



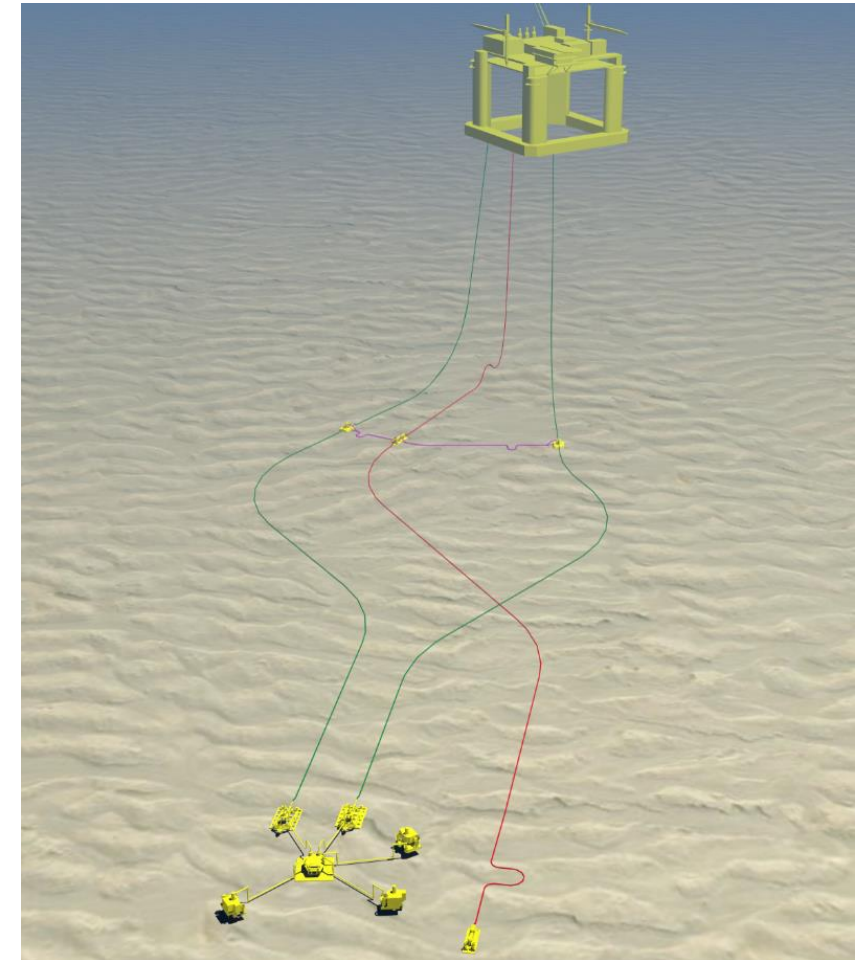
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ICOTA
Intervention & Coiled Tubing Association
Europe Chapter

Flexi-Coil[®] In-riser Velocity String Installation in Deepwater Gulf of Mexico Tieback

Ryan Sangster
Managing Director
Paradigm Flow Services

- Deepwater 4-well subsea tie-back in the Gulf of Mexico
- Dual Flowlines
- Approximately 30 km step-out
- 5,800ft water depth
- 7" Catenary Riser hung on pontoon of FPS



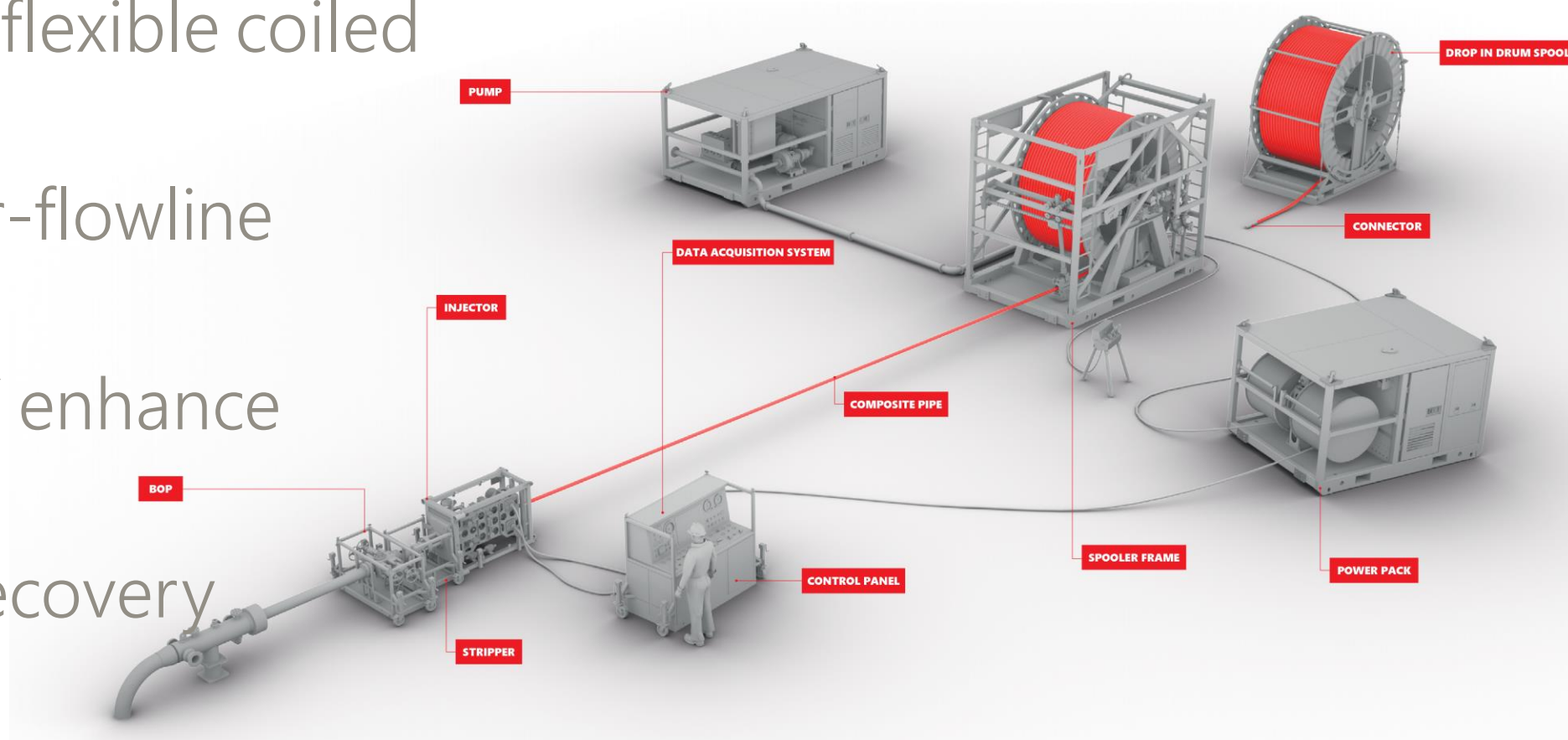
Project Requirements:

- Decrease slugging severity and increase production
- Engineer, Procure and Install <12 months
- Weight <6,000 kg
- Compact installation footprint

Options Considered:

- Smart Choke Valve ❌
- Riser Based Gas Lift ❌
- Subsea Pump ❌
- In-riser Velocity String ✓

- Miniaturized, flexible coiled tubing
- Complex riser-flowline interventions
- Re-establish / enhance production
- Improve oil recovery





Production piping entering Boarding Valve Skid
(prior to installation of IRVS)



Tee-piece to BVS

Production piping Modifications
(post installation of IRVS)

Flexi-Coil Tubing Hanger

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NAVIGATE >1,000°
OF PIPE BENDS

IN-RISER VELOCITY STRING
INSTALLATION

RETROFIT IN-RISER GAS LIFT

REMOVAL OF SOLIDS DEPOSITS

+15,000FT REACH

COMPLEX RISER
& FLOWLINE INTERVENTIONS

IMPROVED OIL RECOVERY

Thank you!

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