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Adicom Wireless

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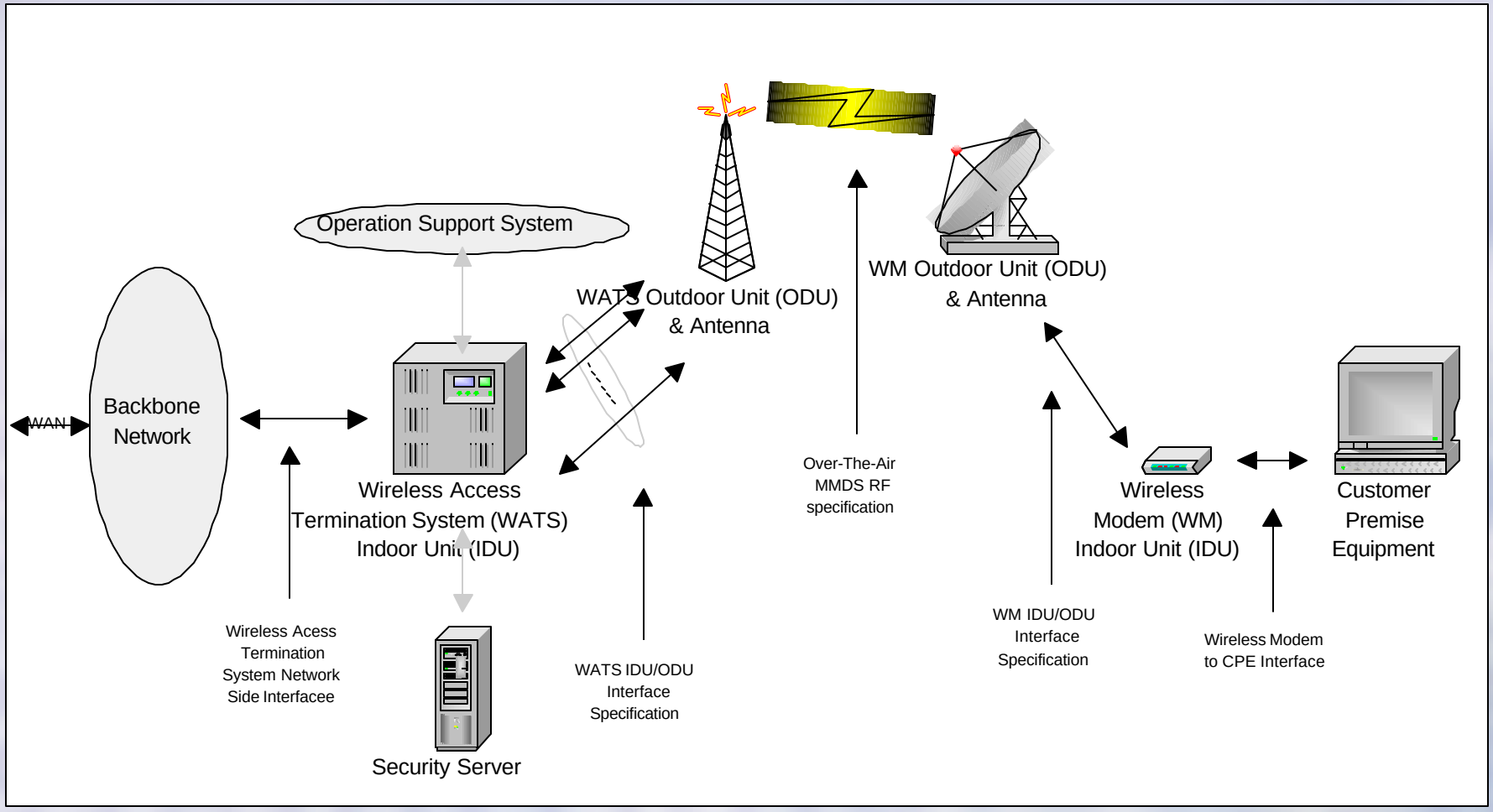
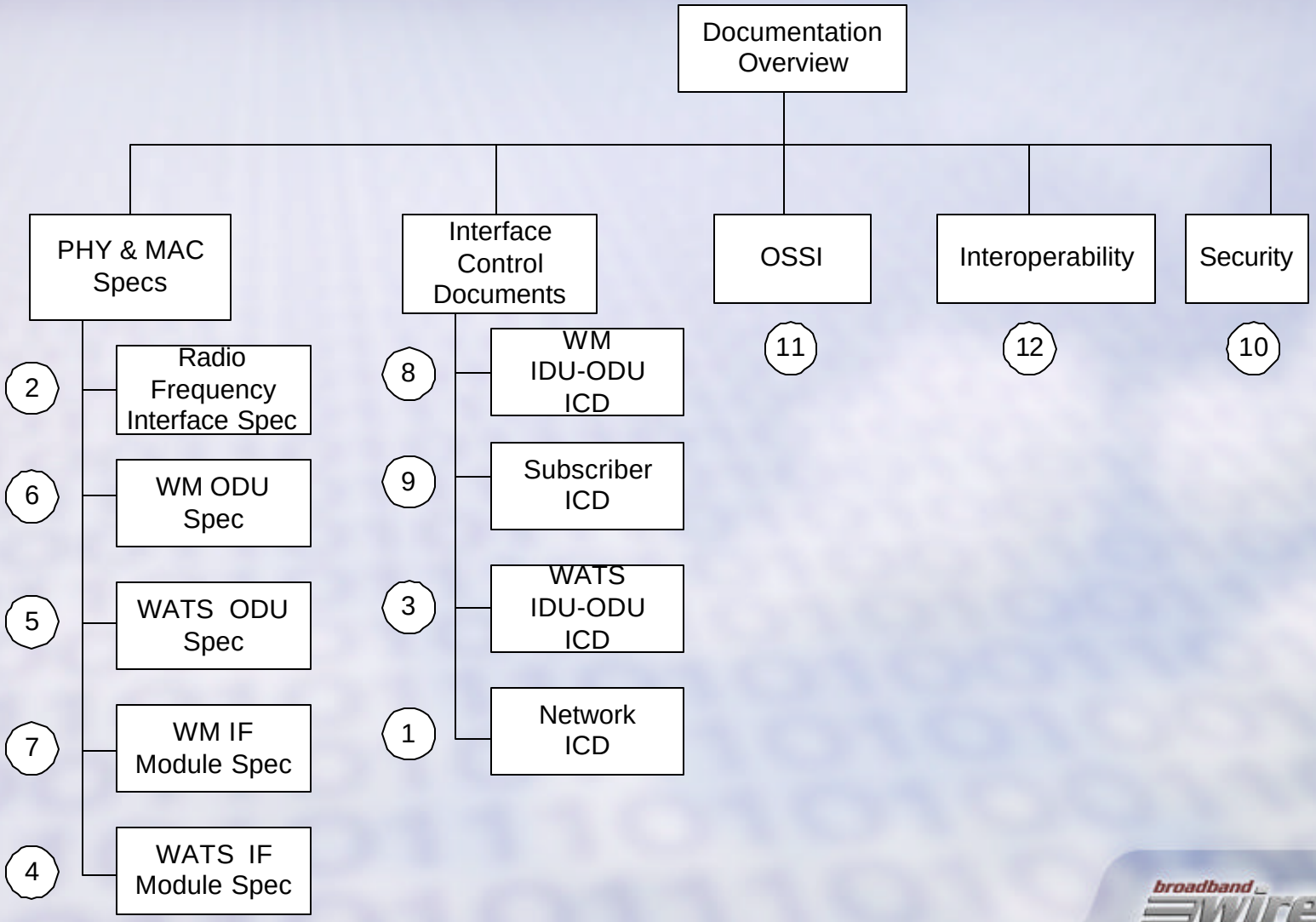
RF Solutions

[27]

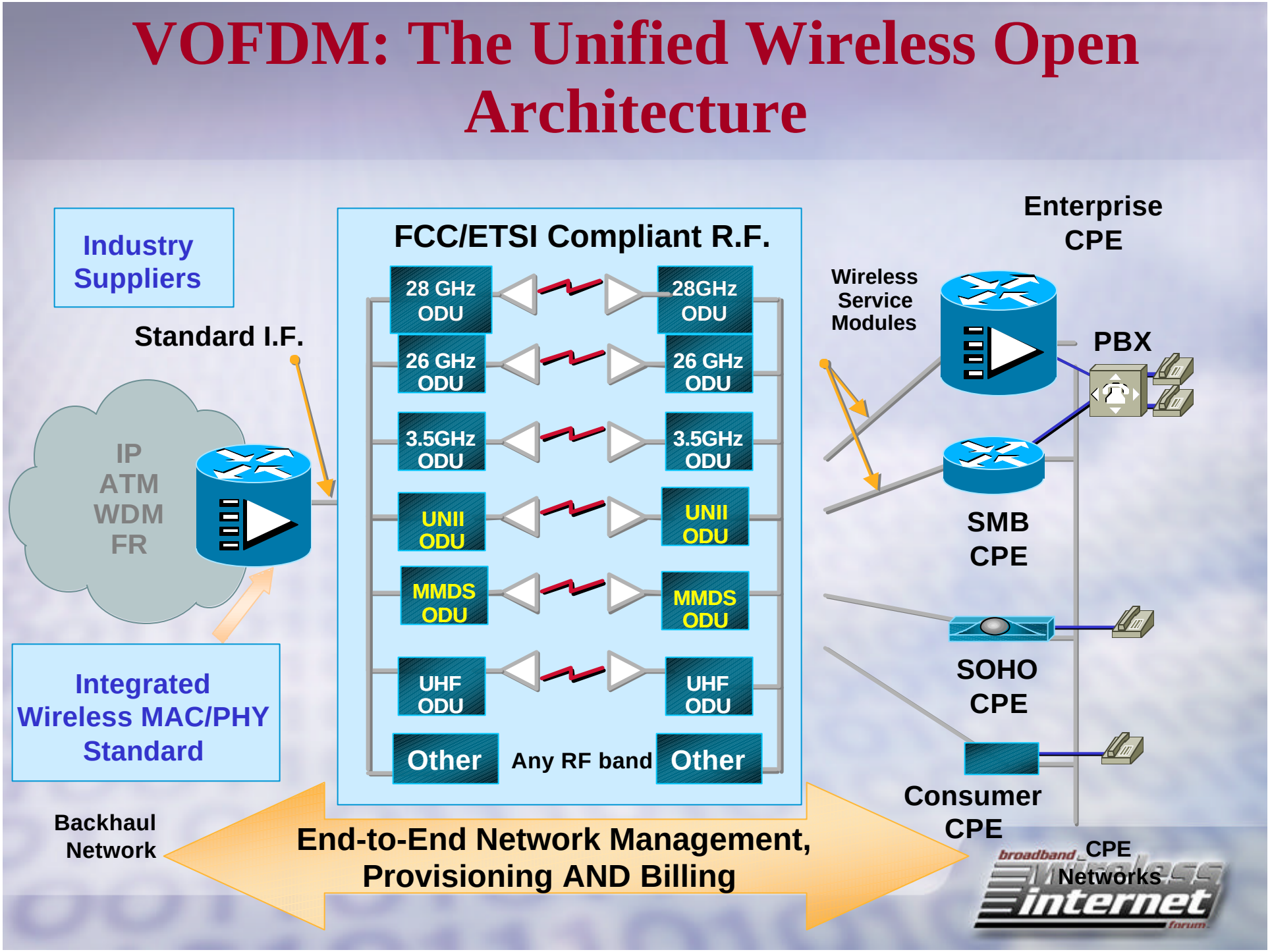
Wireless Reference Architecture



BWIF Specifications



VOFDM: The Unified Wireless Open Architecture

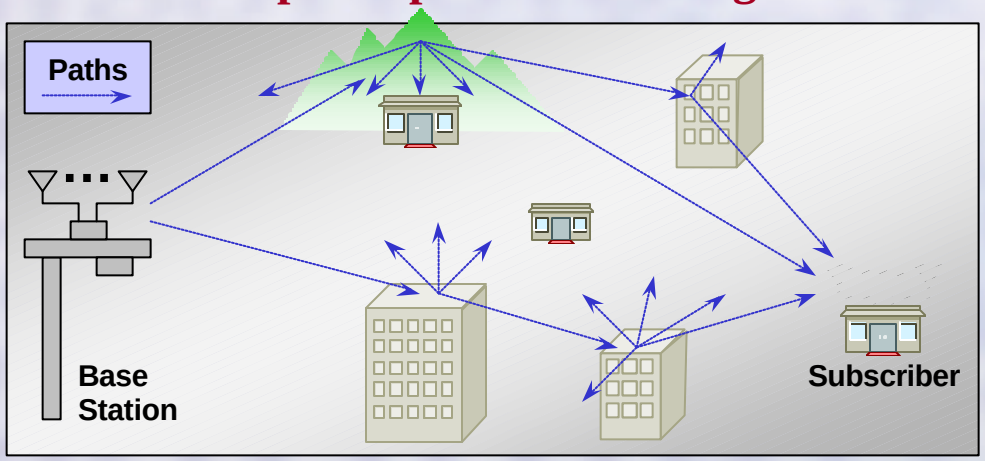


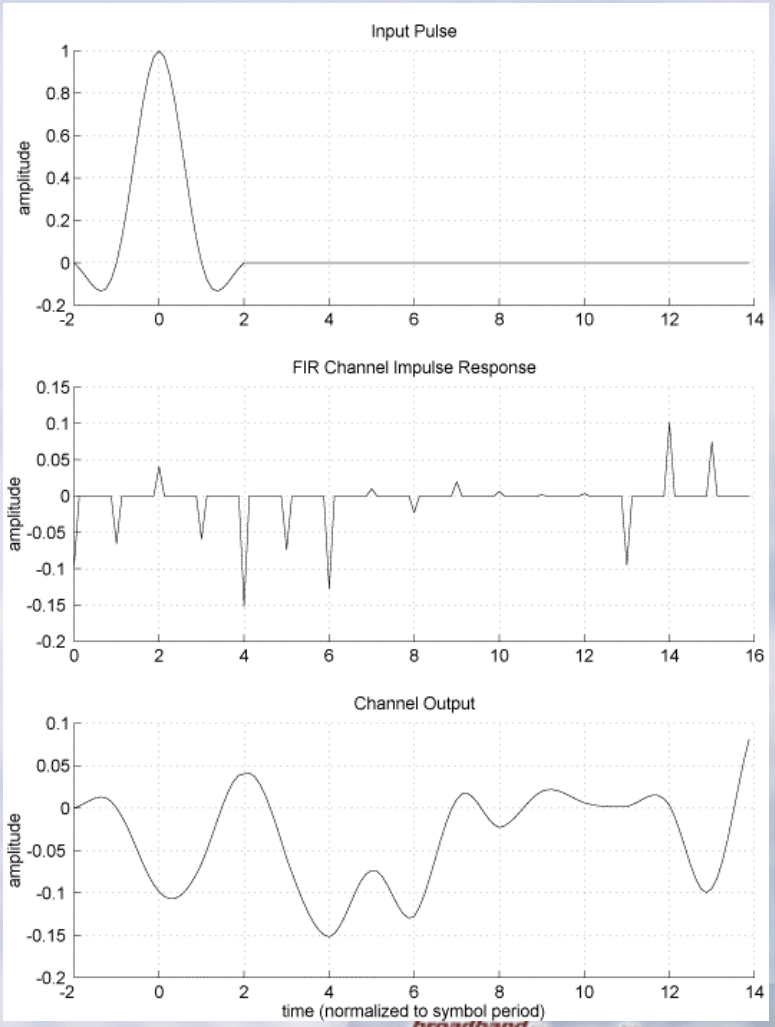
Broadband Wireless Access Layer System Needs

- 5 Mb/s to 20 Mb/s shared BW for consumers and business
- QoS managed, multiservice, bandwidth-on-demand MAC (Service Level Agreements)
- Standard, proven MAC
- High spectral efficiency and frequency re-use capacity
- Robust and simple to deploy
  - multipath tolerance & automated provisioning
- Low cost
- 3-20 mile range
- Easily ported to any frequency band

Multipath Wireless Communication

- Wireless communication involves multipath transmission
- Each path has an associated delay which causes intersymbol interference (ISI)
- Conventional wireless approaches exhibit degraded performance
- Other approaches designed to mitigate the effects of multipath:
  - Equalization
  - Direct sequence spreading
  - Adaptive space-time coding solutions

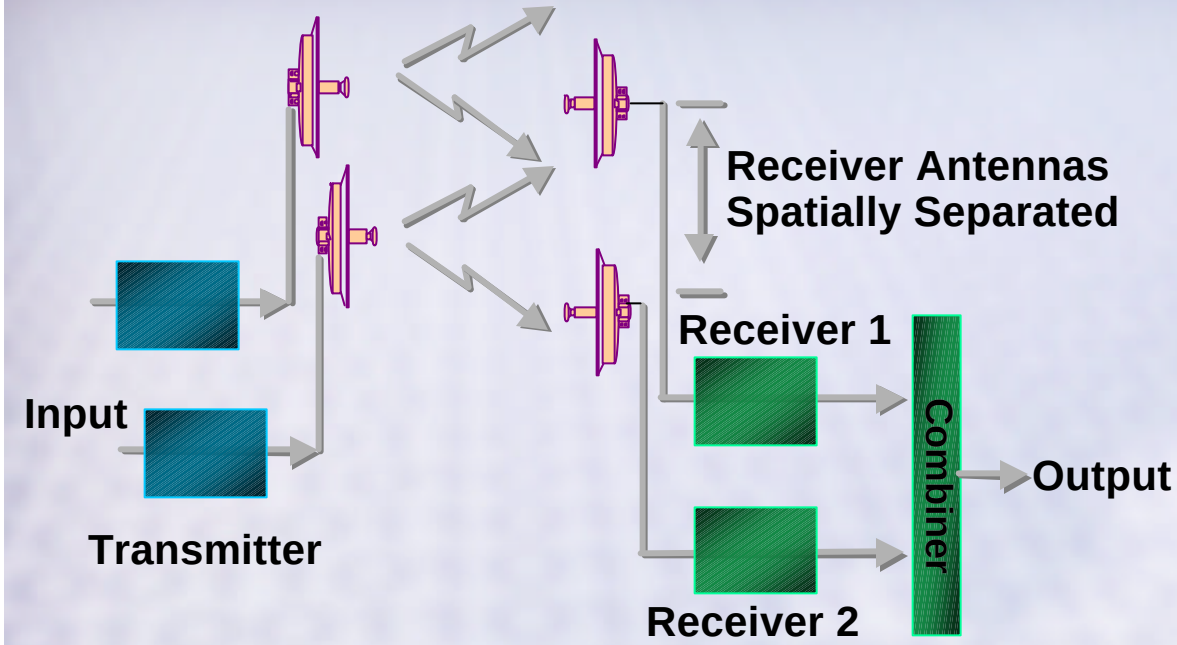


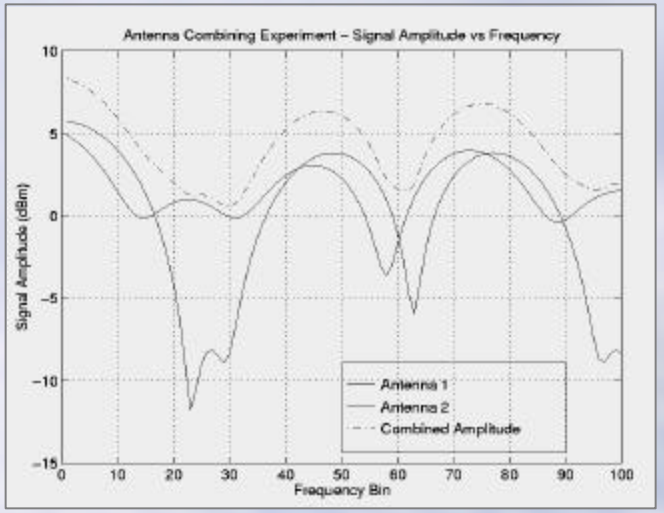


Broadband Wireless Access Alternatives

- Not enough BW to offer broadband access with CDMA. High-speed CDMA is inefficient.
- SCQAM is not as robust, has lower spectral efficiency and is more expensive to make work
- Vector OFDM (VOFDM) has a very large link margin advantage and can be rigorously shown to be more cost effective than Space-Time DFEs.

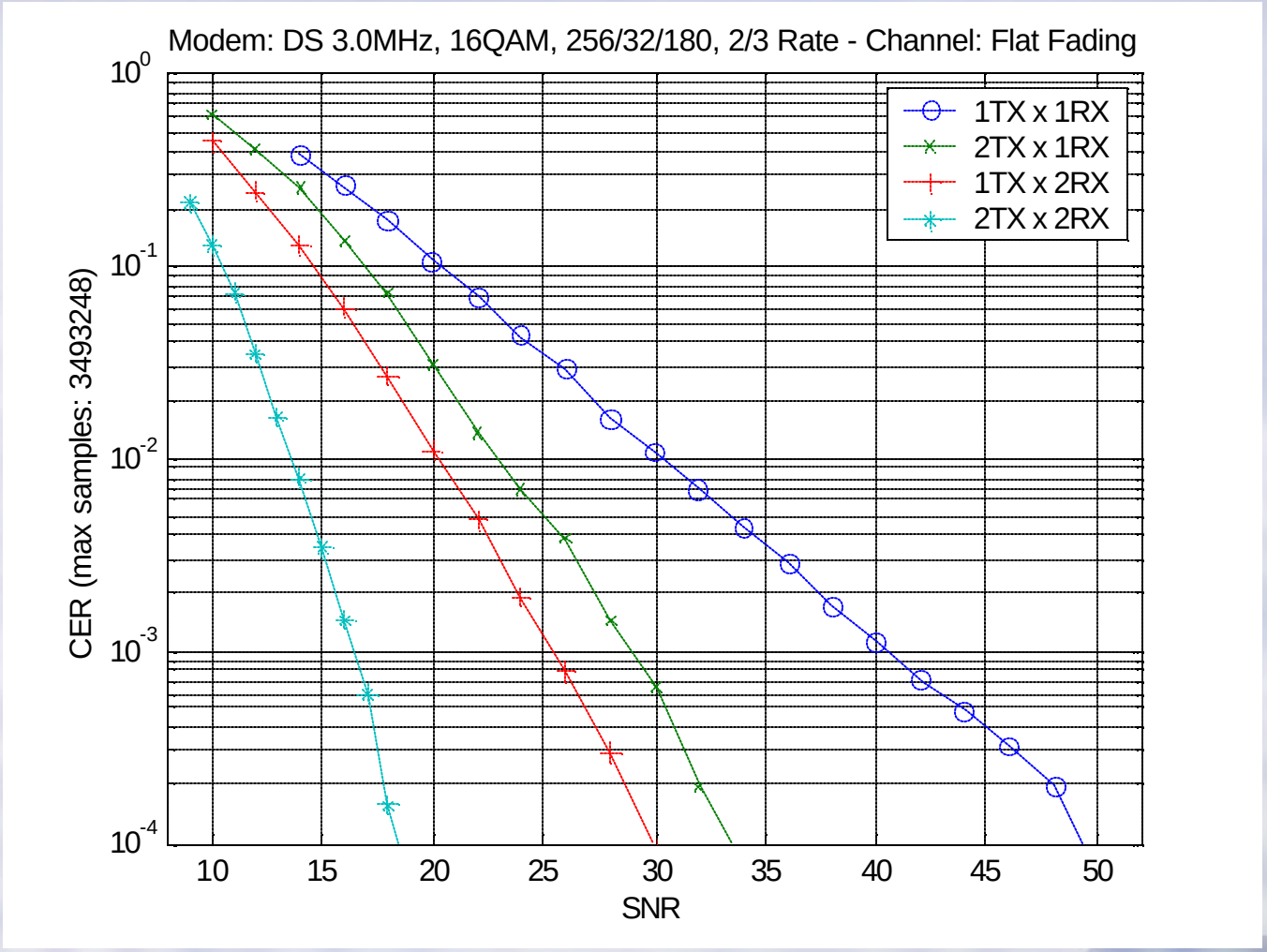
Spatial Diversity





- In the presence of multipath fading, two received signals will have uncorrelated fading effects due to different path lengths
- Thus, a combined received signal will have a higher SNR that any of the individual signals
- The greatest processing benefits come from exploiting both frequency and spatial diversity

Spatial Diversity Advantage



BWIF MAC Capabilities

Proven, widely deployed MAC

Best effort data

VoIP

IP multicast support

Enhanced security and privacy

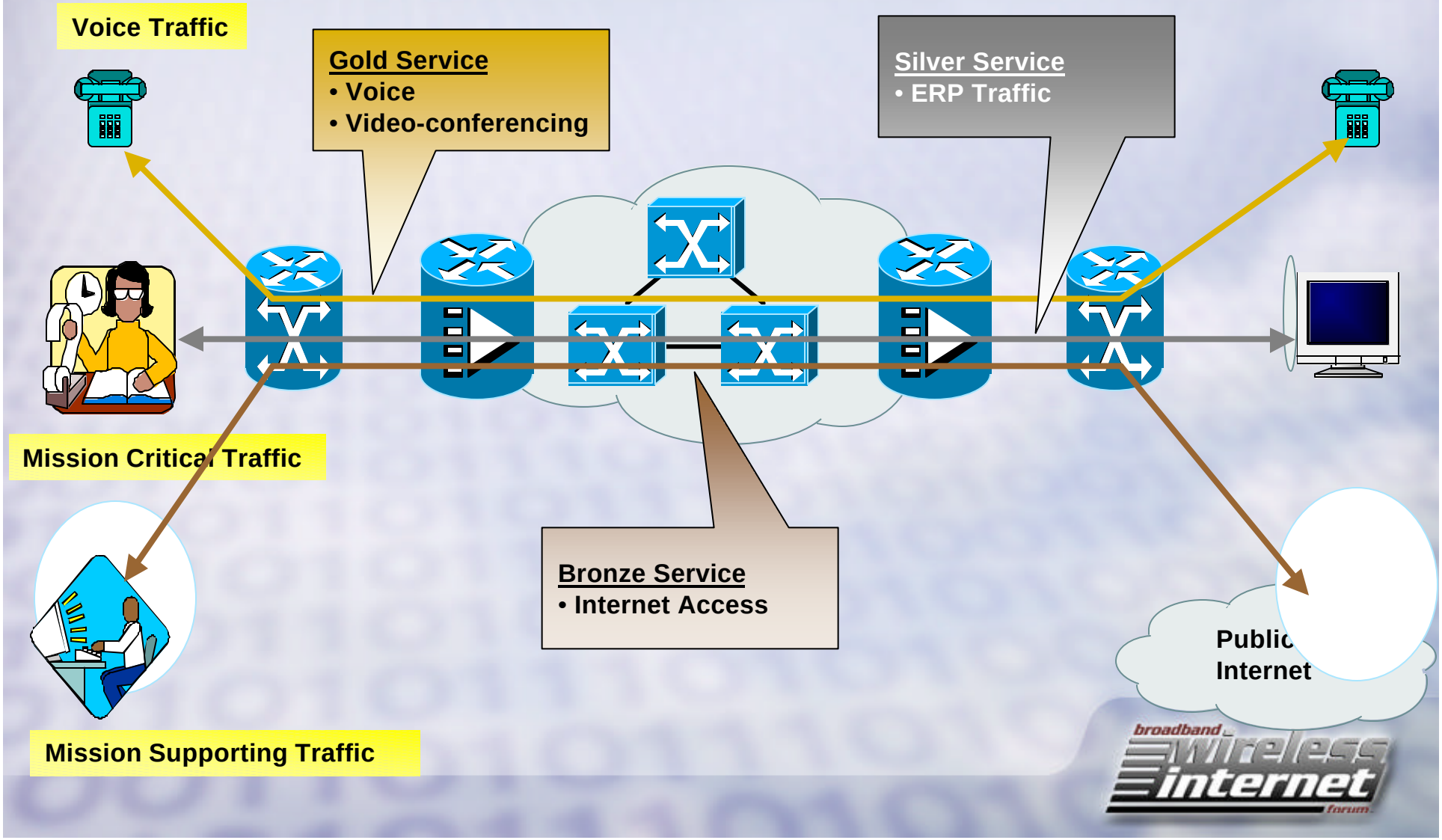
QoS guarantees

Virtual Private Networks

DOCSIC 1.1 MAC:

- **Fragmentation**
- **Concatenation**
- **Payload header suppression**

Service Level Agreements (SLAs): Network and Service Quality Guarantees



BWIF Compliant MMDS and UNII Product Orderable from Cisco Systems

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