

The pipe::scan



UVT

Conductivity

TOC

pH

Pressure

DOC

UV 254

Chlorine

Color

ORP

Temperature

Turbidity

Overview

- The pipe::scan → what is it?
 - Product overview
 - Functionality
 - Benefits
 - Parameters
 - con::cube
 - moni::tool, vali::tool and ana::tool
 - Drinking water certificates
 - Tests
 - Installation



The pipe::scan

What is it?

The new pipe::scan

What is it?



- Modular sensor system for monitoring drinking water quality in pipes under pressure.
- Measuring up to **10 parameters in one device**: TOC, DOC, UV254, Turbidity, Color, Chlorine, pH or Redox, Conductivity, Temperature and Pressure.
- The water quality data can be sent to any central data management system using any protocol.
- General Features
 - 4-sensor platform for at-pipe installation platform with standardized existing hot-tap pipe saddles
 - Use existing proven s::can sensors
 - Use existing proven terminal con::cube

The pipe::scan

Product overview

i::scan

Multi-parameter spectrophotometer probe.

Parameters:
FTU/NTU, UV254, UVT, Color,
TOC, DOC

Optional autobrush for i::scan

Provides automatic brush cleaning for the i::scan.

Pipe saddle

2" pipe saddle for hot tap installation.
Available for pipes from DN80 to DN600.

Enclosure

Additional security for sensors and operator.

Physical sensors

One chlori::lyser and two additional sensors (condu::lyser, pH::lyser or redo::lyser) can be installed.

Parameters:
Conductivity, Free Chlorine, pH, Redox and Temperature

Base unit

Flow cell for up to 4 sensors with retractable insertion nozzle, filter, sample valve, automatic bleeder valve, pressure sensor and flow sensor (optional).

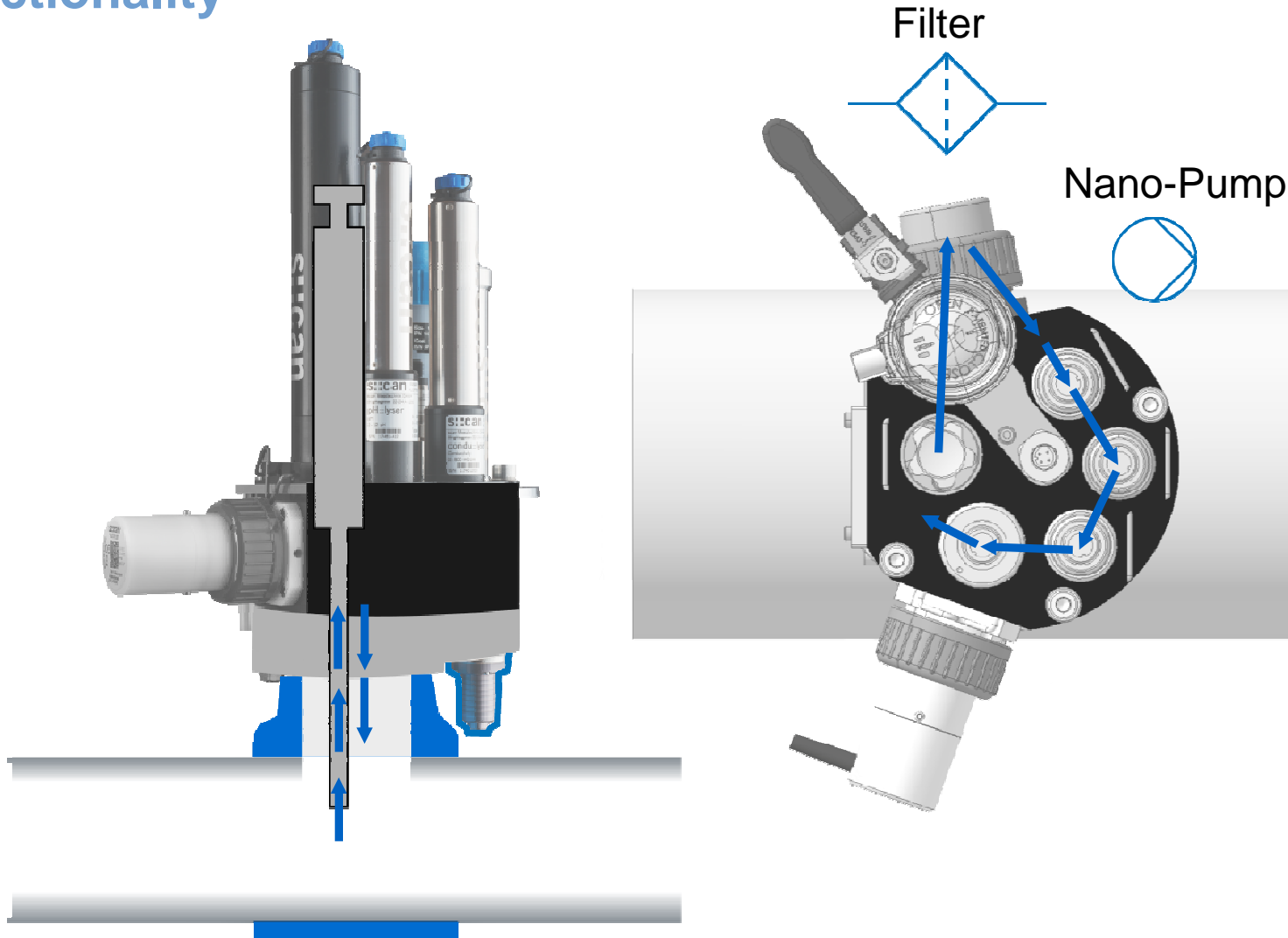
Nano-pump

For water flow even during periods of stagnation.



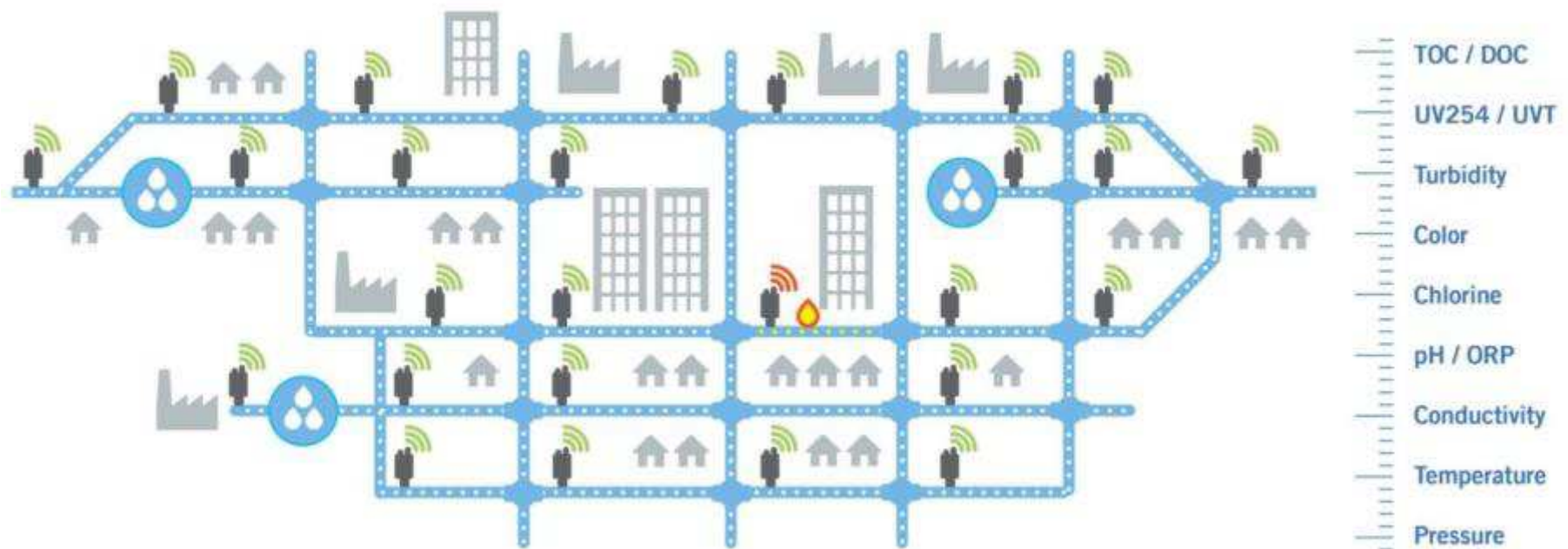
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Functionality



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Drinking Water Network Monitoring



Multiple pipe::scans are the ideal solution to monitor drinking water at any point in the network.

The pipe::scan

Benefits - Only the pipe::scan can:

- Accurate, reportable measurements in perfect agreement to standardized lab reference... not just "trending".
- In-pipe Organics and Turbidity monitoring.
- Totally flow-independent, even works under stagnating conditions.
- Hot-maintenance, without interrupting the flow/ pressure, and for each sensor individually.
- Local contamination event detection software with real-time alarms, tested by US-EPA.
- 6 months service time: Efficient, reliable stand-alone operation without maintenance.



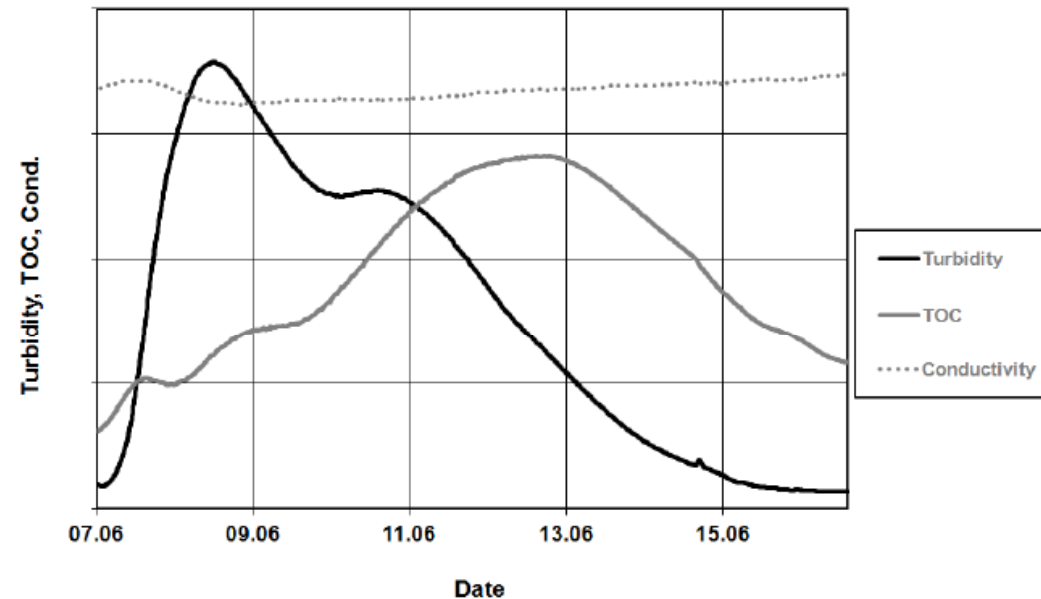
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Benefits: Organics and Turbidity Monitoring

- The integrated i::scan UV spectrometer tracks the concentration and composition of dissolved organic substances (DOC) as caused by many contamination events. Such events are typically invisible for turbidity sensors.
- UV spectrometry is at the same time extremely sensitive to any water quality changes occurring during “normal” operational activities such as maintenance.
- Turbidity measures the presence and concentrations of particles in the water, which can also indicate operational problems.
- UV spectrometry and turbidity are complimentary because they respond to different kinds of deviations in the water.
- Accomplished in the pipe::scan by several other chemical, physical, and hygienic sensors, a complete picture of water quality in real-time is provided.
- Combined by the self-learning ana::tool event detection software, almost any type of contamination will be detected.

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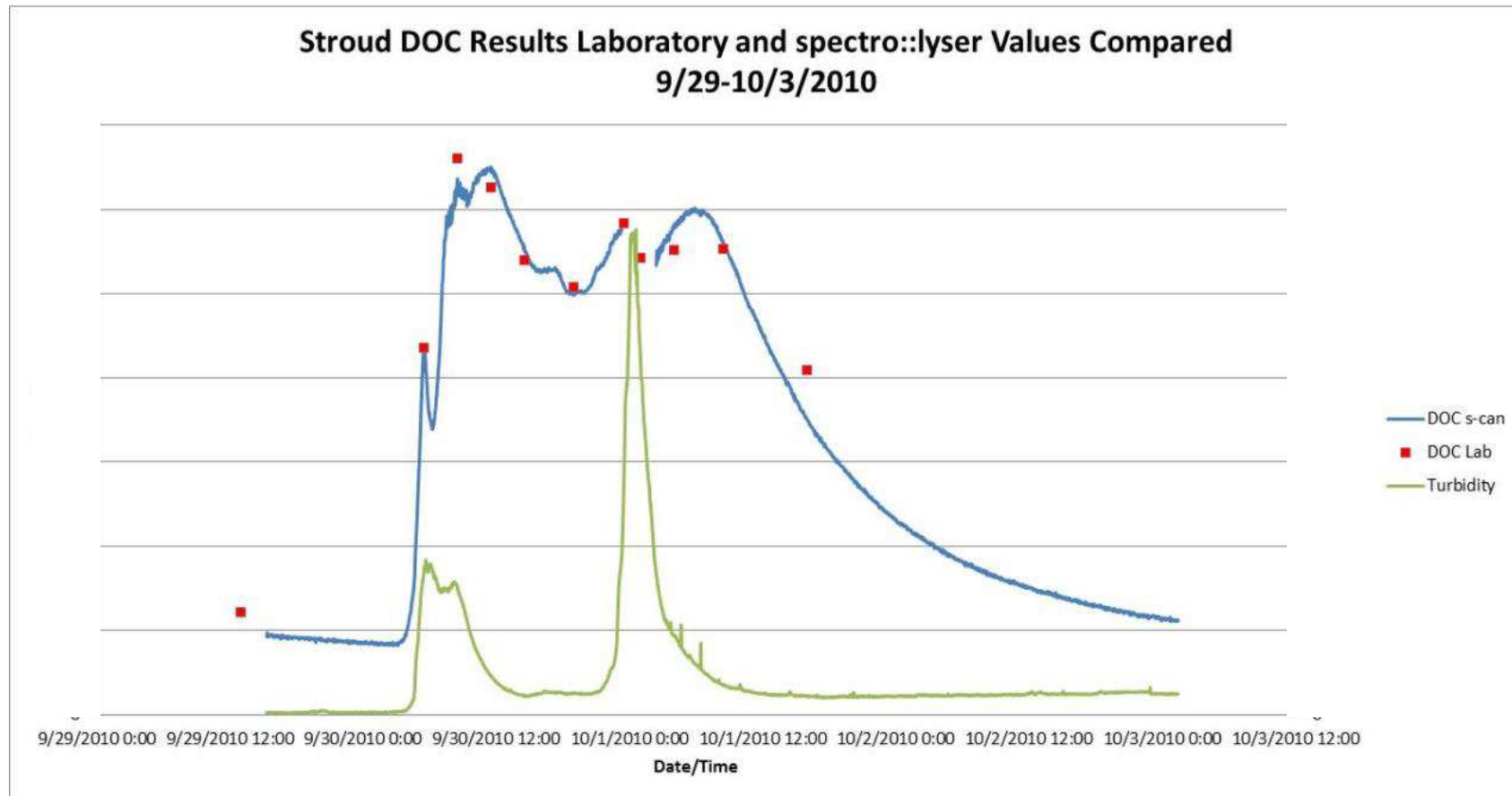
Organics and Turbidity Monitoring



- The diagram shows the relationship between Turbidity and TOC. Elevated Turbidity is followed by elevated TOC during this event.
- No significant change in conductivity was observed. A conductivity sensor alone would have missed the event.
- The combination of all parameters by an intelligent software provides highest possible detection rate at lowest false alarm risk.

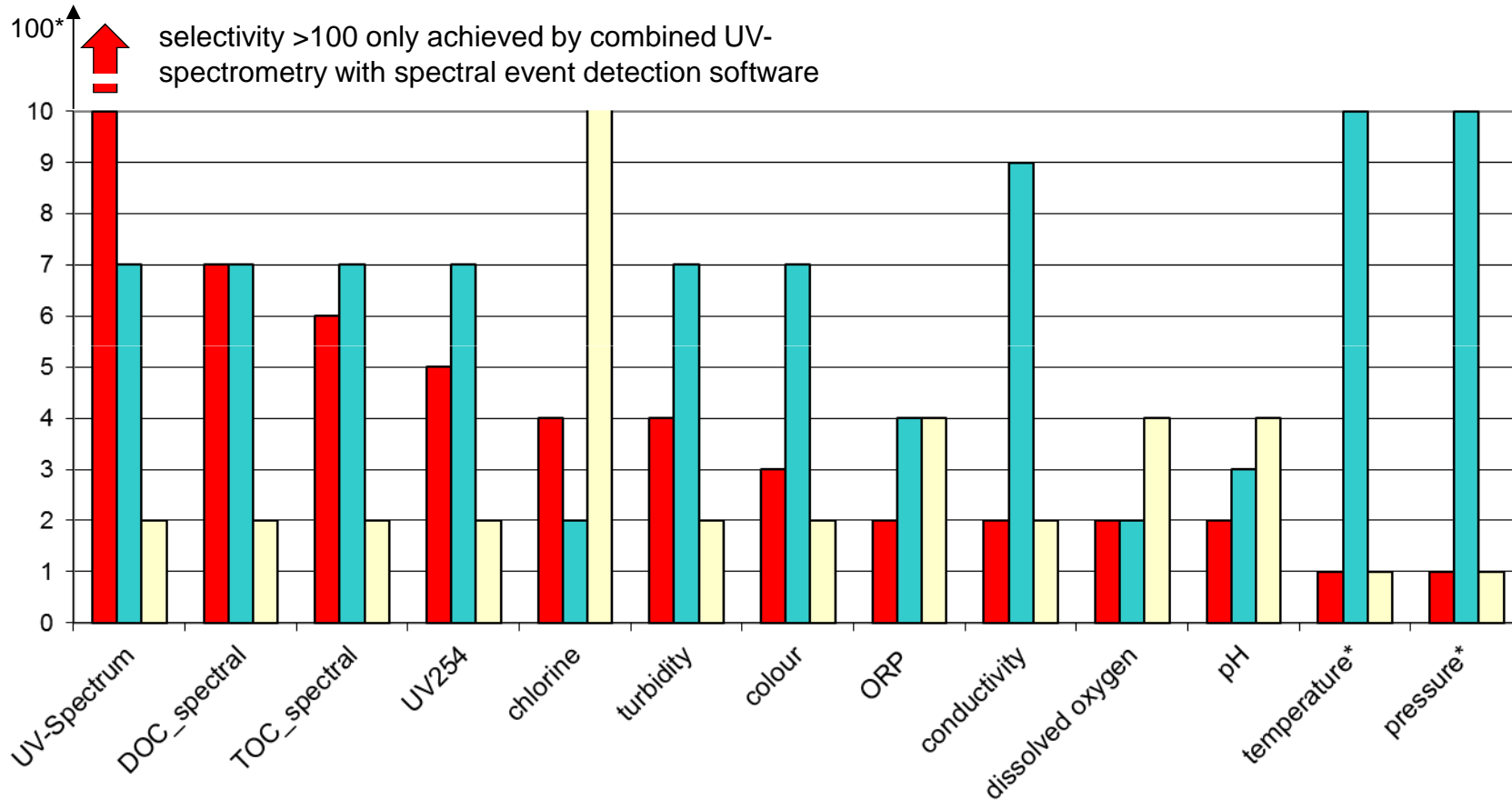
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Turbidity vs. Organics Events



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The choice of parameters to distinguish contamination from naturally fluctuating matrix



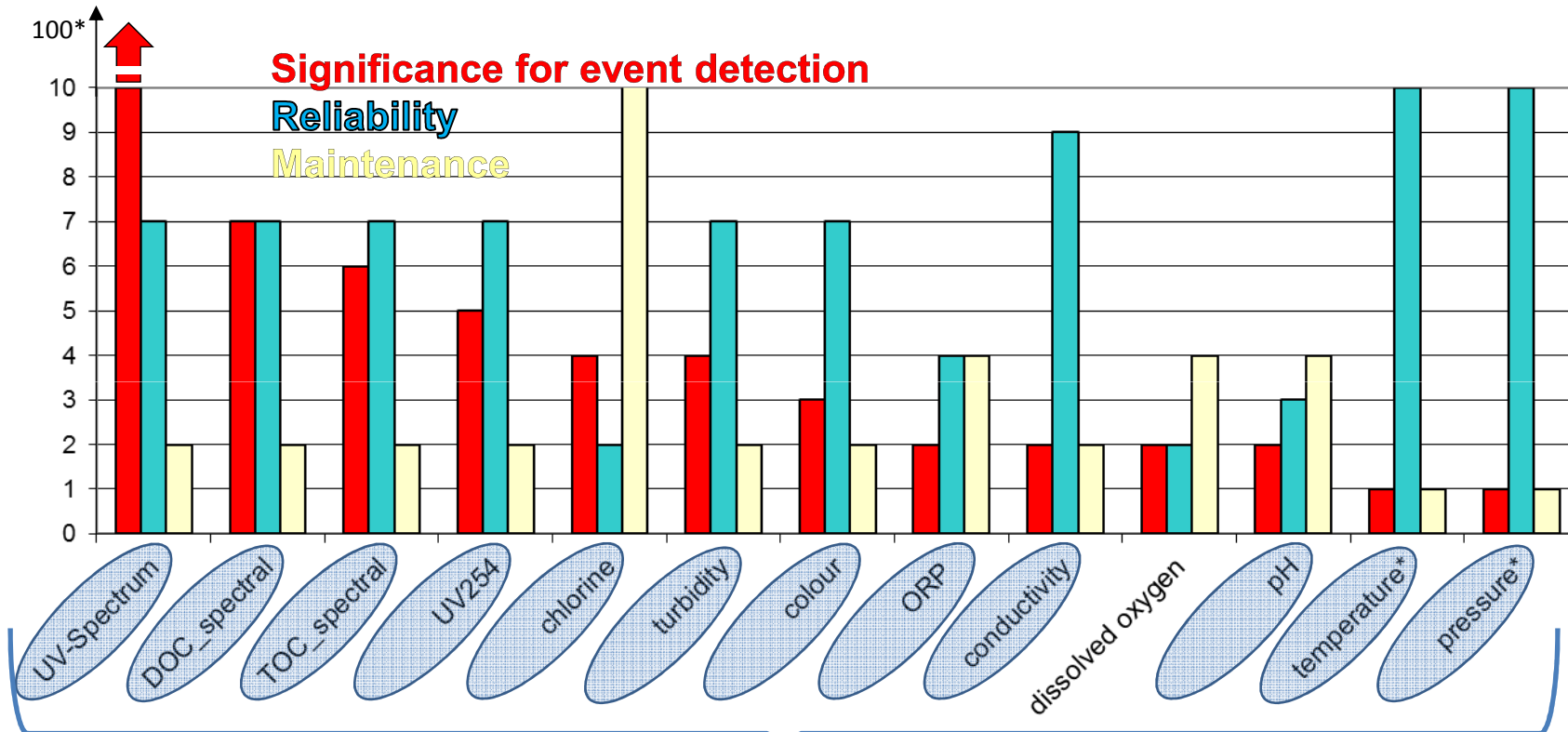
■ selectivity = ability to distinguish contamination from normal fluctuation

■ reliability

■ maintenance (x per yr), according to US-EPA and other Standards

In-pipe parameters available today ...

... all important ones measured by one system – the pipe::scan



available

The pipe::scan system

con::cube

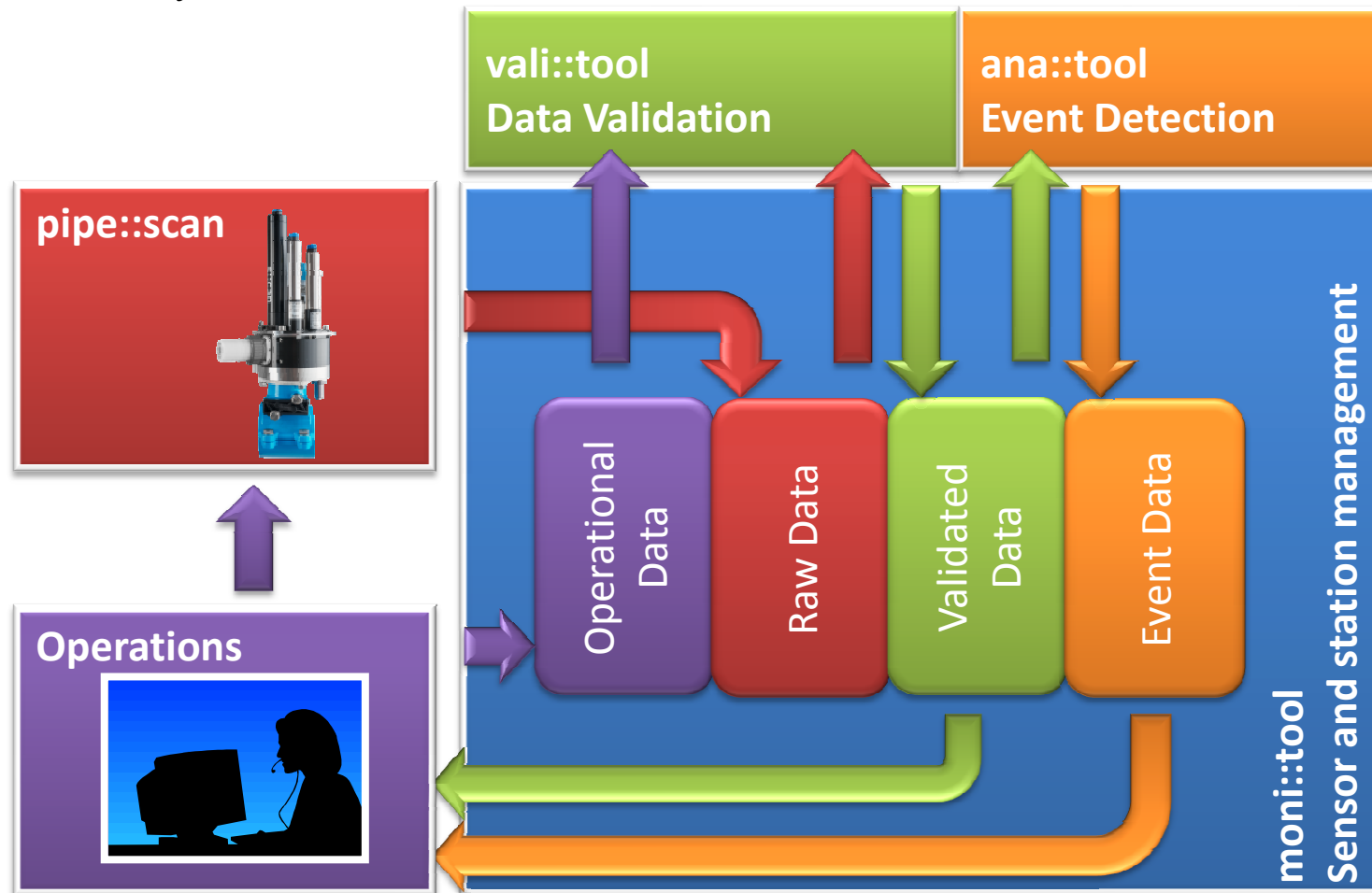
- The con::cube is a compact, powerful and versatile terminal for data acquisition, data logging and station control.
- Integrating the newest processor technology, con::cube's very flexible options for interfacing to sensors, SCADA or any central database system make it perfect for remote monitoring.
- Due to its low power consumption, this terminal fits the requirements for operation in decentralized installation sites.



The pipe::scan system

moni::tool, vali::tool and ana::tool

- Extremely reliable Software for Online Validation and Event Detection



The pipe::scan system

Event Detection Module - Pattern Alarm



- Monitors correlations between inputs
 - Select up to 256 inputs:
 - single parameters (such as pH, EC, chlorine, pressure, FTU, organics, etc)
- Monitors normal range of inputs
 - Any deviation from regular pattern / normal conditions will create an alarm (after initial training)
- Depending on the parameter license many different pattern alarms can be created.

- More powerful than simple threshold alarm:
 - detects small deviations that are not visible to single parameter alarm systems
 - improve based on feedback given to the system
 - adapt to normal fluctuations

The pipe::scan

Drinking water certificates for i::scan and pipe::scan block

- ACS (France)
- DVGW W270 (Germany/Austria)
- KTW for i::scan (Germany/Austria)



Scan Messtechnik
Brigittegasse 22-24
AT – 1200 Wien

Test Certificate
based on EN 16421:2015 method 2
„Influence of materials on water for human consumption –
Enhancement of microbial growth (EMO)”

Producer: Celanese Service Germany GmbH, DE – 65643 Sulzbach
Product(s): Test plate
Material: POM i::scan
Type of test: EN 16421:2015 method 2

According to OFI test report No. 1702633 / 2787 / 1H from 2018-06-28 the above men-
tioned material was tested according to EN 16421:2015 method 2.

Based on these test results and with due regard to the requirements given in the tech-
nical rule of DVGW worksheet W 270:2007, the material:

“POM i::scan”

is suitable for direct contact with drinking water with respect to microbial growth when
used as small-scale seals – on condition of professional processing with respect to its
application.

The validity of this test certificate ends with 2023-06-06 – this under the presumption
that no changes in the production or manufacturing process or the basic material are
made, with the exception of routine adjustments in case of changes in the relevant
legislations and/or normative regulations, which require a new test on the product, this
test certificate loses its validity.

Vienne, 2018-06-28


Christof Winer, BSc
Quality Manager / in charge
Materials in contact with drinking water
OFI

1111 Wien, Rosenstraße 16 | 8207 Eggenstein, Postfach 1036 20 | 20119 Berlin, Schillerstraße 10
1230 Wien, Reindl-Weg 100 | 8001 Kempten, Postfach 10 10 | 61614 Frankfurt, Postfach 10 10 | 10115 Berlin, Postfach 10 10

CARSO - LABORATOIRE SANTÉ ENVIRONNEMENT HYGIÈNE DE LYON
Laboratoire Agréé pour les analyses d'eaux par le Ministère de la Santé

Laboratoire habilité par le Ministère chargé de la santé en application de l'article R° 1321-52 du code de la santé publique

ATTESTATION DE CONFORMITE SANITAIRE
Certificat de conformité sanitaire

Conformément à l'arrêté du 29 mai 1997 modifié et à la circulaire du Ministère de la Santé
Direction Générale de la Santé DGS/SD7A N° 571 du 26 Novembre 2002

Coordonnées du demandeur d'ACS / Contact details of the ACS owner :

SCAN MESSTECHNIK Ges.m.b.H.
Brigittegasse 22-24
1200 WIEN
Autriche

Nom de l'accessoire représentatif / Reference of the representative accessory :
Sonde de mesures spectrophotométriques / Spectrophotometer probe i::scan Y01-1-d-000 / 075

N° de dossier attribué par le laboratoire habilité / File reference : 17 ACC LY 781

Date de réalisation des essais d'urta selon la norme XP P41-280 : du 19 Décembre 2017 au 03 Février 2018.
Teste date (according to the standard XP P-41-280): from December 19, 2017 to February 03, 2018.
Commentaires / Comments : les résultats des essais sont conformes aux exigences de la circulaire DGS/SD7A N°571 du 26 Novembre 2002. The results are in accordance with the requirements of the circular DGS/SD7A N°571 dated November 26, 2002

Famille d'accessoires couverte par l'ACS / Accessories' family covered by this certificate :
Sondes de mesures spectrophotométriques / Spectrophotometer probes i::scan

Référence / Reference (1 référence) :
i::scan 35mm -000 (plug version)

Attestation délivrée par / Certificate issued by : Christèle AULOGELLE
Responsable MCDE
CARSO - L.S.E.M.L. 

Date de délivrance / Date of issue : 07 Février 2018
Date d'expiration / Expiry date : 07 Février 2023

Commentaires / Comments : Mise à jour de l'ACS par simplification des désignations. Cette ACS conserve donc la même date d'expiration que celle émise le 07 Février 2018 / This ACS is an update of the ACS issued on February 7, 2018 (simplification for the designations). Consequently, its expiry date remains the same.

F_MCO006 15082014 MLN
Scalable de mesure spectrophotométrique à 2.283.022.300 - 825 L (en 4.40.147.147) - 00007.010.047.10100007 - 400.743.8. 50° PNA - 00.82.440.540.513
Séjour Social - 4, avenue Jean Moulin - CS 30222 - F- 69403 VILLENEUVE-sur-Iller - Tél. : (03) 84 72 76 18 18 - Fax : (03) 84 72 72 12 11



Scan Messtechnik
Brigittegasse 22-24
AT – 1200 Wien

Test Certificate
based on KTW Guideline
„Guideline for Hygienic Assessment of Organic Materials in Contact with Drinking Water”
(Issue 2016-03-07)


Manufacturer: Scan Messtechnik, AT – 1200 Wien
Product(s): water quality measuring device “i::scan”
Material: POM i::scan
Test: products in direct contact with drinking water

The tested samples fulfil according to OFI test report 1702633 / 2700 / 1H dated 2018-06-14 the requirements given by the KTW guideline (Issue 2016-03-07) for the following temperature and application areas.

Application - category	Cold water (5° & 10 °C)	Warm water (50 & 60 °C)	Hot water (80 & 90 °C)
Pipes with DN < 80 mm (domestic installation)	---	---	---
Pipes with 80mm < DN < 300mm (supply pipes)	---	---	---
Pipes with DN > 300mm (main pipes)	---	---	---
Fittings (domestic installation)	fulfilled	---	---
Fittings (supply pipes)	fulfilled	---	---
Fittings (main pipes)	fulfilled	---	---
Seals (domestic installation)	---	---	---
Seals (supply pipes)	---	---	---
Seals (main pipes)	---	---	---
Tanks in domestic installations including repair systems	---	---	---
Tanks outside domestic installations including repair systems	---	---	---

The validity of this test certificate ends with 2023-06-13 – this under the presumption that no changes in the production or manufacturing process or the basic material are made, with the exception of routine adjustments in case of changes in the relevant legislations and/or normative regulations, which require a new test on the product, this test certificate loses its validity.

Vienne, 2018-06-14

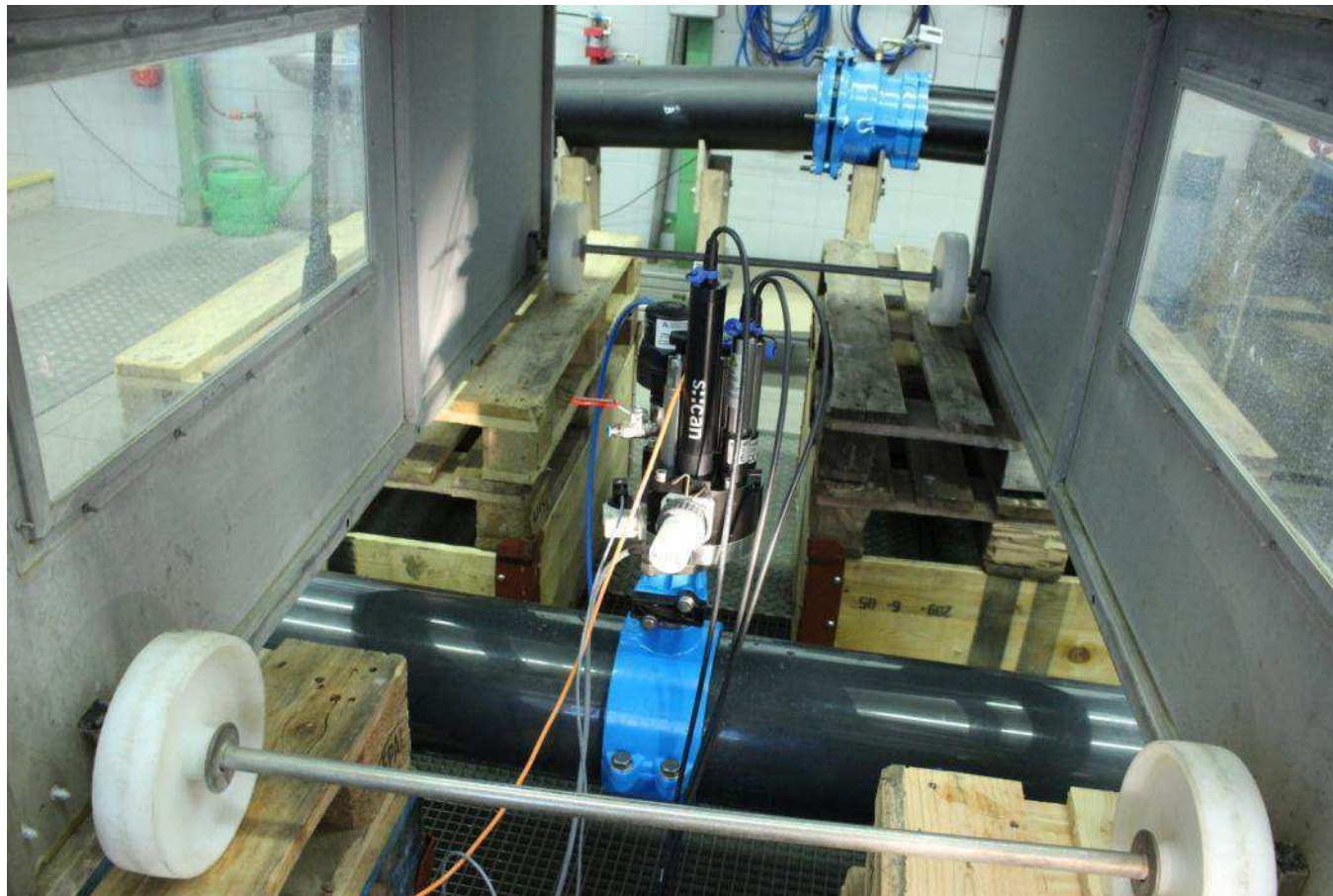

Christof Winer
Quality Manager
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The pipe::scan

External static pressure test

- Up to 32 bar



The pipe::scan Long term field test

- La Défense, Paris, France



The pipe::scan

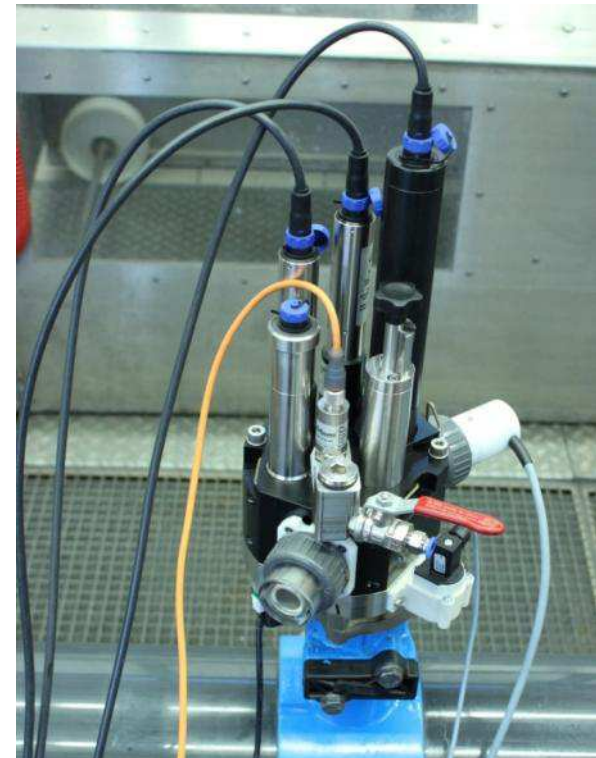
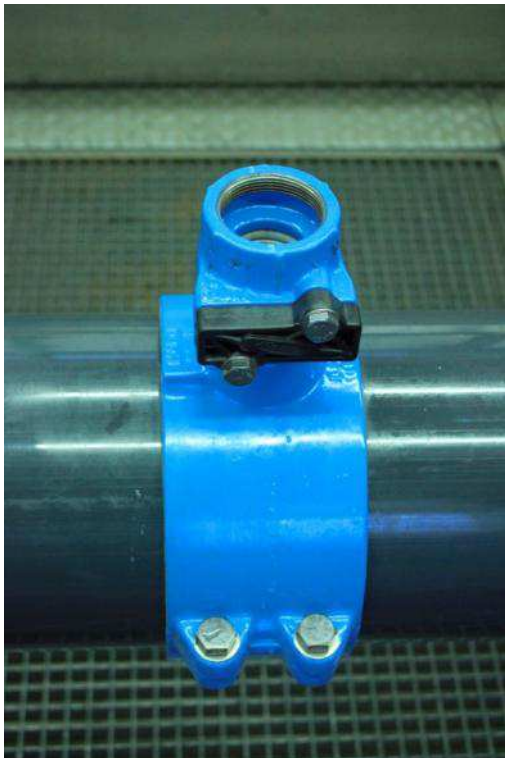
Long term field test

- Barcelona, Spain



The pipe::scan

Installation - Sequence



The pipe::scan... ... leads to Happy customers

