



# International

*Innovation in Knowledge Based and Intelligent Engineering Systems*



## INVITED SESSION SUMMARY

**Title of Session:**

Towards Zero-Defect Manufacturing

**Name, Title and Affiliation of Chair:**

Dr Atanas Ivanov, School of Engineering and Design, Brunel University, UK

**Details of Session (including aim and scope):**

Zero defects manufacturing is an objective long aspired in modern industries, where countless models and systems have been developed in order to achieve it. This invited session will focus on the technologies contributing to the final quality of the machined components, and the key aspects of different manufacturing processes and quality assurance procedures. Current process and production models cover well some aspects of the whole manufacturing processes. They perform well in a lab or near-lab conditions but are difficult to transfer into real industrial scenarios because of the large gap between process planning and process execution on the shop floor. This is particularly valid when the production is more product than process oriented. With the aim to minimize the defects in manufacturing applications, both for large scale production as well as high value singular components, this session will be looking for solutions which will overcome some of the constrains which limit quality and productivity.

Contributions from both industry and academia are solicited. The aim of the session is to raise the awareness of this type of work and to roadmap the future activities in this area. The main results of four EU projects in the area of 'towards zero defect manufacturing' will be also presented.

The indicative list of topics includes (but is not limited to):

- System approaches to monitoring and data processing;
- Efficient simulation tools and methods to predict the machining system behaviour;
- Innovative solutions for intelligent manufacturing systems, in support of customising and build-to-order strategies;
- Production equipment of intelligent, autonomous, and self-adaptive devices (integrated, self-powered sensors and actuators).

**Main Contributing Researchers / Research Centres (tentative, if known at this stage):****Website URL of Call for Papers (if any):****Email & Contact Details:**

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