



## Final Network Services Report

July 19, 2019

**Event:** IEEE 802 Plenary Session

**Venues:** Austria Centre Vienna

**Dates:** July 14-19 2019

### Summary

Linespeed Events, LLC is providing comprehensive wired and wireless network services in 27 meeting rooms, foyers and offices on three floors of the Austria Centre Vienna (ACV). Linespeed is also providing a local document server synchronized in near real time with [mentor.ieee.org](http://mentor.ieee.org).

The local area network (LAN) supporting the meeting space is comprised of seven intermediate distribution frames (IDFs) cross connected with 1Gb fiber to the main distribution frame (MDF). Linespeed's wireless local area network (WLAN), comprised of 55 IEEE 802.11 a/g/n/ac compliant access points, is currently providing Wi-Fi connectivity to more than 1680 unique wireless devices (laptops, tablets, smartphones, smartwatches, etc.) at this session. The WLAN deployment is shown in Figure 1.

IEEE 802 contracted for 200Mb/s of symmetrical Internet bandwidth for this plenary session. The in-house IT vendor H82 provided us with an uncapped 800Mb/s circuit at no additional cost. Thank you H82!

Linespeed provisioned the network with redundant routers in addition to a 1Gb LAN backbone comprised of distribution and edge switches.

Linespeed tested all Cat5 copper connections interconnecting IDFs and meeting room ports prior to deploying network hardware in the meeting space.

Bandwidth utilization is shown in Figure 2. The peak number of simultaneous active wireless connections during the week was 1436.

**Issue:** We received reports this week of poor wireless connectivity in the large meeting rooms set for 250+ attendees. We discovered a large number of Wi-Fi hot spots operating in both the 2.4Ghz and 5GHz bands. These hot spots did not restrict themselves to standard non-overlapping channels. An example of the expected SSIDs are shown in Figure 3. A sample of the unexpected hot spots found in Hall E1 on Wednesday at 3:07PM are shown in Figure 4.

**Resolution:** We reconfigured our 5Ghz radios to operate on DFS channels, which are not typically available on hot spots. We also increased the power on our 2.4GHz radios so they were "louder" than the hot spots. These changes mitigated the problem to make the network useable but not as good as it could be without the hot spots present.

## WLAN Deployment

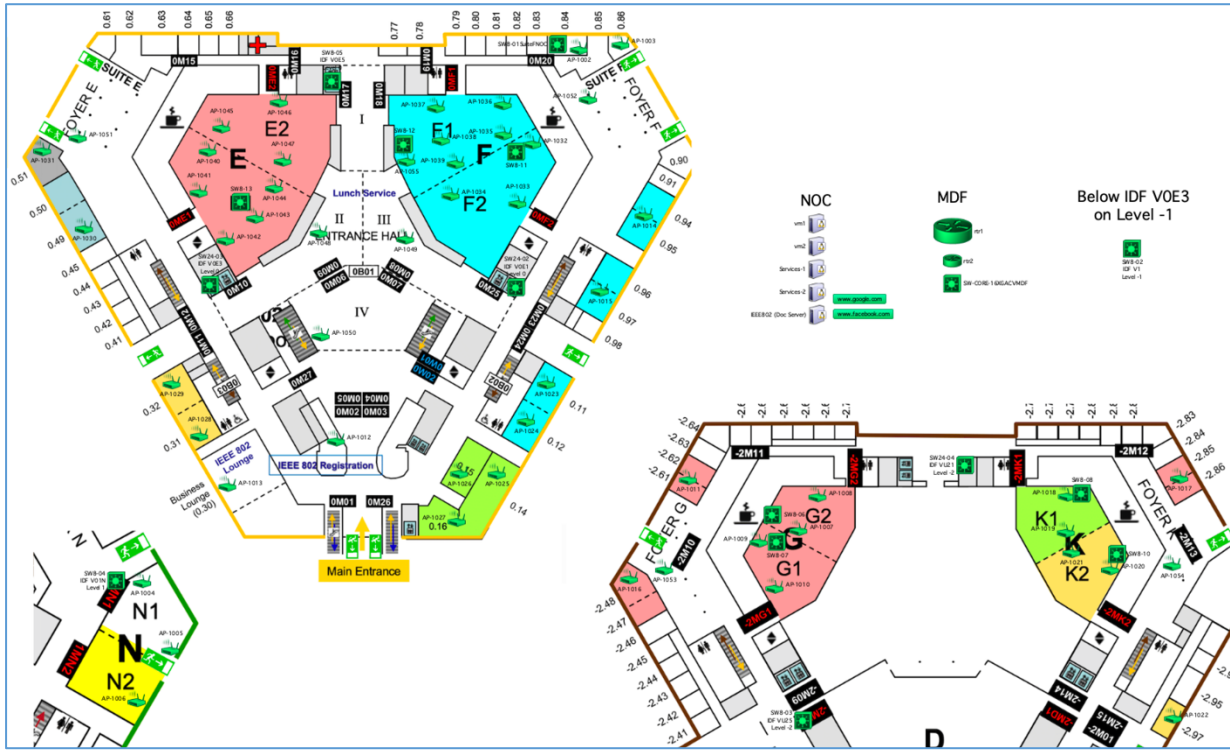


Figure 1. Fifty-three access points were deployed throughout the meeting space.

## BANDWIDTH UTILIZATION

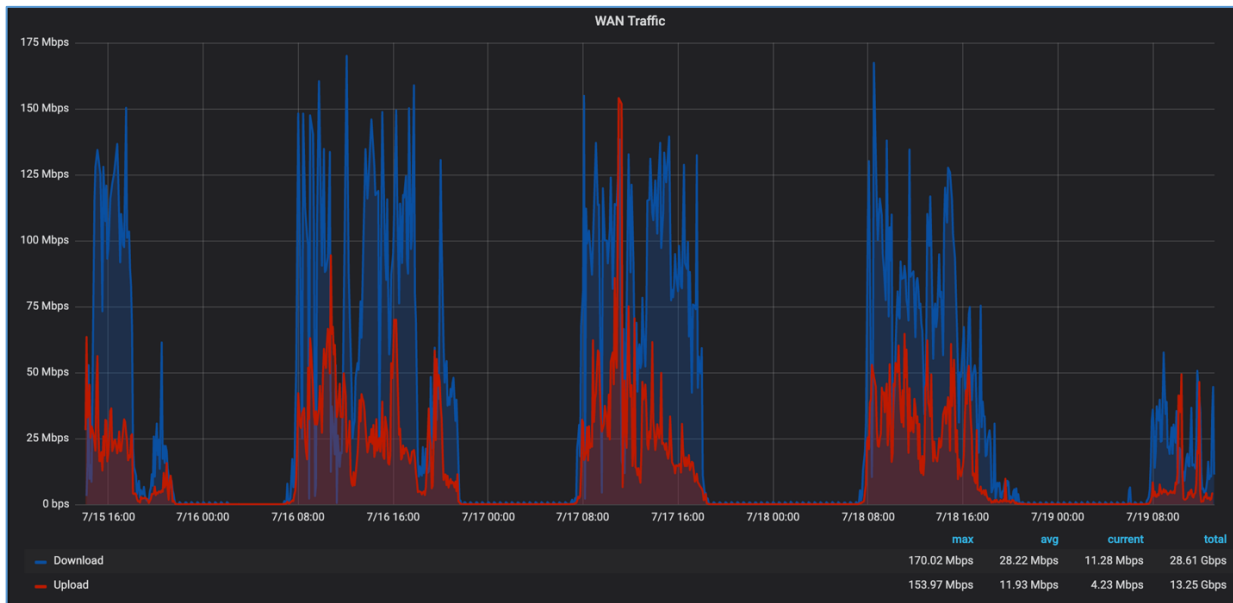


Figure 2. Bandwidth utilization.

## EXPECTED SSIDs

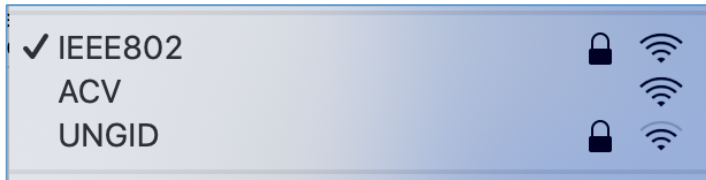


Figure 3. Clean air.

## EXPECTED SSIDs plus WIRELESS HOT SPOTS



Figure 4. Hot spots present in E1 at 3:07PM on Thursday, July 18<sup>th</sup>.