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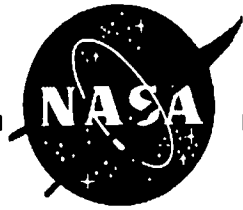
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LAUNCH SERVICES PROGRAM

Portable Lightning Detection System



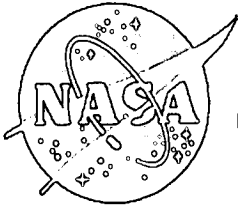
- Overview
- System Schematic
- Installation
- SOLLO Requirements
- TVM Requirements
- Computer Requirements
- Remote Connectivity



Overview

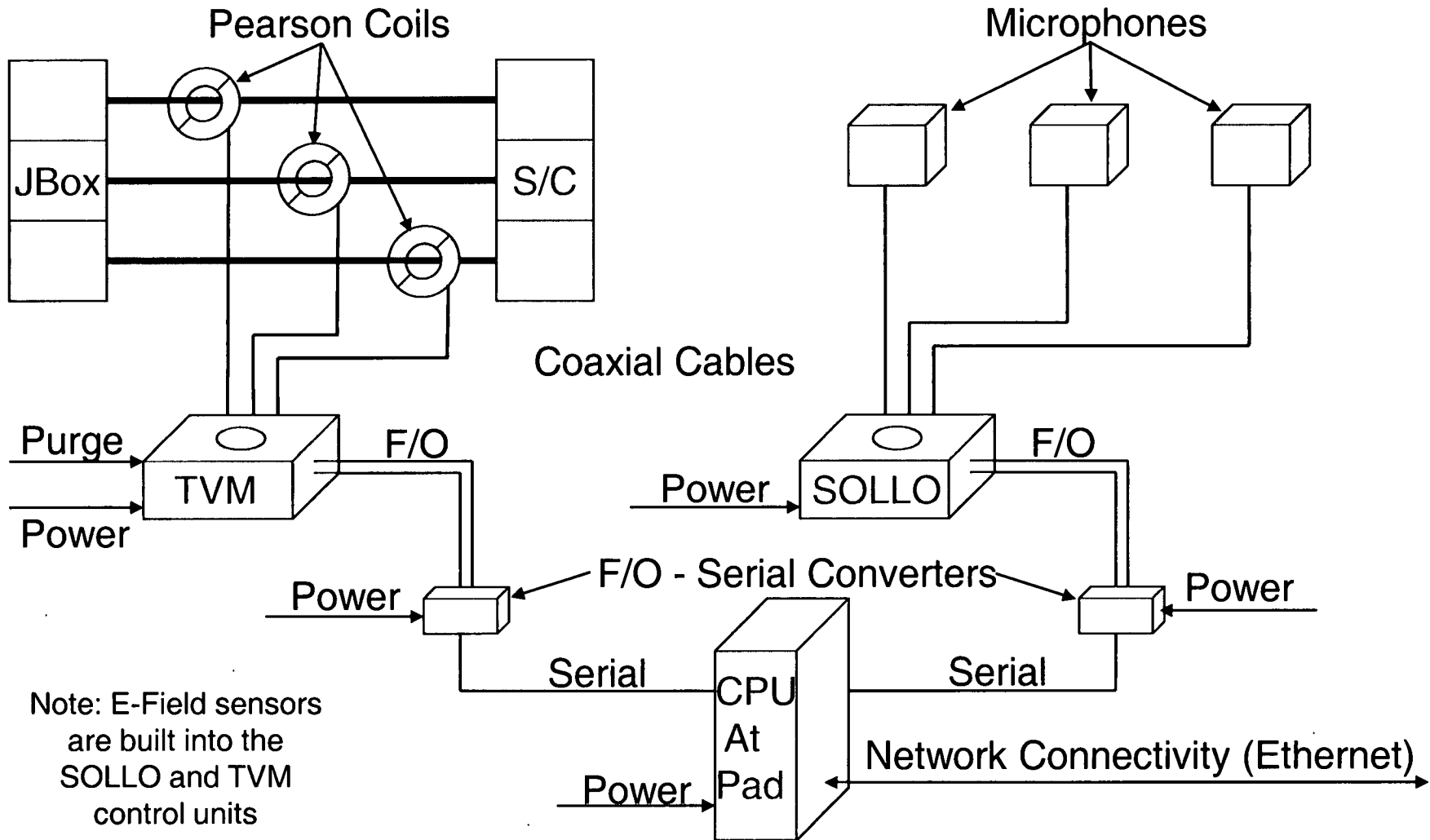
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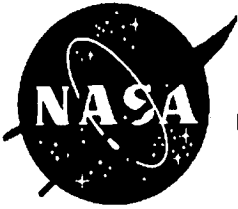
- SOLLO – SOnic Lightning LOcator
 - Consists of a control box and 3 microphones
- TVM – Transient Voltage Monitor
 - Consists of a control box and 3 Pearson coils
- Computer System
 - Consists of a standard desktop platform with 2 fiber optic to serial converters



System Schematic

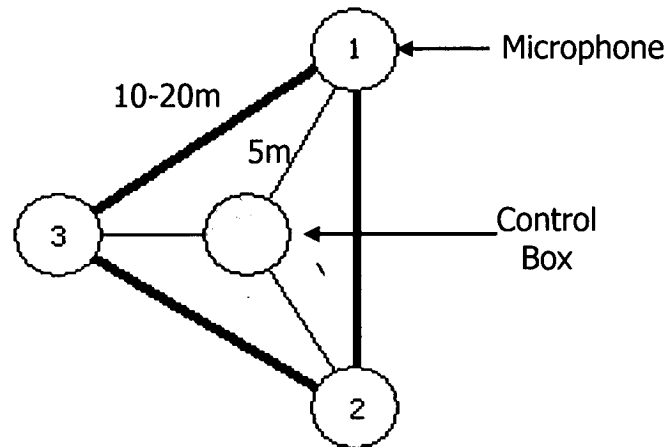
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Installation

- SOLLO
 - Should be installed on as flat a space as possible (Microphones all at the same height with minimal interferences)
 - Capability is $\frac{3}{4}$ mile radius around unit
 - For pad 17 at CCAFS, unit is located on the roof of the blockhouse approximately 200 m from the pad
 - Microphones should be setup around control box with a separation of at least 5 meters, preferably 10-20 meters of separation between each microphone



- TVM
 - Pearson coils are installed around Umbilical
 - Control Unit will be in close proximity to umbilicals being monitored (on mast)
- Fibers: 62.5/125 Micron Multi-Mode with ST connections



SOLLO Requirements

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- Size
 - Control Unit: ~40cm x 45cm x 15cm
 - Microphones: ~30cm x 35 cm x 30 cm each
- Power
 - 105-125 VAC 47-420 Hz
- Data
 - 3 Coaxial Cables from Microphones
 - 2 Fiber Optic Lines to F/O – Serial Converter



TVM Requirements

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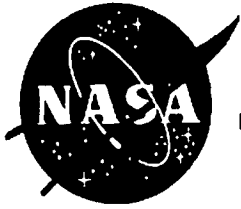
- Size
 - Control Unit: ~40cm x 45cm x 15cm
 - Pearson Coils: Installed around umbilical being monitored
- Power
 - 105-125 VAC 47-420 Hz single phase
 - GN2 Purge Line – This was a Delta II pad specific requirement due to location on the Fixed Umbilical Tower (FUT), specific Ariane requirements will need to be determined
- Data
 - 3 Coaxial Cables from Pearson Coils
 - 2 Fiber Optic Lines to F/O – Serial Converter



Computer Requirements

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- Size: Standard Desktop Computer
 - Computer: ~43cm x 43cm x 18cm
 - F/O-Serial Converters: ~7.5cm x 13cm x 4cm each
- Power:
 - Computer & Monitor
 - 2 at 115/230 VAC 50/60 Hz
 - SOLLO Fiber Optic Receiver
 - 100-240 VAC 50/60 Hz
 - TVM Fiber Optic Receiver
 - 100-240 VAC 50/60 Hz
- Data
 - 2 Serial lines from F/O – Serial converter to CPU serial port



- Data can be checked by:
 - System Computer
 - No further connections required
 - Remote Desktop into System Computer
 - Requires network connection from system computer to remote location
 - Allows the user to monitor the system from a remote location off the pad
 - Allows multiple users to monitor the system (only 1 at a time)