

2008 Paper 7 Question 4

Distributed Systems

- (a) You have been asked to design an event composition and aggregation service to operate above publish/subscribe middleware to be deployed in various environmental monitoring scenarios. Your service is to advertise and publish high-level events of interest to applications. It may subscribe to any published events in the domain of deployment. Your service may itself be distributed.

Identify a list of technical design issues you would raise with your client prior to specifying the service in detail. [12 marks]

- (b) By means of a diagram illustrate the use of vector clocks to implement the delivery in causal order of multicast messages among members of a closed, unstructured process group. Include an explanation of the message delivery algorithm. [8 marks]