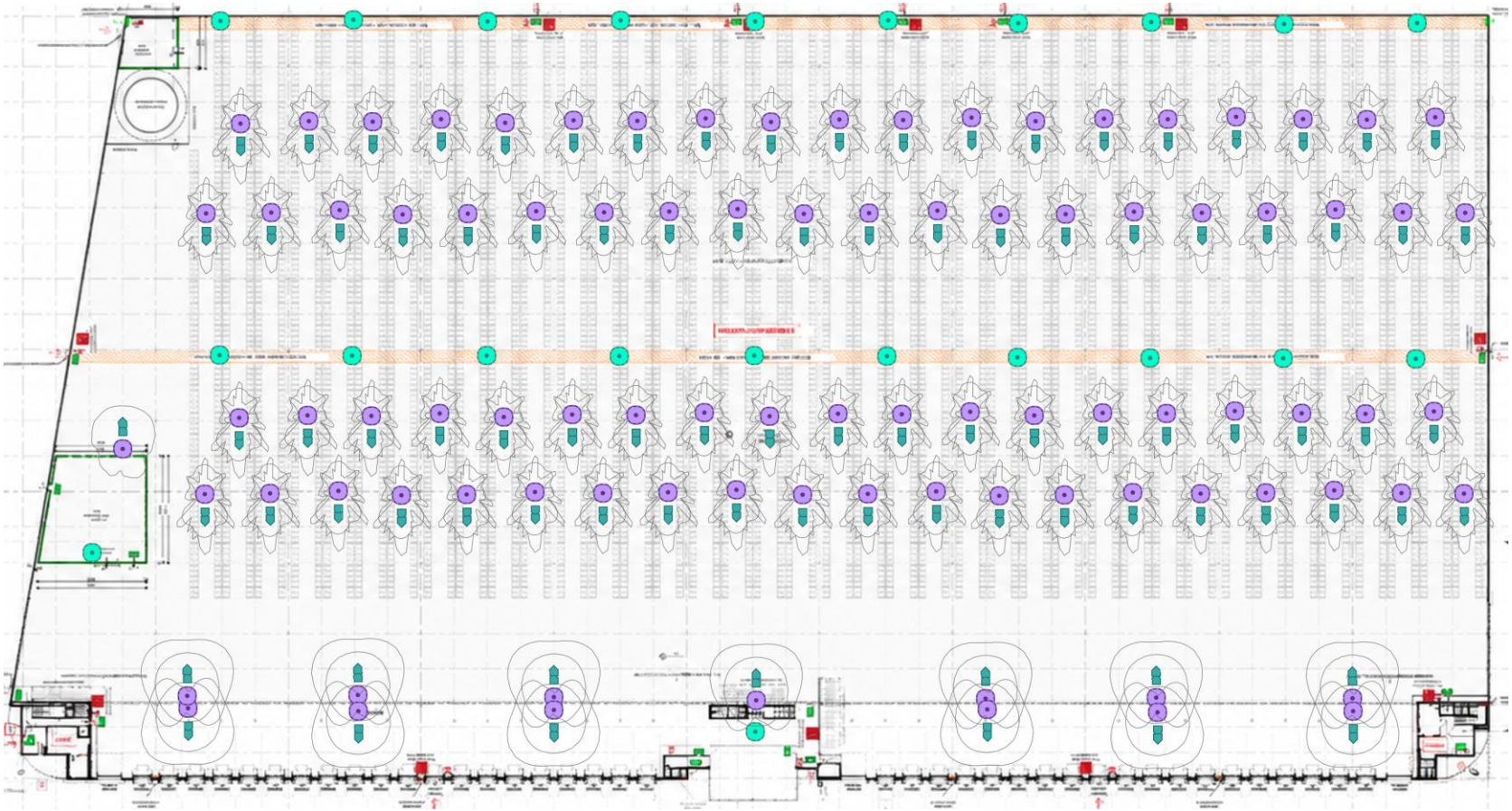
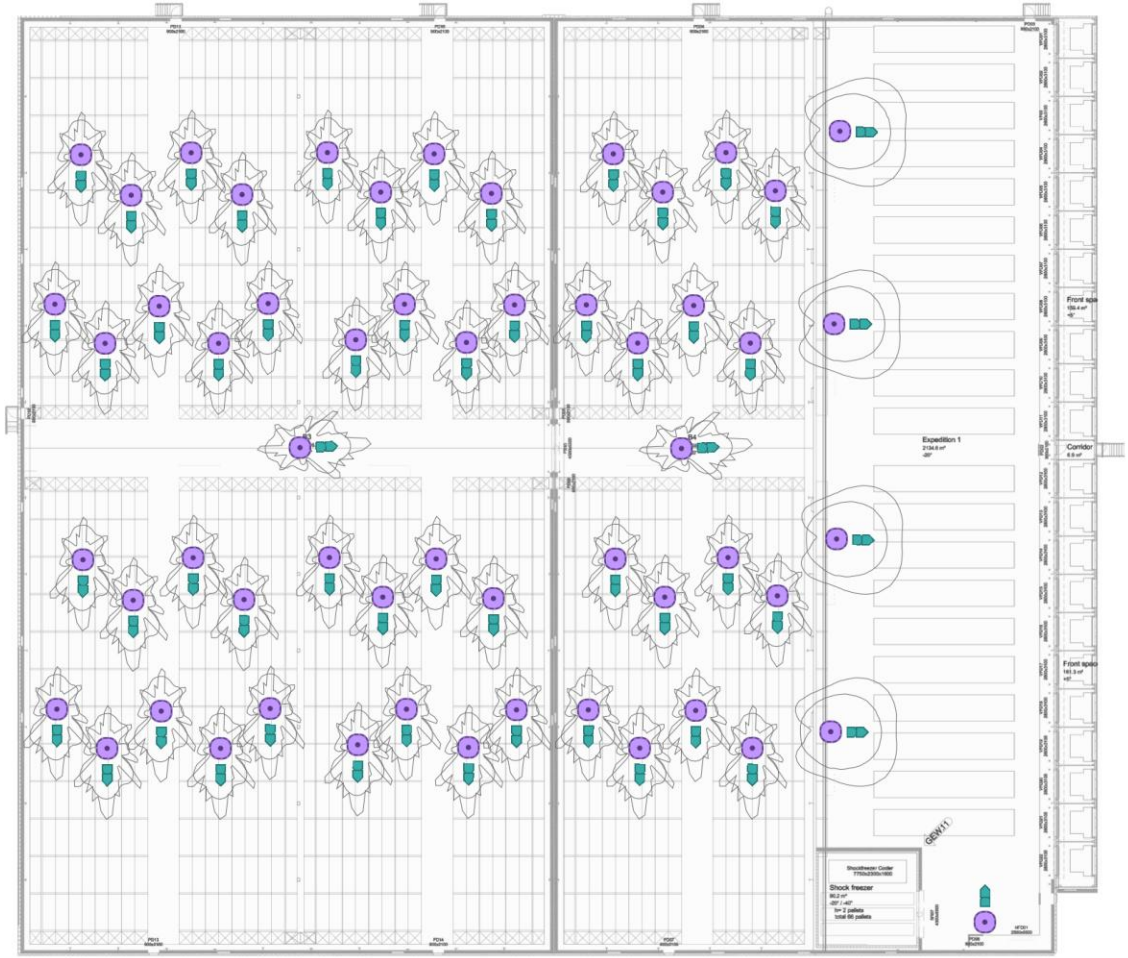
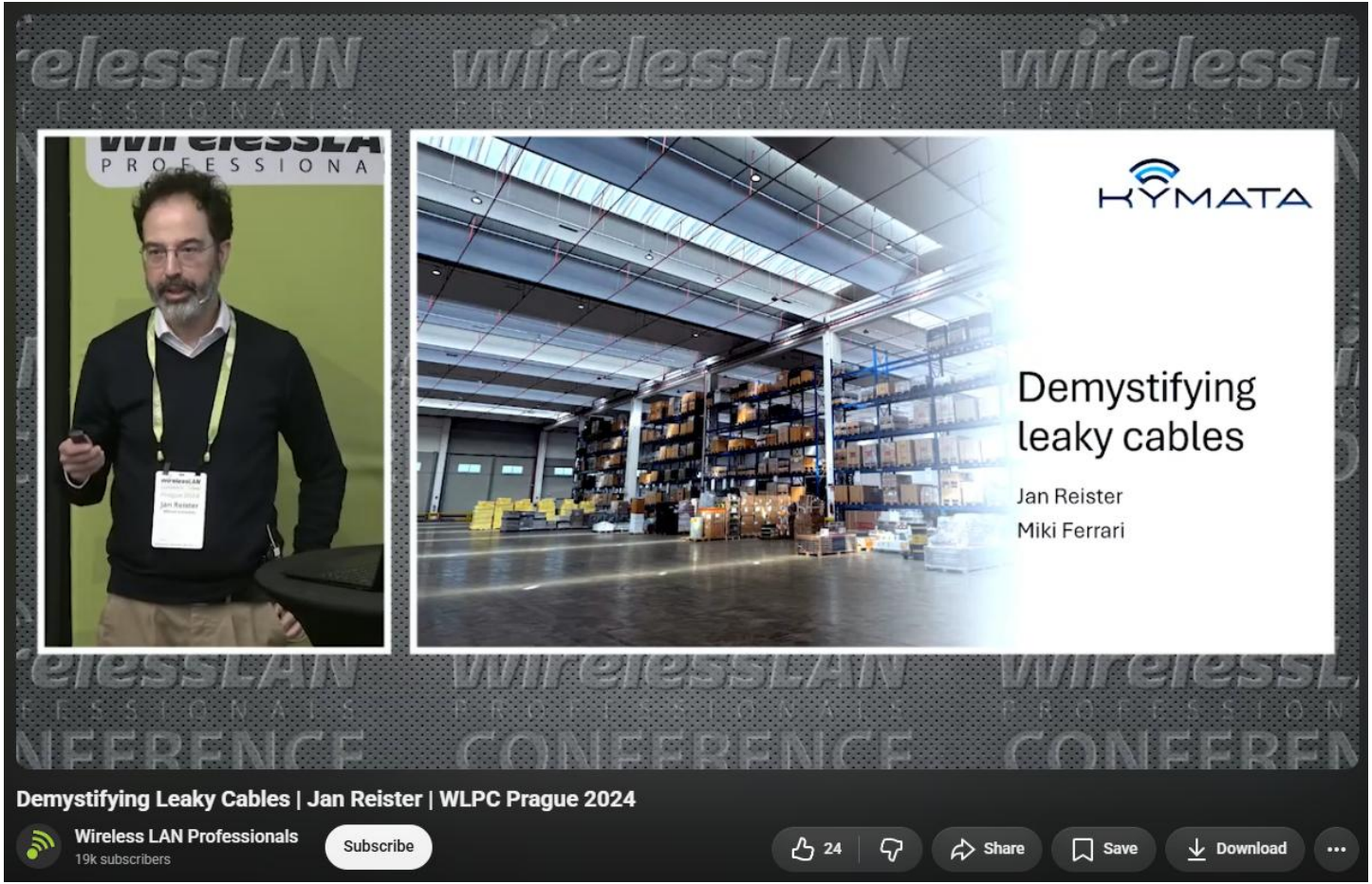


Tom Thielemans
CWNE#612



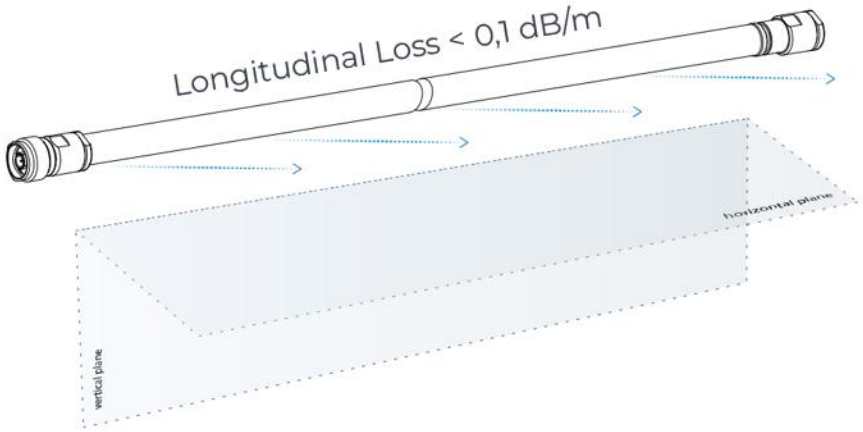

Expedition 1
Corridor
GEW1
Shock freezer


PROFESSIONA
KYMATA
Demystifying
leaky cables
Jan Reister
Miki Ferrari
Demystifying Leaky Cables | Jan Reister | WLPC Prague 2024
Wireless LAN Professionals
19k subscribers
Subscribe
24
Share
Save
Download





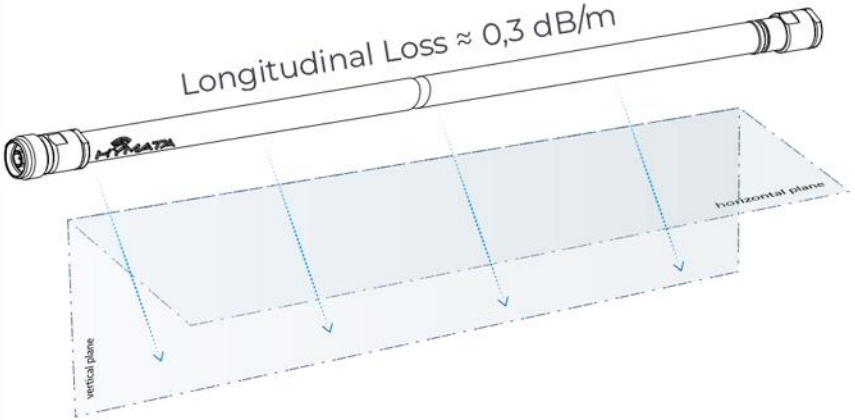
Distributed Antenna for Cellular





Tilt ≈10°

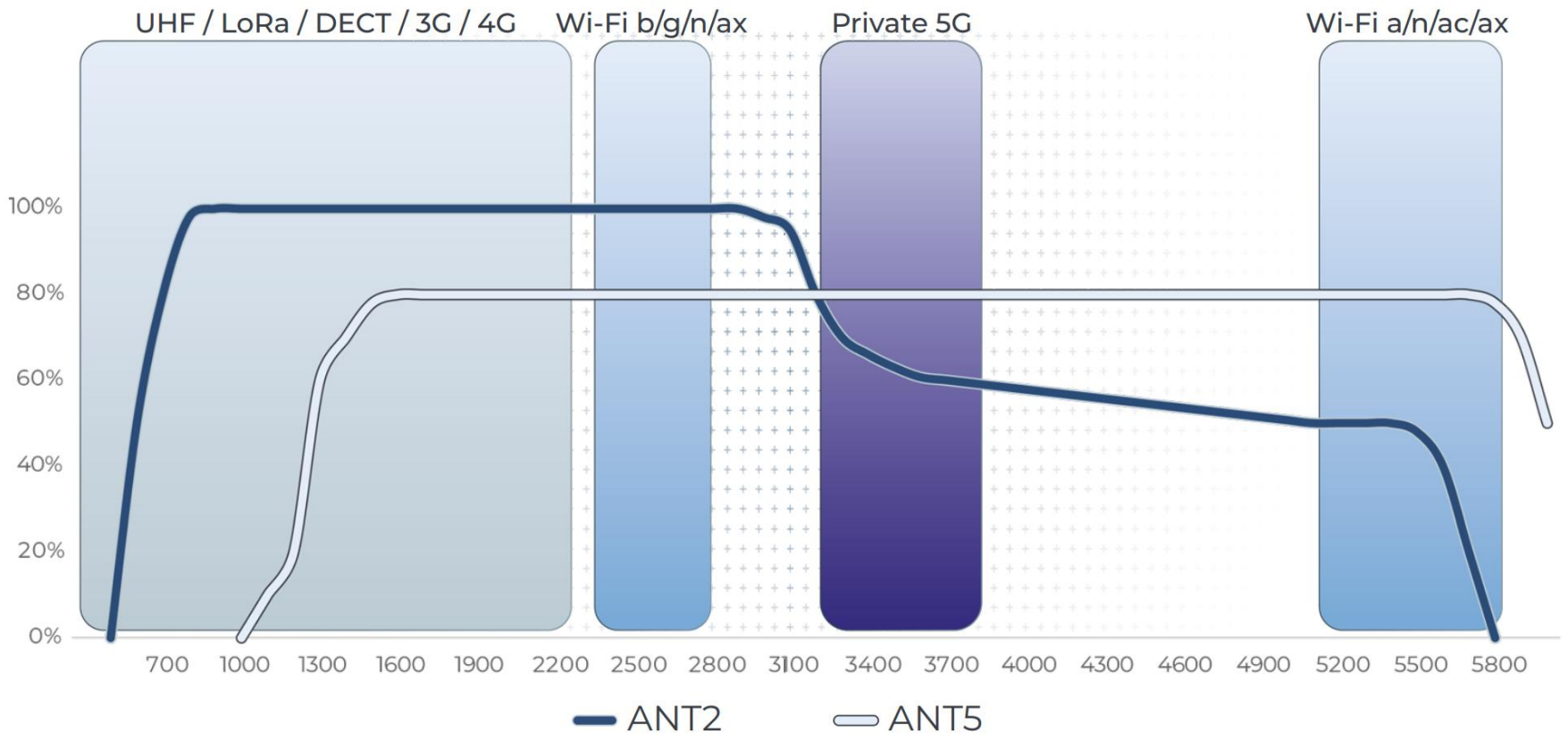
Kymata Antenna for Wi-Fi





2.4 GHz: Tilt ≈80°
5 GHz: Tilt ≈65°

Kymata antenna models comparison

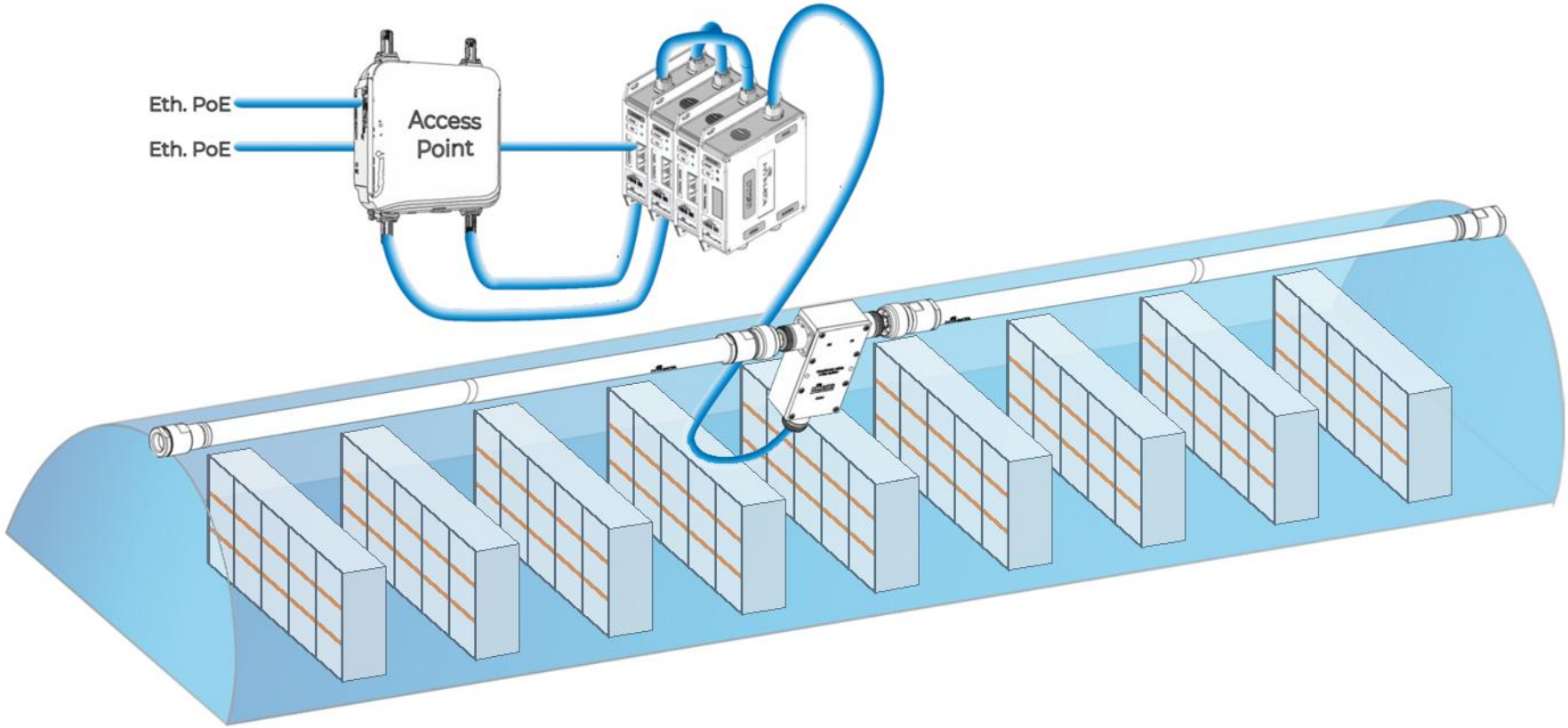


Kymata General System

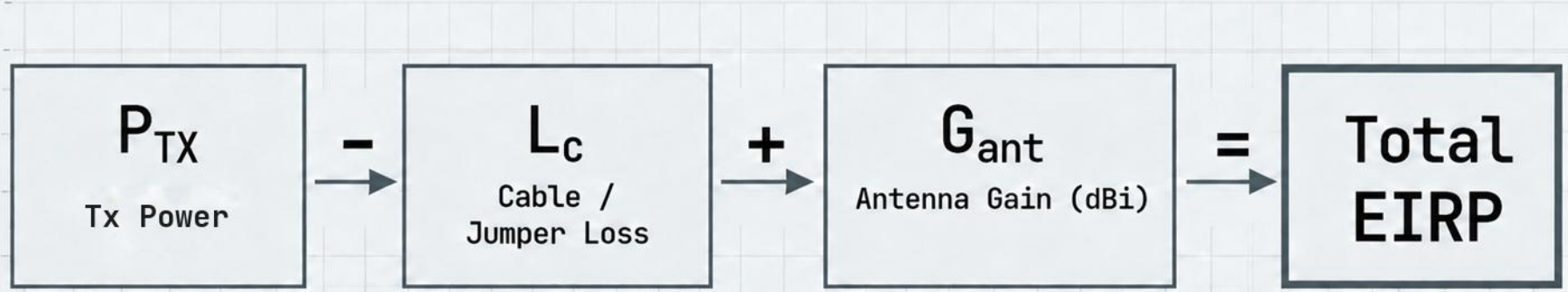
Access Point (third part)

AMP2 or AMP5
Also available with smart MIMO technology

Distributed Antenna



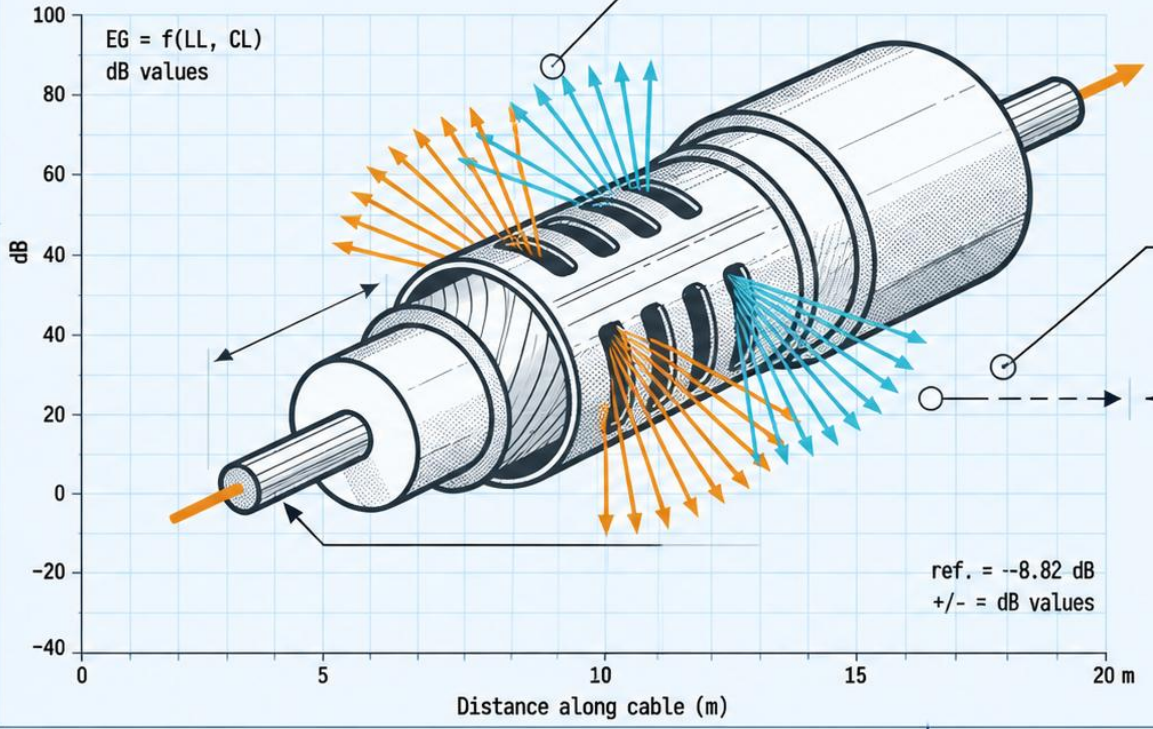
EIRP Calculation: Standard Antenna



$$EIRP\ [dBm] = P_{TX} - L_c + G_{ant}$$

The Anatomy of Equivalent Gain (EG)

To model a slotted cable as a series of point radiating sources, Kymata introduced the Equivalent Gain. It depends on two key factors:



1

Longitudinal Loss (LL)

Linear attenuation of the signal along the transmission axis (dB/m).

2

Coupling Loss (CL)

Ratio between the power carried in the cable and the power radiated into the environment (measured at 2 m, expressed in dB).

3

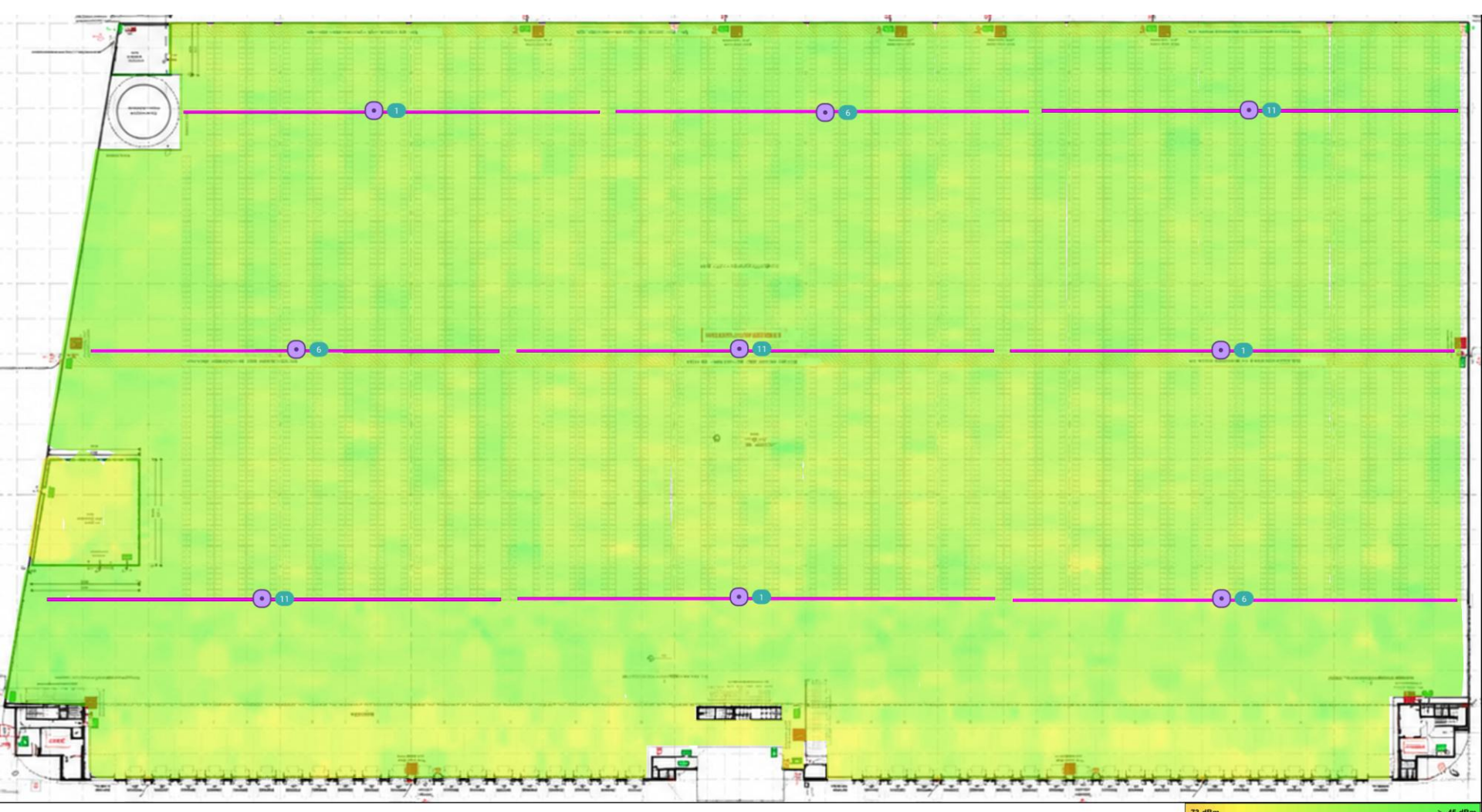
Equivalent Gain (EG)

Combination of LL and CL. Allows us to identify the point of maximum emission along the entire run.

EIRP Calculation: Kymata



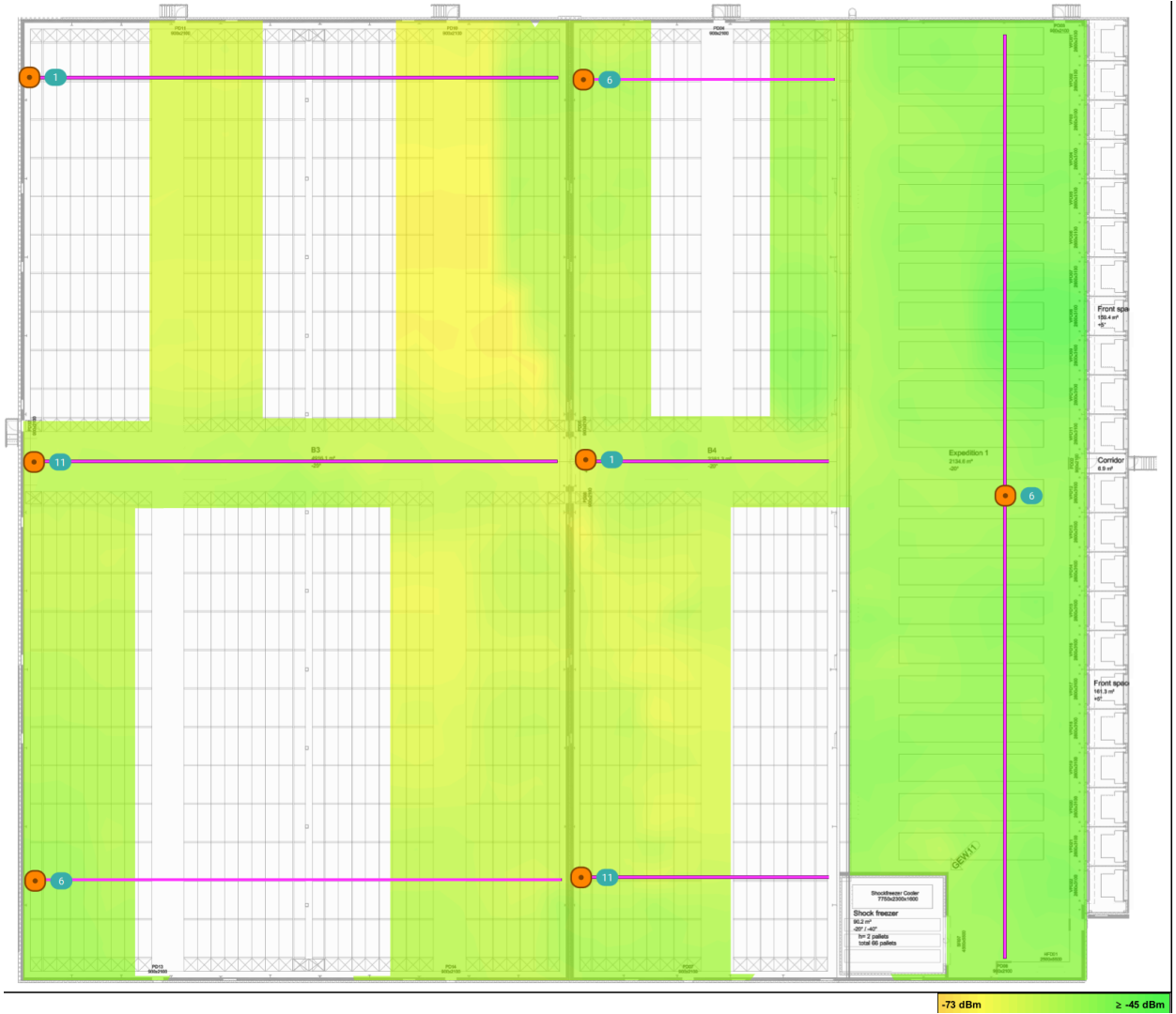
$$EIRP\ [dBm] = P_{TX} - L_c + G_{amp} + EG_{ant}$$


1
6
11
6
11
1
11
1
6
-73 dBm
≥ -45 dBm




Live
802SURV
A8:BA:25:14:C9:21 Ch 6 20 MHz 2.4 GHz
802.11ax
Personal
Signal
-60 dBm
Noise
-96 dBm
Rate
65 Mbps
32
AR MODE




1
6
11
1
6
6
11
B3
B4
Expedition 1
Corridor
Front spa
Front spac
GEW(1)
Shockfreezer Cooler
7750x2300x1800
Shock freezer
90.2 m²
-20° / -4°
for 2 pallets
total 66 pallets
-73 dBm
≥ -45 dBm

Our trade-offs



2.4 GHz only



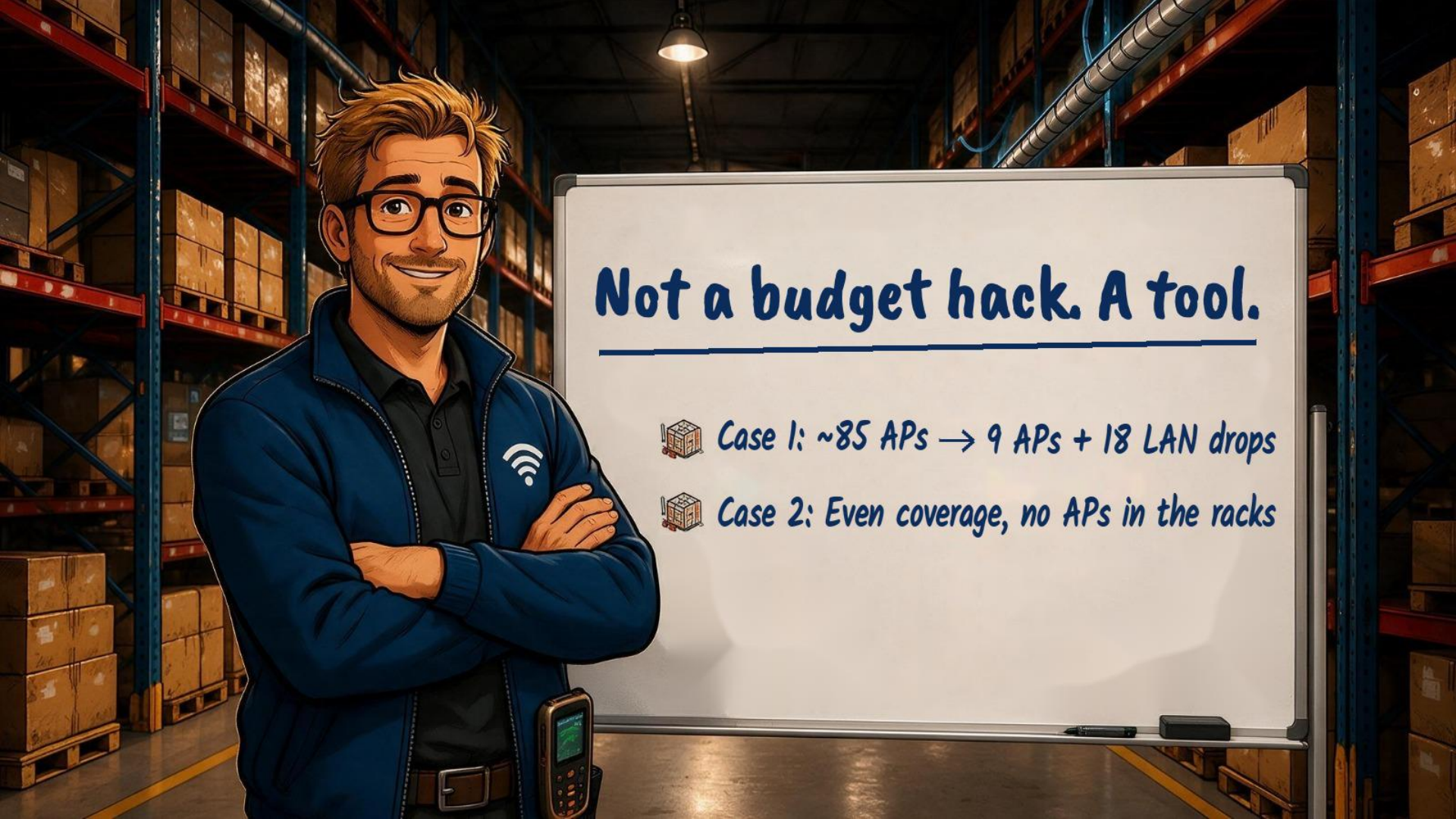
Data only



Low density



1x1 / 2x2


Not a budget hack. A tool.
Case 1: ~85 APs → 9 APs + 18 LAN drops
Case 2: Even coverage, no APs in the racks


THANK
YOU!