Lucky Imaging CCD Camera Control Software
Software Requirements Specification
Version 1.0

Revision History

1.1

Date	Version	Description	Author
25/Sept/09	1.0	Initial software requirement draft.	Mario Aguilera, Luis Gordillo, Miguel Ortiz, Francisco Ramirez, Alexis Tejeda
21/Dec/09	Final Version		Miguel Ortiz, Francisco Ramirez

Software Requirements Specification

1.Introduction

1. Purpose

The purpose of this document is to define the system requirements, to clarify functionality and to define constraints about what it will be developed and what will not.

2. Scope

This document describes the requirements of the software during the system development.

3. Definitions, Acronyms, and Abbreviations

- **EMCCD:** Electron multiplying-CCD
- **CCD**: Charge-Coupled Device
- **ACS**: Alma Common Software
- **CORBA**: Common Object Request Broker Architecture
- **RHEL:** Red Hat Enterprise Linux

4. References

§ http://www.andor.com/pdfs/downloads/product_portfolio.pdf

5. Overview

The next two points give an overall descriptions of the software, including product perspective, principal functions, some constraints and the main requirements, such as functionality, performance, supportability, interface, licensing requirement, copyright and applicable standards.

2.Overall Description

1. Product perspective

The Luca DL-658M Camera is the latest Electron Multiplying CCD innovation, one of its more important features is that it utilizes a monochrome interline frame transfer EMCCD sensor, providing single photon detection sensitivity and unrestrained QE at 37 full frames/sec. So, the purpose of the Software is to create a solution to the transmission problem (37 fps), Using ACS.

A client connects to the CCDContainer and uses the notification channels to send requests and to receive the images filenames. Images are sent by BulkDataTransfer to the client, and they are shown in client GUI.

2. Product functions

It may request certain features to Camera Control Software:

1. **Capture:** the software must capture images through the Lucky Imaging CCD Camera.
2. **Power On Equipment**: The system must have an option to turn on the equipment.
3. **Power Off Equipment**: It also must have the capacity to turn off the camera
4. **Interrupt Image Capture**: The software may have the option to interrupt an image send.

3. Constraints

The software must be designed and constructed using the framework ACS. and developed under the Rational Unified process rules.

3.Specific Requirements

1. Functionality

This section describes the functional requirements of the system; this requirement can change During the project development.

1. Operate the camera

The software must have the capacity to Turn on and shut the camera, also it can interrupt a photo transmission and control the capture of the camera.

2. Send the image (FITS) to a client PC.

The software must have the capacity to transmit 37 fps between a server (Connected to the camera) and a client, all this without collapse.

2. Performance

In this section the system's performance characteristics will be described.1. ***It must send 37 fps***

The camera have the capacity to take 37 fps, is not a good idea to have it using half or less of its capacity.

3. Supportability

1. All platforms should be open source.

4. Interface

All the interfaces (User, Hardware, Software and Communications interface) are no defined yet.

5. Licensing Requirements

All software used during this project is open source, and the most of its have a GNU LGPL license.

6. Legal, Copyright, and Other Notices

This software is open source and its developed only for investigative use, so is not limited to any restrictions.

7. Applicable Standards

- ACS testing standards: tat, cppunit.
- C++ Coding Standards.