





# Span the distance

What connectivity means for drilling

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# Separation in remote locations

- Drilling rigs can be spread out over a very long distance
- Troubleshooting centrifuges, optimizing processes, monitoring bearing life can be a challenge over long distances

## Industry trend

- Remote monitoring/'Internet of Things' is being offered now by a number of companies
- There is clearly a technology trend



Bringing you closer



# Benefits of remote connectivity

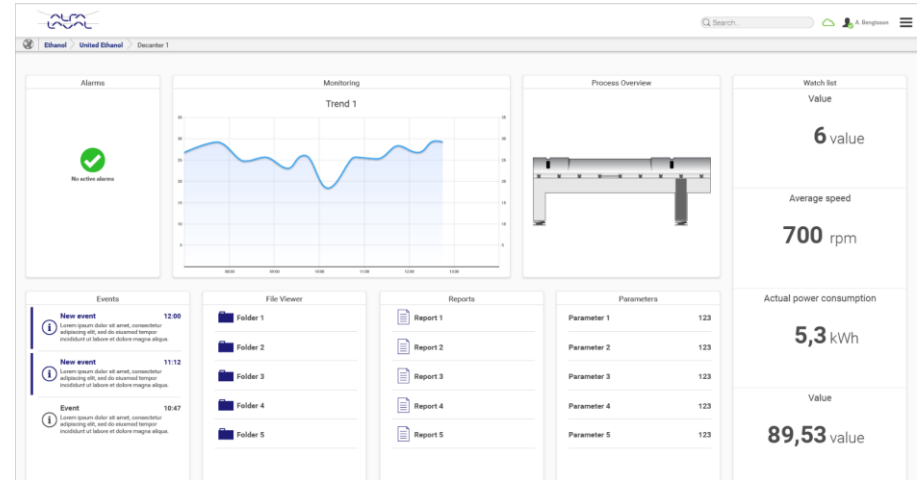
Alfa Laval's remote monitoring system allows you to access the centrifuge control panel from your office

- Reduce unnecessary trips
- Optimize field staffing
- Prevent unnecessary downtime
- Improve reporting and transparency
- Optimize the operations and maintenance planning of the fleet of decanter
- Optimize decanters remotely



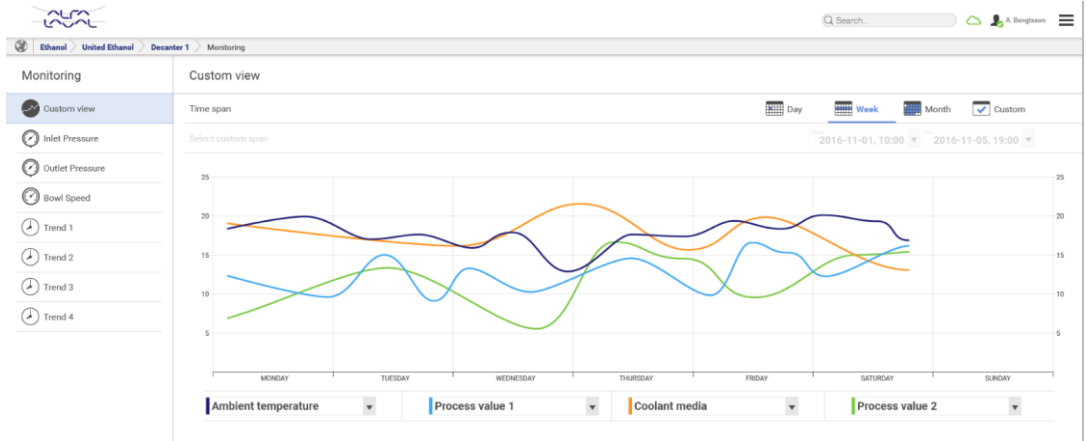
# Monitoring

- Monitor ALL machine data in real time
- Operational timers (pump hour counter for maintenance)
- If mud density sensors are used by customer then mud weight before and after the centrifuge can be monitored



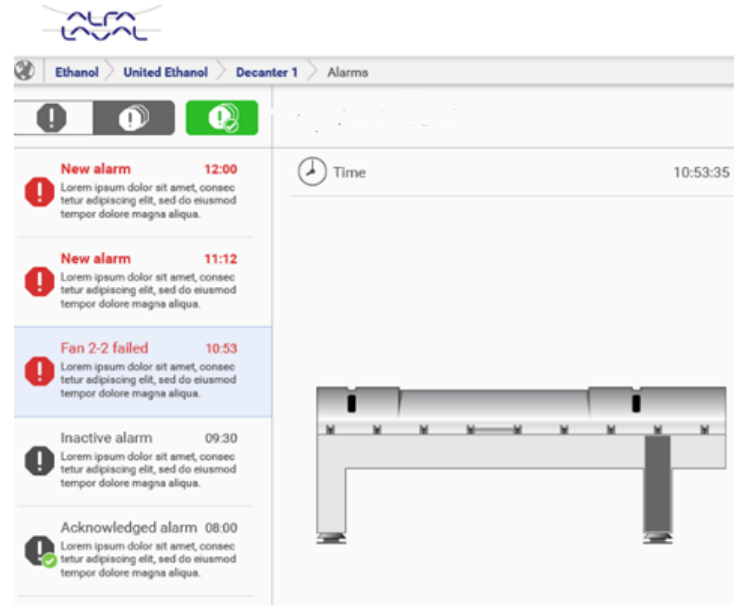
# Data logging

- Historical data log for machine and process data
- Integrated trend tool
- Export tool to Excel



# Alarms

- Historical Alarm log
- Historical Event log
- Push alarms to cell phones





# Run time hour tracking

- A large fleet of centrifuges makes it difficult to track the hours use of their different units
- Connectivity can track the rotating hours for the centrifuge and feed pump

## User benefits

Easier fleet tracking making it a daily tool to use

More informed maintenance decisions, preventing unnecessary drive to locations

# Field service support

- Can proactively respond to customers needs as issues arise (alarms etc).
- Begin diagnosis before the trip begins, take the spare parts needed preventing back and forth trip

## User benefits

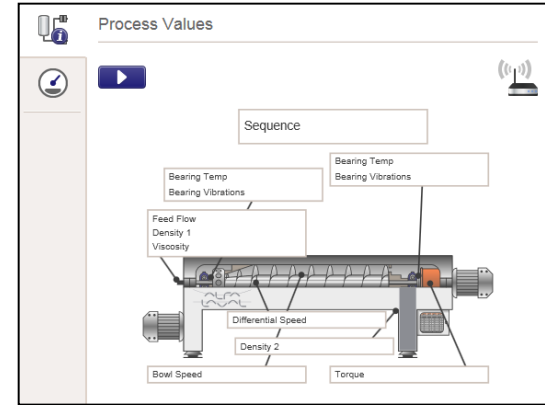
Time savings for user to be able to remotely diagnose a problem

Avoid repeated trips take the correct spare parts on the first trip

# Remote monitoring

View and control operating parameters on a decanter

- Ensure customers are running the machine correctly
- Often they will change parameters and complain there is something wrong with the machine
- Troubleshooting a problem may require driving up to 10 hours for a customers service personnel in order to just diagnose the problem



## User benefits

Monitor a decanter without needing a visit every time

Experts can advise and train new employees without having to be on location every time

# Remote control

Enable your process experts to control decanters remotely

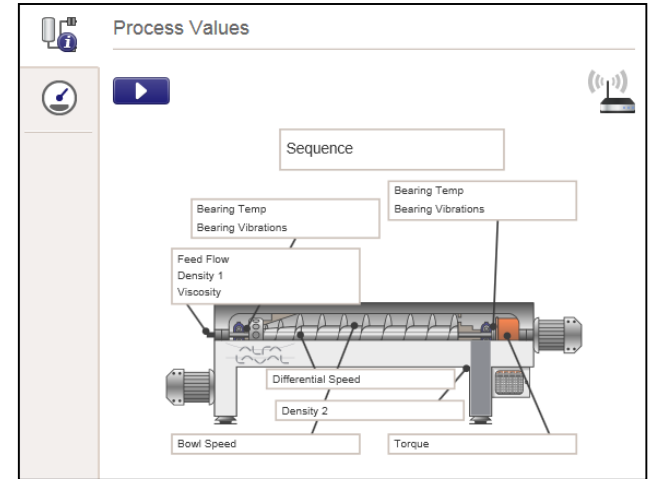
- Skilled operators are not always readily available
- Remote control capability allows for the operator to support the customer quickly and efficiently

*\*Remote startup is disabled for safety reasons*

## User benefits

Optimize a decanter without needing a visit every time

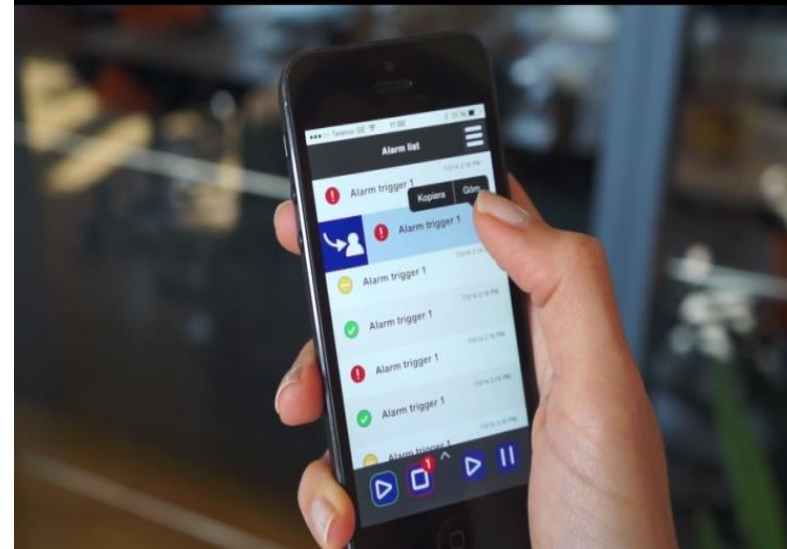
Provide faster service to the end user



# Improve competitiveness using Connectivity

## Service companies can

- Reducing operating costs;
  - Eliminate wasted trips to rigs.
  - Schedule maintenance based on operating data.
- Offer better customer service;
  - Reduce downtime and increase billable days.
  - Rapidly optimize or provide process advice to the operator.



# Thank you



