Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Clarify the EAP based Authentication Procedure**
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Re:	Contribution on comments to P802.16g-D1
Abstract	In this contribution, we clarify the EAP based authentication procedure in Figure 477
Purpose	Adoption
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Clarification on EAP Based Authentication Procedure Diagram

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1. Introduction

In Section 14.2.5.1 (EAP based authentication procedures), Figure 477, it is confused to use bi-direction arrow line to show interaction between 802.16 Entity and NCMS. It is hard to tell sequence of the call flow~~. .~~ Based on EAP specification, ~~the C_SM_REQ is sent fromNCMS to 802.16 Entity. The 802.16 Entity will send C_SM_RSP in response to it. It~~it is better to separate them by C_SM_NOTFY, which will make the flow more accurate.

2. Proposed Solution

This contribution clarifies the primitive diagrams by ~~separating~~ changing the C_SM_REQ/RSP primitive ~~in~~to ~~two unidirectional arrow line~~C_SM_NOTFY.

3. Detail Text Changes

[*Modify section 14.2.5.1, replace Figure 477with the following figures]*]

14.2.5.1 EAP based authentication procedure

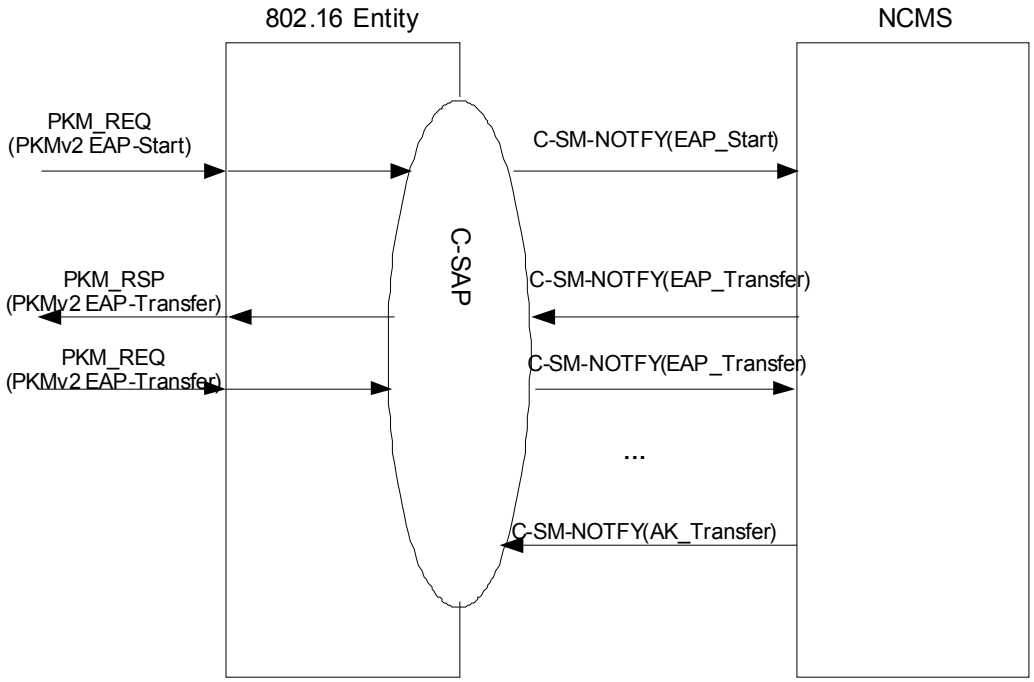

Figure 477 ---- EAP based Authentication Procedure

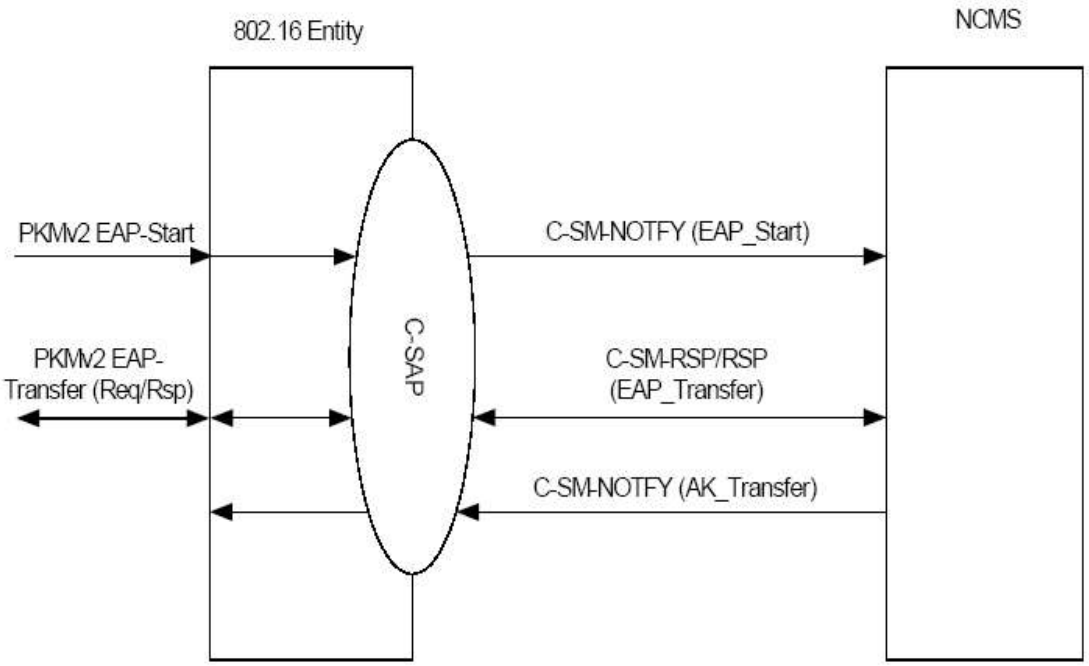

Figure 477—EAP based Authentication Procedure

14.2.5.1.1.1 C-SM-NOTFY

This primitive ~~(or message)~~ is used by an 802.16 entity to notify security procedures. The Event Type included in this primitive defines the type of security operation in Authentication and Re-authentication procedure to be performed. The possible ~~Operation~~Event ~~-~~Types for this primitive are listed in Table below:

Event Type	Description
EAP Start	EAP Start
AK Transfer	AK Transfer notificatiOn
EAP Transfer	Transfer EAP Payload

14.2.5.1.1.1.1 Function

14.2.5.1.1.1.1.1 EAP_Start

…..

14.2.5.1.1.1.1.2 AK Transfer

…..

14.2.5.1.1.1.1.3 EAP Transfer

After the C-SM-NOTFY/EAP_Start primitive, EAP payloads are exchanged between an MS and NCMS. The EAP payloads are encapsulated in the C-SM-NOTFY/EAP_Transfer because it is not interpreted in the MAC. C-SM-NOTFY/EAP_Transfer is used between NCMS and BS..

14.2.5.1.1.1.2 Semantics of the Service Primitives

14.2.5.1.1.1.2.1 EAP_Start

…..

14.2.5.1.1.1.2.2 AK Transfer

…..

14.2.5.1.1.1.2.3 EAPTransfer

The parameters of the primitives are as follows:

C-SM-NOTFY
(
Message_id,
Event_Type(EAP TRANSFER),
Object_id(BS_ID or NCMS),
Attribute _list:
MS ID
EAP Payload
)

MS ID
48-bit unique identifier used for user identification between BS and NCMS, may be MSS MAC Address
EAP Payload
Contains the EAP authentication data.

14.2.5.1.1.1.3 When generated

14.2.5.1.1.1.3.1 EAP_Start
…..
14.2.5.1.1.1.3.2 AK Transfer
…..

14.2.5.1.1.1.3.3 EAP Transfer

This primitive can be issued by a BS in EAP procedure to transfer EAP Message included in PKMv2 PKM-REQ message. This primitive can also be issued by a NCMS in EAP procedure to transfer EAP Message to BS

14.2.5.1.1.1.4 Effect of receipt
14.2.5.1.1.1.4.1 EAP_Start
…..
14.2.5.1.1.1.4.2 AK Transfer
…..
14.2.5.1.1.1.4.3 EAP Transfer

When received by NCMS, the NCMS could derive PMK and optional EIK from the MSK , then AK context from PMK after a successful authentication procedure.

When received by BS, the BS forwards EAP payload to MS in PKM-RSP message.
[Delete entire section 14.2.5.1.1.2 C-SM-REQ and 14.2.5.1.1.2.4 C-SM-RSP]