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Synoptique d'un réseau iP maillé, pour Stations Mobiles & Drones

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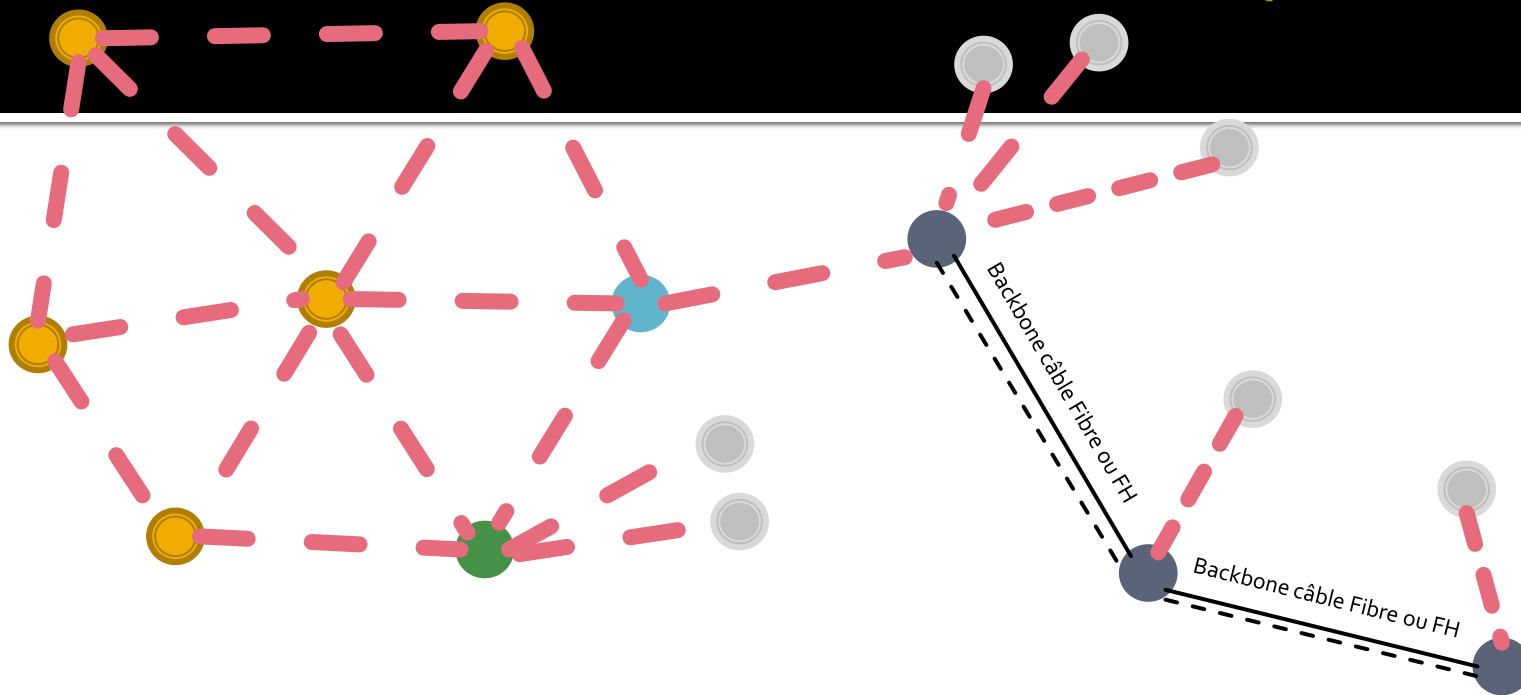
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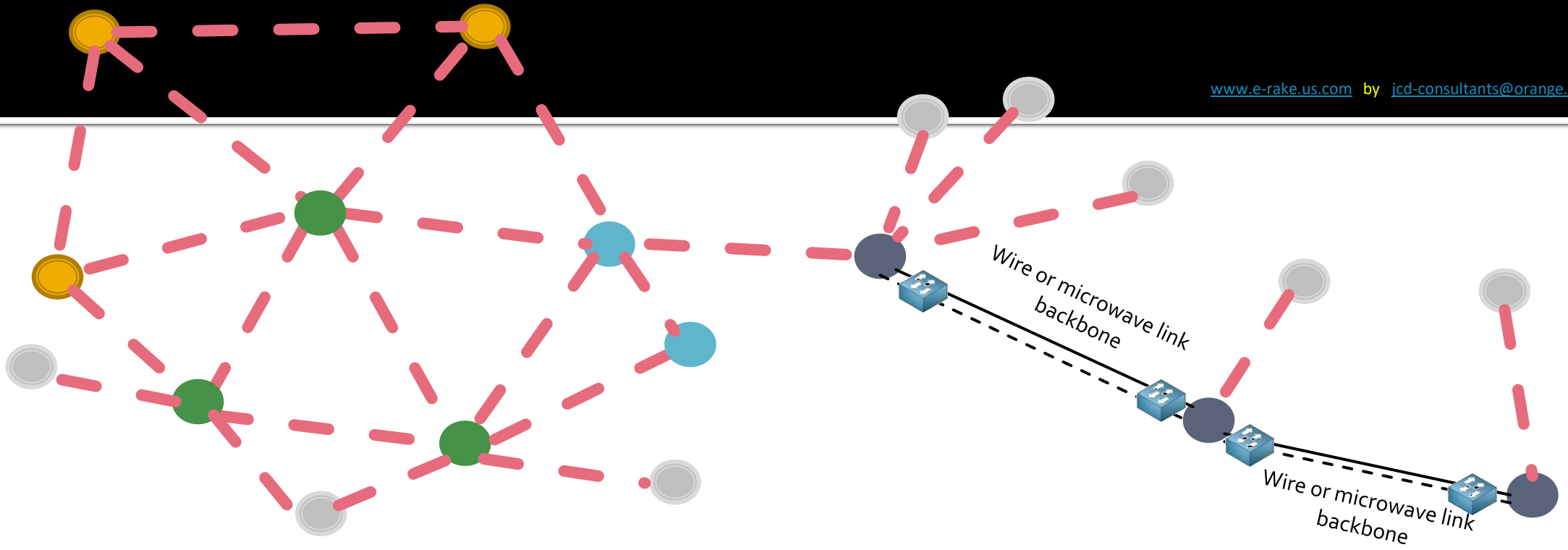
SkyMesh MIMO explication des modes & applications. Chaque node est de niveau 2

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Operating mode	Mesh enable	Mesh disable
Networks architecture	PTP/PTMP/hops-relay/ring/mesh	PTP/PTMP/hops-relay
High faster roaming	Seamless roaming when RF channel switching	Doesn't support when RF channel switching. (A few second delay when channel switching)
Multicast traffics	NO	Yes
Unicast traffics	Yes	Yes

	Unstructured peer-to-peer model	Each mesh nodes is equal to each other, free connection by the best path <i>The mode connects to peer-to-peer mode (peer-to-peer model), server (Hybrid model) & client (Hybrid model) ... (3)</i>
	Client-server model: Server mode	Can be scanned and connected by Client (client-server model) and Client (Hybrid model)
	Client-server model: client mode	Can only connect to Server (client-server model) and Server (Hybrid model)
	Hybrid model: Server mode	Can connect to Client (client-server model), Client (Hybrid model) and Unstructured peer-to-peer <i>The mode connects to Server (Hybrid model), Client (client-server model), Client (Hybrid model) and Unstructured peer-to-peer. ... (4)</i>
	Hybrid model: Client mode	Can connect to Server (client-server model), Server (Hybrid model) and Unstructured peer-to-peer <i>The mode connects to Client (Hybrid model), Server (client-server model), Server (Hybrid model) and Unstructured peer-to-peer. (4)</i>



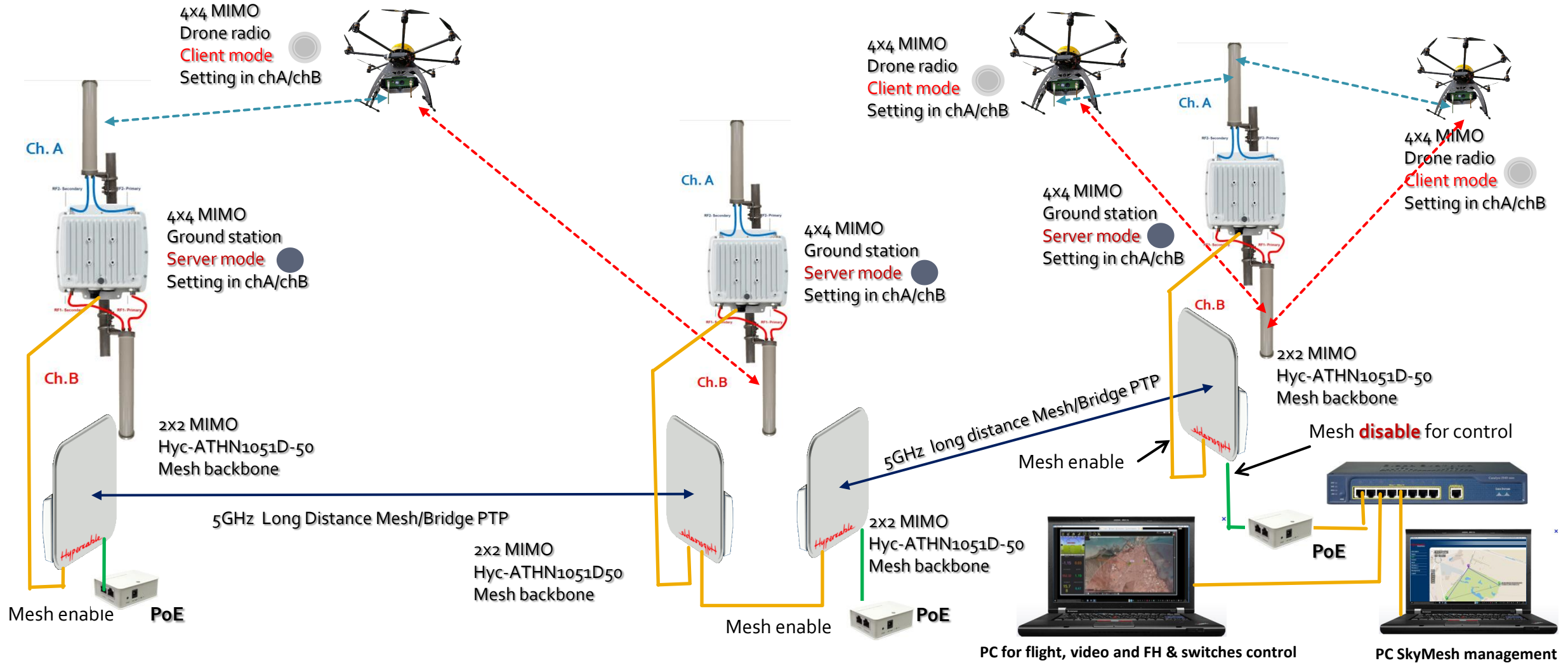
SkyMesh-MIMO modes applications
 When the system use a backbone the SkyMesh "Control Point Box" is required for system managing and video - data display

RTS=256 is for mobile application to improve hidden nodes issue
 RTS=2346 is for standard fixed wireless which is without hidden nodes issue.

	Unstructured peer-to-peer model	Connects to
	Client-server model: Server mode	Connects to
	Client-server model: client mode	Connects to
	Hybrid model: Server mode	Connects to
	Hybrid model: Client mode	Connects to

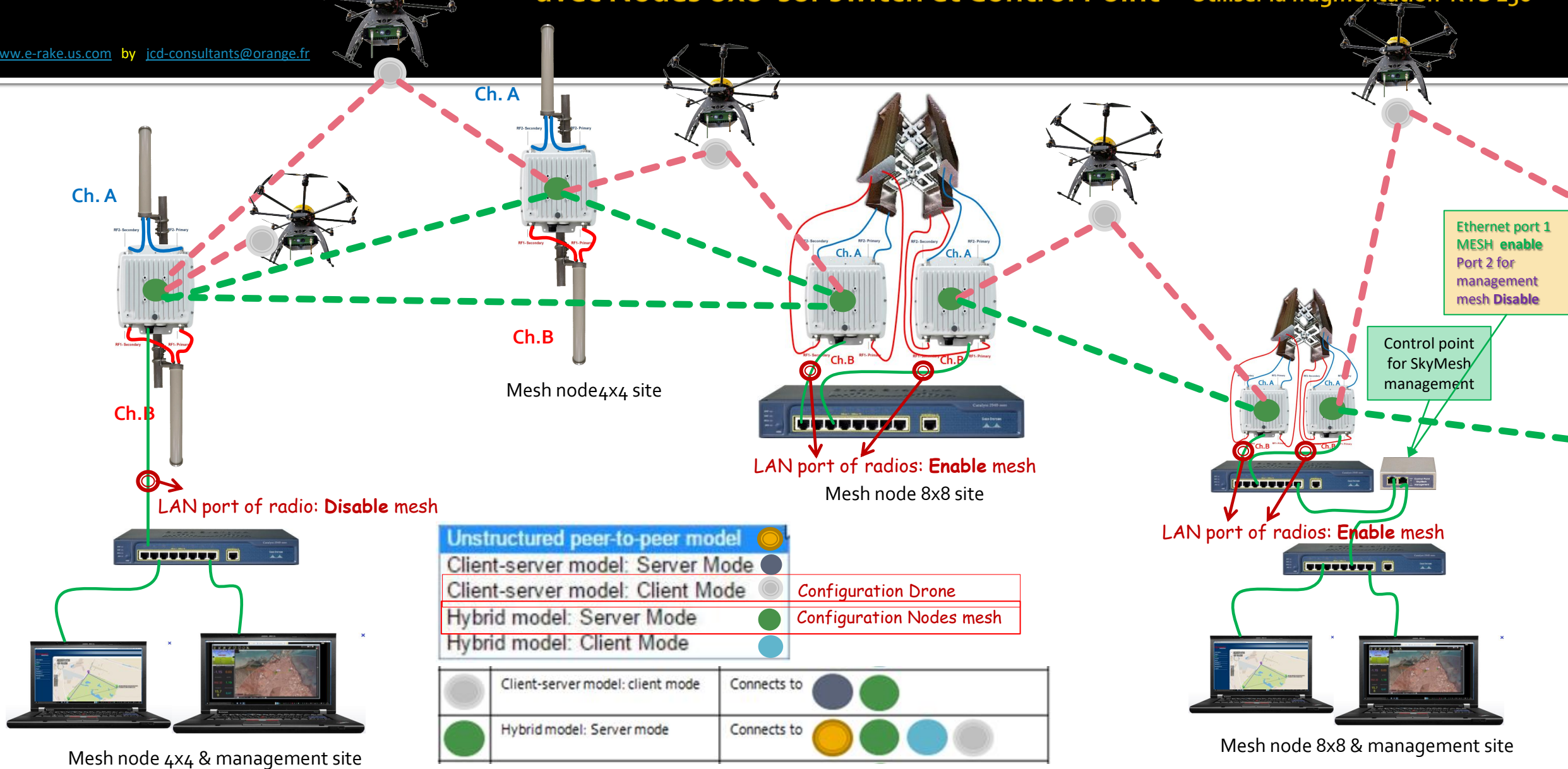
CONFIGURATION

- Backbone "Daisy Chain" MIMO 2x2 250 Mbps 23/27 dBm + ant 23 dBi
- Station Sol AP 4x4 2x 125 Mbps 23/27 dBm + 2 ant 2x2 10 dBi
- Drone PCB 4x4 23/25 dBm + 4 ant 3/6 dBi
- Diamètre de la cellule 2 km à 6 km selon le gain de l'antenne de base 10 dB à 22 dB



SkyMesh MIMO applications en Mode full Mesh sans backbone mais avec Nodes 8x8 sur switch et Control Point – Utiliser la fragmentation RTS 256

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Unstructured peer-to-peer model		
Client-server model: Server Mode		
Client-server model: Client Mode		Configuration Drone
Hybrid model: Server Mode		Configuration Nodes mesh
Hybrid model: Client Mode		

	Client-server model: client mode	Connects to					
	Hybrid model: Server mode	Connects to					

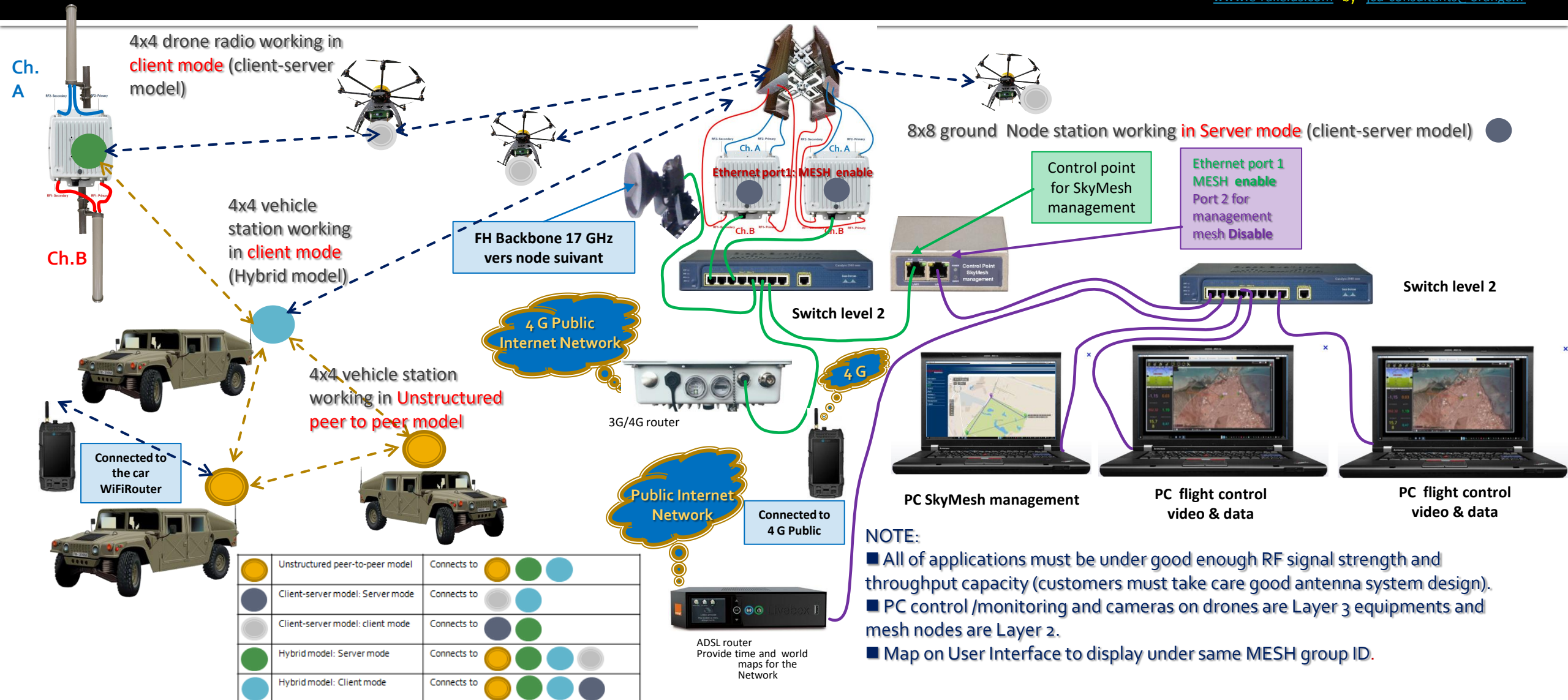
Mesh node 4x4 & management site

Mesh node 8x8 & management site

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SkyMesh MIMO applications des différents modes de fonctionnement

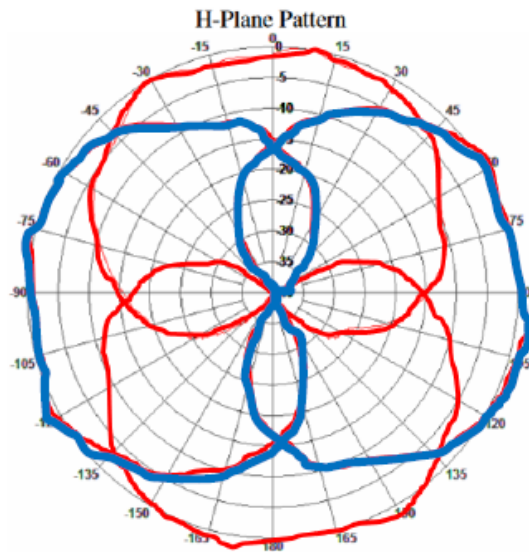
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	Unstructured peer-to-peer model	Connects to	
	Client-server model: Server mode	Connects to	
	Client-server model: client mode	Connects to	
	Hybrid model: Server mode	Connects to	
	Hybrid model: Client mode	Connects to	

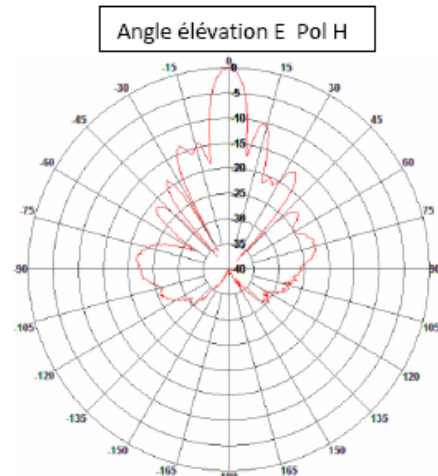
NOTE:

- All of applications must be under good enough RF signal strength and throughput capacity (customers must take care good antenna system design).
- PC control /monitoring and cameras on drones are Layer 3 equipments and mesh nodes are Layer 2.
- Map on User Interface to display under same MESH group ID.

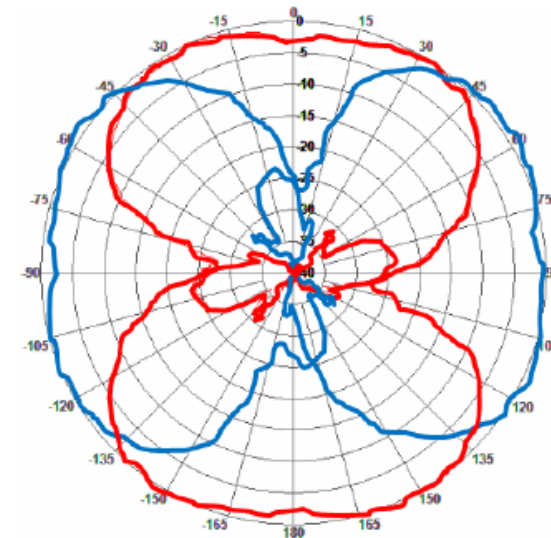
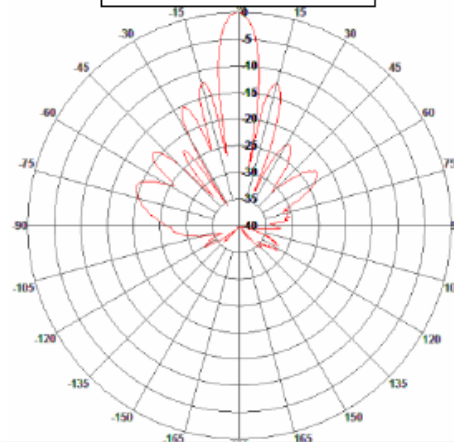


Polarisation Verticale

- RED North channel A from 2x2 Radio 1
- RED South channel A from 2x2 Radio 2
- BLUE West channel B from 2x2 Radio 1
- BLUE East channel B from 2x2 Radio 1



Angle élévation E Pol V

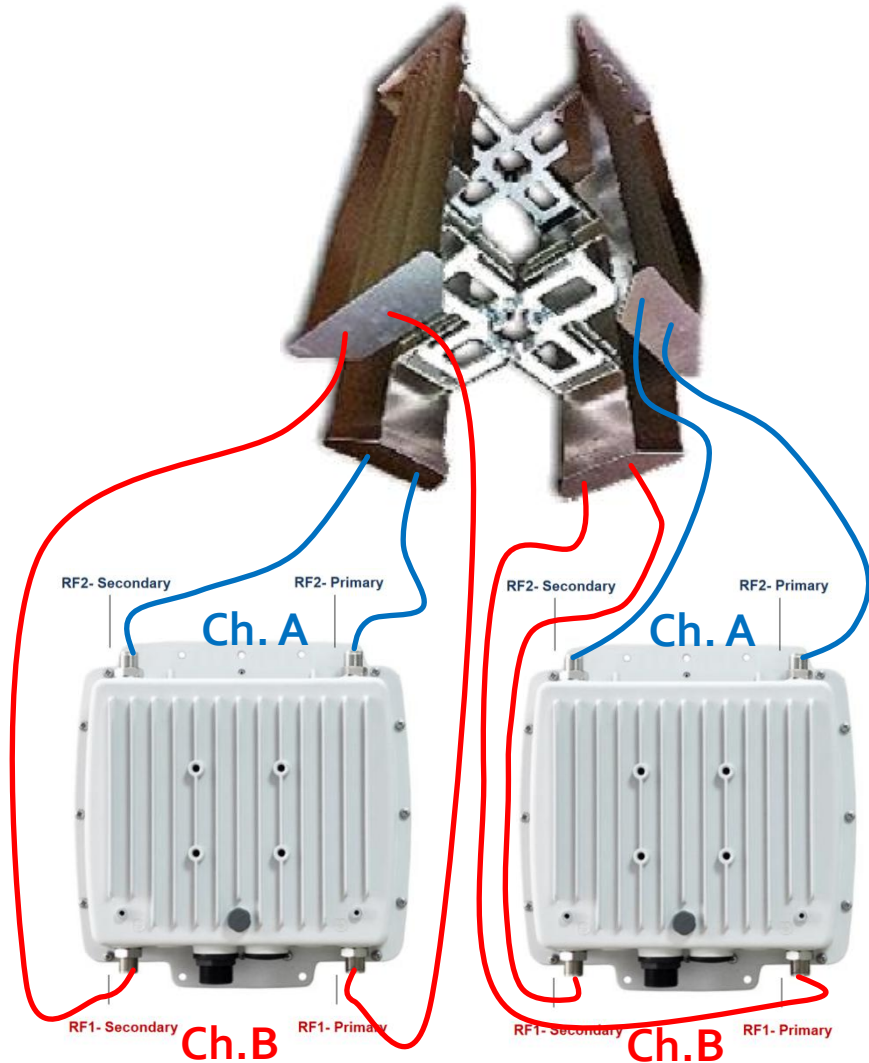


Polarisation Horizontale

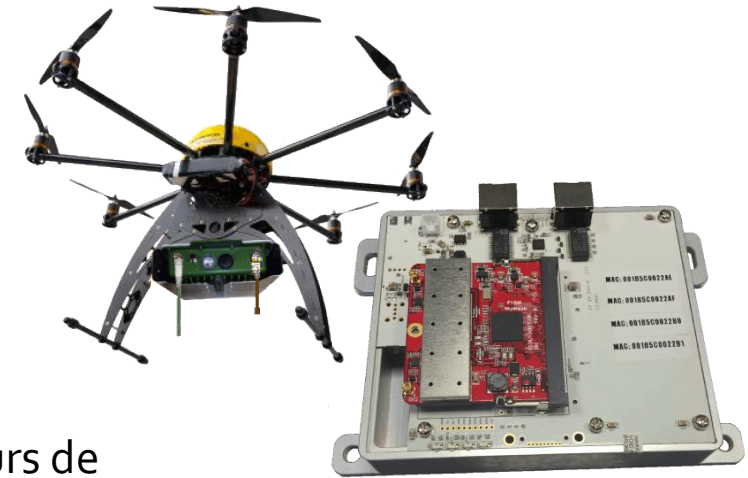


SkyMesh segment Station de Base au sol version 8x8 à 4 secteurs

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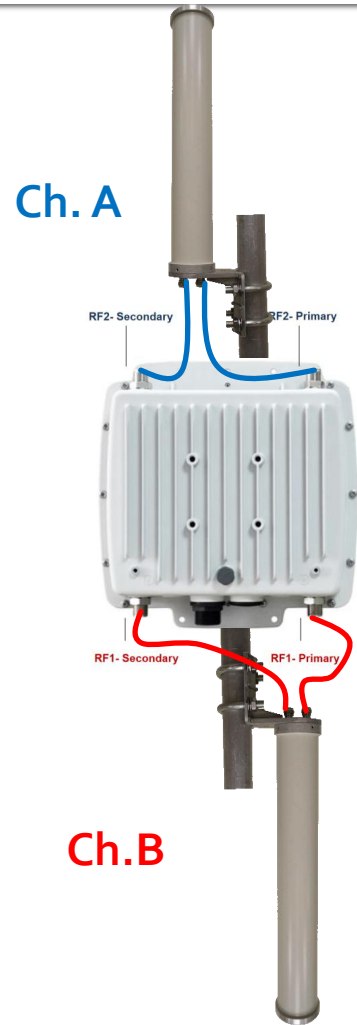
- Système Sol 8x8 4 secteurs de 2 canaux **Ch. A** et **Ch.B**
- 4 antennes MIMO 2x2 en polarisation Dual Slant +/- 45° ou RHCP & LHCP
- 2 radio SkyMesh 4x4 = 8x8
- Radio 1 en Ch. A et CHB
- Radio 2 en CH A et CH B
- **Réglage: Mesh Server Mode**



- Système air 4 antennes polarisation Slant +/- 45° ou RHCP & LHCP
- 1 radio PCB SkyMesh 4x4
- Radio 1 en Ch. A et CHB
- Radio 2 en CH A et CH B
- **Réglage: Mesh Client Mode**

SkyMesh segment Station de Base au sol version 2 x 2x2 Omnidirectionnelle

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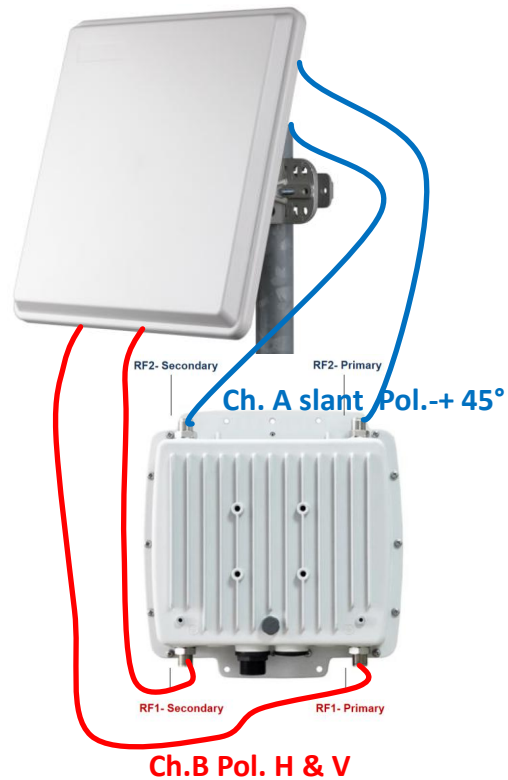


- Système Sol 4x4 Omnidirectionnel canaux Ch. A et Ch. B
- 2 antennes MIMO 2x2 en polarisation H & V en "stack" vertical pour -80 dB d'isolation
- 1 radio SkyMesh 4x4
- Radio 1 en Ch. A et CHB
- Réglage: **Mesh Server Mode**

- Système air 4 antennes polarisation Slant +/- 45° ou RHCP & LHCP
- 1 radio PCB SkyMesh 4x4
- Radio 1 en Ch. A et CHB
- Radio 2 en CH A et CH B
- Réglage: **Mesh Client Mode**

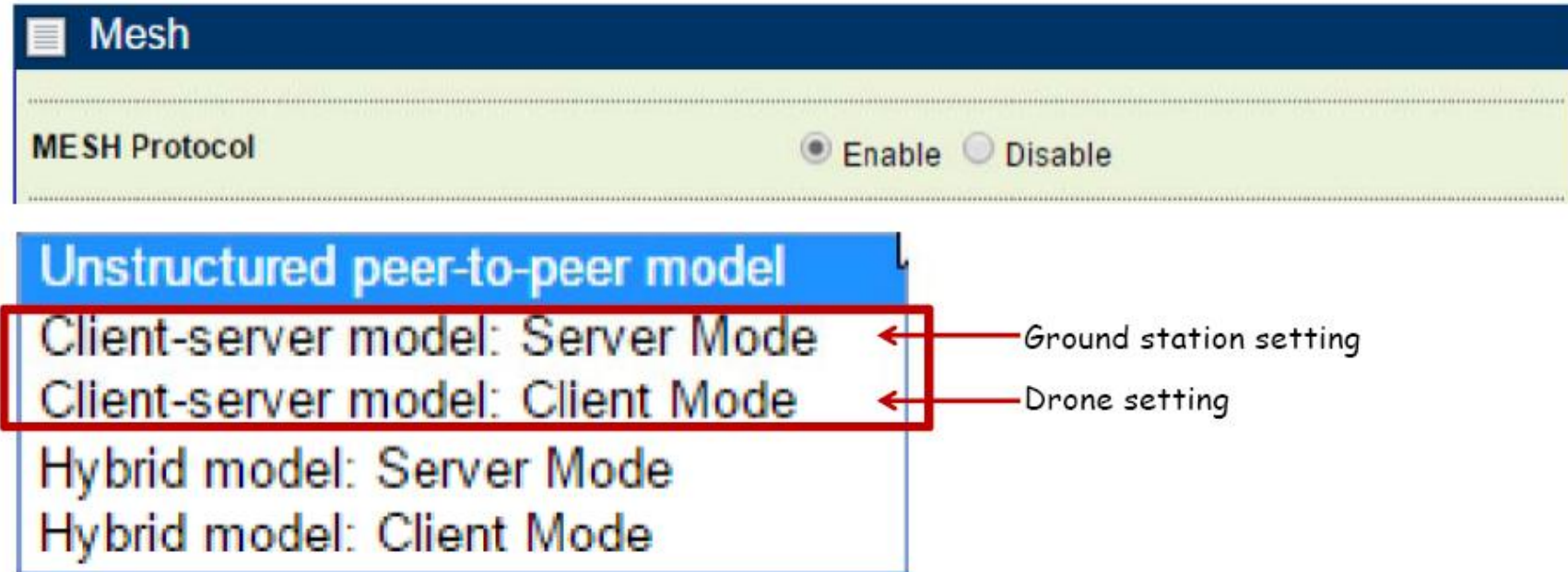
SkyMesh segment Station de Base au sol version 4x4 à un Secteur Grand Gain

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- Système Sol 4x4 Sectoriel canaux **Ch. A** et **Ch. B**
- 1 antenne MIMO 4x4 en polarisation H et V & dual slant+- 45°
- 1 radio SkyMesh 4x4
- Radio 1 en Ch. A et CHB
- Réglage: **Mesh Server Mode**

- Système air 4 antennes polarisation Slant +- 45° ou RHCP & LHCP
- 1 radio PCB SkyMesh 4x4
- Radio 1 en Ch. A et CHB
- Radio 2 en CH A et CH B
- Réglage: **Mesh Client Mode**



- Dans cette configuration les stations de base en "Server Mode" ne peuvent pas se connecter à une autre station de base.
- Les Drones et Mobile ne peuvent pas s'interconnecter
- Les Mobiles et Drones en "Client Mode" ne peuvent se connecter que à une station de base
- Les stations de base au sol doivent être interconnectées par un réseau LAN de type fibre ou Faisceaux Hertziens.

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Synoptique du Réseau SkyMesh air & sol avec backbone 17 GHz ou 24GHz

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