

# **45th Annual International Symposium of the Society of Flight Test Engineers 2014**

**Dayton, Ohio, USA  
19-21 August 2014**

ISBN: 978-1-63439-166-5

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2014) by the Society of Flight Test Engineers  
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact the Society of Flight Test Engineers  
at the address below.

Society of Flight Test Engineers  
44814 N. Elm Avenue  
Lancaster, California 93534

Phone: 661-949-2095  
Fax: 661-949-2096

[www.sfte.org](http://www.sfte.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2634  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## SESSION I

<b>Analyzing DT&amp;E Flight Test Missions</b> .....	1
<i>J. Sutherlin, J. Colombi, J. Wirthlin, K. Oyama, J. Vandewiele</i>	
<b>A Blank Slate: Redefining F-16 Flight Test</b> .....	20
<i>N. Cook, J. Gipson, C. Menino, W. Reigelsperger, S. Rinella, B. Ward</i>	
<b>Landings You Can Walk Away From: Managing Flight Test Risk for the F-16 Landing Gear Loads Survey</b> .....	34
<i>M. Russell, C. Knief</i>	
<b>Addressing the Challenges Created by Large Networked Ethernet FTI</b> .....	55
<i>P. Quinn, D. Corry</i>	
<b>Ethernet Packet Filtering for FTI - Part 1</b> .....	65
<i>O. Holmeide, J.-F. Gauvin</i>	
<b>History and Evolution and Metadata Standards for the FTI Community</b> .....	76
<i>A. Cooke, D. Corry</i>	

## SESSION II

<b>Error Propagation Using Unscented Transforms in Flight Test Scenarios</b> .....	85
<i>G. Mucks, R. Woolf, T. Jorris</i>	
<b>Inflight Test Results Comparing Parameter Estimation Techniques to Traditional Methods to Determine Static Source Position Error</b> .....	96
<i>D. Knighton</i>	
<b>F-18 E/F Air to Ground Gunnery Improved using Design of Experiments</b> .....	121
<i>Z. McCarley, T. Jorris</i>	
<b>Testing Together in a Flight Test Training Environment</b> .....	141
<i>P. Vitsas, N. Othman, E. Kaya</i>	
<b>Flight Test Safety Database - An Online Resource for Flight Test Safety Planning</b> .....	159
<i>J. Hed</i>	
<b>A Proposal for a Flight Test Brevity Standard</b> .....	167
<i>N. Cook</i>	

## SESSION III

<b>Linearizing and Updating a Classic Subjective Workload Rating Scale(s) for the 21st Century in the RTD&amp;E Communities</b> .....	186
<i>D. Holland</i>	
<b>Use of Time-Frequency Representations for Interpreting Handling Qualities Flight Test Data</b> .....	202
<i>J. Tritschler, J. O'Connor</i>	
<b>A/P22P-14(V)3 ChemBio Respirator ECP Flight Testing on the F/A-18</b> .....	219
<i>C. Jackson, J. Feehan, R. Bacorn</i>	
<b>Current Hypersonic Vehicle Flight Test, Challenges, and Instrumentation</b> .....	236
<i>T. Jorris</i>	
<b>Trying to Play a CD on a Record Player: Testing a Digital Upgrade to the A-10 Analog Fuel Quantity System</b> .....	252
<i>K. Waggoner</i>	
<b>The Legend of the Darkstar</b> .....	266
<i>J. Minor</i>	

## SESSION IV

<b>NTPS Optionally Piloted Aircraft Sensor Payload Integration, Optimization, and Test Program</b> .....	290
<i>R. Olson, R. Starke, C. Milliard, C. McElroy</i>	

<b>INTA Official Centre for Helicopter HAD: Certification Process. Test Means and Activities for Certification, Qualification and Development</b> .....	313
<i>A. Fortun</i>	
<b>MAWA Forum. The Long Road for a Common Military Airworthiness Requirements in Europe</b> .....	341
<i>J. Orio</i>	

**AIRWORTHINESS PANEL**

<b>FAA Military Certification Office Airworthiness Panel Discussion</b> .....	354
<i>J. Brys</i>	
<b>USAF Airworthiness Overview (AW 101)</b> .....	360
<i>M. Meyer</i>	
<b>SFTE Airworthiness Panel Discussion</b> .....	369
<i>J. Slye</i>	

**TECH COUNCIL MEETING**

<b>FTE Endorsement Program</b> .....	375
<i>N/A</i>	
<b>Author Index</b>	