Electric drops
User's Guide

Elecdrops Class

Revision: - Author: goudard
Implemented in C++ - CVS repository: ESRF

Introduction:

This server reads TACO vdsp71_cs server and format data for Electric drops client.

Class Inheritance:

- Tango::Device_4Impl
  - Elecdrops

Properties:

Device Properties		
Property name	**Property type**	**Description**
Vdsp71Device	Tango::DEV_STRING	TACO VDSP71 device to be read.
Filename	Tango::DEV_STRING	File name where drop data are stored.
HdbDevice	Tango::DEV_STRING	Name of the hdb device used to store drops in HDB
Dft_Averaging	Tango::DEV_SHORT	number of harmonic spectrums for averaging

Device Properties Default Values:

Property Name	**Default Values**
Vdsp71Device	No default value
Filename	/var/tmp/ds.log/drop.txt
HdbDevice	sys/d-drops/process
Dft_Averaging	3

There is no Class properties.

States:

States	
Names	**Descriptions**
ON	Everything is ok.
FAULT	Three possibilites : * Hardware problem * DSP problem. * Taco device problem.
UNKNOWN	

Attributes:

Scalar Attributes

Attribute name	Data Type	R/W Type	Expert
DspTime: Read and set DSP time	DEV_LONG	READ_WRITE	No
Nb_new_drop	DEV_SHORT	READ	No
Total_drop	DEV_SHORT	READ	No
MaxRMSThreshold	DEV_SHORT	READ	No
MinRMSThreshold	DEV_SHORT	READ	No
MaxBackRMSThreshold	DEV_SHORT	READ	Yes
MinBackRMSThreshold	DEV_SHORT	READ	Yes
MaxPeriodThreshold	DEV_SHORT	READ	No
MinPeriodThreshold	DEV_SHORT	READ	No
MaxBackPeriodThreshold	DEV_SHORT	READ	Yes
MinBackPeriodThreshold	DEV_SHORT	READ	Yes
MissedZeroCrossingPH1	DEV_SHORT	READ	Yes
MissedZeroCrossingPH2	DEV_SHORT	READ	Yes
MissedZeroCrossingPH3	DEV_SHORT	READ	Yes
THD: Total Harmonic Distortion of the tree phases DFT quadratic average.	DEV_DOUBLE	READ	No

Spectrum Attributes			
Attribute name	**Data Type**	**X Data Length**	**Expert**
RMSLive: Read the three phases RMS live values in DSP.	DEV_SHORT	3	No
FREQLive: Read the three phases frequencies live values in DSP.	DEV_SHORT	3	No
MEANLive: Read the three phases mean live values in DSP.	DEV_SHORT	3	No
AnalogicValuesPhase1: Read the analogic values from the DSP DPRAM.	DEV_SHORT	250	No
AnalogicValuesPhase2: Read the analogic values from the DSP DPRAM.	DEV_SHORT	250	No
AnalogicValuesPhase3: Read the analogic values from the DSP DPRAM.	DEV_SHORT	250	No
ReadAnalogicValues	DEV_SHORT	4000	No
Dft	DEV_DOUBLE	1000	No
Dft_Phase1	DEV_DOUBLE	500	No
Dft_Phase2	DEV_DOUBLE	500	No
Dft_Phase3	DEV_DOUBLE	500	No
DftRawDataPh1	DEV_SHORT	1200	No
DftRawDataPh2	DEV_SHORT	1200	No
DftRawDataPh3	DEV_SHORT	1200	No
DftAveraging	DEV_DOUBLE	500	No

Commands:

More Details on commands....

Device Commands for Operator Level		
Command name	**Argument In**	**Argument Out**
Init	DEV_VOID	DEV_VOID
State	DEV_VOID	DEV_STATE
Status	DEV_VOID	CONST_DEV_STRING
ReadValues	DEVVAR_SHORTARRAY	DEVVAR_SHORTARRAY
SetTime	DEV_VOID	DEV_VOID
GetDSPTime	DEV_VOID	DEV_LONG
ReadDrops	DEV_SHORT	DEVVAR_SHORTARRAY
SetThresholds	DEVVAR_SHORTARRAY	DEV_VOID
InitDPRAM	DEV_VOID	DEV_VOID
ReadAnalogicMode	DEV_VOID	DEV_SHORT
ReadAnalogic	DEVVAR_SHORTARRAY	DEVVAR_SHORTARRAY
Reset_nb_new_drop	DEV_VOID	DEV_VOID

1 - Init

- **Description:** This commands re-initialise a device keeping the same network connection.
  After an Init command executed on a device, it is not necessary for client to re-connect to the device.
  This command first calls the device *delete_device()* method and then execute its *init_device()* method.
  For C++ device server, all the memory allocated in the *nit_device()* method must be freed in the *delete_device()* method.
  The language device desctructor automatically calls the *delete_device()* method.

- **Argin:**
  DEV_VOID : none.

- **Argout:**
  DEV_VOID : none.

- **Command allowed for:**
  - Tango::ON
  - Tango::FAULT
  - Tango::UNKNOWN

2 - State

- **Description:** This command gets the device state (stored in its *device_state* data member) and returns it to the caller.

- **Argin:**
  DEV_VOID : none.

- **Argout:**
  DEV_STATE : State Code

- **Command allowed for:**
  - Tango::ON
  - Tango::FAULT
  - Tango::UNKNOWN

3 - Status

- **Description:** This command gets the device status (stored in its *device_status* data member) and returns it to the caller.

- **Argin:**
  DEV_VOID : none.

- **Argout:**
  CONST_DEV_STRING : Status description

- **Command allowed for:**
  - Tango::ON
  - Tango::FAULT
  - Tango::UNKNOWN

4 - ReadValues

- **Description:** Return values read from Vdsp71 TACO device.

- **Argin:**
  DEVVAR_SHORTARRAY : Address offset and number of data to be read.

- **Argout:**
  DEVVAR_SHORTARRAY : Values read on Vdsp71.

- **Command allowed for:**
  - Tango::ON
  - Tango::FAULT
  - Tango::UNKNOWN

5 - SetTime

- **Description:** Formatting data to set DSP Date and Time through Vdsp71_cs TACO server.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::FAULT
  - Tango::UNKNOWN

6 - GetDSPTime

- **Description:** Return DSP date and time. It is the number of seconds since 1st january 1970.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_LONG : DSP time read from Dual Port RAM.

- **Command allowed for:**
  - Tango::ON
  - Tango::FAULT
  - Tango::UNKNOWN

7 - ReadDrops

- **Description:** Read drops parameters values.

- **Argin:**
  DEV_SHORT : Number of drops to be read.

- **Argout:**
  DEVVAR_SHORTARRAY : Drops values read.

- **Command allowed for:**
  - Tango::ON
  - Tango::FAULT
  - Tango::UNKNOWN

8 - SetThresholds

- **Description:** Set respectively the min and max values for RMS and FREQ drop thresholds.

- **Argin:**
  DEVVAR_SHORTARRAY : RMS and FREQ values thresholds

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::FAULT
  - Tango::UNKNOWN

9 - InitDPRAM

- **Description:** Initialize the DSP Dual Port RAM. After that, all old data will lost.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::FAULT
  - Tango::UNKNOWN

10 - ReadAnalogicMode

- **Description:** Read the analogic output values mode setting by the SetAnalogicMode command. 1 means that the analogic values in the DPRAM is the 3 phase live values. 0 means that the analogic values in the DPRAM is the last drop values.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_SHORT : Read the analogic output values mode. 0 = 3 phase live. 1 = last drop (10 periods). 2 = last drop (2 periods).

- **Command allowed for:**
  - Tango::ON

- Tango::FAULT
- Tango::UNKNOWN

11 - ReadAnalogic

- **Description:**

- **Argin:**
  DEVVAR_SHORTARRAY :

- **Argout:**
  DEVVAR_SHORTARRAY :

- **Command allowed for:**
  - Tango::ON
  - Tango::FAULT
  - Tango::UNKNOWN

12 - Reset_nb_new_drop

- **Description:**

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::FAULT
  - Tango::UNKNOWN