Preface

This is the first book to present the topic of *e-maintenance*, which has appeared in the scientific and technological discussions at conferences and meetings during the last decade. E-maintenance is a synthesis of two large trends in our society: on the one hand the growing importance of maintenance as a key technology to keep machines running properly, efficiently and safely in industry and transportation, and on the other hand, the very rapid development of information and communication technology (ICT). This has opened the way to completely new concepts and solutions with more detailed equipment for health information and more effective diagnostic and prognostic tools and user interfaces to ensure good reliability and availability of plants and vehicles remotely worldwide.

The authors of the book are European top experts on ICT and maintenance technology both from academia and industry. They have worked very intensively together for the last four years, starting in 2005 within the European Commission funded research and development project DYNAMITE – Dynamic Decisions in Maintenance. The R&D group consisted of about 50 experts altogether from nine European countries: Estonia, Finland, France, Germany, Greece, Italy, Spain, Sweden and UK.

This book presents an overview of the subject of e-maintenance including trends, scenarios and needs in industry and advanced ICT technologies and future solutions to global and mobile industrial maintenance needs. The pioneering e-maintenance concept DynaWeb is presented, and the group of experts that were involved in its development describe the detailed technologies, their development and experiences gained with this R&D process, as well as future perspectives.

The book is divided into 16 chapters, which include the new integrated e-maintenance concept, intelligent, wireless, MEMS, and lubricating oil sensors, smart tags, mobile devices and services, semantic web services, strategies for e-maintenance and related cost effective decisions, industrial demonstrations as examples of e-maintenance, as well as related e-training.

The book is intended for engineers and qualified technicians working in the fields of maintenance, systems management, and shop floor production lines

maintenance. It constitutes a good tool for the further development of e-maintenance in both current and new industrial sites.

It is the hope of the authors that this book will open new views and ideas to researchers and industry on how to proceed in the direction of a sustainable and environmentally stabile society.

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