

AETN Airport Energy Technologies Network



Air Transport Research Workshop
University of Lincoln
School of Engineering
8th and 9th September 2011

EPSRC

WELCOME

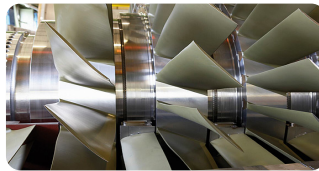
Prof Paul Stewart

Pro Vice Chancellor Research
University of Lincoln

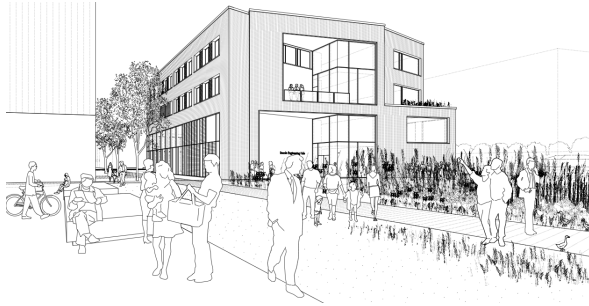
AETN

 **Loughborough
University**


UNIVERSITY OF
LINCOLN



Engineering at Lincoln University



- Founded in 2009 in close collaboration with Siemens Industrial Turbomachinery
- £37m development with support from HEFCE
- Part funded by the European Regional Development Fund (ERDF) and Lincolnshire County Council (LCC).

- First purpose-built UK University Engineering Facility for more than 20 years
- State-of-the-art education and research facility located on the main campus of the University.
- First-phase completed in Summer 2011.





Airport Energy Technologies Network (AETN)

- Funded by EPSRC Grant **EP/H003150/2**
- Network Director: Professor Paul Stewart – University of Lincoln
- Co-Investigator: Dr Tim Ryley – University of Loughborough
- Network runs to December 2012
- Output of Research Councils Energy Programme Sandpit Nov 2008

AETN founding members

Swansea University
University of Cambridge
University of Nottingham
University of Leeds
Northumbria University
University of Southampton
Loughborough University
University of Leeds
Imperial College London
University of Reading
City University
Cranfield University
UCL
University of Bath
University of Liverpool
MMU
De Montfort University
University of Sheffield
Brunel University
Airbus
MMU (OMEGA)
Smith Industries
DfT
Manchester Airport
Arup
BAA
Unique
Aviation Environmental Federation Fraport
Transport Research Lab (TRL)
EADS Corporate Research Organisation
National Air Traffic Services

EPSRC Sandpit November 2008



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Day 1 – 8th September 2011

Workshop themes:

Day 1 – current activities

Day 2 – future collaborative activities

Current research activity in the AETN Network

10.30 **Arrival and coffee**

11.00-11.30 Introduction and welcome – Prof Paul Stewart

11.30-12.00 *Energy and indoor environmental control of airport buildings*

12.00-12.30 *Environmental investment toolkit*

12.30-13.00 *Surface access and environmental change*

Lunch and networking

14.00-14.30 *Changing airflow over the airfield (baffles)*

14.30-15.00 *Energy recovery from landing aircraft*

15.00-15.30 *EU FP7 Multibody Advanced Airship for Transport*
MAAT Project – Prof Paul Stewart

Coffee and networking

16.30-17.00 **AETN meeting roundup**

Transportation Research Board paper/Energies Journal special issue

Website/Blog/JiscMail - Dr Tim Ryley/Prof Paul Stewart

Dealing with airports and data collection

Climate change mitigation vs. adaptation

AETN project reports

Report on new FP7
airship project

Planned publications

Project logistics and
philosophy

Workshop agenda Sept 8th 2011

Forming Future Collaborative Research

10.00-10.30 **Arrival and coffee**

10.30-11.00 Roundup and intro – Dr Tim Ryley/Prof Paul Stewart

11.00-11.30 *Integrating and automating airport operations*

11.30-12.30 *Improvements in Airport Operations by Enhanced Runway Sequencing and Pushback Time Allocation* – Professor Edmund Burke, University of Nottingham

Lunch and networking

13.30-14.00 Social network research - Prof Shaun Lawson, University of Lincoln

14.00-15.30 EU FP7 Transport (Including avionics) Call - Prof Paul Stewart

Coffee and networking

15.45-close Collaborative Research Round Table - Paul/Tim
Effective trans-disciplinary working – Paul Chan

Invited talk

Future collaboration

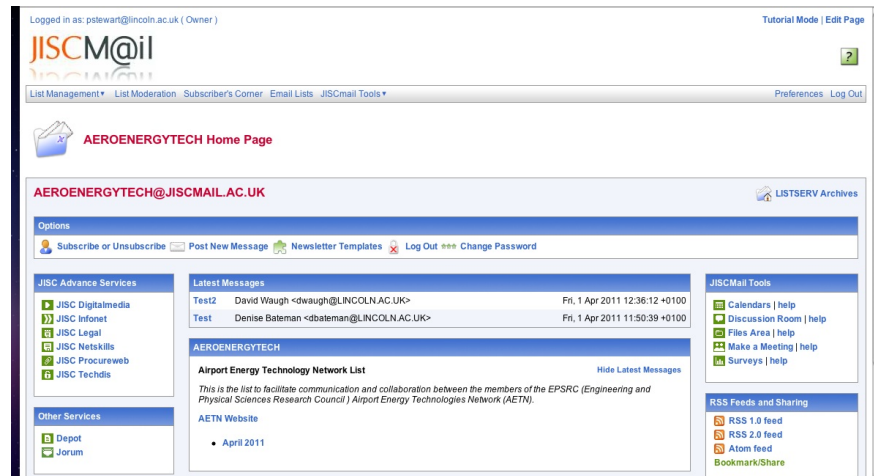
Engaging with FP7
Transport Programme

- Europe 2020
- Flightpath 2050



Blog: energy-institute.eu/wordpress

Web: energy-institute.eu/AETN



JISC.ac.uk

Dissemination tools for the Network

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Sustainable air travel, behaviour change and social media.

A one day workshop organised by the EPSRC Airport Energy Technologies Network.

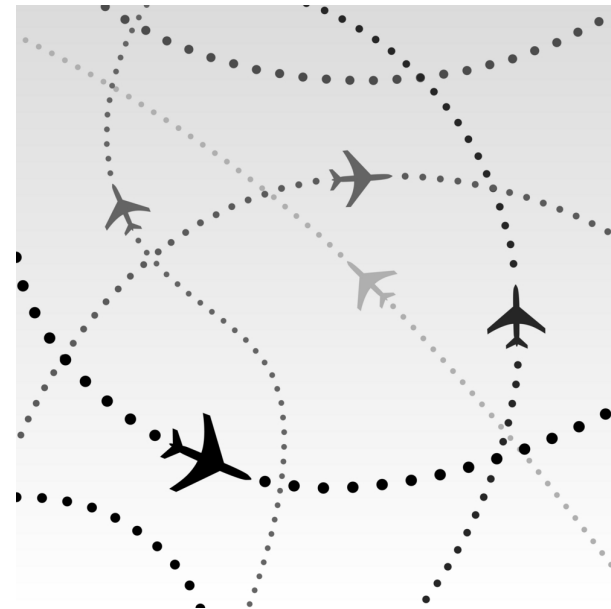
18th May 2011, University of Lincoln.

Online social media sites, such as Facebook, give us hitherto unachievable insight in to what our friends collectively think and do – it is perhaps unsurprising that social media has been suggested as a powerful platform to deliver behaviour change interventions based on social norms and peer pressure. Emerging research has demonstrated this potential in applications such as domestic energy consumption, fitness and diet.

This workshop aims to summarise the state-of-the-art in using OSNs and social media to facilitate behaviour change and will explore the potential of using such technology to deliver sustainable behaviour change in the context of the air-travel industry. The seminar will reveal research already in progress aimed at using OSNs to deliver behaviour change interventions in both domestic and organisational settings and explore issues pertinent to the air-travel industry such as transport to and from airports, passenger attitudes to air travel, airlines and destinations, public attitudes to air freight and sustainable food consumption, energy usage in airports and international and multi-cultural agendas.

The seminar will be hosted by the School of Engineering at the University of Lincoln and co-organised by members of the Lincoln Social Computing (LiSC) Research Centre who are research leaders in the design of social media interventions for positive behaviour change. Speakers at the workshop will include those already engaged in delivering behaviour change interventions using ICT and social media across a number of societal issues. Confirmed speakers include Prof Mark Blythe, Professor of Interdisciplinary Design from Northumbria University, Dr Tim Ryley from Loughborough University and co-investigator on the Airport Energy Technologies Network, Dr Parisa Eslambolchilar from Swansea University and co-investigator on the EPSRC CHARM project, and Dr Charles Musselwhite from the Centre of Transport and Society at the University of the West of England.

For further details please contact Denise Bateman dbateman@lincoln.ac.uk or Prof Shaun Lawson slawson@lincoln.ac.uk
This event is organised by the Airport Energy Technology Network (www.aeroenergytech.co.uk).



All your friends ...

.. just tagged you as an all too frequent flyer. OMG?

5 hours ago · Like · Comment · Share



Recent meetings



Presentations

Eleni Rapti

Centre for Transport Studies
University College London

Narudh Cheramakara

Dept. Civil and Building Engineering
University of Loughborough

Muhammad Waseem Ahmad

Dept. Civil and Building Engineering
University of Loughborough

Vivian Liang

School of Mechanical Aerospace and Civil
Engineering (MACE)
University of Manchester

Stefan Ravizza

School of Computer Science
University of Nottingham

Stefan Velikov

Department of Aircraft Engineering
School of Engineering, Cranfield University

Tom Budd

Dept. Civil and Building Engineering
University of Loughborough

Airport Environmental Investment Toolkit

*Corporate Social Responsibility and Financial
Performance in the Airport Industry*

Airport Behavioural Change

*Valuation of Aviation Externalities - A case
study in Thailand*

Integration of active and passive indoor thermal environment control systems to minimise the carbon footprint of airport buildings

*Model predictive control of integrated energy
systems for airport terminals*

Airport Environmental Investment Toolkit

*Exploring the Decision-Making Process for
Environmental Investment in Airport
Operations*

Integrating and Automating Airport Operations

Ground Movement at Airports

Baffles Project

Wind tunnel Modelling

Airport Behavioural Change

*The impact of low-cost carriers on passenger
behaviour in the UK*



Objectives

- Safer
 - Greener
 - Smarter
- transport systems for Europe that will
- benefit citizens
 - respect the environment
 - increase the competitiveness of European industries in the global market.

Mitigate the negative impacts and consequences of increased mobility in relation to the

- environment
- energy usage
- safety and security
- Public health

FP7-AERONAUTICS and AIR TRANSPORT (AAT)-2012-RTD-1

Budget: € 136 040 000

FP7- SUSTAINABLE SURFACE TRANSPORT (SST)-2012-RTD-1 including European Green Cars Initiative

Budget: € 114 040 000



Emphasis will be given to the following activities

Aeronautics and air transport

- reduction of emissions
- work on engines and alternative fuels
- air traffic management
- safety aspects of air transport
- environmentally efficient aviation

Sustainable surface transport

- rail, road and waterborne
- development of clean and efficient engines and power trains
- reducing the impact of transport on climate change
- inter-modal regional and national transport
- clean and safe vehicles
- infrastructure construction and maintenance
- integrative architectures

Late breaking news....

Title of the project proposal:

**POLLUTANT EMISSIONS
REDUCTION OF IWT VESSELS ON
DANUBE CORRIDOR**

Acronym -IDA

KVD – University of Zilina, Slovak Republic,

CMT - Center of Maritime Technologies e.V.,
Germany;

CIDAUT - Research and Development Center in
Transport & Energy, Spain;

BDB- Bundesverband der Deutschen
BINNENSCHIFFFAHRT , Germany;

FOM - Institute for Logistics and Service
Management, Germany;

EDINNA – Education in Inland Navigation
Association, Netherlands;

DAS – University of Technology and
Economics, Hungary;

Legend:

UCV- University of Craiova, Romania;

VIA- via Donau, Austria;

STC – STC Group, Netherlands;

UoL – University of Lincoln, United
Kingdom;

UoS – University of Sussex, United
Kingdom;

BDI- Brodarski Institute, Croatia;

UB- University of Belgrade, Serbia;

UM- University of Montenegro,
Montenegro;

CER- Ceronav, Romania;

ISL – Institute for Shipping Economic and
Logistics, Germany;

ETNA - "European Transport NCP Alliance"
-FP7 Transport briefing Brussels



THANK YOU !!

- Delegates
- Speakers
- AETN Administrator: Denise Bateman

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