

Center for Intelligent Maintenance Systems  
**11<sup>th</sup> Industrial Advisory Board Meeting**  
**Tuesday May 16<sup>th</sup>**

7:30	<b>Registration and Breakfast</b>
8:00	<b>Host Welcome – Bonnie Tura (Director-Maintenance Strategies, GM Manufacturing Engineering)</b> <b>Directors' Remarks: Professors Jay Lee, Jun Ni &amp; Jag Sarangapani, IMS Co-directors</b>
8:25	<b>IAB Chairman's Address and introduction of Attendees</b>
8:40	<b>Remarks by the NSF Program Director and IMS multi-campus site introduction</b>
8:45	<p><b>Technical Session</b></p> <ul style="list-style-type: none"> <li><b>Watchdog Agent<sup>®</sup> research overview</b> – Dr. Dragan Djurdjanovic (15 min)</li> </ul> <p><b>Algorithm development</b></p> <ul style="list-style-type: none"> <li><b>Sensor degradation in non-linear systems</b> – Li Jiang (UM) (10 min)</li> <li><b>Detection of intermittent connections in an industrial networks</b> – Yong Lei (UM) (10 min)</li> </ul> <p><b>IMS Platform development</b></p> <ul style="list-style-type: none"> <li><b>Review of methods and tools for Watchdog Agent<sup>®</sup> algorithm selection and implementation</b> – Lei Yang (UC), Kondo Adjallah (UTT), Dragan Djurdjanovic (UM) (20 min)</li> </ul> <p><b>Hardware development</b></p> <ul style="list-style-type: none"> <li><b>Progress Report on Watchdog Agent<sup>®</sup> Hardware Platform</b> – Linxia Liao (UC) (15 min)</li> <li><b>Energy harvesting for wireless motes</b> – Shahab Mehraeen (UMR) (10 min)</li> <li><b>Industrial monitoring &amp; control using wireless multi-hop network routing protocol</b> – James Fonda and Maciej Zawodniok (UMR) (10 min)</li> </ul>
10:15	<b>Break</b>
10:30	<p><b>Testbeds and company-member sponsored projects</b></p> <ul style="list-style-type: none"> <li><b>Pneumatics prognostics testbed phase 1</b> – Jeffrey Birt (UMR), Chris Boehm (Festo) (10 min)</li> <li><b>Smart machine tool predictive maintenance testbed</b> – Dr. Anil Srivastava (TechSolve), Linxia Liao (UC) (10 min)</li> <li><b>Engine prognostics</b> – Mr. Takahiro Ueda (Komatsu) (8 min)</li> <li><b>Advances in data-driven fault detection and diagnosis in complex engineering systems</b> – Dr. Kenneth Marko (ETAS Inc.) and Mr. Jianbo Liu (UM) (8 min)</li> <li><b>Robot health monitoring at Toyota</b> – Tianyi Wang (UC) (7 min)</li> <li><b>Cutting process monitoring in turbine blade machining</b> – Adam Brzezinski (UM) (7 min)</li> <li><b>Investigation of broaching machine degradation with International Truck</b> –Ashwin Balasubramanya (UC), Eric Phillips (7 min)</li> </ul>

	<p><b>New proposals</b></p> <ul style="list-style-type: none"> <li>• <b>Systematic design of embedded Watchdog Agents®</b> – Rifet Muminovic (UM) (7 min)</li> <li>• <b>Systematic data-base organization for intelligent maintenance</b> – Prof. Kondo Adjallah (7 min)</li> <li>• <b>Sensor Selection and Missing Data Reconstruction for Intelligent Condition-based Maintenance</b> - Prof. Sam Huang (UC) and Prof. Jay Lee (UC) (15 min)</li> </ul>
<b>12:10PM</b>	<b>Lunch</b>
<b>1:25pm</b>	<p><b>Decision Support Tool Progress</b></p> <ul style="list-style-type: none"> <li>• <b>Decision Support Tool (DST) overview</b> – Haixia Wang (UC) (15 min)</li> <li>• <b>Simulation-based Real Time Bottleneck Detection and Maintenance Opportunity Window Calculation</b> - Dragan Djurdjanovic (UM) (10 min)</li> </ul> <p><b>New Project Proposals</b></p> <ul style="list-style-type: none"> <li>• <b>Product quality and condition-based predictive maintenance</b> – Haixia Wang (UC) (7 min)</li> </ul>
<b>2:00PM</b>	<p><b>NSF Funded Projects</b></p> <ul style="list-style-type: none"> <li>• <b>NSF GOALI “Immune systems engineering for complex dynamic systems”</b> – Roberto Torres (UM) (10 min)</li> </ul>
<b>2:10PM</b>	<p><b>Updates of Other Collaborative Projects</b></p> <ul style="list-style-type: none"> <li>• <b>SRC Project - Intelligent maintenance for next-generation high-yield fab</b> – Yang Liu (UM) (10 min)</li> <li>• <b>NSF ERC project on intelligent maintenance and reconfiguration decision-making</b> – Jing Zhou (UM) (10 min)</li> <li>• <b>Collaboration with SIMTech Singapore and Brazil</b> - Prof. Jay Lee (UC) (10 min)</li> </ul>
<b>2:40PM</b>	<b>Solicitation of New Projects and Open Discussions: issues and new opportunities for new IMS projects</b>
<b>3:20PM</b>	<p><b>New Company Presentations</b></p> <ul style="list-style-type: none"> <li>• Samsung</li> <li>• National Instruments</li> <li>• Toshiba</li> <li>• Honeywell</li> <li>• P&amp; G</li> <li>• Coherix</li> </ul>
<b>3:50PM</b>	<b>Break</b>
<b>4:00PM</b>	<b>Poster and Demonstration Session</b>
<b>5:30PM</b>	<b>Adjourn</b>
<b>6:00PM</b>	<b>Reception with cash bar, Dinner to follow (Speaker TBD)</b>

## Wednesday May 17<sup>th</sup>

7:30	<b>Breakfast</b>	
8:00	<b>LIFE forms Feedback Session</b>	
10:00	<b>Closed Door Session – <i>members only</i></b> <ul style="list-style-type: none"><li>• Multi-campus IMS Operations (Inter-Institution Agreement, IP,..)</li><li>• Approval of IAB 10 Minutes</li><li>• Institutional agreement (UC. UM. UMR)</li><li>• Financial/Operational Report</li><li>• Annual Member Survey-Ron Beck</li><li>• New Business</li><li>• Choose IAB 12 date</li></ul>	This session is open only to IMS Members and selected guests as approved by IAB Chairman and Co-Directors IN ADVANCE OF MEETING.
12:00	<b>Lunch and networking time (at the GM cafeteria)</b>	
12:30	<b>Adjourn</b>	
1:00 - 5:00	<b>Individual Company Discussions with IMS Center Directors and Researchers and Industry forum with GM engineers</b>	