



# Session 1: Copper Broadband Technology Developments

## MDU Connectivity Enhancements



Dr Jim Crammond,  
MoCA



Mike Talbert,  
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# About MoCA Technology Standards



**MoCA HOME**

*Connecting devices within a home  
(mesh)*

**MoCA Home™ 2.0 (1 Gbps)**  
**MoCA Home™ 2.5 (2.5 Gbps)**  
**MoCA Home™ 3.0 (10 Gbps)**



**MoCA ACCESS™**

*Connecting homes in an MDU  
(P2MP)*

**MoCA Access™ 2.5 (2.5 Gbps)**  
**MoCA Access™ 3.0 (10 Gbps)**



**MoCA LINK**

*Bridging from access network  
to home network (P2P)*

**MoCA Link™ 2.5 (2.5 Gbps)**  
**MoCA Link™ 3.0 (10 Gbps)**

All flavors based on the same PHY standards

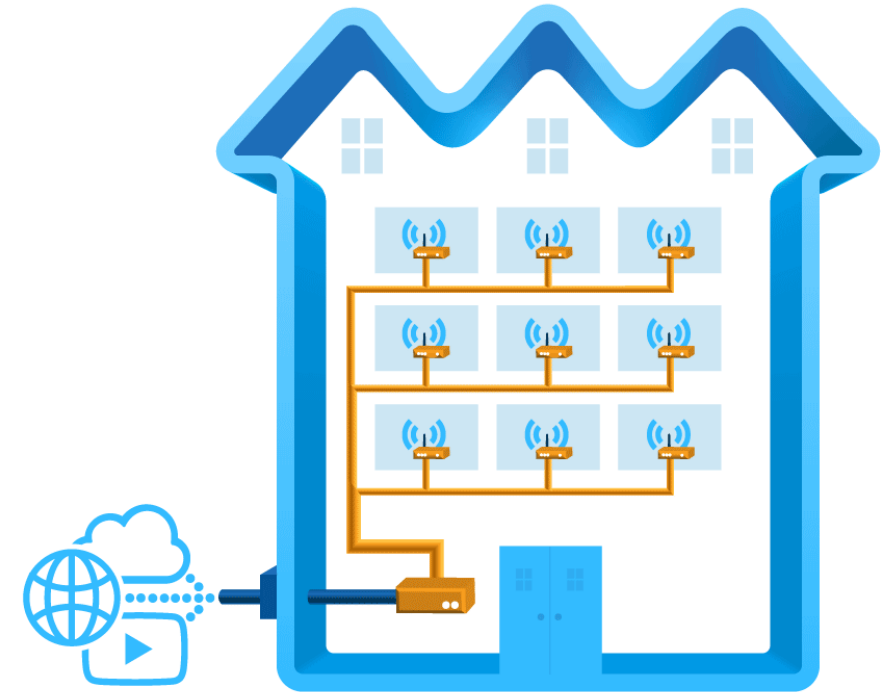
# About MoCA Access™

## MoCA Access™ 2.5

- Developed for secure point to multipoint networks
- Enables fiber speeds over existing MDU coax cable
- Individual client provisioning
- Individual secure connections to each client
- BBF Standardized Data Models to Service Providers
  - TR-181, Yang, SNMP
- TR-419 – Fiber Access Extension over Copper
- Enables reverse power feed

## MoCA Access™ 3.0

- Will use MoCA 3.0 technology standard as basis
- Backward compatible to MoCA Access™ 2.5



# No-New-Wires for Multi-Gigabit Services

- **The challenge** for MDUs and service operators is keeping PON fiber installation costs under control, eliminating fiber ducting issues, and minimizing tenant unit disruptions.
- **The good news:** A vast majority of MDUs built between 1960 and 1990 are wired with reusable coaxial cabling. Coaxial cabling can be the ideal, shielded conduit for PON fiber gigabit and multigigabit networking to each unit.
- Using the MoCA Access 2.5 technology, a fiber broadband solution can be deployed with minimal tenant unit disruptions.

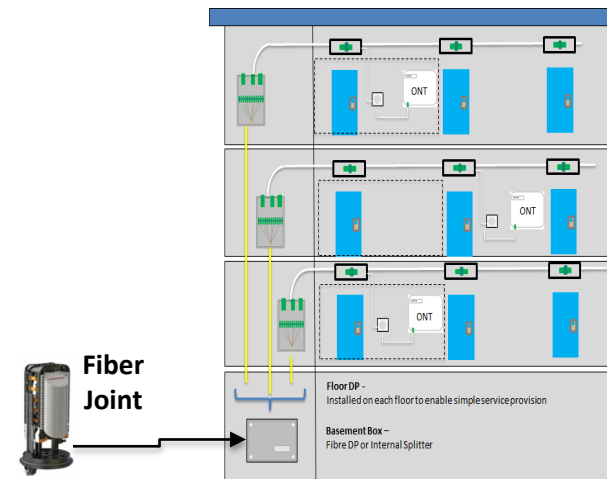
# Site Considerations

- Who owns the building's coax?
- Are there Building owner / Site management agreements in place?
- What access permission is required?
- How do you minimize disruptive and time consuming build elements?
- What are the more complex service provision processes?

Hospital, Industrial Estate, Campus

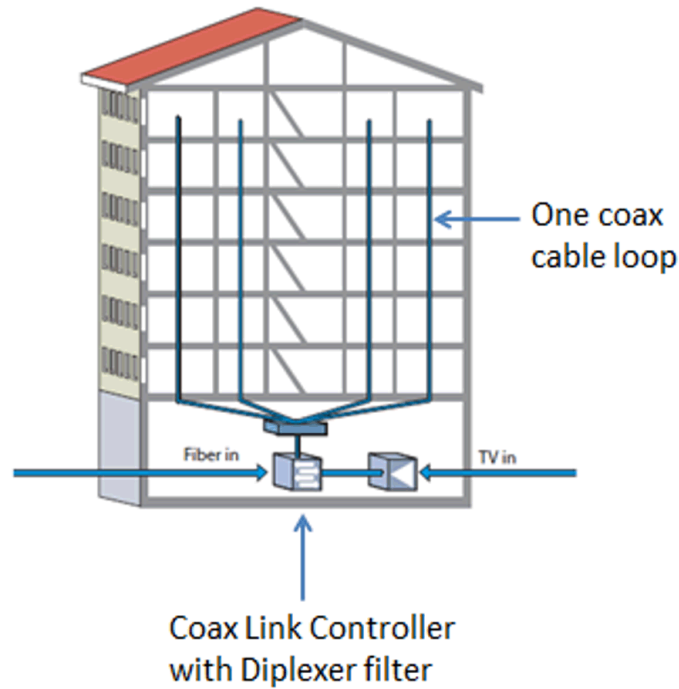


Multi Dwelling Units, Office Blocks



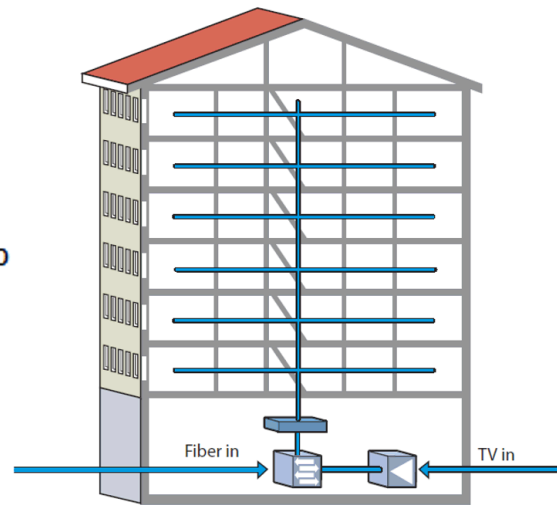
# MDU Coax Installation Considerations

### Star-Cascade Network



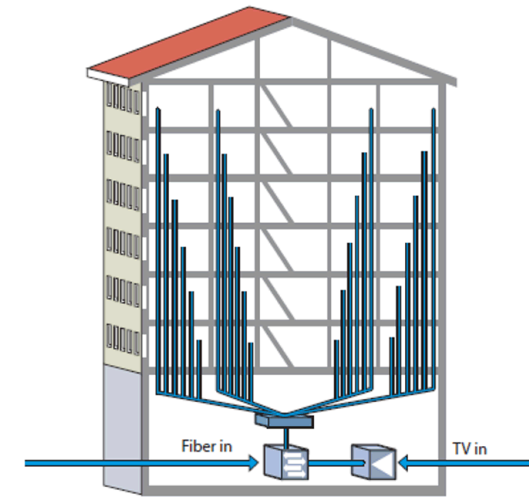
**Several RF bands**

### Tap-Cascade Network



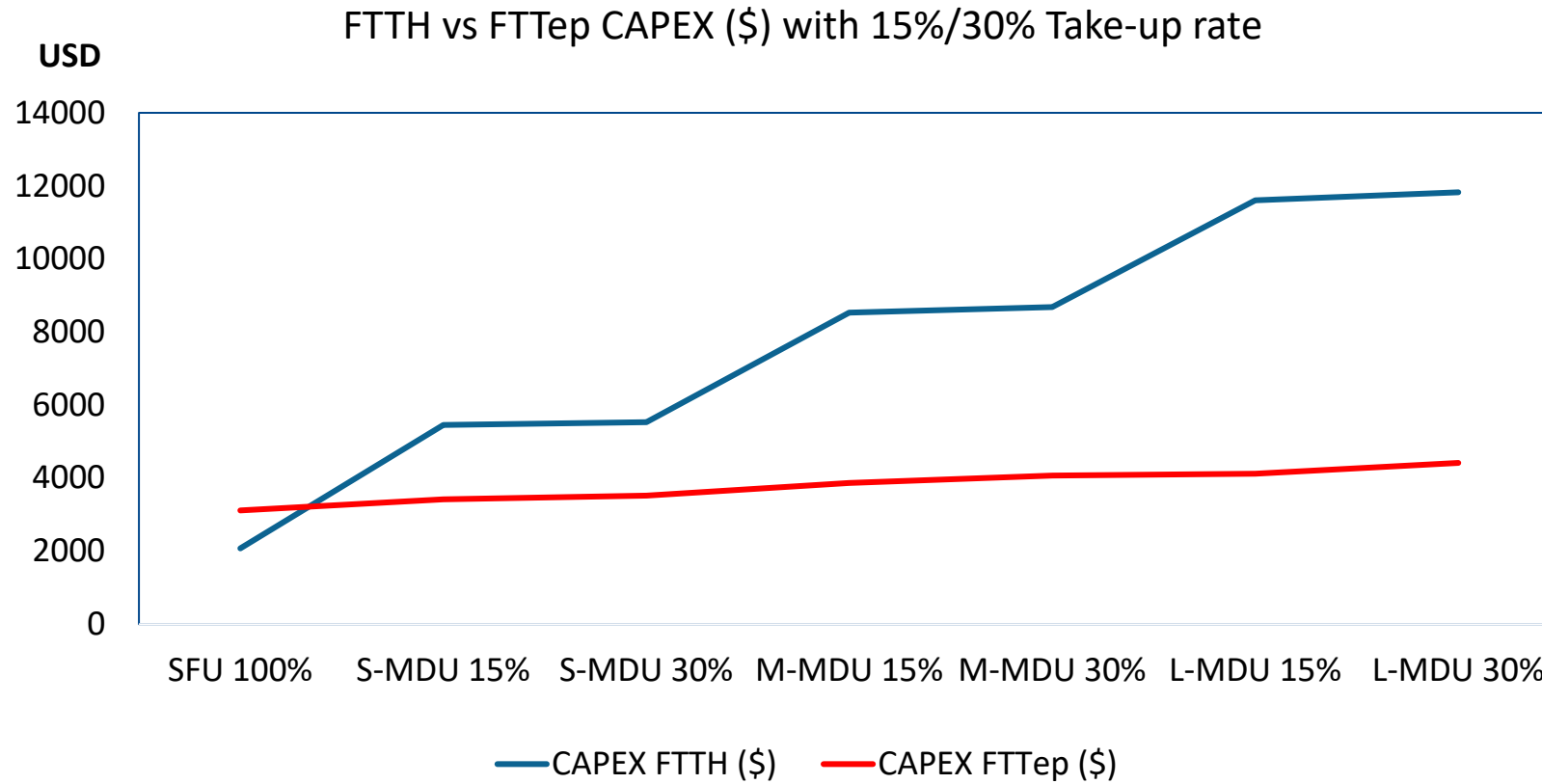
**Single RF band**

### Star-Network



**One RF band per outlet**

# Cost of Install - FTTH vs FTTEp



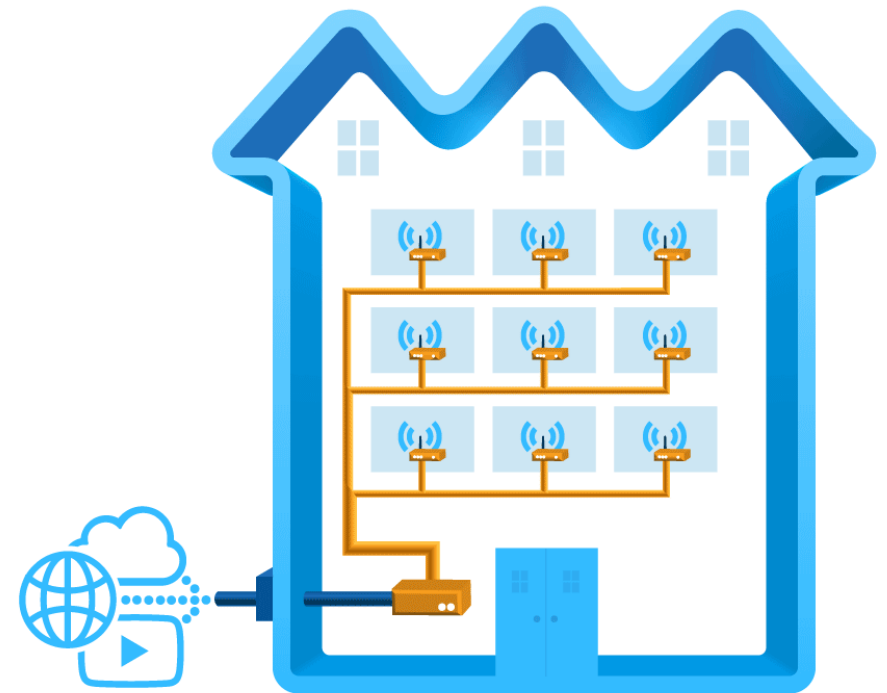
# FTTep – A Multi-Gigabit Path Forward for Copper Broadband Technology

## MoCA Access™ 2.5

- Available NOW!
- Enables existing building wiring to reduce build costs and disruptions
  - At least <30% total cost of ownership (TCO) of full FTTH fiber builds

## MoCA Access™ 3.0

- Clear path to 10Gbps performance
- Existing MDU solutions could be field upgradable





## **Dr. Jim Crammond, MoCA President**

**Bio:** An early proponent of MoCA standards, Dr. Crammond, Senior Director of Cable Business Development at MaxLinear, and before that in Intel's Connected Home Division, brings more than 20 years of well-honed experience in technical management and customer-oriented marketing to the office of MoCA President.

Dr. Jim Crammond, [jcrammond@mocalliance.org](mailto:jcrammond@mocalliance.org)

## **Mr. Mike Talbert, MoCA Vice President**

**Bio:** Mr. Talbert has over 20 years of experience working specifically with Customer Premise Equipment. His focus has been premise architecture with Wi-Fi and Service Assurance as additional fields of interest. In his current position at Verizon as Associate Fellow has Mike focused on driving additions and changes to existing standards that enhance next generation architecture. Mike is bilingual in both English and Spanish. Mike is currently the President of the Broadband Forum, the Vice Chair of the Service Provider Action Council, and Vice President of the MoCA Alliance.

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## **MoCA:**

<http://www.mocalliance.org/access/index.htm>