

To: INCITS T10 Committee

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Subject: ADC: FC Descriptor (ADC Device Specific Mode Page)

In the ADI teleconference held in August, 2002 there was an action item to create a proposal for modifying the Fibre Channel Descriptor of the Service Delivery Port descriptor sub-page described in 02-253r1 to more clearly specify the use and reporting of Hard Addressing.

### 2.2.5 Fibre Channel Descriptor

Table 1 describes the fields in the Fibre Channel Descriptor:

**TABLE 1. Fibre Channel Descriptor**

Bit Byte	7	6	5	4	3	2	1	0
4	P2P	TopLock	RHA	LIV	MPN		Reserved	PE
5	Reserved			SpdLock	SPEED			
6	Reserved							
7	Reserved	FC-AL LOOP ID						
8 - 15	PORT_NAME							

The PORT ENABLE (PE) bit is set to one to enable the port. When set to zero, the port will not be enabled its drivers onto the Fibre.

The MODIFY PORT NAME (MPN) field is used to modify and report modifications to the device's port name, as defined in Table 3

If the LOOP ID VALID (LIV) bit is set to one, the value in the FC-AL LOOP ID field indicates the loop ID that the port shall use to set the Hard AL\_PA to be used during a LIHA process when the RHA bit is set to one.

A REQUIRE HARD ADDRESS (RHA) bit of one indicates that a target attached to an arbitrated loop shall only attempt to obtain its hard address using the value in the FC-AL LOOP ID field during loop initialization. The target shall not attempt to obtain an address during the LISA phase of initialization (see FC-AL-2). If there is a conflict for the hard address selection during loop initialization or the target does not have a valid hard address available, the target shall enter the nonparticipating state. If the target detects loop initialization while in the nonparticipating state, the target shall again attempt to get its hard address. If the hard address has not changed from the address obtained in a previous successful loop initialization, the target shall attempt to obtain the address in the LIFA phase if a valid Fabric Login exists or LIPA phase of loop initialization. If the hard address has changed, the target shall attempt to obtain the new address in the LIHA phase.

When the RHA bit is set to zero, the target follows the normal initialization procedure, including the possibility of obtaining a soft address during the loop initialization process.

Targets not attached to an arbitrated loop shall ignore the RHA bit.

The POINT TO POINT (P2P) is set to one to indicate the port is configured to operate in point to point mode. When set to zero, the port is configured to operate in arbitrated loop mode.

The TOPOLOGY LOCK (TopLock) bit is set to one to force the port to only operate in the mode selected by the P2P bit. When set to zero, the port may negotiate the topology and select the appropriate one. When this bit is set to 0 on a MODE SELECT command, the P2P bit is ignored.

The SPEED field indicates the bit rate that the port is configured to operate in. The valid values can be found in Table 2:

**TABLE 2. Speed Values**

Value	Speed
000b	1 GB/Sec
001b	2 GB/Sec
010b – 111b	Reserved

The SPEED LOCK (SpdLock) bit is set to one to force the port to only operate in the speed selected by the SPEED field. When set to zero, the port may negotiate the speed and select the appropriate one. When this bit is set to 0 on a MODE SELECT command, the SPEED field is ignored.

The FC-AL LOOP ID field contains the Loop ID that shall be converted to a FC\_PA value per the table in FC-AL-2:

**TABLE 3. Modify Port Name**

MPN	MODE SENSE	MODE SELECT
00b	The value in the PORT_NAME field is the manufacturer assigned port name.	Do not modify the port's world wide name. The PORT_NAME field shall be ignored.
01b	The value in the PORT_NAME field has been modified from the manufacturer's assigned value.	Do not modify the port's world wide name. The PORT_NAME field shall be ignored.
10b	Invalid value for a MODE SENSE.	Set the port's world wide name to the manufacturer's default value. The value in the PORT_NAME field shall be ignored.
11b	Invalid value for a MODE SENSE.	Set the port's world wide name to the value in the PORT_NAME field.