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Foreword

High value manufacturing companies are increasingly offering through-life support for their products and guaranteeing their performance. Today in the aerospace and defence sectors, over half the revenue is coming from these through-life engineering services (TES) and it is growing. Other sectors, such as the railways, energy and machine tools have also recognised this potential and are striving to grow their TES activities. With the increasing popularity of performance or availability based contracts for high value equipment, manufacturers are looking to increase the life of components, reduce maintenance costs and thus maximise revenue. TES are those technical services that are necessary to guarantee the required and predictable performance of complex engineering systems throughout their expected operational life with the optimum whole life cost. TES research is focusing on developing technology and engineering solutions to address the new support requirements for these performance based contracts where maintenance is the major engineering service.

These proceedings present 48 state of the art research papers from the 3rd International Conference on Through-life Engineering Services (TESConf 2014) addressing many aspects of the technological and operational challenges involved in this service provision. This reflects the increasing importance of the subject area and the growing international research community surrounding the EPSRC Centre for Innovative Manufacturing in Through-Life Engineering Services (EPSRC TES Centre). This year's research topics include:

- The challenge of no-fault-found in TES provision
- Obsolescence management
- Condition monitoring and health management
- Self-healing technologies
- Cost engineering for TES
- Product development for TES
- Standards for TES
- Asset life cycle management
- Reliability and prognostic health management
- Recent progresses in jet-engine regeneration
- Functional and high temperature surface engineering for TES
- Systems design for TES

In addition, the Conference invited world-renowned researchers to deliver keynote speeches on TES-related topics as well as panel sessions to deepen emerging TES-related topics focusing on industrial relevance. The research presented here highlights the need for joint development of technological solutions with the service operation management research. These papers reflect the latest research and industrial best practices from different countries around the world.

Recognising the national need and growing industrial interest, the EPSRC together with a number of key industry partners has funded a national Centre for TES. The EPSRC TES Centre based at Cranfield and Durham Universities is supported by four core industrial partners, Rolls-Royce, BAE

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Systems, the UK Ministry of Defence and Bombardier Transportation and over a dozen others. TESConf continues to be organised every year by the Centre and sponsored by CIRP (The International Academy for Production Engineering) as an international forum to share best practice, develop the research community and stimulate future technological development to support through-life engineering services design and delivery.

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