

6 Software and Security Engineering (RJA)

A city council has decided to mount Bluetooth scanning equipment at each major road junction across the city and to use the information gathered to optimise traffic flows. In particular, it intends to control both the length of time for which specific traffic lights are green, and the relative timing of the green lights at different junctions. What performance, safety and security issues might arise, and what policies should be implemented to manage the associated risks? [20 marks]

Note: You should assume that the scanning equipment is able to obtain a unique network address for the majority of vehicles and of smartphones carried by cyclists moving through the city. The scanning equipment does not contain any exploitable vulnerabilities but you may assume that an attacker can simulate the existence of many Bluetooth devices from a single smartphone located near a scanner.