CAPWAP Extension Problem Statement
draft-shao-capwap-plus-ps-01
draft-cao-capwap-eap-00

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CAPWAP was standardized by IETF between 2004-2010.

- RFC4564: requirements and objectives
- RFC5415, RFC5416: specifications

Years passed, but we still could not connect an AP to an AC of a different vendor

- Partly because of the business model in the industry
- And partly originated from the need of AP-AC interface standard extension
Scenarios & Problems of AP-AC

* Scenarios
  * In an incremental deployment, new APs can join the existing hotspot, and new AC can be added to increase network capacity
  * Flat network architecture, distributed data routing and centralized control and authentication
Local MAC and Split MAC, or Hybrid MAC?

As from RFC5416, local mac and split mac

<table>
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<tr>
<th>Functions</th>
<th>Local MAC</th>
<th>Split MAC</th>
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<td>Integration Service</td>
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<td>Beacon Generation</td>
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<td>Probe Response Generation</td>
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<td>IEEE 802.11 Encryption/Decryption</td>
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- It is difficult to inter-operate because of these options
In a scenario of data and control separation, the EAP message should be encapsulated in CAPWAP-CTL plane in stead of data plane.

Note: EAP is by default encapsulated into the CAPWAP-Data Plane
New Elements needed, as IEEE has moved from ~802.11-2007 to 802.11-2012

- 802.11n support
  - CAPWAP should allow the access controller to know the supported 802.11n features and the access controller should be able to configure the different channel binding modes.

- Channel auto reconfiguration
  - Channel auto reconfiguration could improve the Wi-Fi performance, CAPWAP message could be extended to support this function.

- Power auto reconfiguration
  - Power auto reconfiguration could improve the Wi-Fi performance. CAPWAP message could be extended to achieve following outcome.

- Others?
Three operators in China has cosign the AP-AC standard work in CCSA
Testing the inter-operability of AP and AC between four different vendors

Seriously, it is NOT a Myth
We extend the first step though...
Next Step in IETF

* Re-start the Capwap work in Opsawg
  * Capwap encapsulation of EAP document – Opsawg
  * Air-interface management extension document – Opsawg

* Best current practice on the Local/Split MAC – individual
Comments Welcome