

07/08/20

## **Telemetry Dynamic Simulator (TDSIM)**

### **WdAlg Function**

There are times when you just want to simulate data that just doesn't fit into a generic simulator. It's too complex or is a one of a kind, highly specialized function. The TDSim has user hooks to allow users to write their own application (or have us do it), and that application can interface with the TDSim application to process the data. It can also allow the use of a DLL to be called at the correct time to have some magical data manipulation occur. This adds a huge capability to the functionality of a 'generic' simulator.

See the Shared Memory Applications document for other ways to get data from your code to the TDSim application.

The WdAlg Function (word algorithm) allows your DLL to be called when the word in the major frame that contains your function needs to be called. Several functions are distributed with the TDSim system. The WdAlg function has a little more functionality in it than the shared memory type interfaces, in that it can control certain aspects of the application, including the transmitter controls, and even turning data on/off. There is nothing that says a WdAlg dll cannot talk to another application either.

One such WdAlg function distributed with the TDSim system is the WebCam.dll. Also distributed is the TDSim Webcam.exe. The external application talks to the WdAlg function, who in turn talks to the TDSim application, inserting the video into the PCM stream from the web camera.

### **Examples**

The following is a list of some of the WdAlg functions distributed with the TDSim system. Hopefully, it will get your brain moving a bit so you can see the type of functions that can be easily added to the 'generic' simulator. (You can read the help files associated with these for a more detailed explanation of their functionality.)

- AsciiFileReader – Reads an ASCII file and inserts the data as set by the commutation.
- BiaryFileReader – Reads a binary file and inserts the data.
- Counter – Counts (up or down) by x
- CrcInserter – Computes a CRC and inserts it
- EmbTimeIrigFormat – Converts the IRIG reader time to the format IAW IRIG 106
- EmbTimeLs50Format – Converts the IRIG reader time to the format the same as the LS50 decom uses.

- JoystickReader – Reads the data from up to 2 joysticks and their buttons.
- PrnGen\_Wdalg – Generates a PRN pattern
- RestValueStepper – Sets a value, remains at that value, goes on to the next value.
- WebCam – Reads the data from the web camera on the PC.

WdAlg Functions are simply DLLs. The architect has to follow a very simple API, but what he does in the DLL other than that is up to him (and/or you). Let your imagination soar. (For some of you folks out there, you'll have to because you're trying to simulate some weird thing your encoder architect dreamed up.)