

Critical software in anaesthesia; a doctor's view of what is needed *

R. W. D. Nickalls[†]

12, November 2004

Abstract

Anaesthetists form the largest single group of hospital doctors by far, and are significant users of patient data-measurement technology. Consequently the anaesthesia domain is awash with real-time electronic data, and has many interesting problems looking for software and hardware solutions via interdisciplinary collaboration. Anaesthetists are looking to sophisticated processing to help interpret data and anticipate impending problem situations in the operating theatre.

The 'next level' for anaesthetists lies in the development of modular intelligent interactive software for processing comprehensive real-time data-streams. In particular, smart-alarms, decision support, real-time kinetic modeling and data-processing for generating useful derivative data, automated record keeping, windowed communications with hospital laboratories and their databases, and more.

Developing software which makes a difference in the anaesthesia domain is not easy. However, a significant practical difficulty is actually bringing anaesthetists and engineers together, and finding the time to move projects forward. This talk draws upon the author's experience developing a prototype open source system for the Linux platform as is currently used in the operating theatre.

*Abstract of a talk presented at the *Institute of Physics and Engineering in Medicine* conference on *The software device*, held at the British Institute of Radiology, 36 Portland Place, London on 12 November, 2004.

[†]Department of Anaesthesia, Nottingham University Hospitals, City Hospital Campus, Nottingham, UK. email: dick@nickalls.org [www.nickalls.org/dick/]