

**COMPUTER SCIENCE TRIPOS Part II – 2013 – Paper 9**

**12 Topical Issues (RKH)**

- (a) Compare and contrast the Active Bat system with GPS. [6 marks]
- (b) An alternative ultrasonic positioning system could use network-connected beacons positioned around a building that simultaneously emit a radio signal and an ultrasonic pulse. Describe how this would work and discuss its advantages and disadvantages over the Active Bat system. [8 marks]
- (c) The Active Bat system makes use of narrowband ultrasound for the propagation medium. It can be adapted to use wideband ultrasound signals. By analogy with the benefits that wideband radio signals give GPS, discuss the advantages and disadvantages of doing so. [6 marks]