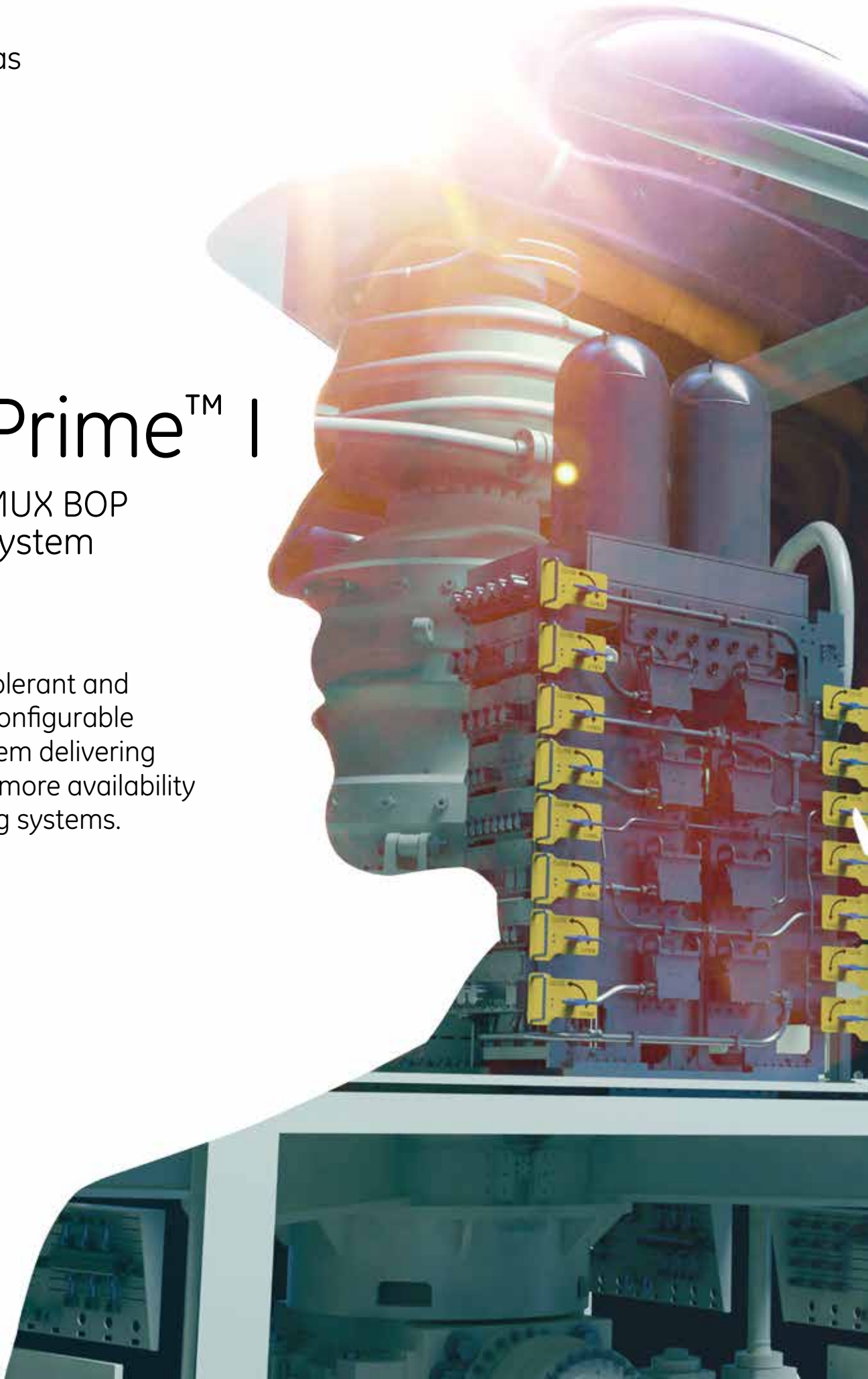
GE Oil & Gas

SeaPrime™ I

Subsea MUX BOP Control System

New fault-tolerant and subsea re-configurable control system delivering three times more availability than existing systems.



SOMETIMES LESS IS MORE

Our fault tolerant system is designed to increase reliability, simplify maintenance and prevent costly stack pulls.

The GE SeaPrime™ I Subsea MUX BOP Control System is the first design to include a re-routable smart redundancy feature which allows drilling contractors to continue drilling if components of one POD fail, reducing BOP downtime and the risk of a POD-related stack pull.

By simplifying access to critical components, utilizing only two pods, and re-routing hydraulic functions within a POD the SeaPrime I system delivers three times more availability than existing systems.

3X more availability than existing systems

DESIGNED FOR RELIABILITY

SeaPrime™ I was designed using GE's proven "Design for Reliability" and "Reliability, Availability, Maintainability (RAM)" models, proven in the Aviation, Nuclear and Power businesses, to drive system-level design and architecture.

Features and benefits:

- Two-POD design with smart redundancy
- Isolates and re-routes hydraulics within a POD enabling the system to remain fully operational in the event of a failure
- Recovers drilling function redundancy using ROV-operated hydraulic by-passes and flying leads while staying subsea
- Improves access to serviceable components and reduces maintenance costs
- Eliminates 100% of pilot tubing, reducing potential leak points by 40%
- Isolates ground faults within each instrumentation bus
- Enables BOP stack flexibility for up to 8-cavity configurations

Fault tolerant, re-configurable architecture

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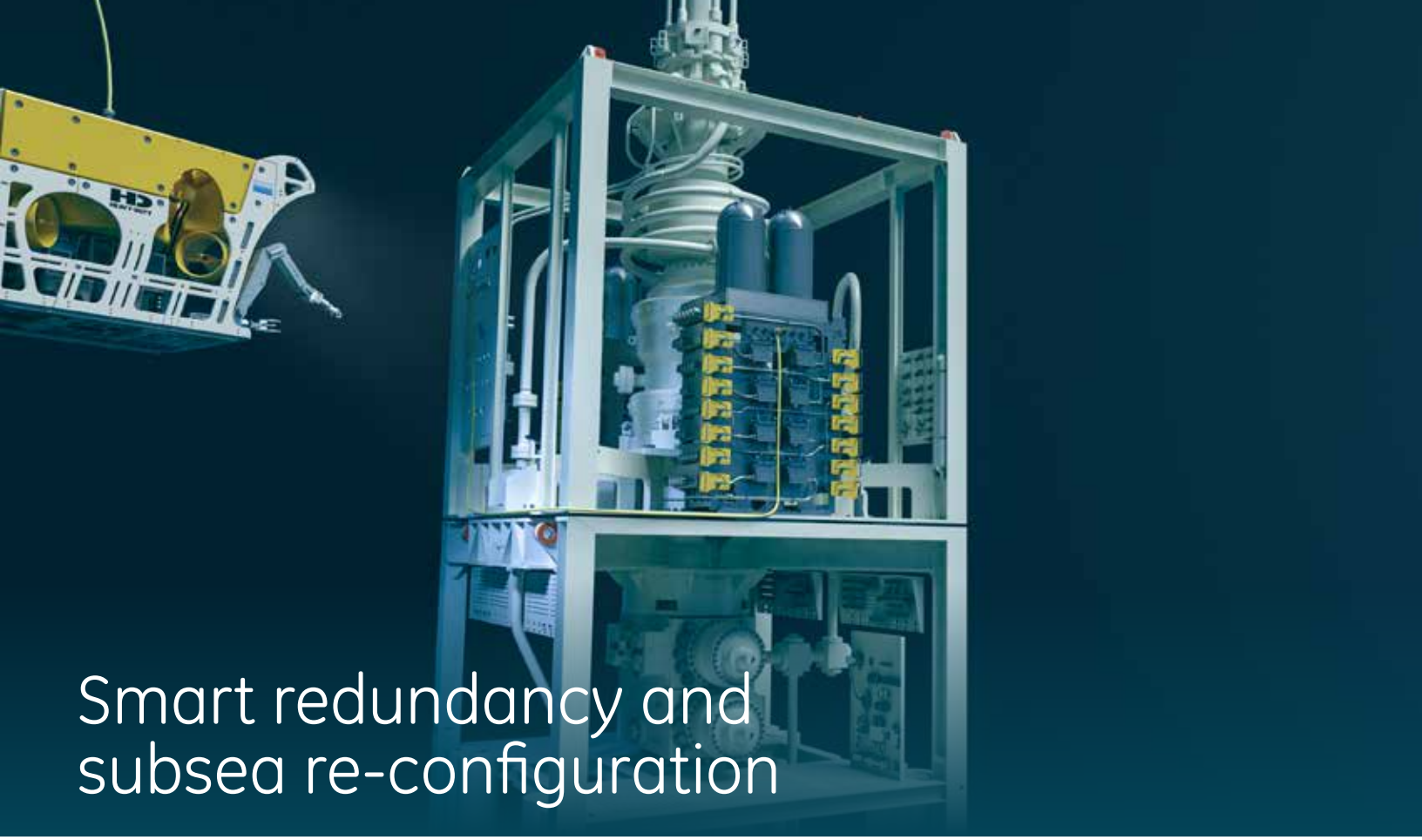
pilot tubing

Improves maintainability and reduces service costs

Prevents costly stack pulls



Smart redundancy and subsea re-configuration

The SeaPrime™ I re-configures critical hydraulic functions subsea, restoring functionality without a stack pull.

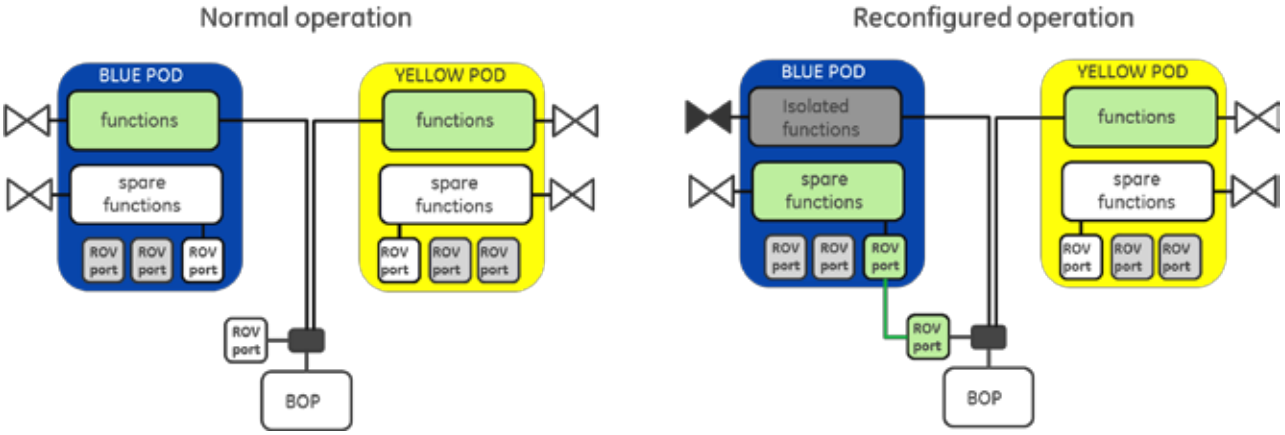
Fault tolerant hydraulics

The process to re-route hydraulic functions utilizes smart redundancy—or select spare functions—that are built into each SeaPrime™ I POD. This enables the system to self-heal and recover full functionality if one component becomes impaired.

An ROV can be used to operate ball valves on the system to isolate functions. Flying leads are then connected between the SeaPrime I system and BOP panel to re-route functions, which are then re-assigned from the surface controller. All while remaining subsea.

Always in control

Before, during and after re-routing operations, all four SEM controllers will remain online, providing uninterrupted controls and diagnosis. All sensors and solenoids are dual channel, enabling the system to maintain quad redundancy.



Re-configuration process for SeaPrime™ I hydraulic functions

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