Operating Systems Design for Embedded Environments

**Practice 3 2.0 OSTask\_Manager**

|  |  |
| --- | --- |
| **Project:** | **OSTask\_Manager** |
| **Team:** | **Team 4** |
| **Date:** | **30/03/2014** |
| **Comments:** | **This is just an initial draft, can be changed if needed.** |

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# SW Conceptual design











# Function Description and Dynamic Behavior

## Function Status\_Type ActivateTask(TaskType taskID)

|  |  |  |
| --- | --- | --- |
| **Description** | *Status\_Type ActivateTask(TaskType taskID)* | |
| **Return Value** | *E\_OS\_ID, E\_OS\_LIMIT, E\_OK* | |
| **Precondition** | *None* | |
| **Parameters** | *TaskType* |  |
| **Error Conditions** |  | |

**Dynamic Behavior**

Set a task in Ready inside the Dispatcher Array.

## Function Status\_Type TerminateTask (void)

|  |  |
| --- | --- |
| **Description** | *Status\_Type TerminateTask (void)* |
| **Return Value** | *E\_OS\_RESOURCE, E\_OS\_CALLEVEL, E\_OK* |
| **Precondition** | *None* |
| **Post condition** | *None* |
| **Error Conditions** |  |

**Dynamic Behavior**

Reference to a variable of type TaskType that contains the TaskID that is currently running. If no task is running, the variable is set to INVALID\_TASK.

## Function Status\_Type GetTaskID(TaskRefType taskIDRef)

|  |  |
| --- | --- |
| **Description** | *Status\_Type GetTaskID(TaskRefType taskIDRef)* |
| **Return Value** | *E\_OK* |
| **Precondition** | *None* |
| **Post condition** | *None* |
| **Error Conditions** |  |

**Dynamic Behavior**

Return the ID of the Task Running, in case no task is running return 0xFFFF.

## Function Status\_Type GetTaskState(TaskType taskID, TaskStateRefType stateRef)

|  |  |
| --- | --- |
| **Description** | *Status\_Type GetTaskState(TaskType taskID, TaskStateRefType stateRef)* |
| **Return Value** | *E\_OK,* *E\_OS\_ID* |
| **Precondition** | *None* |
| **Post condition** | *None* |
| **Error Conditions** |  |

**Dynamic Behavior**

Returns the State of the ID specified in the parameter tasked

## Function void Dispatcher(void)

|  |  |
| --- | --- |
| **Description** | *void Dispatcher(void)* |
| **Return Value** | *None* |
| **Parameters** | *None* |
| **Post condition** | *None* |
| **Error Conditions** |  |

**Dynamic Behavior**

Run the hightest priority task in ready.

## Scheduler task callback functions

|  |  |
| --- | --- |
| **Task** | **Description & Period** |
| *(void) SchM\_Tsk\_1ms (void);* | *Callback function for 1ms* |
| *(void) SchM\_Tsk\_4ms (void);* | *Callback function for 4ms* |
| *(void) SchM\_Tsk\_8ms (void);* | *Callback function for 8ms* |
| *(void) SchM\_Tsk\_16ms (void);* | *Callback function for 16ms* |
| *(void) SchM\_Tsk\_32ms (void);* | *Callback function for 32ms* |
| *(void) SchM\_Tsk\_64ms (void);* | *Callback function for 64ms* |

**Dynamic Behavior**

Callback functions for periods requested.