# FIT3165 – S1 2018 Assignment 2

**Submission: Assignment-2 is due by Friday of week-12, 4:00 PM**

## A request for proposal (RFP) to design a new Wired & Wireless Local Area Network LAN and Backbone wide area network (WAN) network design report

1) You should supply the following information in response to the request for Proposal (RFP):
2) Project requirements brief can be derived from **Objectives** and **Scope of Work section** of the RFP. A requirement brief is usually an **itemized list of the client's requirements** derived from the RFP
3) Wired & Wireless LAN design for a typical floor, which includes the following information:-
   a) Computer **desktop layout plan** with network topology for a typical floor level.
   b) **Switch/Wireless Access Point location** on a typical floor, vertical cable paths and lengths between the floors. Switch/Access Point functional specifications. Assume the floor to ceiling height as 3 meters approximately including the false ceiling.
4) **Recommendation and justification of the structured cabling**, **AP distribution layer**, backbone cabling and media type to be used for a **typical floor level and for the connection across the road to the existing LAN**.
5) List of **equipment** and the **wireless** and **wired** specifications, technical and cabling specifications. Note: Specifications/Technical details should be included in the **Appendix**.
6) You need to **outline design rules** for a computer LAN, WLAN & WAN network and describe it in detail. Your description should include:
   a) Detailed steps required in the network design process,
   b) methods used to form estimates of network performance for each access point taking into account the types of antennae and wireless protocol,
   c) An example of a basic sample design showing proposed floor plan, assumptions, justifications and calculations.
   d) Assumptions of backbone connectivity using wired/wireless media needs to be reported.
7) Write a report of **maximum** 3000 words, not including diagrams and pictures (you can write a good report in **around** 2000 words).

## Description of Wireless LAN Design

The submission of the assignment will be in the form of a Technical report write-up with explanatory figures and other requirements for reporting. The specifications are as follows.

A **public transport company** requires that its office building be connected over a local network. You have been asked to respond to the following excerpt from their RFP (request for proposals) in the newspaper:

## About Return2Fender Transport Company

At present, the total number of office employee is 700 with 200 in Sydney & Melbourne and 100 each in Adelaide, Brisbane, and Perth. Each office worker is provided with a multimedia desktop with wireless network connection. Owing to a business acquisition, the number of employees at Melbourne is expected to increase substantially.

## Objectives and Scope of Work

The size of the Melbourne office Wireless LAN would increase/expand from 200 to 800 stations; after **three** **4-storey buildings** from across the road have been acquired for the additional office space, see Figure 1. The new buildings have **not yet been wired** for the LAN or WLAN. The buildings also **needs to be connected to the existing office network** (from across the road).

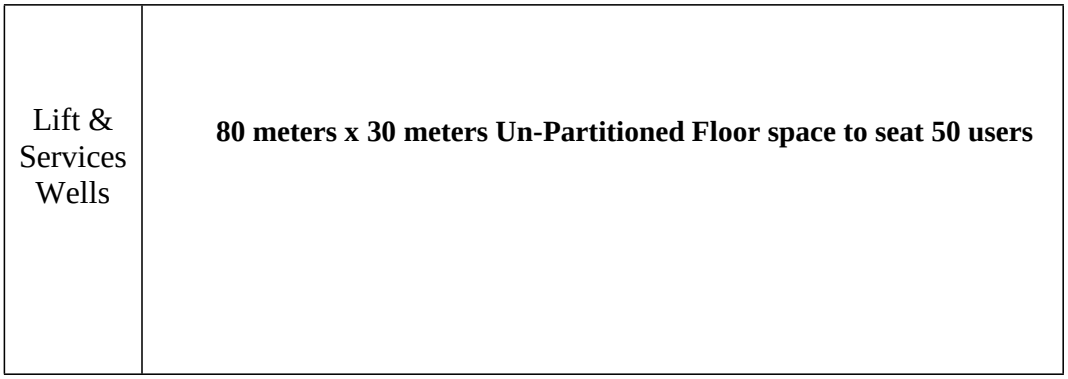


Figure 1: **A typical floor plan for a 4-storey building**.

It is envisaged that the **three** new building in Melbourne office would support a both wired & wireless networked office environment where each of the staff PC would be equipped with **desktop video conferencing**, **VoIP** alongside the **usual business applications** such as web, **email**, and **regular office productivity packages**. It is anticipated that the network traffic generated by **each active-user** is estimated to **vary between 15-20 Mbps**. The **expected user activity pattern for all new buildings may be seen in Figure 2**. The Wired LAN infrastructure needs to be designed, which should support the anticipated peak time data traffic, and in parallel you will design Wireless-LAN to support LAN.

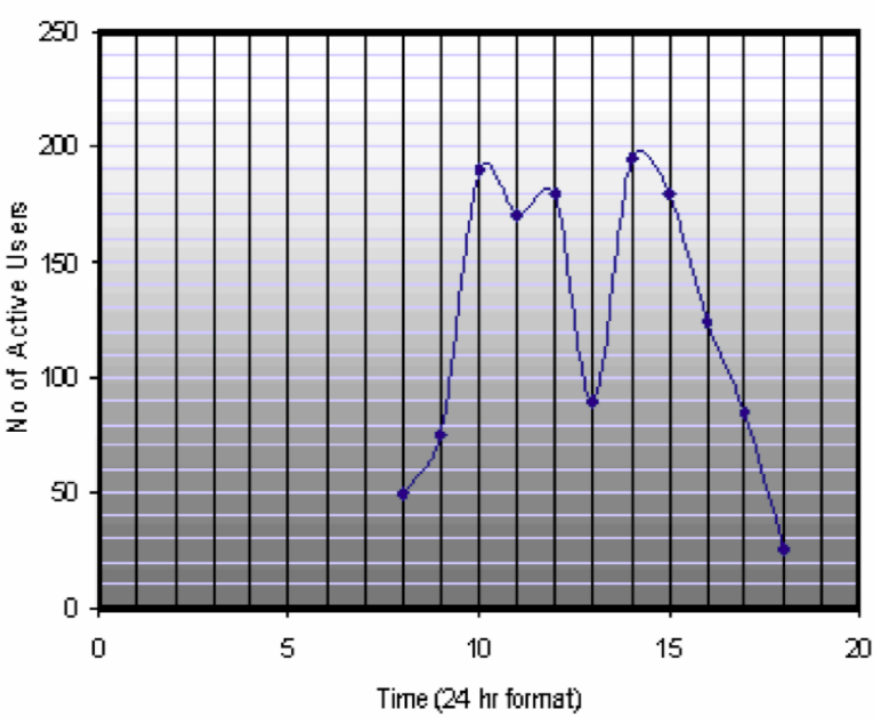


Figure 2: The number of expected users active during the business hours

The report should contain the following three diagrams to support your report. (1) A typical floor-plan, (2) Building floor switches and Access-point (AP) connections to building routers diagram, (3) WAN connectivity to main head office diagram. Details of structured horizontal floor cabling, vertical floors structured cabling diagram and WAN connectivity layout. Details of network topology, UTP Cable and Fiber optics cable selection and justifications.

## Submission

Before the due date, a soft copy of your work with the **standard assignment format** in **Moodle has to be submitted.** (submission via email is **not** acceptable). Use FIT standard report format. Report will be checked on **turnitin for Plagiarism**.

(see http://www.monash.edu.au/lls/llonline/writing/information-technology/report/1.3.xml).
References should be listed correctly (see conference papers or journal for the reference).

## Interview

Your tutors may carry out an interview in the last week tutorial with each of you to assess your work. If you cannot explain your work or what you write in your report, you may get the lowest mark. This is to make sure that the work you submit is your own work.

### Important note:

Please read the unit guide for assessment criteria and remember that if you do not understand your work, you will get minimum mark (ZERO).