

## Embedded programming exam

June 2018.

### Questions:

#### 1. The Task Model

- Definition of a task
- Elements of the task model
- Structuring the program by tasks
- Inter-task communication

#### 2. Program Control

- The “ticks” variable
- Software timers
- Super-loop
- RTCS
- Pre-emptive scheduling

#### 3. FreeRTOS

- Tasks
- Task states
- Scheduling
- Task priority
- FreeRTOS API
  - Tasks
  - Semaphores
  - Mutexes
  - MessageQueues

#### 4. An Embedded system

- Portfolio Assignment 2.

The examination will be held in 2 parts.

First the student will be given 8 min. to present the one of the 4 question, which is given by a draw, just before the examination. Then the examiners will ask the student questions related to the drawn question and to the curriculum as a whole.

There will be access to a projector in the examination room.

Since the subject of each question probably is too comprehensive to be covered at all levels in an 8 min. presentation, the student must prioritise and select his focus.