**Introduction**

The purpose of the report is to document the findings of the investigation into the quality of a piece of software developed for texture assessment.

A texture assessment is carried out by processing data collected by a surface texture instrument in order to generate statistical or frequency spectrum of the data collected.

The program calculates parameters and spectral data from the above instrument. In particular:

*Load data from file –* The data is stored in a text file. It is assumed that it was captured using a texture assessment device

*Calculate the frequency spectrum data –* The algorithm performs calculations of the Fourier transform

*Save the spectral data –* The data is stored in text format file

*Compute parameters –* The parameters for the surface texture are computed

The report will focus on the accuracy and quality of algorithms for delivery of these parameters.

**Quality Requirements**

The quality of software depends on how well it meets the requirements. There are two types of requirements; functional and non-functional.

Functional requirements detail the operations that the software needs to perform such as, in the case of this task, store data in text format or calculate the Fourier transform of the parameters.

Non-functional parameters would include things that support delivery of functional requirements such as readability of the code and availability of support service for the end user.

There is a degree to which quality is necessary however, which varies depending on the use case. For example, a child’s toy does not require the same degree of quality as a control system for a nuclear reactor. The first product can fail as long as it does not cause injury and is fit for purpose while the second must have a very high degree of reliability as failure will result in catastrophic damage to the surrounding area and massive loss of life.

While the minimum standard of quality is required, it is sensible to exceed this standard. However there is a limit to how much quality is feasible to achieve given time and resource constraints. For example, cost, development time, development tools and libraries as well as the ways of working within the development team.

Therefore the quality requirements for this code would be:

Functional:

* The program must load data from file
* Calculate frequency spectrum of data in form of a Fourier transform
* Save the data in .txt format
* Calculate surface texture parameters

Non-functional:

* Maintainability of code
* Reusability of code
* End user support
* Compatibility with the gathered data

**Testing Requirements**

**Reliability**

**Conclusion**