CLAIMS

1. A system for cleaning and sterilizing a water flow, comprising:

a main treatment line (1), comprising an inlet (2) with a pump (56) to pump water from a water storage, such as a ballast water tank of a vessel, through a main filter (8) to a sterilizing station (20) with one or more UV lamps (21) to sterilize the water flow, and a system outlet (30),

wherein the main filter is provided with a first filter element (12) and a backflush member (14) with a first backflush outlet (17) to rinse the first filter element with backflush water,

and a secondary treatment line, comprising an inlet (18) being in fluid communication to the first backflush outlet, a backflush filter (31;39;47) with a backflush filter element (32) that has filter openings with a largest dimension between 50 micrometer and 20 micrometer to remove floating organisms or silt from the backflush water, and a secondary outlet (44) being in fluid communication with the main treatment line, to lead filtered backflush water from the secondary treatment line to the main treatment line, and a controller for controlling the flow through the main treatment line (1) and the flow through the back flush filter (31;39;47),

wherein the controller is configured such that a backflush pressure difference over the backflush filter element (32) is less than 0.05 bar (5 kPa), and

wherein the controller is configured such that the pressure difference over the first filter element (12) is at least 0.1 bar (10 kPa) or 0.2 bar (20 kPa) and wherein the largest dimensions of openings (12a) in the first filter element are smaller than half or one third of the largest dimension of the openings in the backflush filter element (32).

2. The system according to claim 1, wherein the backflush filter (31; 39; 47) has a filter rinsing system (36, 37; 50) to rinse the silt from the backflush filter element (32) with rinsing water and the filter rinsing system is connected to a centrifuge (23) to remove rinsing water from the silt.

3. The system according to claim 1 or 2, wherein the first filter element (12) comprises first filter openings (12a) with a largest dimension of 10 micron or 6 micron.