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# Enhancing Water Operations through Alarm Management

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# Alarm Management in the Digital Age

*"ProcessVue is reframing the way we think about alarm management, no long just a necessary cost to be safe and meet compliance requirements, it is a route to optimisation, a downtime killer and a window into operations data and continuous improvement potential,"*

**Lieven Dubois**, Qualified Instructor and technical contributor for the ISA - Instrumentation, Systems, and Automation Society.

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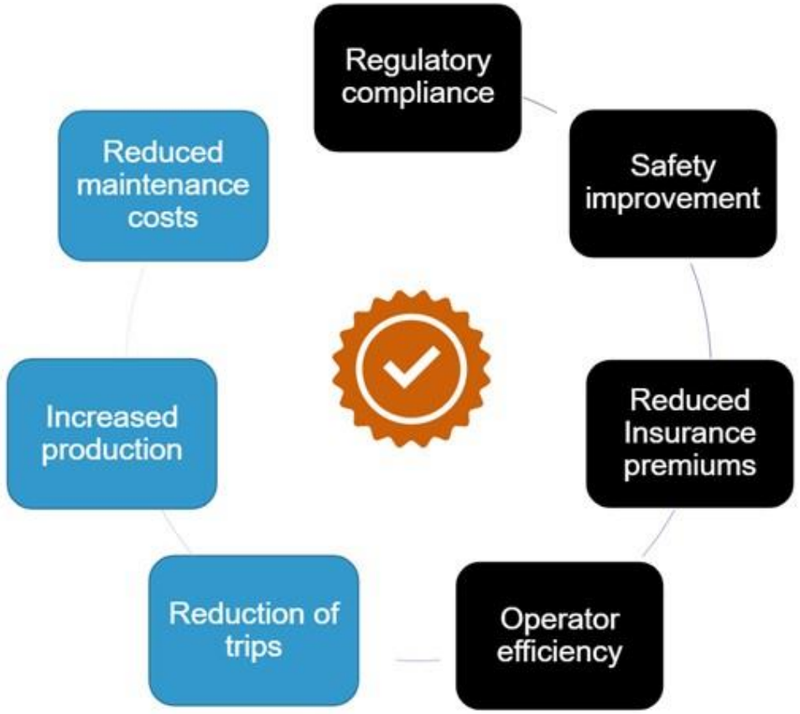
# Perception shift




**Traditional** – Process safety, regulation & compliance

**Emerging** – Wider digitalisation process, reduce downtime, cost saving, efficiency

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# Industry Background

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# A generalisation...

## The Increasing Demand For Water

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# Water and Wastewater Digitalisation strategy

- Water companies that implement effective alarm management illuminate additional optimisation opportunities.

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# User Story: The Water Company

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# User Story: Background & Challenges

## The Company's Alarm Management Challenges

- High alarm loads.
- Loss of production/water/processing.
- Frequent engineering callouts
- Environmental breaches.
- Monetary fines.

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# User Story: Current Alarm Management Practices

No Alarm Management Activities

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# User Story: Assessing the Situation

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# User Story: Alarm Management Benchmark Assessment

- The benchmark assessment identified a number of problems.

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# User Story: Assessment

Common business problems

- Inconsistent priorities
- Inconsistent terminology
- Alarms not aligned to business priorities
- Different departments and staff responsible
- Culture

| Issue | Cause | Consequences |
|---|---|---|
| High Alarm Load | ■ Weather events<br>■ Increased automation<br>■ Increased digitalisation<br>■ Compliance requirements for reporting or monitoring | ■ Operators accept alarms without review<br>■ Poor decision making in response to alarms<br>■ Critical/High priority alarms may be masked<br>■ Failures and fines |
| Alarm Floods | ■ Weather events<br>■ Poor alarm rationalisation<br>■ Inadequate alarm philosophy | ■ Distraction causing delayed response<br>■ Incorrect responses to the incidents |
| Nuisance Alarms | ■ Poor alarm rationalisation<br>■ Inadequate alarm philosophy | ■ Alarms regularly 'defeated'<br>■ Alarms not acknowledged<br>■ Alarm system becomes ignored |
| Operator Cognitive Overload | ■ Too many, poorly rationalised alarms<br>■ Insufficient staffing (or skills deficit)<br>■ Inadequate alarm philosophy | ■ Operators with reduced situational awareness<br>■ Mistakes causing failures, quality issues, reputation loss, fines etc.<br>■ Poor staff retention and time lost to sickness/stress related illness |

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# User Story: The Improvement Strategy

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# User Story: Improvement Process

- The first step was to review the company's existing alarm philosophy document.

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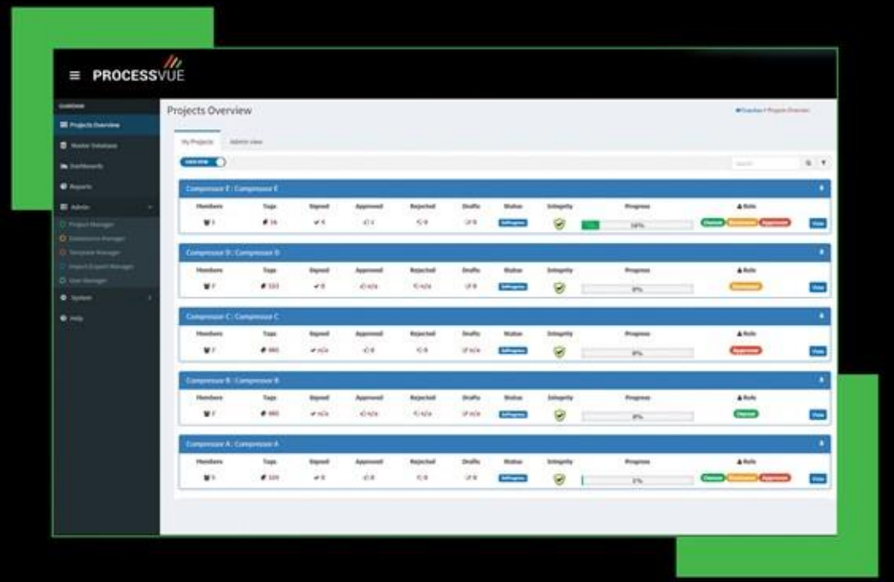
# PROCESSVUE GUARDIAN

ProcessVue Guardian integrates a Master Alarm Database and Management of Change functionality into a single application, facilitating alarm rationalisation and documentation in a fully collaborative work environment.

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PROCESSVUE ANALYSER

PROCESSVUE GUARDIAN

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# User Story: Improvement Process

- Implemented key information from the amended alarm philosophy document into ProcessVue Guardian.

- This helps ensure:
  - Consistent approach to rationalisation.
  - Required information on hand.
  - Standardised terminology.

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# User Story: Improvement Process

- Mentored the company during rationalisation and documentation of their alarm population to better serve operations.

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# User Story: Benefits

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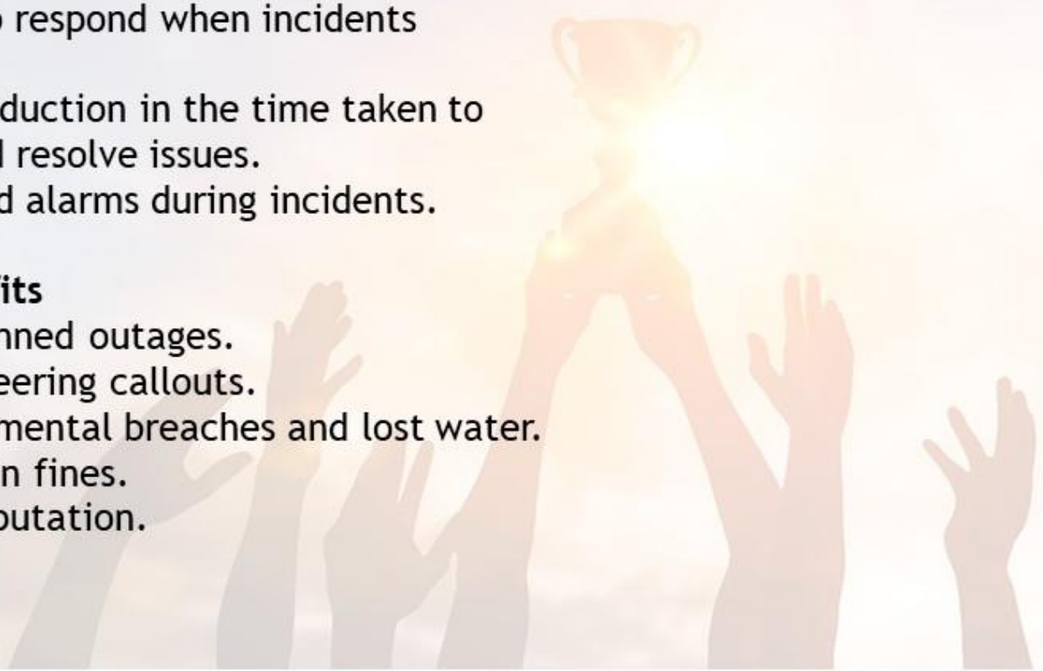
# User Story: Customer Benefits

**Operator Benefits**

- Better visibility of abnormal situations.
- More time to respond when incidents occurred.
- A sizeable reduction in the time taken to diagnose and resolve issues.
- Fewer missed alarms during incidents.

**Business Benefits**

- Fewer unplanned outages.
- Fewer engineering callouts.
- Less environmental breaches and lost water.
- A reduction in fines.
- Improved reputation.



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# Information

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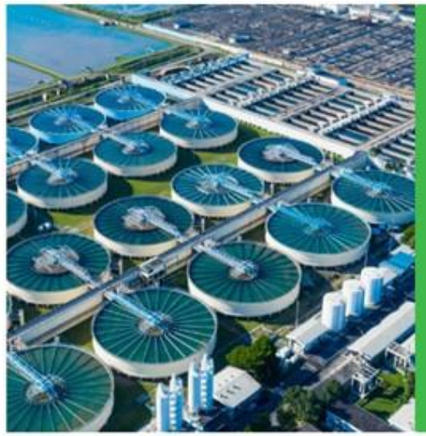
# White paper and summary

We have produced a series of white papers to help you understand alarm management and the benefits it can bring to your business.

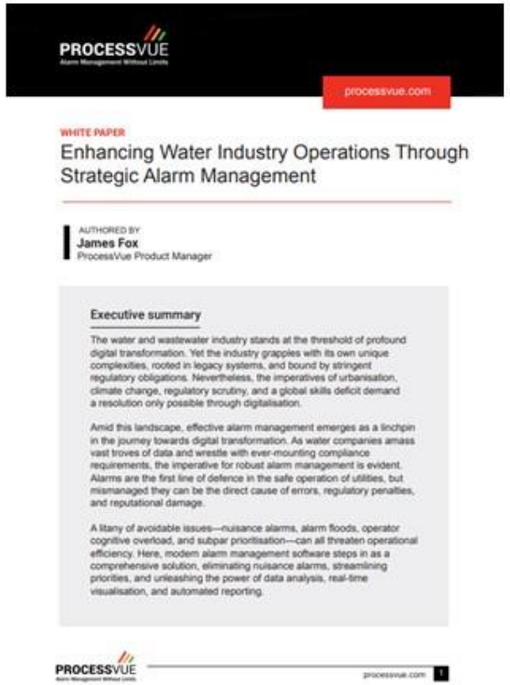


Our latest White Paper

## Enhancing Water Industry Operations Through Strategic Alarm Management

This white paper explores how alarm management steps in as a comprehensive solution for the water industry, eliminating nuisance alarms, streamlining priorities, and unleashing the power of data analysis, real-time visualisation, and automated reporting.

DOWNLOAD PDF



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WHITE PAPER

Enhancing Water Industry Operations Through Strategic Alarm Management

AUTHORED BY
**James Fox**
ProcessVue Product Manager

**Executive summary**

The water and wastewater industry stands at the threshold of profound digital transformation. Yet the industry grapples with its own unique complexities, rooted in legacy systems, and bound by stringent regulatory obligations. Nevertheless, the imperatives of urbanisation, climate change, regulatory scrutiny, and a global skills deficit demand a resolution only possible through digitalisation.

Amid this landscape, effective alarm management emerges as a linchpin in the journey towards digital transformation. As water companies amass vast troves of data and wrestle with ever-mounting compliance requirements, the imperative for robust alarm management is evident. Alarms are the first line of defence in the safe operation of utilities, but mismanaged they can be the direct cause of errors, regulatory penalties, and reputational damage.

A litany of avoidable issues—nuisance alarms, alarm floods, operator cognitive overload, and subpar prioritisation—can all threaten operational efficiency. Here, modern alarm management software steps in as a comprehensive solution, eliminating nuisance alarms, streamlining priorities, and unleashing the power of data analysis, real-time visualisation, and automated reporting.

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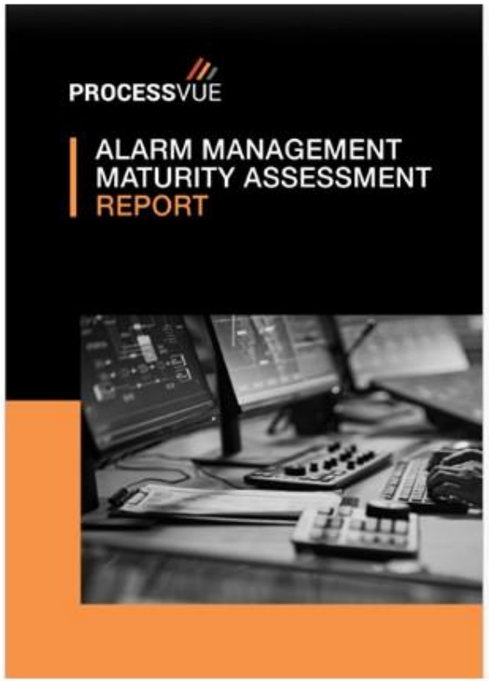
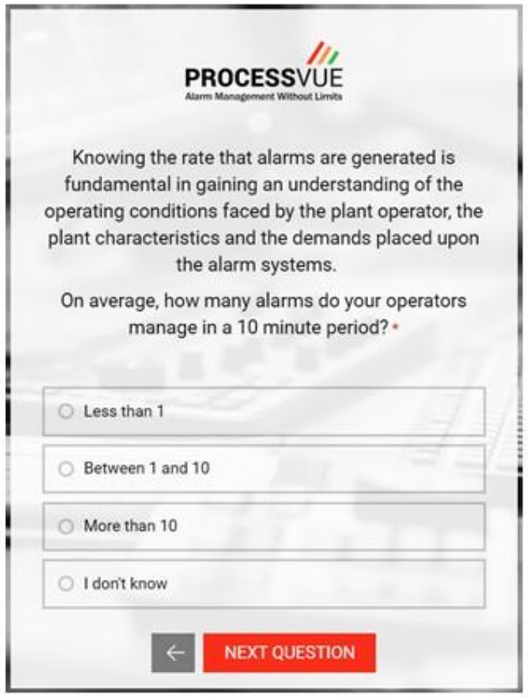
# Struggling to Start? - Alarm Maturity Assessment



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