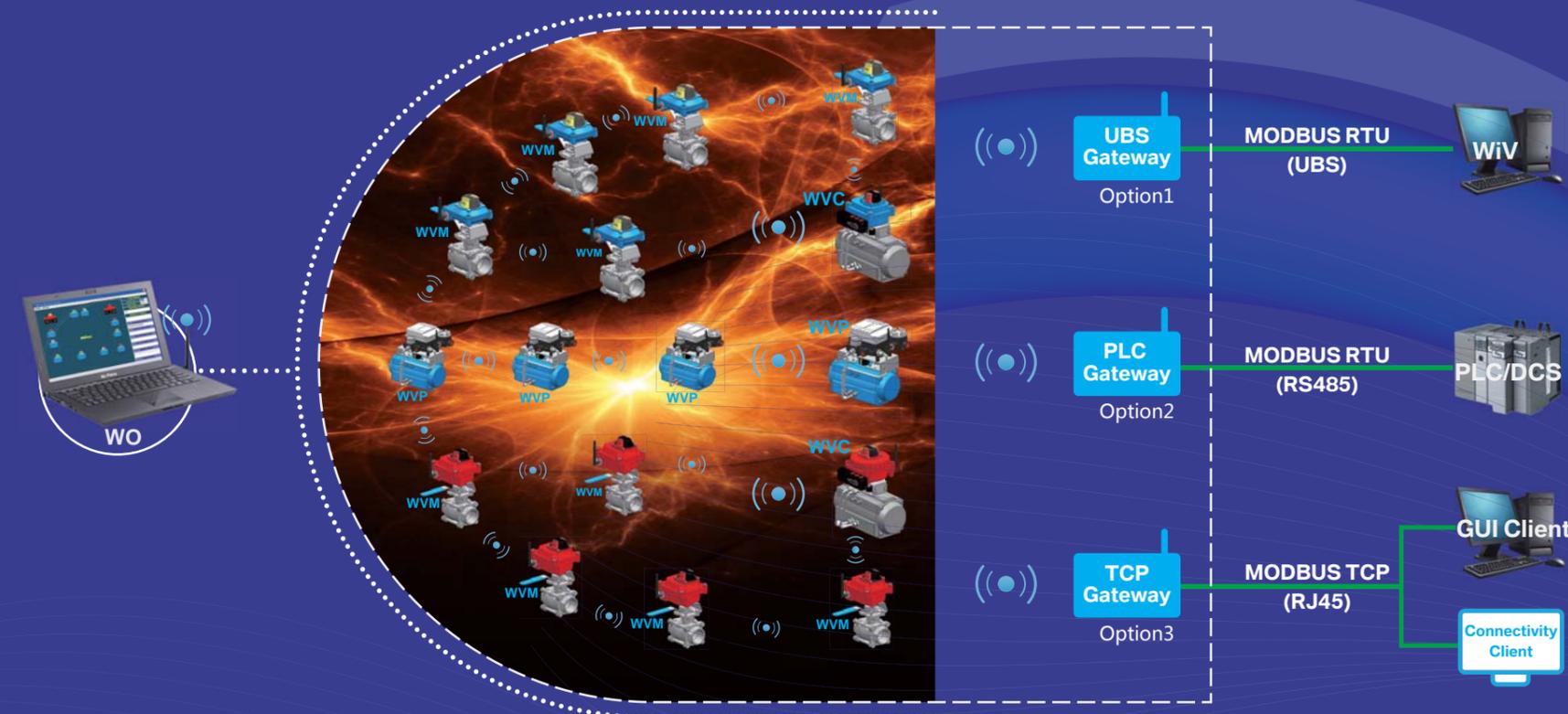


Zigbee Wireless Valve System was specifically designed both for controlling on/off, proportion valves and monitoring manual, automated valves. This wireless system is able to integrate directly with a wider plant control system by wireless gateways. All field devices use the proven standard ZigBee Pro. Based around the very flexible wireless valve monitor (WVM), wireless valve controller(WVC), wireless valve positioner(WVP), wireless gateways (UG/PG/TG), and the Wireless Operator(WO), the Zigbee wireless valve system provides real-time information about a valve's status directly into plant control system, and also available to transmit and output wireless signal from PC/PLC/DCS to operate the valve position in real-time.

Wireless Valve Monitor (WVM) is a battery(life of 5 year) powered wireless on/off valve position feedback device with integrated Zigbee RFD smart node, limit switches and auxiliary inputs. Based on ISO5211 and Namur, it is Installed on the valve (or actuator) and reports on valve status every 15 minutes or whenever a deviation in stem angle($\geq 1.5^\circ$) is detected. It also monitors temperature, battery status, all messages are transmitted with a real time stamp. The WVM is suitable for both rotary and linear monitoring and is available to a number of specifications in enclosure. The monitor can be supplied in IP67, Flameproof IECEx/ ATEX Zone 1 enclosure and Intrinsically Safe IECEx/ ATEX Zone 0.



****Wireless Valve Controller(WVC)** is a local powered (24VDC) wireless on/off valve control device with integrated Zigbee FFD smart node, solenoid valve(3/2 and 5/2), and limit switches. Based on ISO5211 and Namur, it is Installed on the actuator both for controlling and monitoring on/off valves. WVC is suitable for both rotary and linear valves and is available to a number of specifications in enclosure. The controller can be supplied in IP67, Flameproof IECEx/ ATEX Zone 1 enclosure.

****WVC** also acts as a router in Zigbee Wireless Valve System to collect reported data from a group of up to 32 WVMs typically within a 25 m radius (up to 100 m in open spaces) and wirelessly transfers the information to the next WVC or directly to WG on a self-healing mesh topology providing alternate information relays in the event of a failure. The typical distance between WVC to WVC is within a 100 m radius in indoors and non-obstructed environment (up to 200 m in open spaces).

****Wireless Valve Positioner(WVP)** is a local powered (24VDC) wireless proportion control valve device(4-20mA) with integrated Zigbee FFD smart node, pilot valve, torque motor and/or limit switches. Based on ISO5211 and Namur, it is Installed on the actuator both for wireless proportion controlling and monitoring valve position(0-100%). WVP is suitable for both rotary and linear valves and is available to a number of specifications in enclosure. The controller can be supplied in IP66, Flameproof IECEx/ ATEX Zone 1 in enclosure.

****The WVP** also acts as a router in Zigbee Wireless Valve System like WVC.

Armed with wireless dongle(USB interface) and wilson wireless setup software, **Wireless Operator (WO)** provides PC GUI interface for engineer to calibrate and set up each wireless valve device data in the field. The datum include Address, PANID, Baud rate, Password and so on.

Wilson Wireless Valve System (WiV) is a valve network software which is specifically designed by Wilson both for controlling and monitoring valve positions based on plant production requirement. Armed with PC and USB gateway, WiV provides the GUI interface to the plant control and management system both for controlling and monitoring all valve status in real-time within the area of the Zigbee Network.

Wireless TCP gateway(TG) wirelessly collects the router data using the ZigBee protocol and then transfers this to a connectivity server or GUI client via Ethernet TCP/ IP by RJ45. Each Wireless gateway can manage the data from up to 32 routers at a distance of 100 m radius in indoors and non-obstructed environment (up to 200 m in open spaces). The gateway also operates as part of the self-healing mesh topology ensuring full redundancy and avoiding a single point of failure.

Wireless PLC Gateway(PG) is hardened connectivity device to forward wireless valve device data and status to the third party PLC, DCS and so on by RS485. The supported protocols are Modbus RTU, Modbus TCP/IP and OPC DA. Each PG can manage the data from up to 32 routers at a distance of 100 m radius in indoors and non-obstructed environment (up to 200 m in open spaces). The gateway also operates as part of the self-healing mesh topology ensuring full redundancy and avoiding a single point of failure.

Wireless UBS Gateway(UG) wirelessly collects the router data using the ZigBee protocol and then transfers this by UBS port to wilson wireless system via modbus protocol both for monitoring and controlling valve positions remotely and wirelessly. Each UG can manage the data from up to 32 routers at a distance of 100 m radius in indoors and non-obstructed environment (up to 200 m in open spaces). The gateway also operates as part of the self-healing mesh topology ensuring full redundancy and avoiding a single point of failure.