**5. How the CAPWAP tunnel is maintained between AP and controller.**

CAPWAP is used to manage the communication between an Access Point (AP) and a Wireless LAN Controller (WLC). Once the AP joins the controller, a secure tunnel is created to handle both control and data traffic.

* The CAPWAP tunnel is set up using DTLS, which keeps all control messages encrypted and secure.
* To make sure the tunnel stays active, the AP and WLC send keep-alive messages to each other regularly.
* If these messages stop, the WLC assumes the AP is disconnected and may try to reconnect or free up resources.
* Even if settings are updated or users move between APs, the tunnel continues without needing to reconnect.
* CAPWAP actually creates two tunnels: one for control and one for data. This separation helps manage things better and keeps the network stable.