We claim:

1. A method of controlling fluid flow in a fluid system, the fluid system including an actuated valve assembly including an actuator having an actuator member biased towards a normal position and an inlet port configured to receive a pressurized fluid for movement of the actuator member to an actuated position, the method comprising:

receiving a command signal pulse at a valve controller;

in response to receipt of the command signal pulse, after a predetermined opening delay, transmitting an actuation signal pulse from the valve controller to a pilot valve;

in response to receipt of the actuation signal pulse at the pilot valve, actuating the pilot valve to direct pressurized fluid to the actuator inlet port for movement of the actuator member to the actuated position;

in response to movement of the actuator member to the actuated position, transmitting a stroke signal pulse from a position sensor assembled with the valve assembly to the valve controller;

in response to termination of the command signal pulse, after a predetermined closing delay, terminating transmission of the actuation signal pulse to the pilot valve;

in response to termination of the actuation signal pulse, actuating the pilot valve to divert pressurized fluid from the actuator inlet port for biased movement of the actuator member to the normal position;

in response to movement of the actuator member to the normal position, terminating transmission of the stroke signal pulse to the valve controller;

calculating an adjusted predetermined opening delay based on a measured time duration between transmission of the actuation signal pulse and receipt of the stroke signal pulse; and

calculating an adjusted predetermined closing delay based on a measured time duration between termination of the actuation signal pulse and termination of the stroke signal pulse.

2. The method of claim 1, wherein receiving the command signal at the valve controller comprises transmitting the command signal from an external computer in communication with the valve controller.

3. The method of claim 1, wherein the predetermined opening delay and the adjusted predetermined opening delay are calculated to maintain a substantially constant total opening time duration between receipt of the command signal pulse and receipt of the stroke signal pulse.

4. The method of claim 1, wherein the predetermined closing delay and the adjusted predetermined closing delay are calculated to maintain a substantially constant total closing time duration between termination of the command signal pulse and termination of the stroke signal pulse.

5. The method of claim 1, further comprising transmitting actuation timing data from the controller to an external computer.

6. The method of claim 1, wherein the fluid system further includes a second valve assembly including a second actuator having a second actuator member biased towards a normal position and a second inlet port configured to receive a pressurized fluid for movement of the second actuator member to an actuated position.

7. The method of claim 6, further comprising delaying transmission of the actuation signal pulse from the valve controller to the pilot valve when the second actuator member is in the actuated position.

8. The method of claim 6, further comprising:

receiving a second command signal pulse at the valve controller;

in response to receipt of the second command signal pulse, after a predetermined second opening delay, transmitting a second actuation signal pulse from the valve controller to a second pilot valve;

in response to receipt of the second actuation signal pulse at the second pilot valve, actuating the second pilot valve to direct pressurized fluid to the second actuator inlet port for movement of the second actuator member to the actuated position;

in response to movement of the second actuator member to the actuated position, transmitting a second stroke signal pulse from a second position sensor assembled with the second valve assembly to the valve controller;

in response to termination of the second command signal pulse, after a predetermined second closing delay, terminating transmission of the second actuation signal pulse to the second pilot valve;

in response to termination of the second actuation signal pulse, actuating the second pilot valve to divert pressurized fluid from the second actuator inlet port for biased movement of the second actuator member to the normal position;

calculating an adjusted predetermined second opening delay based on a measured time duration between transmission of the second actuation signal pulse and receipt of the second stroke signal pulse; and

calculating an adjusted predetermined second closing delay based on a measured time duration between termination of the second actuation signal pulse and termination of the second stroke signal pulse.

9. The method of claim 8, wherein receiving the second command signal pulse at the valve controller is simultaneous with termination of the command signal pulse at the valve controller.

10. The method of claim 1, further comprising, in response to receipt of an error signal at the valve controller, entering a passthrough mode in which subsequent command signal pulses bypass the valve controller and are transmitted to the pilot valve.

11. The method of claim 10, wherein entering the passthrough mode comprises operation of a relay switch by the valve controller.

12. The method of claim 1, wherein the position sensor is assembled with the actuator.

13. The method of claim 12, wherein the position sensor is configured to sense a mid-stroke position of the actuator member.

14. The method of claim 1, wherein the valve assembly includes a valve element movable between a closed position blocking flow between inlet and outlet ports of the valve assembly and an open position permitting flow between the inlet and outlet ports.

15. The method of claim 14, wherein the normal position of the actuator member corresponds to the closed position of the valve element and the actuated position of the actuator member corresponds to the open position of the valve element.

16. A fluid supply system comprising:

at least one actuated valve assembly including:

an actuator having an actuator member biased towards a normal position; and

a pilot valve connected with an inlet port of the actuator and configured to be operated between a first configuration supplying pressurized fluid to the actuator inlet port for movement of the actuator member to an actuated position and a second configuration diverting pressurized fluid from the actuator inlet port for biased movement of the actuator member to the normal position;

a valve control module including a valve controller configured to receive a command signal pulse and transmit an actuation signal pulse from the valve controller to the pilot valve for actuation of the pilot valve to the first configuration after a predetermined opening delay stored in the valve controller, for corresponding movement of the actuator member to the actuated position; and

at least one position sensor assembled with the at least one valve assembly and configured to transmit a stroke signal pulse to the valve controller in response to movement of the actuator member to the actuated position;

wherein the valve controller is configured to calculate an adjusted predetermined opening delay based on a measured time duration between transmission of the actuation signal pulse and receipt of the stroke signal pulse, the valve controller being configured to replace the predetermined opening delay with the adjusted predetermined opening delay;

wherein the valve controller is configured to terminate transmission of the actuation signal pulse to the pilot valve in response to termination of the command signal pulse, after a predetermined closing delay, and wherein the pilot valve is configured to actuate to the second configuration in response to termination of the actuation signal pulse to divert pressurized fluid from the actuator inlet port for biased movement of the actuator member to the normal position, terminating transmission of the stroke signal pulse to the valve controller; and

wherein the valve controller is configured to calculate an adjusted predetermined closing delay based on a measured time duration between termination of the actuation signal pulse and termination of the stroke signal pulse.

17. The fluid supply system of claim 16, wherein the adjusted predetermined closing delay is calculated to maintain a substantially constant total closing time between termination of the command signal pulse and termination of the stroke signal pulse.

18. The fluid supply system of claim 16, further comprising an external device configured to transmit the command signal pulse to the valve controller.

19. The fluid supply system of claim 16, wherein the adjusted predetermined opening delay is calculated to maintain a substantially constant total opening time between receipt of the command signal pulse and receipt of the stroke signal pulse.

20. The fluid supply system of claim 16, wherein the position sensor is assembled with the actuator.