

# The Convergence of wireless & Internet... is revolutionizing the way we work, live and play...

## Know the buzz terms:

**1G** (or 1-G) is short for first-generation wireless technology. These are the **analog** standards that were introduced in the 80's and continued until being replaced by 2G **digital** space.

**2G** (or 2-G) is short for second-generation wireless technology. It cannot normally transfer data, such as email or software, other than the digital voice call itself, and other basic ancillary data such as time and date. Nevertheless, SMS messaging is also available as a form of data transmission for some standards. 2G services are frequently referred to as Personal Communications Service or **PCS** in the US.

**3G** (or 3-G) is short for **third-generation** technology. The services associated with 3G provide the ability to transfer both voice data and non-voice data (such as downloading information, exchanging email, and instant messaging).

**Wi-Fi**, short for "Wireless Fidelity", is a set of standards for wireless local area networks (WLAN) currently based on the IEEE 802.11 specifications. New standards beyond the 802.11 specifications, such as 802.16 are currently in the works, they offer many enhancements, anywhere from longer range to greater transfer speeds.

**4G** (or 4-G) is short for **fourth-generation** the successor of 3G and is a wireless access technology. It describes two different but overlapping ideas. It offers high-speed wireless access with a very high data transmission speed, of the same order of magnitude as a local area network connection (10 Mbits/s and up). It has been used to describe wireless LAN technologies like Wi-Fi, as well as other potential successors of the current 3G standards.

### LTE

LTE is one of the next major steps in **wireless** broadband delivery, offering increased capacity, higher speeds and lower latency. Based on pure IP protocols, LTE promises richer communication including enhanced voice, video and messaging services and advanced multimedia solutions. One problem facing LTE introduction is that the frequencies planned for the new **wireless** service are different from existing GSM and 3G networks, so **new antenna** will be required at most cell sites.

## TRIWAY WIRELESS

### Technology Fusion:

- Wireless convergence in internet.
- Wireless convergence in Marine.
- Wireless convergence in Oil and Gas.
- New communication language.
- Making wireless work diverse everywhere, anywhere.



### Broadband Connectivity:

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### Features and Benefits.

- ❖ Easy integration into any LAN network topology including support for VLAN's, VLAN in VLAN, VLAN transparency, Quality of Service and Rapid Spanning Tree Protocol
- ❖ Easy addition of extra bandwidth through Triway's powerful aggregation capabilities as traffic increases or new usages are added
- ❖ Low latency and guaranteed Quality of Service for crystal clear voice support or video surveillance backhauling
- ❖ Very easy set-up and configuration for non radio specialist IT staff
- ❖ Migration path from E1s to Gigabit Ethernet services

### Time Division Multiplexing (TDM)

Native TDM is a type of digital multiplexing that transfers two or more data streams transmitted simultaneously as sub-channels in one communication channel. This is perfect for circuit switched networks such as Public Switched Telephone Network (PSTN) there is a need to transmit multiple subscriber calls along the same transmission medium. TDM allows switches to create channels, also known as tributaries, with a transmission stream. A standard DSO voice signal has a data bit rate of 64Kbits. TDM takes frames of the voice signals and multiplexes them into a TDM frame which runs at a higher bandwidth.

### Internet Protocol (IP)

The Internet Protocol (IP) is a data-oriented protocol used for communicating data across a packet-switched network.

IP is a network layer protocol in the internet protocol suite and is encapsulated in a data link layer protocol (e.g., Ethernet). As a lower layer protocol, IP provides the service of communicable unique global addressing amongst computers.

Because of the abstraction provided by encapsulation, IP can be used over a heterogeneous network (i.e., a network connecting two computers can be any mix of Ethernet, ATM, FDDI, Wifi, token ring, etc.) and it makes no difference to the upper layer protocols. Each data link layer can (and does) have its own method of addressing (or possibly the complete lack of it), with a corresponding need to resolve IP addresses to data link addresses. This address resolution is handled by the Address Resolution Protocol (ARP).

**FDD Vs. TDD – in our next issue**