Site report - WLAN planning

Office building with atrium

+ High bay

warehouse

ENBITCON

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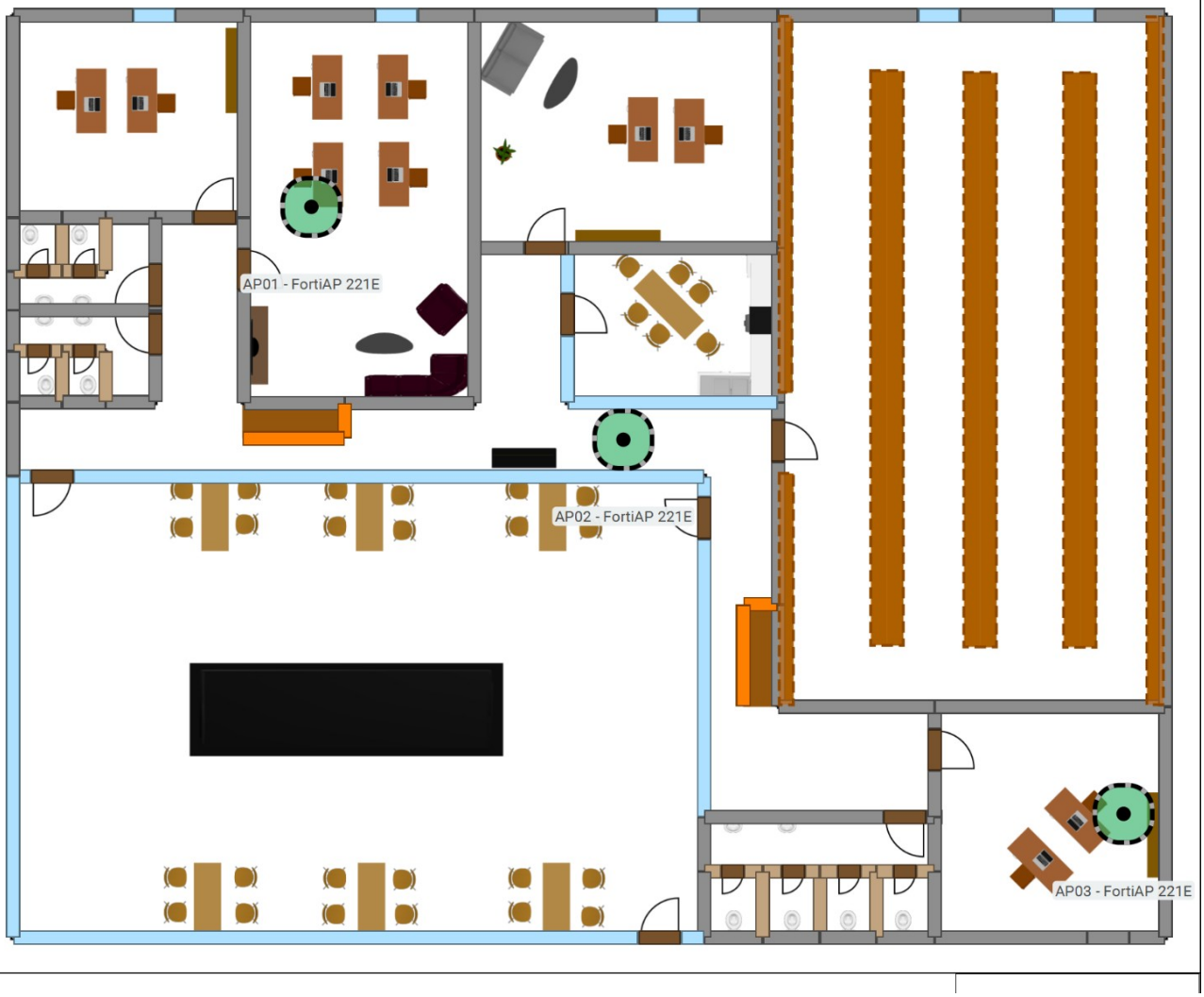
Office building ground floor (3 APs)



Ground floor (427 m²)

Coverage requirement: **Voice + Data**	Signal strength Min	**-70.0 dBm**
	Secondary signal strength Min	**-100.0 dBm**
	Signal-to-noise ratio Min	**20.0 dB**
	Data rate Min	**20 Mbit/s**
	Channel interference Max	**3 with min. -85.0 dBm**

AP01 - FortiAP 221E: ceiling mounting

AP02 - FortiAP 221E: ceiling mounting

AP03 - FortiAP 221E: ceiling mounting

Signal strength for office building EG at 2.4 GHz band

Signal strength - sometimes referred to as coverage - is the most basic requirement of a wireless network. The general rule is that low signal strength indicates unreliable connections and therefore low data throughput.

Signal strength for office building EG at 5 GHz band

Signal strength - sometimes referred to as coverage - is the most basic requirement of a wireless network. The general rule is that low signal strength indicates unreliable connections and therefore low data throughput.

Secondary signal strength for office building EG at 2.4 GHz band

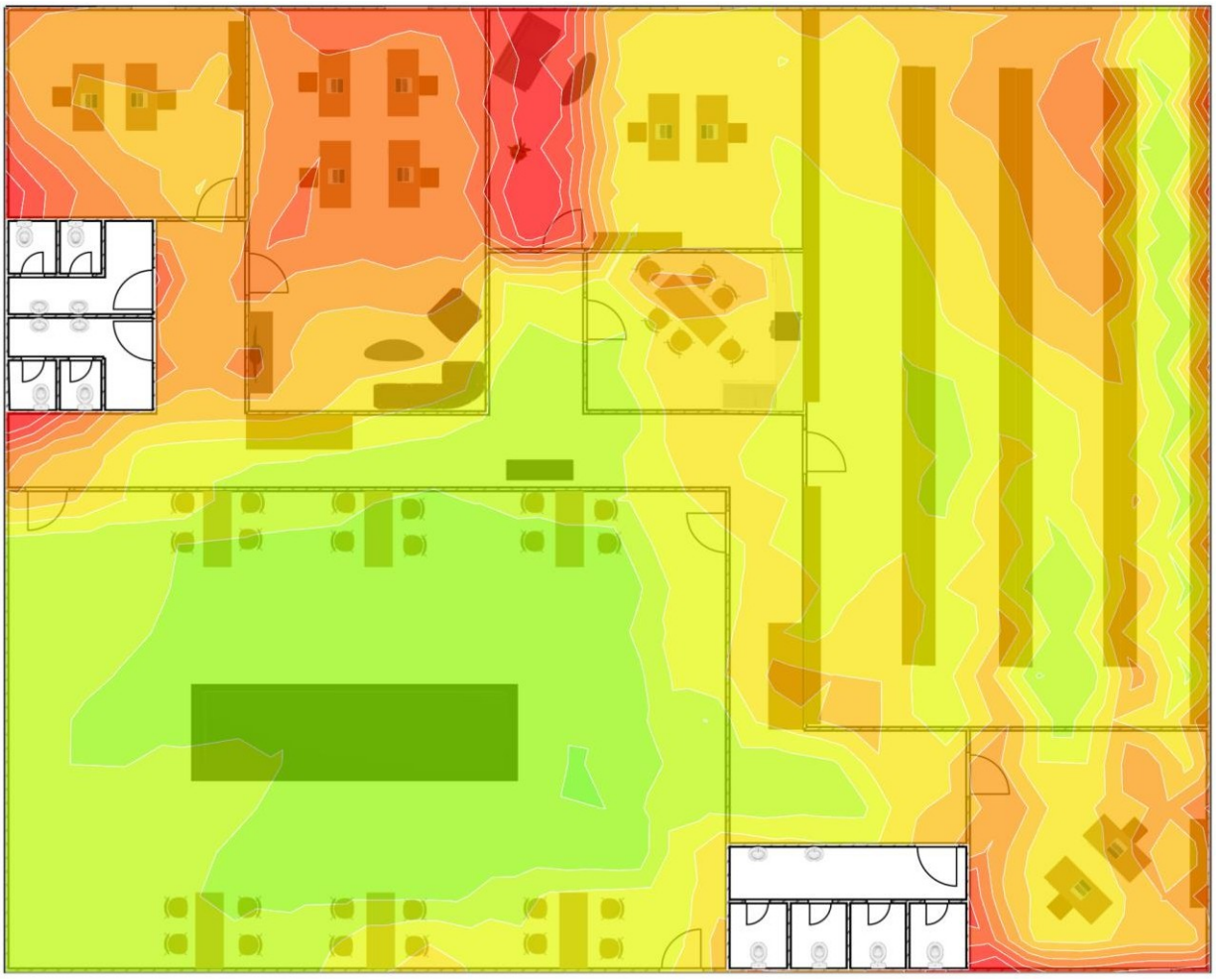
Secondary signal strength shows the second strongest RSSI at any location on the map. This heat map helps ensure smooth roaming for customers and quality of service for certain latency-sensitive applications such as VoIP calls.

Secondary signal strength for office building EG at 5 GHz band

Secondary signal strength shows the second strongest RSSI at any location on the map. This heat map helps ensure smooth roaming for customers and quality of service for certain latency-sensitive applications such as VoIP calls.

Tertiary signal strength for office building EG at 2.4 GHz band

Tertiary signal strength is used to indicate the third strongest RSSI at any point on the map. The tertiary signal is predominantly used to ensure that sufficient quality of service is provided for certain specialised services such as real time location services (RTLS).



Tertiary signal strength for office building EG at 5 GHz band

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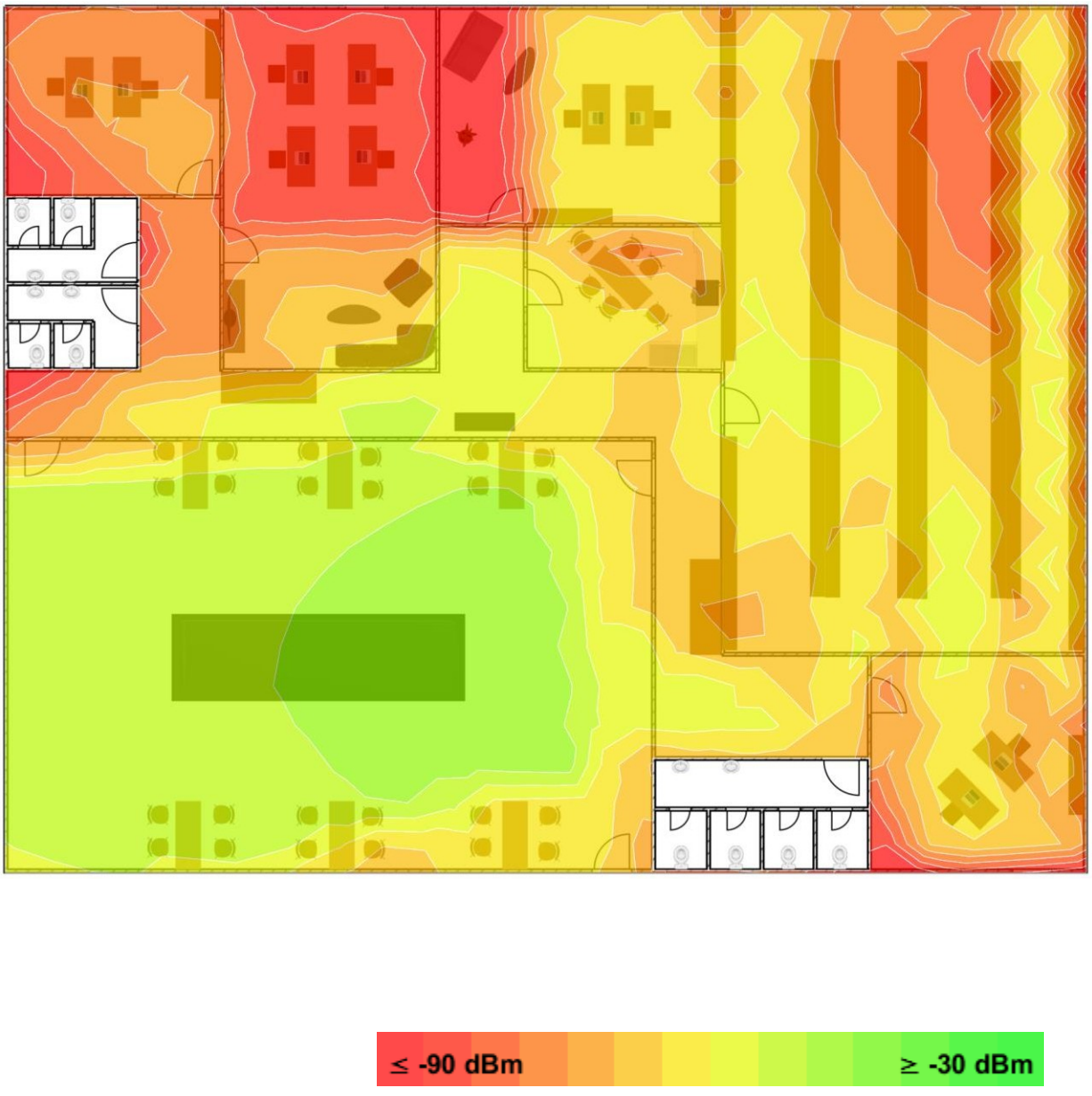
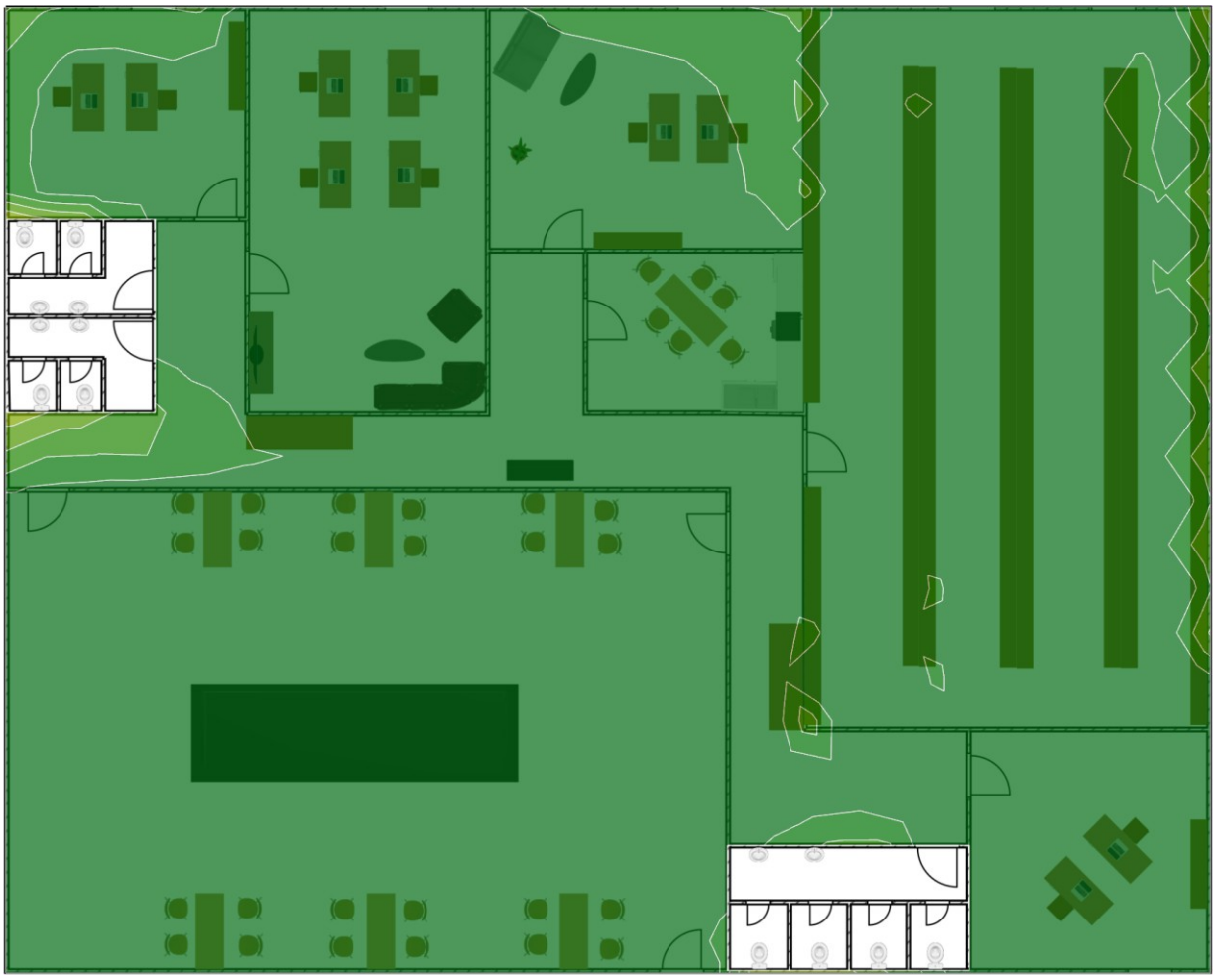


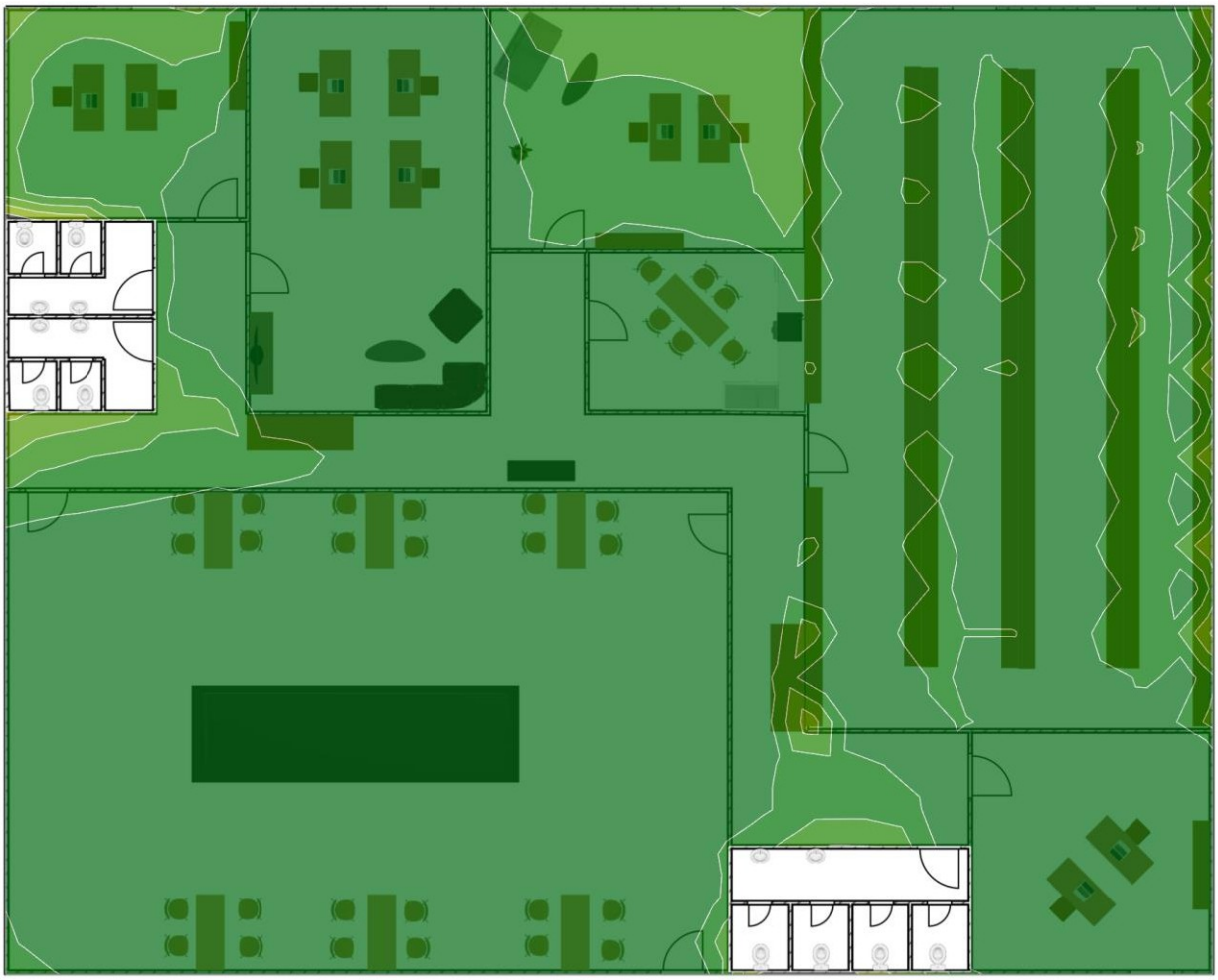
Signal-to-noise ratio for office building EG at 2.4 GHz band

The signal-to-noise ratio indicates the signal strength in relation to the noise (two-channel interference). For data transmission to take place, the signal strength must override the noise (SNR higher than 0). If the signal is only slightly stronger than the noise, occasional connection failures may occur.



Signal-to-noise ratio for office building EG at 5 GHz band

The signal-to-noise ratio indicates the signal strength in relation to the noise (two-channel interference). For data transmission to take place, the signal strength must override the noise (SNR higher than 0). If the signal is only slightly stronger than the noise, occasional connection failures may occur.



Channel interference for office building EG at 2.4 GHz band

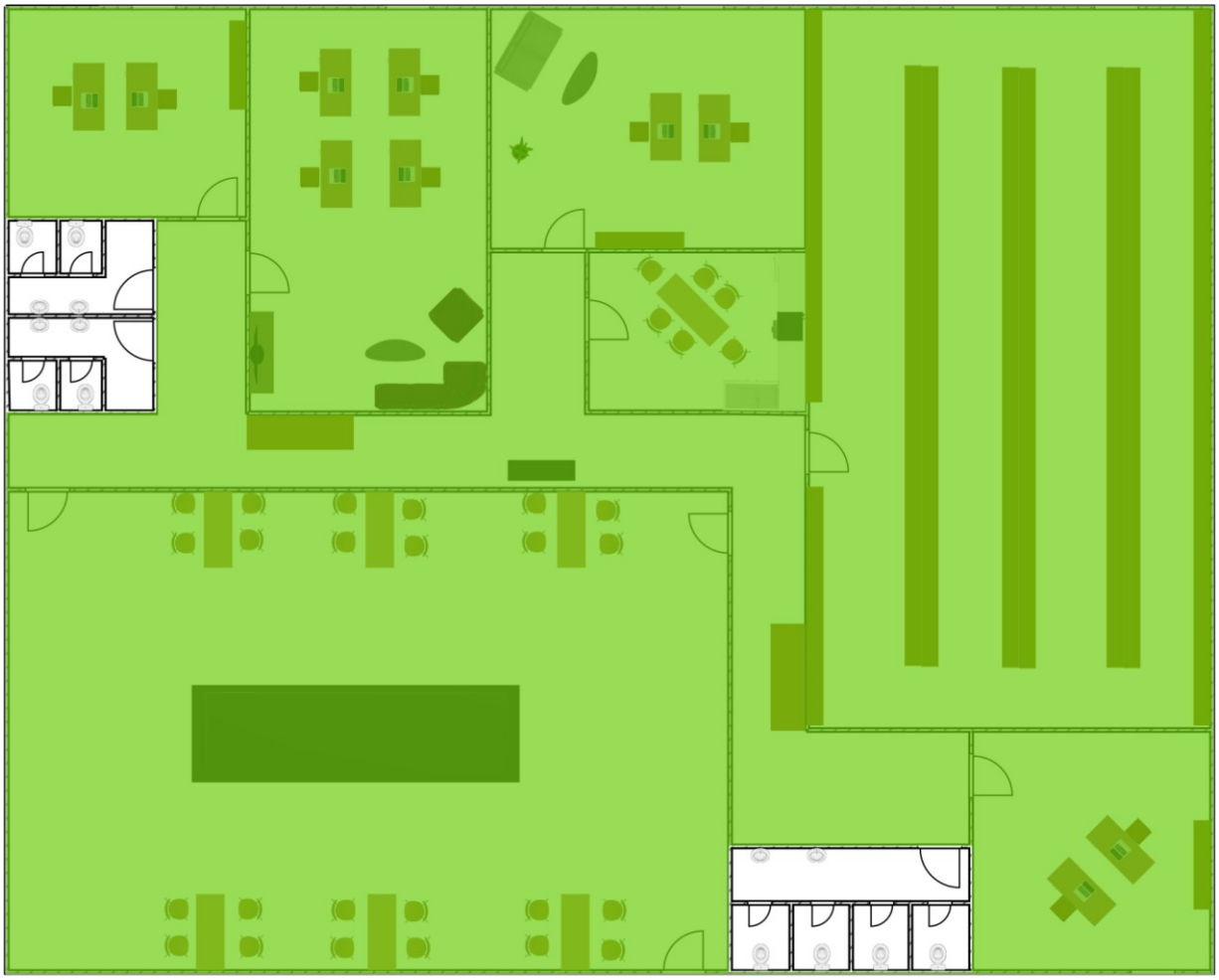
Channel interference indicates the number of access points that overlap per site in a single channel.

Channel interference for office building EG at 5 GHz band

Channel interference indicates the number of access points that overlap per site in a single channel.

Noise for office building EG at 2.4 GHz band

Displays the calculated strength of the two-channel interference.



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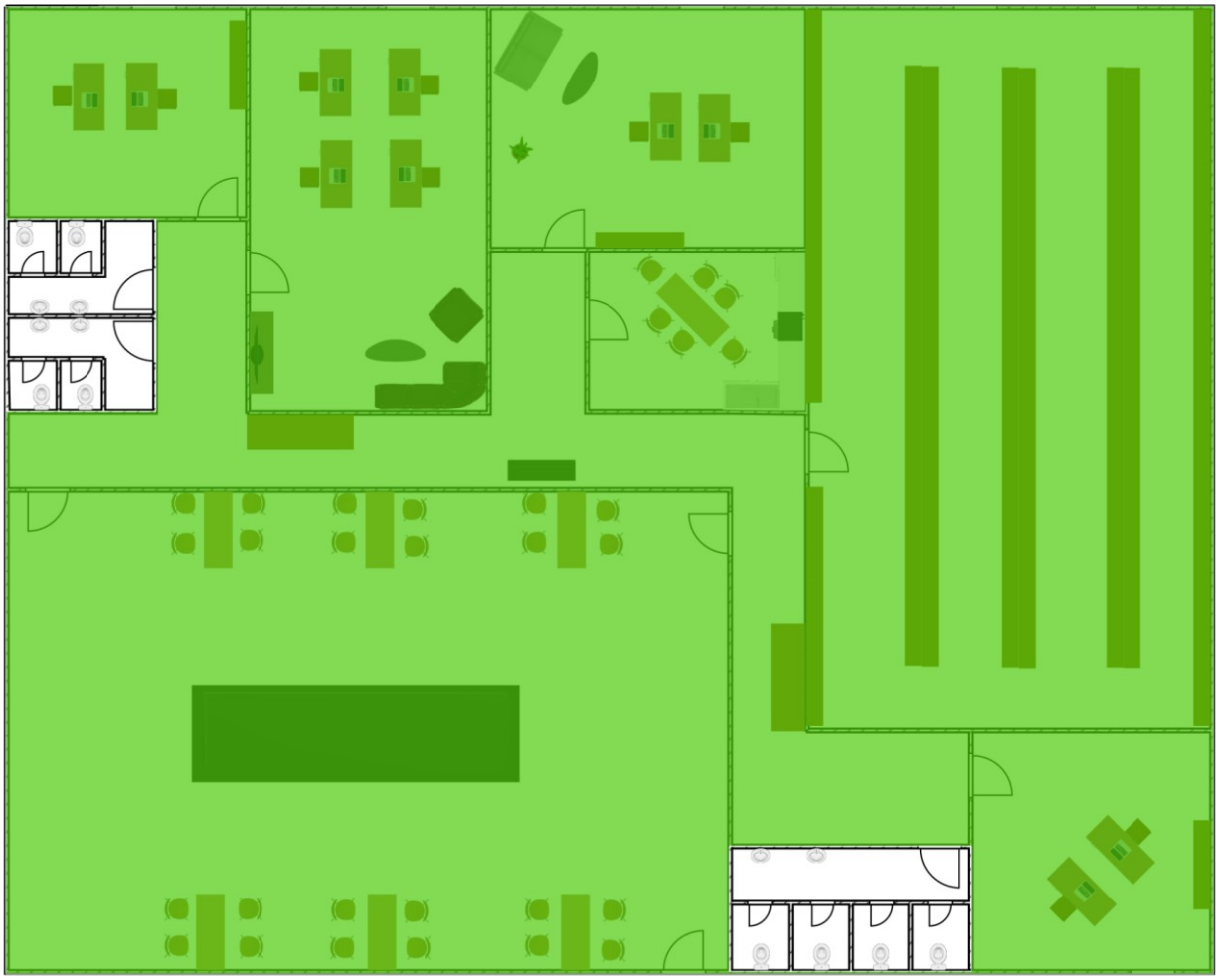
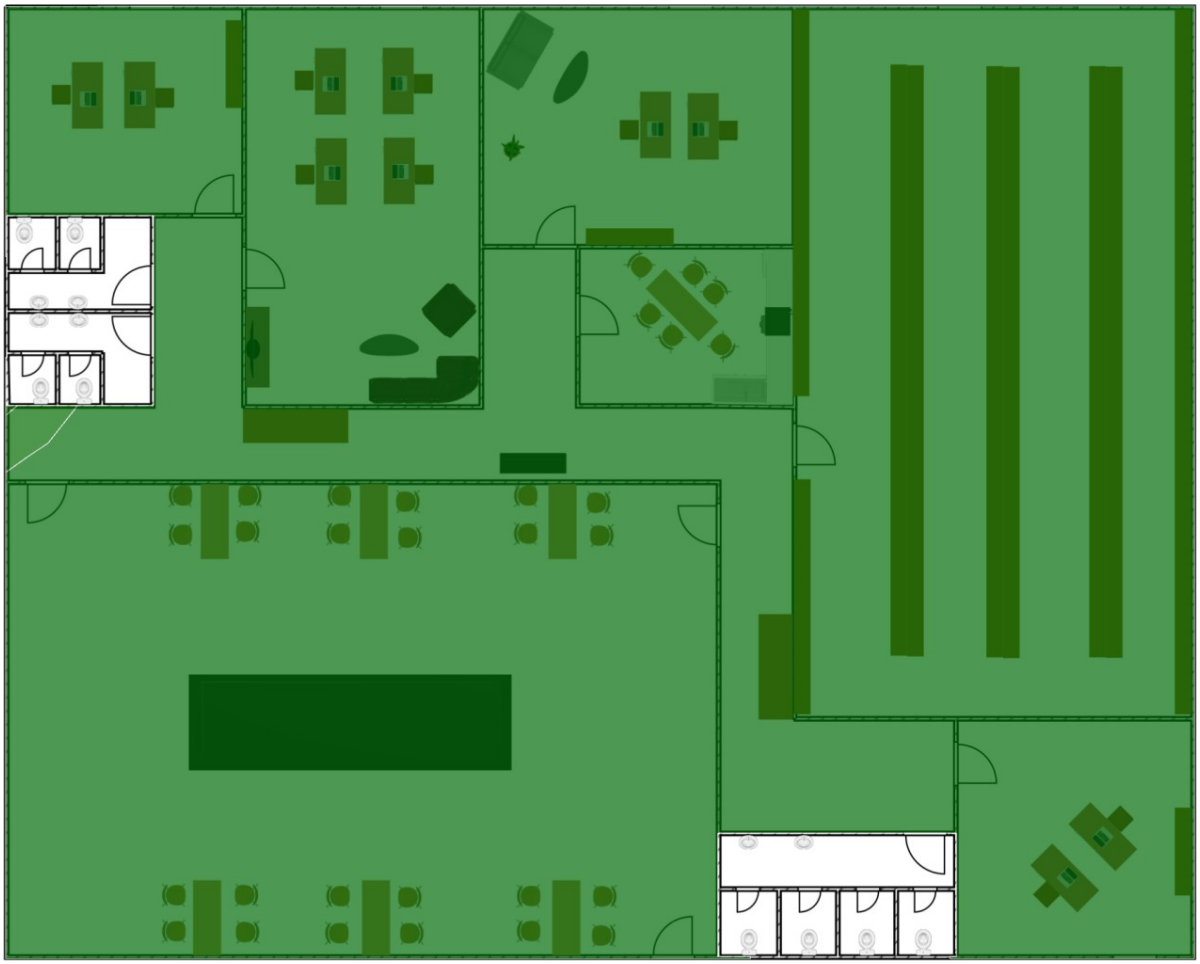


Data rate for office building EG at 2.4 GHz band

The data rate indicates the highest possible transmission speed (in megabits per second) at which a WLAN device transmits data. Normally, the actual data throughput is half the data rate or less.



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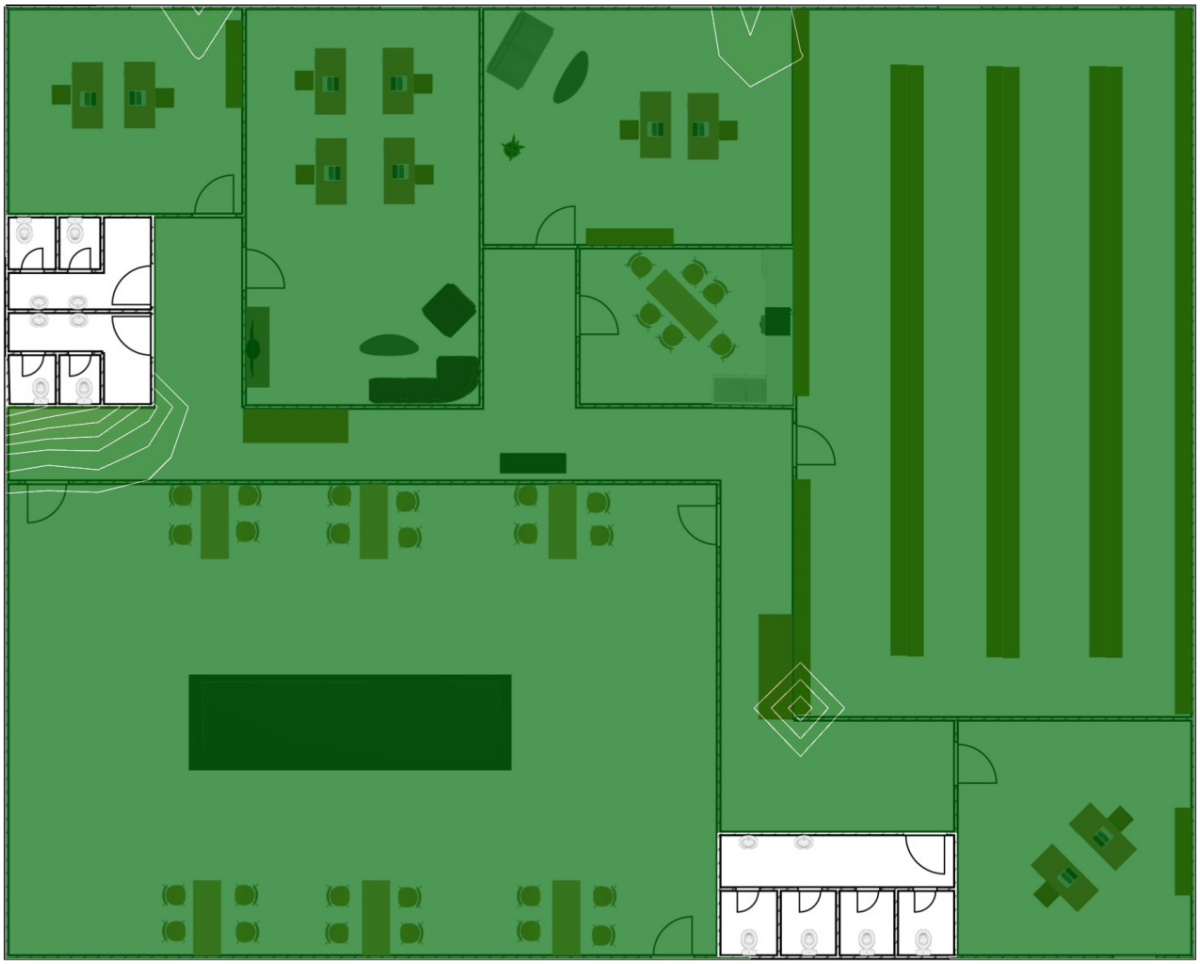
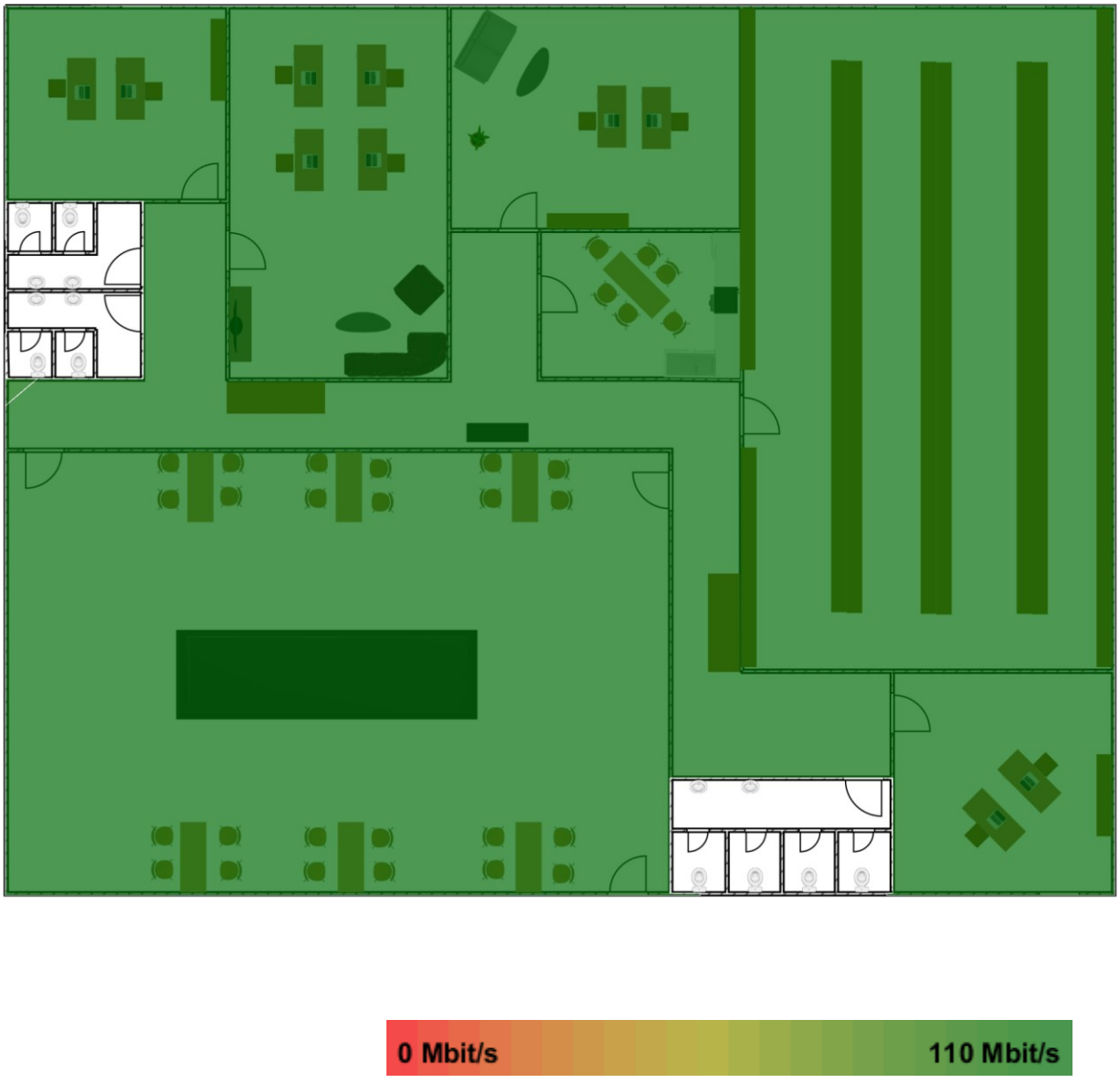


Throughput for office building EG at 2.4 GHz band

Displays the measured throughput. In case of non-existent measurements, the estimated maximum effective throughput is displayed.



Throughput for office building EG at 5 GHz band

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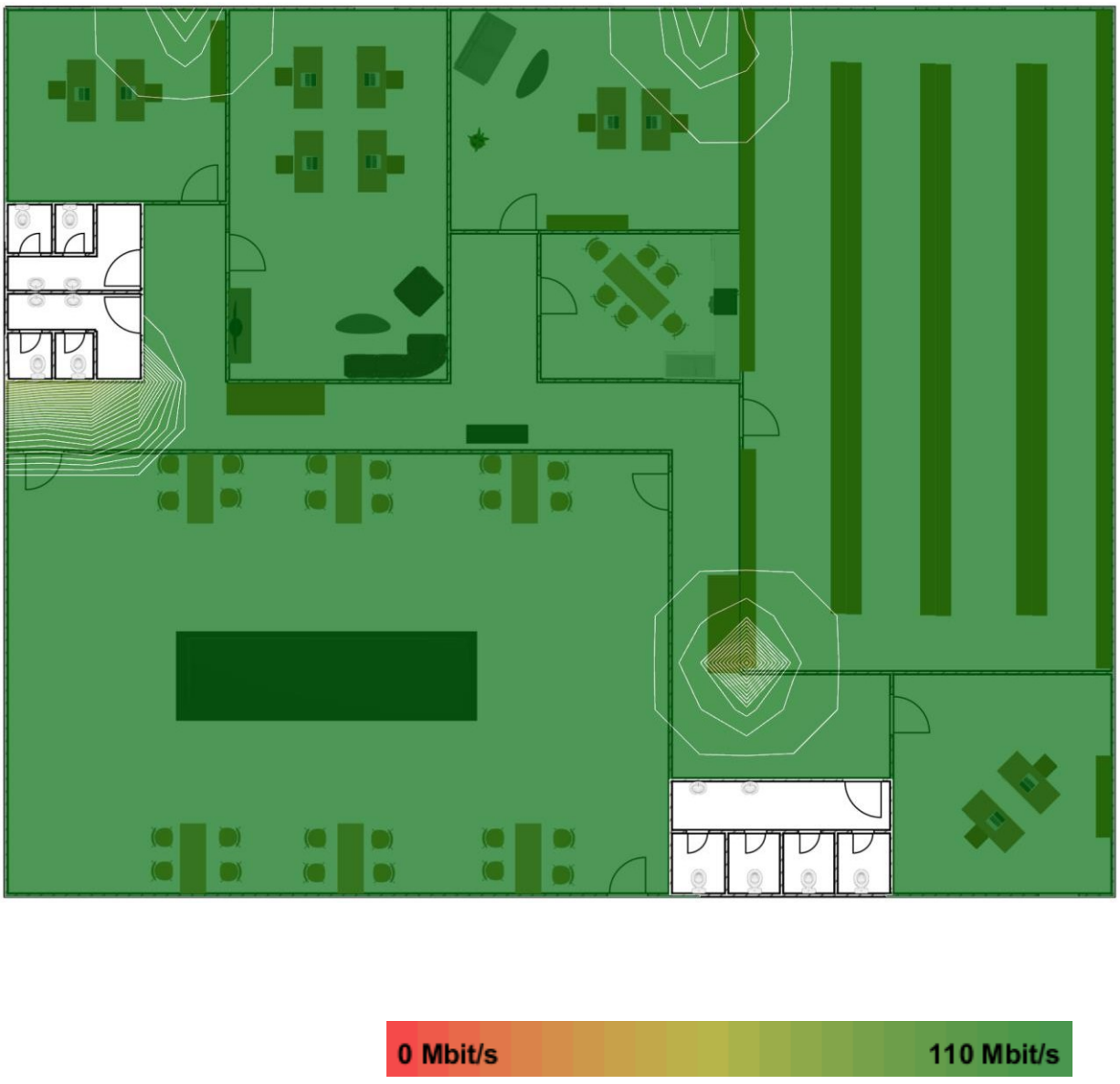
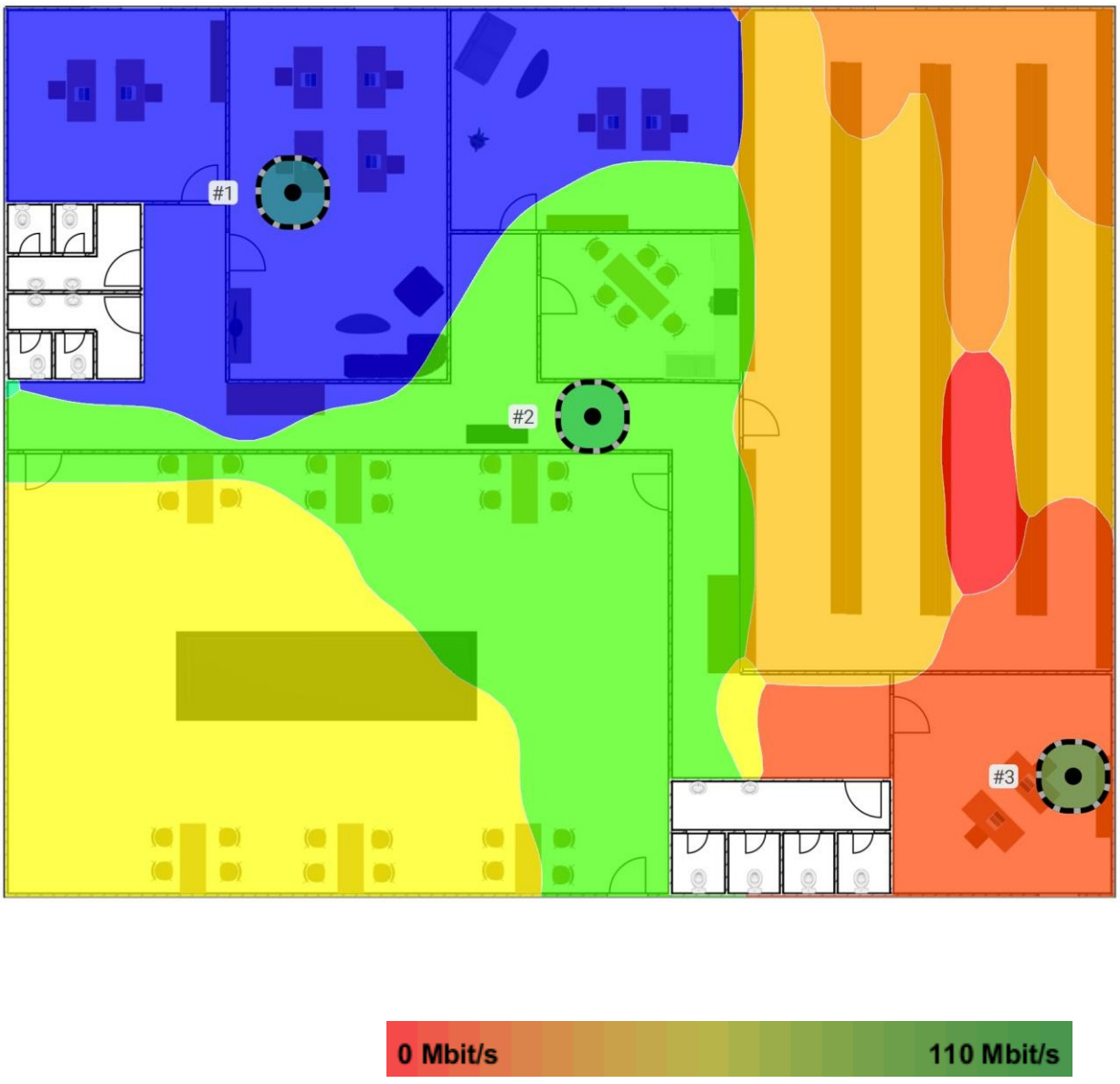


Assigned access point for office building ground floor

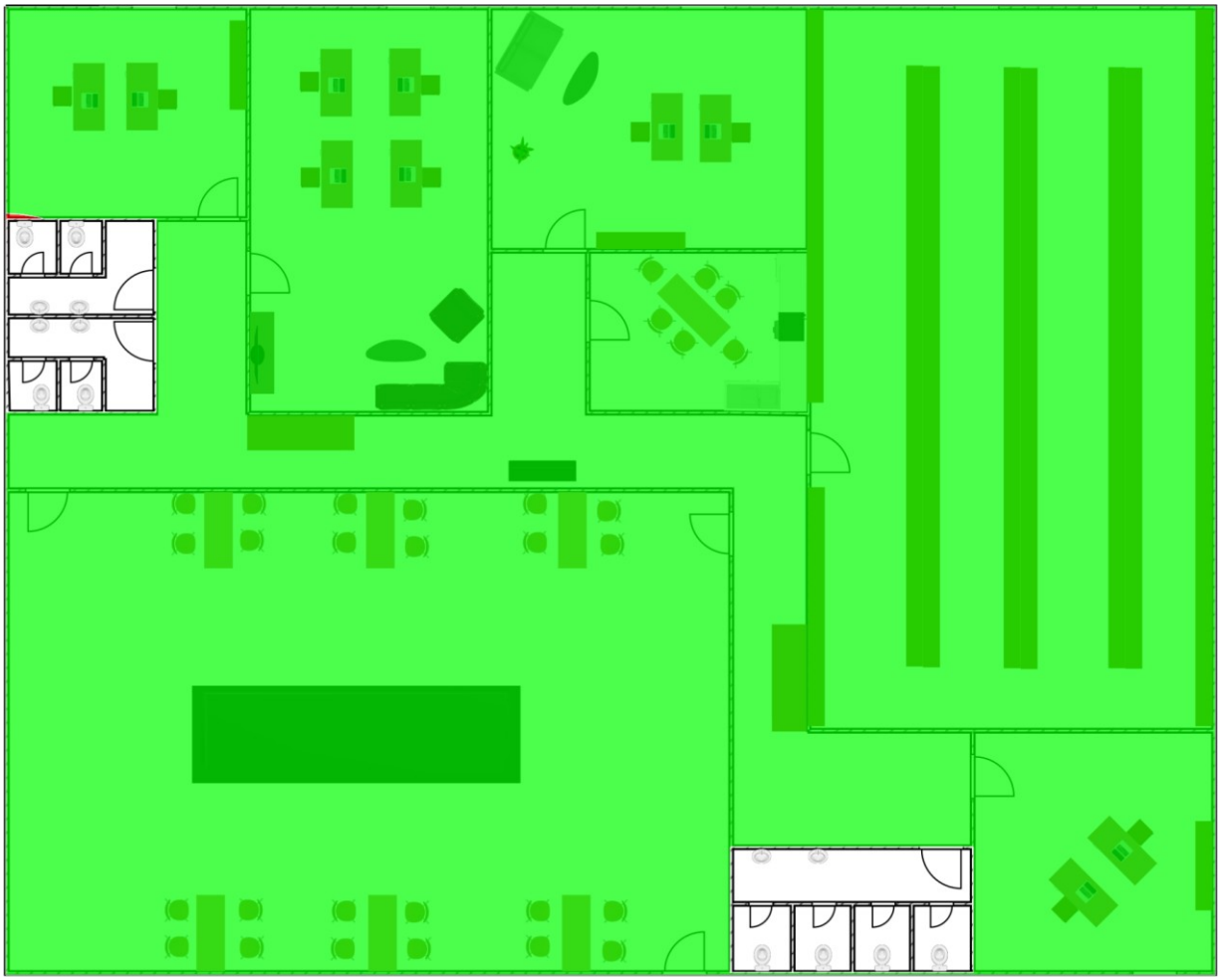
Shows the access point to which the client was assigned at the time of the ping measurement. The image shows prediction for assignment - signal strength



AP \#	Access Point			
1	AP01 - FortiAP 221E		Fortinet FortiAP-221E	
	●802.11n	11	100 mW	Fortinet FortiAP-221E 2.4GHz
	802.11ac	36@40	100 mW	Fortinet FortiAP-221E 5GHz
2	AP02 - FortiAP 221E		Fortinet FortiAP-221E	
	●802.11n	1	100 mW	Fortinet FortiAP-221E 2.4GHz
	802.11ac	60@40	100 mW	Fortinet FortiAP-221E 5GHz
3	AP03 - FortiAP 221E		Fortinet FortiAP-221E	
	●802.11n	6	100 mW	Fortinet FortiAP-221E 2.4GHz
	802.11ac	44@40	100 mW	Fortinet FortiAP-221E 5GHz

Network status for office building EG at 2.4 GHz band

A WLAN is usually set up for one or more specific tasks, such as VoIP, web browsing or positioning. The Network Status feature allows you to see if the network is meeting your needs with a single visualisation.



nicht ok | ok

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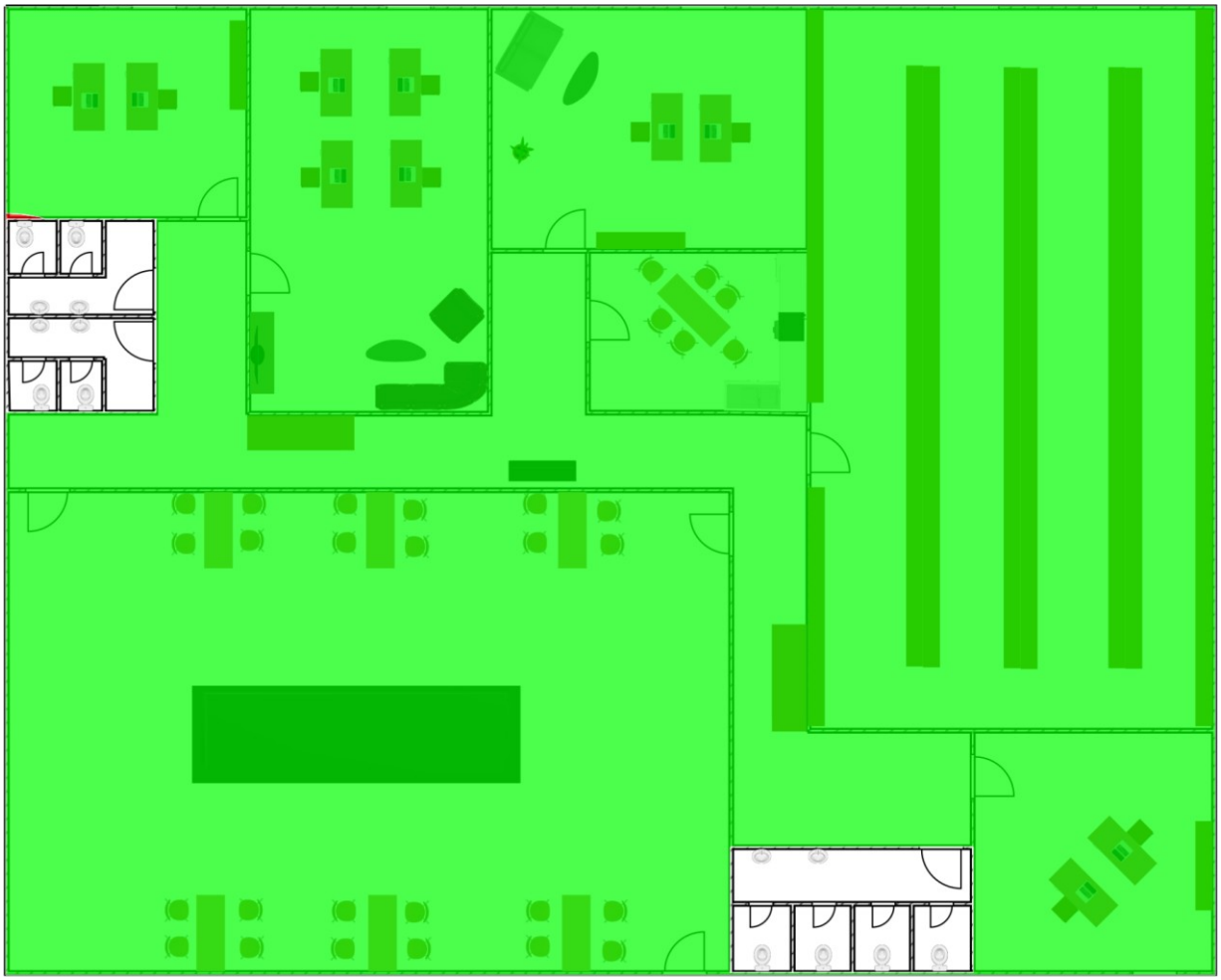

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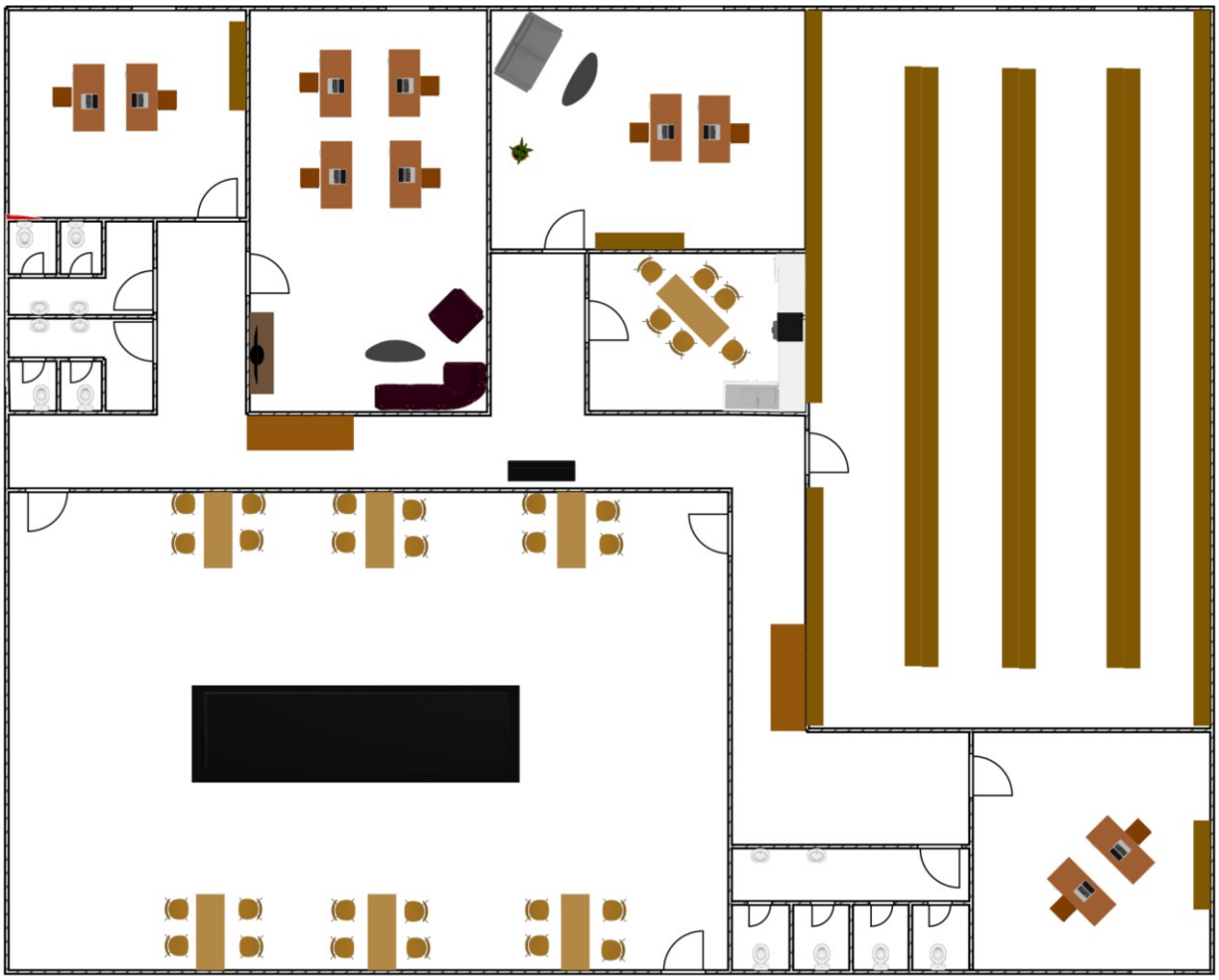
Network problems for office building EG at 2.4 GHz band

"Network Problems" complements "Network Status" by displaying the demand that is below the limit allowed for each item. So while "Network Status" gives an answer to the question "Is it working?", "Network Problems" answers the question "Why is it not working?".



nicht ok ok

Network problems for office building EC at 5 GHz band

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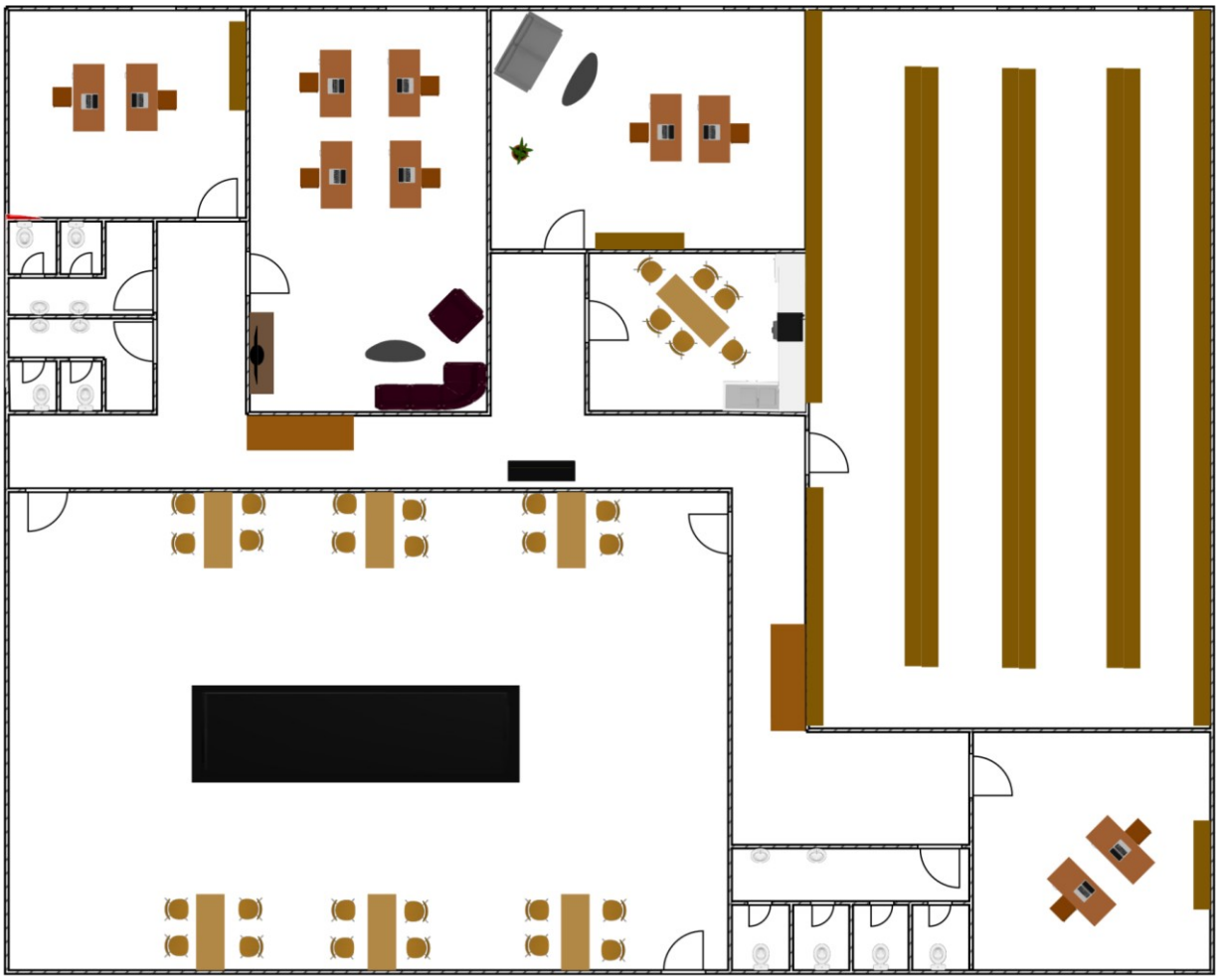

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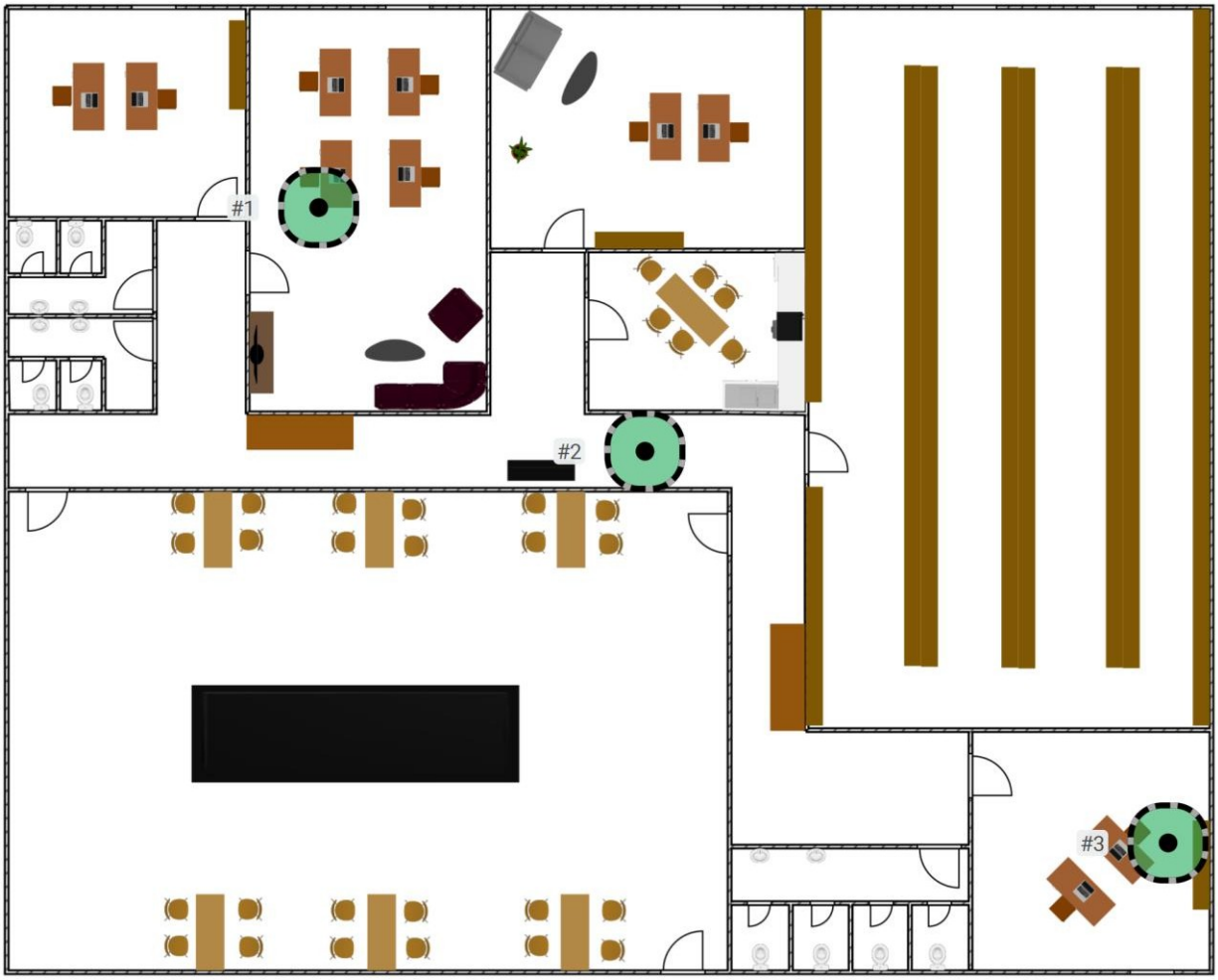
Simulated access points in office building EG



AP \#	Access Point			
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	802.11n	1	100 mW	Fortinet FortiAP-221E 2.4GHz
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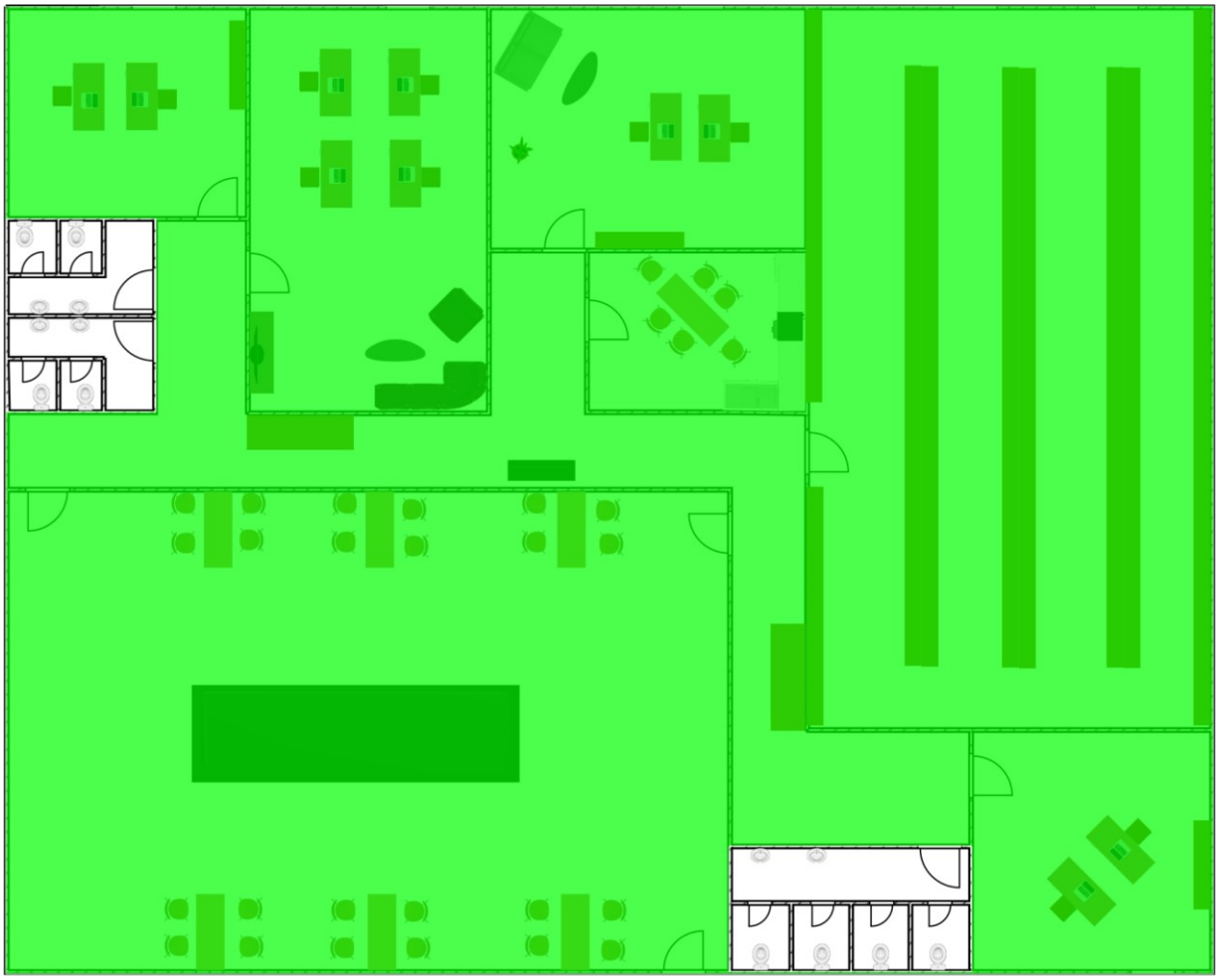
	802.11ac	44@40	100 mW	Fortinet FortiAP-221E 5GHz

Channel width for office building EG at 2.4 GHz band

Displays the maximum channel width in each area.



Channel width for office building EG at 5 GHz band

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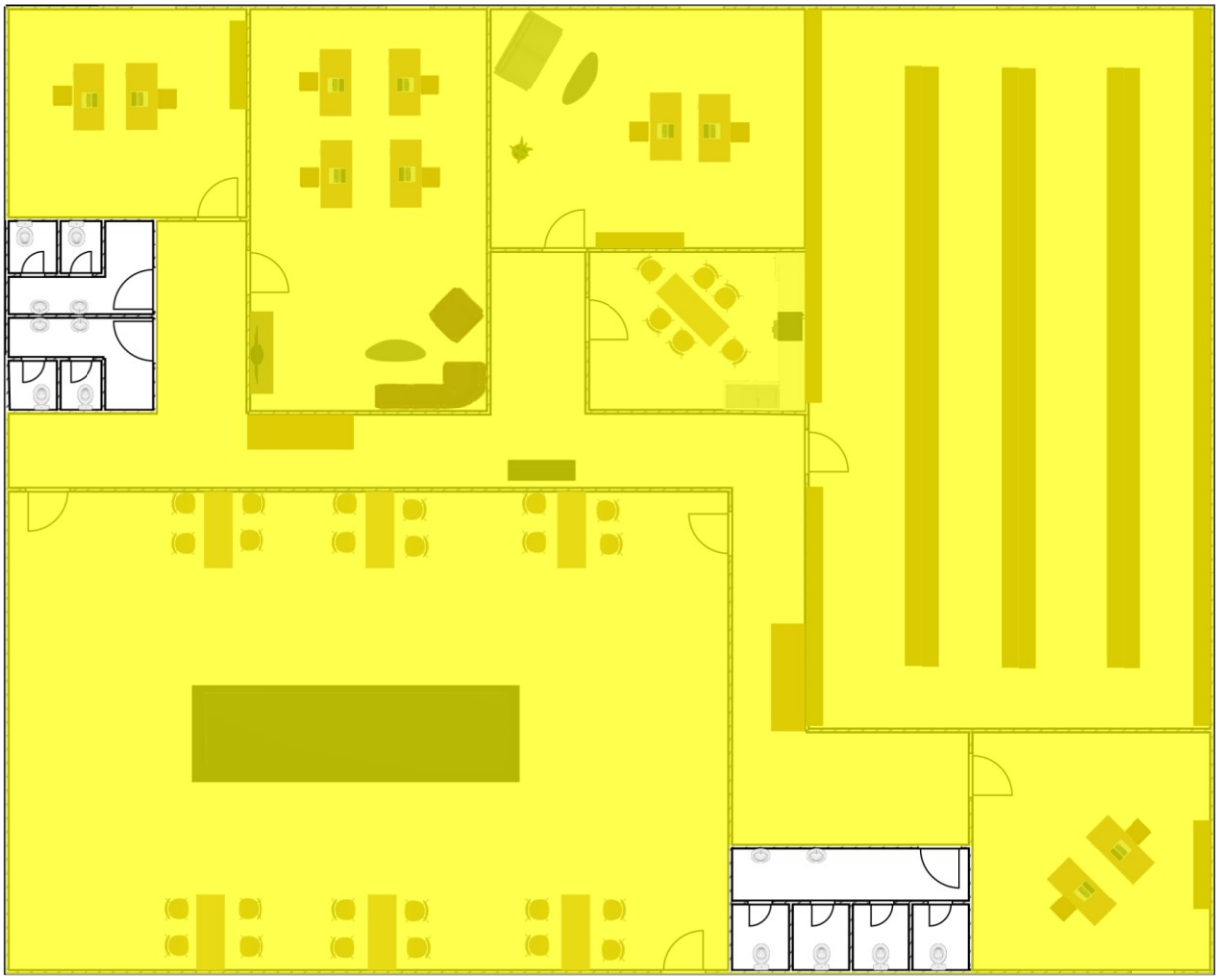
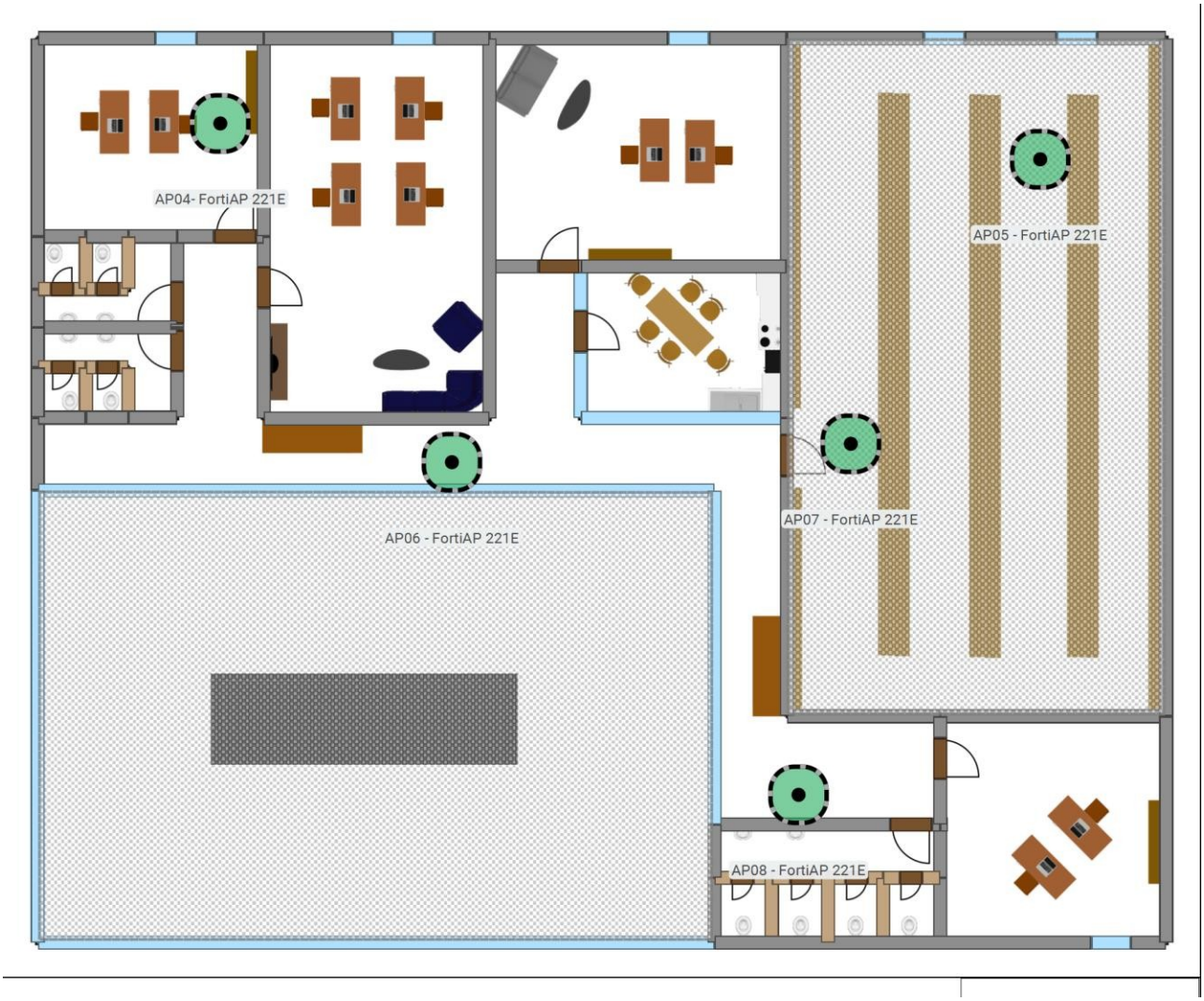


20MHz 40MHz 80MHz 160MHz

Office building OG (5 APs)



First floor (183 m²)

Coverage requirement: **Voice + Data**	Signal strength Min	**-70.0 dBm**
	Secondary signal strength Min	**-100.0 dBm**
	Signal-to-noise ratio Min	**20.0 dB**
	Data rate Min	**20 Mbit/s**
	Channel interference Max	**3 with min. -85.0 dBm**

AP04 - FortiAP 221E: ceiling mounting

AP05 - FortiAP 221E: ceiling mounting

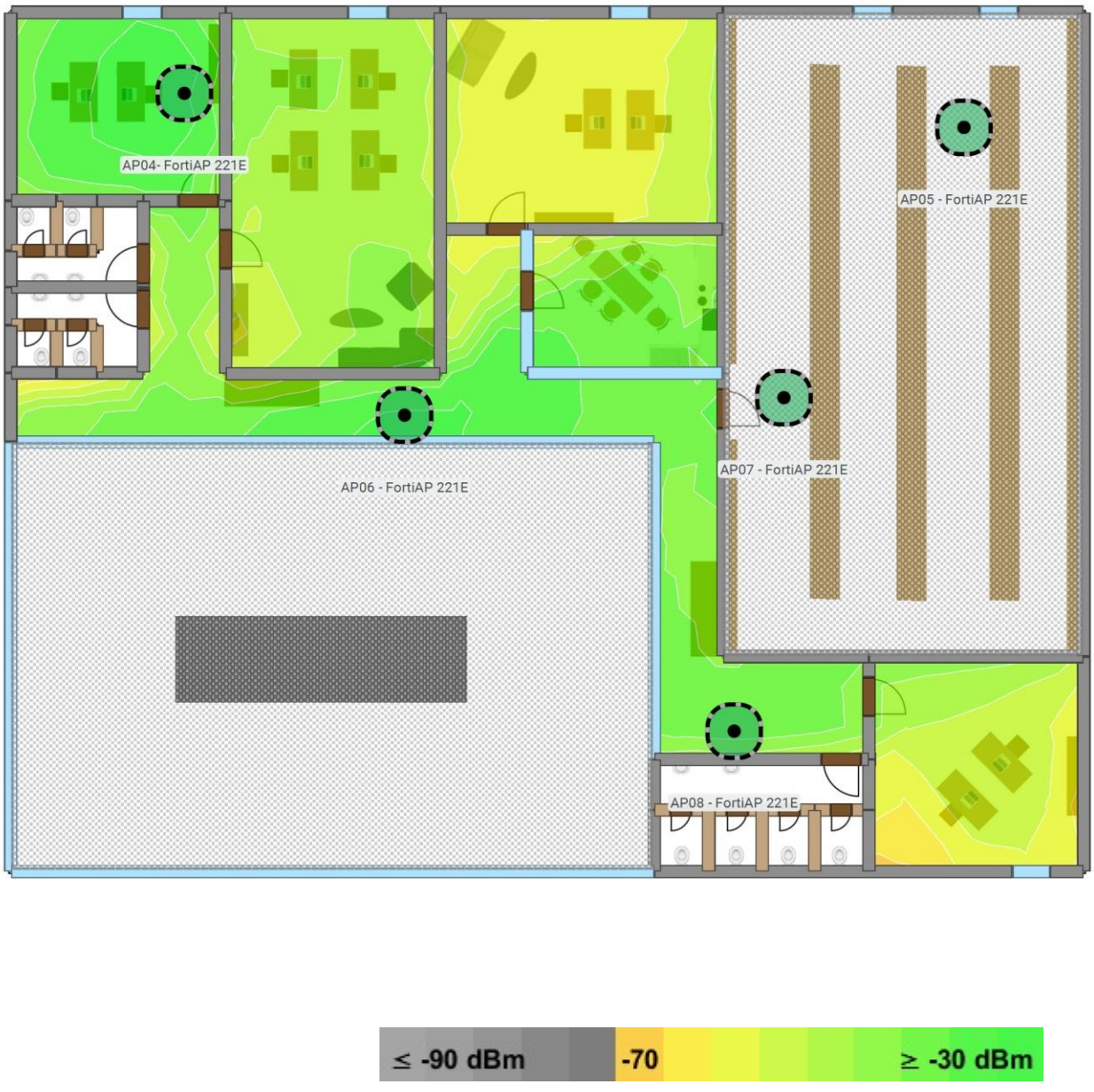
AP06 - FortiAP 221E: ceiling mounting

AP07 - FortiAP 221E: Mounting on ceiling

AP08 - FortiAP 221E: Mounting on ceiling

Signal strength for office building OG at 2.4 GHz band

Signal strength - sometimes referred to as coverage - is the most basic requirement of a wireless network. The general rule is that low signal strength indicates unreliable connections and therefore low data throughput.



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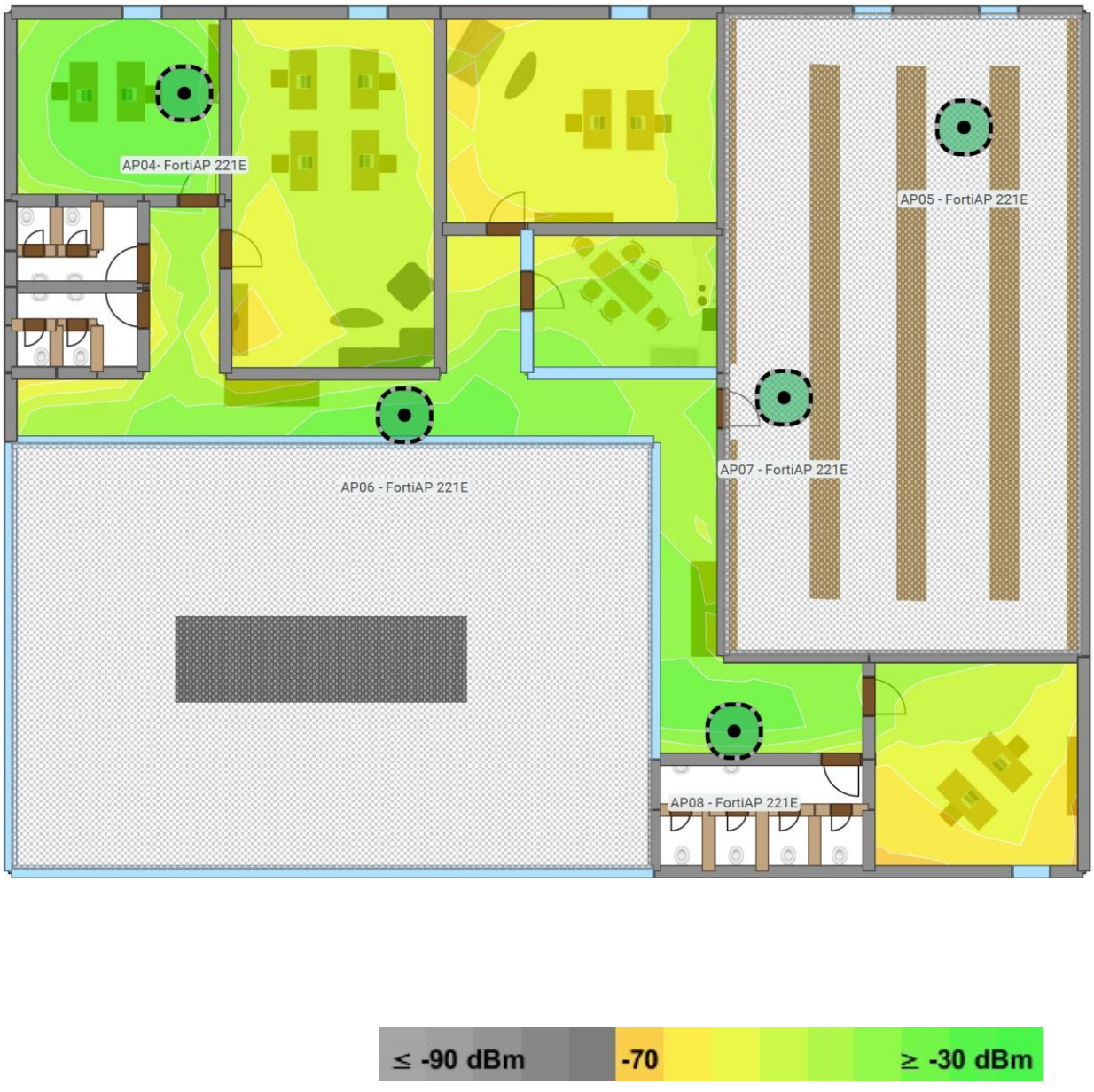

Secondary signal strength for office building OG at 2.4 GHz band

Secondary signal strength shows the second strongest RSSI at any location on the map. This heat map helps ensure smooth roaming for customers and quality of service for certain latency-sensitive applications such as VoIP calls.

Secondary signal strength for office building OG at 5 GHz band

Secondary signal strength shows the second strongest RSSI at any location on the map. This heat map helps ensure smooth roaming for customers and quality of service for certain latency-sensitive applications such as VoIP calls.

Tertiary signal strength for office building OG at 2.4 GHz band

Tertiary signal strength is used to indicate the third strongest RSSI at any point on the map. The tertiary signal is predominantly used to ensure that sufficient quality of service is provided for certain specialised services such as real time location services (RTLS).

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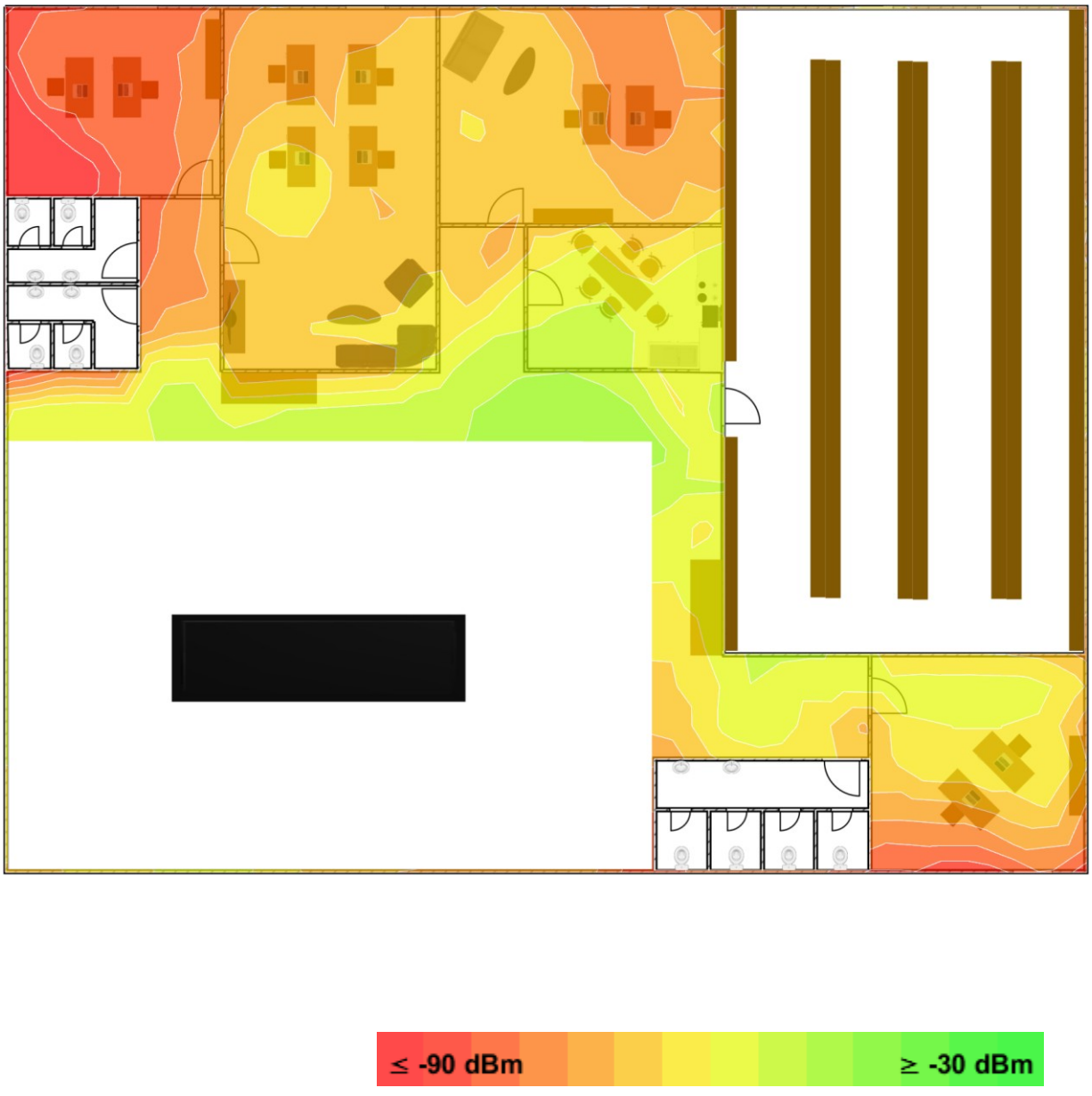
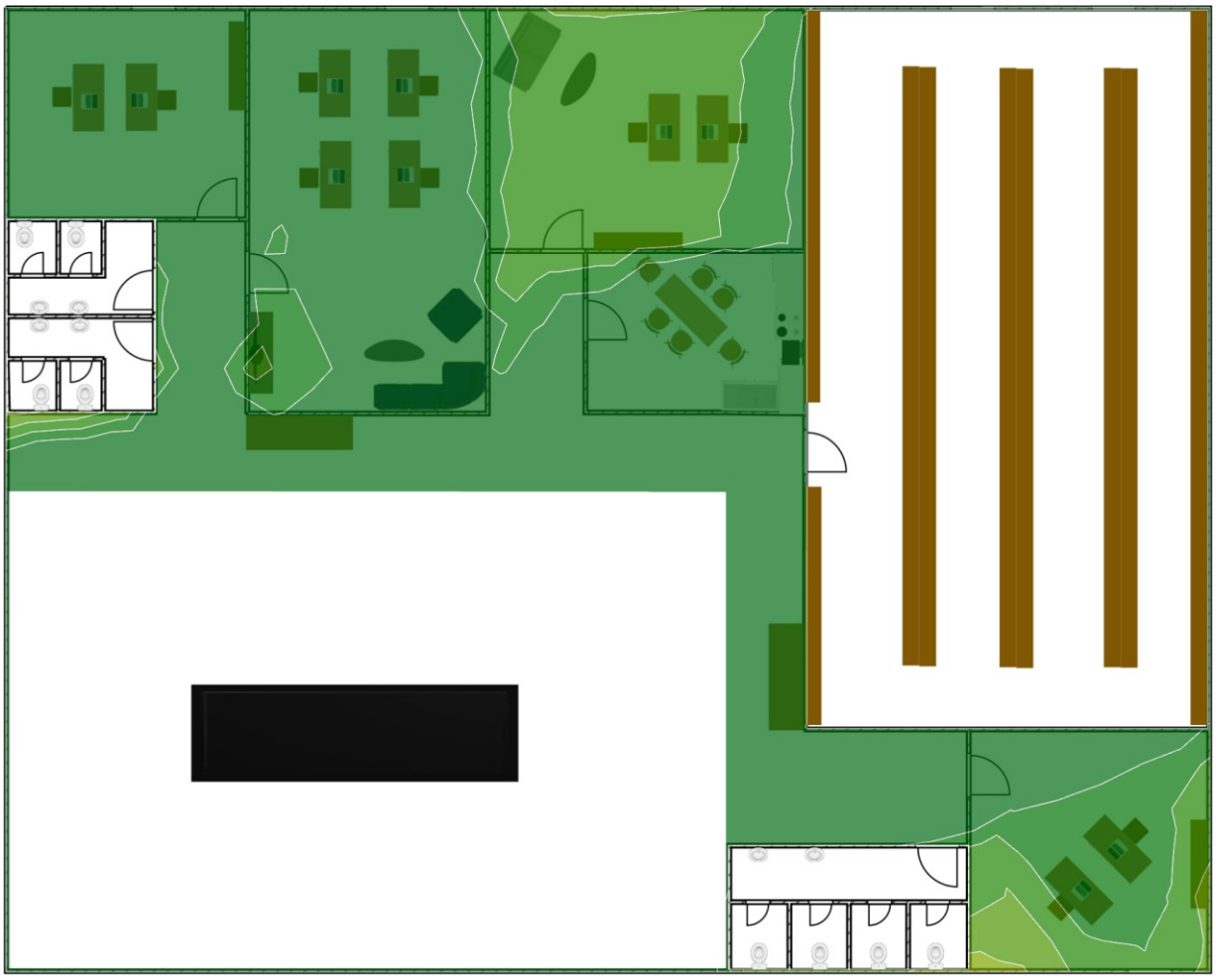


Signal-to-noise ratio for office building OG at 2.4 GHz band

The signal-to-noise ratio indicates the signal strength in relation to the noise (two-channel interference). For data transmission to take place, the signal strength must override the noise (SNR higher than 0). If the signal is only slightly stronger than the noise, occasional connection failures may occur.



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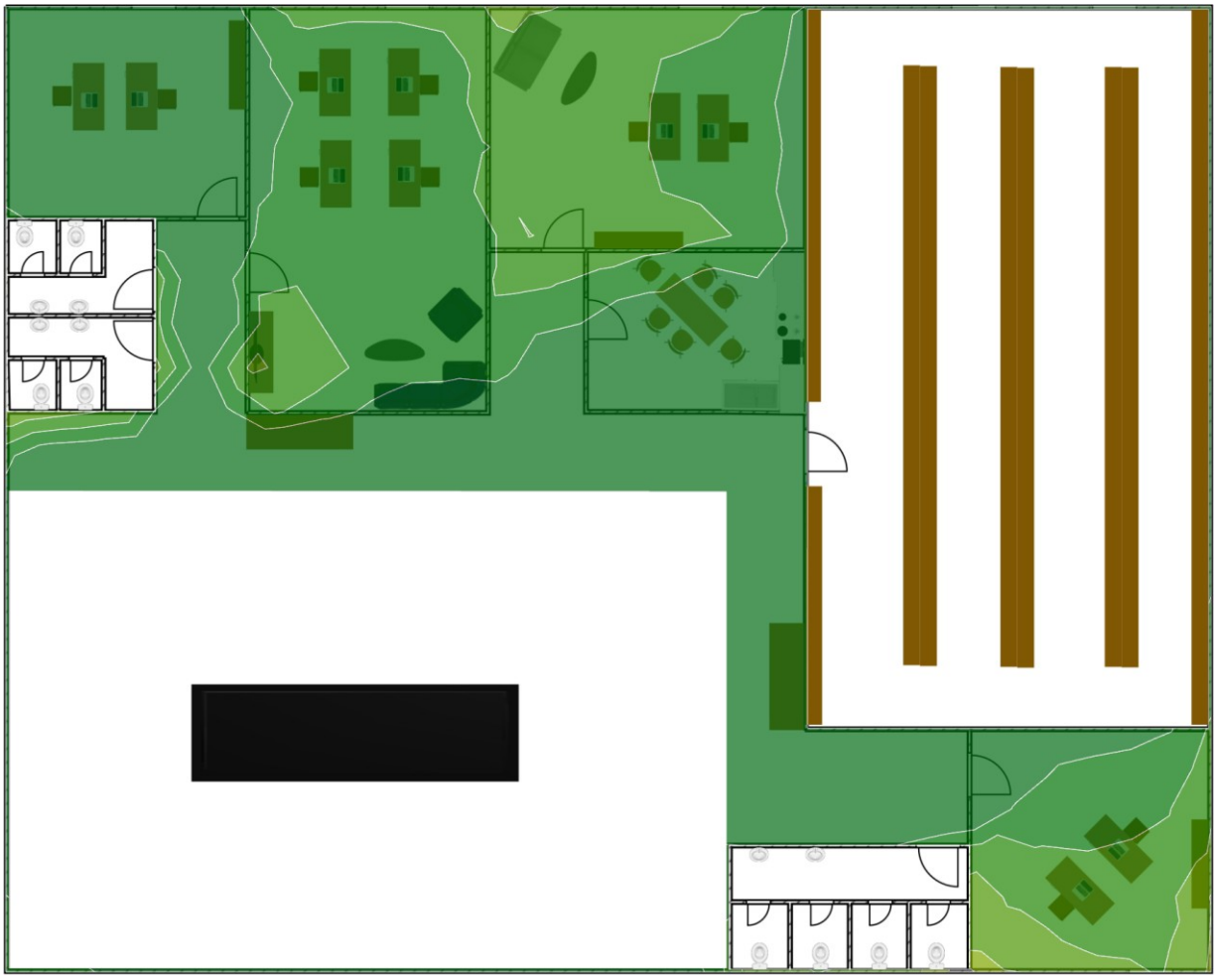

Channel interference for office building OG at 2.4 GHz band

Channel interference indicates the number of access points that overlap per site in a single channel.

Channel interference for office building OG at 5 GHz band

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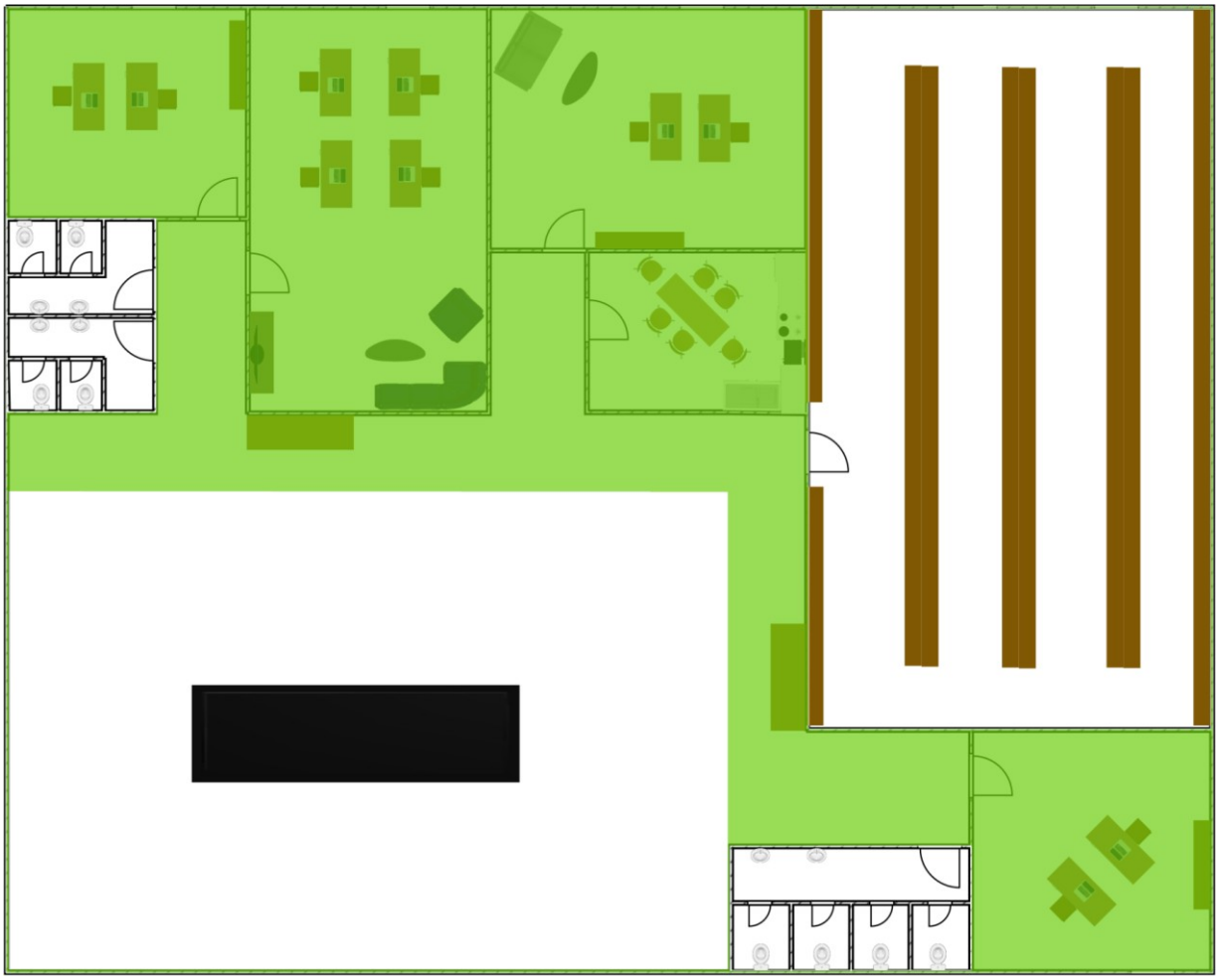
Noise for office building OG at 2.4 GHz band

Displays the calculated strength of the two-channel interference.



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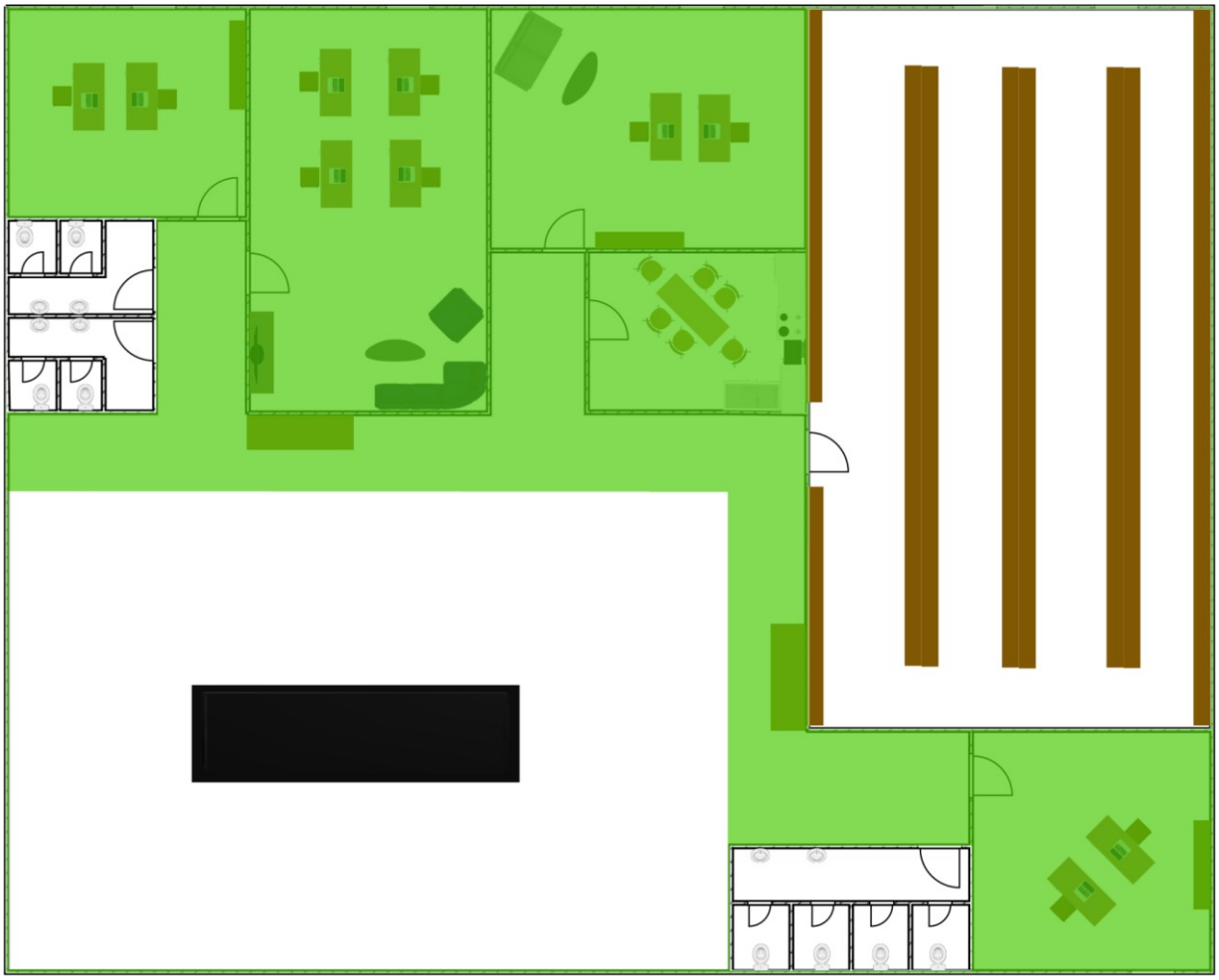
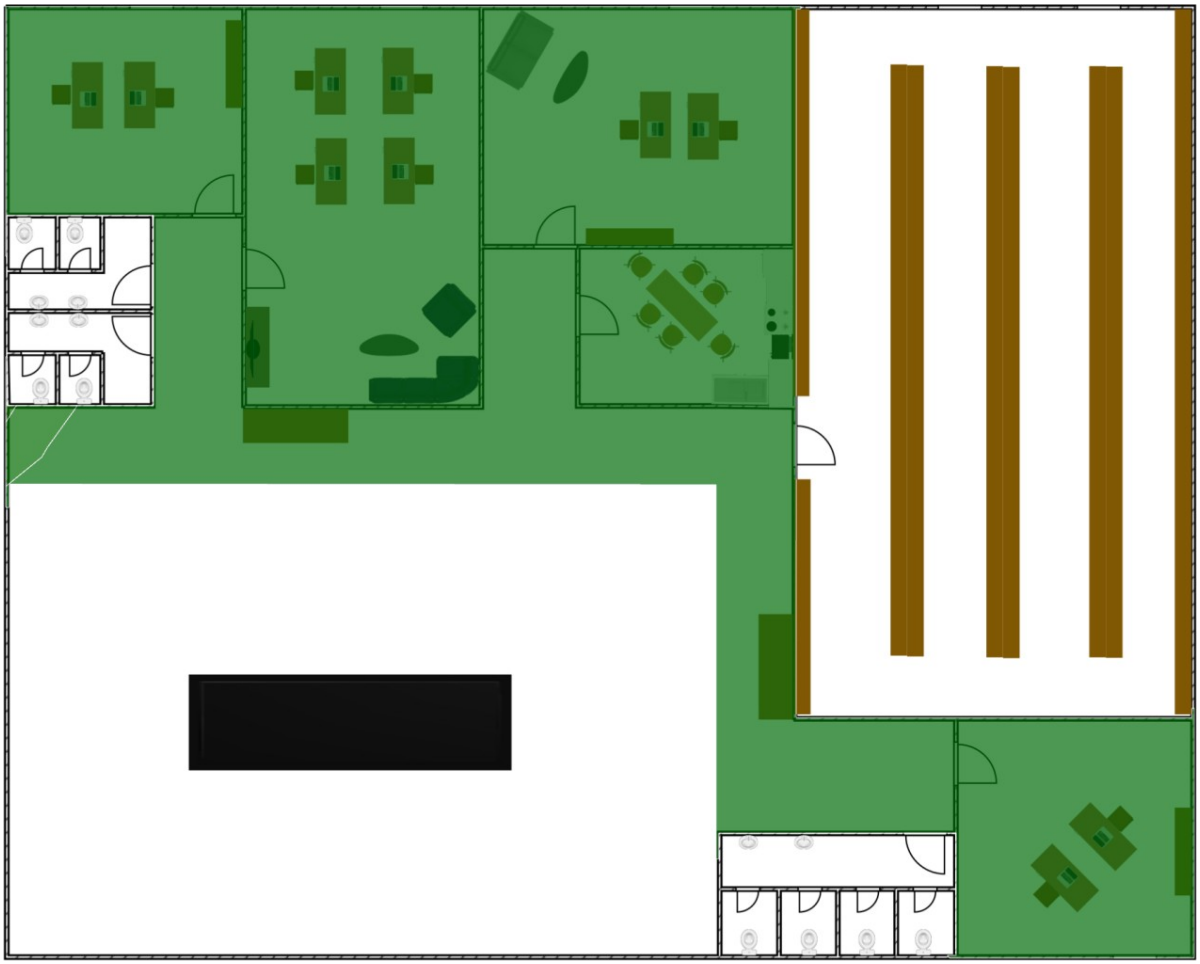


Data rate for office building OG at 2.4 GHz band

The data rate indicates the highest possible transmission speed (in megabits per second) at which a WLAN device transmits data. Normally, the actual data throughput is half the data rate or less.



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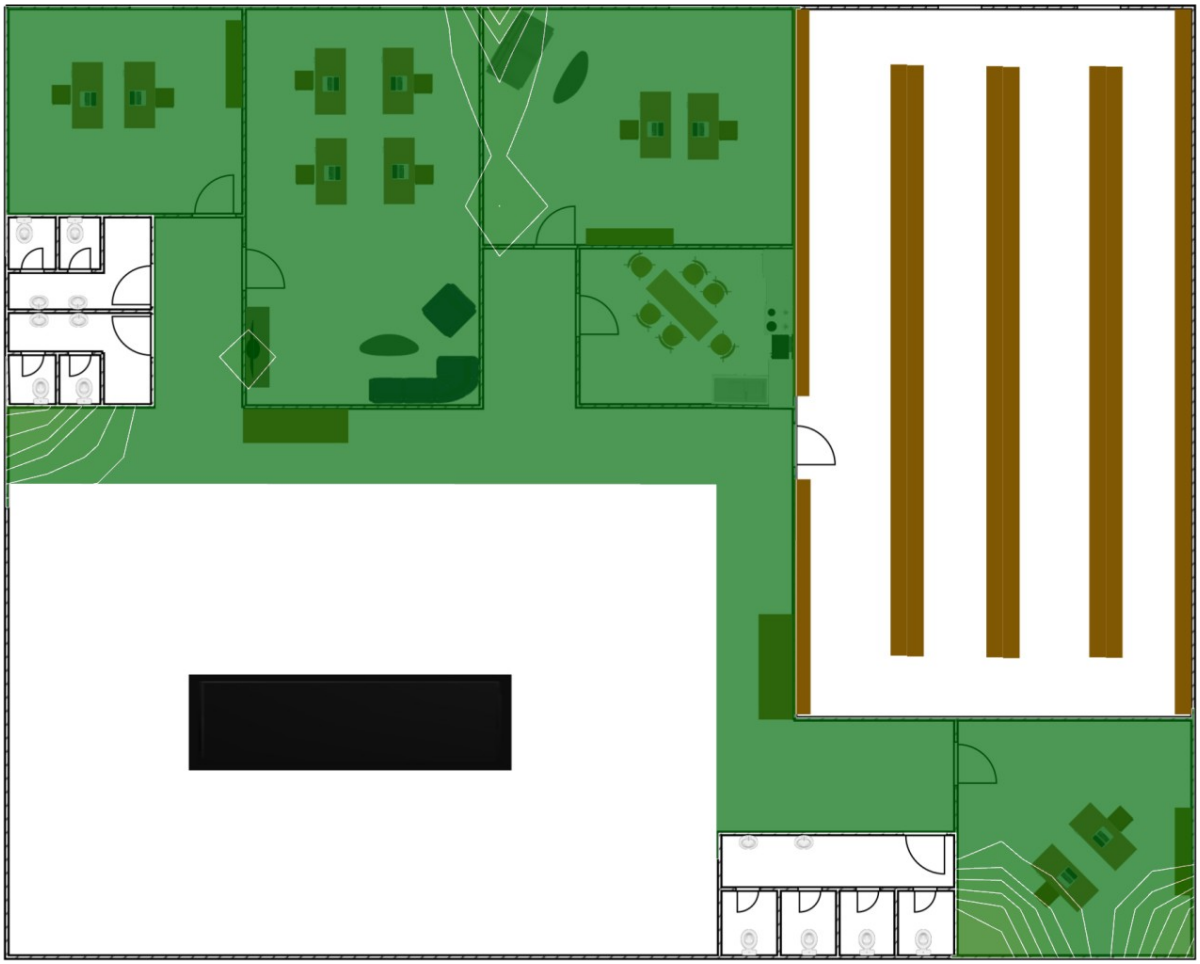


Throughput for office building OG at 2.4 GHz band

Displays the measured throughput. In case of non-existent measurements, the estimated maximum effective throughput is displayed.

Throughput for office building OG at 5 GHz band

Displays the measured throughput. In case of non-existing measurements, the estimated maximum effective throughput is displayed.

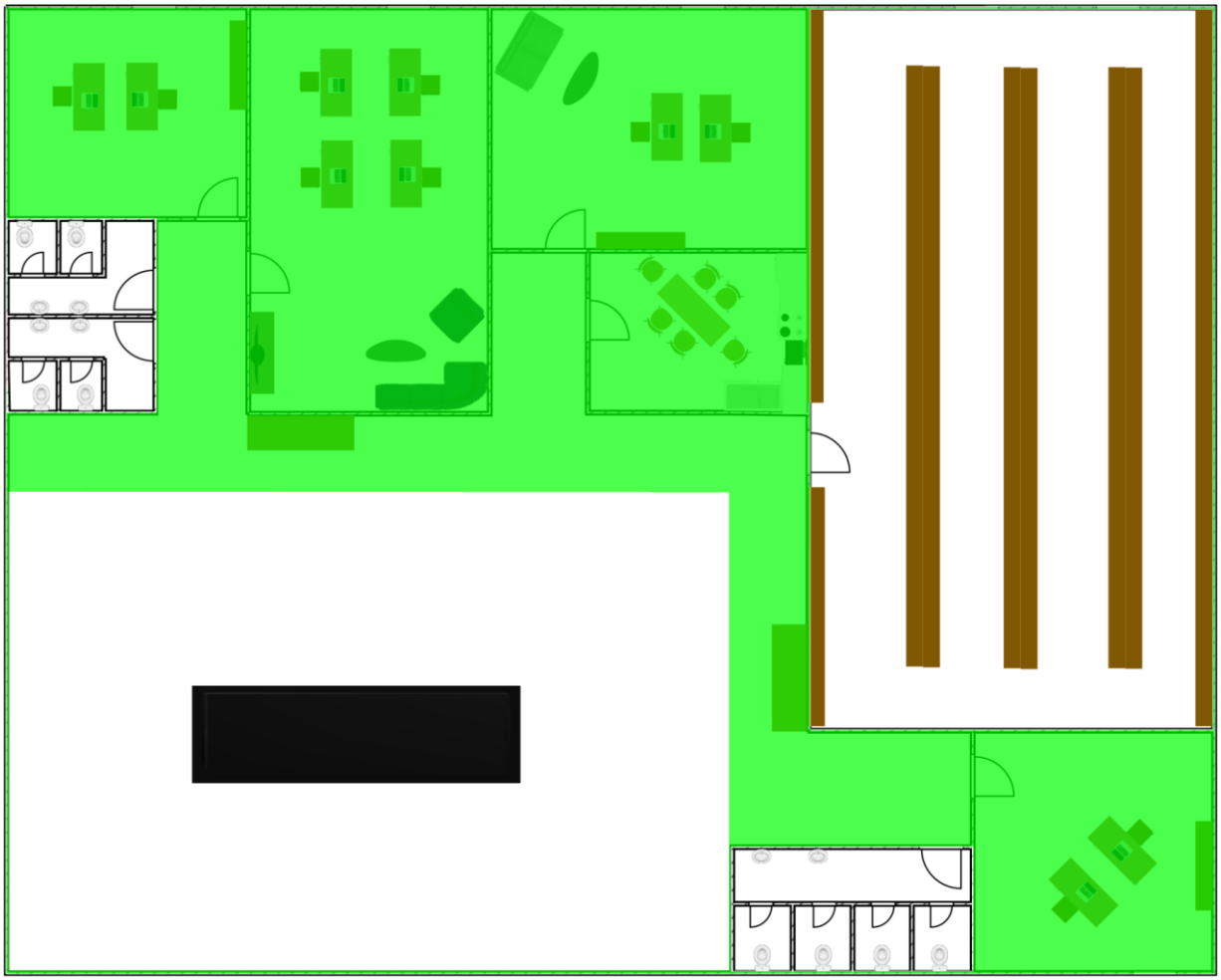
Assigned access point for office building OG

Shows the access point to which the client was assigned at the time of the ping measurement. The image shows prediction for assignment - signal strength

AP \#	Access Point			
4	AP04- FortiAP 221E		Fortinet FortiAP-221E	
	●802.11n	6	100 mW	Fortinet FortiAP-221E 2.4GHz
	802.11ac	44@40	100 mW	Fortinet FortiAP-221E 5GHz
5	AP05 - FortiAP 221E		Fortinet FortiAP-221E	
	●802.11n	1	25 mW	Fortinet FortiAP-221E 2.4GHz
	●802.11ac	44@40	100 mW	Fortinet FortiAP-221E 5GHz
6	AP06 - FortiAP 221E		Fortinet FortiAP-221E	
	●802.11n	11	100 mW	Fortinet FortiAP-221E 2.4GHz
	802.11ac	52@40	100 mW	Fortinet FortiAP-221E 5GHz
7	AP07 - FortiAP 221E		Fortinet FortiAP-221E	
	●802.11n	6	100 mW	Fortinet FortiAP-221E 2.4GHz
	802.11ac	36@40	100 mW	Fortinet FortiAP-221E 5GHz
8	AP08 - FortiAP 221E		Fortinet FortiAP-221E	
	●802.11n	1	25 mW	Fortinet FortiAP-221E 2.4GHz
	●802.11ac	60@40	100 mW	Fortinet FortiAP-221E 5GHz

Network status for office building OG at 2.4 GHz band

A WLAN is usually set up for one or more specific tasks, such as VoIP, web browsing or positioning. The Network Status feature allows you to see if the network is meeting your needs with a single visualisation.



nicht ok ok

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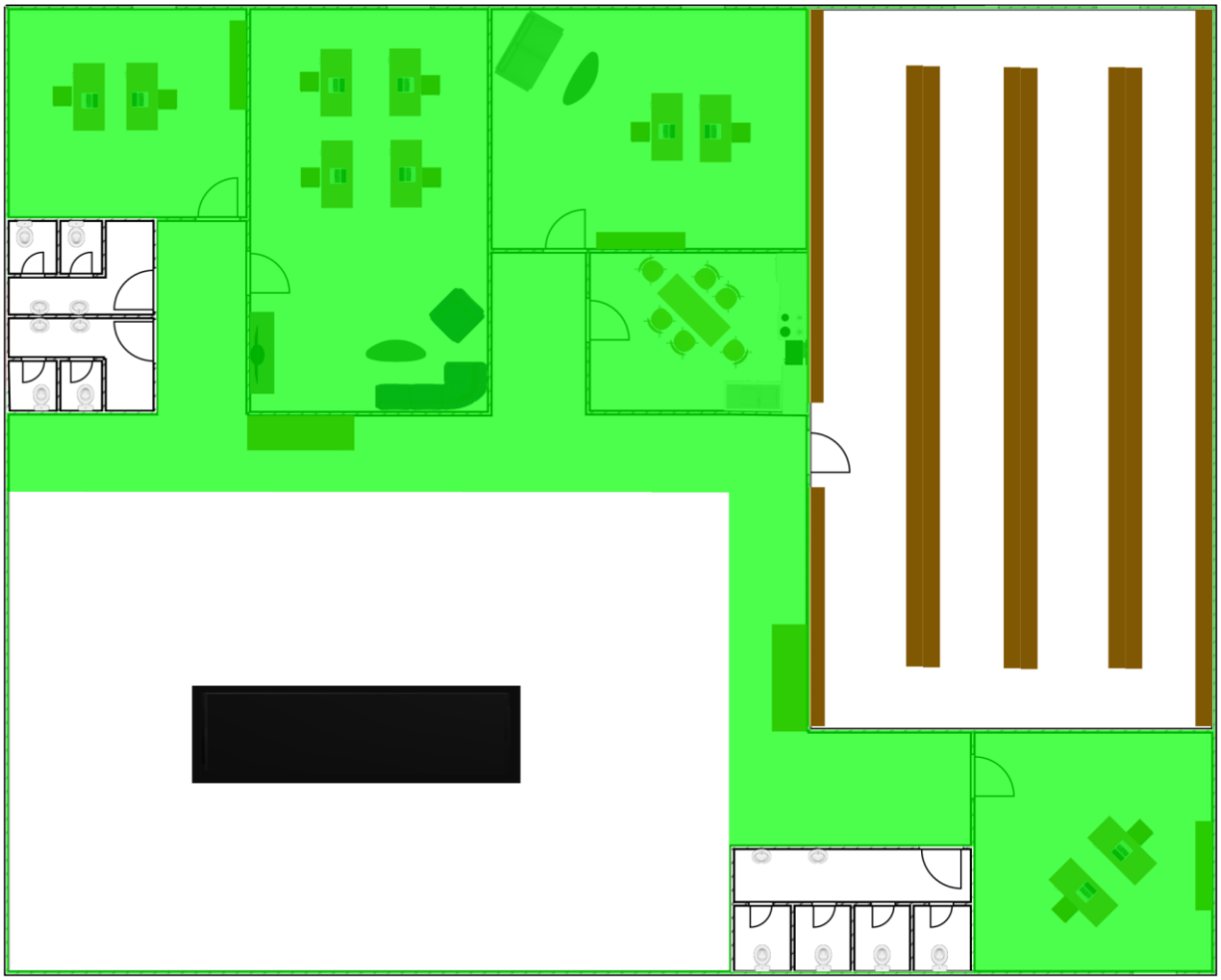

nicht ok | ok

Network problems for office building OG at 2.4 GHz band

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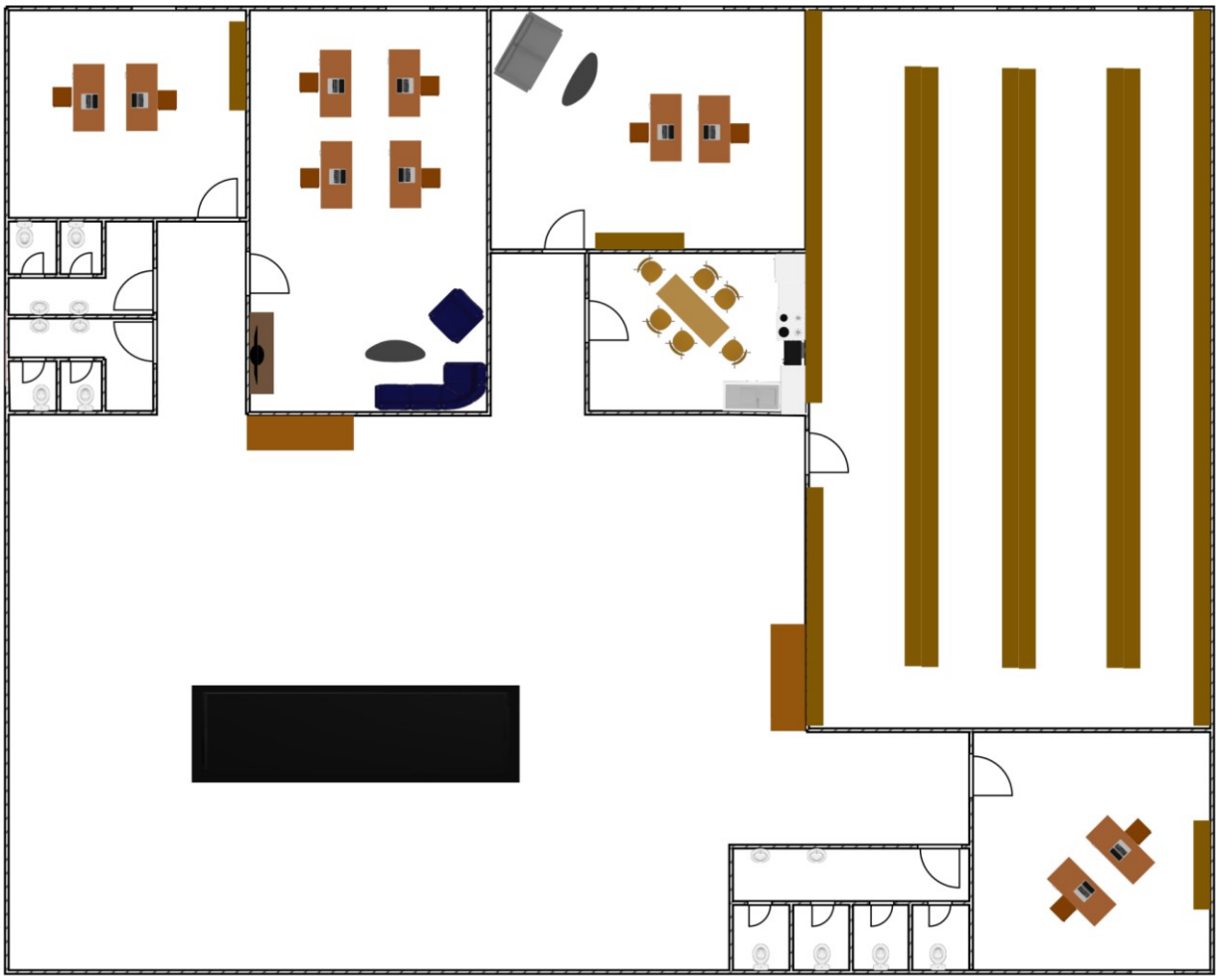

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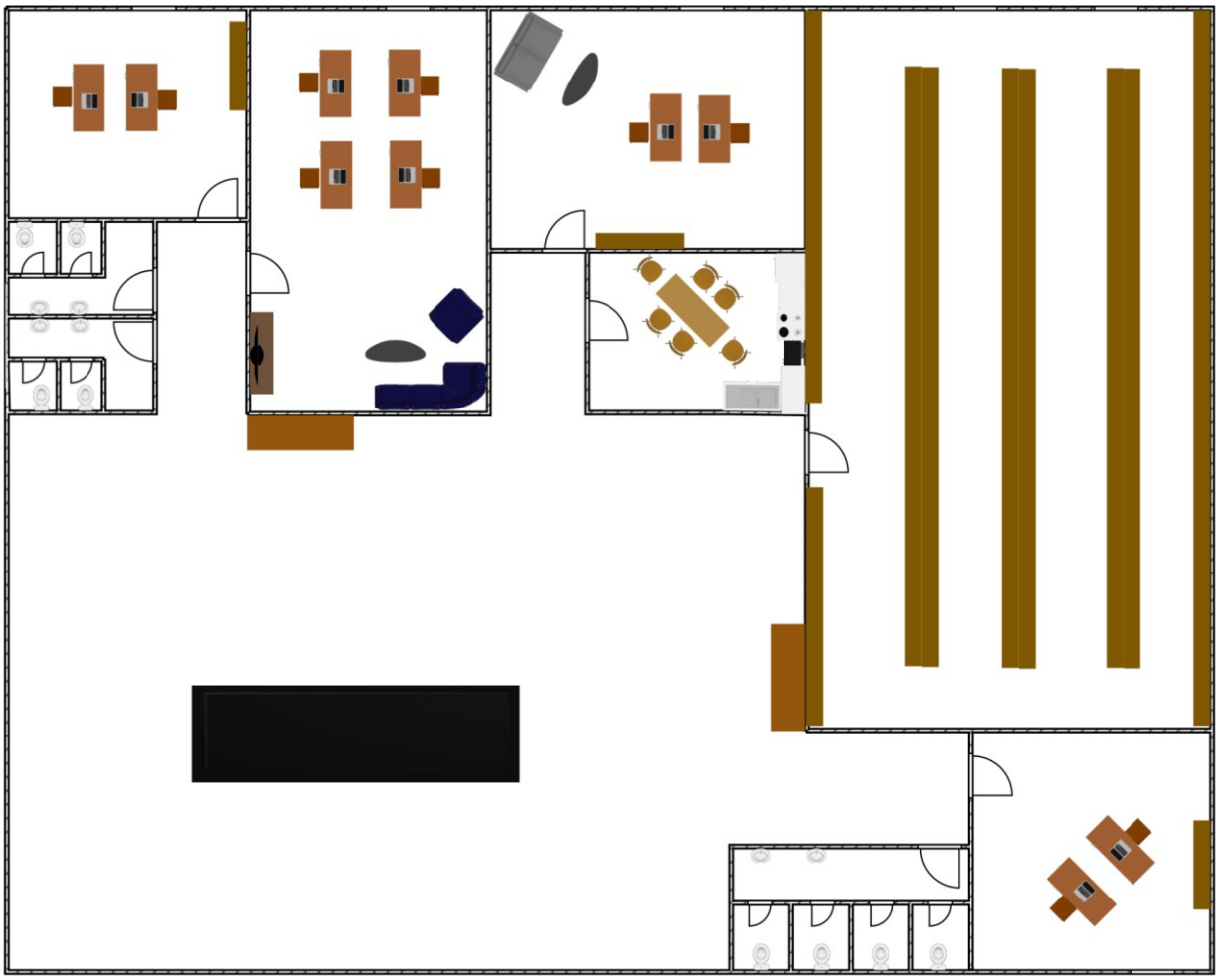
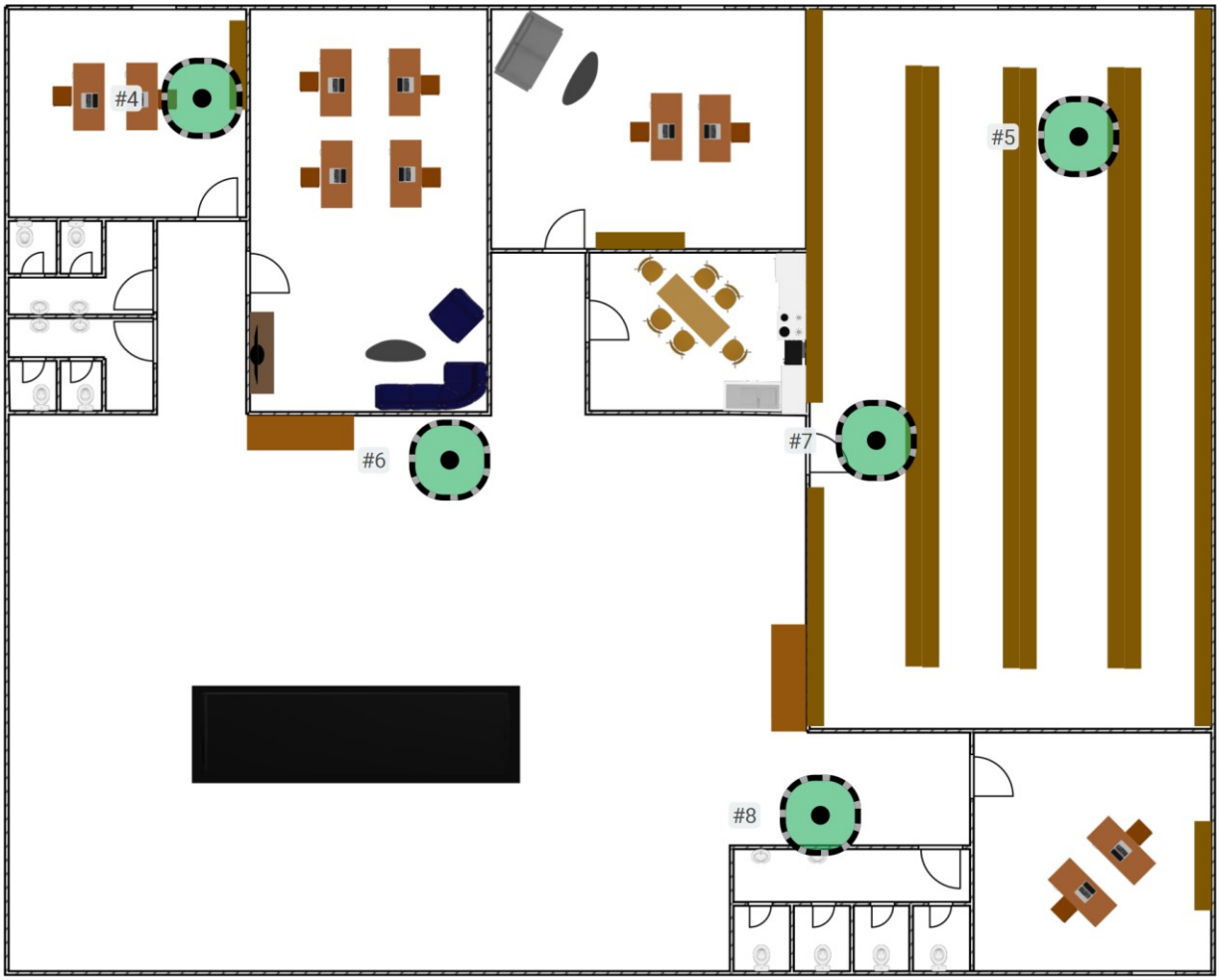


nicht ok ok

Simulated access points in office building OG



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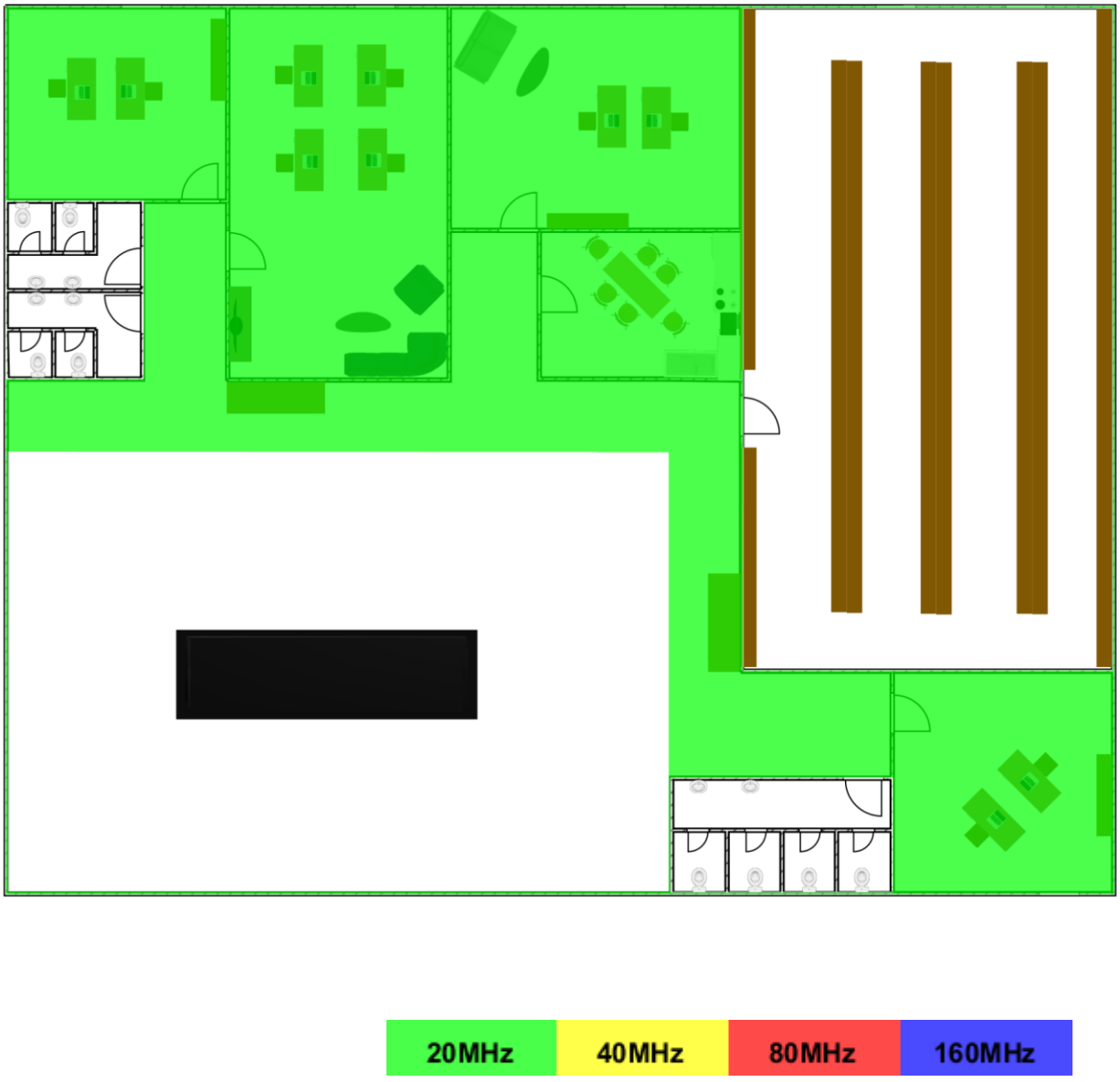
	802.11n	11	100 mW	Fortinet FortiAP-221E 2.4GHz
	802.11ac	52@40	100 mW	Fortinet FortiAP-221E 5GHz
7	AP07 - FortiAP 221E		Fortinet FortiAP-221E	
	802.11n	6	100 mW	Fortinet FortiAP-221E 2.4GHz
	802.11ac	36@40	100 mW	Fortinet FortiAP-221E 5GHz
8	AP08 - FortiAP 221E		Fortinet FortiAP-221E	
	802.11n	1	25 mW	Fortinet FortiAP-221E 2.4GHz
	802.11ac	60@40	100 mW	Fortinet FortiAP-221E 5GHz

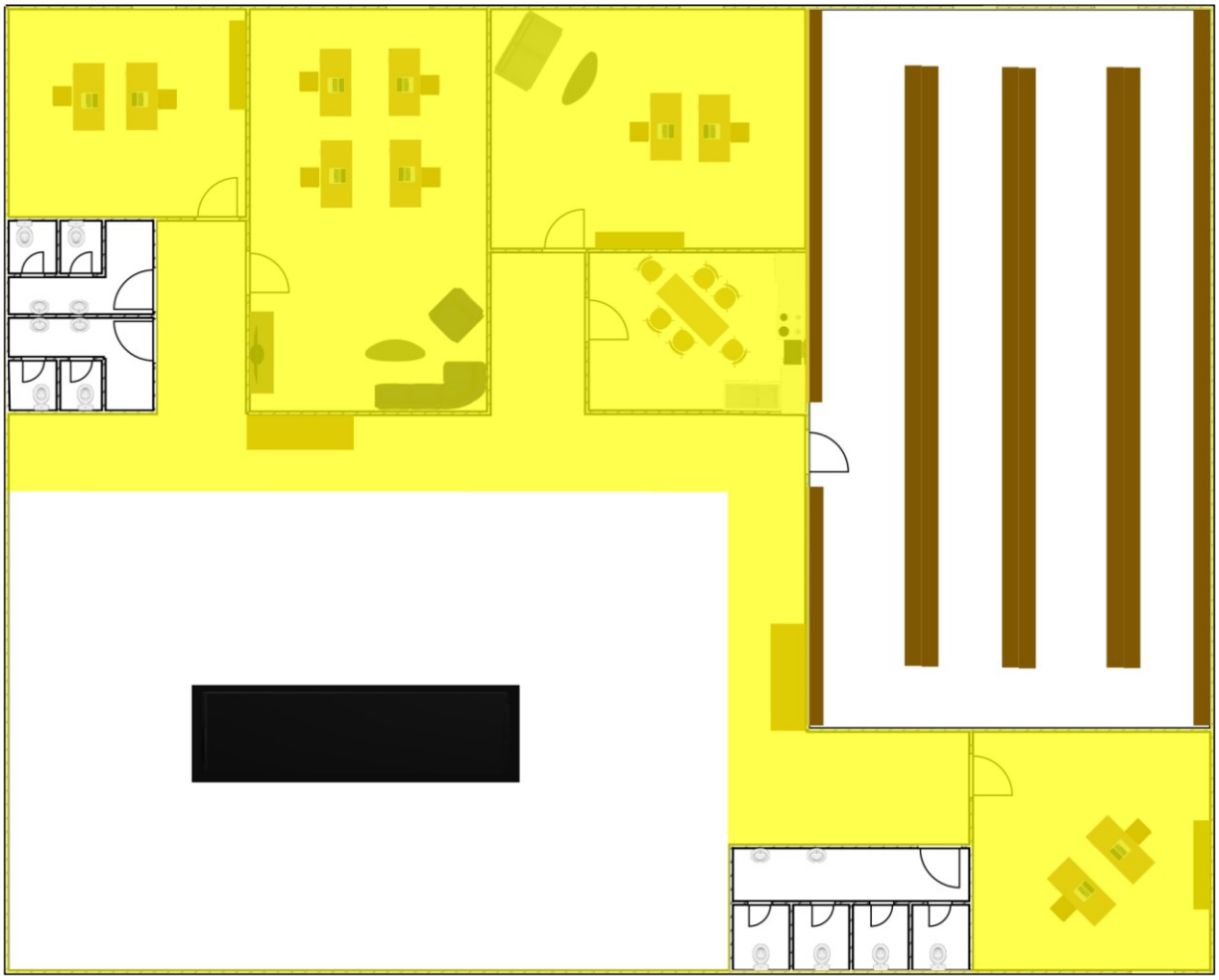
Channel width for office building OG at 2.4 GHz band

Displays the maximum channel width in each area.



Channel width for office building OG at 5 GHz band

Displays the maximum channel width in each area.



20MHz 40MHz 80MHz 160MHz