CLAIMS

1. A system, comprising:

a client device;

a server device; and

a broadband cellular technology system configured to provide bi-directional cellular communication between the client device and the server device via end-to-end Internet Protocol traffic, wherein the broadband cellular technology system comprises a Citizens Broadband Radio Service (CBRS) system that provides the end-to-end Internet Protocol traffic by bypassing network address translation (NAT) and tunnelling of a Long-Term Evolution (LTE) standard for wireless broadband communication for mobile devices.

2. The system of claim 1, wherein the client device comprises a first programmable logic controller (PLC) and the server device comprises a second PLC.

3. The system of claim 2, wherein the first PLC and second PLC are configured to provide, via the bi-directional cellular communication, heartbeat signals indicating active communication between the first PLC and the second PLC.

4. The system of claim 3, wherein:

the first PLC is configured to trigger a fault state when a threshold number of the heartbeat signals are not received within a prescribed amount of time from the second PLC; and

the second PLC is configured to trigger the fault state when the threshold number of the heartbeat signals are not received within the prescribed amount of time from the first PLC.

5. A system, comprising:

a client device comprising a first programmable logic controller (PLC);

a server device comprising a second PLC; and

a broadband cellular technology system configured to provide bi-directional cellular communication between the client device and the server device via end-to-end Internet Protocol traffic;

wherein the first PLC and second PLC are configured to provide, via the bi-directional cellular communication, heartbeat signals indicating active communication between the first PLC and the second PLC;

wherein the first PLC is configured to trigger a fault state when a threshold number of the heartbeat signals are not received within a prescribed amount of time from the second PLC; and the second PLC is configured to trigger the fault state when the threshold number of the heartbeat signals are not received within the prescribed amount of time from the first PLC; and

wherein the broadband cellular technology system is configured to utilize tunnelless communication without network address translation, reducing a latency of communication between the first PLC and the second PLC over tunnelled communication with network address translation to ensure the latency of communication does not impact the ability of the threshold number of the heartbeat signals to be received by a receiving PLC.

6. A system, comprising:

a client device comprising a first programmable logic controller (PLC);

a server device comprising a second PLC; and

a broadband cellular technology system configured to provide bi-directional cellular communication between the client device and the server device via end-to-end Internet Protocol traffic;

wherein the first PLC is associated with a ride vehicle of an amusement park attraction.

7. A system, comprising:

a client device;

a server device; and

a broadband cellular technology system configured to provide bi-directional cellular communication between the client device and the server device via end-to-end Internet Protocol traffic, wherein the broadband cellular technology system comprises a Citizens Broadband Radio Service (CBRS) system, wherein the CBRS system comprises:

a core;

a CBRS antenna;

a base band unit configured for facilitating communication between the core and the CBRS antenna; and

a Customer Premise(s) Equipment (CPE) bridge coupled via a hardwire connection to the client device, to provide a hardware network connection to the client device, wherein the CPE bridge is configured to transform wireless signals received from the CBRS antenna to a hardwire signal transmitted via the hardwire connection to the client device.

8. The system of claim 1, comprising routing tables that store a reverse routing path from the server device to the client device, to facilitate the bi-directional cellular communication.

9. The system of claim 1, comprising:

a SIM card, eSIM card configured with an eSIM profile, or both, wherein authentication and access to the bi-directional cellular communication is provided via an international mobile subscriber identity (IMSI) of the SIM card, the eSIM profile, or both.

10. The system of claim 1, wherein the broadband cellular technology system is configured to segment an available frequency band for the bi-directional cellular communication into a plurality of sub-bands, wherein each application of a plurality of applications is assigned to a particular sub-band of the plurality of sub-bands, to isolate applications in different sub-bands.

11. A system, comprising:

a client device;

a server device; and

a broadband cellular technology system configured to:

provide bi-directional cellular communication between the client device and the server device via end-to-end Internet Protocol traffic; and

segment an available frequency band for the bi-directional cellular communication into a plurality of sub-bands, wherein each application of a plurality of applications is assigned to a particular sub-band of the plurality of sub-bands, to isolate applications in different sub-bands;

wherein one application of the plurality of applications comprises: at least one of:

a safety system that is isolated in a dedicated sub-band for safety system traffic; or

a prioritized guest network that is isolated in a dedicated sub-band for faster bi-directional cellular communication traffic.

12. The system of claim 11, wherein the client device is configured to:

access the prioritized guest network via a graphical user interface display in response to scanning a quick response (QR) code;

in response to interacting with the graphical user interface display, receive an eSIM profile that comprises an international mobile subscriber identity (IMSI) registered for access to the dedicated sub-band for faster bi-directional cellular communication traffic; and

access the dedicated sub-band for faster bi-directional cellular communication traffic, using the IMSI.

13. The system of claim 1, wherein the client device comprises a camera equipped to capture and stream video content via the bi-directional cellular communication.

14. The system of claim 13, wherein the camera comprises a mobile camera attached to a ride vehicle of an amusement park attraction.

15. A system, comprising:

a client device;

a server device; and

a broadband cellular technology system configured to provide bi-directional cellular communication between the client device and the server device via end-to-end Internet Protocol traffic;

wherein the client device comprises a roaming robot, comprising: sensors, a safety programmable logic controller (PLC), and a controller;

wherein the roaming robot is configured to:

transfer between access points as it roams into regions served by different access points;

cause performance of computer vision processing, by providing sensor inputs to a computer vision processing server via the bi-directional cellular communication;

cause safety control by providing heartbeat signals to a server PLC via the bi-directional cellular communication; or

any combination thereof.

16. A system, comprising:

a client device;

a server device; and

a broadband cellular technology system configured to provide bi-directional cellular communication between the client device and the server device via end-to-end Internet Protocol traffic;

wherein the client device comprises an interactive component configured to receive inputs to be processed by an external processing system;

wherein the broadband cellular technology system is configured to:

identify an access point that the interactive component is connected to;

identify a processing component nearest to the access point that is equipped to process the inputs received by the interactive component; and

deploy instructions to complete processing of the inputs to the processing component to cause the processing component to process the inputs.

17. A system, comprising:

a client device;

a server device; and

a broadband cellular technology system configured to provide bi-directional cellular communication between the client device and the server device via end-to-end Internet Protocol traffic;

wherein the broadband cellular technology system is configured to form an encapsulated bridge between the server device and the client device via a virtual network protocol, facilitating the bi-directional cellular communication.