

|  |
| --- |
|  |
| Comet\_maths  Requirements  Documentation  Version 1.0 Draft1 | |
| Pieter De Vis |
| 01/04/2023 |
|  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Description** | **Author** |
| V1.0 | **01/04/2023** | Initial draft | Pieter De Vis |
|  |  |  |  |

**Version History**

# Introduction

## Terminology

Terminology used in this document.

## References

References to external documents as well as the statement of work, design document, …

# User Requirements

Comet\_maths

# Functional Requirements

Requirements are graded as follows:

* *Critical:* Core to the software, must be met.
* *Major:* Improves the software, should be met.
* *Minor:* Useful, but not critical or major. If cannot be implemented in a first release perhaps can be implemented later.

## General requirements

### [Critical] There is seasonal variation in the surface reflectances. The code needs to take this into account.

## User interface

Definition of those user interface characteristics that allow to understand and learn the software easily so the user be able to perform his/her tasks efficiently including the interface exemplar description.

### [Major] On starting up, the software will prompt the user to select one of the available measurement functions from a list.

## External interface

Definition of interfaces with other software or hardware.

### [Minor] Build on existing eopy and punpy python packages.

## Input / Output File(s)

The contents of the files that the software will read in/save results to.

### [Major] The code should be able to read inputs from both csv and netcdf4 format.

## Mathematical

Equations the software is to apply.

### [Critical] The radiance measurements will be processed to surface reflectance. Appendix I specifies how to do this.

## Operational\*

Hardware, operating system, memory requirements, performance, efficiency, portability etc.

### [Minor] The code should be able to process the data to L1 in less than 1 hour on eoserver.

## Reliability\*

Specification of the software execution level concerning the maturity, fault tolerance and recovery.

### [Minor] Reach at least 95% MC/DC coverage.

## Maintenance\*

Description of the elements facilitating the understanding and execution of the future *Software* modifications.

### [Minor] The code needs to be set up so that it is easy to re-process all the data if a new calibration measurement function is developed in the future.

## Design and construction limitations/constraints\*

Needs, timelines imposed by the Customer.

### [Critical] A demo version needs to be ready by 01/11/2020 for approval by customer.

## Legal and regulative\*

Needs imposed by laws, regulations, NPL security or IP regulations.

### [Critical] All codes should be made open-source.

# Appendix I: Algorithm description\*