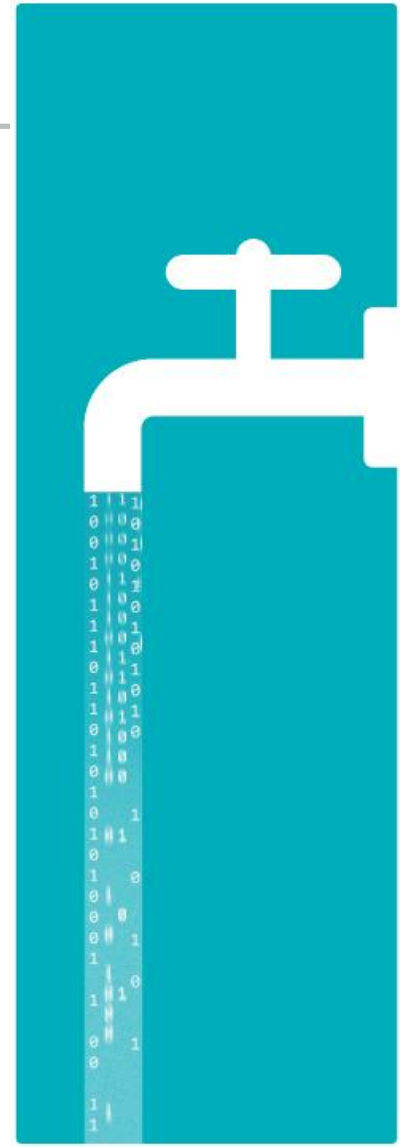


Digital forsyning og vandkvalitet

Kristian Rokkjær
Produkt Manager
Vandsystemer
Kamstrup



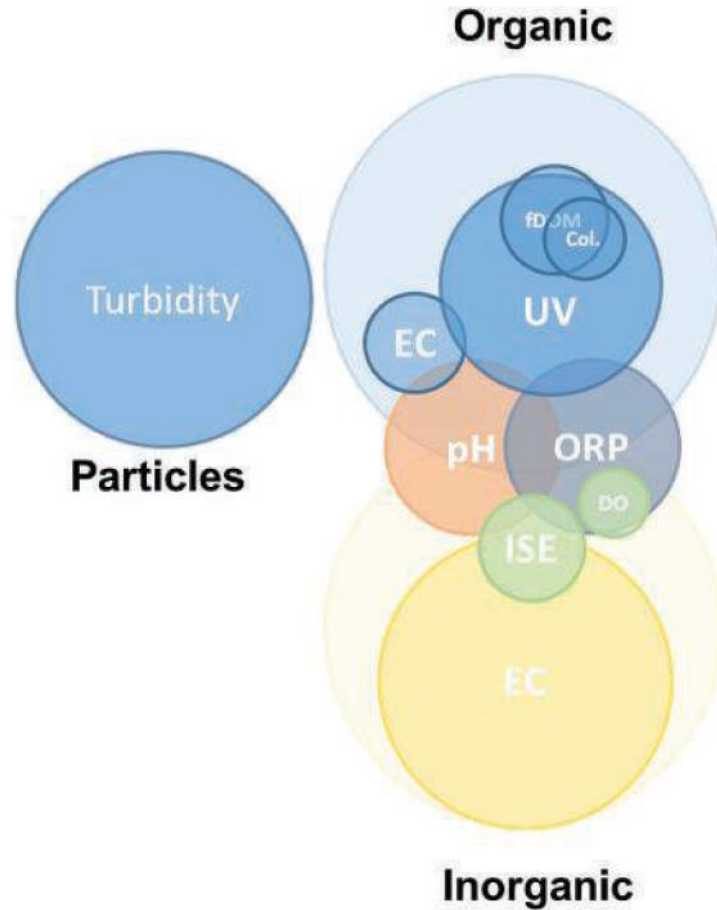
A woman with dark hair, wearing a bright green top and a black long-sleeved shirt, is drinking water from a clear glass. She is looking down at the glass. The background is a kitchen with a white tiled wall and a stainless steel sink. A white speech bubble is overlaid on the right side of the image, containing text in purple.

Vi tror på at digitalisering af vandforsyningen er et vigtigt skridt i retning af mere bæredygtig brug af energi og vandressourcer, og understøtter leveringen af sikkert og rent drikkevand.

- Problemer med drikkevandskvalitet har store økonomisk og imagemæssige omkostninger
- Over halvdelen af hændelser i relation til drikkevandskvalitet opstår ude i distributionsnettet.
- Distributionsnettene er store, aldrende og sårbare overfor utilsigtede såvel som tilsigtede hændelser.
- Den nuværende tilgang til beskyttelse er stikprøvekontroller i distributionsnetværket og hos forbrugerne.
- Der er behov for mere online overvågning af vandkvalitetshændelser i distributionsnetværket!

kamstrup





kamstrup

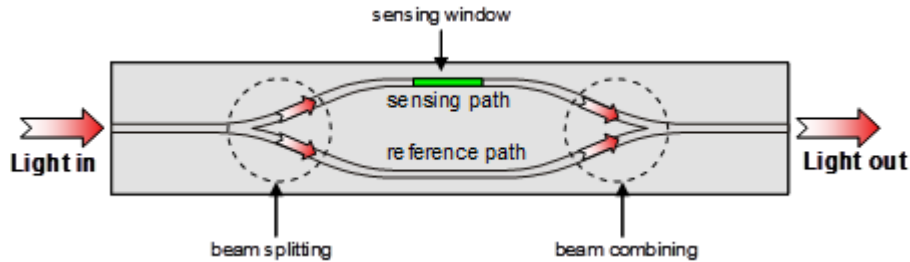
Fanger ændringer i vandets sammensætning

Respondere på alle kemikalier

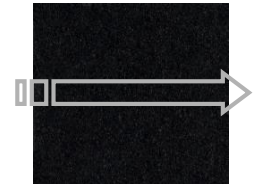
Ingen kemikalier, høj stabilitet, hurtig respons



kamstrup



Refraktivt indeks (RI) er en fysisk egenskab ved alle stoffer, som defineres ved lysets hastighed gennem stoffet set i forhold til den teoretiske hastighed i vacuum.



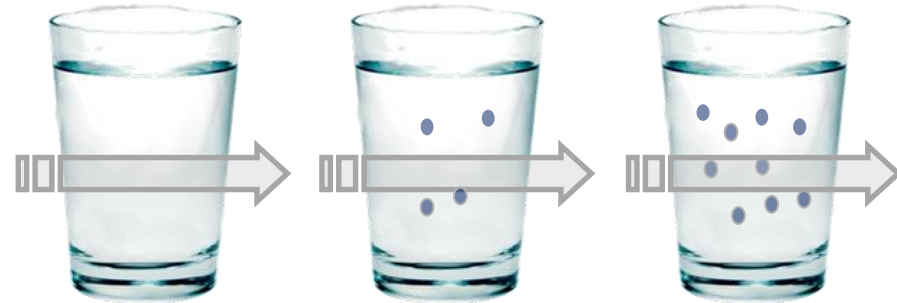
Vacuum
RI = 1

Sensoren opfanger små ændringer i det refraktive indeks (RI) af vand

Alle opløste stoffer ændre det refraktive indeks af vand.



En sensor til at overvåge alle opløste stoffer



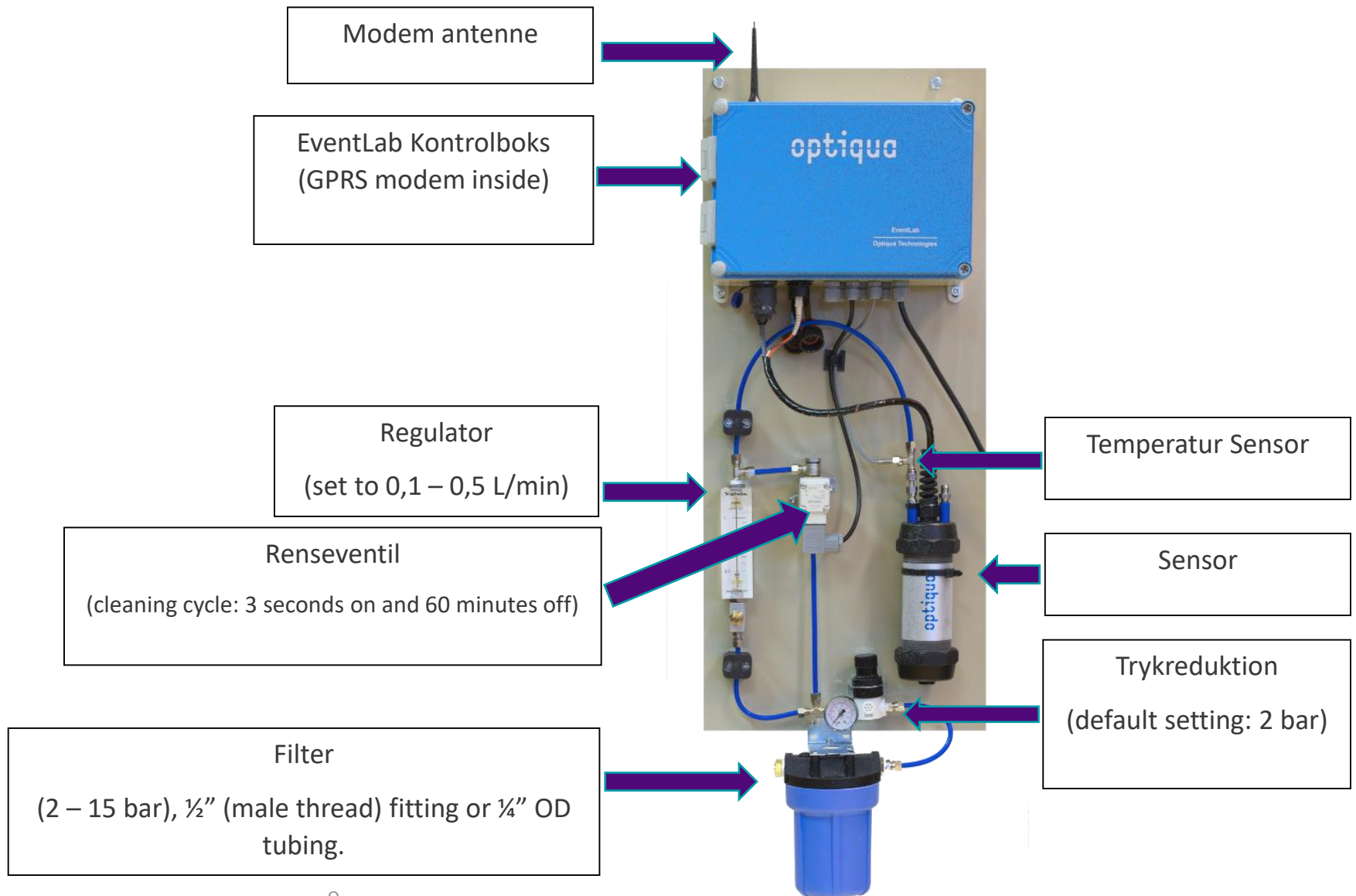
Rent vand
RI = 1.33

0.005% NaCl
RI = 1.3301

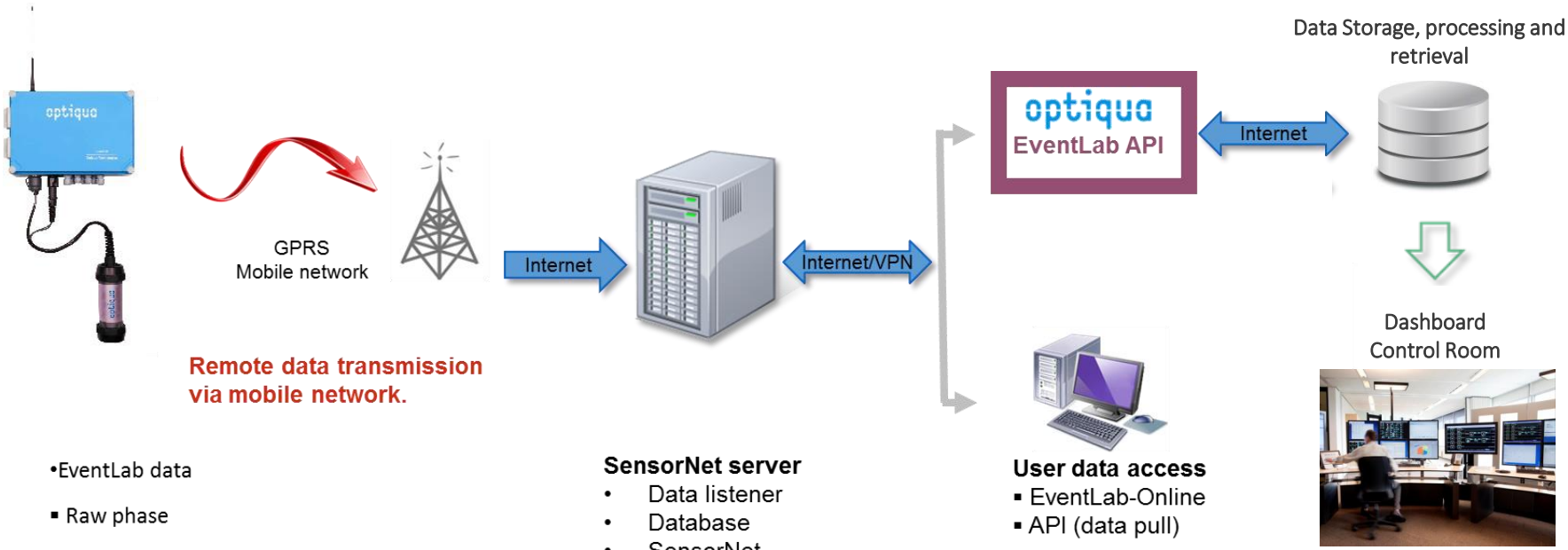
5% NaCl
RI = 1.34

Class	Compound	EventLab	pH	Cond	Turb	UV/VIS	O ₂	ORP
Inorganic	Sodium Chloride	✓	✓	✓				✓
	Sodium Nitrate	✓	✓	✓		✓		✓
	Sodium Sulfite	✓	✓	✓			✓	✓
Organic – pesticides	Aldicarb	✓				✓		
	Azinphos-methyl	✓				✓		
Organic – other	Acetylsalicylic acid	✓	✓	✓		✓		✓
	MTBE	✓						
Heavy Metal	Cadmium Nitrate	✓	✓	✓				✓
Wastewater / Fertilizer	Urea	✓						
Turbidity	Formazine	✓			✓	✓		

EventLab system panel



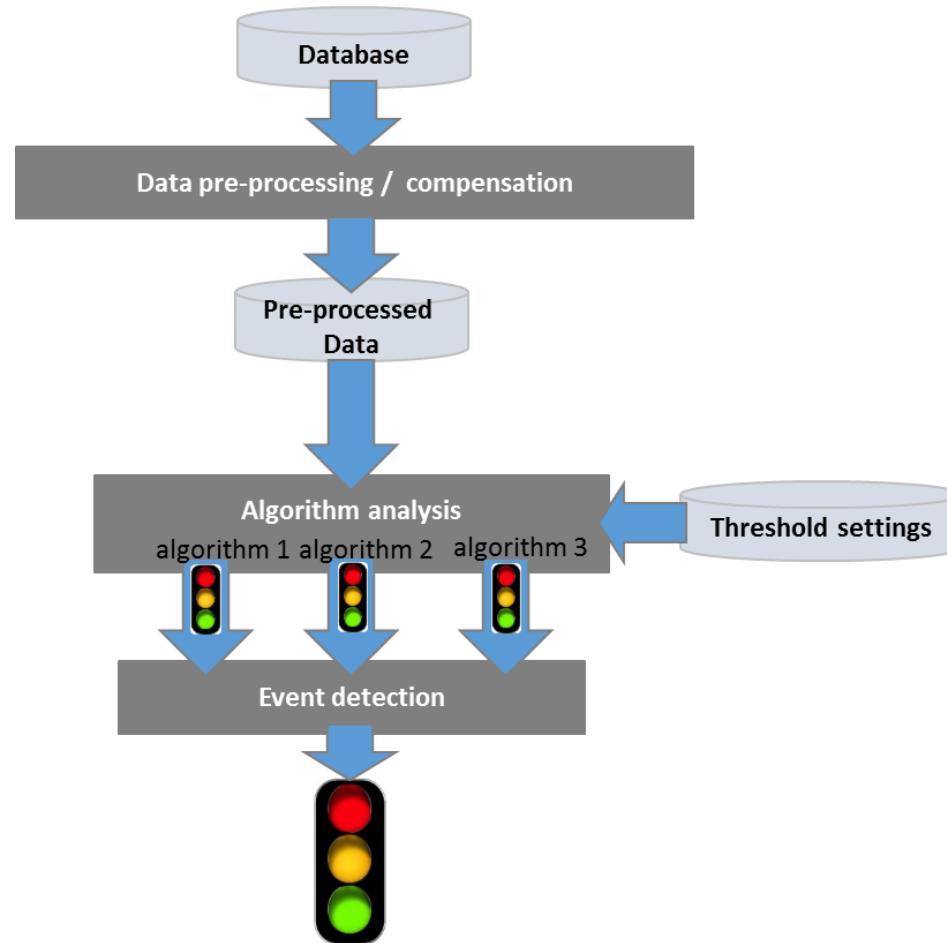
kamstrup

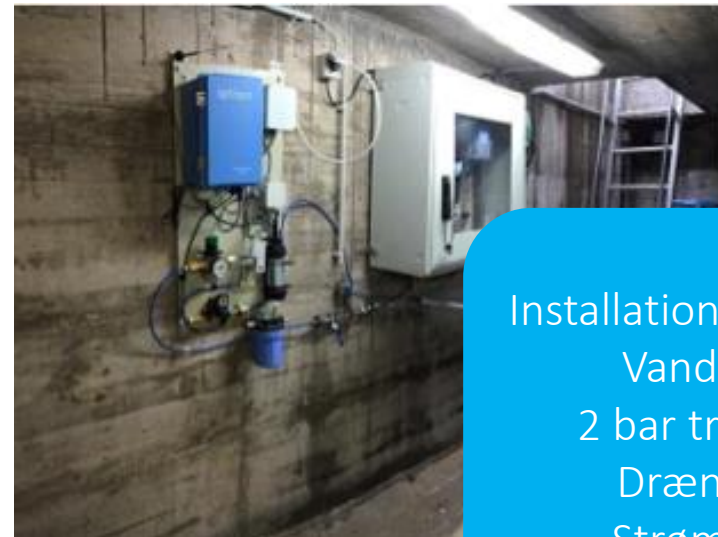


- EventLab data
 - Raw phase
 - Temperature
 - Time
 - Other sensor parameters

The screenshots display the following interface elements:

- Table View:** A table with columns 'From', 'Start', and 'End'. The 'From' column contains 'ICWR'. The 'Start' column contains '17F6G/2015 15:44'. The 'End' column contains '20F6G/2015 13:44'. There are 'Refresh' and 'Export' buttons.
- Login Form:** A 'Please Login' form with 'Username' and 'Password' input fields and a 'Login' button.
- Dashboard:** A map view showing sensor locations (green dots) on a city map. A sidebar menu lists 'GROUPS' (Austria, BIK, Accor, P&G water quality office, T&E, group3, Ind sensors, P&G water supply network, 10000 Waterhut, NewGroup, F1800000, Unconnected, University Life, Maric, Suel) and 'SENSORS'.





Installationskrav:
Vand
2 bar tryk
Dræn
Strøm
Mobildækning

PUB Singapore

kamstrup

optiqua

Logout

GROUPS

- Network Sensors
- Unassigned

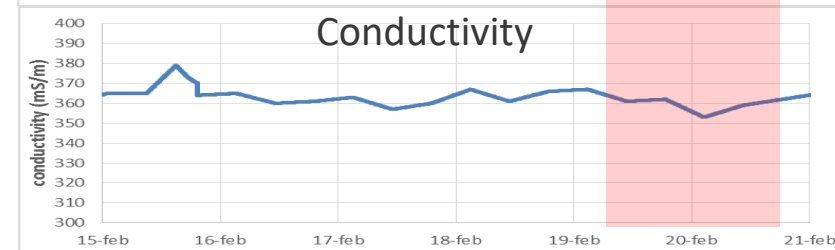
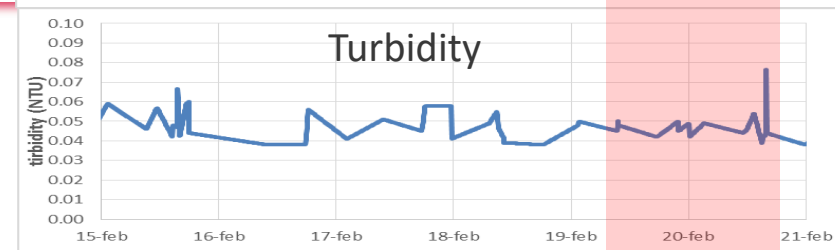
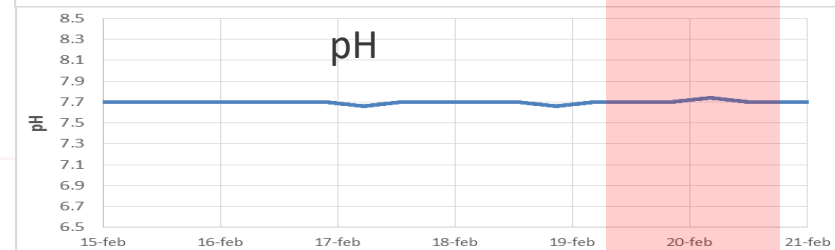
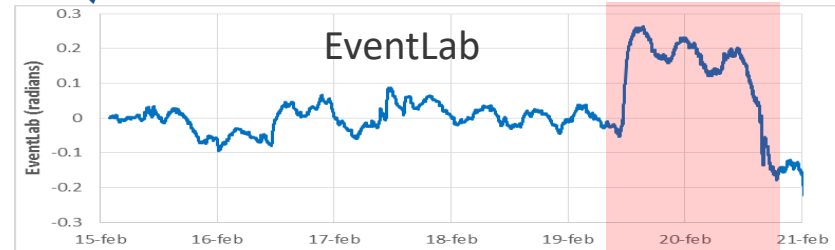
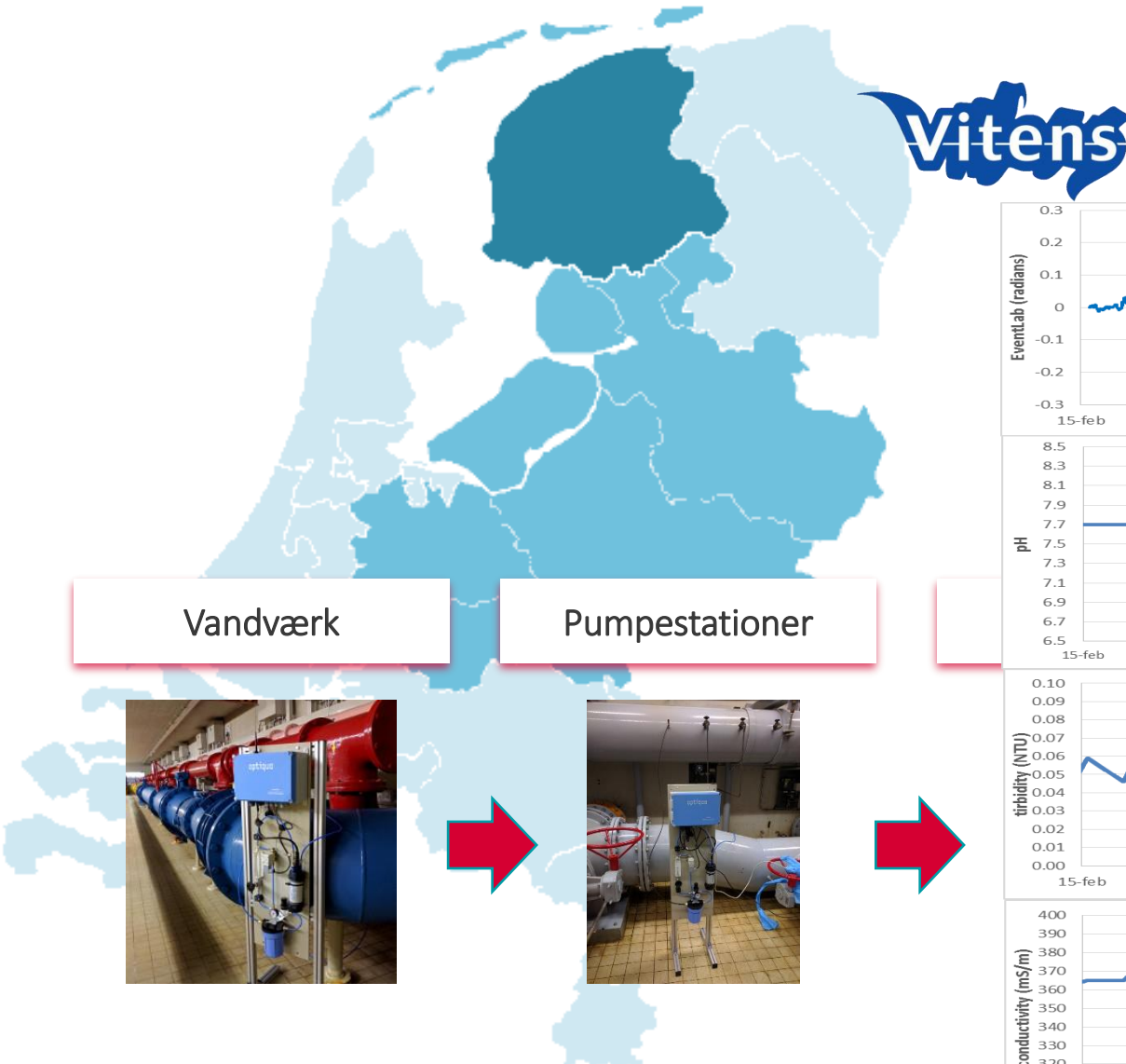
SENSORS

Singapore

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terms of service

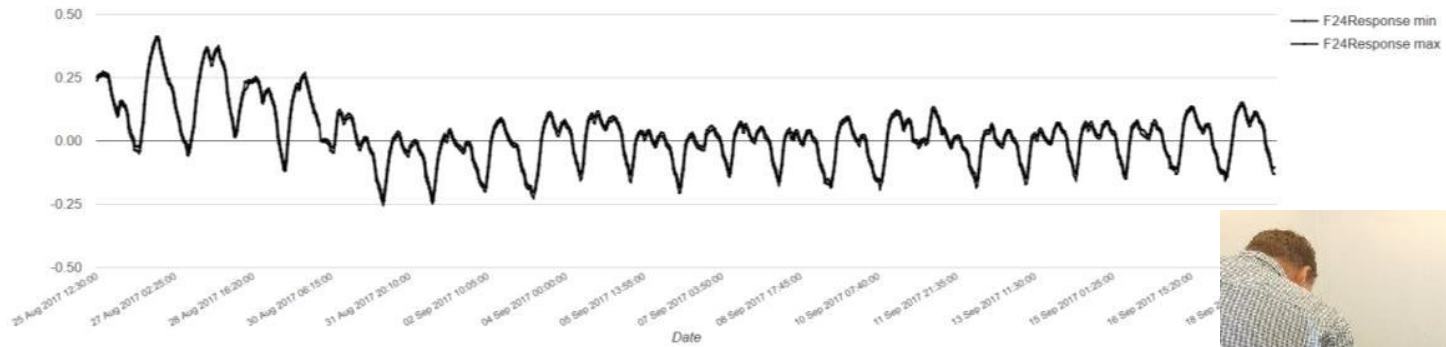




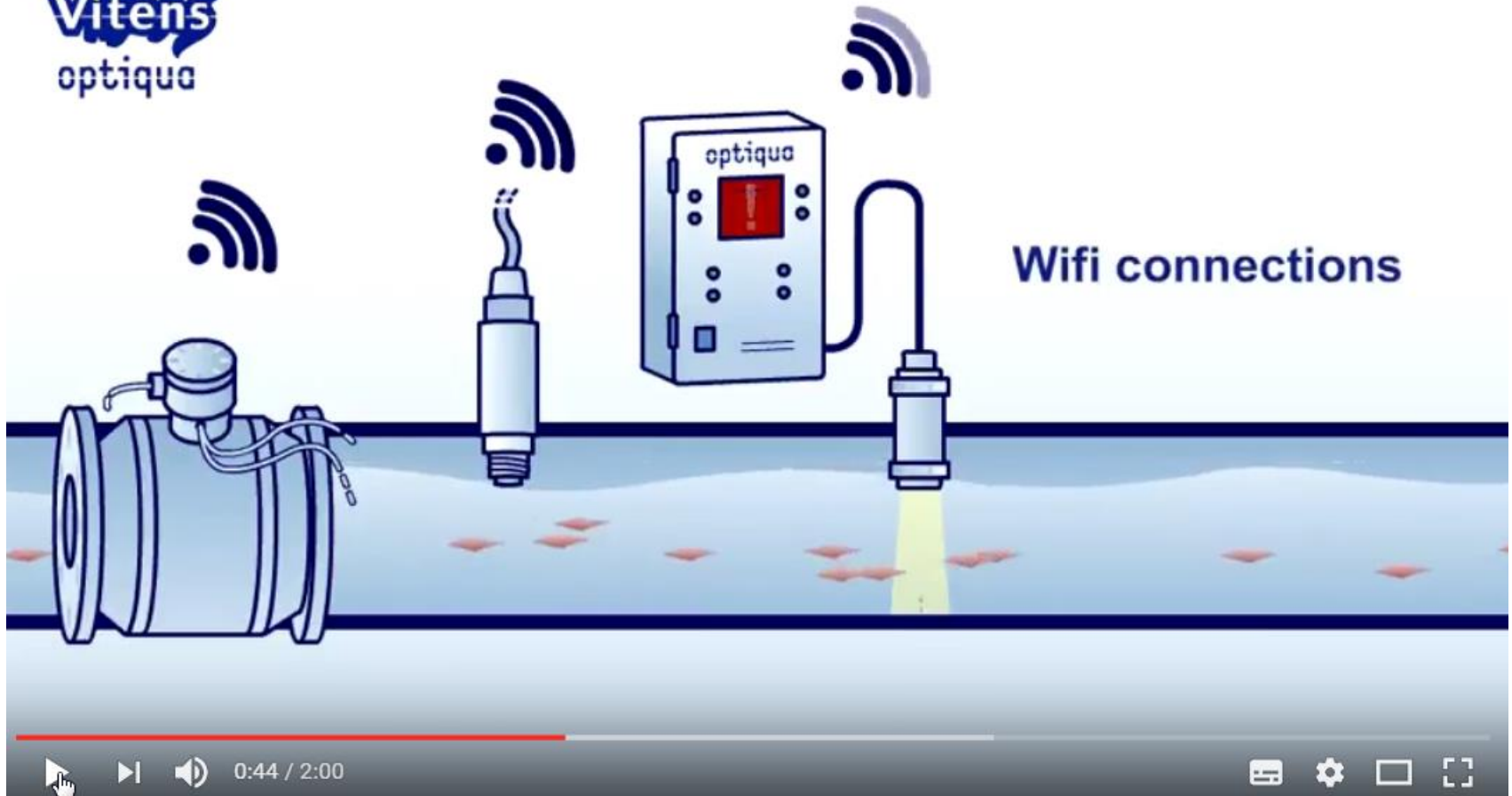
optiqua

AARHUS VAND 1 > CHART Logout

Feeds: F24Response
Start: 25/Aug/2017 12:30
End: 18/Sep/2017 08:16
Refresh
Export



Vitens
optiqua



0:44 / 2:00

