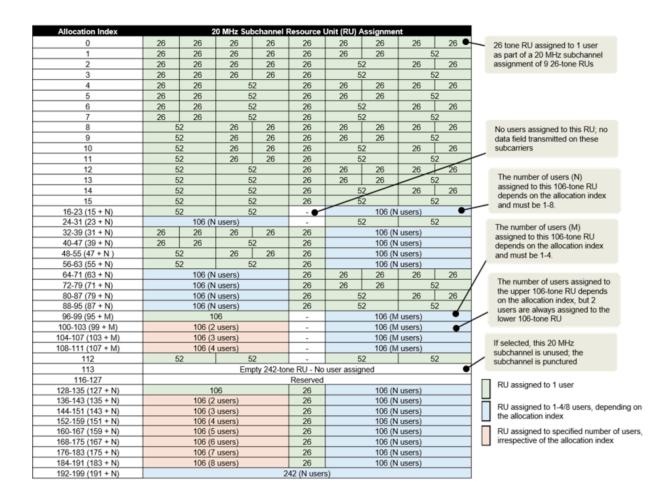
Matlab Simulation Example 4: PHY abstraction under 11ax OFDMA SISO system

From Table C-1.3 shown in the following, we show the number of combinations of resource units (RUs). There are four types of RUs differentiated by their sizes (number of subcarriers): RU of size 26, RU of size 52, RU of size 106, RU of size 242. The RU of size 242 in OFDMA is equivalent to the case of 20MHz OFDM (see Allocation index 192). In the following, we only focus on generating the log-SGN parameters for RU of size 26, RU of size 52, and RU of size 106.

Table C-1.3. 11ax Allocation indices and the corresponding RU combinations. Each RU can be occupied by 1 user (the green RU) or multiple users up to 8 (the red RU and blue RU).



In this example, we focus on generating log-SGN parameters under OFDMA with RU size 106 SISO, MCS4. The allocation index in the full PHY is set to 24. From Table C-1.3, we can see that the 1st RU (the blue RU) has size of 106.

Using the similar procedure of examples 1-3, we can generate the following table:

Table C-1.1. Average PER and Log-SGN parameters under 11ax OFDMA allocation with RU size 106, SU-SISO, **Model-D**, **MCS4**, with payload length 1000. The parameters are obtained by running 40000 packet simulations. Under such setup, the optimized EESM parameter beta = 8.7307.

Rx SNR	Full PHY Avg PER	Log- SGN Avg PER	mu	sigma	lambda 1	lambda 2
11dB	0.7583	0.7828	1.6230	0.7813	0.7775	1.4878
15dB	0.4227	0.4113	3.1015	0.8930	-1.1420	0
19dB	0.1600	0.1462	3.2718	0.7353	-0.7159	11.8710
23dB	0.0417	0.0474	3.8469	0.8242	-0.6345	7.9055