



TC 4.4. & TC 5.1.

## Proposition of the new IFAC Working Group

### **“Advanced Maintenance engineering, services and technology” (A-MEST)**

#### **Foreword:**

The idea to establish a new IFAC Working Group on maintenance related topics was first initiated by discussions done in IFAC TC 4.4. and TC 5.1 in 2006 under the initiative of Pr. H. Erbe. Thus an informal meeting was organized by prof. Benoit lung in Monterrey during the IFAC CEA07 Conference in October 2007. In that occasion formal support to the idea came from Pr. Carlos Pereira (TC 5.1. chairman). The final decisions were:

- to take the occasion of the next IFAC IMS'08 Conference in Poland (8-10 October 2008) for the official establishment of the WG, and
- to set-up a Steering Committee to be put in charge of promoting the new WG.

The Steering Committee (composed by Adolfo Crespo Marquez, Marco Garetti, Erkki Jantunen, Benoit lung, Dimitris Kiritsis, Jay Lee) met in Lausanne on 19-20 February 2008, deliberated on various matters related to WG organization and developed the present document.

#### **Proposal of the new IFAC Working Group**

##### **“Advanced Maintenance engineering, services and technology”**

A new Working Group titled “Advanced Maintenance engineering, services and technology”<sup>1</sup> is being proposed for establishment within IFAC. The WG will be common to TC 4.4 and TC 5.1, while strong relationships with other scientific organizations (i.e. IFIP, ESRA, ISEAM, EFNMS) are encouraged.

Academic and Industrial people will be invited to join the WG and international coverage is planned for the WG (i.e. Europe, USA, Canada, Australia, South America, Asia).

#### **Rationale**

- Maintenance is a wide and interdisciplinary topic
- Design and improvement of maintenance can be achieved only considering all together the different interconnected methodologies and technologies
- The importance of maintenance and related services is rapidly increasing
- The WG can contribute to rise the scientific level of maintenance related topics and the consideration of maintenance as a scientific area (this could happen through cooperation with conferences already organized by different institutions and with journals)
- The maintenance area, considered as a whole (maintenance engineering, services and technology) is not well represented in scientific journals, as it is dispersed in many specialized issues.

Due to the above mentioned situation an international interdisciplinary Working Group, endorsed by well recognized scientific institutions, will be very important to overcome the divide situation among maintenance related disciplines.

#### **General objectives of the WG**

- Federate people working on maintenance
- Promote partnership between industry and academia
- Promoting exchange of students, PhDs and researchers
- Promoting and improving education in maintenance
- Promote the role of maintenance in contributing to sustainability from a technical and social point of view
- Investigate and contribute to the social consideration of maintenance

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<sup>1</sup> The above mentioned WG name has been set-up for the current preparation phase of the WG, the final official name will be decided during the first official meeting of the WG.

### **Topics of the WG**

- Maintenance strategies, organizational and economical methods, business models
- Asset and maintenance management
- Maintenance related services
- E-maintenance technology and processes
- Diagnostics, prognostics, reasoning and decision support
- Condition monitoring, sensors, signal analysis and failure analysis
- Reliability, statistical approaches
- Lifecycle and sustainability issues

### **Research objectives of the WG**

- Develop a general framework for the maintenance area
- Generate perspectives of the future trends in maintenance
- Promoting Maintenance as a Science
- Define a research agenda in the maintenance area

### **Activities of the WG**

The WG will pursue its statutory objectives through the following activities:

- Organization of workshops (at least one per year) in which discussions and cross-fertilization among the participants are promoted. Activities like the creation of small working groups on specific research themes, discussions to share experience, presentations of working papers will be encouraged. The results of the working groups as well as the papers discussed during the workshop and then updated are planned to be published in volumes collecting the experience of the participants. Experts will be invited to attend the workshops;
- A web home-page describing the purpose, the scope and all the information about the WG will be developed. The list of members and future events will be included in the WG home-page. Links to home-pages concerning related topics, conference announcements, electronic bibliographies will be available and updated with the contributions of all the members.

### **Benefits of being part of the WG**

- be part of a network
- up to date who's who (list of maintenance experts)
- improve & share knowledge
- up to date information on science, engineering, technology on advanced Maintenance
- develop informal & formal partnerships required to establish consortium for project submission in the maintenance area.
- take part to maintenance events organized in conjunction with IFAC or other related organisations

### **Action Plan for WG establishment**

The IMS'08 (9th IFAC Workshop on Intelligent Manufacturing Systems) Conference, Szczecin, Poland, 8-10 October 2008 (<http://www.ims08.ps.pl/index.html>) will be the formal occasion for the official establishment of the WG.

To this concern **3 Special Sessions on "Advanced Maintenance engineering, services and technology"** topics will be organized within the Conference (see the attached Call for Papers).

### **Organisation of the WG**

During the current foundation phase, the WG organization will be managed by the Steering Committee through its members:

Adolfo Crespo Marquez, University Sevilla  
Marco Garetti, Politecnico di Milano  
Erkki Jantunen, VTT  
Benoit lung, Nancy University - CRAN  
Dimitris Kiritsis, EPFL  
Jay Lee, Univ. of Cincinnati

SC Chairman: Benoit lung  
SC Secretary: Marco Garetti  
Nancy & Milano, March 2008