

## Questions for Telemetry Front End Replacement

### Solicitation Number: INU-15-018

1. **External Bit Sync** - Is the minimum 1bps data rate a hard requirement? Having worked with WATR for over 25 years the lowest bit rate we have seen is single digit kbps. This can be a significant cost driver.  
A. No, 1bps is not a hard requirement.
2. **PCM Processor** – Is a FPGA based PCM processor a hard requirement or is a software based PCM with comparable or better performance and flexibility acceptable.  
A. Not a hard requirement, but the Dryden Aeronautical Test Range (DATR – formerly WATR) prefers a FPGA based PCM processor.
3. **PCM Processor** – Is there a desire or aversion to be able to host the PCM processor and potentially other traditional firmware based functions in a virtualized machine provided the performance is equal to or better than FPGA based systems?  
A. The DATR has no existing preference for or against virtualization of the PCM processor
4. **Auxiliary Data Processor(s)** – Is it desirable to host ADP functions and algorithms in virtualized environments potentially in the same physical space as the primary processing system?  
A. No
5. **Auxiliary Data Processor(s)** – Will the ADP be required to support legacy WATR algorithms written in FORTRAN such as “Thrust Deck?”  
A. No, FORTRAN support is no longer required.
6. **System Configuration** – Is IRIG 106-15 Chapter 9 TMATS used only configure the PCM Processor, or is TMATS expected to also configure the bit syncs and EUP?  
A. Yes, the TMATS files would be used to configure the PCM processor, the EU processor, and the bit synchronizers
7. **System Configuration** – Is CIMS compatibility required?  
A. No
8. **Archiving & Recording** – Is archiving in a standard format such as Chapter 10 or another format preferable?  
A. The DATR has no existing preference for Chapter 10 as an archiving format in the telemetry front-end
9. **File Playback** – Is any file playback capability required in the system?  
A. Yes, the telemetry front-end will need file playback capability
10. **IADS Functionality** – Is IADS expected to perform some of the EU and Auxiliary Data Processing?  
A. No, the DATR preference is to use the telemetry front-end to perform EU and auxiliary processing.
11. **IADS Connectivity** – Is connectivity to IADS via Chapter 10 packets acceptable or is another programmatic interface preferred?  
A. No, the DATR would consider any preexisting interface to the IADS the vendor might offer.
12. **Network Configuration** – Will this system have a dedicated and managed network and network infrastructure?  
A. Yes, the DATR telemetry front-ends operate within a dedicated network infrastructure.

13. **Redundancy** – Is redundancy required and is there a preferred architecture?
  - A. No, redundancy is not required within a single telemetry front-end system.
14. **Information Assurance** – What are the information assurance requirements beyond a NASA IT Security Management Plan? Will NIST/DoD STIG testing be required?
  - A. No additional IA test requirements are expected for the telemetry front end at this time.
15. **Physical Configuration** – Will the entire system be collocated and installed in a location area as is the current WATR configuration, or is distributed architecture anticipated with each front end installed with each control room?
  - A. Both architectures need to be supported.
16. **WAN Support** – Is it desirable to provide bi-directional connection capability to NASA WAN assets for support of programs similar to “Pad Abort” at remote NASA centers including WSMR, JSC and KSC?
  - A. No, WAN connectivity is not a DATR telemetry front end requirement.
17. **Modem Support** – Is it desirable for DATR to be able to provide commanding capability as well as telemetry support and command echo for unmanned assets including UAS/V’s, near space, and sub-orbital test articles?
  - A. No, command generation capability is not a DATR telemetry front-end requirement.
18. **FEC Support** – Is the system expected to support any forward error correction algorithms such as Reed Solomon, Viterbi, Turbo Code, or LDPC?
  - A. Yes
19. **Best Source Selection Support** – Is the system expected to provide best source selection functionality?
  - A. No, best source selection capability is not a DATR telemetry front-end requirement.
20. **Bit Error Rate Test Support** – Is the system expected to provide embedded BERT testing using PN or other NASA provided patterns?
  - A. No, BER test support is not a DATR telemetry front-end requirement.
21. **Compatibility With Legacy System** – is any level of compatibility with the existing WATR front ends required beyond TMATS import for configuration of the PCM Processor?
  - A. No, the DATR does not require backward compatibility
22. We need to know what type of chassis you require: Rack Mount or Portable. Please see our “LS-84” data sheets for examples.
  - A. The chassis requirement is 19” rack-mount.
23. Can we get copy of the requirements associated with NASA DATR Software Baseline.
  - A. No, the requirement would be for a vendor to define a configuration baseline for the software delivered to the DATR with a telemetry front-end.