

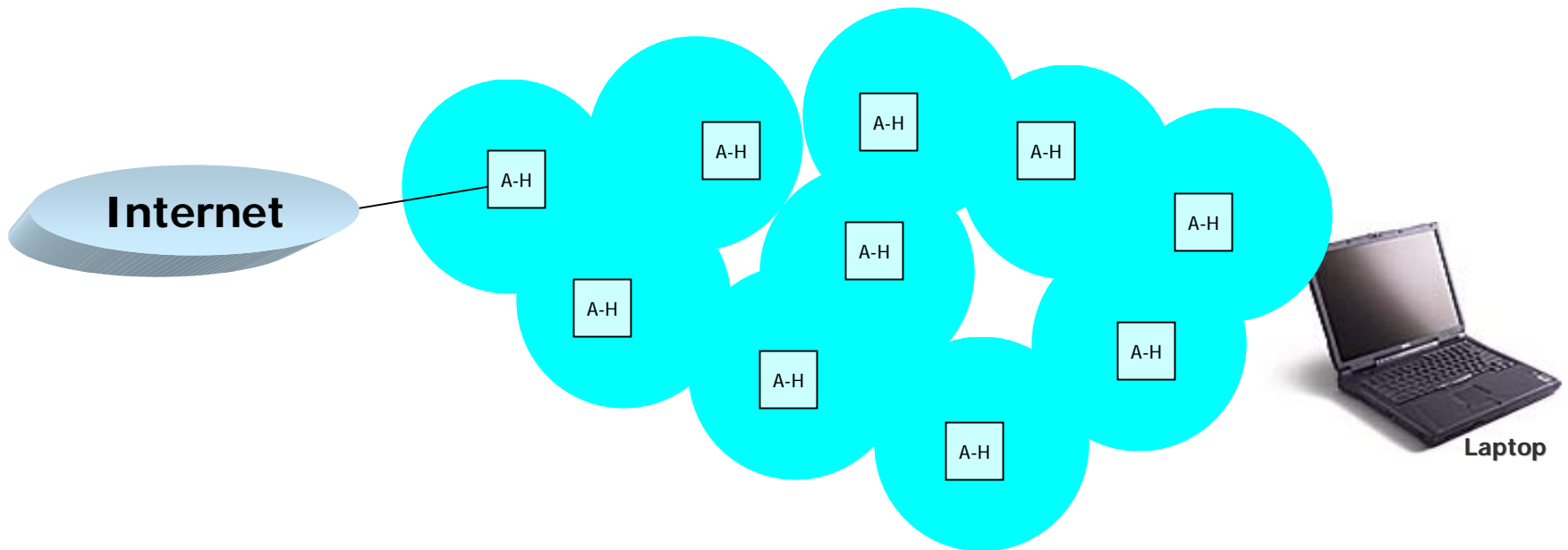


Structured MeshTM Products

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- What Makes Structured Mesh Different
- Meshdynamics Product Offering
- Homeland Security Trials
- Military Field Trials
- Hybrid Mesh Framework

- Any node may talk to any node (ad hoc fashion).

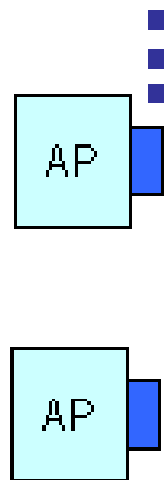


- Wireless connectivity without internet connections to every access point

One Radio Backhauls run out of steam

1-Radio Backhaul Cannot Send/Receive Simultaneously

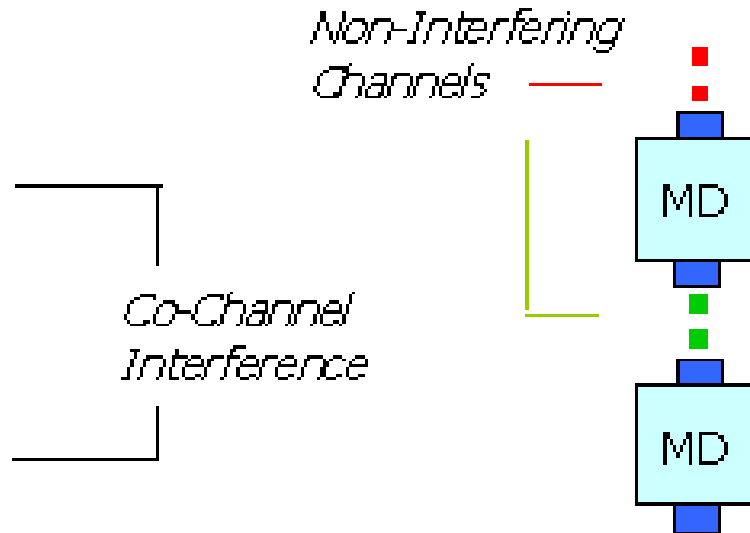
Single Radio Backhaul



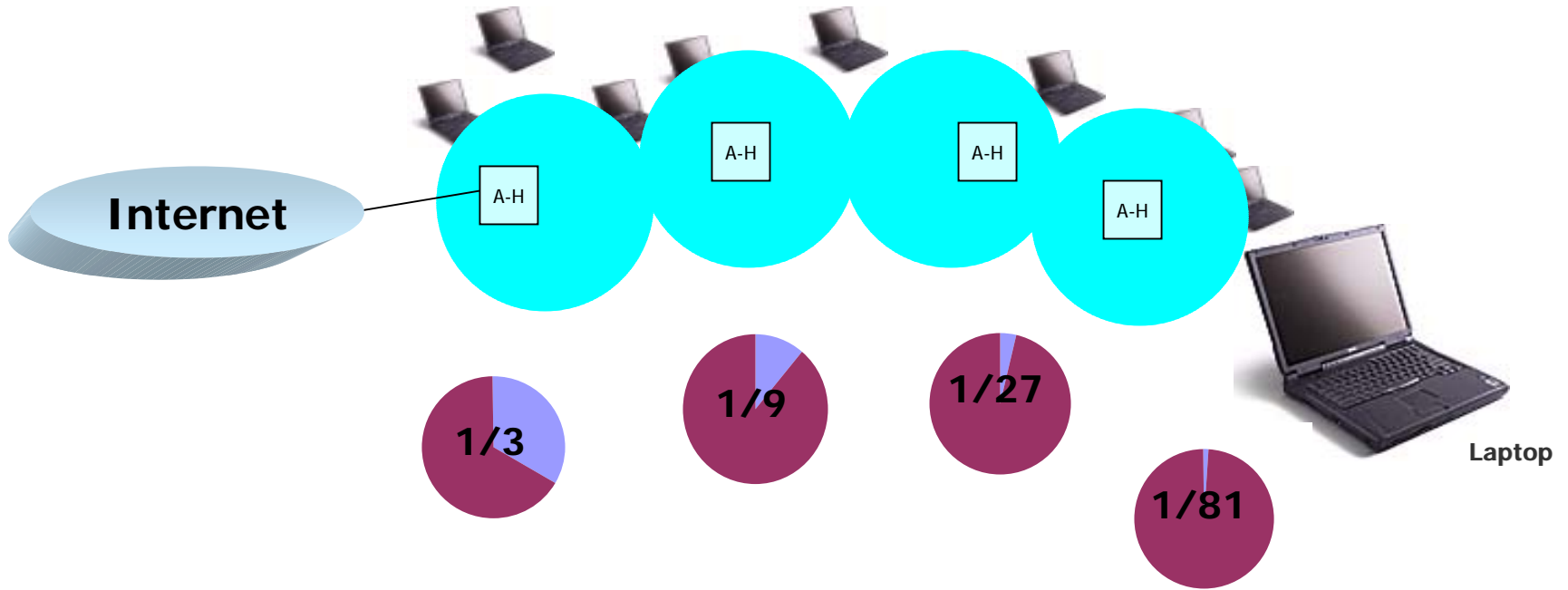
Step 1. Receive Packet
Step 2. Send (on same radio)

 Mesh Backhaul Radios

Multi Radio Backhaul

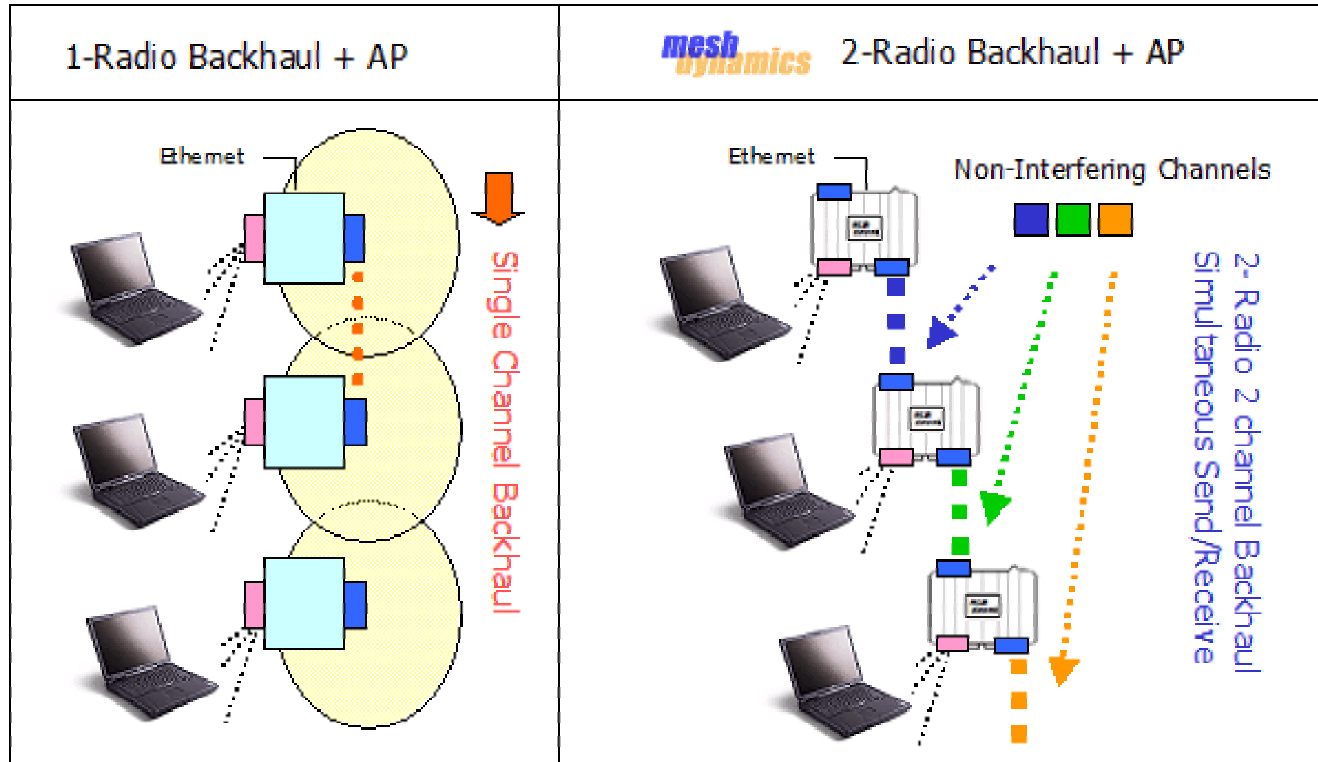


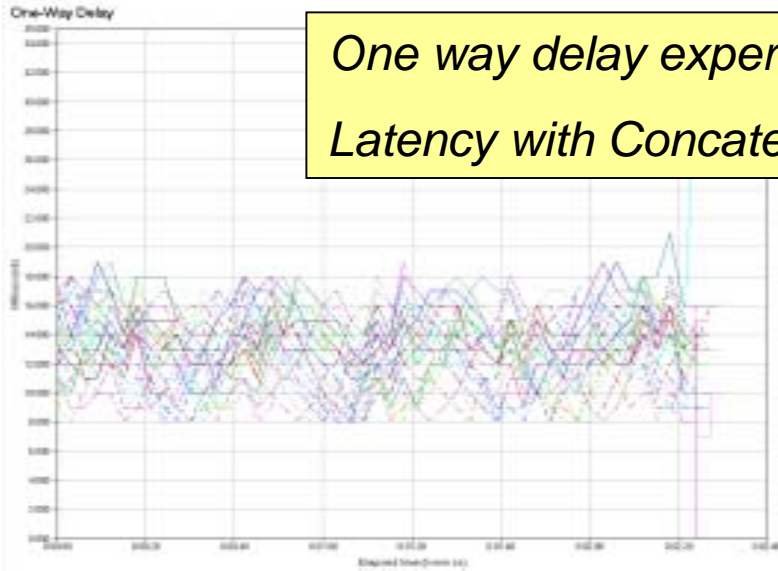
*Simultaneous
Receive/Send*



- One contention domain ... like giant Ethernet hub

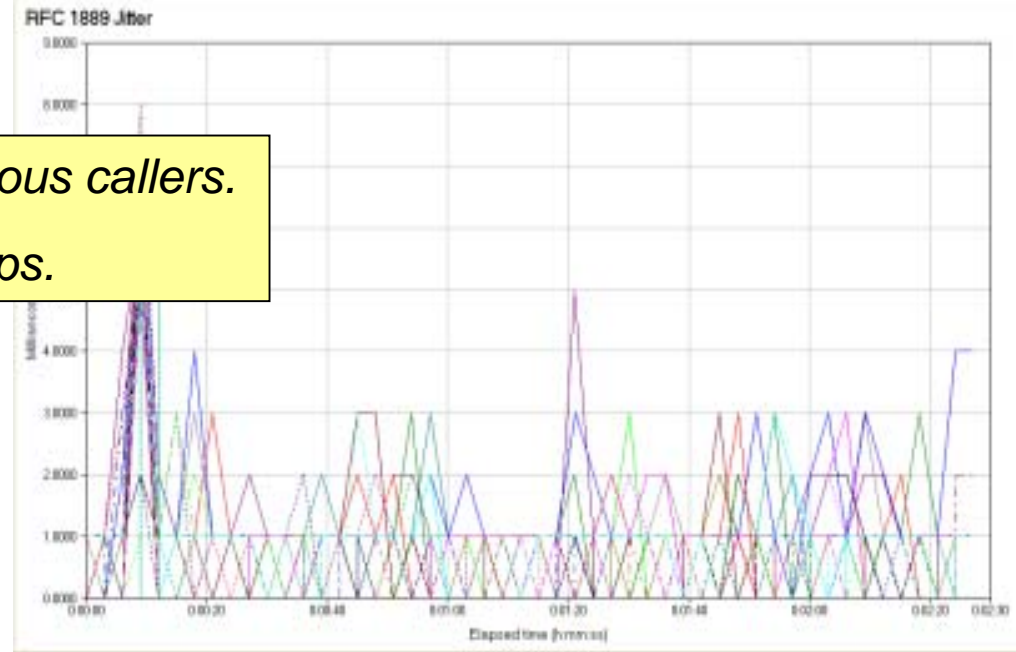
Structured Mesh has a Multi-Radio Backhaul



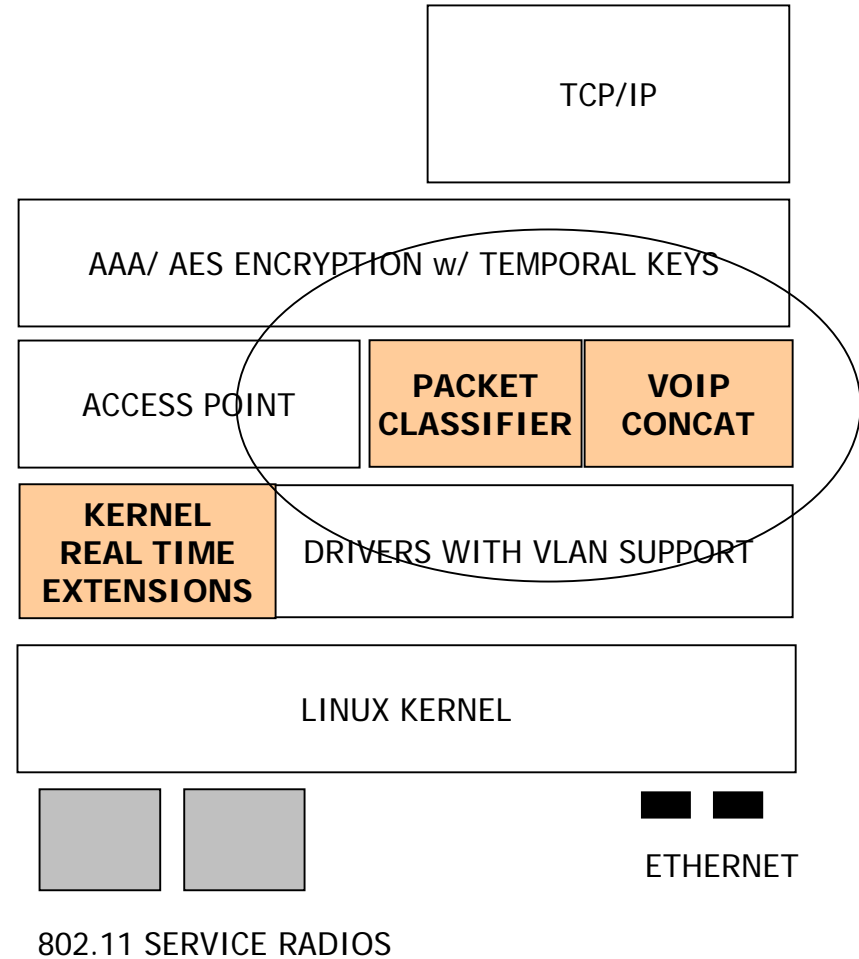
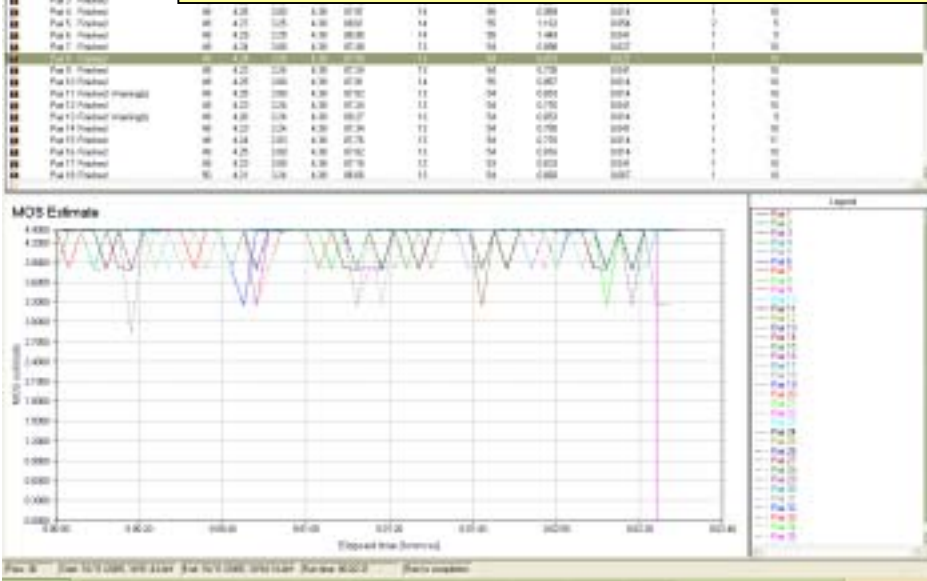


*One way delay experienced by the 36 simultaneous callers:
Latency with Concatenation is 10 ms + 1 ms per hop*

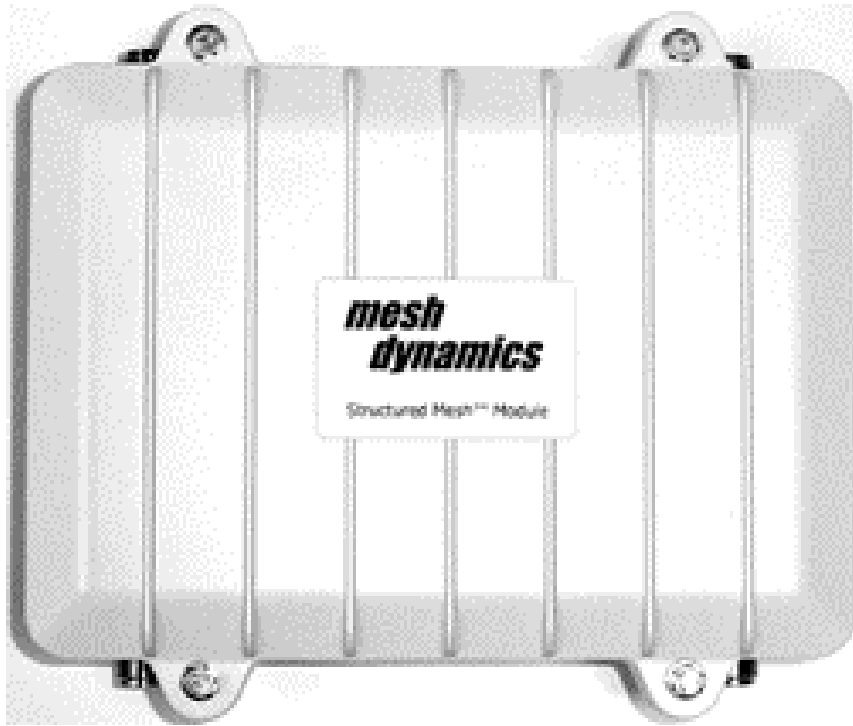
*Jitter experienced by 36 simultaneous callers.
Less than 4 ms average over 4 hops.*



Meshdynamics VOIP Concatenation Engine:
MOS Estimate for 36 simultaneous calls over 4 hops



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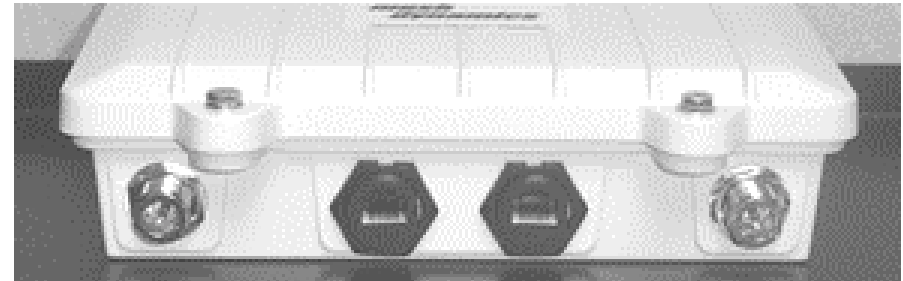


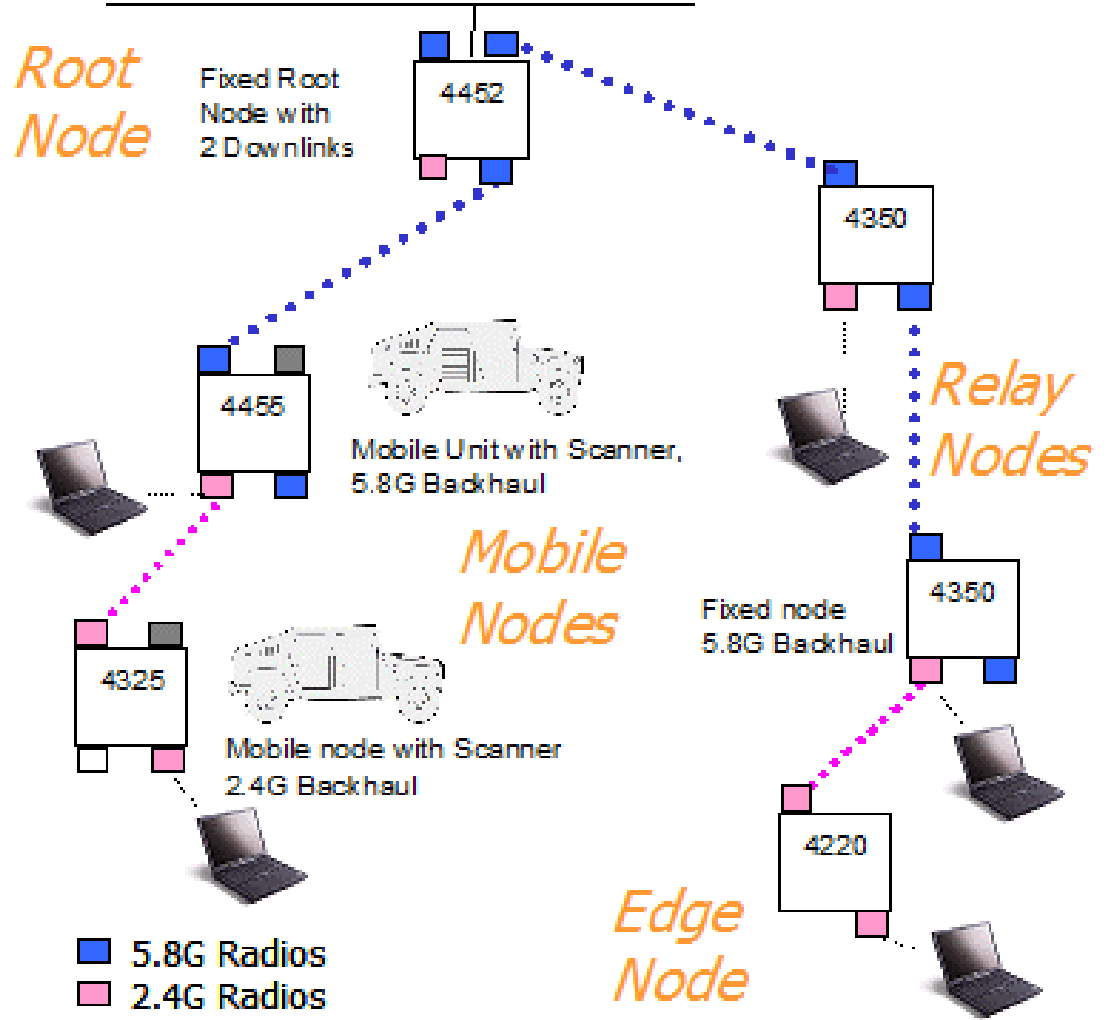
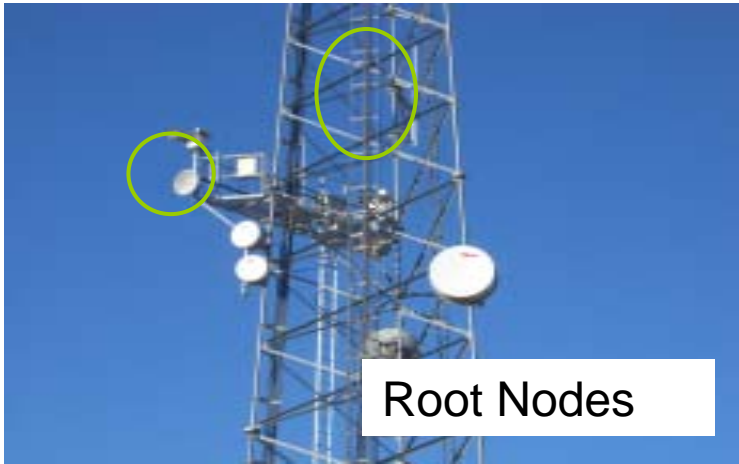
4 N-Female Connectors, 2 Ethernet Ports
Module Dimensions: 8" x 6" x 2", 3.0 lbs

Top: 2 N-Female connectors to Antennas



Bottom: 2 N-Female, 2 Ethernet Ports with POE





MeshDynamics Network Viewer 7.0

File Edit Run View Help

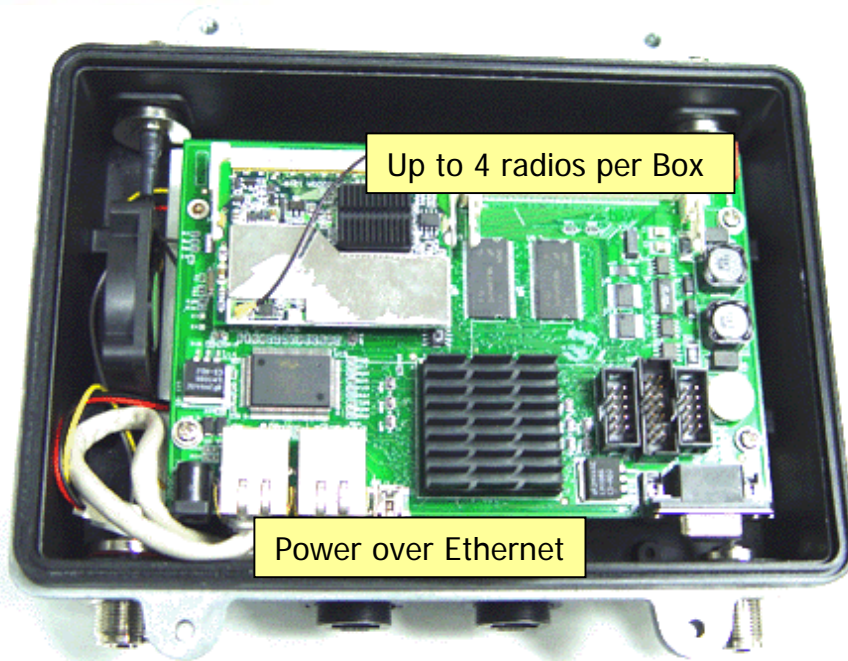
Properties

Property	Value
Name	meshap
Description	<<enter description.
Latitude	0
Longitude	0
Hardware Info	
Firmware Version	2.209.0
Model Info	MD4350-AA-G
Mac Addresses	
Unit	00:12:ce:00:08:a8
bsp1	00:12:ce:00:08:a9
wlan0	00:12:ce:00:08:aa
wlan2	00:12:ce:00:08:ac
IP-Settings	
Host Name	meshap
IP Address	192.168.0.100
SubNet Mask	255.255.255.0
Gateway	192.168.0.1
Information	
HeartBeat Count	231
Parent Signal Strength	29
Known AP's	1
Uplink TX Rate	54
Hop Count	1
Mesh Settings	
HeartBeat Interval	15

default

HeartBeat Group Selection Station Activity

No	MacAddress	TimeStamp	STA Address	Status
1	00:12:ce:00:0a:f52	Mon Oct 03 13:43:06 PDT 2005	00:12:f0:4d:76:e1	Disassociated
2	00:12:ce:00:08:06	Mon Oct 03 13:43:13 PDT 2005	00:12:ce:00:09:7a	Associated
3	00:12:ce:00:08:12	Mon Oct 03 13:43:15 PDT 2005	00:12:ce:00:08:a8	Associated
4	00:12:ce:00:08:12	Mon Oct 03 13:43:15 PDT 2005	00:12:ce:00:0a:f52	Associated
5	00:12:ce:00:08:a8	Mon Oct 03 13:46:05 PDT 2005	00:12:ce:00:09:7a	Associated
6	00:12:ce:00:09:7a	Mon Oct 03 14:40:00 PDT 2005	00:12:ce:00:09:74	Associated
7	00:12:ce:00:09:74	Mon Oct 03 14:53:04 PDT 2005	00:12:ce:00:09:7a	Associated



Features for Military Version of product:

1. *GPS over Serial line*
2. *Lithium backup battery*
3. *Min. 10GB internal storage*
4. *Store-and-forward messaging*

Store and Forward Messaging for relay/receiving information to troops.

1. *Location and time stamp all text/VOIP messages for next set of troops*
2. *Even if no mesh formed, the information is available to next set of troops*
3. *Instructions may be relayed to edge node awaiting personnel arrival*
4. *Mesh Nodes in the field can act as message mailboxes + relays*

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Agua Prieta
Mexico

Douglas Arizona
USA

Looking west from
Jefferson Tower

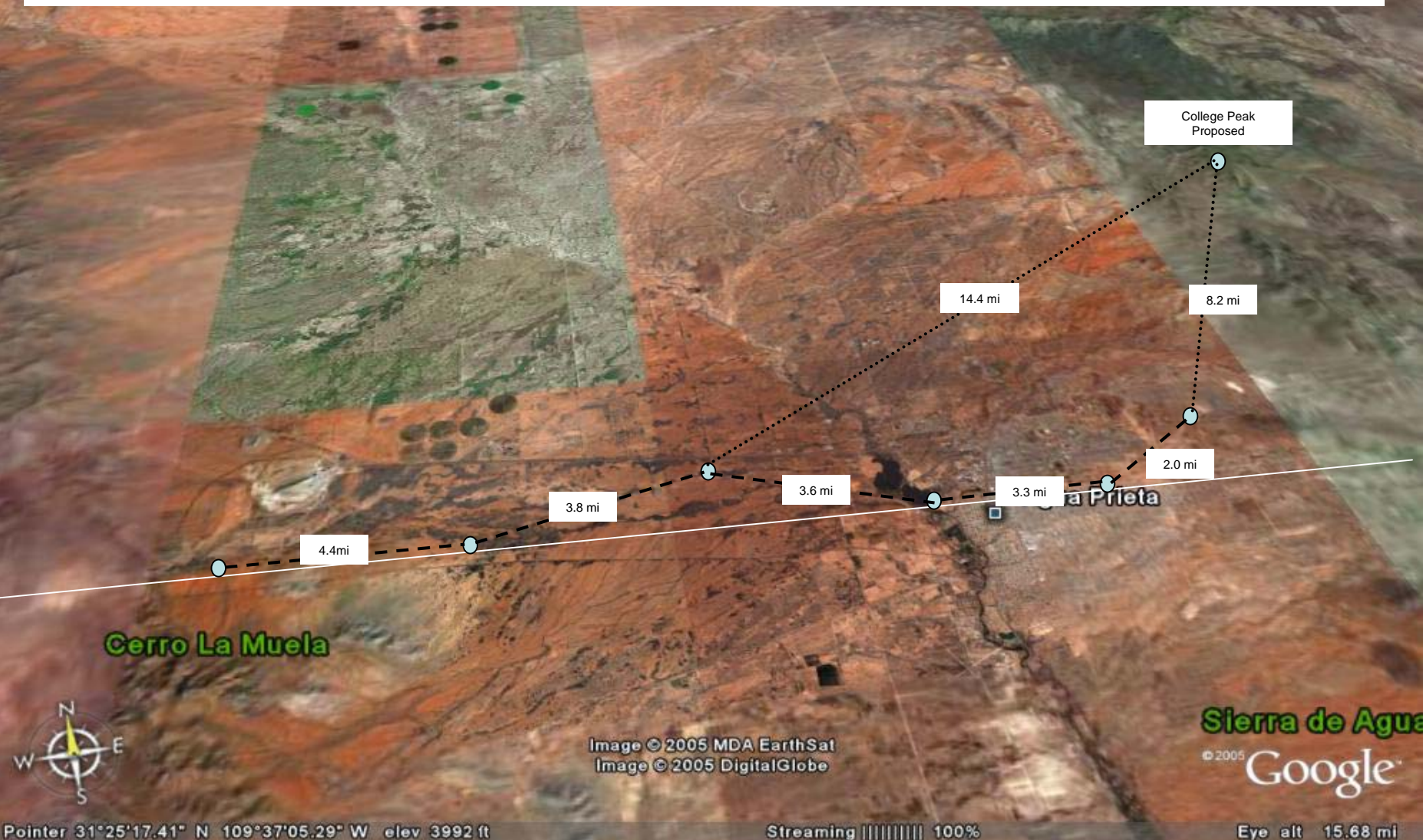
Douglas AZ

6 stationary MD4350-AABx-1100, 4 mobile MD4220-BBxx-0000

Backhaul using 29dbi Hyperlink Parabolic Antennas (HG5829d) with UBNT radios, no amps

Backhaul transmit rate is 54Mbps on all links. Throughput is 20Mbps.

SPAWAR has tested a 14mi link that maintained the 54Mps transmit rate.



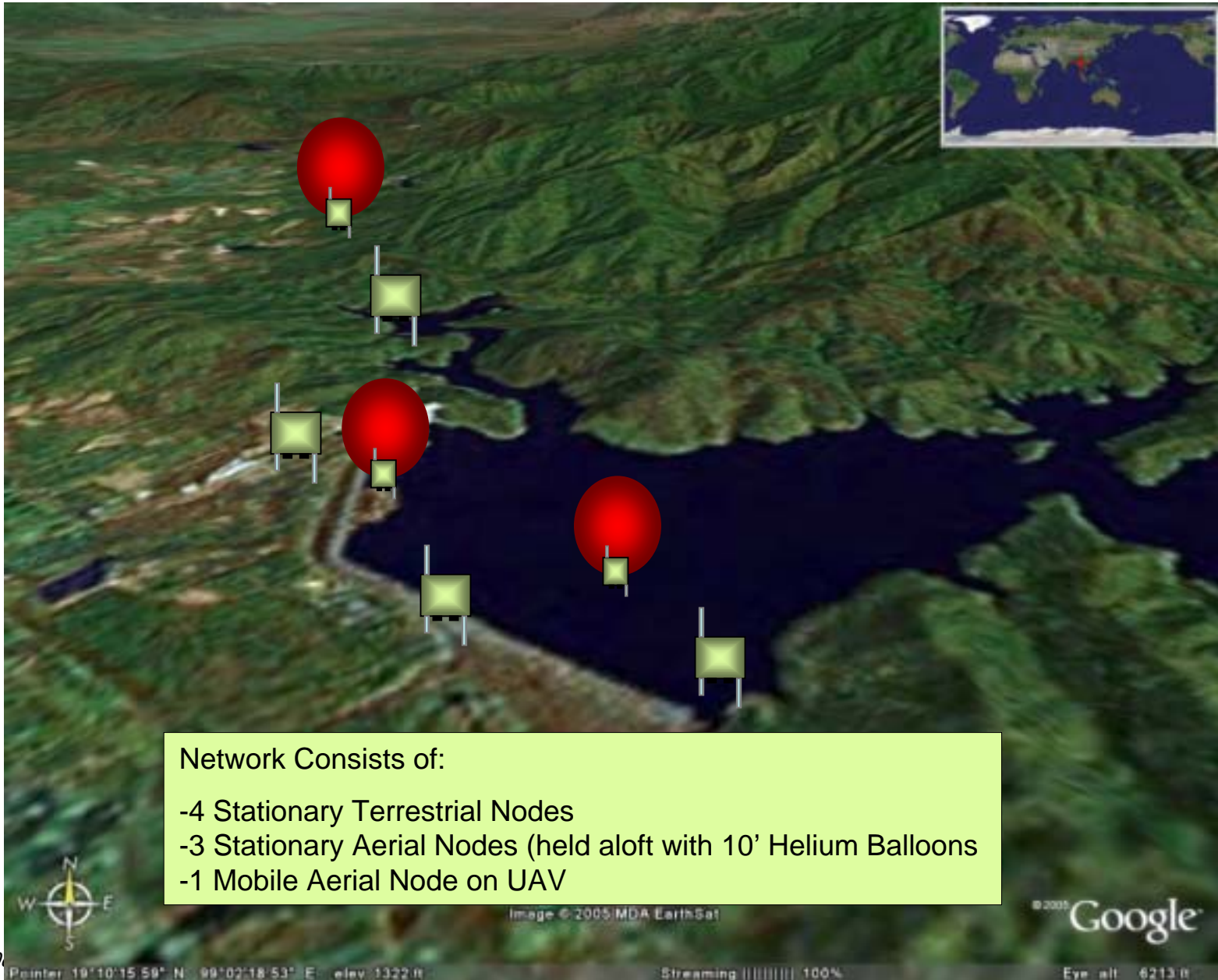
Douglas
Station



Trunk Mounted Unit (Mobile Unit)



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Network Consists of:

- 4 Stationary Terrestrial Nodes
- 3 Stationary Aerial Nodes (held aloft with 10' Helium Balloons)
- 1 Mobile Aerial Node on UAV




Live view - AXIS 213 PTZ Network Camera version 4.03 - Microsoft Internet Explorer presented by Comcast

File Edit View Favorites Tools Help

Address http://12.155.12.133:1751/view/index.shtml

Live Feed over a 9 hop mesh network



Up
↓
TILT
↓
Down

The AudioComponent that enables streaming video in Microsoft Internet Explorer, could not be registered on this computer. To install AXIS Media Control, you must have administration rights on this computer and you must answer Yes when asked if you wish to allow the installation. The AXIS 213 can also be configured to show still images.

Click in image movement:

PAN Left [Slider] Right Home [Button]

IRIS Close [Slider] Open Auto iris [Button]

FOCUS Near [Slider] Far Auto focus [Button]

ZOOM Wide [Slider] Tele [Button]

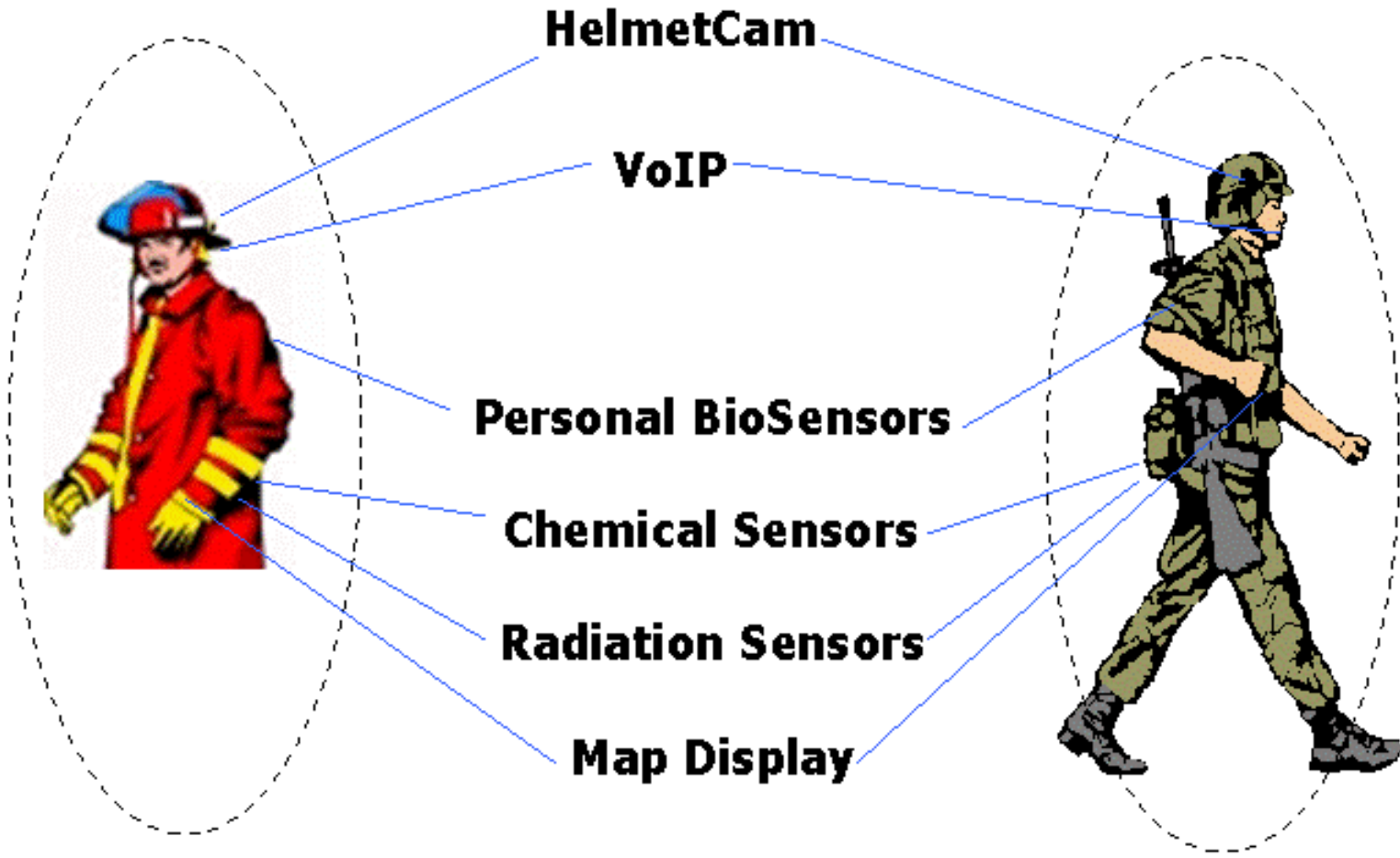
Remote Controls

PTZ Control Queue

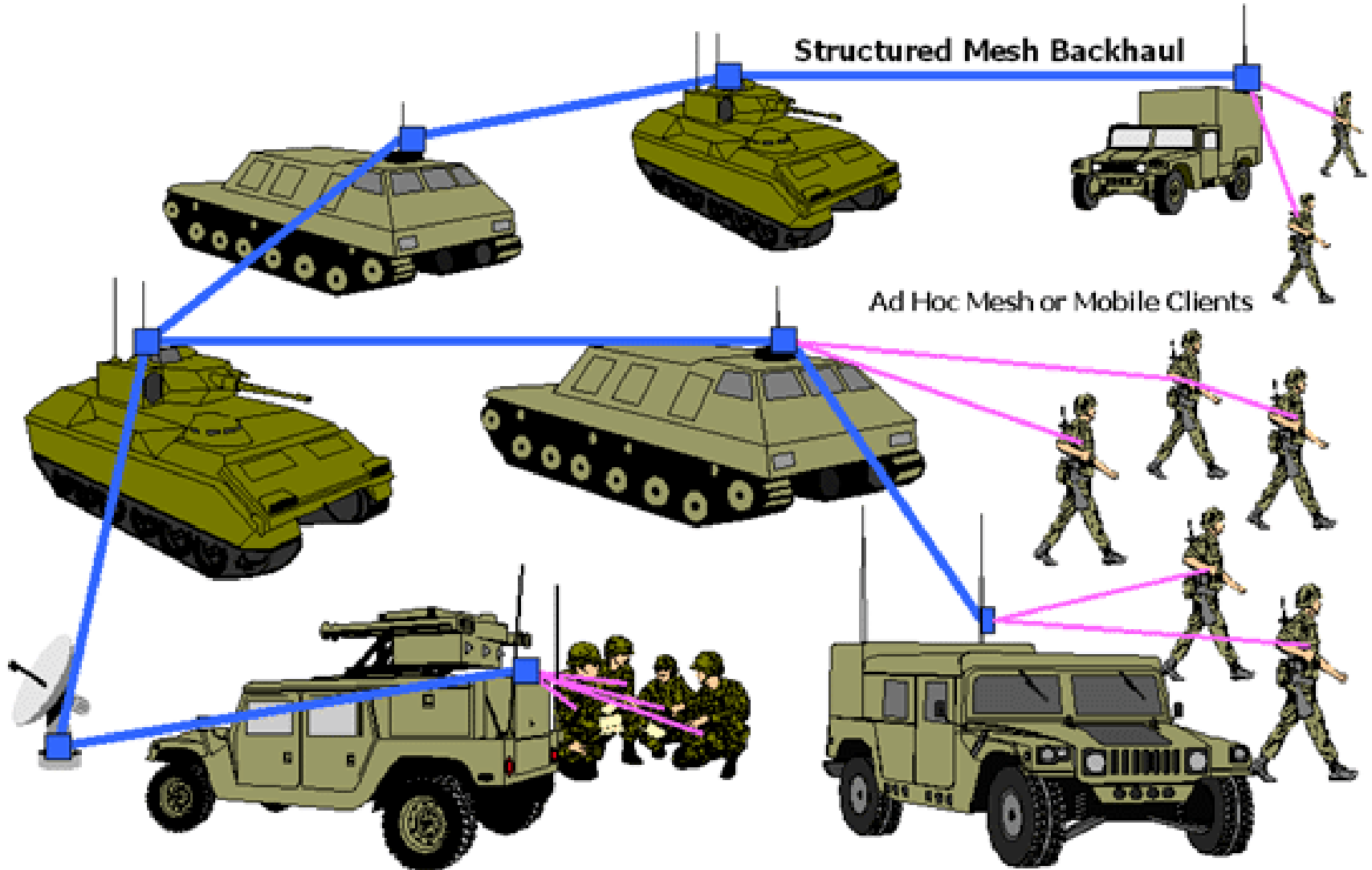
Status in queue: Not in queue Position in queue: [Field]

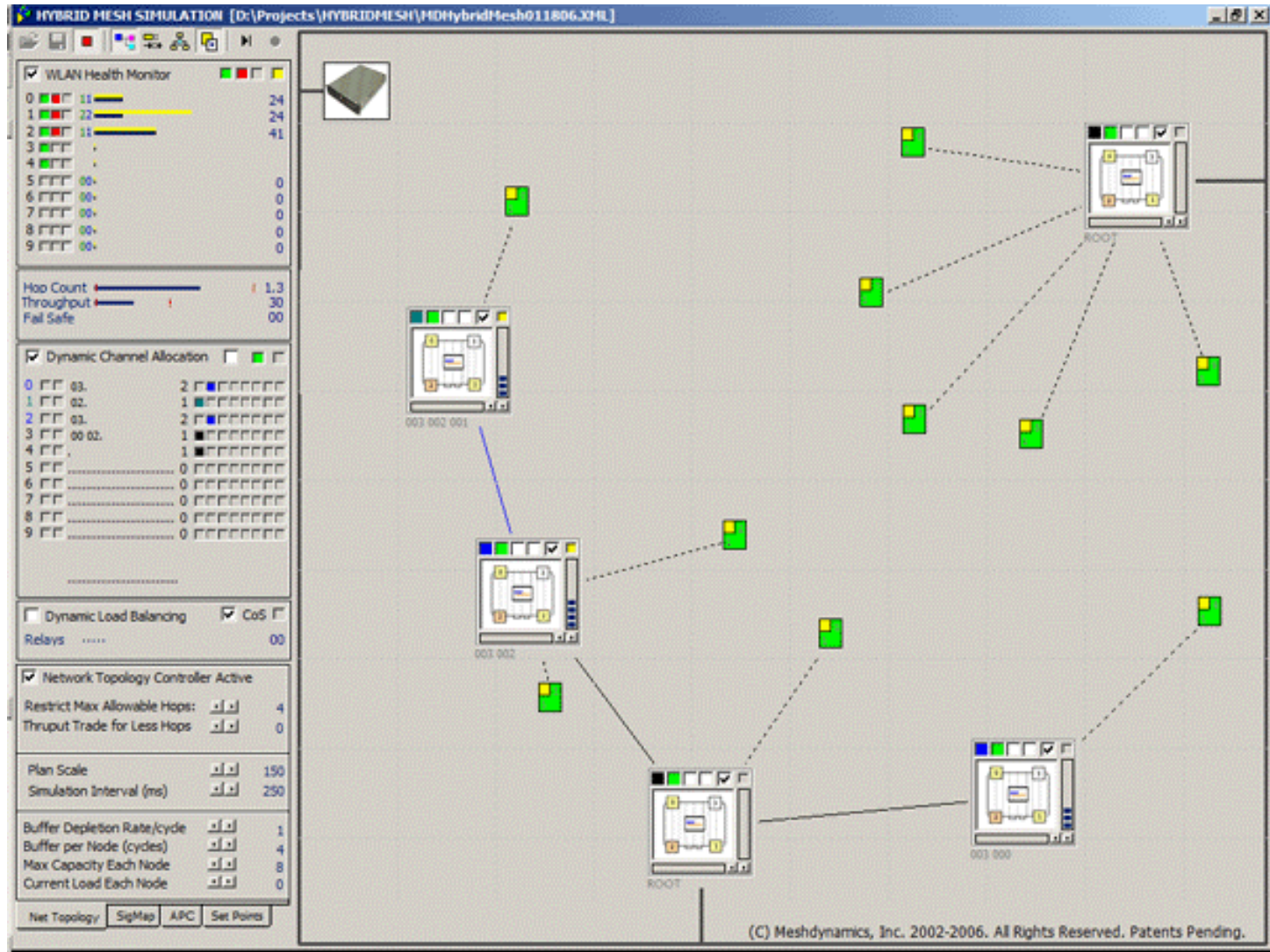
Time remaining: [Field] seconds [Request control Button]

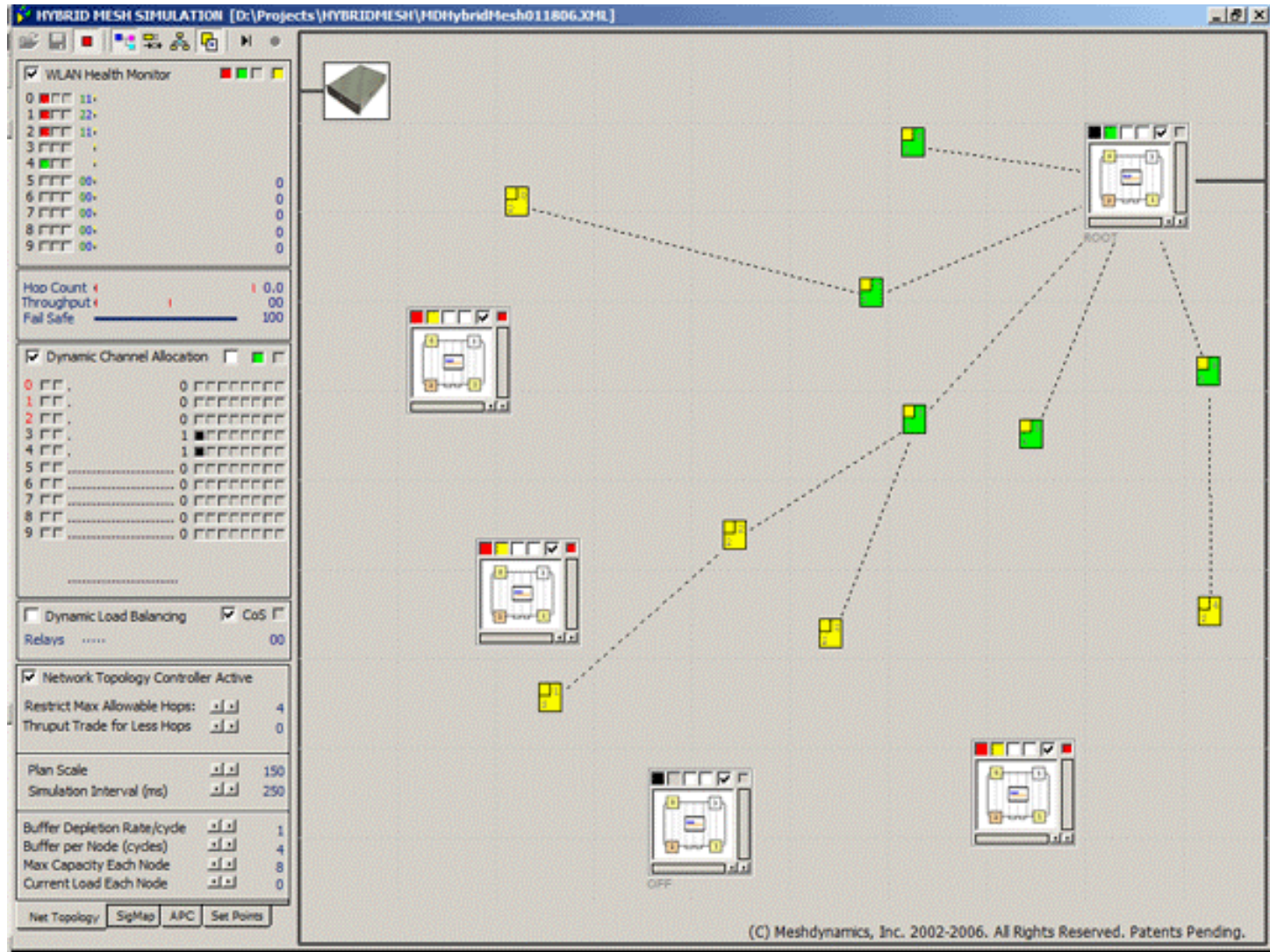
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Hybrid Mesh: Always Connected









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