



Applied Systems Engineering, Inc.

Technical Note #35 IEC Parameter Handling

Technical Note 35: IEC Parameter Processing

1. Introduction	3
2. Running 2.x DAC with version 3.0 GPT.....	Error! Bookmark not defined.
2.1 Building a 2.x version.....	Error! Bookmark not defined.
2.2 Defines.....	Error! Bookmark not defined.
2.3 GPT Data Types	Error! Bookmark not defined.
2.4 Copying version 3.0 files.....	Error! Bookmark not defined.
2.5 Upgrading to COMM version 3.0.....	Error! Bookmark not defined.
2.5.1 Migrating ReadComm	Error! Bookmark not defined.
2.5.2 Migrating WriteComm	Error! Bookmark not defined.
2.5.3 Supporting ControlComm	Error! Bookmark not defined.
2.6 Upgrading to DAC version 3.0.....	Error! Bookmark not defined.

1. Introduction

This document describes how parameters are handled by the IECPT. Parameters are configured in IECCFG.C like any other IEC object. The following illustrates the parameter configuration in the shipped IECCFG.C:

```
USER(IEC_CLASS_GENERAL, C12, 0, USER_IEC_PARAMETER_NORMALIZED ),  
USER(IEC_CLASS_GENERAL, C12, 0, USER_IEC_PARAMETER_SCALED ),  
USER(IEC_CLASS_GENERAL, C12, 0, USER_IEC_PARAMETER_FLOAT ),
```

The flag IEC_CLASS_GENERAL in the configuration indicates that the parameter will be read by the GPT and returned as part of a general interrogation. Removing the flag as illustrated in the following entry prevents parameters from being returned as part of a general interrogation.

```
USER( 0, C12, 0, USER_IEC_PARAMETER_SCALED ),
```

The above entry indicates that parameter data will not be read by the GPT and returned as class 2 data following the activation of a general interrogation. The user must specify the number of parameter variables supported. This is done in the shipped IECCFG.C with the following entry.

```
POINTS( USER_IEC_PARAMETER_SCALED, 10, LOCAL_CFGOPT_EVENT_SIZE )
```

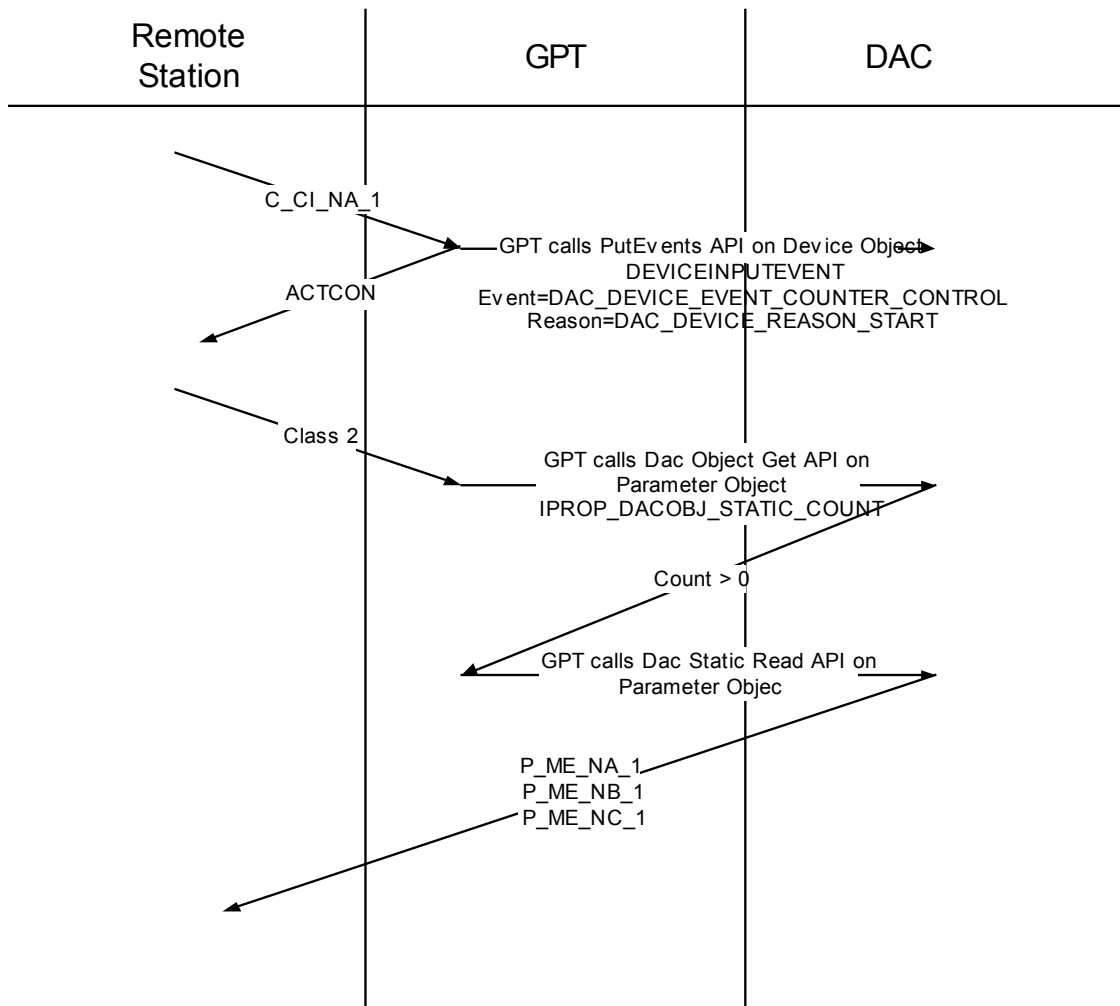
The above entry indicates that the user supports 10 scaled parameter variables.

2. Parameter Processing

The following sections describe how parameter requests are processed by the IECPT.

2.1 General Interrogation

When a G.I. is received by the IECPT all parameter will be returned as part of the interrogation if the IEC_CLASS_GENERAL flag is set for the parameter entries in the IECOBJECTS table. If the flag is set the IECPT will query the parameter objects to determine if the user supports parameter variables. The IECPT determines parameter counts by requesting the DAC Property IPROP_DACOBJ_STATIC_COUNT for each of the IEC parameter objects USER_IEC_PARAMATER_NORMALIZED, USER_IEC_PARAMETER_SCALED, and USER_IEC_PARAMETER_FLOAT. If the counts are non-zero the parameter data is returned as part of the interrogation. The following figure illustrates this processing:

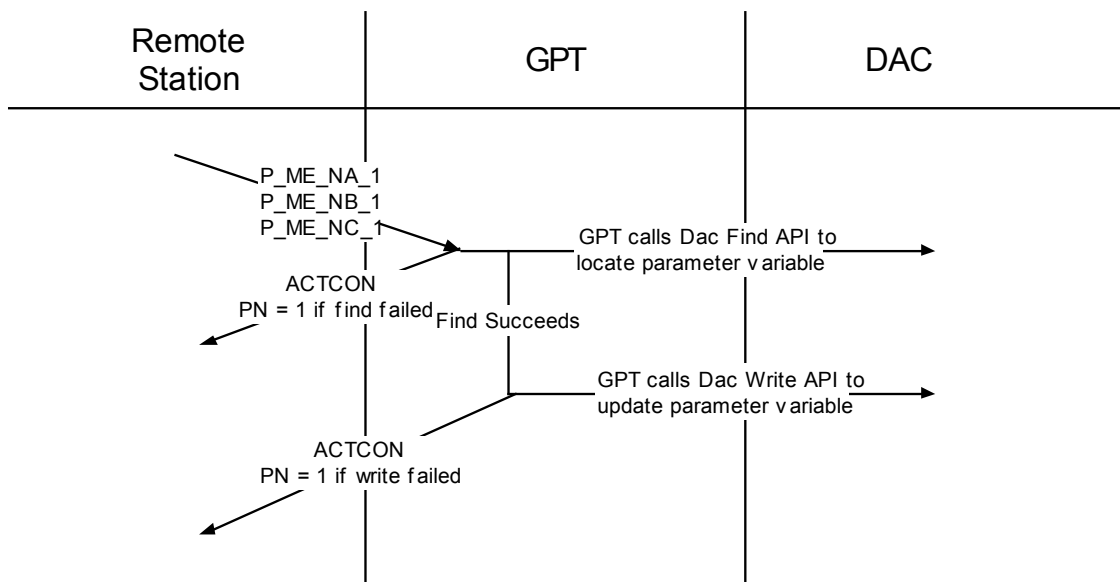


2.2 Parameter Updates

Parameter writes are also in the control direction. When a request is received to write a parameter the IECPT parses the ASDU and process the information as follows:

- **Object Information Address.** The IECPT uses the Object Information Address in the ASDU to locate the parameter variable. Calling the DAC Find API with the Object Information Address does this.
- **Parameter Data.** If the DAC find locates the parameter variable the parameter data in the ASDU is store in a PARAMETER data structure. This data is written to the user using the DAC Write API.

The following figure illustrates how parameters writes are processed.



Parameter Activation

After parameters have been updated the remote station can activate or deactivate the new parameter data. The parameter activation request is passed on to DAC as a Event Write on the device object. The following figure illustrates this:

