**THE EUROPEAN SOCIETY FOR COMPUTING
AND TECHNOLOGY IN ANAESTHESIA
AND INTENSIVE CARE (ESCTAIC): A SPECIAL
ISSUE OF FULL PAPERS (BERLIN MEETING
2009) AND CONFERENCE ABSTRACTS
(AMSTERDAM MEETING 2010)**

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The European Society for Computing and Technology in Anaesthesia and Intensive Care (ESCTAIC) is a forum for communication between the clinical disciplines of anaesthesiology and intensive care medicine, and technical disciplines including engineering and computer science. ESCTAIC organizes annual conferences (www.esctaic.org) and has recently become one of the specialist societies of the European Society of Anaesthesiology.

ESCTAIC has a long standing collaboration with the Journal of Clinical Monitoring and Computing, with the journal regularly publishing abstracts from the societies meetings. As a new initiative, following ESCTAIC's 2009 meeting in Berlin [1], selected authors were requested to write full papers for submission to the journal. This initiative is planned for future ESCTAIC meetings and this issue of the JCMC represents the first ESCTAIC special issue of the journal, including full papers from the Berlin meeting, plus the abstracts of ESCTAIC's 2010 meeting in Amsterdam. Seven full papers were accepted following peer review, for publication for this issue, and these papers represent a good selection of the activities presented at ESCTAIC meetings. All new initiatives take time to mature and unfortunately, three of the papers were mistakenly published in issues proceeding this (Efrati et al. [2], Zenker [3], Wooten [4]).

Efrati and colleagues [2] review the current state of activities aimed at preventing ventilator induced pneumonia (VAP). In doing so, they comment on the twofold strategy of improved clinical practice guidelines along with technological developments such as the design of endotracheal tubes to prevent infection. Zenker [3] describes a mathematical approach, applied to the cardiovascular physiology, for combining mechanistic models of physiology with quantitative observations in decision support. The approach is based on probability theory, and Zenker illustrates using simulated clinical scenarios, how parameters describing patients' cardiovascular state can be updated to account for clinical measurements. Hemodynamic monitoring is also an area addressed by Cannesson and colleagues [5], in their review of the pulse pressure variation technique. They review the history, the technological and physiological background, and the current state of the art in both the commercial and scientific domains, commenting on the role of the technique in directing fluid management.

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Two great debates have dominated the field of acid–base in the past decades: the first, known as the “Great Trans-Atlantic” debate, contrasted the empirical rules of acid–base interpretation of the ‘Boston’ school with the quantitative approach based in Copenhagen; the second, has contrasted two quantitative approaches, i.e. that based-on strong ion theory with that based in Copenhagen. Two papers [4, 6] illustrate the apparent consistency of these approaches. Matousek and colleagues [6] illustrate that, for plasma, the two quantitative approaches are almost interchangeable; and Wooten [3], illustrates that models can be formulated for both quantitative approaches which, when including blood and interstitial fluid, are similar, and can be used to derive the ‘Boston rules’.

Bibian and colleagues [7] address the topic of depth of anesthesia monitoring, a subject which has been a focus of ESCTAIC meetings over many years. They compare the performance of three brain function monitors to assess whether their feedback characteristics are linear and time invariant, finding that one of the three monitors fulfilled this requirement. Anesthesia information management systems (AIMS), also a core topic of the society, are addressed in the paper of Ehrenfeld and Rehman [8]. They provide an account of the potential of introducing AIMS and the considerations necessary when: preparing a business case; deciding upon functionality, deciding upon the system and vendor to choose, and implementation issues including ergonomics and user training.

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