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To: T10 CAP Working Group  
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Subject: UAS Clause 4 (Model)

Table 1 —

Revision	Date	Description
0	14-Jul-2008	Initial Revision
1	15-Jul-2008	Added clarification on operation during data transfers

## 1 Related documents

UASr1, USB Attached SCSI revision 1  
USB-2, Universal Serial Bus Revision 2.0

## 2 Introduction

This proposal defines the model clause for UAS. The model clause describes to 4 pipe configuration for USB 2 and

## 3 Proposed additions to UAS

The following text replaces clause 4 of UAS

## 4 Model

### 4.1 USB

#### 4.1.1 Overview

USB devices implementing this standard shall support full or high speed operation as defined by the USB-20 specification. The minimum configuration for a UAS target is one Control pipe, two Bulk-in pipes, and two Bulk-out pipes. UAS targets shall only support a single initiator. Figure 1 describes the relationships of the pipes in a UAS target.

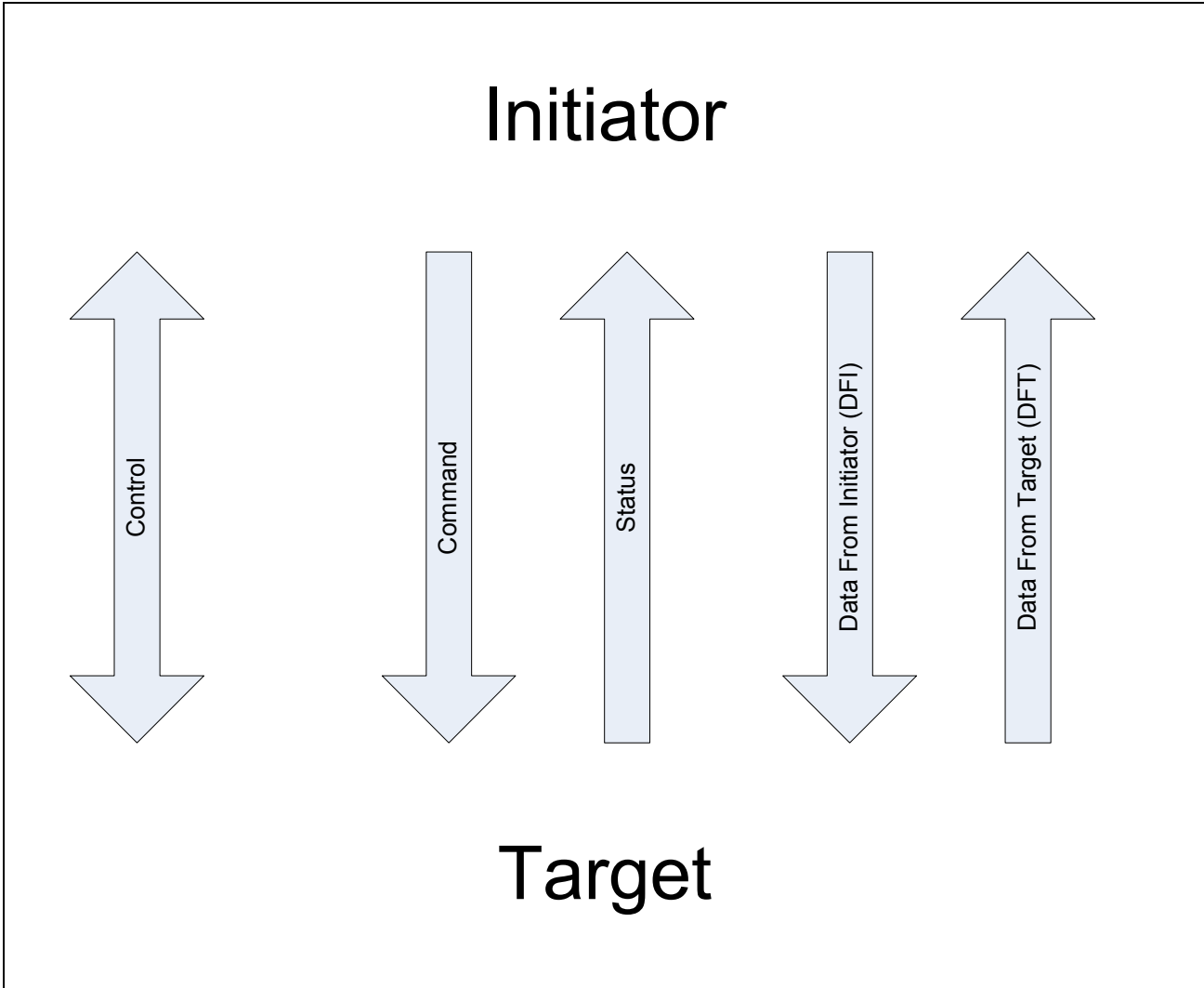


Figure 1 — USB Model

The Control pipe is a required by USB-20, and is not used by this standard.

The target receives Information Units (IUs) from the initiator using the Command pipe and responds with IUs using the status pipe.

The Data From Initiator and Data From Device pipes are for transferring data between the initiator and target.

#### 4.1.2 Data Transfers

The five pipe model described in 4.1.1xxx enables the USB device to process commands and return status during data transfers. If the target is transferring data on the DFI or DFT pipes, it shall also be capable of processing Command IUs or Task Management IUs. If the target's queue is full, the shall return a Response IU using the Status pipe. The Response IU may be returned while data is transferred on the DFI or DFT pipes.

Once the target returns a Read Ready IU or a Write Ready IU on the status pipe, it shall be ready to send or receive all the data for the indicated request. When the last byte of data is transferred, the target shall return a Status IU on the Status pipe to indicate command completion. When the command is complete, the associated DFI or DFT pipe is may be used to transfer data for another command.