

# E&CE 354 S11 RTX P3 Description

**Due at 8:30am July 11<sup>th</sup> 2011**

## Summary of RTX P3 Requirements

### 1 Scheduling Strategy

Four user priority levels plus an additional “hidden” priority level for the Null process, preemption is now *required*, no time slicing, FIFO discipline at each priority level.

### 2 RTX Primitives

All Primitives as defined in section 4 in the E&CE 354 Project Description for Spring 2011 term.

### 3 RTX Processes

Processes as defined in sections 5.1, 5.2, 5.3.1 and 5.3.2 in the E&CE 354 Project Description for Spring 2011 term. You need to include 6 test processes as described in section 5.3.4 in your process table. You are not required to implement any testing cases for now. Use dummy test processes code posted on the lab website for RTX P3 submission. A light weight testing suite would be available for download from the lab web site before P3 source code is due.

### 4 RTX Initialization

Section 6 as defined in the E&CE 354 Project Description for Spring 2011 term.

### 5 Error Detection and Recovery

At minimum, the RTX kernel must detect one type of error: an attempt to *send\_message* to or *set\_process\_priority* of a non-existent process\_id. The primitive will return an error code (a non-zero integer value). No error recovery is required. It may be assumed that the application processes can deal with this situation.

### 6 Documentation

Document the design of *delayed\_send* primitive as described in sections 4.4, the KCD process, the CRT process, the UART I-Process, the Timer I-Process and the wall clock process. Use pseudo code when appropriate. You may build your documentation based on the documentation submitted in P1 and P2.

## Regular Deliverables and Demo

Name the RTX P3 source code and documentation archive zip file as p3\_Gid.zip (refer to section 3.3 in the project description for naming convention). Submit the source code and documentation to course book system before the deadline.

The RTX P3 implementation will be demonstrated to project TAs in E2-2363. **All group members** are required to attend the demo of the RTX P3. Each group has 30 minutes maximum to demonstrate the RTX P3. Use the Course Book System to reserve a demo time. An announcement will be posted to the class when the Course Book System is ready to accept RTX P3 demo reservation.

## Early Deliverables and Demo

For groups that are able to finish P4 by the P3 deadline, we will combine their P3 and P4 demos together and classify the combined demo as an early demo. A 5% bonus will be applied to your entire project if you attend the early demo. Please refer to the RTX P4 requirement for more information. The combined demo will take up to 50 minutes.