

# Can a Wi-Fi WLAN Support a Real-Time Services During a Handoff?

Online games with tight real-time constraints are becoming ubiquitous: they are no longer exclusive of high-end PCs, but many of them have been ported to tablets or even smartphones.

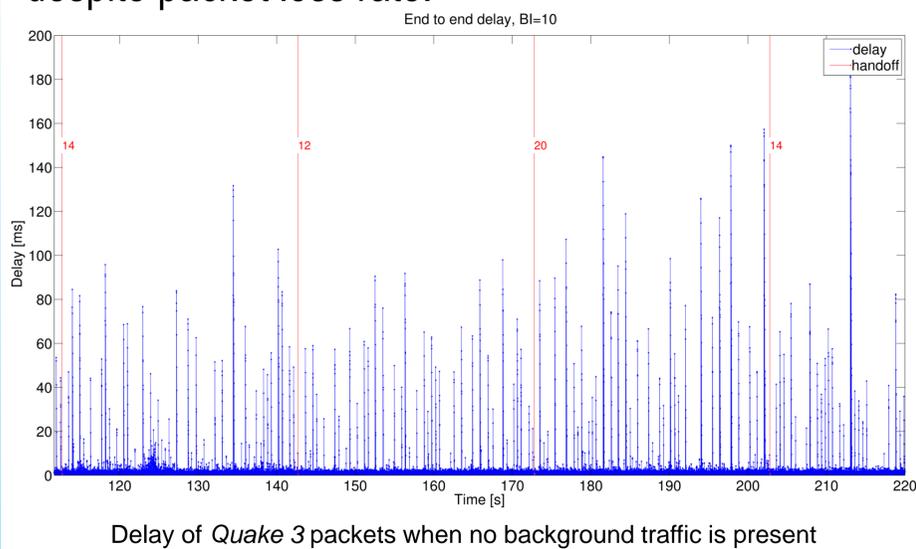
The **Wi-5 (What to do With the Wi-Fi Wild West) Project** is exploring a set of functionalities to be included in a pool of **coordinated smart Wi-Fi APs**, including **resource management algorithms** that take into account the nature of each flow. In addition, **seamless handovers between APs** are required for supporting user mobility.

Can this Wi-Fi WLAN support seamless handovers between different APs? In this case, “seamless” means that the player of a First Person Shooter must experience a good quality.

## Obtained results

A machine is connected to an *Odin\** Wi-Fi network, and it generates a *Quake3* traffic flow. No other machines are connected to that SSID. The mobility application has been configured to handoff the client every 15 seconds from one AP to another. The **Figure** represents the delay of each packet during 220 seconds (4 handoffs).

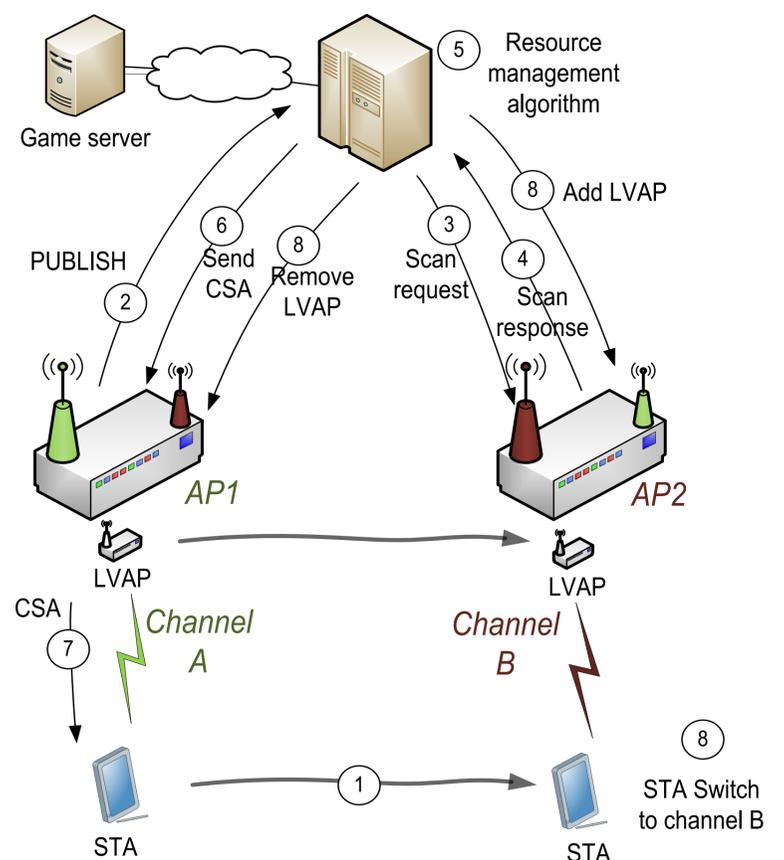
The delay and jitter are produced by the wireless technology and do not significantly increase after the handoff. Players can experience a good quality despite packet loss rate.



\* J. Schulz-Zander, L. Suresh, N. Sarrar, A. Feldmann, T. Hühn, R. Merz, “Programmatic orchestration of wifi networks,” in USENIX Annual Technical Conference (USENIX ATC 14), pp. 347-358, Jun 2014

## Demo setup

- **Two TP-Link1043NDv2 APs** are used, configured in channel 4 and 9 (2.4 GHz band) respectively.
- The **controller** runs Linux Debian.
- **Laptop A** is being switched from an AP to another every 15 seconds.
- **Laptop B** always uses the same AP.



More information

<http://www.wi5.eu/>

<https://twitter.com/Wi5Project>

[sequeira@unizar.es](mailto:sequeira@unizar.es)

[j.almodovarchico@tno.nl](mailto:j.almodovarchico@tno.nl)



Universidad  
Zaragoza

TNO innovation  
for life

What to do With the Wi-Fi  
Wild West



European Union  
Horizon 2020

