UNIVERSITY OF CAPE TOWN

EEE4120F - High Performance Digital Embedded System

Quiz 1 - UML

21st February 2019

Time: 15 mins
Marks: 25

REQUIREMENTS

You are part of an engineering team that is developing a drone-based delivery system for use in managing request and delivery of light medical supplies to patients in remote areas. For a prototype: The system should allow patients to use a mobile application interface to request medical supplies and view real-time location of a delivery drone. The system administrator should be able to manage users and delivery drones via a web interface. She can register new users, new drones, view real-time patients requests, approve or reject the requests and monitor real-time location of registered delivery drones. A typical patient request will include description of the requested medical supplies. Other information such as patient's names, location and contacts are static and captured during registration. Once a patient request is approved, the system automatically sends parameters to a drone which performs automatic route planning and uses it's own auto-pilot functionality to deliver medical supplies payload (loaded manually by the administrator) to a requesting patient and return to the take-off station.

1. Sketch a UML use-case diagram for the system **[5]**
2. Sketch a minimal UML class diagram for the drone-system's web-based management sub-system **[5]**
3. Sketch an appropriate UML behavioural diagram to describe the auto-pilot functionality of the drone **[5]**
4. Sketch a UML deployment diagram for the entire system showing key hardware and software components **[10]**

It is the work of **true education** to train the youth to be **thinkers**, and not mere reflectors of other men's thought - Education, p17.