BRIEF of Industry Sponsored Final Year Project

Monash Supervisor: A/P Nemai Chandra Karmakar

Industry Supervisor: Mr. Geoffrey Ramadan

**Project 1: Bluetooth Low Energy Portal**

**Project Description:** Development of state-of-the-art BLE RFID portal to detect personnel and distance of the person

**No. of Students:** 1 to 4 (Each student may do team work or do a separate part of the project)

**Figure 1. BLE RFID enabled portal**

**Stakeholders:** Unique Micro Design Pty Ltd / Monash University

Date Commence: March 2015

**Background:**

RFID is an enabling technology that permeates in every wake of our life including car immobilizer, keyless access, near field communications, access control, patient tracking and item locations to name only a few.

**Objective:** UMD holds a range of state of the art RFID systems in their inventory. UMD is a solution provider of RFID technology in Australia, NZ and Asia. The project will provide the FYP students the opportunity to develop various RFID systems and provide solutions to the customer’s needs.

Market(s): Australia, New Zealand and Asia.
Target Audience: Various industries

Outcome: A workable concept and prototype using existing and developed components and software in FYP.

Functional Requirement Overview: Evaluation and development and/or proof of concepts of some customers’ requirements.

Date Completion: End 2015 (development of process and test concept)

**Project 2: RFID Enabled Tugs and Dollies in Sydney Airport**

**Project Description:** Development of state-of-the-art RFID enabled tug and dollies to detect what dolly is attached to what tug.

**No. of Students:** 1 to 4 (Each student may do team work or do a separate part of the project)

![Figure 2. RFID enabled tug and dollies](image)

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**Project 3: Design and Develop Methodology, Equipment and Software to evaluate passive UHF RFID Tags.**

**Project Description:** UMD needs a system comprising of: (i) UHF RFID Interrogators; (ii) Antennas; (iii) Computer; and (iv) Software as shown in Figure 3. They wants to place their target UHF RFID passive tags on the system which would take measurements and uses some analytics to generate a report. Its purpose is to provide a standardised way of comparing the performance of UHF tags. Note that UMD has over 100 different types of UHF RFID tags. The comparison only needs to be "internal" (i.e to our own reference)

**Remarks:** Significant hands-on and theoretical components to understand the working principles of various RFID systems would be extra benefits

**No. of Students:** 1 to 4 (Each student may do team work or do a separate part of the project)

![Figure 3. RFID system development and evaluation](image-url)
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