Department of Computer Science
Final Year Undergraduate Project Mark Sheet

Student: *Teddy Boaz (110399459)*

Project Title: *Exploring the capabilities of Software Defined Networking*

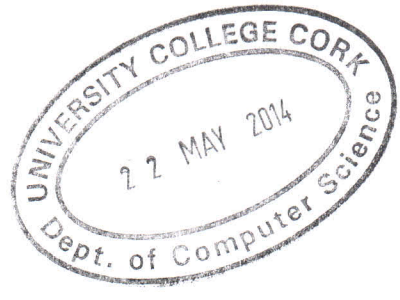
Supervisor: *Cormac Sreenan*

Second Reader *Adrian O'Riordan*

General comments on project: level of difficulty, conduct, or mitigating circumstances, other than health.

Software defined networks (SDNs) is an emerging topic that is attracting very significant interest in industry and research. The student had no exposure to SDNs prior to starting the project, so the learning curve for him was extremely steep. I was aware that he has a very keen interest in networks and so a very ambitious agenda was set, to design and implement an SDN Controller. To put this in perspective, it is common to see peer-reviewed papers being published that report on new SDN Controllers.

The student tackled the project with gusto, delving into the details of products and literature for SDN, and working with his supervisor to define the requirements for a Controller, but showing considerable independence in terms of the detailed design and implementation choices. Weekly meetings were attended with regularity, and the student set out a plan and managed his progress carefully.



Signature of supervisor:

Signature of second reader

Date: **May 21 2014**

Final Marks Returned 249 / 300

mments on allocation of overall marks to specific grading criteria appropriate to project e.g. emphasis on theory, design, testing etc.

The nature of the project meant that the design and implementation were tightly integrated, and so it is proposed to assess these together. Marks are allocated evenly across the key criteria.

Grading Criterion	Max Mark	Mark Given	Brief comments on issues which support or limit the mark to that awarded for each criterion, especially where marks deviate significantly from normal. References to specific pages or sections of the report may help.
Technical writing	20	15	*The report is well structured and quite well written, but there are numerous mistakes (eg typos, figures without captions). Good use of diagrams. Detailed description of DVD contents a nice touch.* *The Abstract gives a concise and accurate description of the project goals and also the achievements.* *The introductory Chapter gives a clear explanation of the project objectives and achivements, together with the report layout.* *There is some, mostly unnecessary, repetition.*
Analysis	20	16	*Chapter 2 gives an extensive overview to SDN, the principle, its advantages relative to current networks, open issues, products and some of the literature. The set of references is appropriate, and properly formatted.* *The student demonstrates a clear understanding of the benefits and drawbacks of SDNs, the technical requirements for an SDN Controller, and the salient technical issues.* *The description of the project requirements is high-level, and informal.*
Design	40	35	*Design & Implementation* *The main contributions are a SDN Controller called SmartSwitch, and a graph-based representation of the network topology called NetGraph. These are described in good detail, and each technical choice is justified in comparison to alternatives. The Chapter demonstrates a solid understanding of the technical issues, and his ability to overcome obstacles.* *No evidence of (formal) testing or validation.*
Implementation			*Combined with Design criteria above.*
Evaluation	20	17	*To have produced a working SDN Controller is viewed as a very good achievement. The results, using the mininet SDN network simulator, show performance in contrast to the well-known POX Controller.* *Not all features of the design are evaluated/demonstrated. Also, it would have been good to quantify the overhead of flooding messages in POX.* *The results for NetGraph are based on an example rather than actual measurements.* *Chapter 5 evaluates future opportunities and offers detailed suggestions, showing remarkable insight into the field (and prior work on active networks).*
Total Marks:	**100**	83	X 3 to give Final Mark / 300 = 249