

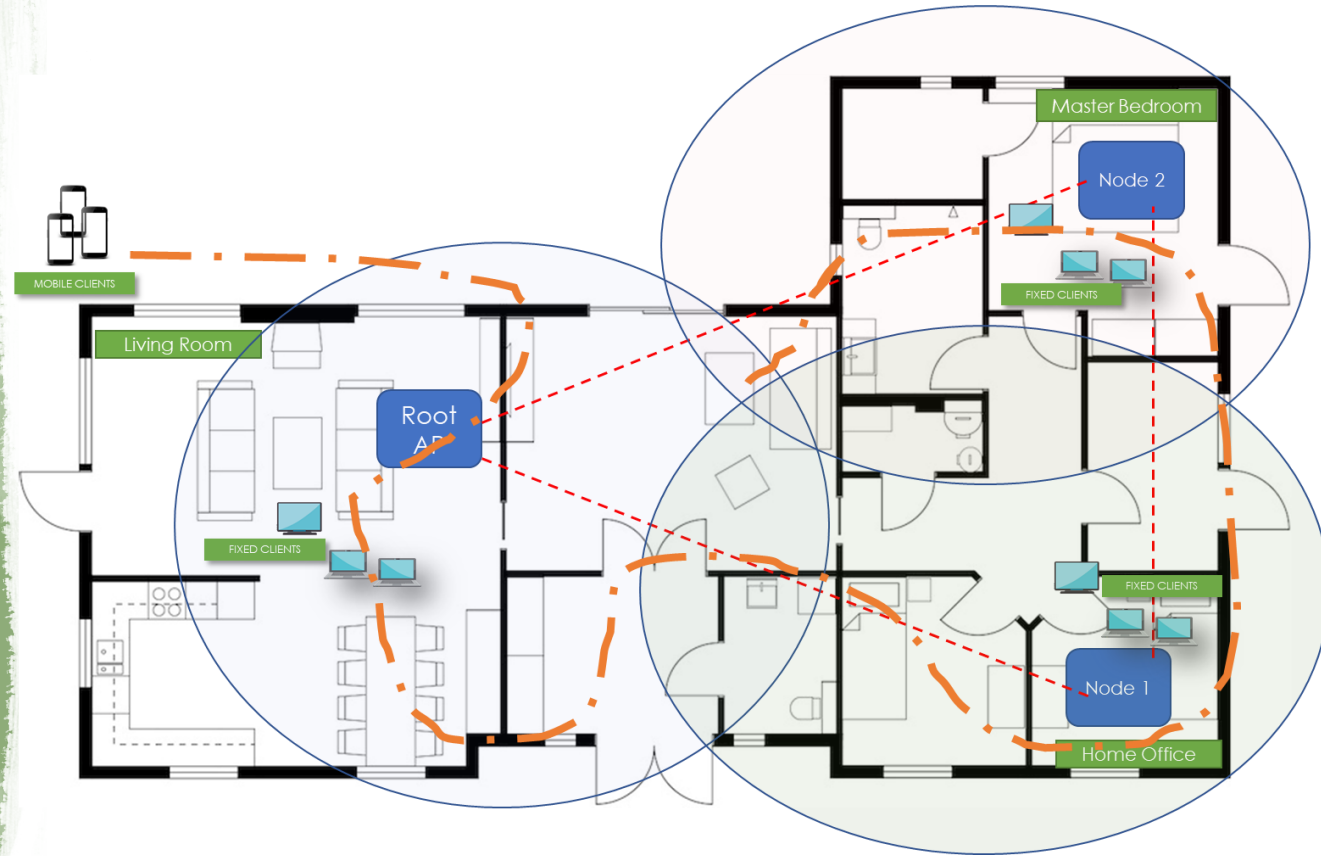
Network  
Testing &  
Emulation  
Solutions

- Founded in 2000
- Focus on Network testing and Emulation Solutions
- WiFi test solutions since 2006
- Team of Networking Technologies and Firmware Experts
- Helping over 200 customers, design, develop and deploy high quality networking products

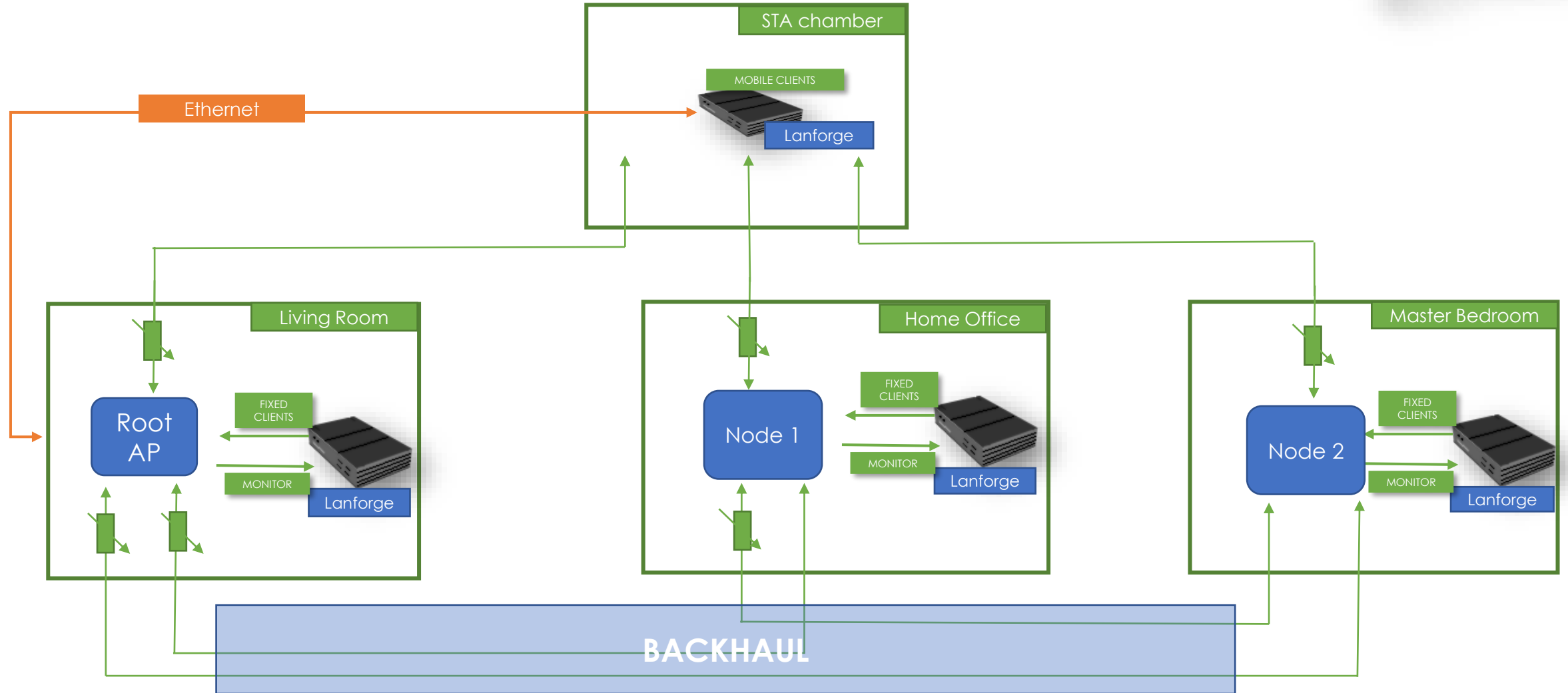
 [sales@candelatech.com](mailto:sales@candelatech.com)  
 1-360-380-1618

## Testbed Wiring Diagrams

# Mesh Test Solution



# 3 Node Mesh Testbed



# Testbed Picture - Front



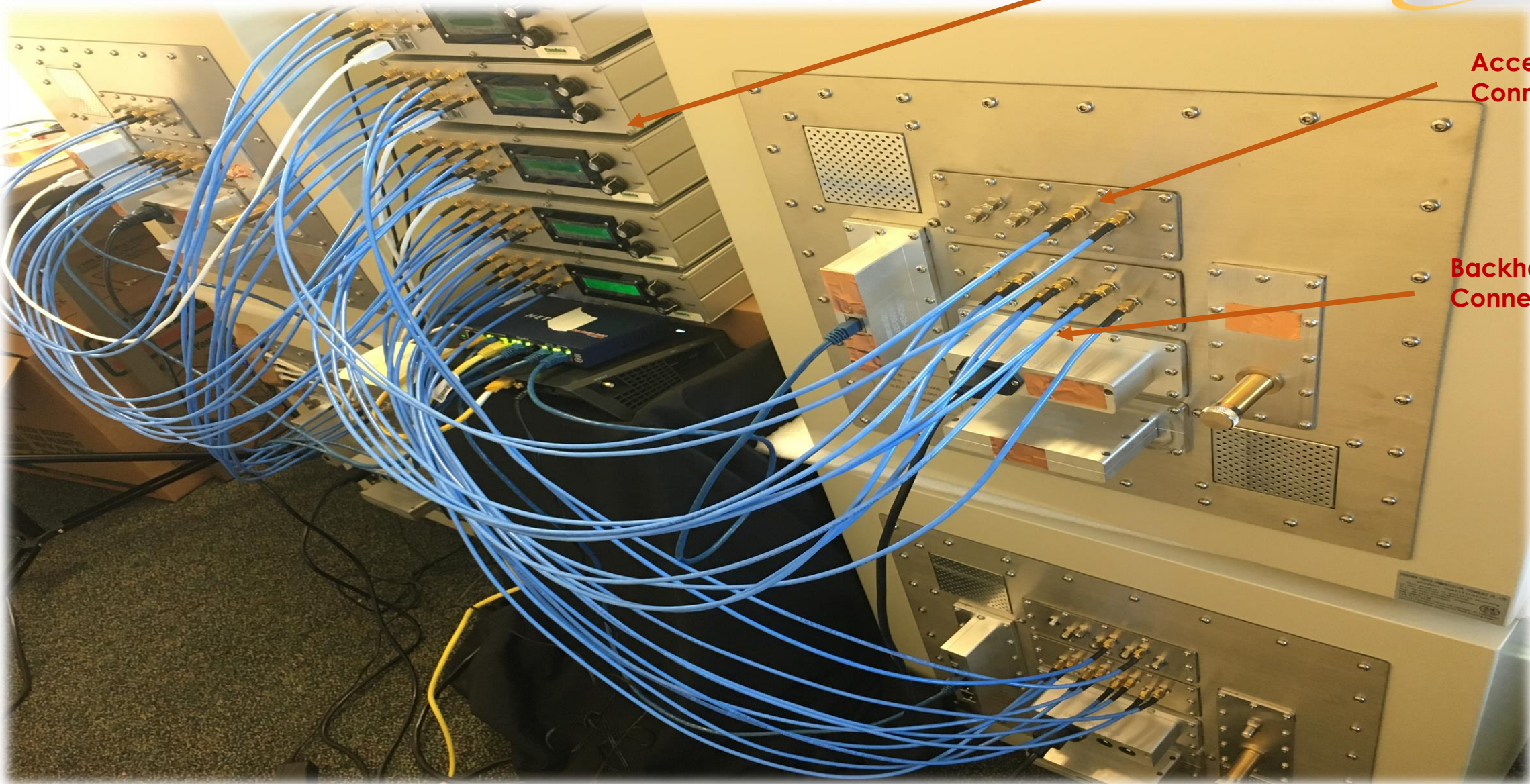
# Testbed Picture - Back

Programmable  
Attenuators



Access  
Connections

Backhaul  
Connections



# Mesh Testbed installation notes.



- **Node 1, Node 2, Root Chamber**

- It is normally difficult to properly cable directly to the AP Device under Test, so we use over-the-air connectivity inside the chambers.
- Considering AP to AP mesh connectivity is over-the-air on both sides, there is a lot of path loss even when everything is otherwise working well.
- To minimize path loss, use an SMA Male to SMA Female cable, 60cm or longer. Attach antenna to one side, and the other side to the inside chamber wall.
- Place the antenna on or very near to the AP. Velcro straps or similar may be used to strap the antenna to the Aps.

- **Mobile Station Chamber**

- Use 8 30cm cables to connect radios to the '2' side of the 2-1 splitters.
- Use 4 30cm cables to connect the '1' side of the 2-1 and 1-4 splitters.
- Use 16 60cm cables to connect 1-4 splitters to the walls.
- Ensure all splitter/combiners are inside the chamber.

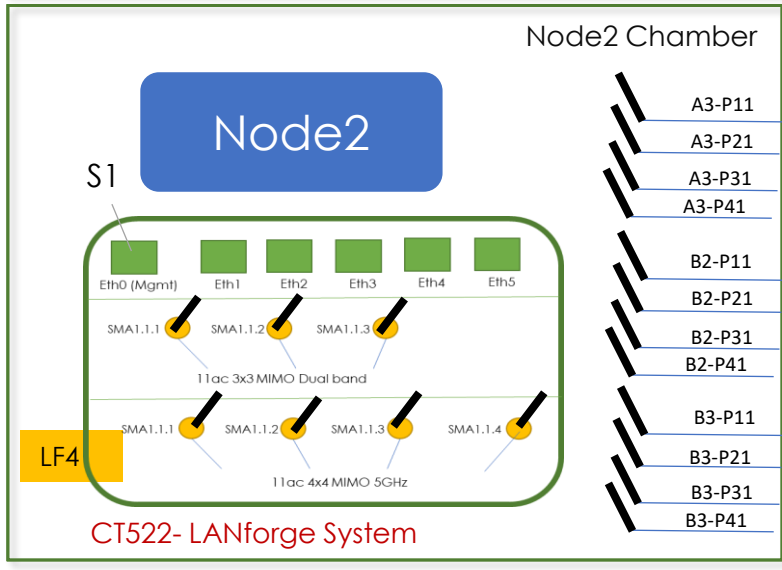
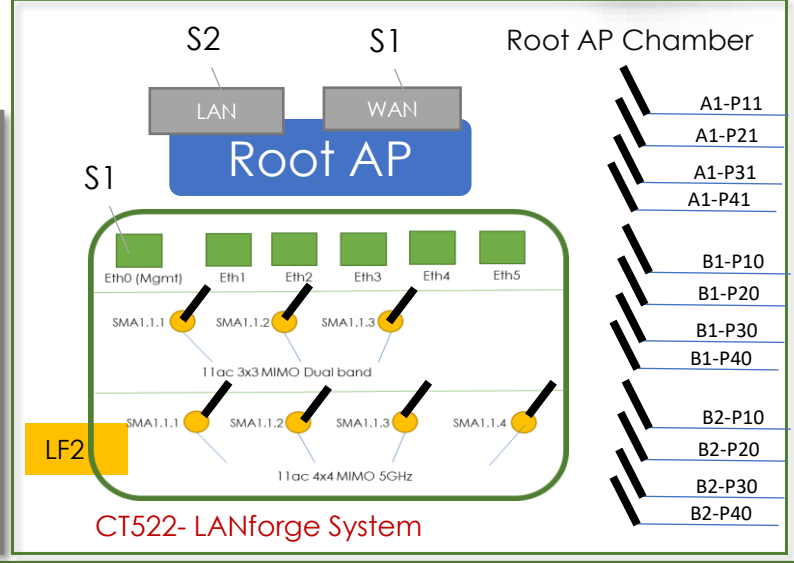
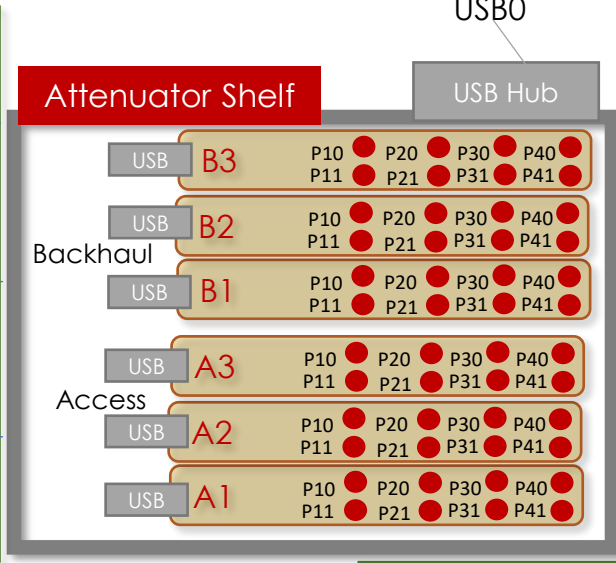
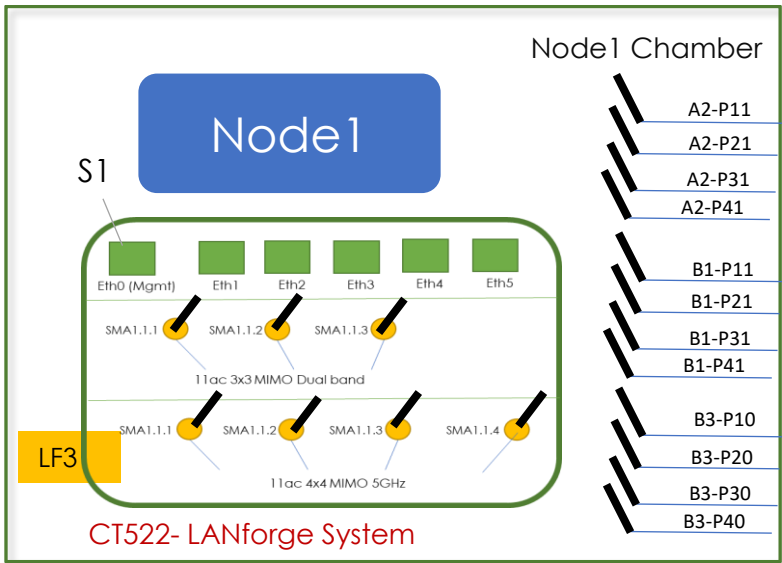
# Mesh Testbed Wiring Diagram



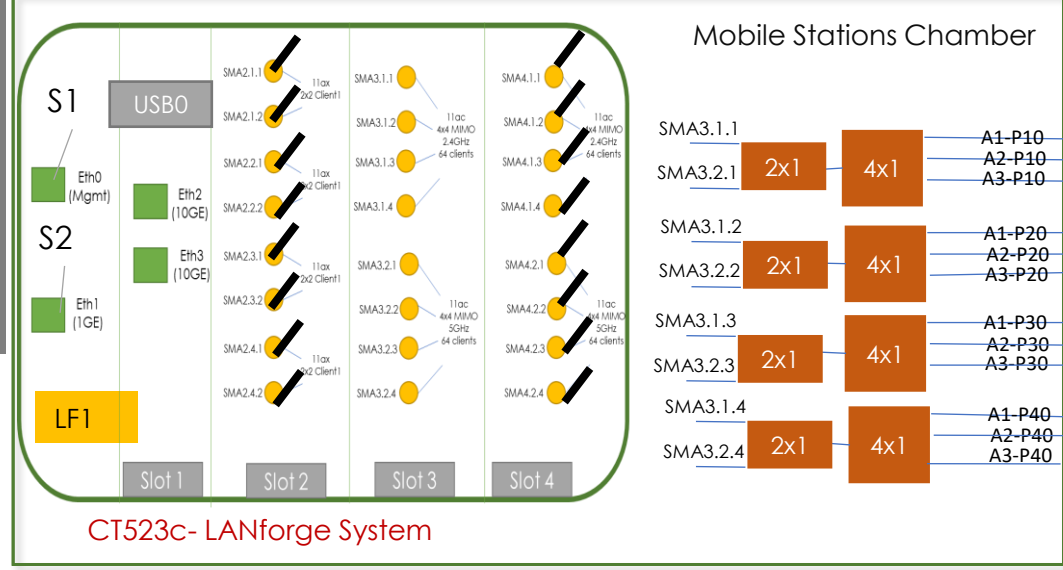
S1 – Management Network Switch

S2 – Test Network Switch

S1 – Remote Desktop to LANforge



- Other items in each chamber not shown in the diagram:
- ✓ Programmable Power Switch
  - ✓ Webcam
  - ✓ LED Lamps
  - ✓ DUT Table
  - ✓ Powered USB Hub
  - ✓ Ethernet Switches
  - ✓ Attenuator Stand
  - ✓ Fixed attenuators
  - ✓ Antennas



# Mesh Testbed Bill of Materials (BOM)



- ✓ Hardware
  - ✓ LANforge Systems Units
    - ✓ CT-523c-4ax-2ac2-db-10GE-cu – 1 unit
      - ✓ 4x4 MIMO 11ac Wave2 Single Band 5GHz radio – 2 units (64 clients per radio)
      - ✓ 4x4 MIMO 11ac Wave2 Single Band 2.4GHz radio – 2 units (64 clients per radio)
      - ✓ 2x2 MIMO 11ax dual band radio – 4 units (1 client per radio)
    - ✓ CT-522-1ac2-1ac1 – 3 units
      - ✓ 4x4 MIMO 11ac Wave2 Single Band 5GHz radio – 1 unit (64 clients per radio)
      - ✓ 3x3 MIMO 11ac Dual band radio – 1 unit (64 clients per radio)
  - ✓ RF Enclosures
    - ✓ CT820a Medium Chambers – 4 units
  - ✓ CT714b Programmable Attenuators – 6 units
  - ✓ 2x1 Splitters – 4 units
  - ✓ 4x1 Splitters – 4 units
  - ✓ RF Cables
  - ✓ RF Antennas
  - ✓ Other Accessories Include - Programmable Power Switches, Webcams, LED Lamps, Chamber Tables, Powered USB Hubs, Ethernet Switches, Attenuator Stand and Fixed attenuators
- ✓ Software
  - ✓ SW1001m 1GE 1000 Traffic Stream Licenses – 1 unit
  - ✓ SW1001sta virtual station licenses – 654 Virtual Stations
- ✓ Support/Warranty
  - ✓ 1-year hardware and software support