



C.O.V.E.R.T.

Coalition for Observing and Verifying Extraterrestrial Real Threats



M.O.U.S.E

Architecture





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Mission Computer (MC)

A scalable and expandable integrated information processing system used to manage the entirety of the MOUSE platform. Comprised of both highly-resilient hardware and software components, it acts as the single intermediary device between the MOUSE's many subsystems and sensors ensuring successful mission execution.

Vehicle Management System Computer (VMSC)

A highly-resilient microcontroller used to manage the MOUSE drive system. It acts as an intermediary device between the MOUSE Mission Computer (M-MC) and the drive subsystems, offloading power maneuvering processing cycles from the M-MC.

Ultrasonic Subsystem

The unclassified purpose of the Ultrasonic Subsystem is to provide ultrasonic-related measurement data to the scientific community in terrestrial environments that are not accessible by traditional collection vehicles. Because the MOUSE can be produced at low-cost and controlled over a SATCOM connection, it allows for scientific readings to occur in previously unexplored spaces.

- Max Range: 4000 m
- Min Range: 2 cm
- Measuring Angle: 15°
- Must be able to rotate 145° every 10 s

EO/IR Sensor Suite

Provides scientific collection quality imagery in full-light and low-light situations. Also used to remotely control the MOUSE when it is operating out of sight. Images are transmitted to COVERT personnel and are made freely available to the public after a review. Images for public release are stored on the mass storage (MS) device of the MOUSE and are only released after analyst review to prevent sensitive data from leaving the system. This public release data must be retrieved from the Red (MS) device via the maintenance panel. Real-time video feed is sent to the MOUSE controller and supporting operations centers. EO/IR real-time feed is transmitted via SATCOM.

Temp/Humidity Subsystem

Readings are sent to COVERT in real-time and are made freely available to the public. This system delivers scientific collection quality temperature and humidity readings of the environment no less than every second while in operation. COVERT can maintain and acquire the health status of the Temp/Humidity Subsystem only. This subsystem requires a cooling fan to properly function, or it will discontinue operation. Temp/Humidity data is stored on the MS device.

SATCOM

The primary communication pathway to control MOUSE movement and transmit EO/IR data feed. The MOUSE can identify key objects by using an AI library loaded pre-mission.

Yellow Satellite Constellation Almanac Data

The MOUSE's navigation system leverages the satellite constellation almanac data set. The orbital position of each satellite, as well as the satellite health contained in the satellite constellation almanac, is leveraged by the MOUSE so that it has the most up-to-date information prior to and during the MOUSE missions.



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Global Positioning System (GPS)

Provides GPS coordinates via a wireless encrypted link to provide the MOUSE real-time geo-location data.

TRAP Docking Port (TDP)

The TDP provides the physical and logical connections to connect the MOUSE to any TRAP platform. It is the conduit for data transfer and power hookups, allowing for rapid charging of the MOUSE from the TRAP platform. The TDP is also a maintenance connection for system updates, troubleshooting, etc. when the MOUSE is in depot maintenance. Wired communication occurs for maintenance laptop connections, and wireless communication occurs over the MOUSE docking station of the TRAP. The TDP also allows the MOUSE to receive additional power from the TRAP and route power to the on-board power system of the MOUSE.

Mass Storage (MS) Device

The MOUSE employs a MS device in order to retain data on the platform. The MS device on the MOUSE is removable with the proper tools.