5TH ANNUAL
INTERNATIONAL CONFERENCE

COMMERCIALIZATION
OF MILITARY AND
SPACE ELECTRONICS

Conference & Exhibition

February 12 - 15, 2001

The Los Angeles Airport Marriott Hotel
Los Angeles International Airport
Los Angeles, CA

Conference Notes

Organized by:
Components Technology Institute Inc.

In cooperation with:
EIA/ECA - Electronic Components, Assemblies, Equipment and Supplies Association
IEEE/CPMT - Components, Packaging and Manufacturing Technology Society
IMAPS - International Microelectronics and Packaging Society
RTC Group - COTS Journal
CONFERENCE PROGRAM

Tuesday, February 13

Welcome and Introduction 9:00 - 9:10

Keynote 1: Application of COTS in the F-22 Program 9:10 - 9:50
Ron Dubbs, Chief Engineer
F-22 System Program Office ................................. 1

Session 1: COTS Management Practices 9:50 - 12:00
Chairman: Joe Tomase, Motorola

1.1 How Commercial Avionics Reliability is Achieved with COTS;
L. Condra, Boeing ...................................................... 11

1.2 The United States Navy's Q-70: Commercial and Niche Markets;
W. Wilder, U.S. Navy .................................................... 23

1.3 The Use of COTS, Present and Future in the M109A6 Paladin Howitzer Program;
M. Zecca, U.S. Army ................................................... 35

1.4 Part Guidelines for Military Applications: Defense Standardization Program
Guide for Part Requirement & Application SD-18;
D. Quearry, NAVSEA Crane ........................................ 43

Buffet Lunch in the Exhibition Area 12:00 - 2:00

Session 2: Managing COTS Obsolescence 2:00 - 4:30
Chairman: Steve Strickler, Intersil

2.1 Component Obsolescence Management for Military Electronics;
J. Wasson, Smiths Industries; C. Wilkinson, CALCE/EPSC .................. 51

2.2 Management of Commercial Electronics for Radiation Survivable
Military Systems;
J. Nicklaus, U.S. Army .............................................. 73

2.3 Tools for Component and System Obsolescence Mitigation;
D. Darling, Lockheed Martin ........................................ 81

2.4 Getting Off the Obsolescence Treadmill;
R. Holmes, VisiCom, Inc. ........................................... 103

2.5 Microcircuit Emulation - A Technology Solution;
J. Crabbe, Sarnoff Corporation .................................... 109

2.6 Software: No Longer the Forgotten Element;
M. Weaver, U.S. Navy; P. Burke, BAE Systems ...................... 121

Exhibits and Get Acquainted Reception with Refreshments 4:45 - 6:30
### Keynote 2: Selecting COTS Suppliers and Ensuring a Successful Partnership
8:30 - 9:00
Vince Mancuso, VP, Mercury Computer Systems, Inc.

### Session 3: Designing with COTS Equipment
9:00 - 12:15
Chairman: Lou Gullo, Sensormatic

<table>
<thead>
<tr>
<th>#</th>
<th>Title</th>
<th>Presenter/Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Electronic Miniaturization for Missile Applications (EMMA);</td>
<td>D. Klein, Raytheon Electronic Systems</td>
</tr>
<tr>
<td>3.2</td>
<td>Applying Mainstream Interconnect Technologies to Military Systems;</td>
<td>R. Jaenicke, Mercury Computer Systems, Inc.</td>
</tr>
<tr>
<td>3.3</td>
<td>The Fallacy of COTS Economics for Space Applications;</td>
<td>S. Strickler, Intersil Corporation</td>
</tr>
<tr>
<td>3.4</td>
<td>Using Hermetic Optocouplers in Military and Space Electronics;</td>
<td>J. Khan, Agilent Technologies</td>
</tr>
<tr>
<td>3.5</td>
<td>Using COTS PCI Signal Processing in a Deployed Sonar System;</td>
<td>N. Myrman, Mercury Computer Systems, Inc.</td>
</tr>
<tr>
<td>3.6</td>
<td>Packaging Technology Trends: Application to PowerPC Microprocessors;</td>
<td>E. Marcelot, P. Lestrat, Atmel-Grenoble</td>
</tr>
<tr>
<td>3.7</td>
<td>Process for Converting a Commercial GPS Receiver to a Space Application;</td>
<td>A. Vallerani, Space Systems/Loral</td>
</tr>
<tr>
<td>3.8</td>
<td>2250-MHz Class-D High Efficiency Microwave Power Amplifier;</td>
<td>Dr. W. Sims, NASA MSFC</td>
</tr>
</tbody>
</table>

### Buffet Lunch
12:15 - 1:45

### Session 4: Uprating, PEMs Testing, Analysis
1:45 - 5:30
Chairman: Stan Purwin, Johns Hopkins Univ.

**Invited:** Robust Packaging of Commercial-Off-The-Shelf (COTS) Integrated Circuits
J. Hagge, Rockwell Collins

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<tr>
<th>#</th>
<th>Title</th>
<th>Presenter/Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Results of Microcircuit Upscreening Study - Defense Standardization Program Office;</td>
<td>J. Chapman, Chapman Consulting</td>
</tr>
<tr>
<td>4.2</td>
<td>Long Term Reliability of Delaminated PEMs;</td>
<td>P. McCluskey, C. O'Connor, CALCE; S. Young, J. Von Bank, General Dynamics</td>
</tr>
<tr>
<td>4.3</td>
<td>Up-Screening of Ethernet Commercial Devices for Space Applications;</td>
<td>P. Le Blanc, Astrium SAS, France</td>
</tr>
<tr>
<td>4.4</td>
<td>Uprating Experience by an Avionics OEM;</td>
<td>T. Brennom, N. Anderson, Rockwell Collins</td>
</tr>
</tbody>
</table>
Session 4: Uprating, PEMs Testing, Analysis (continued)

4.5 Correlation of CSAM Observed Delamination with Function Failure of PEMs After Accelerated Life Testing; 
J. Sweet, J. Marchiondo, C. Sandoval, Sandia National Laboratories ........................................... 325

4.6 Using Non-Destructive Methods (C-SAM) for COTS PEMs Screening and Qualification; 
M. Sandor, S. Agarwal, JPL ................................................................. 333

4.7 Modern Methods of HALT and HASS Technology for MIL and Space Applications; 
G. Bastien, Screening Systems ......................................................... 341

4.8 WASPP Program: Near-Hermetic Protection for PEMs Used in Military Applications; 
C. Reusnow, Lockheed Martin ......................................................... 351

THURSDAY, FEBRUARY 15

Session 5: Ruggedizing COTS for Military Use (parallel session) 9:00 - 12:00
Chairman: Duncan Young, DY 4 Systems

5.1 Designing to Conquer Shock and Vibration; 
W. Schindler, Elma Electronic AG, Switzerland ............................................. 369

5.2 The Total Cocooning Approach Utilizing Unmodified Computer Equipment on Navy Ships; 
G. Seppenwoolde, Signaal Special Products, Netherlands ..................................... 381

5.3 Column Grid Array: Modified COTS Approach for Area Array Packaging of Military and Space Electronics; 
W. Davis, R. Winslow, Applied Material Technologies, Inc ........................................ 391

5.4 Validating a Standardized Rigid/Flex VME 6U Form Factor; 
G. Bartlett, J. Keating, R. Larmouth Teledyne Electronic Technologies; 
W. Yacovitch, E. D’Agostino, J. Bardo, R. Banton, Mercury Computer Systems, Inc .... 399

Session 6: Radiation Hardness Practices for COTS (parallel session) 9:00 - 12:00
Chairman: Mike Maher, National Semiconductor

6.1 ISC (Integrated Spacecraft Controller) Case Study of a Proven, Viable Approach to Using COTS in Spaceborne Computer Systems; 
D. Lahti, G. Grisbeck, P. Bolton, General Dynamics Information Systems ..................... 413

6.2 Adaptive Instrument Interfacing for Satellites Using FPGAs; 
N. Bergmann, Cooperative Research Centre for Satellite Systems, Australia .................. 429

6.3 Single Event Effects Hardness Assurance for Spacecraft Power Designs; 
B. Alaskiewicz, Intersil Corp ........................................................................ 445

6.4 High-Reliability Commercial Components for Space Applications Using QML T; 
J. Benedetto, Aeroflex UTMC ........................................................................ 465

6.5 COTS Parts Evaluation for Space Application on “SERVIS”; 
K. Takeuchi, Mitsubishi Electric Corporation, Japan; 
M. Arakaki, Institute for Unmanned Space Experiment Free Flyer, Japan ...................... 473
PEMs Coatings Workshop ............................................................................................. 1:30 - 5:30
The Development of Plastic Encapsulated Mictocircuits (PEMs) Coatings for Military Applications
Organizer: Chuck Reusnow, Lockheed Martin

Organizing Committee Contact Information ................................................................. 479
Index to Speakers ........................................................................................................... 481
Biographies ...................................................................................................................... 483
Exhibitors ......................................................................................................................... 491