

## FREDI-2 Local Data Storage (LDS) Module

### FREDI-2 Tracker

The Mobile Ground Truth System (MGTS), also known as “FlexTrain,” tracks and monitors the movements of dismounted players, vehicles, or aircraft via a radio known as the FREDI-2. In addition to providing Time-Space-Position Information (TSPI) data, the FREDI-2 is designed to interface with MILES and capture real-time casualty assessment (RTCA) data. Tracking accuracy is between two and four meters in the horizontal direction and within 15 meters in the vertical direction.

The FREDI-2 is a 915 MHz ISM radio that broadcasts its position and status messages. The FREDI-2 communicates within the MGTS via a Time-Division Multiple Access (TDMA) radio protocol, wirelessly transmitting all collected data to the Exercise Control (ExCon) to be recorded and displayed in real-time using the **ORION** software. The data is organized and transmitted as a specific message or protocol data unit (PDU). Each radio has a specific time to transmit its PDU after hearing the master sync message. How often the FREDI-2 transmits a PDU to **ORION** to be recorded is related to the number of FREDI-2s active in the system; the more FREDI-2s in play, the longer each will wait to transmit. For example, if 500 FREDI-2s are active using the standard 4-net system, each FREDI-2 will transmit every 0.93 seconds; with 2,000 FREDI-2s, each will transmit every 3.75 seconds.

### Local Data Storage (LDS) Module

The Local Data Storage (LDS) Module is used in conjunction with the FREDI-2 player unit to record the PDU information regardless of transmission rate. The data captured is then reviewed after the event using **ORION**. This functionality is beneficial for events that anticipate jamming effects or difficult RF conditions.

The LDS is also a useful tool for events that require richer datasets, because the data captured by the LDS is faster than the data transmitted over the air (regardless of player count).

The LDS connects to the FREDI-2 by removing the dust cover and clipping the module to the front face of the FREDI-2. It communicates to the FREDI-2 via the Flex-

Train Inter-Modular Protocol (FIMP) port. The data is recorded onto an internal SD card. The LDS records the PDU information at 4 Hz.

Although the SD card can be removed, the primary download method is Wi-Fi via the LDS Collector application running on a ruggedized tablet running Microsoft Windows. The LDS Collector tablet connects up to 50 FREDI-2s at the same time within a 10m radius. Once LDS data is collected, it is uploaded into **ORION** for data packaging.

Ravenswood Solutions can merge the data captured by each LDS with the data captured by **ORION** via the FREDI-2 over-the-air (OTA) transmissions. This feature is available now for use with the rental version of the Mobile Ground Truth System.

### Accreditations

FlexTrain, categorized as Low, Low, Low for Confidentiality, Integrity and Availability (CIA) in accordance with the DoD Risk Management Framework (RMF), received its current Defense Information Assurance Certification & Accreditation Process (DIACAP) Connected Authorization to Operate (ATO) from the National Guard Bureau (NGB) authorizing Official (AO) Brigadier General Robert A. Moore, expiring February 1, 2020. Continuous authorization under the DoD RMF is expected by May 1, 2019.



The FlexTrain system utilizes Freewave transceivers that communicate in the 902–928 MHz frequency band. All radios have been approved by the MCEB and are assigned the J/F-12 license: J/F 12/10050 for use in CONUS (a note to holders will likely need to be requested from ASMO to enable OCONUS usage; a local frequency management office should be able to temporarily authorize using this band via waiver while that request is in progress). Further documentation can be provided upon request.

### For More Information:

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Local Data Storage (LDS)  
Module



LDS Module attached to  
FREDI-2

#### Dimensions:

- LDS imparts a 14.9% (0.280") thickness increase over the FREDI-2 with dust cover.
- FREDI-2 with LDS – 2.165"
- FREDI-2 with dust cover – 1.885"

#### Weight:

- LDS imparts a 5.3% (1.8 oz.) weight increase over the FREDI-2 with MBITR battery, dust cover, and jacket.
- FREDI-2 with MBITR, with dust cover, with jacket – 34.2 oz.
- LDS – 5.1 oz.
- Dust cover – 3.3 oz.