

To: Robin Taylor-Hunt (MRO&L Network Chairman)
Tim Rice (MRO&L Network Dep Chairman)

Copy to: Paul Phillips (NFF Project Manager, EPSRC TES Centre)

Report to the ADS Maintenance, Repair, Overhaul & Logistics Network on the 1st Meeting of the No Fault Found Working Group (NFF WG)

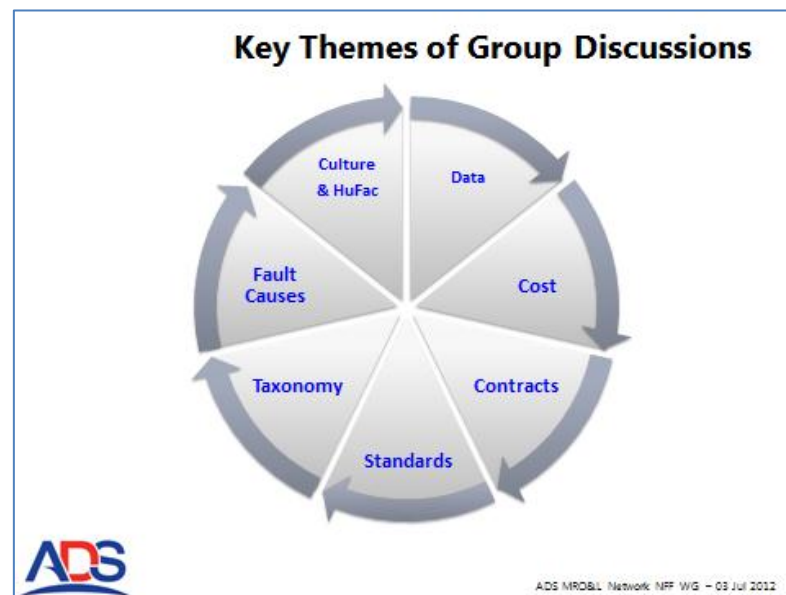
1. Summary.

1.1 This report summarises the discussions and outcomes of the ADS MRO&L Network NFF WG which held its inaugural meeting at the Defence Capability Centre at the MOD Defence Academy site at Shrivenham on 03 Jul 2012. There were 26 attendees, drawn from across commercial and military aerospace organisations, including academia, industry and the MOD; plus approx 6 more planned to attend but had to cancel at last minute due to work commitments, but with all stating they wished to be kept on the distribution for future meetings. Attendees are listed at the end of the document.

1.2 The agenda covered:

- Introductions
- A short brief on why the WG was instigated
- Presentations on ongoing and previous NFF research: from the American Institute of Aeronautics & Astronautics NFF Steering Committee (AIAA NFF SC), presented by Giles Huby; NFF research at the EPSRC Centre for Innovative Manufacturing – Through-Life Engineering Services (TES), at Cranfield, presented by the NFF research project manager, Paul Phillips; and previous NFF best practice SOPs and modelling done under a DTI project 10 years ago (REMM), presented by Angus Murray of BAE SYSTEMS.
- Workshop discussion, splitting into 3 groups to identify:
 - What is the ideal 'Future State' for NFF?

- What are the technology/commercial/regulatory hurdles to achieving this?
 - Conversely, what are technology/commercial/regulatory enablers to achieving this?
 - A final discussion on what the role and objectives of the WG should be.
- 1.3 The discussion outcomes have been captured in separate powerpoint slides which will be copied to you separately. Several themes emerged repeatedly from all 3 of the workshop groups:



2. Decisions on Way Forward.

2.1 **Objectives.** In discussing the way forward for the WG there were some obvious aspirations about sharing knowledge and best-practice among the group, but there was also a clear appetite to deliver 'something tangible'. It is anticipated the WG's role and objectives will evolve and be refined over time, and so in the short-term it was agreed that the best way forward was to identify a couple of bounded projects to deliver. This would get people involved, show the wider community that the WG was gaining momentum by doing something worthwhile, and that it wasn't just 'a talking shop'. Some specific objectives and projects were discussed as follows:

- Generate a vision for NFF in UK ADS sectors

- Share best practice, and monitor and feed-back on other related research
- Bench-marking
- Update and refine NFF Taxonomy (through TLES Centre at Cranfield)
- Review MOD LITS data for opportunity to create industry case study for NFF solution approaches

2.2 **Projects for Next Meeting.**

- The EPSRC TES Centre undertook to publish a Wiki for peer review of NFF taxonomy
- The MOD Log NEC attendee (Wg Cdr Fergus Hawkins) offered the EPSRC TES Centre the opportunity to review MOD fleet maintenance data to identify how readily NFF improvement opportunities can be found from such data, which could then form the basis of a WG follow-on project
- Attendees would be invited to attend the next meeting armed with their own NFF statistics for comparison and bench-marking against other industry sectors (through the EPSRC TES Centre, which has non-aerospace organisations involved in its NFF project). The potential commercial sensitivity over such data was not lost on the attendees.
- The opportunity also exists for WG members to get involved in sub-committee activity with the AIAA NFF SC, focusing on revision of the ARINC672 NFF reduction guidelines and also on NFF economics.

2.3 **Post-Holders.** Volunteers were requested for posts of Chairman, Dep Chairman and Secretary. I didn't volunteer, but was proposed by Chris Hockley of the EPSRC TES Centre, unprompted; and seconded by other attendees. I made sure that I declared clearly my commercial interest in the subject and no objections were raised. Paul Phillips was 'volunteered' by his Cranfield colleagues to take on the role of Secretary. It was suggested in the margins that the tenure of these roles could be 12 months.

2.4 **Arrangements for Next Meeting.**

- It was agreed that the WG shall meet 3 times a year.
- The EPSRC TES Centre will be holding a NFF seminar in approx 4 months' time, probably at Cranfield, so this was seen as an ideal opportunity to

align the activities by holding the next WG with the seminar: date TBC.

3. **Further Information.** Please contact either myself or Paul Phillips – details below. Furthermore, members of the wider MRO&L Network are warmly invited to publicise the work of the new WG and to suggest other issues and topics for it to examine.

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Paul Phillips

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Attendees

Title	First Name	Surname	Role	Organisation
Dr	Bill	Bardo	Chair, Advisory Board	EPSRC TES Centre, Cranfield
Mr	Brian	Bell	Principal Scientist, Advanced Technology Centre	BAE SYSTEMS
Mr	Alex	Bond	Chinook Avionics EA1, DE&S, MOD Abbey Wood	MOD
Sqn Ldr	Kris	Brooks	SO2 Airworthiness, HQ Air Command	RAF
Mr	Lloyd	Francis	Software and Training Solutions Consultant	Continental Data Graphics Ltd
Wg Cdr	Fergus	Hawkins	SO1 LogNEC PMG FW, DE&S, RAF Henlow	MOD
Mr	Chris	Hockley	System Effectiveness & Through-Life Support	EPSRC TES Centre, Shrivenham
Mr	Ian	Hubert	Consultant	Copernicus Technology Ltd
Mr	Giles	Huby	Managing Director	Copernicus Technology Ltd
Mr	Ian	James	Electronics Technical Manager	Aero Engine Controls
Mr	Phil	Jones	Engineering Service Manager Avionics Maintenance, Llantrisant	British Airways
Mr	Samir	Khan	Project Manager/Research Fellow	EPSRC TES Centre, Cranfield
Mr	David	Kindred	Typhoon Capability Enhancements	BAE SYSTEMS
Lt Col	Mark	Leach	SO1 Projects, DE&S Airworthiness Team	MOD
Mr	Geoff	Longstreeth	Chief of Service Engineering	Rolls-Royce
Mr	Stewart	MacLeod	DAT Airworthiness IKM, DE&S Airworthiness Team	MOD
Mr	Gary	McNab	IOS Technical Support Manager, Support & Service Solutions (UK)	Selex Galileo Ltd

Title	First Name	Surname	Role	Organisation
Mr	Robert	Morris	Avionics Technical Specialist Avionics Maintenance, Llantrisant	British Airways
Mr	Angus	Murray	Reliability Specialist, Military & Technical Services Team - Research & Technology	BAE SYSTEMS
Mr	Chris	Oakley	Business Development Manager	Cassidian Test & Services
Mr	Paul	Phillips	Project Manager/Research Fellow	EPSRC TES Centre, Cranfield
Mr	Richard	Pitman	Project Manager & MRO Group lead	Aerospace, Aviation & Defence Knowledge Transfer Network
Prof	Raj	Roy	Director	EPSRC TES Centre, Cranfield
Mr	Andy	Shaw	Centre Manager	EPSRC TES Centre, Cranfield
Flt Lt	John	Stephens	Watchkeeper UAS - ILS 1a, DE&S, MOD Abbey Wood	MOD
Mr	Tony	Whitehorn	Head of Procurement & Vendor Management Regional Aircraft	BAE SYSTEMS