How to optimize passive scan

- 2023-01-04 - BAT, WLC (HiLCOS)

When a wireless client operates in DFS channels and is doing background scan, it must do a passive scan.

Passive scan in oposite to active scan means that it will listen into a channel until it receive a beacon. As soon as a beacon is received, it switches to active scan.

The duration of a passive scan is per default 400 ms.

It means that if no beacons is received during a passive scan (no beacon received) the client will listen the channel until 400 ms ellapse which correspond to 400 ms unavailability in its original channel.

Longer is the passive scan, higher is the probability to loose data.

The passive scan time duration can nevertheless be reduced either in the CLI or in the web interface.

In the CLI:

admin@BAT-Client:/

> cd Setup/Interfaces/WLAN/Radio-Settings/WLAN-1

admin@BAT-Client:/Setup/Interfaces/WLAN/Radio-Settings/WLAN-1

> set Passive-Scan-Duration [value in ms]

In the web interface:

HiLCOS Menu Tree > Setup > Interfaces > WLAN > Radio-Settings > WLAN-1 > Passive-Scan-Duration

Take care that the beacon interval on the AP should be lower than thePassive-Scan-Duration configured on the client. Actually it's recommened to have a passive-scan-duration at least 2 times higher than the beacon interval configured on the AP.

On HiLCOS devices, per default the beacon interval is 100 ms but can be modified

In the CLI:

admin@BAT-AP:/

> cd Setup/Interfaces/WLAN/Beaconing/WLAN-1

admin@BAT-AP:/Setup/Interfaces/WLAN/Beaconing/WLAN-1

> set Beacon-Period [value in ms]

In the web interface:

HiLCOS Menu Tree > Setup > Interfaces > WLAN > Beaconing > WLAN-1 > Beacon-Perdiod

For a "fast passive scan", the beaconing perido on the APs may be for example set to 30 ms and the passive scan duration on the client set to 70 ms.