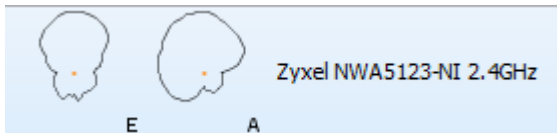# ZyXEL Offline Site Report

Wysyłanie wiadomości
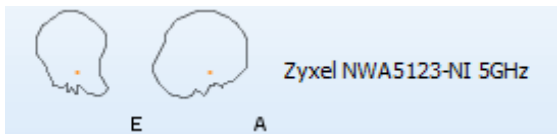
Version 1.0

Made by Daniel Janeš

17.6.2016

Vysvětlivky:

- **Signal strength** is defined by dBm, which can také values from -90 dBm to 0 dBm
  - Every manufacturer defines edge values for certain cards when there is still possibility of connection on certain standard and speed
  - Our defined value -65 dBm, Thus, the reserve boundary defines the network parameters to achieve the maximum speed of the standard. If we calculate the possible reduction of the data rate, we have a signal with a lower transmission rate and plotted out space map, ie white.
  - i.e. Intel 5300 - Receiver sensitivity is measured at a packet error rate of 10% for 802.11a/g (OFDM modulation).
    - 54 Mbps: –74 dBm, 6 Mbps: –90 dBm
- **Characteristics of transmit antennas AP**
  - 802.11n
    -
  - 802.11n
    -
- **Transmitting power of simulated AP**
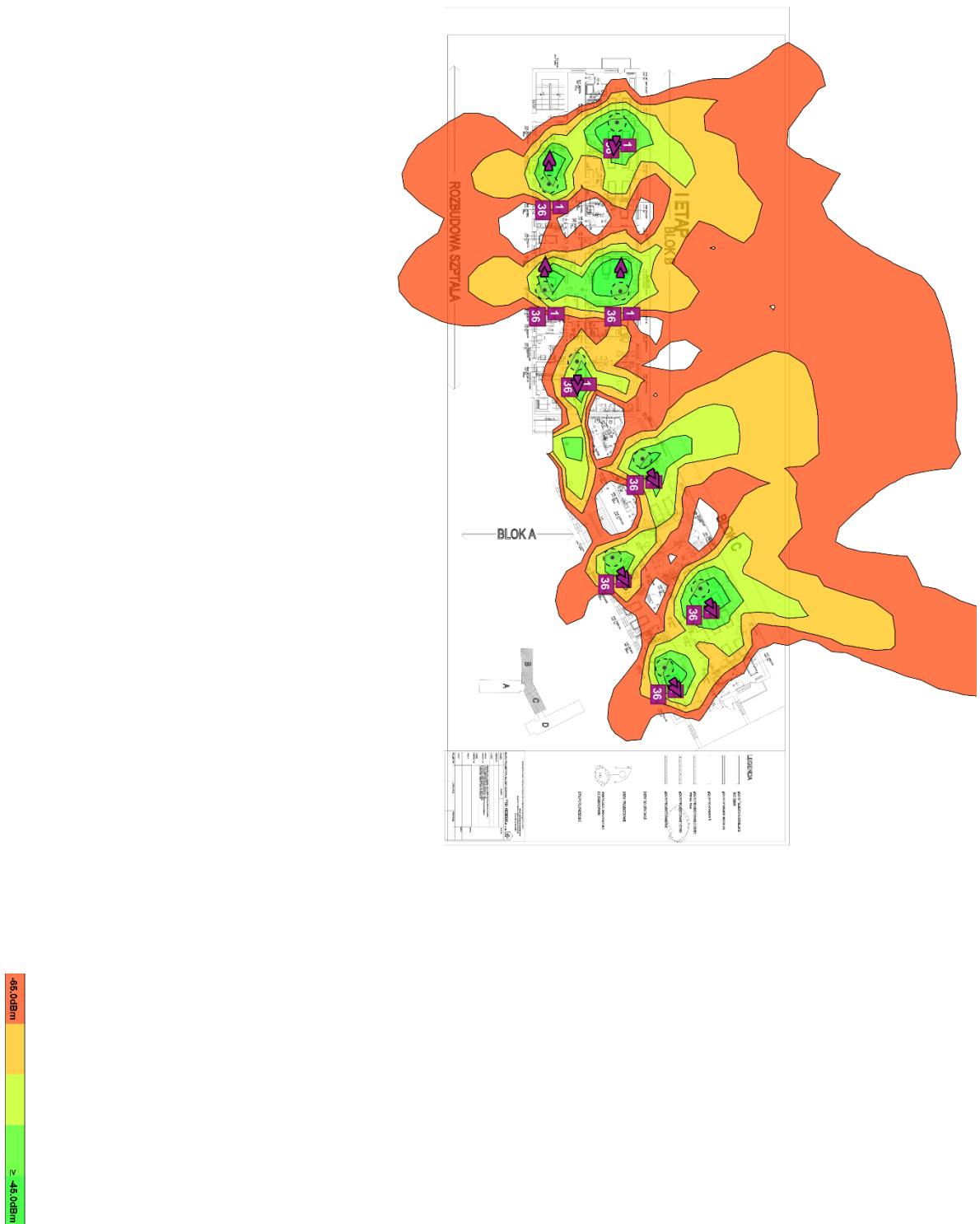
  - 2,4 GHz 802.11n – 80mW

  - 5 GHz 802.11n – 40mW

1.0 Simulation coverage
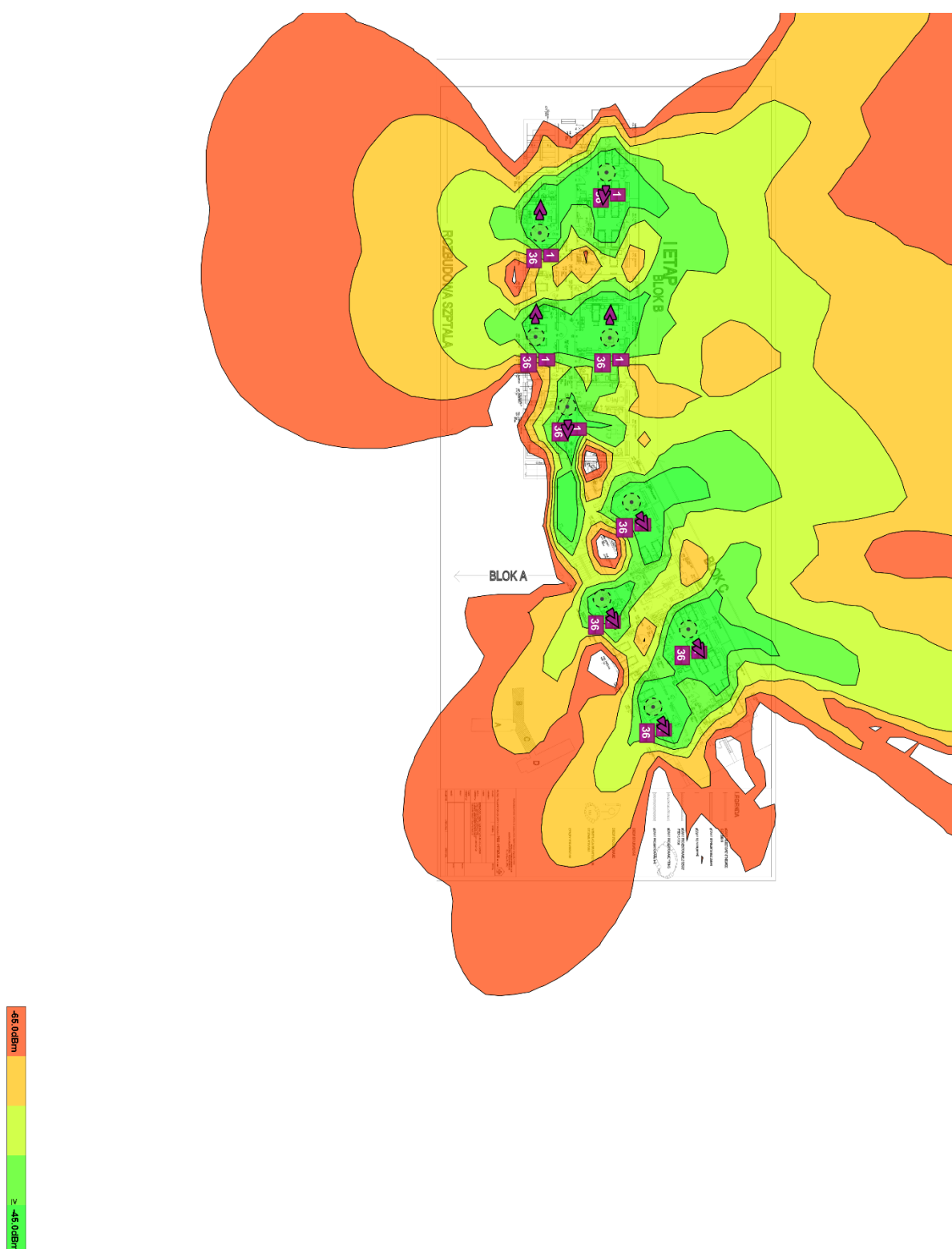
1.1 Simulation coverage – 2.4GHz
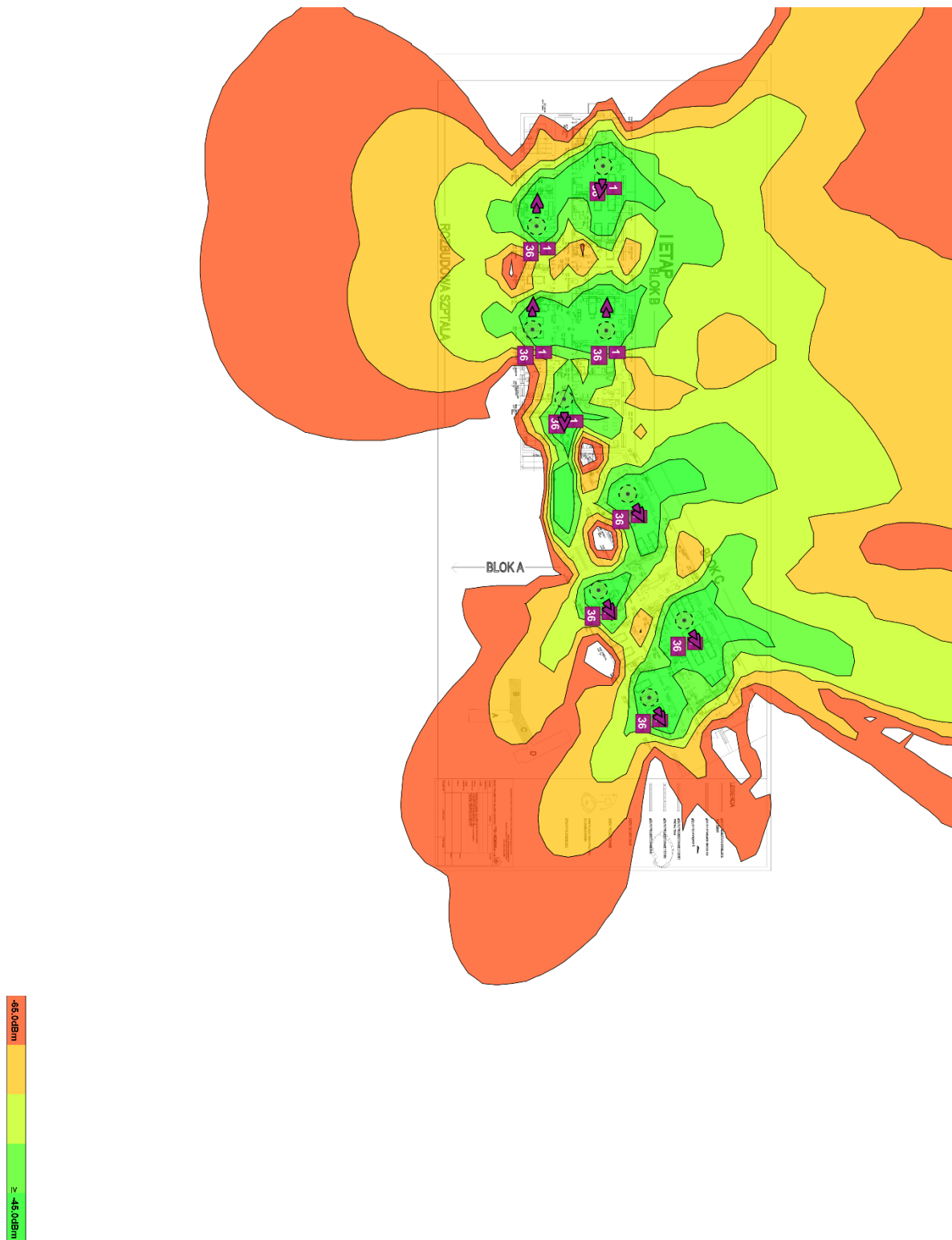
1.2 Simulation coverage – 5GHz

2.0 Results :

For simulation has been used AP ZyXEL NWA5123-NI (customers choice).

As a threshold signal level was chosen value at the -65 dBm. In the drawings, the value is shown in red color. At this level, the signal would still have wifi clients connect seamlessly attached to the AP.

In the drawings there are coverage on 2.4GHz and also on 5GHz.

Offline model has been made according to delivered plans and details (Material/Attenutation) :
- Main walls – Brick 30cm – Attenuation 10dB
- Partition walls – Porotherm 10-20cm – Attenuation 6dB
- Doors – Wooden – Attenuation 6dB

AP´s were placed to ceiling at height of 3,2 meters.

Model was made only for inner area of object.

Due to conditions of environment I recommend to check the relevance of the offline model by the real measurements in the location. Details about object was not as detailed as they should be.

Manufacturer suggest to associate to one radio (for ensure enough quality of service), without encryption, 20-25 wireless clients at maximum. With WPA2 encryption its about 15-20 wireless clients.

In the processing of the simulation were used **9 AP.**

Notes :

Delivered details about object :
- plan for one floor
- Access Point – NWA5123-NI
- height of ceiling – 3,2m
- Material of walls
    - Main walls – Brick 30cm – Attenuation 10dB