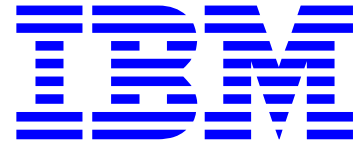


To: INCITS Technical Committee T10  
From: Kevin Butt  
Date: Wednesday, October 08, 2008 1:23 pm  
Document: T10/08-407r1 — iADT: ADT Port State Machine



## Revisions

- 08-407r0 (07 October 2008) Initial revision
- 08-407r1 (08 October 2008) Incorporated comments from ADI phone conference and added transition from AP1:Listening to AP0:Not Connected. Added notes to point out where items may need to be added.

## Introduction

The more time spent discussing the iADT proposal the more apparent it becomes that understanding what happens in response to each Service Request and when each Service Indication is received depends on what state the ADT port is in. To date, there is no ADT Port connection state machine.

This proposal attempts to define such a state machine. When this definition is agreed to then discussing the Service Requests and Service Indications will be easier because we will have the basis needed for that discussion. At a minimum, this effort needs to occur for those discussions. Furthermore IBM believes that the standard that has iADT included also needs to have the state machine included in order for people to understand it.

## Proposal

### 1.1 iADT state machines

#### 1.1.1 ADT Port Connection state machine

##### 1.1.1.1 ADT Port Connection state machine overview

The ADT Port Connection state machine is used to manage the connection process. The states are as follows:

- a) AP0:Not Connected;
- b) AP1:Listening;
- c) AP2:Connecting;
- d) AP3:Connected; and
- e) AP4:Disconnecting;

This state machine shall start in the AP0:Not Connected state after a hard reset event.

Figure 1 shows the ADT Port Connection state machine. The following subclauses describe the transitions and the actions taken in each state.

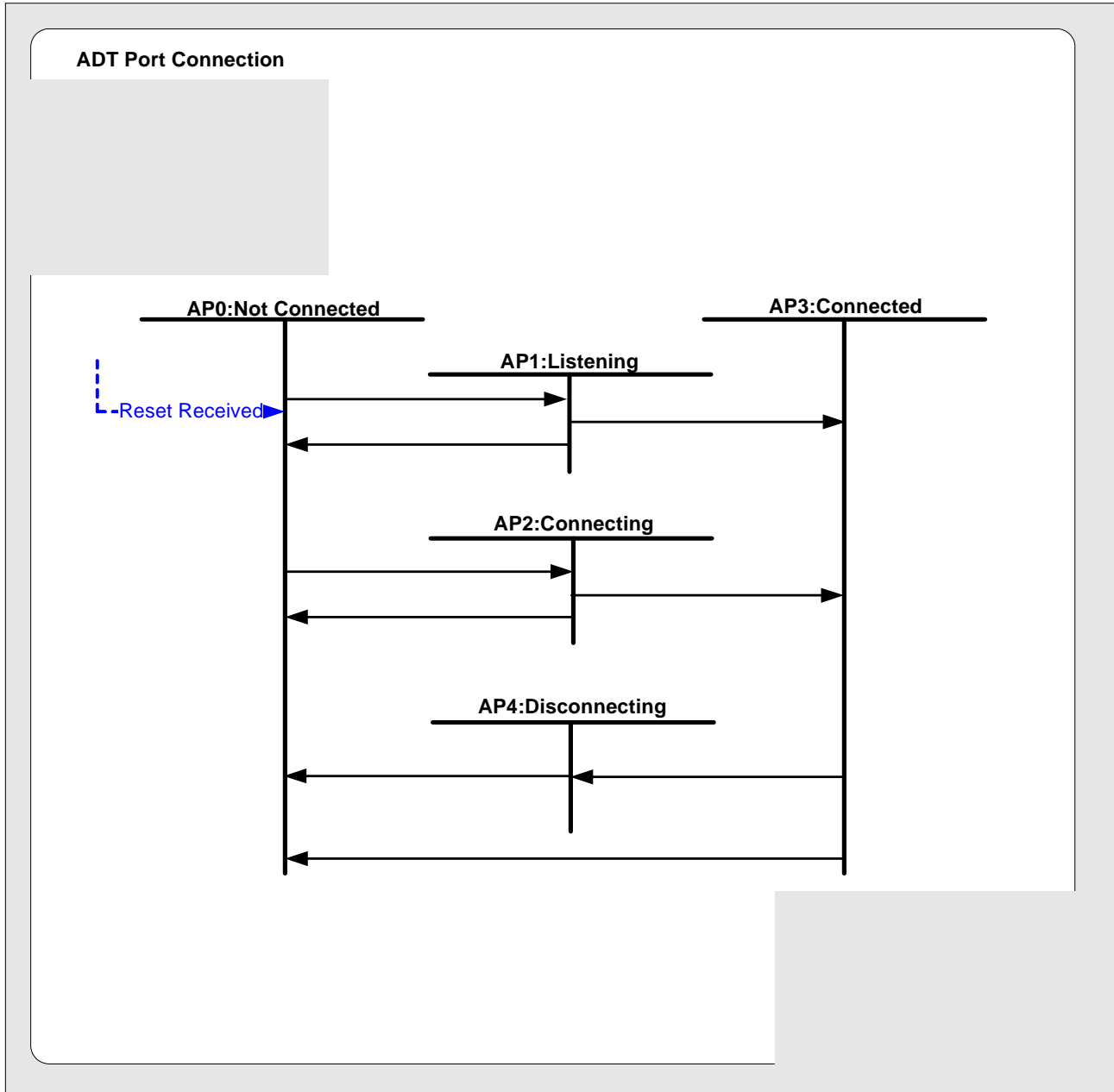


Figure 1 — ADT Port Connection State Diagram

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Editors Note 1 - KDB: I will use “[” and “]” to surround text that describes the intent but that is not necessarily appropriate for the standard.

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### 1.1.1.2 AP0:Not Connected state

#### 1.1.1.2.1 State description

The AP0:Not Connected state waits for the ADT Port Connection state machine to send a Listen Service Request or Connect Service Request.

While in the AP0:Not Connected state,

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Editors Note 2 - KDB: Need to describe what is done in this state.

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Editors Note 3 - KDB: Need to describe what is done on transition into this state

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#### **1.1.1.2.2 Transition AP0:Not Connected to AP1:Listening**

The ADT Port Connection state machine shall transition from AP0:Not Connected to AP1:Listening when the port sends Listen Service Request.

#### **1.1.1.2.3 Transition AP0:Not Connected to AP2:Connecting**

The ADT Port Connection state machine shall transition from AP0:Not Connected to AP2:Connecting when the port sends Connect Service Request.

#### **1.1.1.3 AP1:Listening state**

##### **1.1.1.3.1 State description**

When the ADT Port Connection state machine enters the AP1:Listening state the port shall [cause a listen() socket function call to be sent from the ADT interconnect port].

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Editors Note 4 - KDB: Need to describe what is done in this state.

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Editors Note 5 - KDB: Need to describe what is done on transition into this state

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##### **1.1.1.3.2 Transition AP1:Listening to AP3:Connected**

A ADT Port Connection state machine in the AP1:Listening state shall transition to the AP3:Connected state when it receives a Connected Service Indication.

##### **1.1.1.3.3 Transition AP1:Listening to AP0:Not Connected**

A port in the AP1:Listening state shall transition to the AP0:Not Connected state when it receives a Disconnected Service Indication.

#### **1.1.1.4 AP2:Connecting state**

##### **1.1.1.4.1 State description**

When the ADT Port Connection state machine enters the AP2:Connecting state it shall [cause a connect() socket function call to be sent from the ADT interconnect port].

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Editors Note 6 - KDB: Need to describe what is done in this state.

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Editors Note 7 - KDB: Need to describe what is done on transition into this state

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#### 1.1.1.4.2 Transition AP2:Connecting to AP0:Not Connected

A ADT Port Connection state machine in the AP2:Connecting state shall transition to the AP0:Not Connected state when it receives a Disconnected Service Indication.

#### 1.1.1.4.3 Transition AP2:Connecting to AP3:Connected

A ADT Port Connection state machine in the AP2:Connecting state shall transition to the AP3:Connected state when the port receives a Connected Service Indication.

#### 1.1.1.5 AP3:Connected state

##### 1.1.1.5.1 State description

When the ADT Port Connection state machine is in the AP3:Connected state the port is able to send and receive data through the ADT interconnect port.

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Editors Note 8 - KDB: Need to describe what is done in this state.

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Editors Note 9 - KDB: Need to describe what is done on transition into this state

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##### 1.1.1.5.2 Transition AP3:Connected to AP0:Not Connected

A port in the AP3:Connected state shall transition to the AP0:Not Connected state when it receives a Disconnected Service Indication.

##### 1.1.1.5.3 Transition AP3:Connected to AP4:Disconnecting

A port in the AP3:Connected state shall transition to the AP4:Disconnecting state when it receives a Disconnect Service Request.

#### 1.1.1.6 AP4:Disconnecting state

##### 1.1.1.6.1 State description

When the ADT Port Connection state machine enters the AP4:Disconnecting state, it shall [cause that a shutdown() socket function call or a close() socket function call be sent from the ADT interconnect port].

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Editors Note 10 - KDB: Need to describe what is done in this state.

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Editors Note 11 - KDB: Need to describe what is done on transition into this state

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Editors Note 12 - KDB: There is a flushing issue to discuss here. Is the data all flushed or discarded or optional, or????

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##### 1.1.1.6.2 Transition AP4:Disconnecting to AP0:Not Connected

A port in the AP4:Disconnecting state shall transition to the AP0:Not Connected state when it receives a Disconnected Service Indication.