

# FLUX Stability Adviser

Reliable real-time information on flow instabilities to help optimize your operations

## Defined

Reliable real-time information about flow instabilities and the conditions at which they occur helps you optimize your operations at the same time as you minimize the risk to encounter intolerable operating conditions which may disrupt your production. Combining simulations with data analytics, it is possible to map the multidimensional operating space and understand how changes in operational parameters impact production. Using this information along with live sensor data, FLUX Stability Adviser provides real-time situational awareness to assess the risk of flow instabilities, avoid intolerable operating conditions and support your production optimization decisions. It also helps you to effectively assess past production to optimize future operations.

## Benefits

- Access to real-time risk assessment of flow instabilities
- Offers situational awareness
- Accurate predictions through the life of the asset
- Insights can be consumed on any surface, e.g. proprietary surveillance dashboards
- Easy integration and secure connection to proprietary systems
- Consumes information from existing sensors through data platform/historian
- Low maintenance needs – human intervention practically zero

## Features

- Self-adjusting – automatically updates the underlying models to ensure the most accurate outcome at any time
- Connectivity – securely connects to data platforms, databases, and historians to retrieve sensor and reference data
- REST API – offers 3rd-party applications and dashboards secure access to our cloud-based solutions
- Scenario mode – investigate how past production would have been affected by different operational settings

## Hybrid technology as foundation

FLUX Stability Adviser is a hybrid technology that combines physics-based modeling with machine learning. The solution is self-adjusting and utilizes available sensor and reference data to maintain the highest level of accuracy. In real-time deployment, FLUX Stability Adviser consumes sensor data and operational parameters to deliver real-time information about flow instabilities, such as slugging. At the core of the solution are:

- FLUX Simulator – a new, fast, and robust transient multiphase flow simulator purpose-built by Turbulent Flux for real-time environments – is the foundation of the physics-based modeling and uses a simulation model to represent the actual production system.
- FLUX Analytics – a toolbox which provides state-of-the-art machine learning and data processing utilities – forms the basis for the machine learning component and input data preprocessing.
- FLUX Optimizer – a multipurpose framework of optimization workflows – caters to predictions always kept valid and reduces the need for maintenance and human intervention to practically zero.

