

Center for Intelligent Maintenance Systems
11th Industrial Advisory Board Meeting
Tuesday May 16th

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

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

Wednesday May 17th

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