

# ENN523 Advanced Network Engineering

## Assignment Part 2 – Call For Proposals

**Document Version:** v1.0 on Friday 24 April 2020

**Assignment Due:** 11:59pm Friday 29 May 2019 (Week 12)

**Total Raw Marks:** 150 (worth 15%)

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This is an **individual** or **group-of-two-or-three** assignment. It is worth **15%** in all assessment items of this unit ENN523.

The objective of this assignment is to gain working knowledge and understanding of network planning through research, system analysis, and system planning. The understanding is to be demonstrated by submission of a formal proposal in response to a **Call for Proposals**.

Submit your proposal through the Blackboard by the assignment due date:  
11:59pm Friday 29 May 2019 (Week 12).

As a Call for Proposals, this assignment project has a **Hard Deadline** regardless of any potential issues that may prevent you from submitting your proposal (for example, the Blackboard may be temporarily offline, or your computer may fail). As in the real profession, any late submission will not be accepted by the proposal submission system.

For any enquires about this assignment project, contact:

Professor Glen Tian,           y.tian@qut.edu.au; or

Dr Fida Hasan,               fida.hasan@qut.edu.au; or

Dr Farzaneh Masoumiyan,   f.masoumiyan@qut.edu.au.

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**Academic integrity.** Students are expected to engage in learning and assessment at QUT with honesty, transparency and fairness. Maintaining academic integrity means upholding these principles and demonstrating valuable professional capabilities based on ethical foundations.

Failure to maintain academic integrity can take many forms. It includes cheating in examinations, plagiarism, self-plagiarism, collusion, and submitting an assessment item completed by another person (e.g. contract cheating). It can also include providing your assessment to another entity, such as to a person or website.

Further details of QUT's approach to academic integrity are outlined in the Academic integrity policy and the QUT Student Code of Conduct.

Breaching QUT's Academic integrity policy is regarded as student misconduct and can lead to the imposition of penalties ranging from a grade reduction to exclusion from QUT.

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*Next page – Project Specifications.....*

# Call for Proposals for Data Centre Planning

## Planning of a Data Centre for General Data and Network Services

NatNets Pty Ltd

### Background

An IT Firm plans to extend its business to general data centre services. For this purpose, a new company called NatNets Company has been set up to build and manage a data center. The NatNets company is now fully functional. It invites submissions of specifications and a standard framework for design of a brand new data centre to provide general data and network services primarily to small- and medium-size companies and organisations. General data, voice, video services and other services are required to make the data centre fully functional for future extension of data centre services to a variety of industrial sectors. Your group assignment project is based on this scenario to develop specifications and a standard framework for planing a brand new data centre for NatNets Company.

### Overview of the Data Centre Services

Small- and medium-size companies and organisations do not have their own infrastructure to provide comprehensive data and networked services. They rely on the services provided by external Internet service providers (ISPs) to support their business. For these companies and organisations with many branches, offices and call centres spread in many cities and even overseas, existing network services from external ISPs do not meet their business requirements for integrated business operations.

Addressing such business requirements, the NatNets Company plans to build a brand new data centre to provide integrated and cloud services to such companies and organisations.

To reduce the environment impact, capital and operating costs, the data centre is to be built in a regional town, about 100 km away from a major capital city. It is planned to serve around 100 small- and medium-size companies and organisations at early stages and to further extend their services to more organisations later. Each of these companies and organisations consists of a headquarter in a capital city and many branches and offices, which are spread national wide in many capital cities, second-tier cities and regional towns. It may also have a few overseas branches and offices. The managers and employees of these organisations should be able to access to their respective corporate networks to request services and to deliver services to their customers.

With the fast growing wireless network technologies, wireless and mobile network services may have to be part of their corporate network services for each of the organisations.

All back-end network services are seamless and transparent to end-users including the employers of the institutions and their customers.

## What to Plan

A proposal should enable the NatNets Company to follow your proposal to actually build and then operate such a data centre for a variety of network services in cloud. The aspects you may consider could be, but are not limited to, the following:

- (1) General specifications and standard for building a data centre; [25 marks](#)
- (2) The architecture and topology of the data centre and its integration with all branches, offices, and other components of the organisations to be served; [25 marks](#)
- (3) Virtualization of cloud data centre resources (IaaS, PaaS, SaaS, etc ); [25 marks](#)
- (4) Security of the cloud data centre and cloud services. [25 marks](#)

## Your Proposal

You are required to submit a formal proposal [in pdf format](#) to address all the four aspects described above in the last section (“What to Plan”).

Your proposal is required to be [NO more than 20 A4 pages](#). This page limit excludes the cover page, Executive Summary, Table of Contents, and a one-page CV from each of your team members.

The quality of the presentation of a technical report is as important as the quality of the technical content of the report in the profession. Therefore, your proposal will also be assessed on the quality of the following aspects:

- (5) Executive summary and conclusion; [10 marks](#)
  - (6) Organization of the report such cover page, executive summary, table of contents, background of this project, body text, conclusion, references and appendix; [10 marks](#)
  - (7) Overall layout such as margins, spacing, font, font size, margins; [10 marks](#)
  - (8) Reflections from each of your team members; [10 marks](#)
  - (9) A one-page CV as an appendix for each of the team members of your proposal; [10 marks](#)
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