



# Operations+

## Process Optimization

Operations +

*If you're looking for ways to reduce downtime and enhance the performance of operations and assets, GE Power Conversion's simple suite of clever software applications can help. Its flexibility includes 'on-prem' and cloud-based options which help to optimize operations and energy, and enable predictive maintenance and cyber-secure service solutions. GE Power Conversion's digital suite is based on a straightforward, modular range of digital app's, tools and services, connecting data with the right people. Already, more than 430 sites are benefiting from Power Conversion's digital solutions. Each of our three easy-to-navigate modules focuses on a key area of improvement: Operations+, Maintenance+ and Services+ tools and app.*

**Operations+** solutions include Performance, Process and Energy optimization. Operational efficiency, repeatability and safety are enhanced with real-time feedback on operational Key Performance Indicators (KPIs), with advisories for timely and targeted intervention.

**Operations+ Process Optimization** tool brings real-time operational intelligence to help optimize your operations, based on data-driven decisions. By analyzing repeatable equipment movements in your operations, GE's **Operations+ Process Optimization** tool helps streamline benchmarked processes for improved performance. This is done by using gathered data to create Process Autodetect Models to help determine both operational inconsistency and time variances. A key benefit of the **Operations+ Process Optimization** tool is a shared source of information – that delivers the ability to communicate timely, significant information between teams to provide immediate feedback for improvement or troubleshooting.

Any industry process that deploys equipment for repetitive tasks can benefit from the analysis performed by **GE Power Conversion's Operations+ Process Optimization** tool. A breakdown of the discrete steps required for each task is presented on your dashboard, and the tool evaluates variations and identifies opportunities to speed up specific process steps. A prime example occurs on an automotive production line, where our Process Optimization tool can be put to use analyzing distinct operators to improve efficiency through specific training. With your dashboard, you can see the impact of improvements, and dig into variations.

**USE CASE: GE Power Conversion's Operations+ Process Optimization** tool has been helping enhance drilling productivity by evaluating activities that are carried out on the rig main and auxiliary floors, then mapping the process at the activity level. One such activity is 'tripping in', where a section of drill pipe is moved to the well center, connected, then lowered down the well to the seabed. Data from each part of the process can be tracked, timed and viewed

on an operator dashboard. Through equipment analysis, the operator could identify areas for process efficiency improvements, enabling an accessible shift from Drilling-as-an-Art to Drilling-as-a-Science.

### Drilling Process - Challenges

The offshore energy drilling has long been approached as an expertise-driven operation involving a mix of organically evolving processes and gut-feel decisions. Such an approach may be operationally less repeatable or predictable as it might be, and lead to performance variance across drilling operations. Today, with fluctuating industry energy prices and day rates, and increased focus on cost containment, identifying opportunities for operational efficiencies is really important.

### An Industry Ripe for Efficiency Improvements

Despite a sustained downcycle and operating in an energy sector in transition, the good news is there are opportunities for efficiencies - new business models and innovative technologies that can unlock change. Digital technologies have been proven to help improve cost performance in many high tech sectors, redefining operational excellence.

### Drilling as a Science

**GE Power Conversion's Operations+ Process Optimization** Drilling Productivity solution enables a shift from Drilling-as-an-Art to Drilling-as-a-Science:

**Identify deviations** - Uses data to detect drilling tasks and highlight deviations from stated process.

**Better situational awareness, clearer, accessible metrics** - highlights inefficiencies on equipment movement.

**Opportunity to compare and improve rig management**, whether onshore or offshore, with potential for rapid implementation.

### Drilling Productivity - Scope

The scope of **Operations+ Process Optimization** for Drilling Productivity spans all activities within the well lifecycle.

- BHA Running
- Tripping In
- Drilling
- Circulating
- Tripping out
- BHA Pulling
- Run Casing and Running Casing on DP
- Wireline
- Slip and Cut
- BOP Pressure Test on Drillships
- Aux. Floor Activities (time-saving)
- Running Riser (BOP) on Drillships
- Pulling Riser (BOP) on Drillships

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# Drilling Productivity

## Insights

For each task, the **Operations+ Process Optimization** tool can offer innovative insights:

- Information on operational deviations and drill-down - Detects process deviations and provides drill-down for trouble-shooting.
- Intelligence on operational anomalies and sources – Automatically detects outliers for some tasks and highlights expected source of the problem for more timely trouble-shooting.
- Rig manager View – Comprehensive view across a fleet of rig.

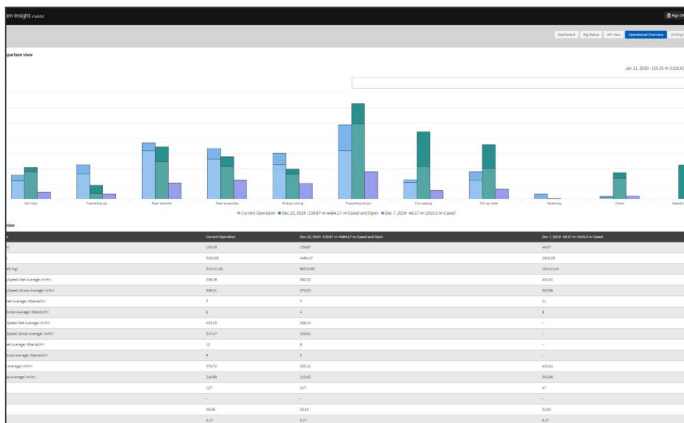
## User Friendly Dashboards

**Operations+ Process Optimization** tool offers drilling process insights via stakeholder dashboard screen 'views' to enable better decisions. The views can be aligned to fit with stakeholders' existing decision-making processes for seamless adoption:

- **KPI View** – Autodetected processes and related KPIs (Slip-to-Slip, Stand drill time, etc).
- **Operations View** – Rig performance metrics and variance (process to process). Details on process, subprocesses and relevant signal trends.
- **Dashboard/Canvas** – Analytics derived from process KPIs by time, well, section and/or crew.

## Road to Drilling as a Science

- Derives efficiencies and quantifies performance metrics
- Enables targets to be defined and tracked for process consistency and predictability



**Operations View** – Performance Metrics and Variance



**Real-Time KPI View** - View and Drill Down



**Fleet View** – Comprehensive Rig View (Process, Equipment, Safety, Crew)

## Conceived for Operators

GE Power Conversion's Digital Suite is built on GE's industry wide expertise in IT, OT (operating technology) and IIoT (the industrial internet of things). Above all we believe it should be intuitive, visual and customized for your operational needs. Featuring simple, clear interfaces it provides organizations of all sizes with access to GE's powerful data analytics, made accessible and usable by providing better intel and situational awareness. Genuine performance improvements are within reach, to help your organization work with increased efficiency and profitability.

To find out more:  
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