

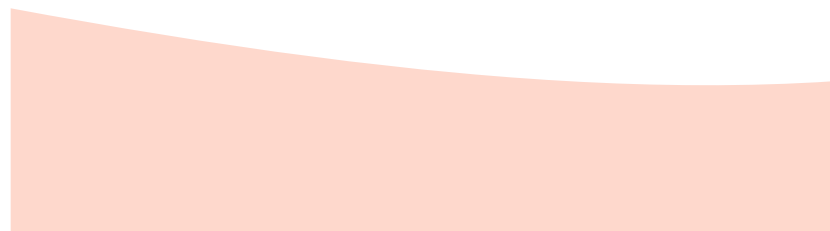


# **Base Station Electronics (BAS) System Architecture**

**ES00004**

Rev: A01  
Jinzhi Cai  
2019-07-29

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# 1 Introduction

## 1.1 Scope

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## 1.4 Revision History

Rev	Author	Approver	Changes	Date
A01	Jinzhi Cai		Initial draft	2019-7-28

Table 1: Summary of Revision History

## 2 Main Control Facility (MCF)

The Main Control Facility shows vehicle information during flight. This includes a 3D map of the flight path, propulsion system temperatures and pressures, and IMU data. It also will be able to connect to computer to allow analysis. A Main Control Facility will connect to different station, such as Launch Control Station(LCS), Terrestrial Telemetric Station(TTS), Ground Testing Station(GTS).

The Main Control Facility include three part.

**Upstream Router** The upstream router is performing communication between each station and the computer in the Main Control Facility. It also is the master in the whole Base Station Electronics System.

**Remote Switch** The Remote Switch will allow to separate one link to different link.

**Power Station** The power station is use to power all the Base Station Electronics System.

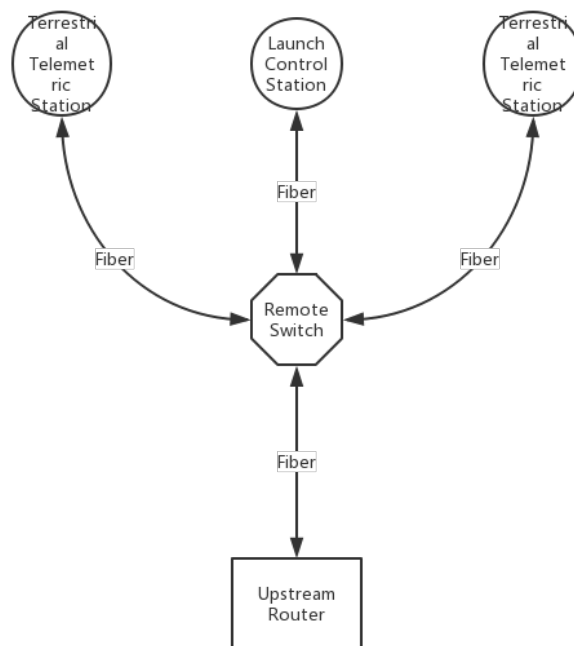
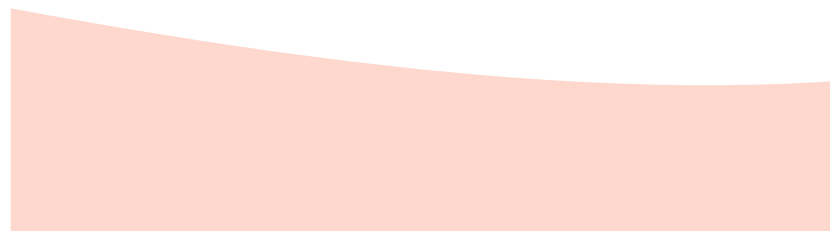


Figure 1: Block Diagram For Main Control Facility

### 3 Launch Control Station (LCS)

The Launch Control Station is majorly use to performs a launch sequence. It will take care all the need of the rocket and report the rocket status before launch. It also offer emergent cutoff.

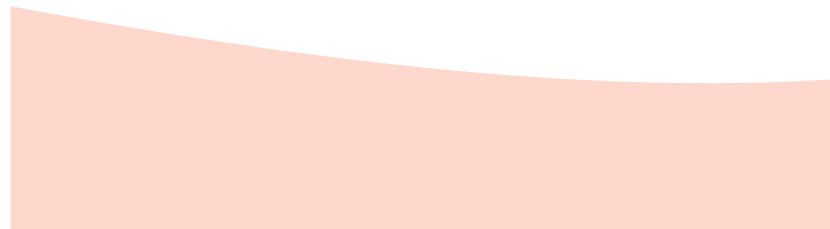
It will have ability to perform any action the launch pad needed, which will be execute one processor inside the station. It will have ability to connect to the Main Control Facility.



## 4 Terrestrial Telemetric Station (TTS)

The Terrestrial Telemetric Station performs basic analysis on the live telemetry data. This includes displaying a Range Safe/Range Live indication, vehicle orientation from sensor fusion, flight profile stages, and error monitoring.

The Terrestrial Telemetric Station is proform two jobs. The first job is monitering the



## 5 Ground Testing Station(GTS)

The Ground Testing Station is majorly for the engine testing. It will help Main Control Facility to record and report testing engine thrust and thermo condition. It also will offer control on the rocket engine such as increase or cutoff fuel and oxidizer supply.

