Étude de de la signalisation standardisée pour l'Association Client- point d'Accès et Point d'Accès- Contrôleur (Livrable L2.1)

- Mohamed Amine KAFI
- Alexandre Mouradian
- Véronique Vèque

Sommaire

- Association Standard
- Association optimisée: architectures, paramètres
- Signalisation pour association Client-AP
  - Quelques Groupes de travail IEEE802.11
  - Signalisation Standard
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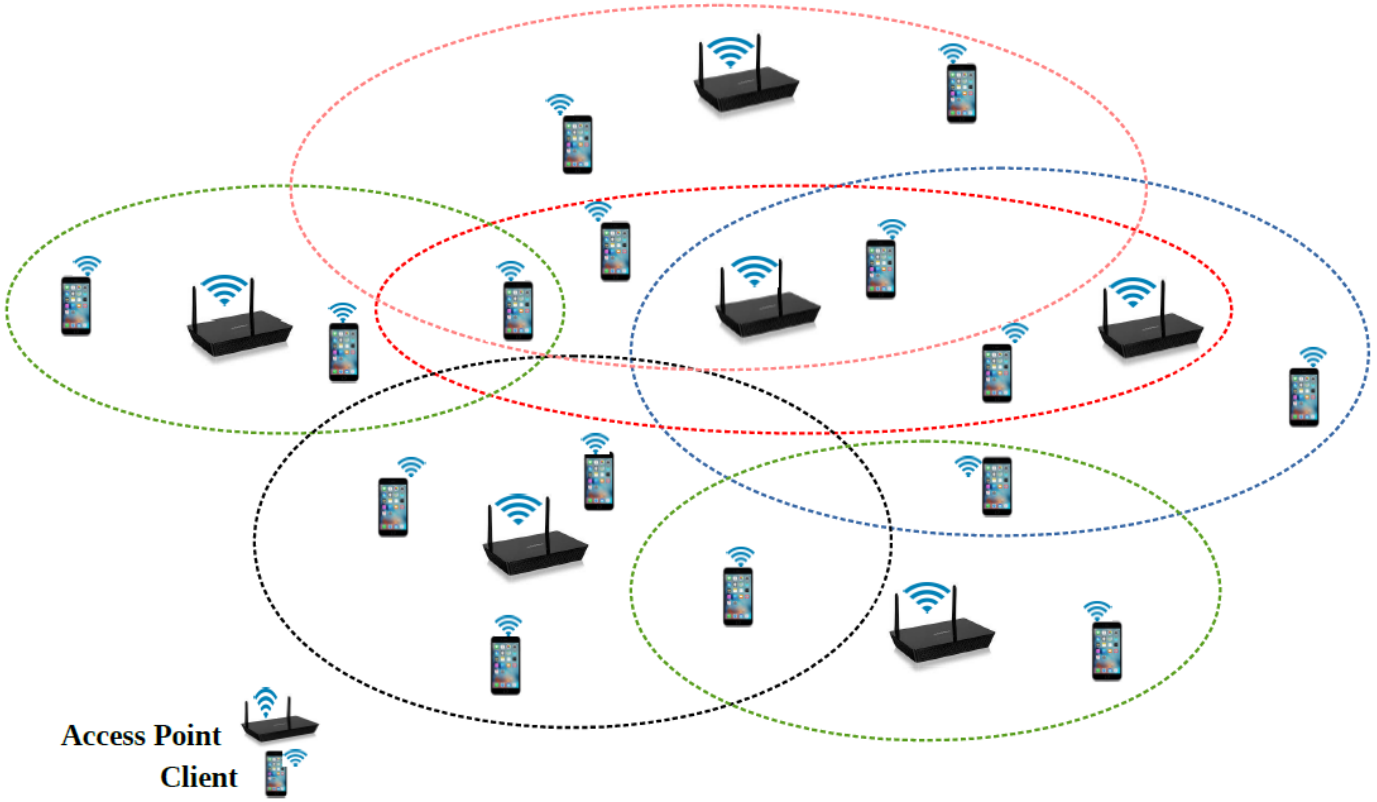
  - ODIN- Association optimisée (Transparente au client)
- Conclusion **(Optimisations à faire)**

Association Client-Point D’accès

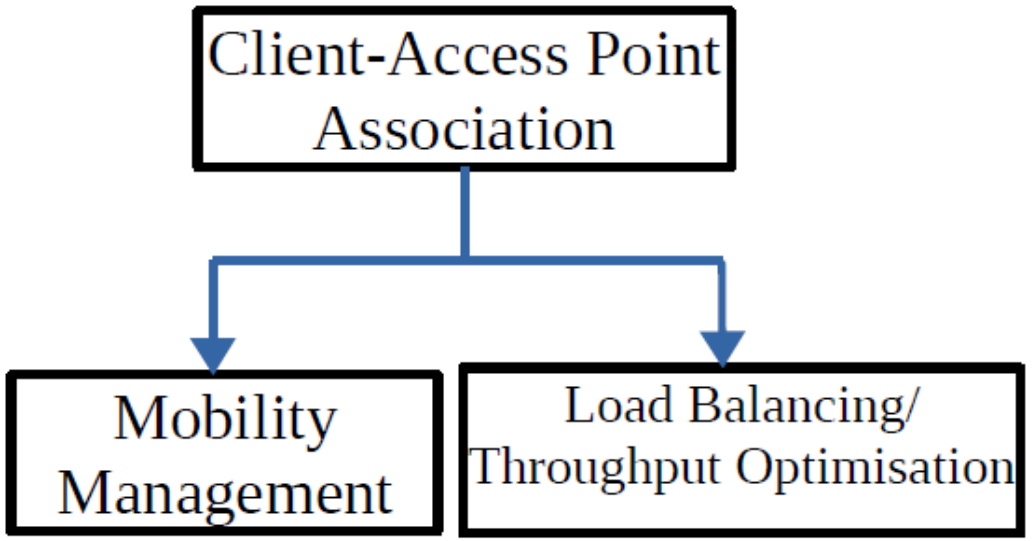
Association Standard [1]

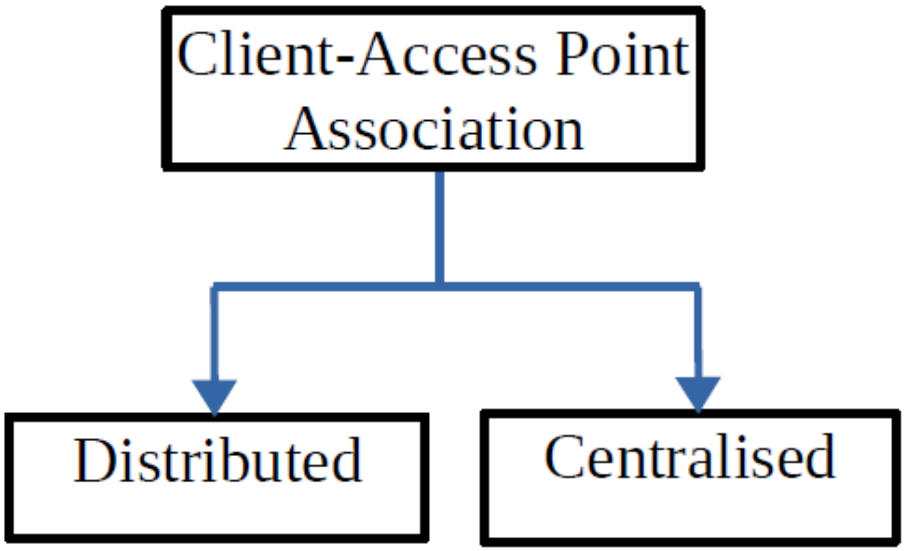


- **Le scan Passif ou Actif:** La station reçoit les beacons de la part des APs du voisinage
- La **station** choisie de s’associer à l’AP ayant le **plus fort signal**,
- **L’authentification:** La paire des nœuds échange une preuve pour garantir la sécurité.
- **L’association** client-AP s’effectue selon le standard.

Association Client-Point D’accès

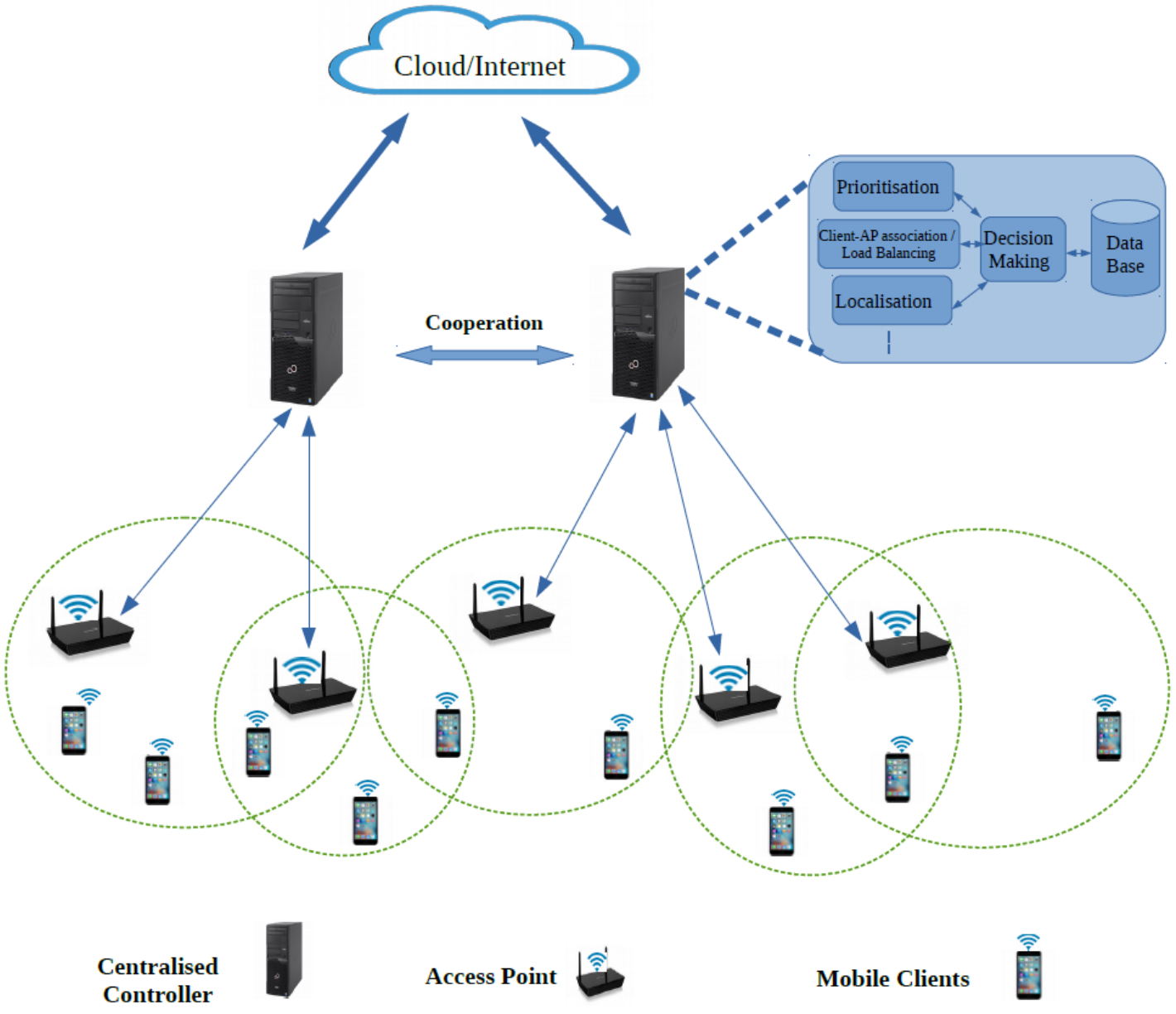
Association Optimisée





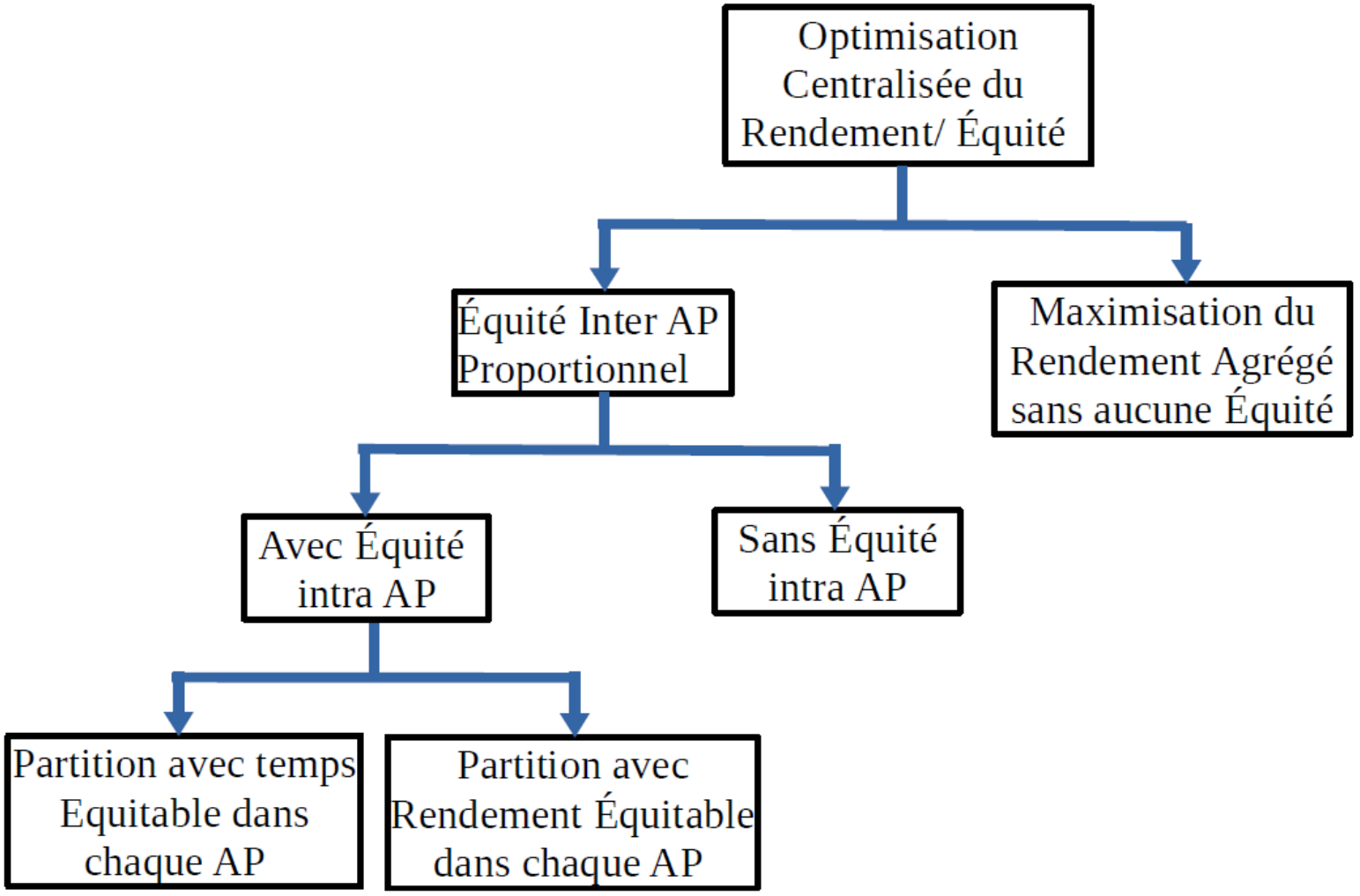
Association Client-Point D’accès

Association Optimisée centralisée



Association Client-Point D’accès

Association Optimisée Centralisée [2-6]

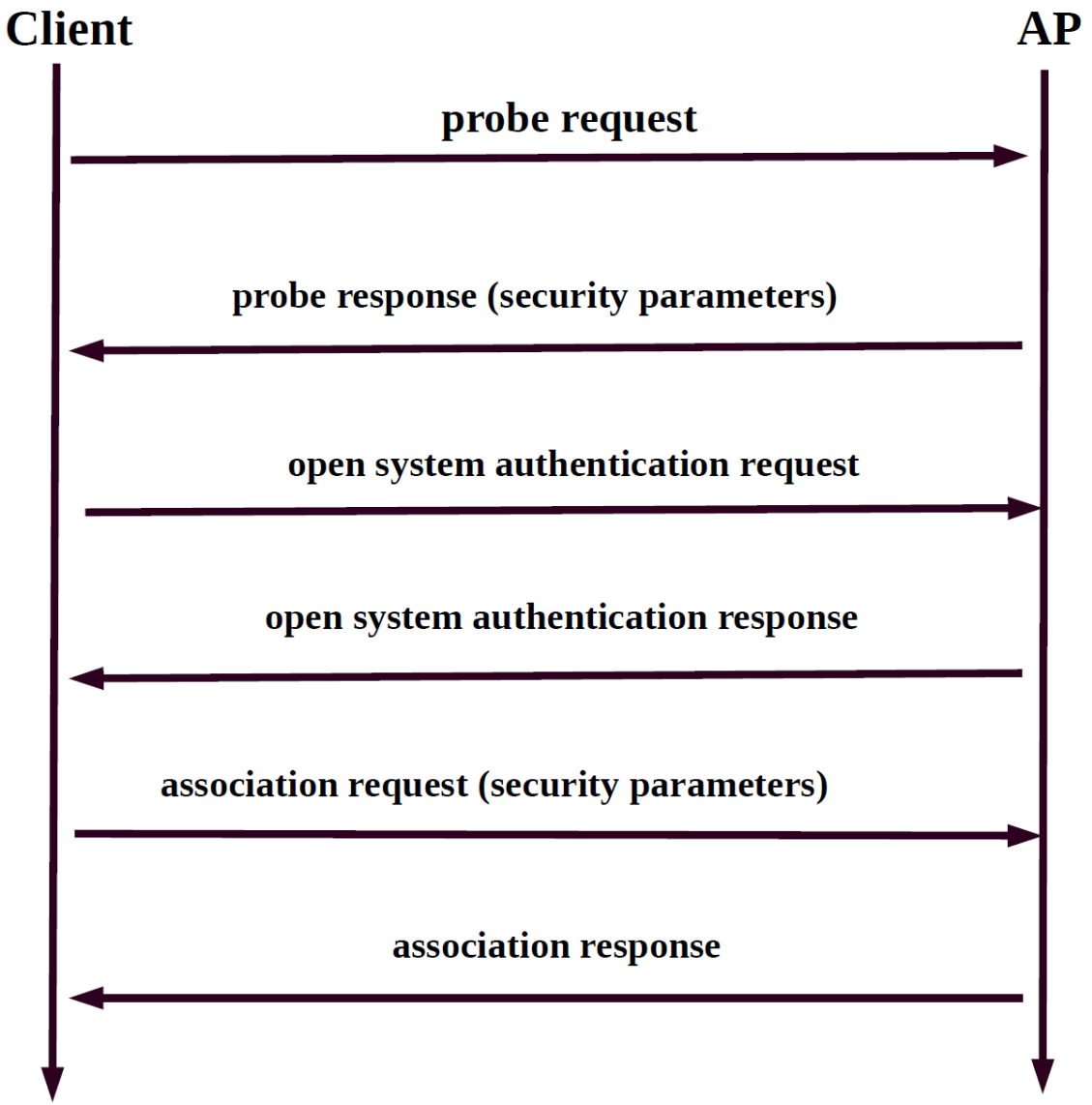


Quelques groupes de travail IEEE802.11 [1]

IEEE802.11 Task Group	Activity
a	To develop PHY for 5 GHz UNII band
b	To develop higher rate PHY in 2.4 GHz band
c	To cover bridge operation with 802.11 MACs (spanning tree)
e	To enhance 802.11 MAC for QoS
f	To develop recommended practices for Inter Access Point Protocol (IAPP) for multi-vendor use
g	To develop higher speed PHY extension to 802.11b (54 Mbps)
h	To enhance 802.11 MAC and 802.11a PHY-Dynamic Frequency selection (DFS), Transmit Power control (TPC)
i	To enhance 802.11 MAC security and authentication mechanisms
k	To define RRM enhancements to provide interfaces to higher layers for radio and network measurements
n	Focus on high throughput extensions (> 100MB/s at MAC SAP) in 2.4GHz and/or 5GHz bands
o	To provide Fast Handoffs in Voice over WLAN (goal is around 50ms)
p	Focus on vehicular communications protocol aimed at vehicles, such as toll collection, vehicle safety services, and commerce transactions via cars
r	To develop a standard specifying fast BSS transitions and fast roaming
s	To define a MAC and PHY for meshed networks that improves coverage with no single point of failure
t	To provide a set of performance metrics, measurement methodologies, and test conditions to enable manufacturers, test labs, service providers, and users to measure the performance of 802.11 WLAN devices and networks at the component and application level
v	To provide extensions to the 802.11 MAC/PHY to provide network management for stations (STAs)
w	To provide mechanisms that enable data integrity, data origin authenticity, replay protection, and data confidentiality for selected IEEE 802.11 management frames including but not limited to: action management frames, deauthentication and disassociation frames

Signalisation pour Association Client-AP

Le standard IEEE802.11[1]

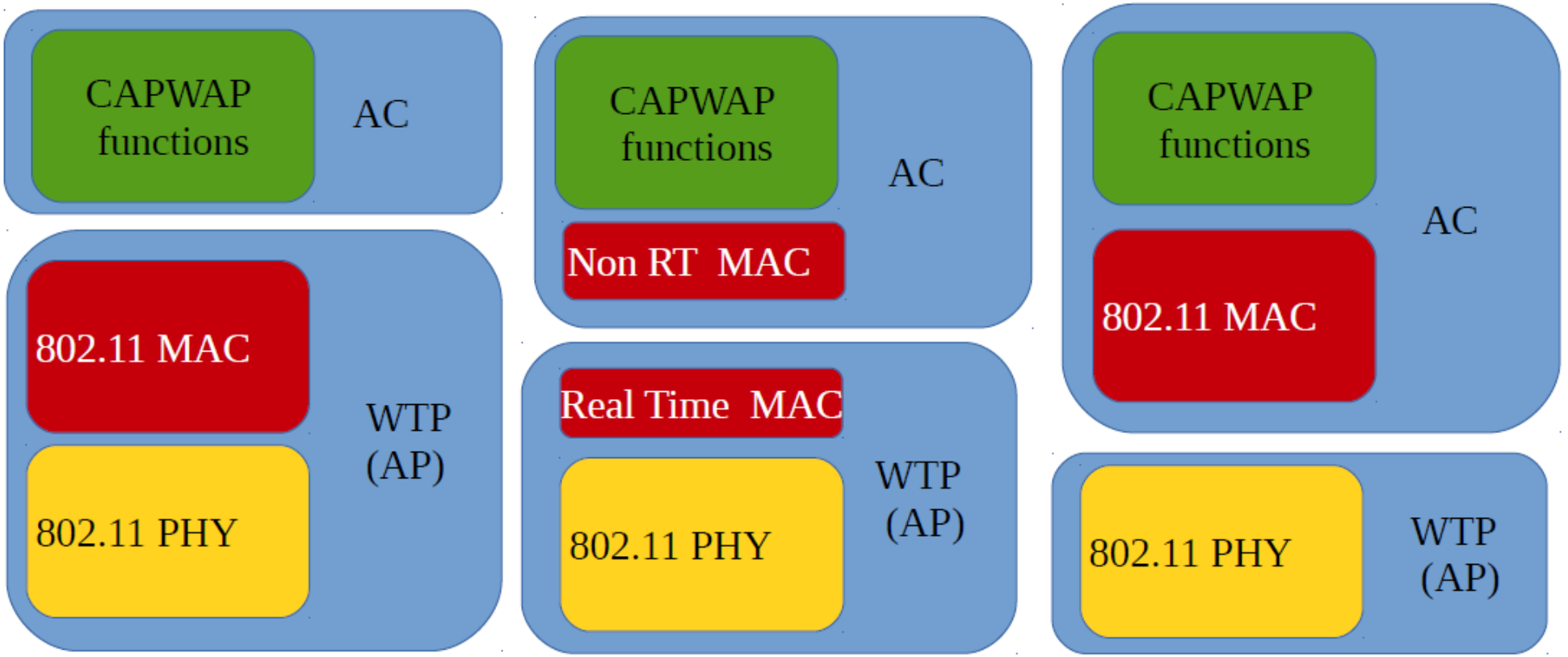


Signalisation pour Association Client-AP
Le standard CAPWAP [7]

- Standard développé par l'IETF
- Permet le contrôle entre l'AP **(WTP: Wireless Termination Point)** et l'AC **(Access Controller),**
- Basé sur LWAPP **(Lightweight Wireless Access Point Protocol)** et sur DTLS **(Data Transport Layer Security).**

Signalisation pour Association Client-AP

Le standard CAPWAP(Architectures MAC) [8]



(a) Local MAC (b) Split MAC (c) Remote MAC

Signalisation pour Association Client-AP

Le standard CAPWAP (Association AP / AC) [7]

Phase de découverte(optionnelle)

Phase de DTLS Handshake

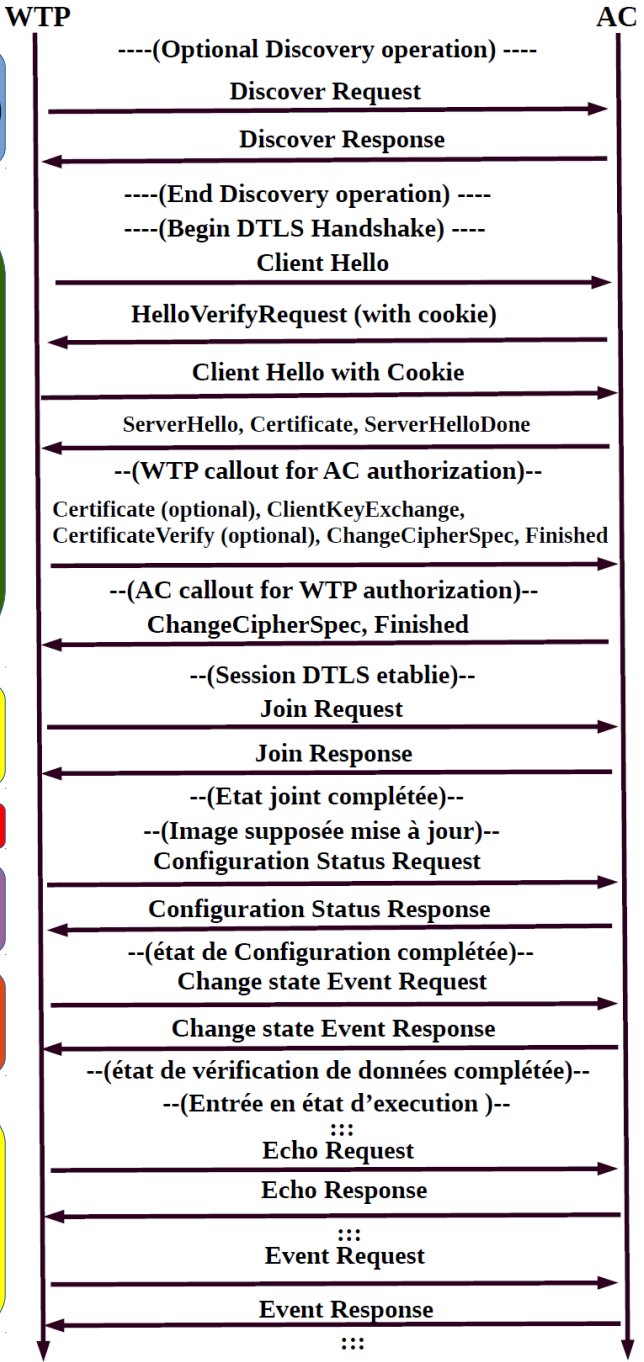
Phase d'association

Phase de vérification de version

Phase de configuration

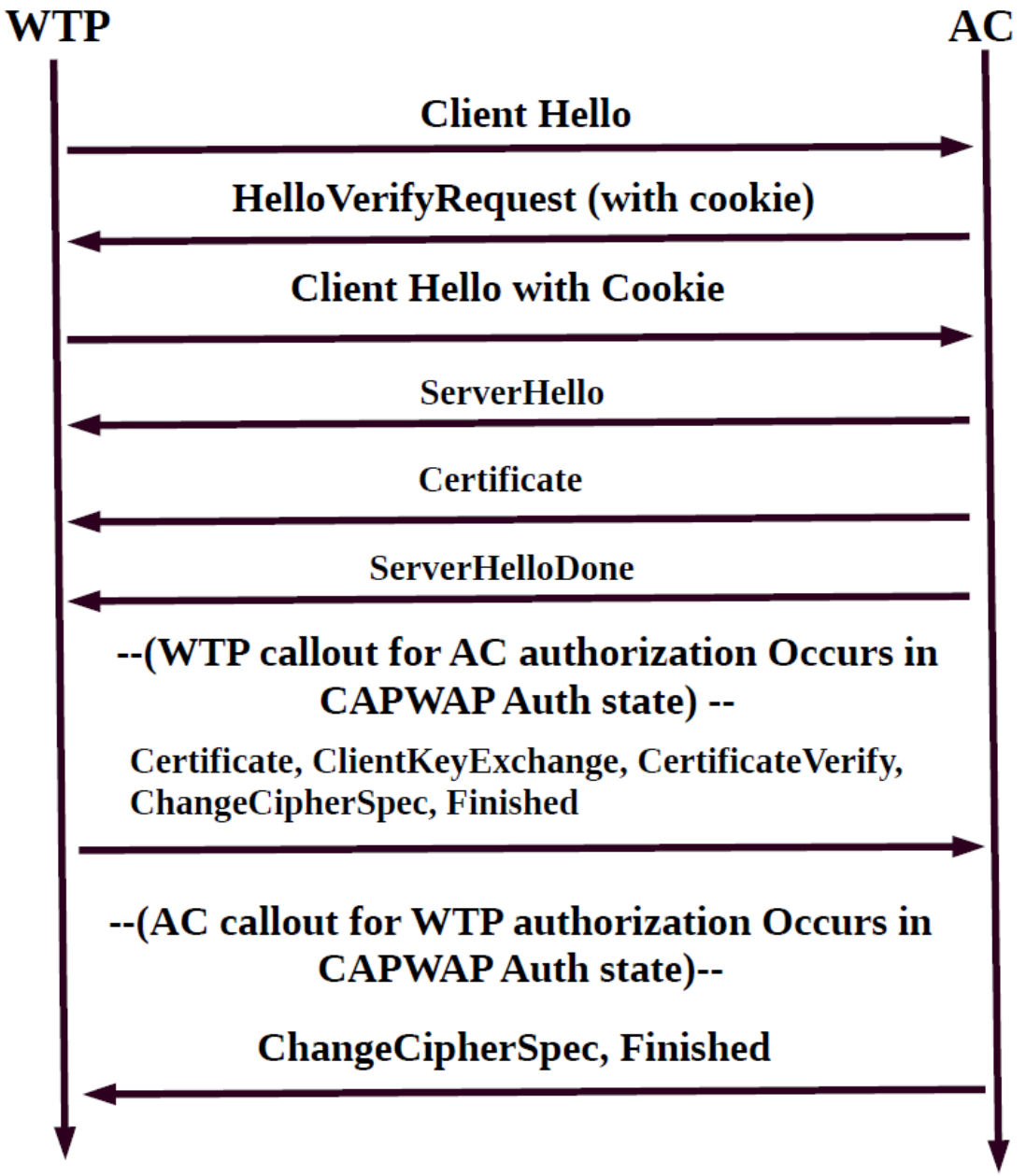
Phase de vérification de données

Phase d'exécution



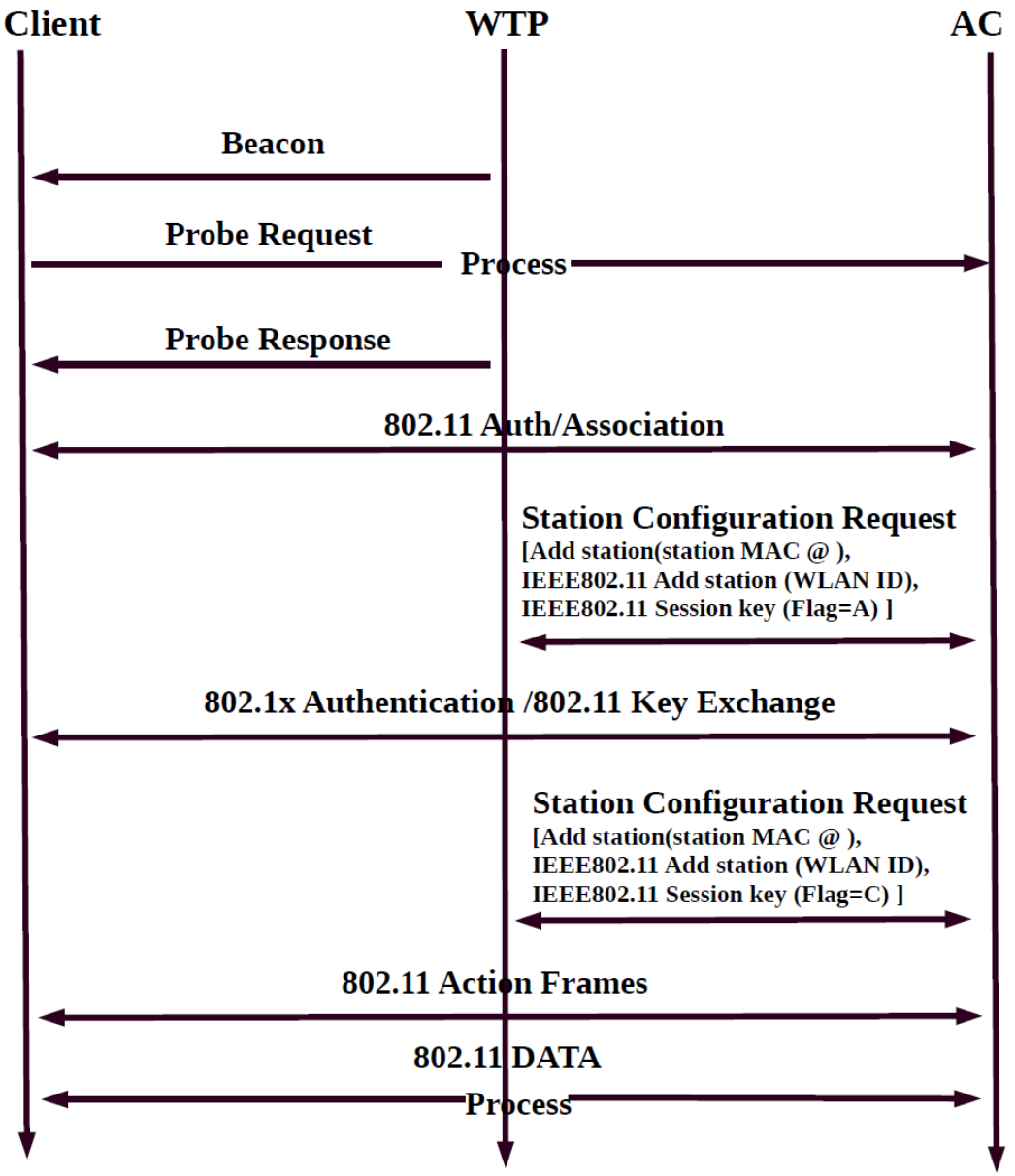
Signalisation pour Association Client-AP

Le Handshake DTLS [7,10]



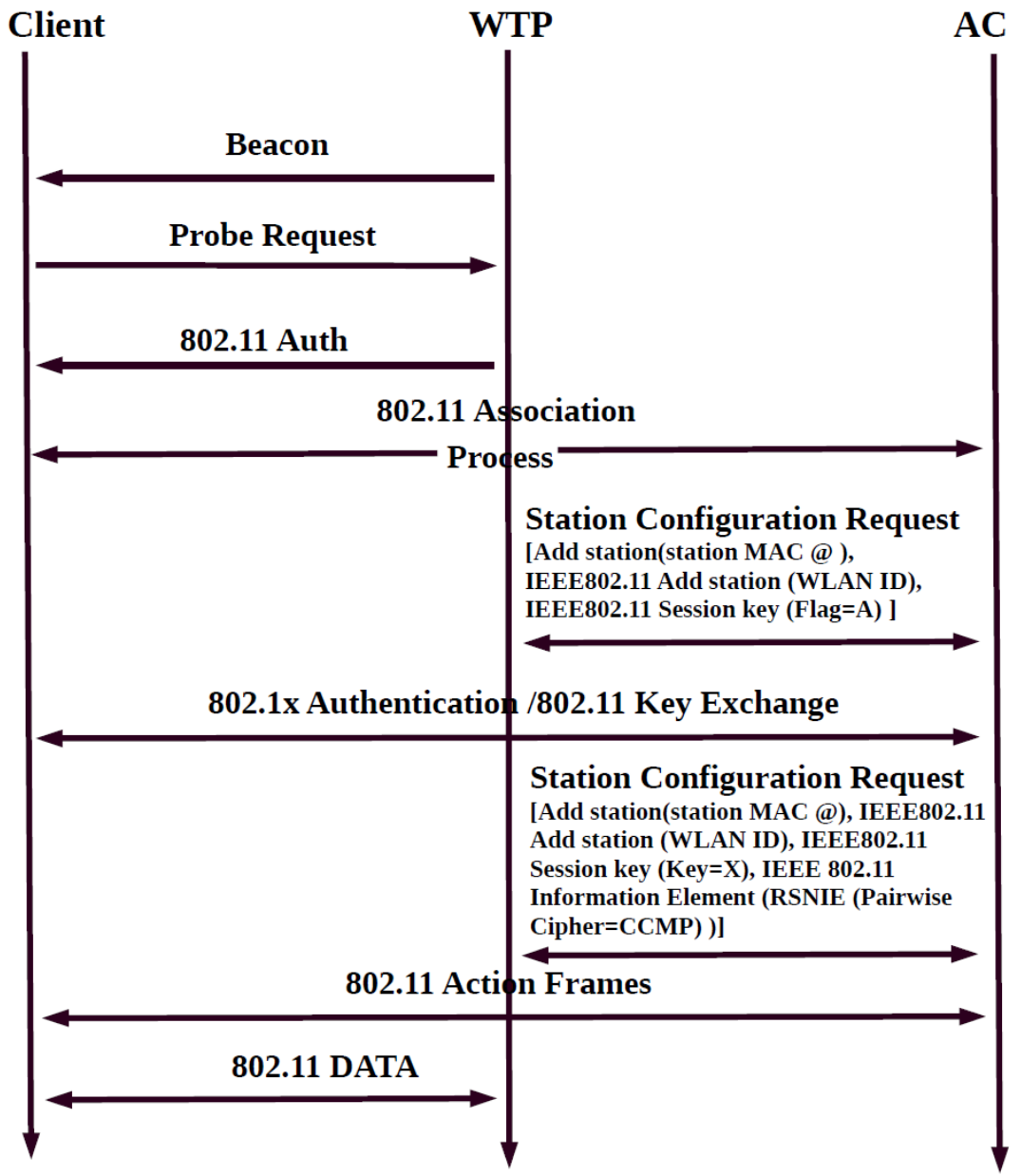
Signalisation pour Association Client-AP

Le standard CAPWAP (Split MAC Architecture) [9]



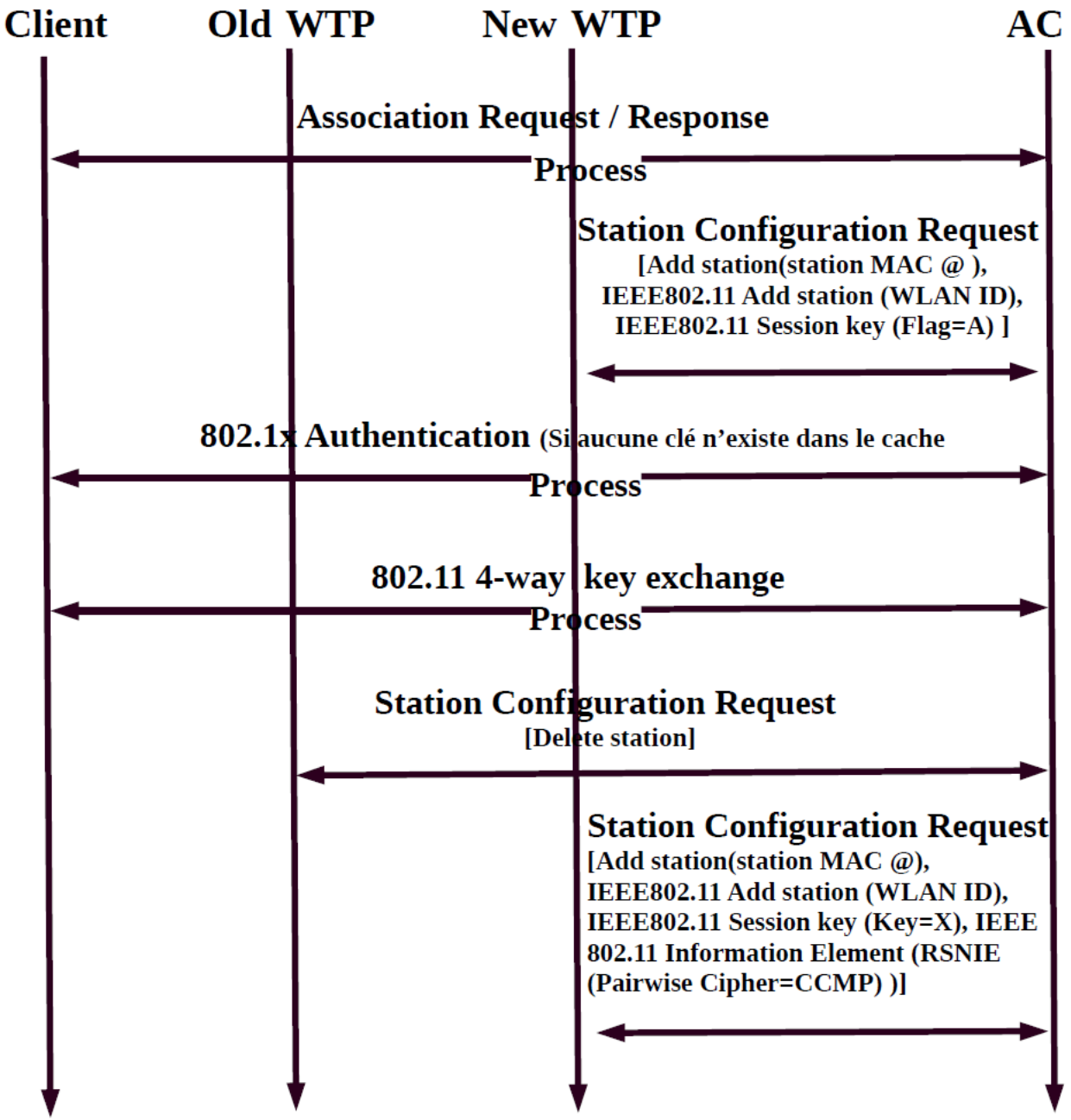
Signalisation pour Association Client-AP

Le standard CAPWAP (Local MAC Architecture)[9]



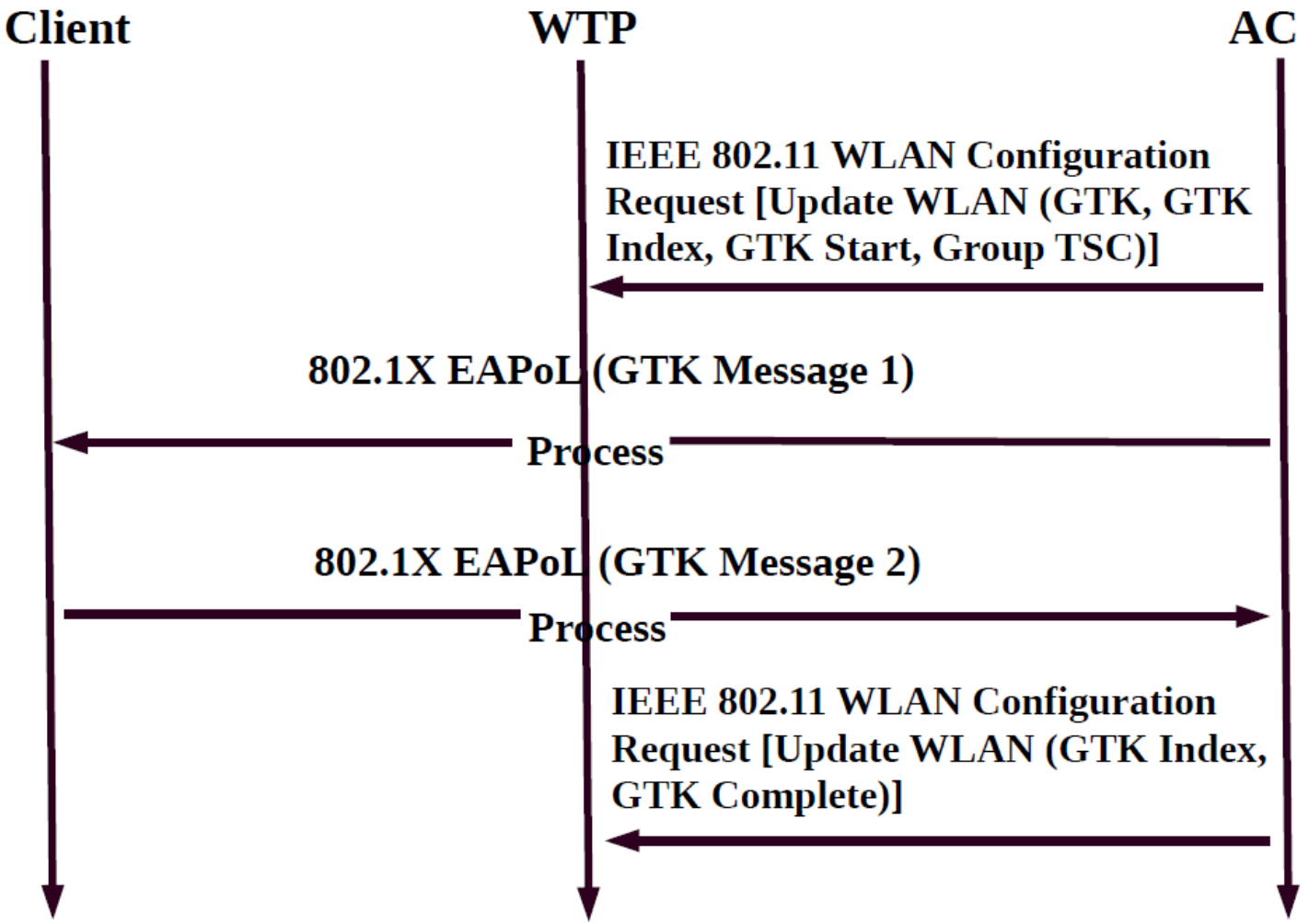
Signalisation pour Association Client-AP

Le standard CAPWAP (station Roaming) [9]

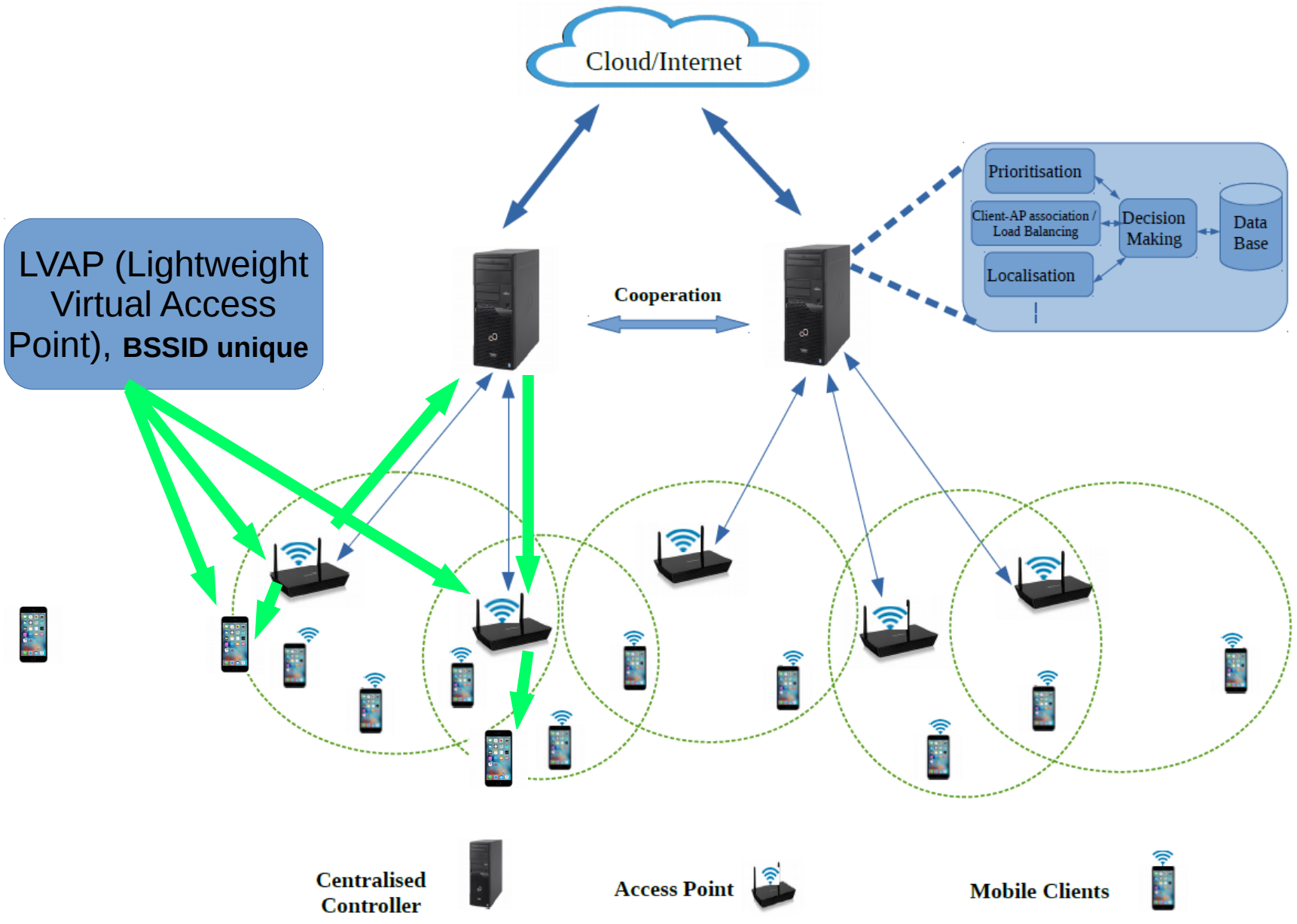


Signalisation pour Association Client-AP

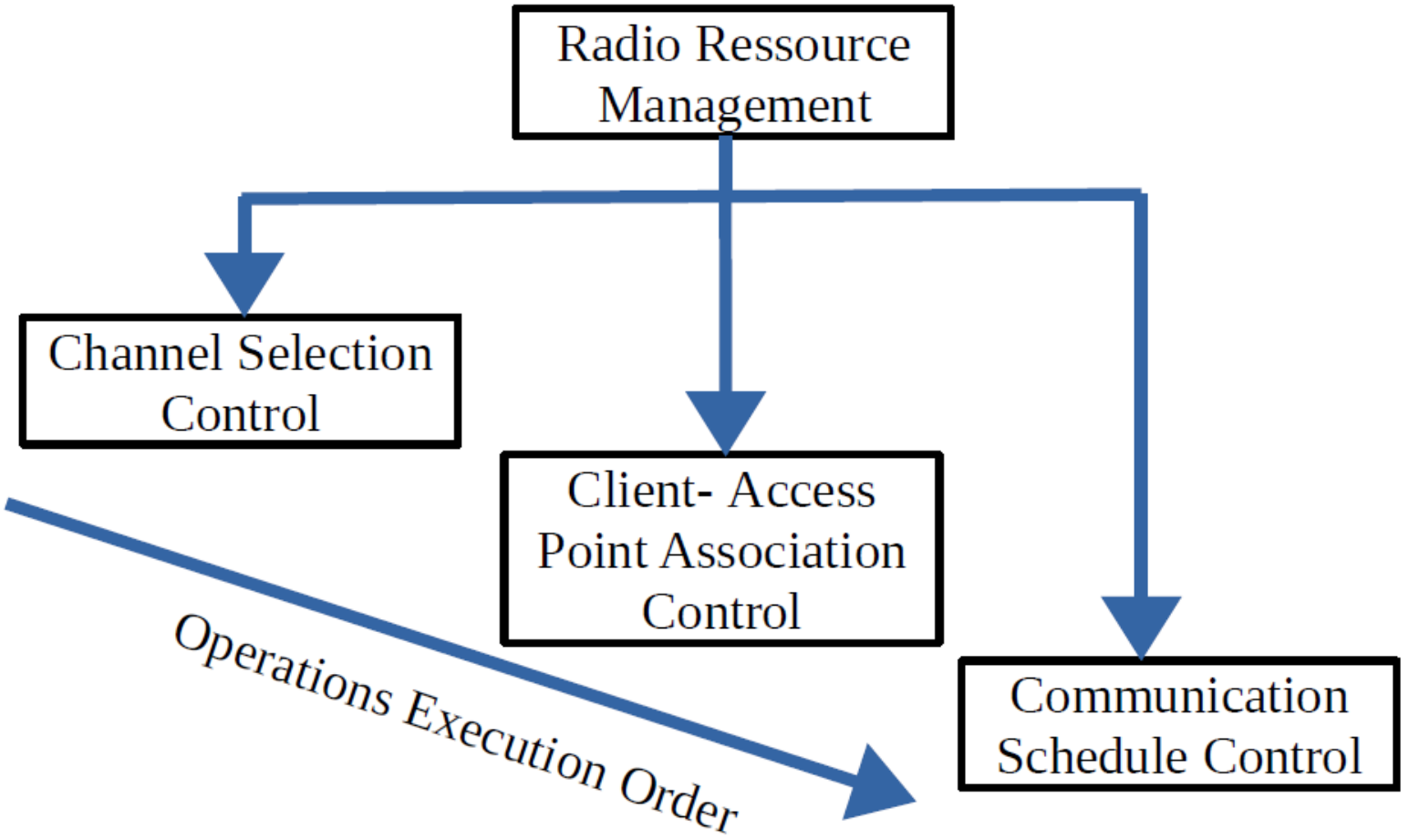
Le standard CAPWAP (Groupe key mise a jour) [9]



ODIN -Changement de Point d'Accès transparent au client [11]



Contrôle Optimisé à faire



Quelques Références

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