Driving towards the Vision of Sustainable Autonomous FPSO Operations – Project Polaris

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“Autonomous Operations”

we hear about it in industry....

This is how we are together leading the way....
## PURPOSE

To design, construct, and operate industry-leading production assets for the offshore oil and gas industry towards improving global access to stable and affordable energy.

## STRATEGY

### SHORT TO MEDIUM TERM (1-5 YEARS)

1. **Build sustainable project pipeline, including through mergers and acquisitions**
2. **Drive ESG initiatives towards reducing Group carbon intensity by 30% by 2030**
3. **Invest in asset lifecycle management via proactive digitalisation strategy**
4. **Enhance learning, leadership, safety and corporate culture**

### LONG TERM (6-10 YEARS)

1. **Continuous development of asset portfolio to create strong order book and stable cashflows**
2. **Optimise capital structure, increase capital velocity, and expand capital pool to support growth and capture market opportunities**
3. **Continuously evaluate effectiveness of supply chain and Project Execution Philosophy**
The Vision

Conventional Asset
- Basic Digital Adoption
- Maintenance Management
- Physical Inspections
- Condition Monitoring On Selected Equipment
- Preventive Maintenance

Assisted Asset
- Selective Advanced-Analytics Adoption
- Real-Time Monitoring
- Spare Part Management
- Data Collection & Management
- Predictive Maintenance

Semi - Autonomous Asset
- Cross-Discipline Optimization
- Reduced Crew
- Remote Operations & Control
- Module-Based Maintenance
- Continuous Real-Time Monitoring
- Prescriptive Maintenance

Autonomous Asset
- Systems Optimization
- No Fire-Water System
- Smart Maintenance
- No Accommodation, Helideck Or Lifeboats
- No Cranes & Limited Storage
The Partnership

Driving Towards Sustainable Autonomous FPSO Operations

**AVEVA**
- Thought Leadership
- Industry and Technology Experts
- Best in Class Technology
- Asset Performance Management Market Leader

**YINSON**
- Expert FPSO Industry Experience
- Management and Operational Experts
- Industry Specific “Know-How”
- Localised and Available Data/Assets

Sustainable Autonomous FPSO
Project Polaris

Driving Towards Sustainable Autonomous FPSO Operations

Integrated Asset Performance Management Solution to improve the overall operations, maintenance and reliability of Yinson’s enterprise FPSO assets toward Sustainable Autonomous FPSO Operation.

- **15** Unique Use-Cases Defined
- **7** Core Success Criteria
- Integrated with existing Yinson Applications
- Scalability & Flexibility

Solution Platform powered by:
- AVEVA Asset Strategy Optimization → Enable asset maintenance optimization from risk and cost perspective
- AVEVA Predictive Analytics → Proactive approach leveraging AI technologies and data analytics
- AVEVA BI Gateway → Intelligence data warehouse
- AVEVA Unified Operations Centre → Powerful visualization to improve decision making
- AVEVA Work Task → Business process capabilities, continuous improvement loop processes

Existing Yinson Solutions:
- AVEVA PI
- AVEVA AIMS
- IFS
- UNISEA
- NOVACURA
Integrated Asset Performance Management Solution

Unified Operating Centre – Common User Experience

Operational KPIs / Metrics
Dashboards & O&A Health
Value Realization
Maintenance & Reliability
Engineering
Life Cycle Costing
Workflow

Asset Strategy Optimization
Predictive Analytics
BI Gateway
CMMS (IFS)
Novacura
HSEQ

Industrial Information Management

AVEVA AIM (Engineering)

AVEVA PI (Operations)
Integrated Asset Performance Management Solution

**Yinson’s Business Challenges**
- Unified Visualization and Decision Making
- Drive towards Zero Unplanned Downtime
- Perform Precision Maintenance when Needed
- Monitoring Asset Reliability and Efficiency
- Optimizing Operational and Maintenance Costs
- Real-Time Operational and Asset Health Analysis
- Predictive Analysis and Failure Management
- Integrating IT/OT Driving Operational Transparency and Decision Making
- Maximizing Production Through Effective Asset Lifecycle Management

**The Partnership Solution**

**Unified Operating Centre – Common User Experience**
- Operational KPIs / Metrics
- Dashboards & O&A Health
- Value Realization
- Maintenance & Reliability
- Engineering
- Life Cycle Costing
- Workflow

**Industrial Information Management**
- Asset Strategy Optimization
- Predictive Analytics
- BI Gateway
- CMMS (IFS)
- Novacura
- HSEQ
- AVEVA AIM (Engineering)
- AVEVA PI (Operations)
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<th>Recommended</th>
<th>Integration Frequency</th>
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<td>Relational data</td>
<td>On demand</td>
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<tr>
<td>1(b)</td>
<td>ASO (through Crosser) to BI Gateway</td>
<td>Relational data</td>
<td>On demand</td>
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<td>1(c)</td>
<td>IFS to BI Gateway (through Novacura Flow to SQLDB)</td>
<td>Relational data</td>
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<td>1(d)</td>
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<td>ASO to BI Gateway</td>
<td>ASL Library for LCC</td>
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<td>PI to PA</td>
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<td>4(a)</td>
<td>PA to BI Gateway</td>
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<td>4(c)</td>
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<td>Work Order request</td>
<td>Live link</td>
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<td>5(a)</td>
<td>AVEVA NET to UOC</td>
<td>AVEVA NET</td>
<td>Live link</td>
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<td>BI Gateway to LCC</td>
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<td>6(b)</td>
<td>BI Gateway to UOC</td>
<td>Calculated data</td>
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<tr>
<td>6(c)</td>
<td>BI Gateway to UOC</td>
<td>Relational data</td>
<td>Every 12 hours</td>
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<td>Work Order request for APA/Generic Work Order request</td>
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<tr>
<td>9(c)</td>
<td>ASO to WorkTask (Workflow application)</td>
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<td>Relational data for Visualization (HSEQ)</td>
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<td>15(a)</td>
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<td>Lesson Learned, SAMP Power BI Web Link</td>
<td>Live link</td>
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<td>16(a)</td>
<td>PI AF (DOR SQL DB) to BI Gateway</td>
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<tr>
<td>16(b)</td>
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<td>Mode selection and days manual selection entry</td>
<td>On demand</td>
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## Integrated Asset Performance Management Solution

**Yinson Potential Value**

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<tr>
<th>Reduction Maintenance Overall Cost</th>
<th>Optimized Asset Analysis and Collaboration</th>
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<td>Improved Overall Planned Maintenance</td>
<td>Increased Asset Visibility, Control and Contextualization</td>
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<tr>
<td>Improved Resource Planning</td>
<td>Efficient Feedback to Engineering Design and Construction</td>
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<td>Improved Overall Equipment Efficiency</td>
<td>Efficient Asset Failure Management Engagement</td>
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<td>Reduced Unplanned breakdowns</td>
<td>Reduced Work Order Execution and Management Time</td>
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<tr>
<td>Reduced Operational Downtime</td>
<td>Optimized Spare Parts Inventory</td>
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Integrate Asset Performance Management Solution

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As One Team
Driving towards Autonomous FPSO Operations
Feel free to reach out if you saw anything of interest or had any questions

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Questions?
Please wait for the microphone.
State your name and company.

Please remember to...
Navigate to this session in the mobile app to complete the survey.

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Over 20,000 enterprises in over 100 countries rely on AVEVA to help them deliver life’s essentials: safe and reliable energy, food, medicines, infrastructure and more. By connecting people with trusted information and AI-enriched insights, AVEVA enables teams to engineer efficiently and optimize operations, driving growth and sustainability.

Named as one of the world’s most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. The company is headquartered in Cambridge, UK.

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