

# IEEE P1687 PDL

## •Level 0:

- **icomment** <string>
- **ireset**
- **iwrite** <TDR\_bit|UCreg|port|pin> <value>
  - lwrite reg|port|pin <name> <value>
  - lwrite [pin] <name> <value> # where name is reg|port if [pin] is omitted
  - lwrite pin::<name>|<name> <value> # where pin:: is used only for device-level package pins
- **iread** <TDR\_bit|UCreg|port|pin> <value>
- **iapply**
- **irun\_loop** tck | sck <int>
  
- **Maybe not needed for our purposes:**
- **iscope** [pathRelToModule]
- **iscan** <scanPort> <length> -si <siData> -so <soData>

```
"INIT_DATA[1000] (INIT_SETUP)," & -- 1000 bit long INIT_DATA TDR  
"INIT_STATUS[500] (INIT_RUN)," & -- 500 bit long INIT_STATUS TDR
```

-- BSDL extensions to describe register with more granularity

attribute REGISTER\_NAME of exinit : entity is

```
"IO1[10] (INIT_DATA[110,101]),"&  
"IO2[10] (INIT_DATA[210,201]),"&  
"status1[1] (INIT_STATUS[100])";
```

-- format register/bus:MNEMONIC (bit pattern, data, data)

attribute TDI\_MNEMONIC of exinit : entity is

```
"IO1:off (0000000000)," &  
"IO1:2P5 (0000000100)," &  
"IO1:PCIe(1100000100)," &  
"IO1:3P3 (0000000011)," &  
"IO2:off (0000000000)," &  
"IO2:2P5 (0000000100)," &  
"IO2:PCIe(1100000100)," &  
"IO2:3P3 (0000000011)";
```

attribute TDO\_MNEMONIC of exinit : entity is

```
"status1:fail(1)," &  
"status1:pass(0)";
```



## IEEE P1687 examples

```
iComment "SVF like setting of register"  
# clear of init register  
iWrite INIT_REG 0  
# use of user defined sub registers  
iWrite voltage5555 0x555  
# scan the data to the target  
iApply  
iWrite voltage1 0b11011110011  
iApply  
# use of mnemonic rather than number  
  
iWrite voltage1 PCIe  
iWrite voltage2 2P5  
iscan 0x15CA  
iApply  
iRead INIT_STATUS 0x01
```







IO2 is OFF, preparing to set to PCIe

The screenshot shows a software interface with a table of parameters and a code editor. The table has columns for parameter names, values, and other settings. The 'IO2 (10)' row is highlighted with a black box, and its value is 'OFF'. A mouse cursor is pointing at the 'OFF' value. To the right, a code editor window is open, showing the following code:

```
# assign value
iScope U1
iComment "set IO2 to PCIe"
iWrite IO2 PCIE
iApply
```

After iWrite, PCIe is now displayed  
iApply will send it to the target

UC_NEG_I(1)	1	0		
Q_C(1)	1	0		
1 CLK_I(1)	0	0		
IO1(10)	P5	000	UX	
IO2(10)	PCIE	000	UX	
STATUS1(1)	0	PASS	PAS	

  

```
Script and SVF Editor - intdemo.tcl
# assign value
iScope U1
iComment "set IO2 to PCIe"
iWrite IO2 PCIe
iApply
```



