Ashley Nunes (ISA SOFTWARE LLC) *Air Traffic Control Complexity and performance: Examining relationships based on terminal area radar data*

Tuesday, 19 June 2012

Academic Session 6	Academic Session 6	Academic Session 6	Academic Session 6
Session 6.1: IMAPP: Life cycle management Tuesday 19-06, 11:30 - 13:10 *Jens Strahmann (Airbus Bremen) & Stephan Hollmann (Pacific Aviation & Lease Management, Inc)*	**Session 6.2: Value Operations Methodology** Tuesday 19-06, 11:30 - 13:10 *Peter Hollingsworth (University of Manchester)*	**Session 6.3: ATM Performance** Tuesday 19-06, 11:30 - 13:10 *Lorenzo Castelli (University of Trieste)*	
11:30 **Thomas Schilling, Nico B. Hölzel and Stephan Langhans** Thomas Schilling (Institute of Air Transportation Systems, Hamburg University of Technology) *Cost-Benefit Evaluation of Aircraft Maintenance Base-Checks Downtime and Cost*	**Frank Smulders, Ricky Curran and Frank van der Zwan** Frank Smulders (Air Transport and Operations - Delft University of Technology) *A Value-Operations-based methodology for the development of airport concepts for the year 2050*	**Hugo De Jonge, Geert Mulder and Dries Visser** Geert Mulder (Delft University of Technology) *Subliminal Control on CDA final descent operations*	
11:55 **William Pyfferoen, Adel Ghobbar, Dries Visser and T.M. Kerkhof** William Pyfferoen (Delft University of Technology) *Development of a Maintenance Decision Model to Optimize for Technical Reliability – a component approach*	**Ricky Curran, Khanh Dinh, Edwin Van Calck and Paul Roling** Ricky Curran (Delft University of Technology) *Simulation of Taxiway System Maintenance to Optimize Airport Operational Value*	**Hejar Gürlük, Dirk Schulze Kissing and Maria Uebbing-Rumke** Maria Uebbing-Rumke (DLR, Institute of Flight Guidance) *Adaptive Automation Support for Time-Based Operations in ATC*	
12:20 **Bengt Brötzmann, Rene Waldheuer and Benjamin Hinz** - *Life Cycle criteria in Space cabin - special challenge and new ergonomics*	**James Briggs, Yan Jin, Mark Price and Robert Burke** James Briggs (Queens University Belfast) *Scheduling a hybrid flowshop with parallel machines for aircraft assembly production*	**Dennis Nieuwenhuisen** Dennis Nieuwenhuisen (R&D Engineer NLR) *Optimizing Nightly Schiphol Traffic through Time Based Operations*	
12:45 **Werner Granzeier** - *INDUSTRIAL DESIGN OUTLOOK – Life Cycle cabin Management*	**Claudia Mullan, Mark Price, Danielle Soban and Christine Fanthorpe** Claudia Mullan (Queens University Belfast) *Surplus Value Sensitivity and Subsystem Analysis*	**Greg Mcdonald and Jesper Bronsvoort** Jesper Bronsvoort (Airservices Australia) *Concept of Operations for Air Traffic Management by Managing Uncertainty through Multiple Metering Points*	

Wednesday, 20 June 2012

Academic Session 8	Academic Session 8	Academic Session 8	Session 8
Session 8.1: IMAPP: Flying Testbeds Wednesday 20-06, 11:30 - 13:10 *Jens Strahmann (Airbus Bremen) & Stephan Hollmann (Pacific Aviation & Lease Management, Inc)*	**Session 8.2: Airline operations** Wednesday 20-06, 11:30 - 13:10 *Mark Price (Queens University Belfast)*	**Session 8.3: ASDA** Wednesday 20-06, 11:30 - 13:10	**Session 8.4: IMAPP NFF panel** Wednesday 20-06, 11:30 - 13:10
11:30 Gerold Tabken Gerold Tabken (Consulting Engineer Aeronautics) *Noseboom attachment for research and industrial purposes*	**Erik Den Hartigh, Hatice Kucukonal and Bas Verheij** Erik den Hartigh (Ozyegin University and Delft University of Technology) *The Turkish Aviation System and the Strategy of Turkish Airlines*	**Florian Fisch, Matthias Bittner and Florian Holzapfel** Maximilian Richter (Technische Universität München, Institute of Flight System Dynamics) *Optimal Scheduling of Fuel-Minimal Approach Trajectories*	11:30 - Lori Fischer
11:55 Herwig Zieger Gerold Tabken (Consulting Engineer Aeronautics) *Qualification/Certification of Nose boom installation for research and industrial purposes*	**Arthur Dijkstra** Arthur Dijkstra (Delft University of Technology) *Safety Management as Integrated Aspect of Airline Management*	**Meilin Schaper, Marco Temme, Lothar Christoffels, Olga Gluchshenko and Andreas Pick** Meilin Schaper (German Aerospace Center (DLR)) *Coupling of ATM Planning Systems with Different Time Horizons*	12:00 - Bernhard Meyer
12:20 Reiner Kickert Reiner Kickert (Leichtwerk AG) *Modification and Certification of Research Aircraft*	**Jennifer van Horn and Sicco Santema** Jennifer van Horn (KLM Royal Dutch Airlines / Delft University of Technology) *Moonshine: employee-involved workplace innovation*	**Faramarz Golmohammadi and Aliasghar Mehdizadeh Dastjerdi** Aliasghar Mehdizadeh Dastjerdi (Linköping University) *The Economic Analysis of Satellite-Based CNS/ATM Application in Iranian Air Transportation*	12:30 - Plenary Session
12:45 Raj K. Nangia Raj Nangia (Nangia Aero Associate) *Aircraft Efficiency & Operations, comparing Civil and Military Types – Opportunities for SPA and Demonstrators*	**Arjan Stander, Maria Boersma, Mark Overeijnder and Robert Jan de Boer** Arjan Stander (Amsterdam University of Applied Science) *Applying proved methods in a new environment: the case of LEAN in business aviation MRO*		

Academic Session 10	Academic Session 10	Academic Session 10	
Session 10.1: IMAPP: Special Purpose Aircraft Wednesday 20-06, 15:45 - 17:25 *Jens Strahmann (Airbus Bremen) & Stephan Hollmann (Pacific Aviation & Lease Management, Inc)*	**Session 10.2: Value Engineering** Wednesday 20-06, 15:45 - 17:25 *Paul Collopy (University of Alabama in Huntsville)*	**Session 10.3: ASDA+Airport** Wednesday 20-06, 15:45 - 17:25	
15:45 Jean Blondeau Jean Blondeau (FTI Group) *Modification of Military Aircrafts for Fire Fighting Operations*	**Yan Jin, Matilde Freijo Troncoso, Ruben Abella, Enrique Ares, James Briggs, Mark Price and Robert Burke** James Briggs (Queens University Belfast) *New similarity metric for mixed production of aircraft assembly*	**Peter Nolte, Arno Apffelstaedt and Volker Gollnick** Peter Nolte (German Aerospace Center (DLR)) *Quantitative Assessment of Technology Impact on Aviation Fuel Eciency*	
16:10 Jean Blondeau Jean Blondeau (FTI Group) *Coexistence of Entertainment and Instrumentation WiFi in Aircrafts*	**Christine Fanthorpe, Danielle Soban, Mark Price, Claudia Mullan and Peter Hollingsworth** Christine Fanthorpe (Queens University Belfast) *Predicting Foreseeable Uncertainty Using a Value Driven Design Methodology*	**Isabelle Laplace** Isabelle Laplace (ENAC) *Future strategies for airports*	
16:35 Arun Karwal and Xander In 'T Veld Arun Karwal (National Aerospace Laboratory NLR) *Upgrading a multi-mission research aircraft*	**Colin Quinn, Danielle Soban and Mark Price** Colin Quinn (Queens University Belfast) *Value Driven Design In The Presence Of Fuzzy Requirements*	**Hu Li and William Gale** Hu Li (Leeds University) *Analysis of Removal and Decomposition Pathways of Vaporized Hydrogen Peroxide (VHP) for Aircraft Decontamination Operation*	
17:00 Michael Weisel Michael Weisel (FTI Group) *Wireless Sensor networks for Flight Test Instrumentation. (Radio based and light based networks)*	**Peter Hollingsworth and Dipesh Patel** Peter Hollingsworth (University of Manchester) *Development of a Surplus Value Parameter for Use in Initial Aircraft Conceptual Design*		

KEYNOTE SPEAKERS – ADDITIONAL INFORMATION

Keynote 1 – René de Groot, KLM Engineering & Maintenance

René de Groot joined KLM as a pilot in 1990. He started his KLM-career as First Officer on the DC-9, stationed in Curacao for a period of two years. Back on home base Schiphol, he transitioned to F/O Boeing 737 and after a year to F/O Boeing 747-300. After six years in service with KLM, he promoted to Captain on the Boeing 737 and twelve years later to Captain Airbus 330. Besides the actual flying René de Groot has always been very interested in aviation business and many related subjects. He has been actively involved in the Dutch Airline Pilots Association, "Vereniging van Nederlandse Verkeersvliegers", being member of the board for eleven years of which four years as the chairman. From January 1st 2012, René de Groot changed his career and started as the Senior Vice President Operations of KLM Engineering & Maintenance.

Keynote 2 – Pierre Bachelier, AIRBUS

Pierre Bachelier is Head of Air Traffic Management Programme in AIRBUS.

He leads the development of the airborne capabilites supporting ATM transformation programmes such SESAR in Europe and NextGen in the US. He started his career in 1975 at the French Flight test centre at Istres of which he had been technical director. He joined Airbus in 1989 where he has taken several positions:in Engineering as Head of systems research then Head of Aerodynamics and Flight Mechanics department, in Programmes as Head of A400M Systems then Head of Multi Programmes, and in Strategy and Corporate performance improvement programmes. He has been appointed Head of Air Traffic Management Programme in May 2010 and representative of Airbus at the SESAR JU Board. He is graduate of Ecole Polytechnique and of Ecole Nationale Supérieure de l'Aéronautique et de l'Espace. He held a pilot licence with an experience of 2700 FH.

Keynote 3 – Akbar Sultan, NASA

Akbar Sultan is the Deputy Director of NASA's Airspace Systems Program. As his keynote, mr. Sultan will discuss Nextgen challenges. The NextGen and SESAR planning documents have laid out in great detail the research, development, enabler, and implementation needs to make them a success. This talk will look at some of the fundamental and over-arching technical challenges that need to be overcome to enable NextGen research be an implementation reality. Some of the technical challenges to be addressed will be Human/Machine and Air/Ground Functional Allocation, Policy Decisions, Human Factors, V&V, Integration, Infrastructure Dependency, and Interoperability.

KEYNOTE 4 – Christiane Bruynooghe, European Union

Mrs. Christiane Bruynooghe is a Scientific Officer at the Joint Research Centre of the European Commission. Her presentation will outline the FP7 Aeronautics programme in relation to the topics of ATO2012 – including some project examples, international cooperation considerations and indications on the upcoming Horizon2020 framework programme.

KEYNOTE 6 – Henk Akkermans, Tilburg University

Henk Akkermans is Professor Supply Network Dynamics, Department of Information Management, Tilburg University. His presentation will discuss research based on system dynamics modeling, examining the impact of opting for less-than-normal concurrency between development stages in new aircraft development programmes on overall project duration and costs.

INDUSTRY WORKSHOPS / SESSIONS – ADDITIONAL INFORMATION

INDUSTRY SESSION 3.1: IMAPP

NFF – Now and in the Future

This workshop consists of a real-world NFF example of how airline maintenance practices can perpetuate an NFF problem related to an undetected rogue unit. In this example, we will show the various steps that could lead to wasted time and motion once the aircraft message is reported by the aircrew. We will then show how, through due diligence and a little research, time and money could be saved in detecting a known fault early in the process of maintenance troubleshooting and fault isolation.

INDUSTRY SESSION 5.1: NASA

Short Workshop on Airspace System Complexity-and-Design Issues, by Natalia Alexandrov, NASA Langley Research Center.

Natalia Alexandrov is the Project Scientist of the NextGen Systems Analysis, Integration and Evaluation Project. She works at the Aeronautics Systems Analysis Branch of the NASA Langley Research Center. Her doctorate in Computational and Applied Mathematics is from Rice University. Her interests are in computational science and engineering with current emphasis on mathematical modeling for the analysis and design of complex adaptive systems, such as air transportation; problem synthesis and algorithms for multidisciplinary design optimization (MDO); and variable-fidelity modeling and model management for simulation-based design. She is an AIAA Associate Fellow, a member of SIAM, ISSMO, and MOS; an editor of Optimization and Engineering and the Journal of Structural and Multidisciplinary Optimization.

Abstract: Complexity, uncertainty, and the challenges of assuring safety in the presence of the changing nature of the airspace, e.g., the growing automation and autonomy, are some of most difficult issues facing the designers of the future transportation systems. The challenges are formidable considering that the current system has never been designed, but rather evolved in response to demands and constraints. Moreover, established engineering design methodologies presuppose the existence of well-posed predictive models governing the behavior of the system under design; such traditional predictive models are absent in the airspace discipline. Popular recent notions such as "complexity" and "uncertainty" can be vague and require clarification in order to enable new, rigorous system design methods. The one-hour workshop is aimed at clarifying the tangible technical issues in complexity, uncertainty, and modeling that must be resolved in order to augment evolutionary development with active design strategies. The workshop starts with a fifteen-minute presentation that will outline some of the issues, followed by an active discussion by the participants. The discussion will be summarized and made available to the conference participants, following the workshop.

INDUSTRY SESSION 5.2: Royal Netherlands Air Force

Vision towards flying the Cougar helicopter till 2018, by Major W.H.M van Rijn and First Luitenant N.A. Heerink

In this workshop, two representatives of the Royal Netherlands Air Force (RNLAF) will share their current worries on the Cougar fleet's availability. During this session, the audience is challenged to participate in the discussion how to keep the Cougar fleet available at the highest level, during these difficult days of cut backs in the Defense Organization due to the economical crisis.

About a year ago, in May 2011, it was announced that the Dutch Defense Organization (MoD) had to cut back in their budget dramatically. As a result, the number of Cougar transport helicopters was targeted to be reduced to zero. Momentarily, the RNLAF's Cougar helicopters are assigned to 300sqn. Due to national commitments and a foreseen capability gap, caused by the delayed introduction of the NH-90, 8 Cougars were still remained to be active until December 2017.

In advance of the announced shut down of the entire Cougar fleet, all current contracts on supply chain management and training were cancelled. On second hand, these decisions were made too soon, thus leaving 300sqn with numerous limitations in operating and sustaining their operational fleet. Together with this fact, also 9 aircraft are grounded and to be kept airworthy for sales purposes to other nations.

The audience is challenged to participate in the discussion with the RNLAF's representatives to consider all aspects to sustain 8 operational helicopters and maintain 9 saleable units. The aspects that are considered vary from spare part management, procurement strategies, international cooperation, cannibalization processes and training and qualification of personnel. The RNLAF is interested which thoughts on this topic live among the audience and might contribute to higher availability of the Cougar fleet.

With this workshop, the audience is given an unique insight in the Dutch MoD's mission profiles and aircraft sustainment processes.

INDUSTRY SESSION 5.3: Complexworld

ComplexWorld Position Paper presentation, by Damián Rivas, ComplexWorld Scientific Coordinator, Full Professor at University of Seville

The challenge of building resilience into future ATM, Henk Blom, Principal Scientist at National Aerospace Laboratory NL, Full Professor at Delft University of Technology

INDUSTRY SESSION 5.4: Stall Shield

Stall has been an inherent hazard since the beginning of flying. Despite a very successful stall mitigation strategy, stall still exists and occasionally leads to accidents of a serious nature. This session explores stall as a pitch control issue and the remedies that have been developed over time. An innovative approach is proposed, by introducing a stall shield device for various segments of the fleet. A multi-actor collaborative approach is suggested for the development of such a device, covering technological, control and simulation and operational aspects of the design by involving designers, pilots and investigators in its development. The session will see a discussion of experts and the audience on the strengths, weaknesses, opportunities and threats of this innovation.

INDUSTRY SESSION 7.1: World Class Maintenance

WCM is stimulating the development of innovative maintenance processes to increase the maintenance value performed in the Netherlands. "Aircraft stripping" is a cumbersome activity which needs to be done in the life time of an aircraft each 6 to 8 years due to preventive inspection of the aircraft. Presented will be a solution design based on a new high speed laser, a highly mobile platform, and an advance precision measurement system. The robot system will be usable for any substrate and can handle aircrafts upto A340, B787, and all military aircrafts.

INDUSTRY SESSION 7.4: NASA

Common Methodology for Efficient Airspace Operations, by Banavar Sridhar, Senior Scientist, Air Transportation Systems, NASA Ames Research Center

Banavar Sridhar received the B.E. degree in electrical engineering from the Indian Institute of Science, Bangalore, India and the M.S. and Ph.D. in electrical engineering from the University of Connecticut. He is the NASA Senior Scientist for Air Transportation Systems. His research interests are in the application of modeling and optimization techniques to aerospace systems. He led the development of traffic flow management software, Future ATM Concepts Evaluation Tool (FACET), which received the NASA Invention of the Year Award in 2010 and the AIAA Engineering Software Award in 2009. He is a Fellow of the IEEE and the AIAA.

Abstract: Aircraft are generally forced to deviate from fuel-efficient routes due to inefficient procedures near terminal areas and to avoid convective weather. Further, aircraft may deviate from their fuel-efficient routes to reduce the environmental impact of aviation. Volcanic eruption presents an infrequent occurrence where aircraft are forced to deviate from their routes for safety. Although the reasons for the deviation vary, a common methodology can be developed to enable efficient airspace operations under all conditions. The research is focused on bringing together the best practices and models from the scientific community and incorporating them with airspace simulations to evaluate new technology and develop sustainable aviation operations.

INDUSTRY SESSION 9.1: Fokker SPA

Workshop Special Mission Aircraft

INDUSTRY SESSION 9.2: IATA Air Mercury NG, Airline Operations & Management Integration

IATA Air Mercury airline simulation game

See, listen and be critical about the winning cases of airline operation and management integration game and course, undertaken by DUT students.

June 18	8:45 – 9:00	**Opening Ceremony** (J.Hoekstra & R.Curran)
	9:00 – 10:00	**Keynote Speechs** Tom Dortmund *(KLM)* Pierre Bachelier *(Airbus)*
	10:00 - 11:15	**Session 1: Papers presentations** 'Modelling of Human Performance-Related Hazards in ATM' Alexei Sharpanskykh *VU University Amsterdam* 'From uncertainty to robustness and system's resilience in ATM: a case study' Andreas Heidt *Friedrich- Alexander-Universität in Erlangen-Nürnberg* 'Airport Performance Modeling using an Agent-Based Approach' Soufiane Bouarfa *Delft University of Technology*
	11:15- 11:30	**Coffee break**
	11:30- 12:30	**Session 2: Panel Session** 'Role of integration in future air transport' Patrick Ky, Peter Hartman, John Cavalowski, Pablo Perez Illana (EU), Tom Doortmans , Michel Pieters, etc
	12:30 - 13:30	**Lunch**
	13:00 – 14:00	**Keynote speech** Banavar Shridar *NASA*
	14:00 - 15:00	Session 3: Data-driven Research 'Data-driven Research´ David Perez *ComplexWorld Network Coordinator, Director of Innaxis* **Complex Data Mining** 'Big Data in ATM: Lesson Learnt from the Elsa Project Valentina Beato *Data Analysis and Validation Expert, DeepBlue* 'An overview to ATM data for research purposes.' Massimiliano Zanin, *Researcher at the Innaxis Foundation and Research Institute*
	15:00 – 15:30	**Coffee break**
	15:30 – 17:10	**Session 4: Academic** 'Agent-Based Safety Risk Analysis of Time Based Operation in Future ATM' Mariken Everdij *NLR, Air Transport Safety Institute* 'The impact of airlines' collaboration in Air Traffic Flow'

		Lorenzo Castelli *University of Trieste* 'Control of Future Air Traffic Systems via Complexity Bound Management' Natalia Alexandrov *Nasa Ames* 'Analysis of Accident Risk Related Events and the Roles of Agents in Conflict Recognition and Resolution during a Runway Incursion Scenario´ Natalja Mogles *VU University Amsterdam*
	17:10 – 17:40	**Keynote speech** Pablo Perez-Illana *EC*
	17:40 – 19:00	**Welcome reception**
June 19	8:45 – 9:00	**Opening Day 2**
	9:00 – 10:00	**Keynote Speechs** NLR Free
	10:00 - 11:00	**ComplexWorld Position Paper presentation** Damián Rivas *ComplexWorld Scientiffic Coordinator, Full Professor at University of Seville* The challenge of building resilience into future ATM Henk Blom *Principal Scientist at National Aerospace Laboratory NL, Full Professor at Delft University of Technology*
	11:00 – 11:30	**Coffee break**
	11:30 – 13:10	**Case Studies from an operational point of view** 'High Complexity en-route sectors: Levante (LVG) A case of study' Juan F. Moya *ATCO Barcelona* 'The Network Manager experience' Marcel Richard, *Operational Requirements & Acceptance Expert, EUROCONTROL*

Wednesday June 20th, 2012 ASDA seminar @ TU Delft

09:00   Opening ATOS Day 3 – plenary ATOS

09:10   ASDA Opening – Kurt Klein 30 min (ASDA)

09:40   ASDA keynote speech – Doris Schröcker (DG Mobility & Transport) 30 min ATOS

ASDA session 1: EARPG (7.3) 10:10-11:10

10:10   EARPG presentation 1: Introduction – Werner Kleine-Beek (EASA) 320 min

10:20   EARPG presentation 2 – 20 min

10:45   EARPG presentation 3 – 20 min

11:20   Coffee break

ASDA session 2 (8.3) 11:30-13:10

11:30   Optimal Scheduling of Fuel-Minimal Approach Trajectories – Florian Fisch, Matthias Bittner, Florian Holzapfel (TU München) 25 min

11:55   Analysis of Accident Risk Related Events and the roles of agents in Conflict Recognition and resolution during a Runway Incursion Scenario – Nataliya Mogles (VU), Sybert Stroeve (NLR), Bert Bakker (NLR) 25 min

12:20   Coupling of ATM Planning Systems with Different Time Horizons – Meilin Schaper, Marco Temme, Lothar Christoffels, Olga Gluchshenko, Andreas Pick (DLR) 25 min

12:45   Future Strategies for Airports – Isabelle Laplace (ENAC) *25 min*

13:10   *Lunch*

ASDA Panel discussion (9.3) 14:10-15:10

14:10   Panel discussion: How to organize ATM research in Europe: Next steps – Kurt Klein, Jacco Hoekstra,….

15:10   *Tea break*

ASDA+ATOS Airport session 3 (10.3) 15:45-17:25

15:45   Quantitative Technology Assessment within IATA's TERESA framework - Peter Nolte, Arno Apffelstaedt and Volker Gollnick

16:10   Pilot error? Managerial decision-biases against concurrency as explanation for delays in new aircraft development programmes - Henk Akkermans and Kim van Oorschot

16:35   Hu Li and William Gale - Assessment of environmental impact of aircraft decontamination by vaporised hydrogen peroxide (VHP)

17:00   The Economic Analysis of Satellite-Based CNS/ATM Application in Iranian Air Transportation- Faramarz Golmohammadi and Aliasghar Mehdizadeh Dastjerdi

17:30   Closing ceremony

17:55   Closing reception

End of programme