Drilling Rig RedZone detection a Journey from edge to cloud

Martijn Handels
RED-ZONE MONITORING
ACTIVE SAFETY ON THE DRILL FLOOR
Centralizing Knowledge & Experience

Offshore operations are like an airline. Remote operating assets are part of a bigger fleet. In order to optimize this fleet you have to centralize knowledge and experience.

Mission

To maximize safety and efficiency of offshore operations by centralizing their knowledge and experience.

Innovative Services

We offer dedicated end-to-end innovative services to common challenges for offshore industry.

Proposition

- CCTV & Computer Vision
- Data Analytics
- Smart Communication

Markets

- Offshore Oil & Gas
- Offshore Wind
- Special Marine
KEY CHALLENGE

KEEPING PEOPLE SAFE ON THE DRILL FLOOR

Many people working in a small space surrounded by intermittently moving heavy equipment creates a hazardous working on the drilling floor.

- Crew needed on the drill floor for specific jobs; risk of being in the line of fire
- Moving heavy equipment; risk of getting caught in between
- Risk of potential dropping objects
ROLLOOS’ CONTRIBUTION

GOING BEYOND WITH ROLLOOS RED ZONE APPLICATION

To assist all parties involved in drilling operations to deliver a well in a safe, cost-effective and timely manner.

- Detect & Locate People
- Alert in case of red zone breaches
- Logbook of breaches
- Analyzing operations & procedures
- Identify hidden lost efficiency
- Remote access & analysis
RED ZONE MANAGEMENT TOOLBOX

OPTIMIZING SAFETY & EFFICIENCY

Rolloos’ initial “red zone monitoring” system has evolved into a toolbox of applications that supports the drilling operations to deliver a well in a safe, cost-effective and timely manner.

RED ZONE MONITORING
ALERTING PEOPLE
Alerting the drill crew when a red zone is breached; accurately and real-time.

PROCESS OPTIMIZATION
OPTIMIZE PROCEDURES
Optimize operational procedures based on actual human performance

PERFORMANCE ENHANCEMENT
BENCHMARK OPERATIONS
Standardized statistics on human behavior and operational conditions
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  - ALERTING PEOPLE
    - Alerting the drill crew when a red zone is breached; accurately and real-time.

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  - BENCHMARK OPERATIONS
    - Standardized statistics on human behavior and operational conditions
RED ZONE MONITORING SINGLE CAMERA
USE THE HUMAN FACTOR TO OPTIMIZE

INTEGRATION OF HUMAN BEHAVIOR & MACHINE DATA

Identification of hidden efficiency and safety improvements with an integrated data-driven approach.

- Conditional activation of red zones based on position and motion of equipment
- Automatic reporting on operational performance
- Analyzing human motion patterns based on operational state/mode
- Automatic detection of incidents and/or unwanted behavior
- Identification of inefficiencies based on synchronization of motion of people and equipment
WHY EDS

• Lightweight flexible but powerful edge historian
• OS independent
• OSIsoft Message Format Ready
• Scripted Configuration for remote management
• Time synchronization of two separate back end systems
• Micro service architecture
• API Access on edge and cloud
ROLLOOS RED ZONE DASHBOARD

CENTRALIZING INSIGHTS

- Operation dependent heatmaps to visualize human movements
- Time synchronization of two separate back end systems
- Large amounts of time series data
- Micro service architecture
- API Access on edge and cloud
SPEAKER DETAILS

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Questions?

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State your **name & company**

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Complete Survey!

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Thank you