

# Voice over MCNS/DOCSIS

## VON 1998

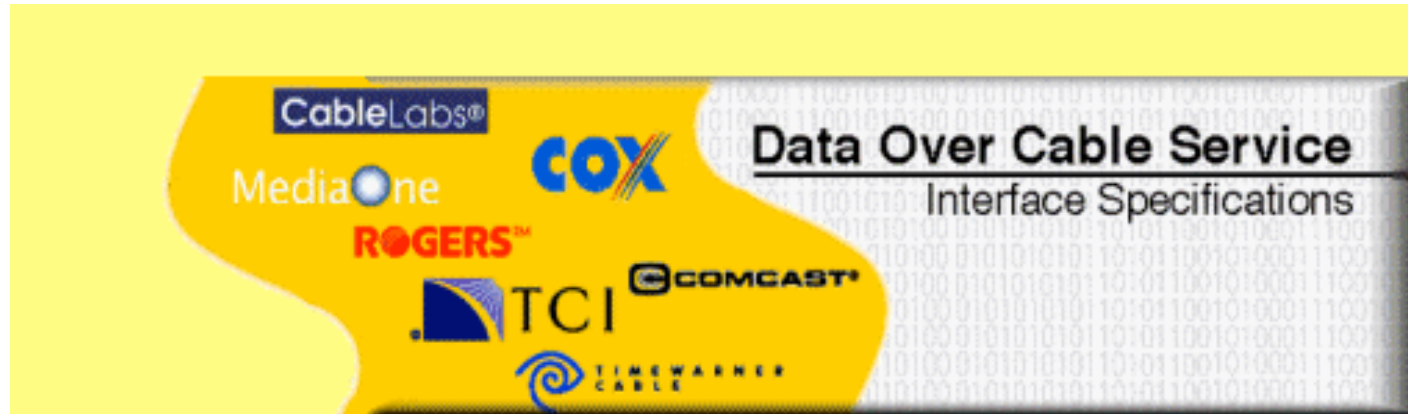
John T. Chapman

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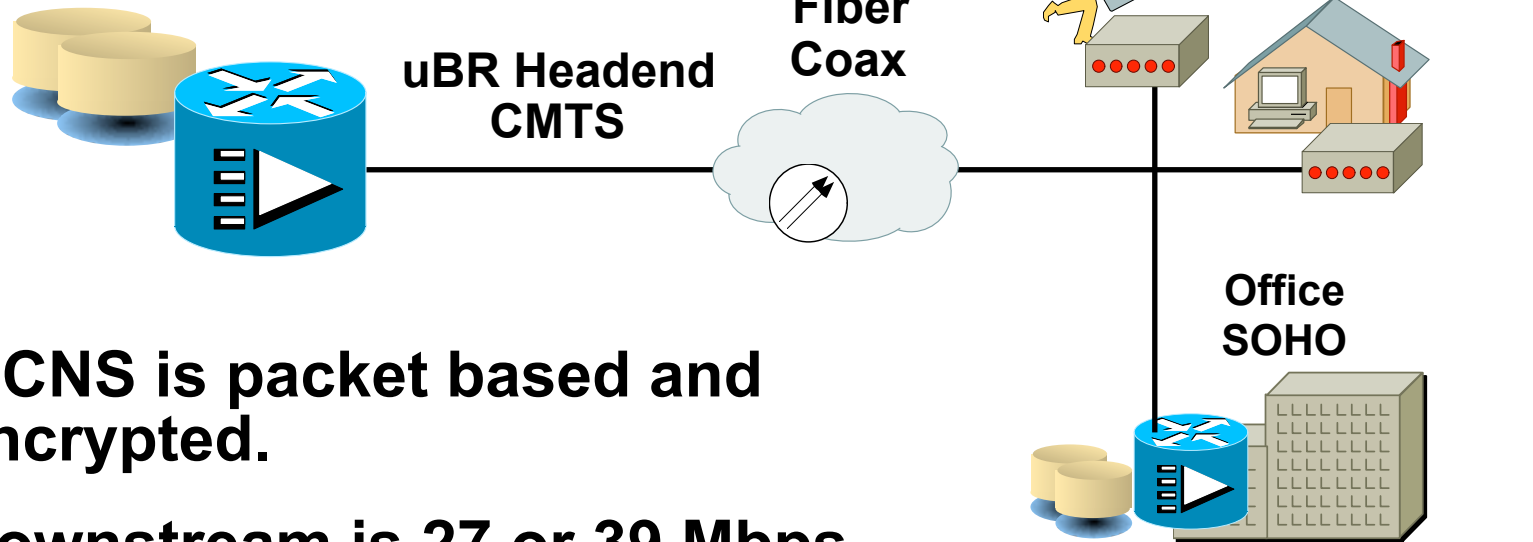
# MCNS DOCSIS



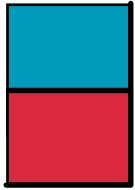
- **The cable industry has chosen a new data standard called MCNS (Multimedia Cable Network System)**
- **Wide adoption planned by the entire industry**



# MCNS DOCSIS



- **MCNS is packet based and encrypted.**
- **Downstream is 27 or 39 Mbps point-to-multipoint. Looks like an Ethernet.**
- **Upstream is 2.5 to 10 Mbps multipoint-to-point. All upstream traffic is scheduled based upon requests or reserved bandwidth. Looks like a dynamic connection table based on minislots.**



# Connections Per Upstream

## Variable Length Packet with 20 ms of Voice

Voice Encoding Rate	64	32	16	8
Voice Recording Time	20.00	20.00	20.00	20.00
QPSK with RTP (2.5 Mbps)	23	36	44	57
16 QAM with RTP (10 Mbps)	94	133	177	228

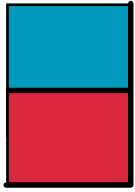
10% FEC, BPI, No Data/Req/Maintenance Slots, no Silence Suppression

- **QPSK traffic load similar to a T1 for G.711**
- **Cable bandwidth may be managed in time, frequency, or space.**



# Packet vs. Cell

- MCNS upstream QoS depends entirely upon the head end scheduler and is independent of packet format.
- Thus packets or cells would achieve same QoS. Choose based upon application.
  - Cells are applicable to ATM backbone and ATM desktop where both use ATM signaling.
  - Packets are applicable for IP backbone (or IP over ATM) and IP to the desktop.
  - Cells don't handle compressed voice efficiently at low delay. Variable Length Packet (VLP) does.
- **Conclusion for MCNS: use packets for voice.**



# Voice over IP over MCNS

- **VoIP is packets. MCNS is packets.**
- **IP will have QoS. MCNS will have QoS.**
- **VoIP has huge momentum. MCNS has huge momentum.**
- **VoIP over MCNS is a natural fit. It will work and will allow voice services to be delivered to the home over cable.**