

California Energy Commission – Efficiency Committee
Workshop on Enabling Technologies
June 19, 2008

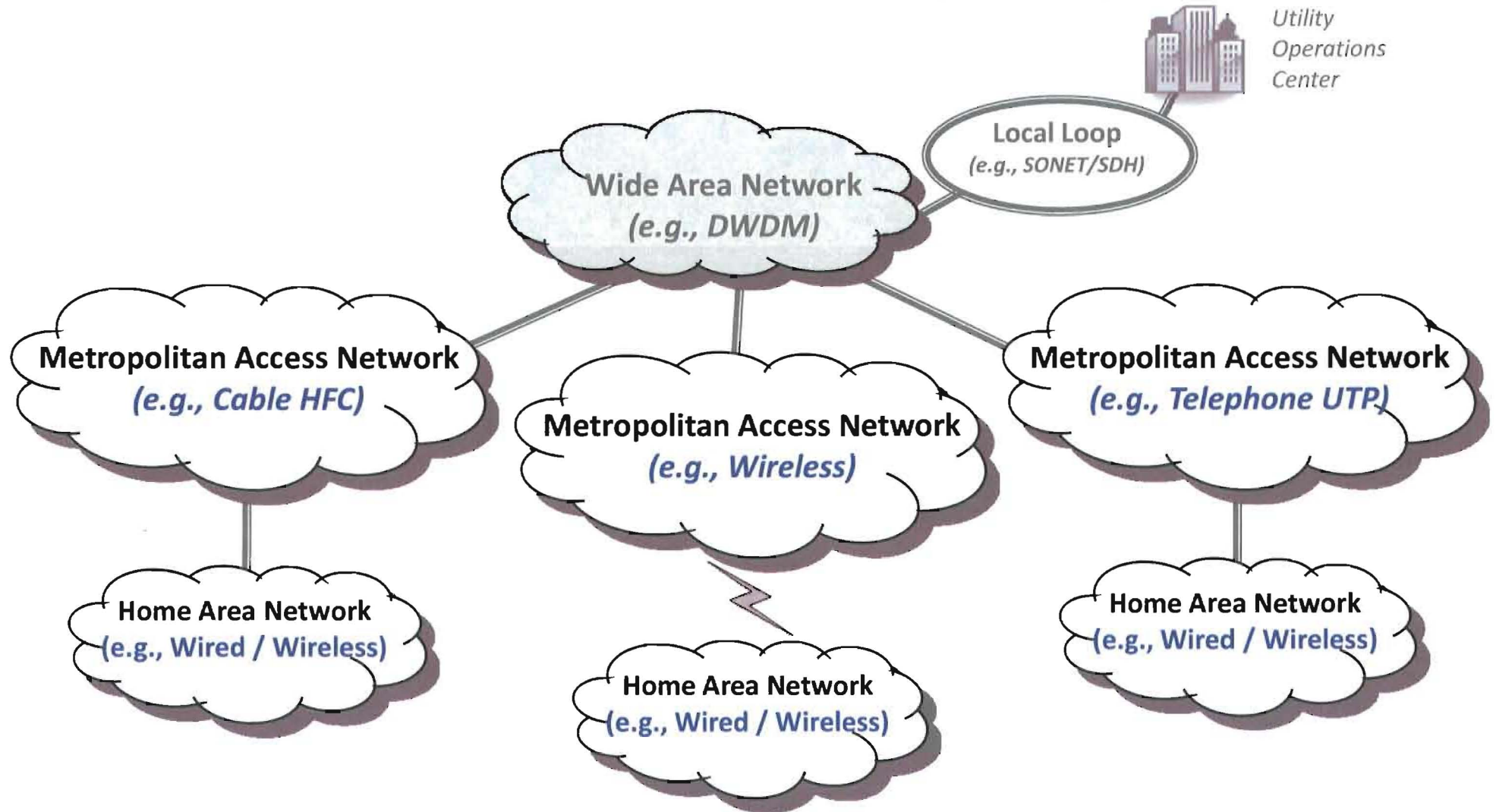
Broadband Communications Overview

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Two-way Broadband Technologies

Metropolitan & Home Area Networks



Two-way Broadband Technologies

➤ Metropolitan Access Service Network (MAN)

❖ 3G Cellular Wireless (Mobile)

- ✓ GSM – UMTS/HSPA (3GPP)
- ✓ CDMA – 1xEV-DO (Qualcomm, 3GPP2)

❖ 4G Cellular Wireless (Mobile & Fixed)

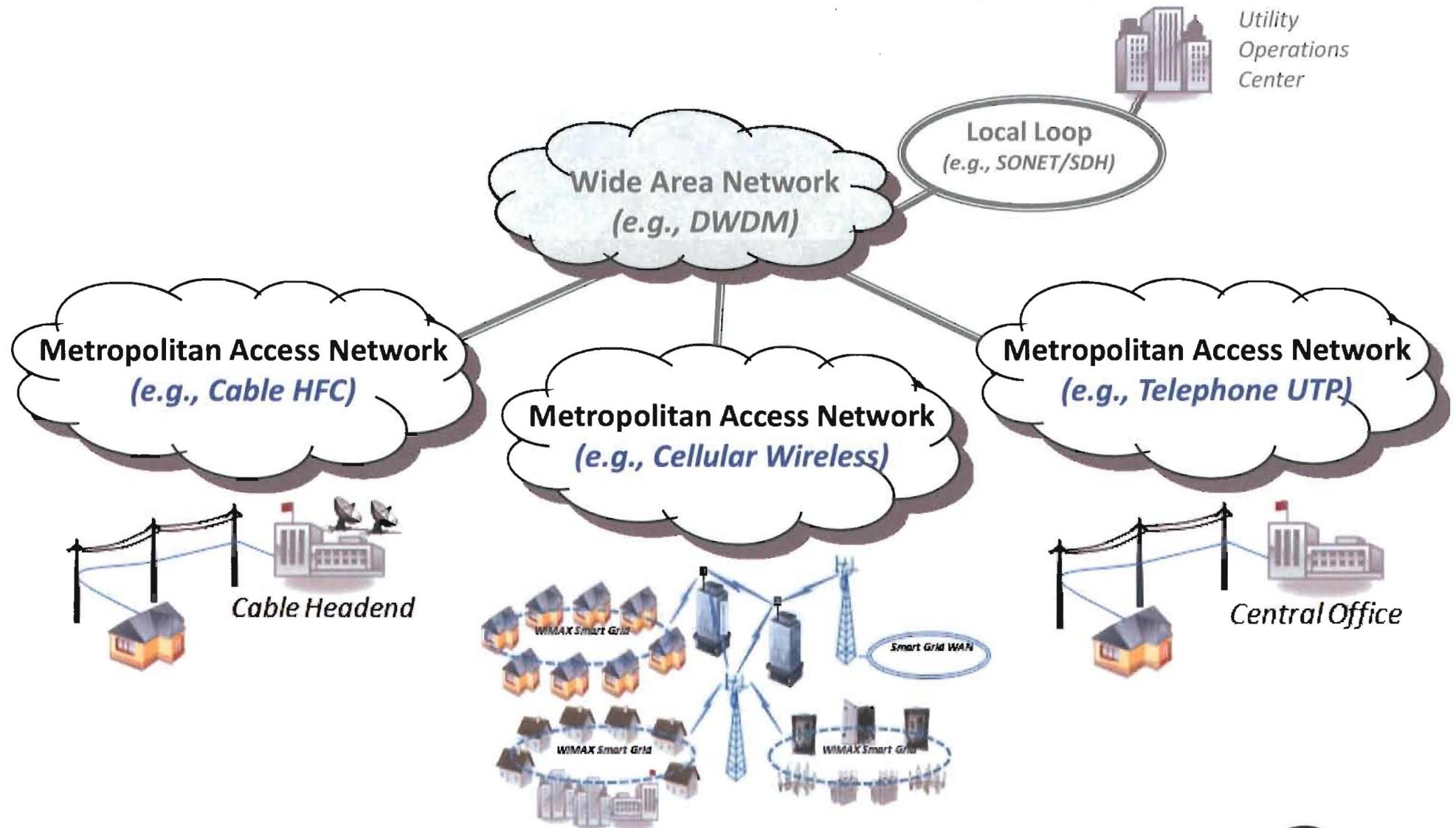
- ✓ WiMAX (IEEE 802.16 , WiMAX Forum)
- ✓ LTE (3GPP – Standard Ratification expected Q4'08)

❖ Wired / Fiber (Fixed)

- ✓ Cable DOCSIS (CableLabs, ITU-T)
- ✓ xDSL (Broadband Forum)
- ✓ Ethernet (IEEE 802.3)

Two-way Broadband Technologies

Metropolitan Area Networks (MAN)



Two-way Broadband Technologies

➤ Home Area or Local Area Networks (HAN or LAN)

❖ Wireless (Mobile)

✓ WiFi (*IEEE 802.11*)

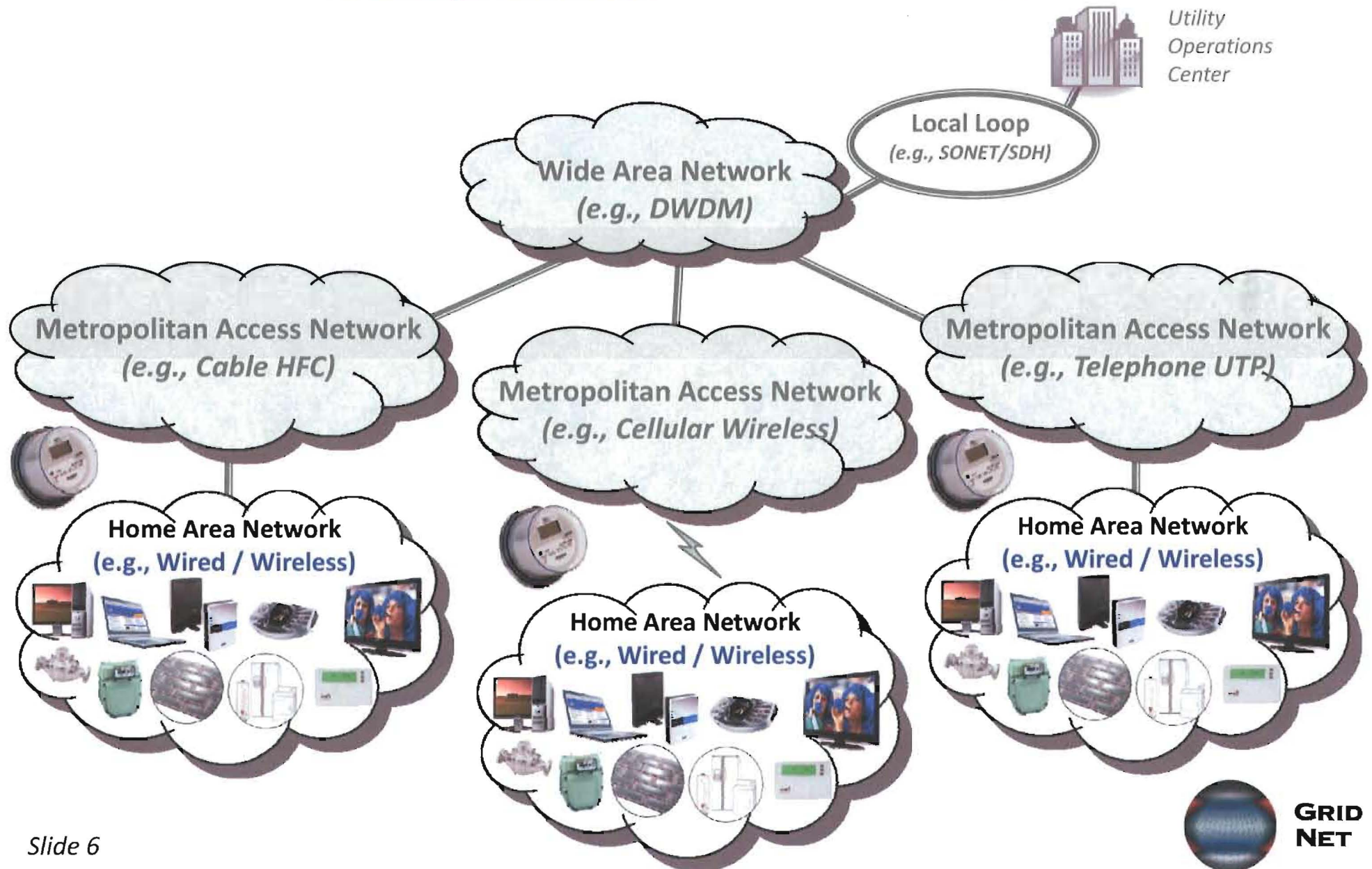
❖ Wired / Fiber

✓ Ethernet (*IEEE 802.3*)

✓ HomePlug (*HomePlug Powerline Alliance , IEEE P1901*)

Two-way Broadband Technologies

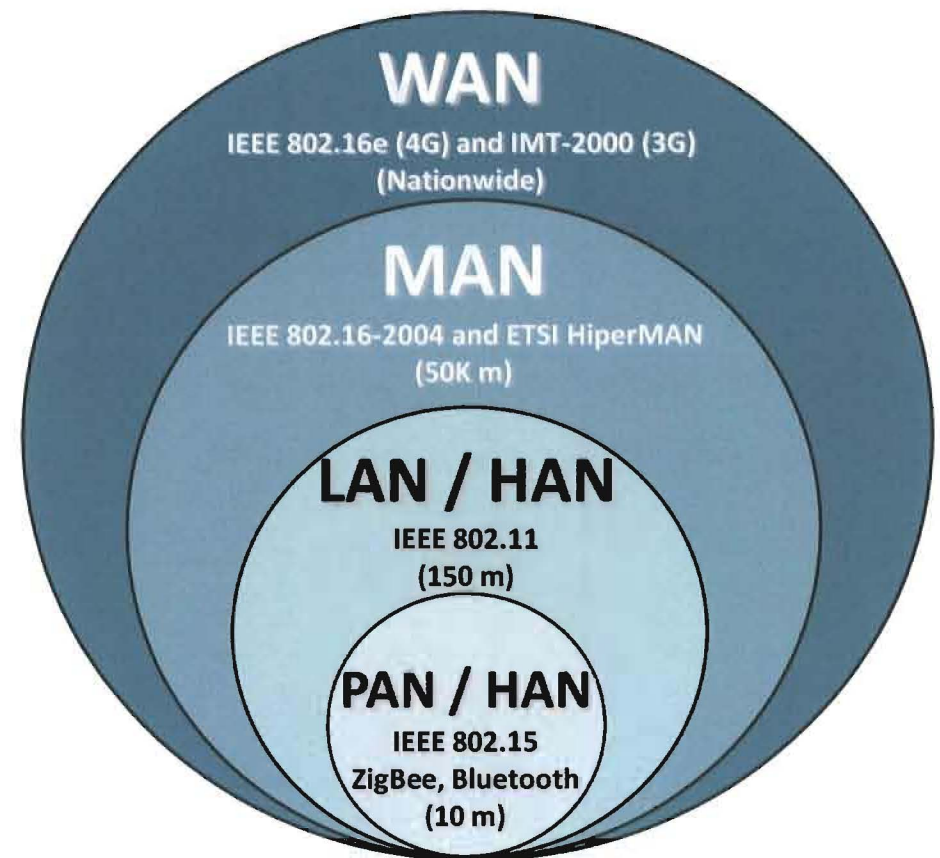
Metropolitan & Home Area Networks



Wireless Broadband

What are the Various Network Segments?

- IEEE 802.16.e (WiMAX) and IMT-2000 (3G – CDMA, GSM) - high power, long range wireless for mobile & fixed point networks
- IEEE 802.16-2004 (WiMAX) - high power, long range wireless for fixed point networks (harmonized with HiperMAN & WiBRO)
- IEEE 802.11 (WiFi) - high-power, short range wireless for mobile & fixed point networks (designed for wireless ethernet)
- IEEE 802.15 (PAN) - low-power, short-range wireless (designed to provide a replacement for the serial cable)



Thank You

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