BROADBAND OVER POWER LINES

WHAT IS IT?

Broadband over power lines (BPL) is a method of transporting high-speed Internet data on electric power lines and using existing wiring to network machines within a building.

- Transporting Internet data over power lines is termed Access BPL.
- Networking machines within a building is termed In-house BPL.

HOW DOES IT WORK?

Access BPL: There are two methods of deploying this technology.

1. High-speed data from an Internet provider is transported to a local utility substation where it is converted to a signal that can be carried across power lines. It is then transmitted into the home using existing power lines, where it is distributed via the electrical wiring.

2. Data is transmitted into the home using wireless (WiFI) technology. Within the home, signals are distributed via the electrical wiring.

In-house BPL: Utilizes a special modem which is plugged into an electrical outlet providing a connection to a computer or some other device within the home.

WHAT ARE THE ADVANTAGES OF BPL?

- Uses existing infrastructure – there are over 18 million miles of electric lines in the U.S.
- Provides a symmetric service (same data rate in both directions)
- Avoids interference problems wireless installations can have within some buildings
- Avoids the need for building new towers or installing antennas on rooftops, etc.
- Simple installation using HomePlug (industry standard) modems
- Provides utilities with new way to improve accuracy and efficiency of billing
- Provides a "third pipe" into homes and businesses (cable and telephone are the first two)
- Provides a potential method for delivering voice over IP and IP video

WHAT ARE THE DISADVANTAGES OF BPL?

- Lack of standards for the technology (except for the in-house modems or plugs) may inhibit wide deployment.
- Deployment may require state regulatory utility approval

MAJOR ISSUE

There is concern that power line data transmissions may cause interference with other licensed bandwidth users, such as ham radio operators. NTIA is conducting a study on

behalf of the FCC. The IEEE has put forth a standard P1675 that will provide comprehensive guidelines for both overhead and underground BPL deployments that should alleviate these concerns. It should be noted that no ham radio organization has demonstrated interference in those states where BPL has been deployed. This issue could slow investment in the technology.

COSTS

BPL services running at one (1) megabit per second (Mbps) costs between $30-$40 per month. A BPL modem currently costs $30-$50 with no installation fee and no long term contract.

WHERE DEPLOYED

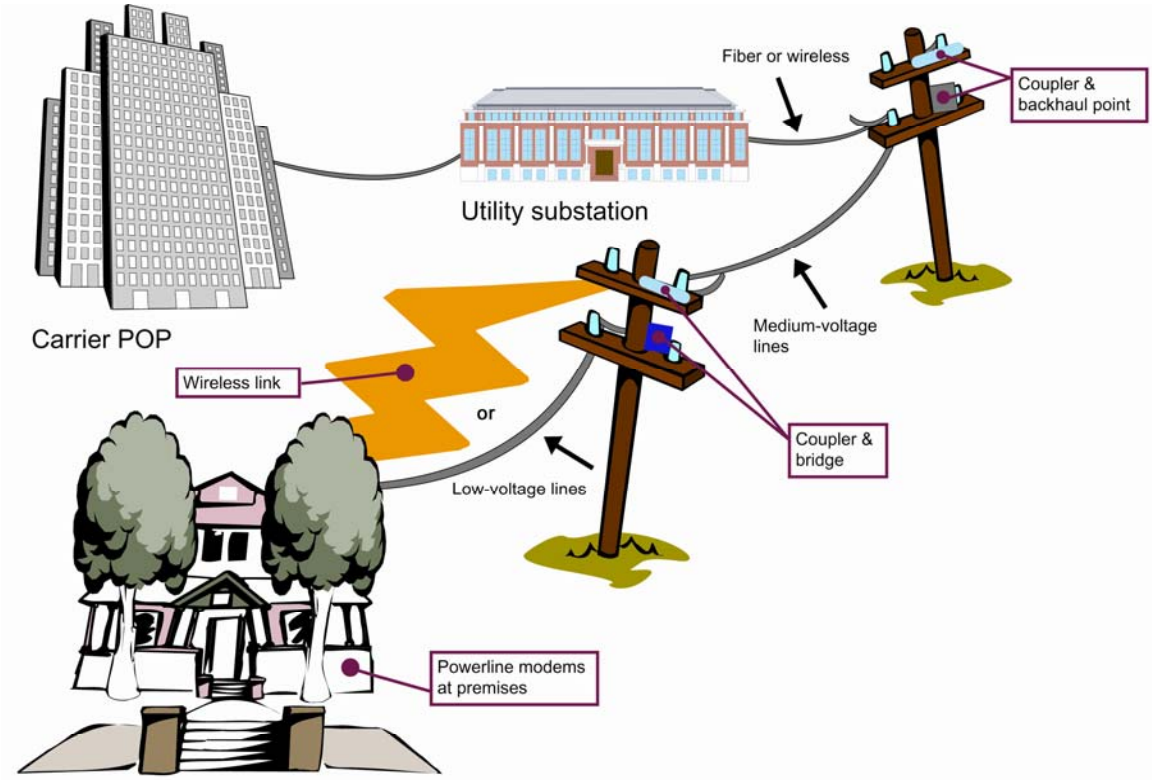
Installation of this technology has been taking place across the country. In Indiana, the South Central Indiana REMC has deployed in Martinsville to 1,400 members along 114 miles of line. In Manassas, Virginia the public utility provider has installed BPL technology in 15,000 homes and businesses. Other deployments include Cinergy in Cincinnati, Ohio, Allentown PA, and Raleigh NC to name a few.

LINKS

Indiana:
http://www.sciremc.com/bpl.php

Ohio:
http://www.current.net/
http://www.enquirer.com/editions/2004/03/02/biz_biz1acin.html

Virginia:
http://www.nbc4.com/technology/2765704/detail.html



How broadband over power lines works