

# Overflowing with data? No time to analyse?

## DETECTRONIC DATA SCREENING

The difference between successful,  
early intervention and network failure

Water Utilities who have invested in Detectronic Data Screening are now extracting maximum value from their Sewerage Network Flow and Level Monitors

**MONITOR, SCREEN, LEARN, ACT**



# YOU HAVE INVESTED IN LEVEL AND FLOW MONITORS, YOU HAVE DATA NOW IT'S TIME TO WORK WITH DETELECTRONIC TO ENSURE THAT YOU MAXIMISE THE BENEFITS

## MULTI-SENSOR FLOW MONITORS

Detectronic MSFM Flow and Level Monitoring installations compare very favourably in the market place because they reliably deliver quality data, generating very high levels of confidence.

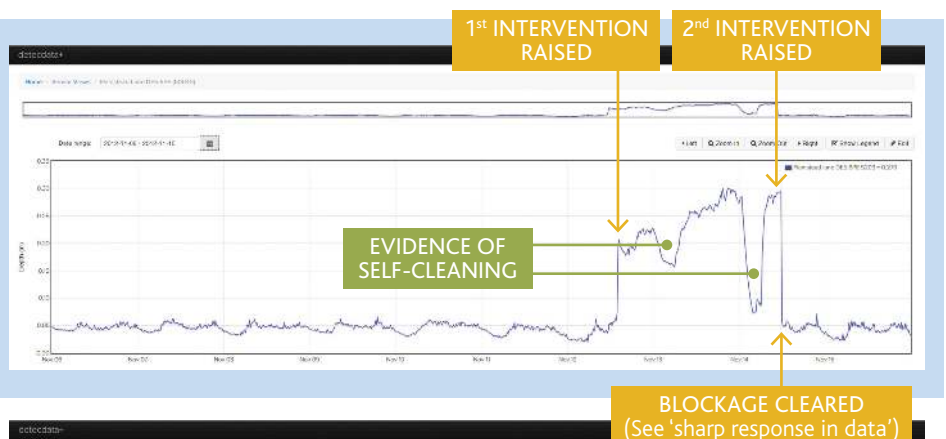
### DATA-FILTERING

To get most out of your network monitoring programme, our Data Technicians will develop normalised data profiles for all monitored sites and develop (site by site) predictive criteria for early preventative intervention.

Detectronic systems are under continuous development. Profile analysis can be further used to develop simple algorithms which can provide an automated initial data filter, the results of which trigger a more rigorous secondary review similar to the processes in Detectronic's current manual Data Screening programme.

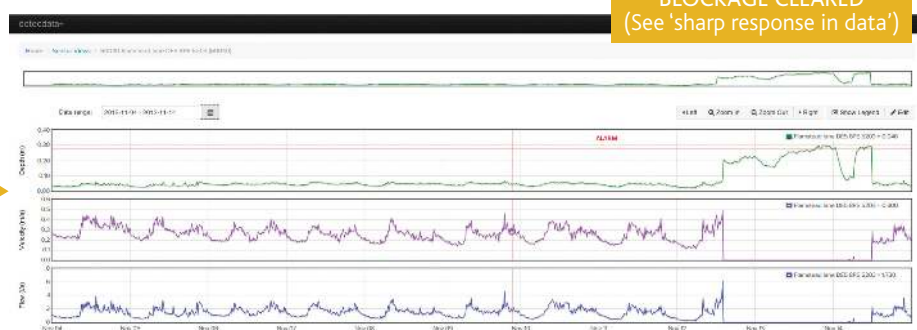
Inclusion of such automated filtering, allied to a statistically random check of sites will lead to greater efficiencies in the screening process and will build increasing levels of confidence in the data delivered and intervention reports generated.

## UNDERSTANDING THE DATA TIMELINE



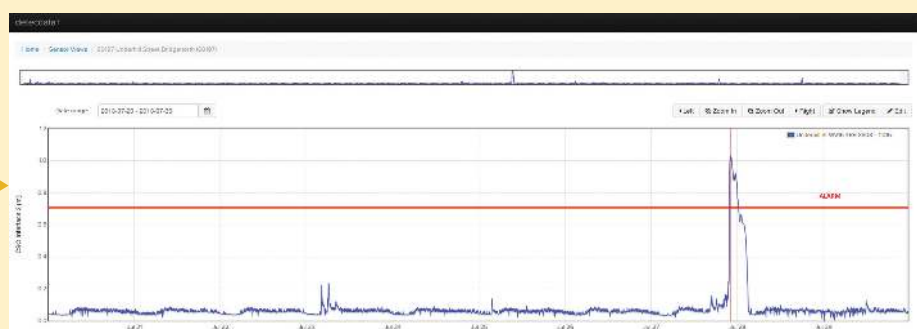
## ATEX MSFM MULTI SENSOR FLOW MONITOR S2

Trends in data sets can be compared quickly using the powerful Detectronic DD+ graphing engine and software tools.



## ATEX MSFM LITE - ULTRASONIC LEVEL MONITOR

Detectronic tailors the alarm protocols for each individual site. This means that you will only be alerted once the appropriate responses and decisions have been made by the system. Therefore you only will be responding to true alarms, based on the agreed alarm criteria.





**DETECTRONIC**

FLOW MEASUREMENT AND DATA DELIVERY

## MAXIMISE THE VALUE FROM YOUR MONITORING ASSETS

### MONITORING SUCCESS

Detectronic knows that monitoring success extends beyond the supply, installation and commissioning of equipment. The extensive support service it provides to its clients includes:

- Ongoing site based maintenance
- Technical support
- Data screening
- Data analysis and interpretation

We have all the resources you need to assure success!

### DETECTRONIC DATA SCREENING

A system flow chart outlining the Detectronic Data Screening process is shown overleaf.

The Detectronic system provides a sophisticated filtering process and gives you everything you need to predict, intervene and prevent pollutions.

### 100% DATA DELIVERY

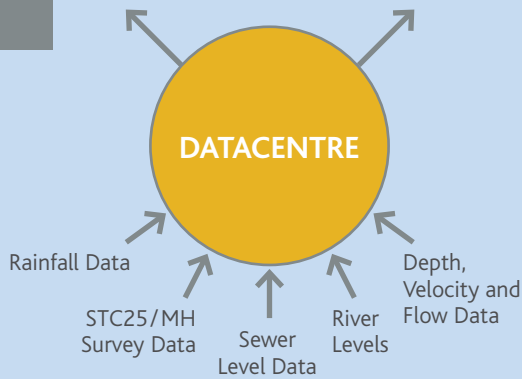
In addition, Data Screening by Detectronic generates routine maintenance work schedules which ensure consistently high levels of reliable data.

### DETECTRONIC MONITORING CONSIDERATIONS TABLE

OBSERVATION	PRIMARY FACTOR	SECONDARY FACTOR	TERTIARY FACTOR	OTHER FACTORS
Alarms	High level	Spill exceeded	Dry weather	Fall or loss of velocity
	Low battery voltage		Wet weather	Other local sites in alarm status
Increasing Depth	Velocity remains at normal levels	Past history of observations	Antecedent conditions	
	Velocity lost or reduced	Proximity to river or PS	Past history of observations	Antecedent conditions
	Depth only data	Proximity to river or PS	Past history of observations	Antecedent conditions
Decreasing Depth (includes negative depths)	Past history of observations	Antecedent conditions	Maintenance history	
Change in Profile	Past history of observations	Antecedent conditions	Maintenance history	
Loss of Comms	Past history of observations	Antecedent conditions	Maintenance history	History of car parked over chamber or other temporary obstruction
Overdue Maintenance Visit	Maintenance history			

**SCHEDULED AND REACTIVE MAINTENANCE**

Detectronic Site Crews



**CLIENT REPORTS**

- Interventions
- COSC - Pollution
- Hydraulic Performance
- Non-communicating
- Maintenance (Cleaning)
- Current Installs
- IDF Return Periods
- Data Quality
- Design Criteria

A dedicated team of data analysts at the Detectronic Data Centre produce client reports and work instructions by carefully screening the data that comes in from the sources shown on the illustration.

**DETECTRONIC DATACENTRE**

**WHAT THE DATA IS TELLING YOU**

Flow and Level Monitors generate alarms for high (or low) levels, normally associated with spill levels or other operationally monitored parameters. **Not all alarms require an action**, particularly those caused by rainfall events where the monitored CSO performs within its designed criteria.

Increasingly, Detectronic is monitoring pass forward flows to treatment and identifying if a CSO is performing to its original design criteria and agreed consent.

Current alarm settings are generally associated with a failure condition and cannot in themselves facilitate any intervention that would prevent flooding and/or pollution.

The Detectronic data screening process:

- Stimulates early customer interventions which prevent incidents from occurring
- Eliminates alarms which require no further action
- Filters false alarms caused either by temporarily abnormal hydraulic conditions (or spurious data)
- Schedules Detectronic site visits to provide for robust data and customer confidence
- Maintains high quality for data delivered - and system confidence
- Develops an understanding of each site's performance and trends

Alarm Strategy - left column is the alarm trigger

**DETECDATA PRO - ALARM STRATEGY**

Maximum	Value goes above predefined set point
Minimum	Value goes below predefined set point
Out of Range	Value goes above the Maximum or below the Minimum
No Data	Value seen for a predefined time
Max/Min Average Over Time	Average value over 'T' minutes goes above/below predefined value
Max/Min Sum Over Time	Sum of all values over 'T' minutes goes above/below predefined value
New Data	New Value enters database
Discrepancy	Average over 'T' minutes between sensor A and the evaluation of sensor B with a delay of 'T' minutes of sensor B is greater than X

**HOW IT WORKS**

Observations are recorded into the Data Centre database so that trends can be identified.

The Detectronic System notes typical flow conditions, so that variations in normal flow can be readily identified.

For example; sites prone to silt movement and those surcharged because of high river levels or through the operation (or failure) of associated pumping stations.

The Data Technicians screen groups of sites on a changing weekly rota so they become familiar with all sites, learning their 'normal' patterns and trends. This prevents individual bias distorting their observations.

At the next stage, those observations which may result in a report and/or action, are subject to further peer review to identify possible contributing factors.

These findings may lead to one of the following three outcomes:

**Maintenance Intervention**

Where screening has identified a possible instrumentation issue, a Detectronic Service Team will be despatched to visit the site and investigate/remediate.

**Strategic Intervention**

Where screening has identified a trend-change in sewer hydraulics but the change is not significant to warrant an immediate visit, a cautionary visit will be scheduled with the client.

**Immediate Intervention**

Where screening has identified a pollution is imminent or current an immediate intervention will be communicated to the Client System using agreed protocols.

**ALARMS - RULES APPLIED AND EXCEPTION REPORTING**

- Wet Day
- River Level High
- Snow Melt (Delayed Run Off)
- Change in base Hydraulic Profile (PS Pump rate differences)
- Storm Event Before/After (Infiltration etc)
- Suspected instrumentation issue
- Dry Day
- Logic applied: If/Or/And



Alarm Rules use a simple traffic light system for identifying priorities: Green = False Red = True

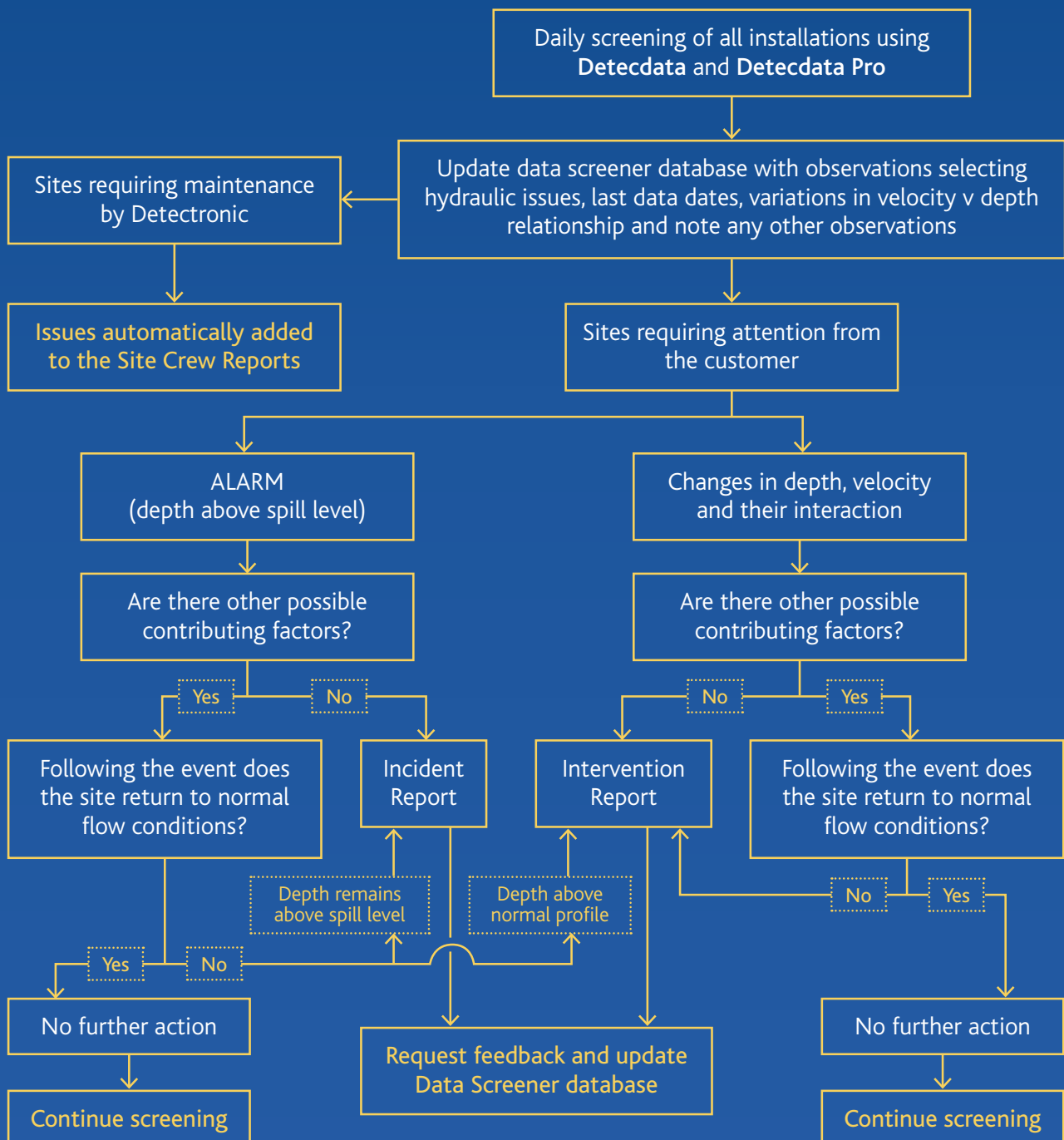


DETECTRONIC

FLOW MEASUREMENT AND DATA DELIVERY

# MAXIMISE THE VALUE FROM YOUR DETECTRONIC DATACENTRE NOW!

## DETECTRONIC DATA SCREENING PROCESS FLOW CHART



# MAXIMISE THE VALUE OF YOUR DATA, USE THE DETECTRONIC DATA CENTRE!

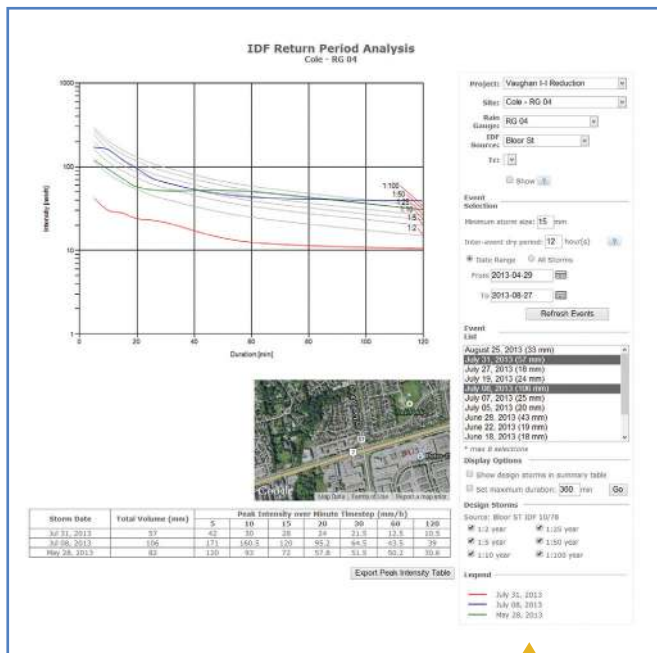
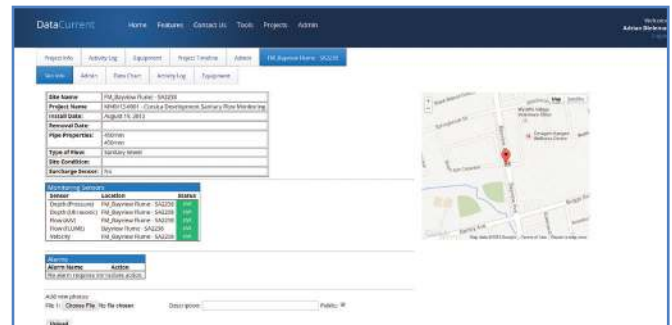
## PREDICTING PROBLEMS AROUND THE GLOBE

Detectronic Flow and Level Monitors incorporate state of the art communications technology to ensure reliable data delivery worldwide. The Detectronic Data Centre will screen your data whatever your time-zone.

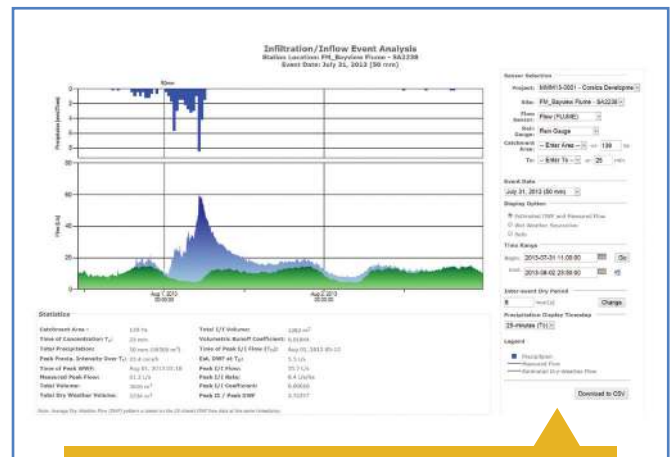
Our systems are designed to keep sewerage engineers fully apprised of sewer network performance, presenting a clear picture of prevailing conditions.

Detectronic Monitoring and Screening services provide Network Managers and Field Engineers with tools to make their lives easier and their networks more efficient.

## DETECTRONIC ONLINE TOOLS



IDF Storm Return Periods can be quickly determined to assess a particular storm event and confirm whether or not the catchment has performed to its original design criteria.



Infiltration and Inflow analysis reports can be produced to estimate the impacts on sewer capacity.

## ENHANCED INFORMATION GATHERING

Your Detectronic DataCentre puts a wealth of real-time data at your fingertips. You can enhance the information you have access to by subscribing to this additional online facility today. Please call **01282 449 124** or email [info@detectronic.org](mailto:info@detectronic.org) for more information.

Detectronic systems, products and services are certified and audited to the following standards:



For more information, or any questions relating to the Detectronic software operation and training in general, please contact your Detectronic Technical Helpline.

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