

# Major Assessment

TNE30009/TNE80009

You are to choose one of the following topics to write a 2500 word research report on.

1. The Industrial Internet of Things is a fundamental part of Industry 4.0, claimed to be the next industrial revolution. The IIoT has strict timing requirements, deals with potentially dangerous machinery and operate in noisy and potentially hazard environments. What security issues does the IIoT present?
2. Satellite Systems are undergoing dramatic developments with low cost CubeSats extending the possibilities of satellite communications so that an Internet of Satellites (IoSat) has been proposed. However, satellites operate over links with very long latencies and low bandwidths, signal power for communications is limited and space is a very hazardous environment for electronic equipment with no possibility of maintenance and regular solar storms. What security issues does the IoSat face?
3. Autonomous Vehicles are in the early stages of being trialled, but for them to be adopted many issues regarding them need to be addressed, one of the key ones of which is security. What security issues do AVs face?
4. Topic of your own choice but you must discuss it with the convenor beforehand.

For your chosen topic you are to answer the following questions:

- What security frameworks and protocols have been developed?
- What problems do the frameworks and protocols attempt to resolve?
- What issues are still unresolved?
- For the unresolved issues, what are some of the approaches being considered?

You are to format your report using IEEE conference template.

The report is due at the end of the second week of the Exam period.

The report is to be no more than 2500 words (excluding references). It will be assessed based on criteria listed in the following table.

	Pass	Credit	Distinction	High Distinction
Format (10%)	<ul style="list-style-type: none"><li>• The submitted report is formatted using the IEEE Conference template</li><li>• All figures/tables are appropriately labelled</li><li>• The submitted report is in PDF format</li></ul>	All Pass requirements plus: <ul style="list-style-type: none"><li>• Images/figures in vector format</li></ul>	All Credit requirements plus: <ul style="list-style-type: none"><li>• Formatting is clean with no words/tables wrapping beyond the edge of a column/page</li></ul>	All Distinction requirements
Structure (25%)	<ul style="list-style-type: none"><li>• The submitted report is properly structured in the format of an IEEE paper including Abstract, Introduction, and Conclusion</li><li>• The topic is divided into a simple but clear structure</li><li>• The report is complete but some sections are lacking required detail</li><li>• A reference list is provided</li></ul>	All Pass requirements plus: <ul style="list-style-type: none"><li>• Clear use of sub-sections as required to clearly delineate different aspects of the findings</li><li>• All sections have a sufficient level of detail</li><li>• The reference list is professionally structured and complete</li></ul>	All Credit requirements plus: <ul style="list-style-type: none"><li>• Suitable references have been located and used for all claims made by the student</li></ul>	All Distinction requirements

Research Analysis (50%)	<ul style="list-style-type: none"> <li>• A limited and incomplete evaluation of the area</li> <li>• Minimal discussion on the issues raised</li> </ul>	<p>All Pass requirements plus:</p> <ul style="list-style-type: none"> <li>• A clear evaluation of the problem researched</li> <li>• Some discussion of the issues raised in relation to the rest of the report</li> </ul>	<p>All Credit requirements plus:</p> <ul style="list-style-type: none"> <li>• A detailed evaluation of the research problem</li> <li>• A complete analysis of the issues raised in the report</li> <li>• An attempt to use existing literature to support your argument</li> </ul>	<p>All Distinction requirements plus:</p> <ul style="list-style-type: none"> <li>• An in-depth evaluation of the research problem but within the 2500 word limit.</li> <li>• A complex and thorough analysis of the issues raised in the report</li> <li>• Good use of existing literature to support your argument</li> <li>• Suitable for submission to an Academic conference or journal</li> </ul>
Language (15%)	Basic language and grammatical skills	<p>All Pass requirements plus:</p> <ul style="list-style-type: none"> <li>• Good grammatical structure and flow of argument</li> </ul>	<p>All Credit requirements plus:</p> <ul style="list-style-type: none"> <li>• A document suitable for reading by a professional audience</li> </ul>	<p>All Distinction requirements plus:</p> <ul style="list-style-type: none"> <li>• An excellent report suitable for reading by an Academic audience</li> </ul>