

## 2003 Paper 7 Question 15

### Additional Topics

- (a) In relation to the locational privacy problem for the Active Badge system:
- (i) Define location privacy.
  - (ii) Define a sensible security policy for the system with respect to location privacy.
  - (iii) What elements of the system does a user need to trust?
  - (iv) What if one does not want to be tracked? [6 marks]
- (b) In the Active Badge system, the badge emits its identifier and the building infrastructure picks it up. To protect location privacy, some have suggested to reverse this architecture: the room would transmit its identifier and the badge would pick it up. Discuss advantages and disadvantages of this arrangement. [2 marks]
- (c) You are required to design the security architecture for a location-based system. You are the cellular phone operator, so you know the location of users; application providers selling their location-based services to users must go through you. Of course you know the position of all active phones at all times, but you want to reassure your users that application providers can't track them. State your security policy and describe your implementation that enforces it. [6 marks]
- (d) Describe at least *two* attacks against the system you designed in part (c). [6 marks]