

# Flex83 | Fault Identification, Prioritization & Resolution

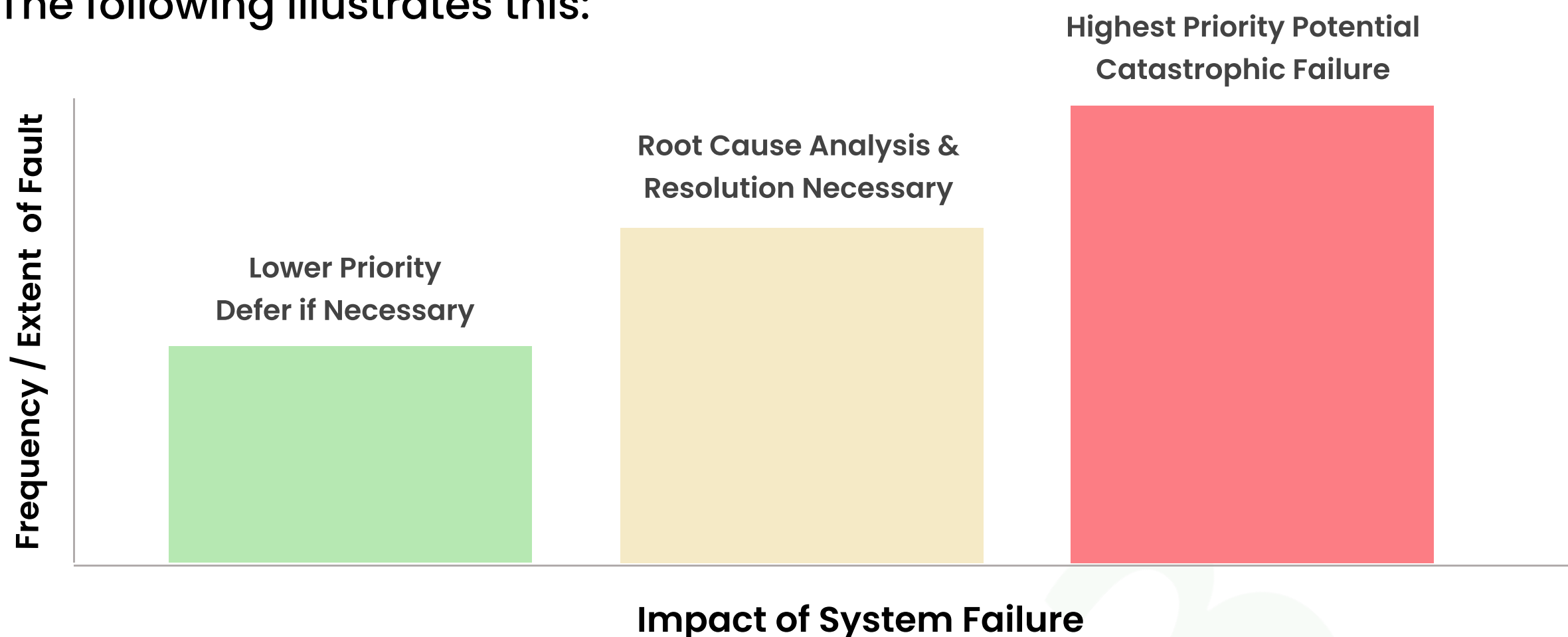
**Click-Through and Low-Code workflows simplify handling of alerts, alarms and fault conditions.**



## Features :

Secure device connectivity, Effective monitoring, Powerful visualization, Creating thresholds

The following illustrates this:



Regardless, to avoid having one's staff processing overwhelming numbers of alerts, alarms, or faults, implementation of programmatic and algorithmic processes are essential to effectively manage IoT automation and fault management. At **IoT83** we have a set of guidelines for this that are supported in the Flex83 alarms & alerts management click-through features & workflows we provide. Our modules, processes and workflows include tracking not only that a fault occurred, but also tracking and analyzing the details of the faults:

- We measure how far above or below the telemetry data set-point for each alarm or alert event to log the "range" or "extent" of the fault condition.
- We measure how long the fault condition lasted as another metric for fault prioritization.
- We also measure how often a given fault occurs as another means of fault prioritization.
- Our tools & workflows also simplify prioritization of a given device, device group, or set of device types because all devices are not assigned to equally critical processes.
- Finally, we allow classification of fault types into groups to allow comparison of fault conditions across devices, device groups, and devices for additional sorting and prioritization.

So, for every device telemetry data being monitored for alarm or fault conditions, a set of meta-data is created that becomes a key element to the effective prioritization, processing, and resolution of alarms, alerts, and faults. And, for every device type, device group, and individual device, we create and analyze meta-data to prioritize, process, and resolve issues associated with that device, device group, or device type. All of this helps users and operators truly understand the potential impact of alerts, alarms and faults and the urgency associated with identifying and resolving root cause.

On a per-device-type, per-device, or per-application basis, users and operators can set a weighting for each of these fault metrics to optimize fault management prioritization and triage. For example, a frequently occurring fault, with a high “out of bounds” reading, a long “duration”, and on a critical device has a higher prioritization than other faults. By recording, storing, and analyzing faults by telemetry data attribute, device, device type, group, as well as other custom tags (which can be set using the AEP tools & workflows), fault management becomes exponentially more effective.



With these tools, users and operators can easily view, sort, prioritize, organize and execute intelligent fault management triage and failure avoidance. And, once an issue is prioritized for resolution, **Flex83** enables users and operators to drill-down into the data to examine the likely causes of the fault with-

- 1) Multi-axis line graphs showing the relevant time-series telemetry data at the time of the fault.
- 2) the ability to move from fault to fault to track common causes.
- 3) the ability to create custom analytics for better insight or fault management, along with multiple other options.



As a coherent system, the Flex83 fault prioritization, analysis and triage approach dramatically reduces the overwhelming nature of IoT fault management and allows users to triage the most important issues first, and “shelve” the less critical until resources are available to address those issues. In effect users and operators can optimize resolution of the problems that matter most to the limited available operations resources at their disposal.

But there is another important fault management, prioritization, and processing concept that many other IoT fault management systems ignore, which is the concept of state-based alarm triggers and prioritization. To understand the importance of state in fault management, consider the following examples:

- First, imagine that you have a plant that requires heating of liquid pipelines. In moderate weather, the efficiency of operations is far less critical than during extreme cold. So here, the “cold state” drives analytical and automation priority.
- Next, imagine that you have a process where multiple sensor readings are physically & logically linked. For example, the current used by a pump is directly proportional to the flow in the pipeline as well as the percent full of an end reservoir. So, when the reservoir is low, backpressure is low, so current should be low and flow should be high. Here the reservoir
- provides a “state” context for fault management.

The last essential element of alarm, alert, and fault management implementation is the automation & processing of problems, issues and fault events. The **Flex83** platform provides existing templates and workflows for this as well as the tools to create custom solutions depending on your needs

For example, Flex83 enables :

- Automated triggering of SMS, emails, logs or reports on defined “Events”
- Triggering automated Remote Procedure Calls (RPCs) to respond to defined “Events”
- Remote equipment emergency shut off or process bypass procedure automation
- Secure APIs and connectors to interwork with third party systems for ticket management
- Advanced analytics, and ML tools to build preventative maintenance prescriptions



- 1) Smart prioritization of alarm & alert management and prioritization, including state-based analytics and fault prioritization.
- 2) Analytical tools to better understand the causes of system alarms, alerts and faults.
- 3) Intelligent automation of fault handling, implementation of preventative maintenance intelligence is the obvious next step and Flex83 provides the workflows to implement this – more unique & custom solution – as well.

## SUMMARY

**Flex83** Application Enablement Platform modules and workflows greatly simplify how users and operators can transform complex and overwhelming information into streamlined and intelligent processes and automation that has immediate impact to operational efficiency and the business bottom line. Smart IoT implementation protects your industrial assets, streamlines work, increases uptime, and improves worker safety, all with a direct impact on profitability.

Give us a ring at **IoT83** and let us get you started with on the next phase of your IoT journey today! Our AEP simplifies continual enhancements to your processes letting you continually compound the benefits of your IoT deployments – all using intuitive and effective tools and processes – or by leveraging our experienced team to jump-start you in achieving your goals.

**Try Flex83 Now – Experience the Difference**

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