Let us assume you are the CTO of a software company. You want to build an intranet based on the 802.15.3 technology ONLY, i.e., without using TCP/UDP/IP, for hundreds of devices on the same floor. The goal is to provide concurrent live and stored video streams for internal work collaboration. Explain your proposed network and software architectures. Answer must be consise

**TCP/IP/UDP**

Transport protocols built on top of the Internet Protocol include Transmission Control Protocol (TCP or TCP/IP) and User Datagram Protocol (UDP or UDP/IP) (IP). Use the TCP/IP and UDP interfaces to read and write binary and ASCII data, respectively.

The Transmission Control Protocol (TCP) and the User Datagram Protocol (UDP), which allow different kinds of data to be transmitted from a network source to a network destination, are the two main building blocks of the internet.

TCP is more dependable, but UDP puts an emphasis on efficiency and speed.

Examples of both TCP and UDP in the real world tcp -> a call, SMS, or other communication with a defined destination AM/FM radio station**, Wi-Fi, and UDP**

Step 2 of 3

**802.15.3 technology**

The IEEE standard known as 802.15. 3 is for a high-data-rate WPAN intended to offer enough quality of service for the real-time dissemination of content like video and music. It is perfect for a wireless multimedia home network.

Explanation

The working group for WSNs, or wireless speciality networks, is IEEE 802.15, which includes Bluetooth, mesh networks, body area networks, wearables, visible light communications, Internet of Things networks, and wireless personal area networks (WPANs).

802.15.3 Principal Features

Low cost, minimal complexity, and tiny size.

a safe network

Ease-of-use:

designed for a multipath environment that is generally normal

Step 3 of 3

Proposed network and software architectures is using UWB technology

**UWB technology**

The radio-based communication technique known as ultra-wideband (UWB) enables quick and reliable data transmission across small distances. UWB is frequently the technology of choice for interior localisation of moving assets in complicated and space-sensitive locations because of its unmatched precision, transmission speed, and dependability.

The lower frequency components of a UWB signal are what give it its intriguing ability to pass through walls and other obstructions.

Because Bluetooth is a comprehensive, end-to-end communications standard, whereas UWB is only a radio technology that can be utilised as part of an overall standard, UWB cannot replace Bluetooth for short-range communications. In a wireless personal area network, Bluetooth specifies how data is organised, structured, and physically transported (WPAN). Designers anticipate that UWB signals will be used as the foundation for future Bluetooth implementations.

The IEEE standard known as 802.15.3 is for a high-data-rate WPAN that is intended to offer enough quality of service for the real-time dissemination of content like music and video. It is perfect for a wireless multimedia home network. The actual transmission medium in the original standard is a 2.4-GHz radio with a conventional carrier.

Between 3.1 and 10.6 GHz is the UWB frequency band. Up to 200 metres away, UWB can locate other devices relative to it in the line of sight. Although a short range is a disadvantage for many applications, it is not a problem when two UWB devices are close to one another.

This will enable extremely quick file transfers between servers and portable devices as well as the streaming of high-definition video between media servers and high-definition monitors.

**Final Answer**

**Conclusion:**

The IEEE 801.15.3 task group is actively working on developing the high-rate wireless personal area network (WPAN) technology, which offers very high-speed short-range transmission capabilities with quality of service guarantees.

This will enable extremely quick file transfers between servers and portable devices as well as the streaming of high-definition video between media servers and high-definition monitors.