State Machine – GUS Standard Interface – Comments

Normal Operation

Under normal circumstances the device has to be opened and enters the “OPEN” 0 state. The “GUS_PrepareTest” will initiate two actions: the device has to load the project test file, which has been predefined in the device (typically all test parameters, the test profile and the run schedule that define a test) and then the device has to execute the self-check and pre-test.

After the pre-test has been finished successfully, the device will go to the “READY” 1 state.

The “GUS_StartTest” will start the test itself. During the execution of the test, the device will remain in the “RUNNING” 3 state. The test can be paused, resumed or stopped by means of the “GUS_PauseTest”, “GUS_ContinueTest” and the “GUS_StopTest” respectively.

When the test has been finished or has been stopped, the state changes to “FINISHED” 4.

GUS-StopTest

At any moment in time, one must be able to give a STOP command. The outcome of the STOP command depends on the actual state. Basically, when a test is running (in READY, RUNNING or PAUSE) and a STOP command is given, the state will change to FINISHED. The reason being, that the project file of the test is still open. The “PreTest Running” state is a special case. In fact, when the open device receives the command “GUS_PrepareTest”, two actions are initiated:

- First the device has to open the project test file.
- Then the device has to start and to run the self-check/pre-test.

The state “PreTest Running” does not specify exactly in which action the device is involved (loading the project file or executing the self-check/pre-test?). A STOP command will cause the device to go into the error state. When the self-check/pre-test was running and the device receives the STOP command, it will go into the ERROR state -1. Then the project file is still loaded / open.

In the other case, where the device was opening the project file (trying to load the project test file), and the device receives a STOP command, it will stop loading the project file and will change to the “ProjLoadFailed” state. The project test file has not been opened and the next STOP command will bring the device back to the “Device Open” state.

The above is also valid in the normal operating mode. When the project test file is corrupt, the file is not available or the path is not OK, the device will move to the “ProjLoadFailed” -2 state. In the event the self-check/pre-test fails, the device will go to the “Error” state -1. In the latter case the project test file is still open.

State 4 : “FINISHED”

The device comes to the state “FINISHED” after the test has been finished under normal operating conditions, without passing through any error state. Or the device will come to the “FINISHED” state after the “GUS_StopTest” command, coming from the “ERROR” -1 state, the “READY” 1 state, the “RUNNING” 3 state or the “PAUSE” 5 state. In the “FINISHED” 4 state the project test file is still

loaded in the device. The state of the project test file is still open! From the “FINISHED” 4 state one can close the file and the device returns to the “OPEN” 0 state. Or one can start the test again by means of the “GUS_StartTest” command. In fact, then the device will run through the self-check/pre-test again, which is the normal behavior of a vibration control system e.g.

Wrong Command

In the event a wrong command is given to a device, the device will remain in the actual state.
e.g. when the device is in the “READY” 1 state and the command “GUS_PauseTest” is given, the device must respond with an error: “ERR” instead of “ACK”.
The device remains in the actual state “READY” 1.