Knobs, Dials and Sliders

- or -

the Management Information Base

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Abstract: Al description of the structure and definition of the Management Information Base is presented in the format defined in ISO 10165-4, Guideline for the Definition of Managed Objects.

Action: Adopt motion the contents of this submission as partial definition of the MIB and place it in the draft standard.

1. Managment Information Definitions

1.1. MIB Summary

The following sections summarize the 802.11 Management Information Base (MIB). Each group, attribute, action and notification is listed. This summary is for information purposes only. If any errors exist, the formal definitions have precedence.

1.1.1.Station Management Attributes

1.1.1.1. agStation_Config_grp

aActing_as_AP_Status,
aAssociated_State,
aBeacon_Period,
aPower_Mgt_State,
aPower_Mgt_Capability;

1.1.1.2. agAuthentication_grp

aAuthentication_Algortihms,
aSelected_Authentication_Algorithm,
aAuthentication_Handshake_State,
aAuthentication_State,
aMin_Authentication_Required;

1.1.1.3. agPrivacy_grp

aPrivacy_Algortihms,
aSelected_Privacy_Algorithm,
aPrivacy_Handshake_State,
aPrivacy_State,
aMin_Privacy_Required;

1.1.1.4. Not Grouped

aStation_ID
aCurrent_BSS_ID
aCurrent_ESS_ID
aKnown_APs

1.1.2.MAC Attributes

1.1.2.1. agAddress_grp

aMAC_Address,
aGroup_Addresses;

1.1.2.2. agOperation_grp

aNAV,

aNAV_max,
aRate_Factor,
aHandshake_Overhead,
aSIFS,
aPIFS,
aDIFS,
aRTS_Threshold,
aSlot_Time,
aCW_max,
aCW_min,
aCTS_Time,
aACK_Time,
aRetry_max,
aMax_Frame_Length;

1.1.2.3. agCounters_grp

aTransmitted_Frame_Count,
aOctets_Transmitted_Count,
aMulticast_Transmitted_Frame_Count,
aBroadcast_Transmitted_Frame_Count,
aFailed_Count,
aCollision_Count,
aSingle_Collision_Count,
aMultiple_Collision_Count,
aReceived_Frame_Count,
aOctets_Received_Count,
aMulticast_Received_Count,
aBroadcast_Received_Count,
aError_Count,
aFCS_Error,Count,
aLength_Mismatch_Count,
aFrame_Too_Long_Count,
aTotal_Backoff_Time;

1.1.2.4. agStatus_grp

aMAC_Enable_Status,
aTransmit_Enable_Status,
aPromiscuous_Status;

1.1.2.5. Not Grouped

aManufacturer_ID
aProduct_ID

1.1.3.PHY Attributes

1.1.3.1. agConfig_grp

1.1.3.2. agOperation_grp

1.1.3.3. agError_Counters_grp

1.1.3.4. agBER_grp

1.1.3.5. agStatus_grp

1.1.4.ResourceTypeID Attributes

1.1.4.1. Not Grouped

aResourceTypeIDName
aResourceInfo

1.1.5. Actions

1.1.5.1. SMT Actions

acStation_init
acStation_reset

1.1.5.2. MAC Actions

acMAC_init
acMAC_reset

1.1.5.3. PHY Actions

acPHY_init
acPHY_reset

1.1.6. Notifications

1.1.6.1. SMT Notifications

nAssociate
nDissociate

1.1.6.2. MAC Notifications

nFrame_Error_Rate_Exceeded

1.1.6.3. PHY Notifications

nBER_Exceeded

1.2. Managed Object Class Templates

1.2.1.SMT Object Class

1.2.1.1. oSMT

```
SMT MANAGED OBJECT CLASS
DERIVED FROM "ISO/IEC 10165-2":top;
CHARACTERIZED BY
    pSMT_base                                   PACKAGE
        BEHAVIOUR
            bSMT_base BEHAVIOUR
                DEFINED AS "The SMT object class provides the necessary support at the station to
                manage the processes in the station such that the station may work cooperatively as a part
                of an 802.11 network.";
            ATTRIBUTES
                aStation_ID                         GET,
                aActing_as_AP_Status                GET,
                aCurrent_AP_MAC_Address             GET,
                aCurrent_BSS_ID                     GET,
                aCurrent_ESS_ID                     GET,
                aKnown_APs                          GET,
                aAuthentication_Algorithms          GET,
                aPrivacy_Algorithms                 GET,
                aSelected_Authentication_Algorithm  GET,
                aSelected_Privacy_Algorithm         GET,
                aAuthentication_Handshake_State     GET,
                aPrivacy_Handshake_State            GET,
                aAuthentication_State               GET,
                aPrivacy_State                      GET,
                aMin_Authentication_Required        GET,
                aMin_Privacy_Required               GET,
                aAssociated_State                   GET,
                aBeacon_Period                      GET-REPLACE,
                aPower_Mgt_State                    GET,
                aPower_Mgt_Capability               GET;
            ATTRIBUTE GROUPS
                agStation_Config_grp,
                agAuthentication_grp,
                agPrivacy_grp;
            ACTIONS
                acSMT_init,
                acSMT_reset;
            NOTIFICATIONS
                nAssociate,
                nDissociate;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) smt(0) };
```

1.2.2.MAC Object Class

1.2.2.1. oMAC

```
MAC MANAGED OBJECT CLASS
DERIVED FROM "ISO/IEC 10165-2":top;
```

```
CHARACTERIZED BY
    pMAC_base                                   PACKAGE
        BEHAVIOUR
            bMAC_base BEHAVIOUR
                DEFINED AS "The MAC object class provides the necessary support for the access
                control, generation and verification of frame check sequences, and proper delivery of
                valid data to upper layers.";
            ATTRIBUTES
                aMAC_Address                            GET,
                aGroup_Addresses                        GET-REPLACE,
                aPromiscuous_Status                     GET,
                aTransmitted_Frame_Count                GET-REPLACE,
                aOctets_Transmitted_Count               GET-REPLACE,
                aMulticast_Transmitted_Frame_Count      GET-REPLACE,
                aBroadcast_Frame_Count                  GET-REPLACE,
                aFailed_Count                           GET-REPLACE,
                aCollision_Count                        GET-REPLACE,
                aSingle_Collision_Count                 GET-REPLACE,
                aMultiple_Collision_Count               GET-REPLACE,
                aReceived_Frame_Count                   GET-REPLACE,
                aOctets_Received_Count                  GET-REPLACE,
                aMulticast_Received_Frame_Count         GET-REPLACE,
                aBroadcast_Received_Frame_Count         GET-REPLACE,
                aError_Count                            GET-REPLACE,
                aFCS_Error_Count                        GET-REPLACE,
                aLength_Mismatch_Count                  GET-REPLACE,
                aFrame_Too_Long_Count                   GET-REPLACE,
                aMAC_Enable_Status                      GET,
                aTransmit_Enable_Status                 GET,
                aNAV                                    GET,
                aNAV_max                                GET,
                aRate_Factor                            GET,
                aHandshake_Overhead                     GET,
                aSIFS                                   GET,
                aPIFS                                   GET,
                aDIFS                                   GET,
                aRTS_Threshold                          GET-REPLACE,
                aTotal_Backoff_Time                     GET-REPLACE,
                aSlot_Time                              GET,
                CW_max                                  GET-REPLACE,
                aCW_min                                 GET-REPLACE,
                aCTS_Time                               GET,
                aACK_Time                               GET,
                aRetry_max                              GET-REPLACE,
                aMax_Frame_Length                       GET,
                aManufacturer_ID                        GET,
                aProduct_ID                             GET;
            ATTRIBUTE GROUPS
                agCapabilities_grp,
                agConfig_grp,
                agAddress_grp,
                agOperation_grp,
                agCounters_grp,
```

```
            agFrame_Error_Condition_grp,
            agStatus_grp;
        ACTIONS
            acMAC_init,
            acMAC_reset;
        NOTIFICATIONS
            nFrame_Error_Rate_Exceeded;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) mac(1) };
```

1.2.3.PHY Object Class

1.2.3.1. oPHY

```
PHY MANAGED OBJECT CLASS
DERIVED FROM "ISO/IEC 10165-2":top;
CHARACTERIZED BY
    pPHY_base                                   PACKAGE
        BEHAVIOUR
            bPHY_base BEHAVIOUR
                DEFINED AS "The PHY object class provides the necessary support at the station to
                manage the physical layer.";
            ATTRIBUTES
                aPHY_Type                       GET,
                aPHY_Data_Rate                  GET,
                aChannel_Capability             GET,
                aCurrent_Channel                GET,
                aChannel_List                   GET,
                aDiversity_Capability           GET,
                aBER_Estimate                   GET,
                aPHY_Turnaround_Time            GET,
                aManufacturer_ID                GET,
                aProduct_ID                     GET;
            ATTRIBUTE GROUPS
                agConfig_grp,
                agOperation_grp,
                agBER_grp,
                agStatus_grp;
            ACTIONS
                acPHY_init,
                acPHY_reset;
            NOTIFICATIONS
                nBER_Exceeded;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) phy(2) };
```

1.2.4.Resource Type Object Class

1.2.4.1. oResourceTypeID

```
ResourceTypeID MANAGED OBJECT CLASS
DERIVED FROM IEEE802CommonDefinitions.oResourceTypeID;
CHARACTERIZED BY
    pResourceTypeID                             PACKAGE
            ATTRIBUTES
                aResourceTypeIDName             GET,
```

aResourceInfo GET;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) resourcetypeid(3) };

1.3. Attribute Group Templates

1.3.1.Station Management Attribute Group Templates

1.3.1.1. agStation_Config_grp

```
Station_Config_grp ATTRIBUTE GROUP
    GROUP ELEMENTS
        aActing_as_AP_Status,
        aAssociated_State,
        aBeacon_Period,
        aPower_Mgt_State,
        aPower_Mgt_Capability;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) smt(0) station_config_grp(0) };
```

1.3.1.2. agAuthentication_grp

```
Authentication_grp ATTRIBUTE GROUP
    GROUP ELEMENTS
        aAuthentication_Algortihms,
        aSelected_Authentication_Algorithm,
        aAuthentication_Handshake_State,
        aAuthentication_State,
        aMin_Authentication_Required;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) smt(0) authentication_grp(1) };
```

1.3.1.3. agPrivacy_grp

```
Privacy_grp ATTRIBUTE GROUP
    GROUP ELEMENTS
        aPrivacy_Algortihms,
        aSelected_Privacy_Algorithm,
        aPrivacy_Handshake_State,
        aPrivacy_State,
        aMin_Privacy_Required;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) smt(0) privacy_grp(2) };
```

1.3.2.MAC Attribute Group Templates

1.3.2.1. agAddress_grp

```
Address_grp ATTRIBUTE GROUP
    GROUP ELEMENTS
        aMAC_Address,
        aGroup_Addresses;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) mac(0) address_grp(0) };
```

1.3.2.2. agOperation_grp

```
Operation_grp ATTRIBUTE GROUP
    GROUP ELEMENTS
        aNAV,
        aNAV_max,
        aRate_Factor,
```

aHandshake_Overhead,
aSIFS,
aPIFS,
aDIFS,
aRTS_Threshold,
aSlot_Time,
aCW_max,
aCW_min,
aCTS_Time,
aACK_Time,
aRetry_max,
aMax_Frame_Length;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) mac(0) operation_grp(1) };

1.3.2.3. agCounters_grp

Counters_grp ATTRIBUTE GROUP
GROUP ELEMENTS
aTransmitted_Frame_Count,
aOctets_Transmitted_Count,
aMulticast_Transmitted_Frame_Count,
aBroadcast_Transmitted_Frame_Count,
aFailed_Count,
aCollision_Count,
aSingle_Collision_Count,
aMultiple_Collision_Count,
aReceived_Frame_Count,
aOctets_Received_Count,
aMulticast_Received_Count,
aBroadcast_Received_Count,
aError_Count,
aFCS_Error,Count,
aLength_Mismatch_Count,
aFrame_Too_Long_Count,
aTotal_Backoff_Time;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) mac(0) counters_grp(2) };

1.3.2.4. agStatus_grp

Status_grp ATTRIBUTE GROUP
GROUP ELEMENTS
aMAC_Enable_Status,
aTransmit_Enable_Status,
aPromiscuous_Status;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) mac(0) status_grp(3) };

1.3.3. PHY Attribute Group Templates

1.3.3.1. agConfig_grp

Config_grp ATTRIBUTE GROUP
GROUP ELEMENTS
a;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) phy(0) config_grp(0) };

1.3.3.2. agOperation_grp

```
Operation_grp ATTRIBUTE GROUP
    GROUP ELEMENTS
        a;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) phy(0) operation_grp(1) };
```

1.3.3.3. agError_Counters_grp

```
Error_Counters_grp ATTRIBUTE GROUP
    GROUP ELEMENTS
        a;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) phy(0) error_counters_grp(2) };
```

1.3.3.4. agBER_grp

```
BER_grp ATTRIBUTE GROUP
    GROUP ELEMENTS
        a;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) phy(0) BER_grp(3) };
```

1.3.3.5. agStatus_grp

```
Status_grp ATTRIBUTE GROUP
    GROUP ELEMENTS
        a;
REGISTERED AS { iso(1) member-body(2) us(840) ieee802dot11(xxxx) phy(0) status_grp(4) };
```

1.4. Attribute Templates

1.4.1.SMT Attribute Templates

1.4.1.1. aStation_ID

Station_ID ATTRIBUTE
DERIVED FROM
IEEE802CommonDefinitions.MACAddress;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) station_id(0) };

1.4.1.2. aActing_as_AP_Status

Acting_as_AP_Status ATTRIBUTE
WITH APPROPRIATE SYNTAX
boolean;
BEHAVIOUR DEFINED AS
"True if this station is acting as an access point, false otherwise.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) acting_as_ap_status(4) };

1.4.1.3. aCurrent_AP_MAC_Address

Current_AP_MAC_Address ATTRIBUTE
DERIVED FROM
IEEE802CommonDefinitions.MACAddress;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) ap_address(5) };

1.4.1.4. aCurrent_BSS_ID

Current_BSS_ID ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute shall identify the basic service set (BSS) with which the station is currently associated.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) current_bss_id(6) };

1.4.1.5. aCurrent_ESS_ID

Current_ESS_ID ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute shall identify the extended service set (ESS) with which the station is associated, if any.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) current_ess_id(7) };

1.4.1.6. aKnown_APs

Known_APs ATTRIBUTE
WITH APPROPRIATE SYNTAX
set-of AP_ID.type;
[BOB- A sequence of 32 data structures that including the MAC address, BSS_ID, ESS_ID, signal strength, age, detach reason, BER + history, FER + history, Missed beacons, "cost"

and PHY specific information required to identify the most recent 32 access points encountered. This data type needs to be defined in the ASN.1]

BEHAVIOUR DEFINED AS
"This attribute shall be a set of the identities of the most recently known Access Points. The Access Point with which the station is currently associated, if any, shall always be the first element of the set. Access Points may be included in this list even if the station did not associate with them.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) known_aps(8) };

1.4.1.7. aAuthentication_Algorithms

Authentication_Algorithms ATTRIBUTE
WITH APPROPRIATE SYNTAX
set-of integer;
BEHAVIOUR DEFINED AS
"This attribute shall be a set of all the authentication algorithms supported by the stations. The values of the numbers in the list are as defined in IEEE Standard 802.10.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) authentication_algorithms(9) };

1.4.1.8. aPrivacy_Algorithms

Privacy_Algorithms ATTRIBUTE
WITH APPROPRIATE SYNTAX
set-of integer;
BEHAVIOUR DEFINED AS
"This attribute shall be a set all of the privacy algorithms supported by the stations. The values of the numbers in the list are as defined in IEEE Standard 802.10.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) privacy_algorithms(10) };

1.4.1.9. aSelected_Authentication_Algorithm

Selected_Authentication_Algorithm ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute shall indicate the authentication algorithm identifer selected during the authentication negotiation. The value of this attribute shall be selected from the set in the aAuthentication_Algorithms attribute. The value of this attribute shall reference one of the authentication algorithm identifiers defined in IEEE Standard 802.10.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) selected_authentication_algorithm(11) };

1.4.1.10. aSelected_Privacy_Algorithm

Selected_Privacy_Algorithm ATTRIBUTE
WITH APPOPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute shall indicate the privacy algorithm identifer selected during the privacy negotiation. The value of this attribute shall be selected from the set in the aPrivacy_Algorithms attribute. The value of this attribute shall reference one of the privacy algorithm identifiers defined in IEEE Standard 802.10.";
REGISTERED AS

{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) selected_privacy_algorithm(12) };

1.4.1.11. aAuthentication_Handshake_State

Authentication_Handshake_State ATTRIBUTE
WITH APPROPRIATE SYNTAX
authentication_handshake.type
[BOB: this data type needs to be defined in the ASN.1 to enumerate the handshake states in the authentication process.]

BEHAVIOUR DEFINED AS
"This attribute shall identify the current state of the station in the authentication process.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) authentication_handshake_state(13) };

1.4.1.12. aPrivacy_Handshake_State

Privacy_Handshake_State ATTRIBUTE
WITH APPROPRIATE SYNTAX
privacy_hanshake.type;
[BOB: this data type needs to be defined in the ASN.1 to enumerate the handshake states in the privacy process.]

BEHAVIOUR DEFINED AS
"This attribute shall identify the current state of the station in the privacy negotiation process.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) privacy_handshake_state(14) };

1.4.1.13. aAuthentication_State

Authentication_State ATTRIBUTE
WITH APPROPRIATE SYNTAX
authentication_state.type;
[BOB: this data type needs to be defined in the ASN.1]

BEHAVIOUR DEFINED AS
"This attribute shall indicate the authentication state.";
[BOB: between what?]

REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) authentication_state(15) };

1.4.1.14. aPrivacy_State

Privacy_State ATTRIBUTE
WITH APPROPRIATE SYNTAX
privacy_state.type;
[BOB: this one needs to be defined as well.]

BEHAVIOUR DEFINED AS
"This attribute shall indicate the current privacy state.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) privacy_state(16) };

1.4.1.15. aMin_Authentication_Required

Min_Authentication_Required ATTRIBUTE
WITH APPROPRIATE SYNTAX
Authentication_Required.type;
[BOB: this type needs to be defined in the ASN.1. Should be an enumerated type with none, me, you, both]

BEHAVIOUR DEFINED AS
;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7)
min_authentication_required(17) }; --

1.4.1.16. aMin_Privacy_Required

Min_Privacy_Required ATTRIBUTE
WITH APPROPRIATE SYNTAX
Privacy_Required.type;
[BOB: this data type needs to be defined in the ASN.1. Should be an enumerated tyoe with none, me, you, both.]

BEHAVIOUR DEFINED AS
;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) min_privacy_required(18)
};

1.4.1.17. aAssociated_State

Associated_State ATTRIBUTE
WITH APPROPRIATE SYNTAX
Associated_State.type;
[BOB: this data type needs to be defined in the ASN.1.]

BEHAVIOUR DEFINED AS
;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) associated_state(19) };

1.4.1.18. aBeacon_Period

Beacon_Period ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR
"The beacon period shall indicate the time, in nanoseconds, between the transmission of beacon frames if the station is acting as an Access Point. If the station is not an Access Point but is associated with one, the beacon period shall indicate the time, in nanoseconds, between the expected arrival of beacon frames. If the station is not an Access Point and is not associated with one, the beacon period shall indicate the time, in nanoseconds, between the transmission of beacon frames.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) beacon_period(20) };

1.4.1.19. aPower_Mgt_State

Power_Mgt_State ATTRIBUTE
WITH APPROPRIATE SYNTAX

Power_Mgt_State.type;

[This attribute needs an enumerated data type that includes all possible power management states. It must be defined in the ASN.1 - Bob]

BEHAVIOUR DEFINED AS
"An enumerated type that describes the current power management state of the station.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) power_mgt_state(21) };

1.4.1.20. aPower_Mgt_Capability

Power_Mgt_Capability ATTRIBUTE
WITH APPROPRIATE SYNTAX
set of Power_Mgt_State.type;
BEHAVIOUR DEFINED AS
"An enumerated type that describes all the possible power management states of which the station is capable.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) SMT(0) attribute(7) power_mgt_capability(22) };

1.4.2.MAC Attribute Templates

1.4.2.1. aMAC_Address

MAC_Address ATTRIBUTE
DERVIVED FROM
IEEE802CommonDefinitions.MACAddress;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) mac_address(0) };

1.4.2.2. aGroup_Addresses

Group_Addresses ATTRIBUTE
WITH APPROPRIATE SYNTAX
set-of IEEE802CommonDefinitions.MACAddress;
BEHAVIOUR DEFINED AS
"A set of xxx MAC_Addresses identifying the multicast addresses for which this station will receive frames."
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) group_addresses(1) };

1.4.2.3. aPromiscuous_Status

Promiscuous_Status ATTRIBUTE
WITH APPROPRIATE SYNTAX
boolean;
BEHAVIOUR DEFINED AS
"This attribute is true when the station is enabled to receive all frames promiscuously. It is false otherwise.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) promiscuous_status(2) };

1.4.2.4. aTransmitted_Frame_Count

Transmitted_Frame_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":pdusSentCounter;

REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) transmitted_frame_count(3) };

1.4.2.5. aOctets_Transmitted_Count

Octets_Transmitted_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":octetsSentCounter;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) octets_transmitted_count(4) };

1.4.2.6. aMulticast_Transmitted_Frame_Count

Multicast_Transmitted_Frame_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":pdusSentCounter;
BEHAVIOUR DEFINED AS
"This counter shall increment only when the multicast/broadcast bit is set in the destination MAC address and the destination MAC address is not the broadcast address.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) multicast_transmitted_frame _count(5) };

1.4.2.7. aBroadcast_Transmitted_Frame_Count

Broadcast_Transmitted_Frame_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":pdusSentCounter;
BEHAVIOUR DEFINED AS
"This counter shall increment only when the destination MAC address is the broadcast address.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) broadcast_transmitted_frame_count(6) };

1.4.2.8. aFailed_Count

Failed_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":counter;
BEHAVIOUR DEFINED AS
"This counter shall increment when a frame is not transmitted due to the number of transmit attempts exceeding the retry_max value.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) failed_count(7) };

1.4.2.9. aCollision_count

Collision_count ATTRIBUTE
DERIVED FROM;
"ISO/IEC 10165-2":counter
BEHAVIOUR DEFINED AS
"This counter shall increment when a collision is detected.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) collision_count(8) };

1.4.2.10. aSingle_Collision_Count

Single_Collision_Count ATTRIBUTE

DERIVED FROM
"ISO/IEC 10165-2":counter;
BEHAVIOUR DEFINED AS
"This counter shall increment when a frame is successfully transmitted after a single collision.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) single_collision_count(9) };

1.4.2.11. aMultiple_Collision_Count

Multiple_Collision_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":counter;
BEHAVIOUR DEFINED AS
"This counter shall increment when a frame is successfully transmitted after more than one collision.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) multiple_collision_count(10) };

1.4.2.12. aReceived_Frame_Count

Received_Frame_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":pdusReceivedCounter;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) received_frame_count(11) };

1.4.2.13. aOctets_Received_Count

Octets_Received_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":octetsReceivedCounter;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) octets_received_count(12) };

1.4.2.14. aMulticast_Received_Frame_Count

Multicast_Received_Frame_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":pdusReceivedCounter;
BEHAVIOUR DEFINED AS
"This counter shall increment when a frame is received with the multicast/broadcast bit set in the destination MAC address, the destnation MAC address is not the broadcast address and the destination address is in the set of Group_Addresses.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) multicast_received_frame_count(13) };

1.4.2.15. aBroadcast_Received_Frame_Count

Broadcast_Received_Frame_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":pdusReceivedCounter;
BEHAVIOUR DEFINED AS
"This counter shall increment when a frame is received with the destination MAC address equal to the broadcast address.";
REGISTERED AS

{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) broadcast_received_frame_count(14) };

1.4.2.16. aError_Count

Error_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":courruptedPDUsReceivedCounter;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) error_count(15) };

1.4.2.17. aFCS_Error_Count

FCS_Error_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":counter;
BEHAVIOUR DEFINED AS
"This counter shall increment when an FCS error is detected in a received frame.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) fcs_error_count(16) };

1.4.2.18. aLength_Mismatch_Count

Length_Mismatch_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":counter;
BEHAVIOUR DEFINED AS
"This counter shall increment when a frame is received and the number of bytes in the frame does not equal the value in the length field of the frame.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) length_mismatch_count(17) };

1.4.2.19. aFrame_Too_Long_Count

Frame_Too_Long_Count ATTRIBUTE
DERIVED FROM
"ISO/IEC 10165-2":counter;
BEHAVIOUR DEFINED AS
"This counter shall increment when a received frame that exceeds Max_Frame_Length is detected.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) frame_too_long_count(18) };

1.4.2.20. aMAC_Enable_Status

MAC_Enable_Status ATTRIBUTE
WITH APPROPRIATE SYNTAX
boolean;
BEHAVIOUR DEFINED AS
"This attribute is true when the MAC sublayer is enabled. It is false otherwise. Setting this attribute true causes the MAC to become operational in the idle state.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) mac_enable_status(19) };

1.4.2.21. aTransmit_Enable_Status

Transmit_Enable_Status ATTRIBUTE
WITH APPROPRIATE SYNTAX
boolean;

BEHAVIOUR DEFINED AS
"This attribute is true when transmission is enabled. It is false otherwise. Setting this attribute to true allows the MAC to transmit frames.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) transmit_enable_status(20) };

1.4.2.22. aNAV

NAV ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute indicates the amount of time remaining that the station will consider the medium to be in use by another station. This attribute is updated whenever there is a change in the MAC network allocation vector.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) nav(21) };

1.4.2.23. aNAV_max

NAV_max ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This is the maximum allowable value for the NAV.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) nav_max(22) };

1.4.2.24. aRate_Factor

Rate_Factor ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute indicates the current rate (in bytes per second) at which data is transferred across the medium.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) rate_factor(23) };

1.4.2.25. aHandshake_overhead

Handshake_overhead ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute is the amount of time required to complete an RTS/CTS handshake. This value, along with the Rate_Factor, may be used to determine the desirable setting of the RTS_Threshold to maximize data throughput.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) handshake_overhead(24) };

1.4.2.26. aSIFS

SIFS ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute indicates the length of the short interframe space.";

REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) sifs(25) };

1.4.2.27. aPIFS

PIFS ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute indicates the length of the priority interframe space.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) pifs(26) };

1.4.2.28. aDIFS

DIFS ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute indicates the length of the distributed interframe space.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) difs(27) };

1.4.2.29. aRTS_Threshold

RTS_Threshold ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute indicates the number of bytes in an MSDU, below which an RTS/CTS handshake will not be performed. An RTS/CTS handshake shall be performed for all frames where the length of the MSDU is larger than this threshold.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) rts_threshold(28) };

1.4.2.30. aTotal_Backoff_Time

Total_Backoff_Time ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute indicates the length of time, in number of slots, the MAC has spent in a backoff condition.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) total_backoff_time(29) };

1.4.2.31. aSlot_time

Slot_time ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute is the length of a single slot, in nanoseconds.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) slot_time(30) };

1.4.2.32. aCW_max

CW_max ATTRIBUTE
WITH APPROPRIATE SYNTAX

integer;
BEHAVIOUR DEFINED AS
"This attribute indicates the maximum size of the contention window, in slots.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) cw_max(31) };

1.4.2.33. aCW_min

CW_min ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute indicates the minimum size of the contention window, in slots.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) cw_min(32) };

1.4.2.34. aCTS_Time

CTS_Time ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute indicates the length of time it takes to transmit a CTS frame.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) cts_time(33) };

1.4.2.35. aACK_Time

ACK_Time ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute indicates the length of time it takes to transmit an ACK frame.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) rts_time(34) };

1.4.2.36. aRetry_max

Retry_max ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute indicates tha maximum number of transmission attempts that will be made before a failure condition is indicated.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) retry_max(35) };

1.4.2.37. aMax_Frame_Length

Max_Frame_Length ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute specifies the maximum MSDU length that will be accepted for transmission. If a frame is received with a length that exceeds this value, a Frame_Too_Long error will be reported.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) max_frame_length(36) };

1.4.2.38. aManufacturer_ID

Manufacturer_ID ATTRIBUTE
WITH APPROPRIATE SYNTAX
octet string;
BEHAVIOUR DEFINED AS
"The Manufacturer_ID shall include, at a minimum, the name of the manufacturer. It may include additional information at the manufacturer's discretion.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) manufacturer_id(37) };

1.4.2.39. aProduct_ID

Product_ID ATTRIBUTE
WITH APPROPRIATE SYNTAX
octet string;
BEHAVIOUR DEFINED AS
"The Product_ID shall include, at a minimum, an identifier that is unique to the manufacturer. It may include additional information at the manufacturer's discretion.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) MAC(1) attribute(7) product_id(38) };

1.4.3.PHY Attribute Templates

1.4.3.1. aPHY_Type

PHY_Type ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"The PHY_Type shall be uniquely assigne to each different PHY.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) PHY(1) attribute(7) phy_type(0) };

1.4.3.2. aPHY_Data_Rate

PHY_Data_Rate ATTRIBUTE
WITH APPROPRIATE SYNTAX
integer;
BEHAVIOUR DEFINED AS
"This attribute indicates the physical rate at which bits are transmitted by the PHY. The rate is given in bits per second.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) PHY(1) attribute(7) phy_data_rate(1) };

1.4.3.3. aChannel_Capability

Channel_Capability ATTRIBUTE
WITH APPROPRIATE SYNTAX
;
BEHAVIOUR DEFINED AS
;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) PHY(1) attribute(7) channel_capability(2) };

1.4.3.4. aCurrent_Channel

Current_Channel ATTRIBUTE
WITH APPROPRIATE SYNTAX
;

BEHAVIOUR DEFINED AS
;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) PHY(1) attribute(7) curretn_channel(3) };

1.4.3.5. aChannel_List

Channel_List ATTRIBUTE
WITH APPROPRIATE SYNTAX
;
BEHAVIOUR DEFINED AS
;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) PHY(1) attribute(7) channel_list(4) };

1.4.3.6. aDiversity_Capability

Diversity_Capability ATTRIBUTE
WITH APPROPRIATE SYNTAX
;
BEHAVIOUR DEFINED AS
;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) PHY(1) attribute(7) diversity_capabililty(5) };

1.4.3.7. aBER_Estimate

BER_Estimate ATTRIBUTE
WITH APPROPRIATE SYNTAX
;
BEHAVIOUR DEFINED AS
;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) PHY(1) attribute(7) ber_estimate(7) };

1.4.3.8. aPHY_Turnaround_Time

PHY_Turnaround_Time ATTRIBUTE
WITH APPROPRIATE SYNTAX
;
BEHAVIOUR DEFINED AS
;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) PHY(1) attribute(7) phy_turnaround_time(8) };

1.4.3.9. a(other stuff from Michael)

(other stuff from Michael) ATTRIBUTE
WITH APPROPRIATE SYNTAX
;
BEHAVIOUR DEFINED AS
;
REGISTERED AS
{ };

1.4.3.10. aManufacturer_ID

Manufacturer_ID ATTRIBUTE
WITH APPROPRIATE SYNTAX
octet string;

BEHAVIOUR DEFINED AS
"The Manufacturer_ID shall include, at a minimum, the name of the manufacturer. It may include additional information at the manufacturer's discretion.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) PHY(1) attribute(7) manufacturer_id(10) };

1.4.3.11. aProduct_ID

Product_ID ATTRIBUTE
WITH APPROPRIATE SYNTAX
octet string;
BEHAVIOUR DEFINED AS
"The Product_ID shall include, at a minimum, an identifier that is unique to the manufacturer and appropriate regulatory body registration information. It may include additional information at the manufacturer's discretion.";
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) PHY(1) attribute(7) product_id(11) };

1.4.4.Resource Type Attribute Templates

1.4.4.1. aResourceTypeIDName

ResourceTypeIDName ATTRIBUTE
DERIVED FROM
IEEE802CommonDefinitions.ResourceTypeIDName;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) ResourceTypeID(3) attribute(7) resourcetypeidname(0) };

1.4.4.2. aResourceInfo

ResourceInfo ATTRIBUTE
DERIVED FROM
IEEE802CommonDefinitions.ResourceInfo;
REGISTERED AS
{ iso(1) member-body(2) us(840) ieee802dot11(xxxx) ResourceTypeID(3) attribute(7) resourceinfo(1) };

1.5. Action Templates

1.5.1.SMT Action Templates

1.5.1.1. acInitialize_SMT

Initialize_SMT ACTION

1.5.2.MAC Action Templates

1.5.2.1. acInitialize_MAC

1.5.2.2. acAdd_Group_Address

1.5.2.3. acDelete_Group_Address

1.5.2.4. acExecute_Self_Test

1.5.3.PHY Action Templates

1.5.3.1. acInitialize_PHY

1.5.3.2. acExecute_Self_Test

1.6. Notification Templates

1.6.1.SMT Notification Templates

1.6.1.1. nAssociate

1.6.1.2. nDisassociate

1.6.2.MAC Notification Templates

1.6.2.1. nFrame_Error_Rate_Exceeded

1.6.3.PHY Notification Templates

1.6.3.1. nBER_Exceeded

1.7. ASN.1 Definitions

1.7.1.Common Definitions

1.7.2.SMT Definitions

1.7.3.MAC Definitions

1.7.4.PHY Definitions

1.8. Name Binding

1.8.1. MAC Naming

1.8.2. PHY Naming

Motion: I move that the definition of the MIB as described in this submission be adopted and placed in the draft standard.