Spacey Space Space

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Abstract

Introduction

The problem being tackled regards a very large US aerospace company, which is developing a spacecraft which uses a large SpaceWire network. They have encountered an issue wherein a link will unexpectedly disconnect. These disconnections occur infrequently, and generally happen after a few hours. To resolve this issue, the aerospace company has, through the use of the STAR-Dundee SpaceWire Recorder product, recorded traffic on the network over an undisclosed period of time, covering 4 links, during which multiple disconnections were recorded.

The objective of this project is to provide the aerospace company in question with a program which can view the traffic in order to look at the packets before link disconnections. Ideally, the system should also be able to analyse the data obtained in order to identify and highlight potential causes of the disconnection.

In addition, the project should be able to display statistics, such as the total number of packets in the batch of traffic and the rate that errors occur in a way that is appealing to the user, as well as generate displays of various interpretations of the data, such as how much the rate of data changes in the packet traffic.

Although a batch of example results will be given for the purposes of testing the system, the program will be tested against multiple different traffic files. This means that it is additionally essential that the program works for all valid data, rather than just the example data provided.

Background

Specification

Design

Implementation and Testing

Evaluation

Usability

Other Criteria

Description of the final product

Appraisal

Summary and Conclusions

Recommendations for future work

Acknowledgements

References

Appendices