

Field Terminal Segment (FTS)

The Field Terminal Segment (FTS) is a Software product and a sub-segment of the Interface Data Processing Segment (IDPS). The field terminal hardware is the responsibility of data users and will be purchased, owned, operated, and maintained by DOC, Air Force, Army, Navy, Marine, national and international civil organizations. The FTS will allow users to receive and process the NPOESS continuous broadcast of sensed data via two frequencies with field terminals located on the surface. The High Rate Data (HRD) will be transmitted at X-band (7834 MHz) with a data rate of 20 Mbps. The Low Rate Data (LRD) will be transmitted at L-band (1707 MHz) with a data rate of

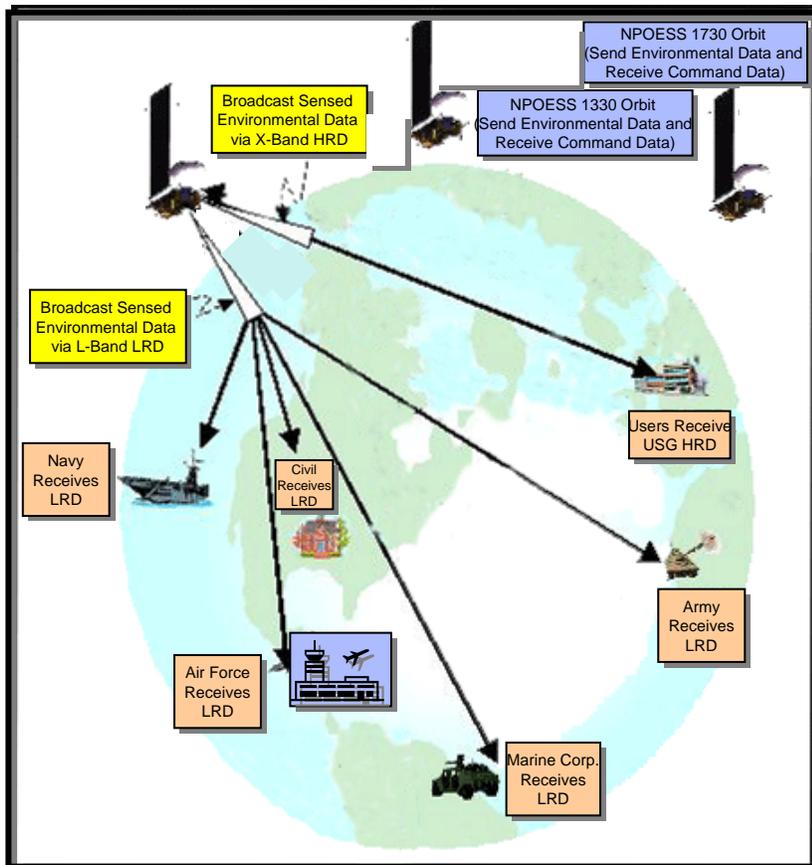
3.88 Mbps. Once the field terminal user receives the data, it is pre-processed to depacketize data. The raw data is sent into the NPOESS provided Field Terminal Software that processes the data into Raw Data Records (RDRs), Sensor Data Records (SDRs), Temperature Data Records (TDRs), and finally Environmental Data Records (EDRs). The EDR is the NPOESS product that can be passed to post-processing software inside the field terminal for value added processing. The point where the EDR passes to a post-processing application is the NPOESS/user interface.

HRD EDR Performance

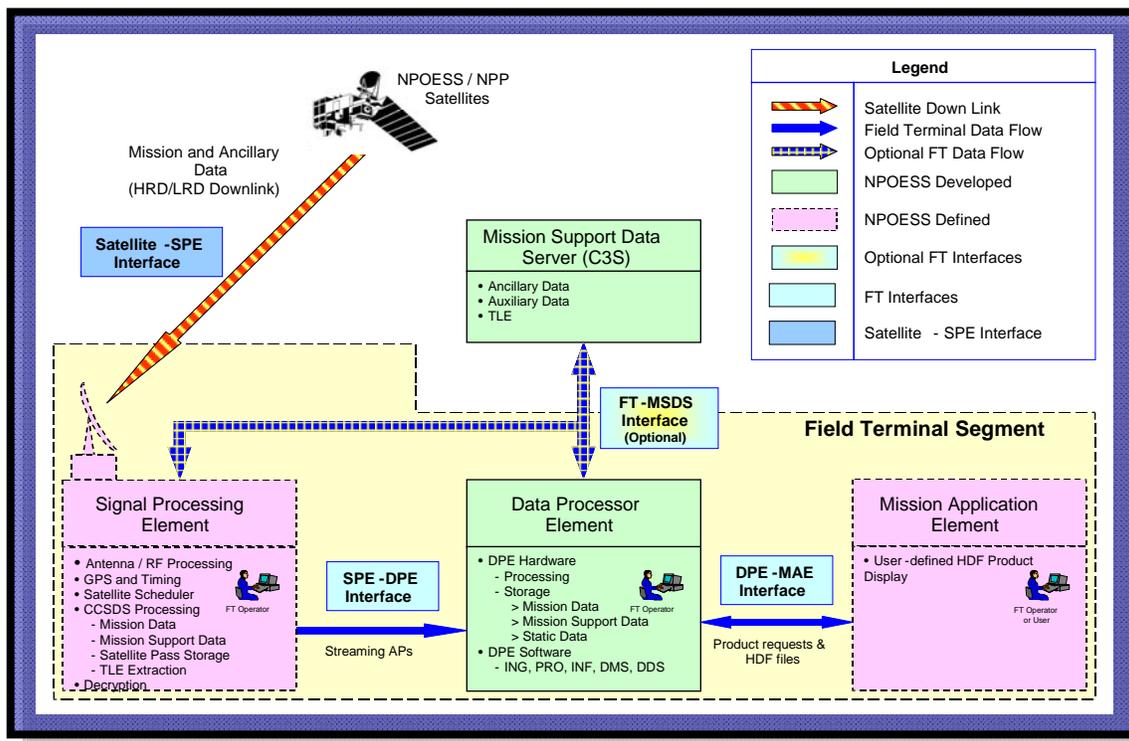
- > 99% of EDR performance attributes meet or exceed performance thresholds
- > Analysis shows latency requirements achievable with current COTS desktop workstations
- > The FTS software adapts to missing channel data or missing ancillary data and uses graceful degradation rules
- > Lossless RICE compression on VIIRS

LRD EDR Performance

- > Meets key users' needs: 0.8 km resolution imagery and programmable downlink
- > Produces the 8 high priority EDRs at or near LRD objective levels
- > Produces all 16 lower priority and 5 supporting EDR products
- > Designed to automatically recognize missing channels and ancillary data
- > Lossy JPEG2000 compression on selected APIDs



Direct Readout Interfaces



To assist the user community in developing field terminal hardware for the NPOESS era, the Integrated Program Office (IPO), in a Memorandum of Agreement with the users, agreed to develop the demonstration terminals for both the HRD and LRD links.

The minimum specifications required for these terminals and the processing software will be available to the field terminal equipment vendors.