Production Maximization on an Oil & Gas Offshore Facility

ORTOMATION.IO
OPTIMIZING YOUR WORLD

Sector: Upstream Oil & Gas

Why chose **ORTO** for this application?

As reservoir pressures decline, oil and gas production reduces and, typically, the amount of produced water increases. Process dynamics associated with topsides equipment gradually change as a result and the operating position needed to maximize production moves.

Traditional model-based RTO technologies are not suited to such applications. Process model mismatch increases with time and schemes require significant maintenance.

ORTO however is model free, continually adapting as process conditions change. ORTO also senses when the optimum moves and tracks it over time. Production is therefore continually being maximized.

Business Objective

The overriding business objective of any oil and gas production facility, is to maximise the oil and gas flowing from the reservoir, for any well configuration and within safe operating limits.

Typical Optimization Objective Function

Oil and gas flow is increased by reducing the back pressure on wells. An optimization goal is therefore to minimize slug catcher pressure / HP separator pressure.

By manipulating, within a permitted range:

- Slug catcher / HP separator pressure
- Choke valve position
- Gas lift (if used)

Subject to suitable constraint limits on:

- Compressor suction pressure / flow
- Gas dehydration
- Downstream oil and water handling
- Slugging amplitude (if present)
- Sanding (if present)

Solution

Depending on the process configuration, 2 or 3 agents should be sufficient. Agents can be added at any time, if further manipulated variables are identified.

Benefits

Typical a 3-5% increase in oil & gas production. Such optimization can also increase total oil produced over the life of the reservoir.