

CLAIMS

1. A water flow management system including a valve, the valve being adapted to communicate with at least one water flow detector and a set of water usage products, wherein the water flow detector is for detecting water flow to the set of water usage products, wherein the valve includes a processor that is arranged to determine:
 - an operational status of the set of water usage products,
 - a water flow status of the water flow detector, and
 - whether, on the basis of the operational status and the water flow status, the water flow to the set of water usage products requires alteration,wherein the processor is adapted to operate the valve to effect the required alteration.
2. The water flow management system of claim 1, wherein the processor is adapted to operate a second valve to effect the required alteration, the second valve controlling water flow to one of the set of water usage products.
3. The water flow management system of claim 1 or 2, wherein the alteration includes a stop of the water flow in response to a water leak occurring, wherein the processor determines whether the water leak is occurring, based upon a determination that the water flow status indicates a water flow through the water flow detector and the operational status indicates that water is not currently being used by the set of water usage products.
4. The water flow management system of any one of claims 1 to 3, wherein the alteration includes an increase in the pressure of the water flow to the set of water usage products.
5. The water flow management system of any one of claims 1 to 4, wherein the alteration includes a decrease in the pressure of the water flow to the set of water usage products.
6. The water flow management system of any one of claims 1 to 5, wherein the alteration includes a control of the water flow to the set of water usage products to a predetermined water flow rate.

7. The water flow management system of claim 6, wherein the predetermined water flow rate includes a minimum flow rate to a urinal.
8. The water flow management system of claim 6 or 7, wherein the predetermined water flow rate includes a maximum flow rate to a shower.
9. The water flow management system of any one of claims 1 to 8, wherein the valve includes:
 - a communication module adapted to communicate with the processor, the water usage products, and a user device;
 - such that the processor is able to send a performance signal based on a performance of the set of water usage products to the user device.
10. The water flow management system of claim 9, wherein the performance signal includes an alarm signal based on the operational status and the water flow status.
11. The water flow management system of claim 9 or 10, wherein the performance signal includes a confirmation that a water usage product is operating correctly.
12. The water flow management system of any one of claims 1 to 11, wherein the water flow detector and the valve are integrated into a single component.
13. The water flow management system of any one of claims 1 to 12, wherein the water flow detector includes a water flow smart meter.
14. The water flow management system of any one of claims 1 to 13, wherein the set of water usage products comprises at least one water usage product that is a bathroom product.
15. The water flow management system of claim 14, wherein the bathroom product comprises a faucet, a toilet, a urinal, a shower, a bath, and/or a bidet.
16. The water flow management system of any one of claims 1 to 15, wherein the set of water usage products are arranged in a defined area to provide water services to the defined area.

17. The water flow management system of any one of claims 1 to 16, wherein the operational status includes an indication that a first water usage product was operated recently, and wherein the alteration includes an increase in water flow to a second water usage product that is known to be operated subsequent to operation of the first water usage product.

18. A method for managing water flow to a set of water usage products, the method comprising the steps of:

determining a water flow status to the set of water usage products using a water flow detector;

determining an operational status of the set of water usage products using an electronic controller associated with the set of water usage products;

determining, on the basis of the operational status and the water flow status, whether the water flow to the set of water usage products requires alteration; and

operating a valve to effect the alteration.

19. The method of claim 18, wherein the method further comprises the step of:

determining whether a water leak is occurring, based upon a determination that the water flow status indicates a water flow through the water flow detector and the operational status indicates that water is not currently being used by the set of water usage products; and wherein the alteration includes a stop of the water flow in response to the water leak occurring.

20. The method of claim 18 or 19, wherein the alteration includes an increase in the pressure of the water flow to the set of water usage products.

21. The method of any one of claims 18 to 20, wherein the alteration includes a decrease in the pressure of the water flow to the set of water usage products.

22. The method of any one of claims 18 to 21, wherein the alteration includes a control of the water flow to the set of water usage products to a predetermined water flow rate.

23. The method of claim 22, wherein the predetermined water flow rate includes a minimum flow rate to a urinal.

24. The method of claim 22 or 23, wherein the predetermined water flow rate includes a maximum flow rate to a shower.
25. The method of any one of claims 18 to 24, wherein the method further comprises the step of:
 sending a performance signal based on a performance of the set of water usage products to a user device.
26. The method of claim 25, wherein the performance signal includes an alarm signal based on the operational status and the water flow status.
27. The method of claim 25 or 26, wherein the performance signal includes a confirmation that a water usage product is operating correctly.
28. The method of any one of claims 18 to 27, wherein the set of water usage products comprises at least one water usage product that is a bathroom product.
29. The method of claim 28, wherein the bathroom product comprises a faucet, a toilet, a urinal, a shower, a bath, and/or a bidet.
30. The method of any one of claims 18 to 29, wherein the operational status includes an indication that a first water usage product was operated recently, and the step further comprises the step of:
 altering the water flow to a second water usage product that is known to be operated subsequent to operation of the first water usage product,
 wherein the alteration includes an increase in the pressure of the water flow to the second water usage product.