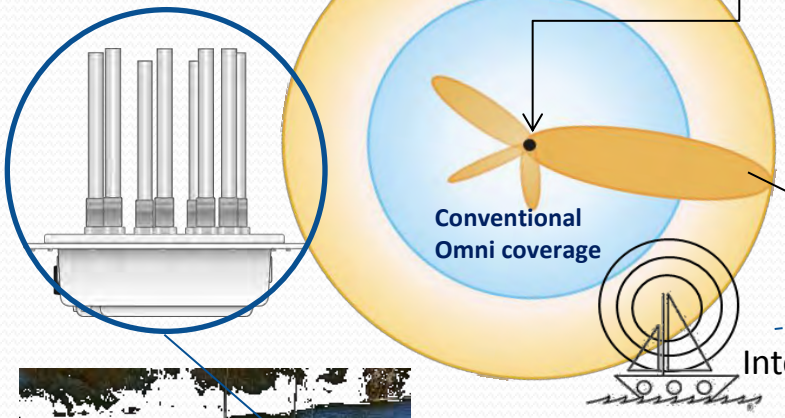
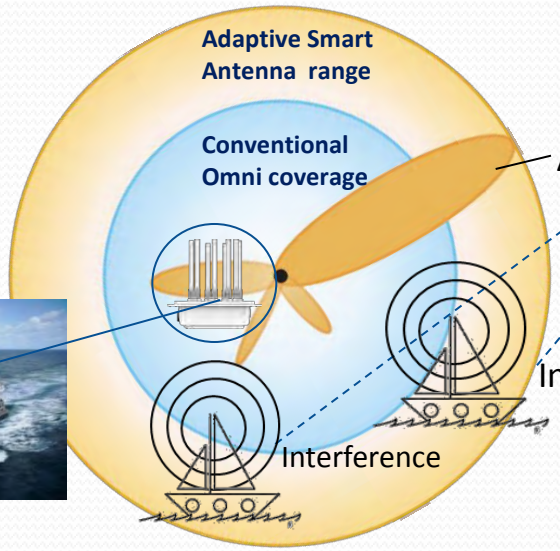
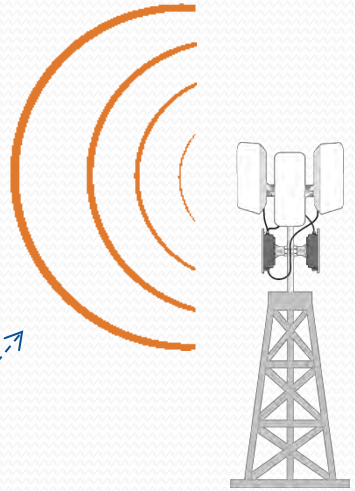
MobiRake TDMA/OFDM Radio
- Beamforming solution for mobility:

Features of Beamformer:
1- Be improved antenna gain to be reach longer distance
2- Effective control the beam wave, improve the efficiency of frequency use
3- Reducing Co-channel Interference between CPEs to increase system capacity.
4- Spatial Division Multiple Access to reduce the impact of multi-path.
5- Enhance the link quality to achieve high-speed transmission.

Adaptive Smart Antenna,
6 dBi Omni antenna x 8.
System EIRP = 51 dBm @ BPSK





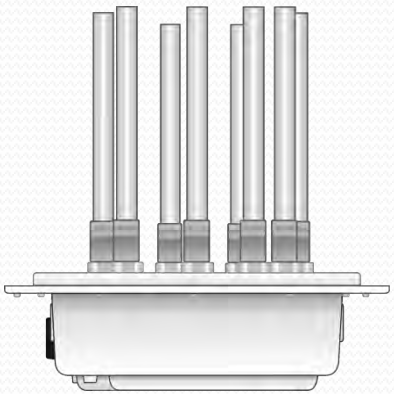


MobiRake Wi50 - 2050-36,
5GHz 36dBm TDMA Radio Base Station
Via 16 dBi sector R-LHCP RHCP
System EIRP = 52 dBm @ BPSK

Main Lobe's of each CPE point to BS

Specifications:

Operating Frequency	4910~6060 MHz	4910~6060 MHz
Power Level	37 dBm @ BPSK	36 dBm @ BPSK
System EIRP	51 dBm @ BPSK	n/a
Sensitivity	-92 dBm @ BPSK	-92 dBm @ BPSK
Frequency stability	±10 ppm	±10 ppm
Channel Bandwidth	5/10/20/40 MHz	5/10/20/40 MHz
40 MHz channel BW	45 Mbps streams aggregated	45 Mbps streams aggregated
Ethernet	IEEE 802.3 (10Base-T) / IEEE 802.3u (100Base-Tx)	
RF (antenna) connector	8 x N-type Jack	1 x N-type Jack
Management and setup	Web-based configuration	
Operating mode	CPE	BS
QoS	CPE data flow control	n/a
Data Encryption	WEP-128 bits / AES-256 bits encryption	
Antenna type	Uniform Circular Array (UCA); 8 Omni-direction antennas; (6 dBi Omni each)	n/a
Improved antenna directly	8 dB	n/a
System antenna gain	14.5 dBi	n/a
Interference rejection	12 dB	n/a
Horizontal beamwidth	20 degree	n/a
Vertical beamwidth	30 degree	n/a
Beam resolution	*22.5 ˚over 360 ˚*	n/a



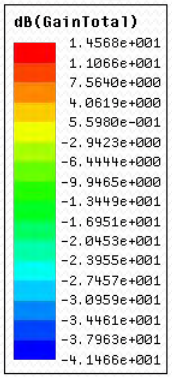
CPE-Adaptive SmartAntenna-integrated, 6 dBi Omni antenna x 8.

Mobile internet Maritime applications

Features of System:

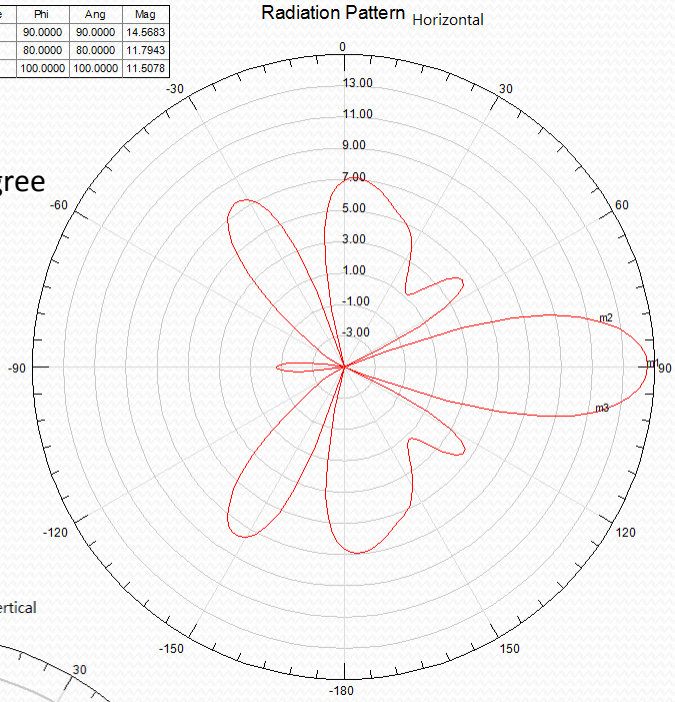
- TDMA protocol –
  - •Long distance
  - •Near-LOS
  - •Without packets collision in a PTMP operating mode.
- Adaptive smart antenna – integrated
  - •The antenna gain be improved to be reach longer distance
  - •Effective beam wave to be with efficiency of frequency use
  - •Reducing CPEs' co-channel interference to increase system capacity
  - •Spatial Division Multiple Access to reduce the impact of multi-path.
  - •Enhance the link quality to achieve high-speed transmission.
- High RF Output Power
  - •3W and 20 watts output power level @ BS & CPE (smartant's end)

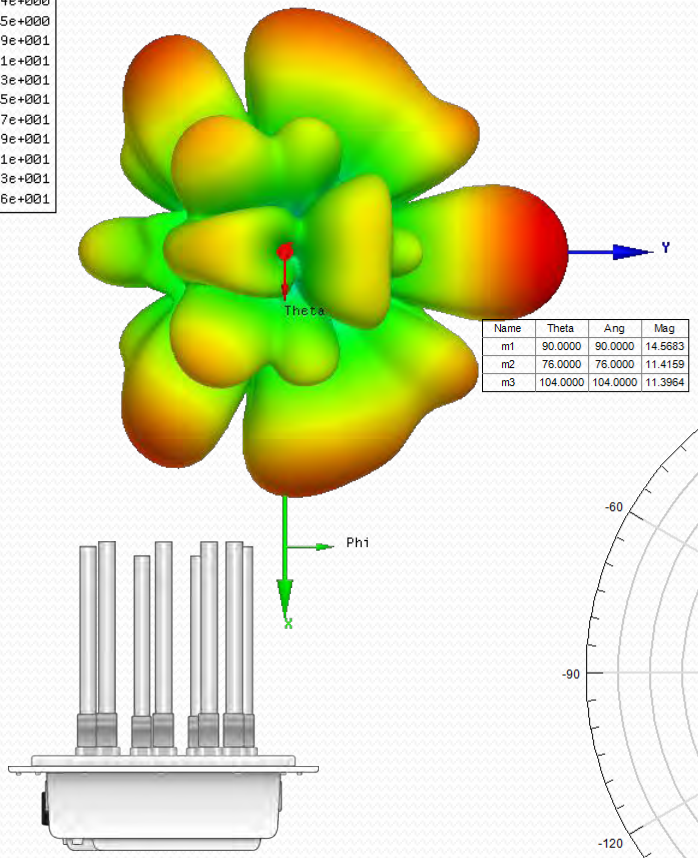
Simulation of the Beamformer @ CPE (boat site):



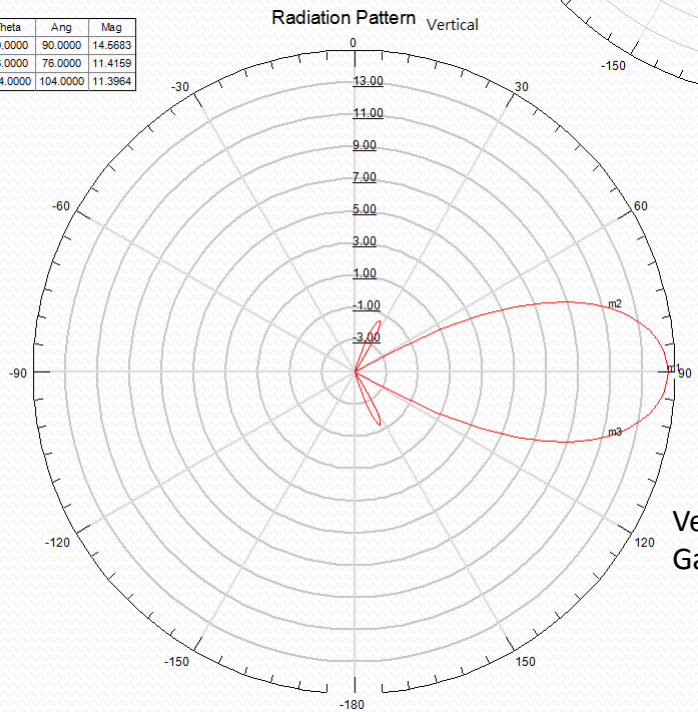
Horizontal beamwidth: 20 degree
Gain: 14.5 dBi

Name	Phi	Ang	Mag
m1	90.0000	90.0000	14.5683
m2	80.0000	80.0000	11.7943
m3	100.0000	100.0000	11.5078





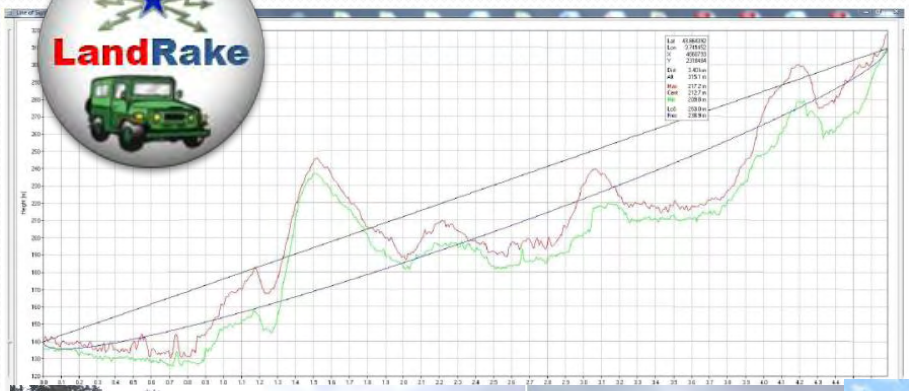
Name	Theta	Ang	Mag
m1	90.0000	90.0000	14.5683
m2	76.0000	76.0000	11.4159
m3	104.0000	104.0000	11.3964

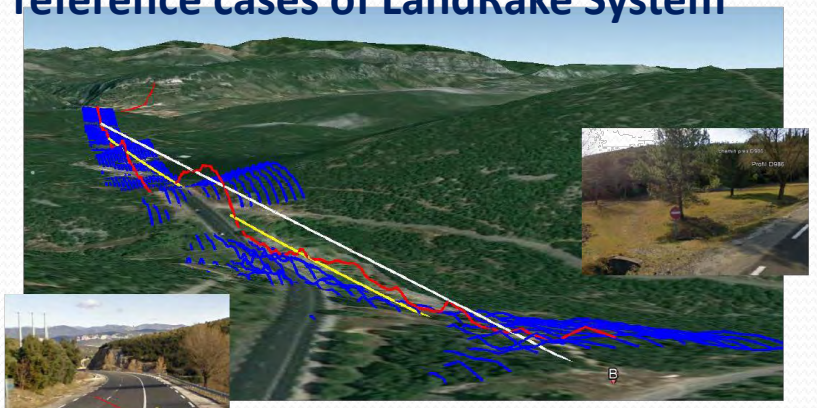


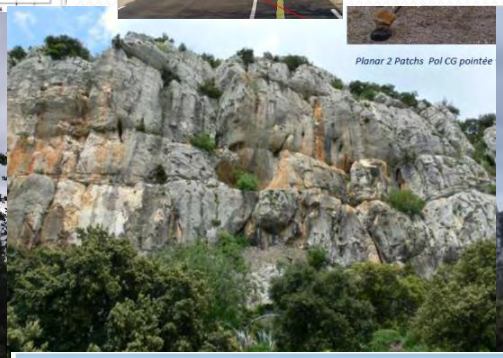
Vertical beamwidth: 30 degree
Gain: 14.5 dBi

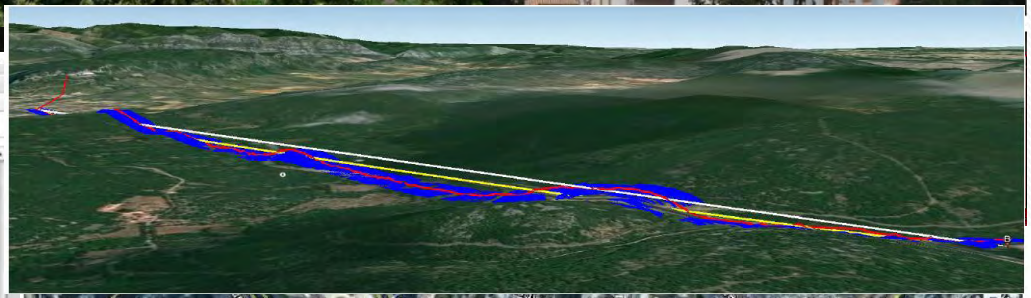
CPE-Adaptive SmartAntenna-integrated, 6 dBi Omni antenna x 8.

Thousands of reference cases of LandRake System









Zone Near LOS | Zone tunnel No LOS | Zone Near LOS

CPE Mobile ← → Base station