Version

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**Change Record**

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# Introduction

This document provides a description of the Gemini Data Service (GDS) Design.

## Document Purpose

The purpose of this document is to present the GDS design for review by interested parties.

This document does not rehash the critical information in references and . It is assumed that the reader has read these other documents and understands their content.

## Intended Readership

The intended audience for this document is *groups who are writing software, design review documents or providing operational support* *for Aspen instruments*.

## Conventions

The GDS is still under active development and things that are expected to undergo some changes are marked like this paragraph with a yellow exclamation point. There are not many of these situations in this document.

Code examples and individual methods are written in a fixed-width font like this: unsubscribeToStatus.

## Acronyms

ACM Action Command Model

CMS C++ Messaging Service

DHS Data Handling System

GIAPI Gemini Instrument Application Programmer Interface

GMP Gemini Master Process

GSDN Gemini Data Storage Network

ICD Interface Control Document

JMS Java Message Service

PCS Primary Control System

TCS Telescope Control System

TLC Top Level Computer

WCS World Coordinate System

GDS Gemini Data Service

## Reference Materials

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| [1] | Kim Gillies and Arturo Nunez, "Aspen GIAPI Design and Use," 2006. |
| [2] | Kim Gillies, "Guidelines for Designing Gemini Aspen Instrument Software," 2004. |
| [3] | FITS Standard Specification. [Online]. http://archive stsci.edu/fits/fits\_standard/fits\_standard.html |

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# Overview of the Gemini Data Service

Add general description of the GDS. Take from doxygen docs. Add a few diagrams

# Implementation Details

The following sections are of interest only to software engineers who need to debug or improve the GDS code base.

## Protocols

Description of the communication protocols used (EPICS, XMLRPC, JMS, RMI)

## Scala

Motivation to use scala: functional programming, concurrency(actors)…