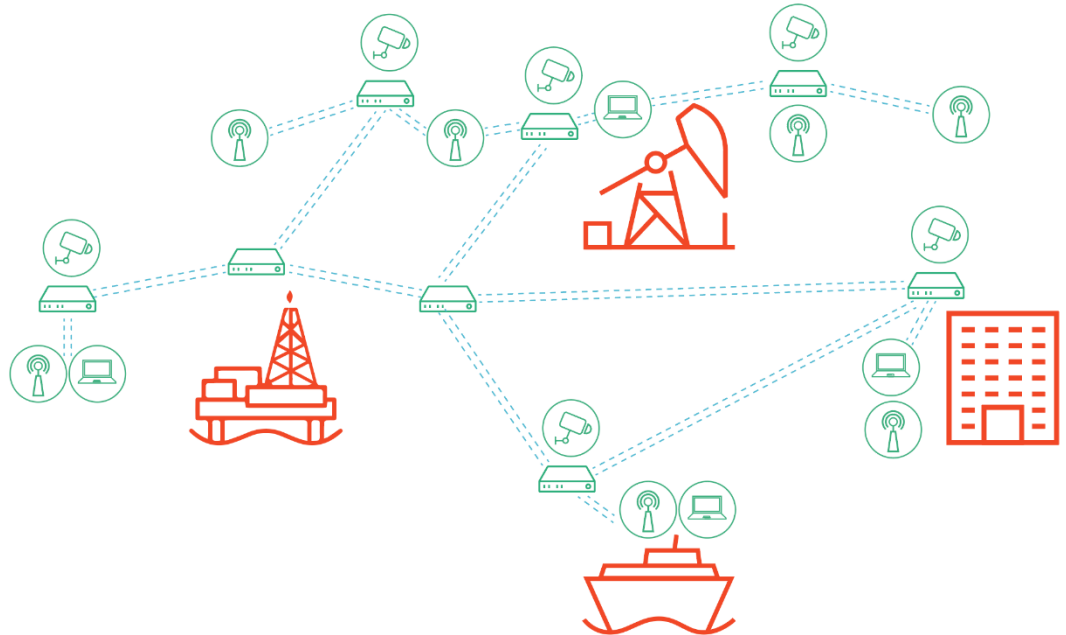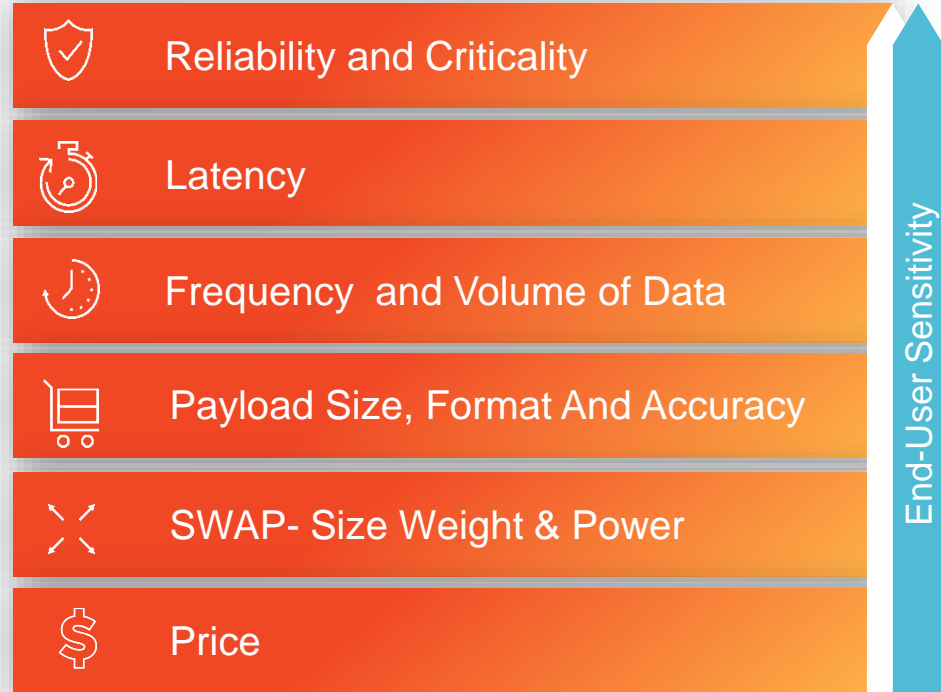# Oil Field Challenges

- Process automation
- **Safety**
- **Security**
- Pro-active asset maintenance and troubleshooting
- Un-manned sites
- Crew welfare
- Remote control/Automation
- Cloud Access for drilling & production data
- Access to Human Resources

Reliable, fast, easy to use connectivity is part of the solution

Connectivity As Key Innovation Enabler

- New level of automation and remote control requires uninterrupted communications for operations

- From low bandwidth for asset tracking to high-speed crew welfare applications

- Seamless access to cloud-based drilling and reservoir management applications

- Flexible connectivity solution that follow the life cycle of O&G life cycle

ST Engineering

Reliability and Criticality

Latency

Frequency and Volume of Data

Payload Size, Format And Accuracy

SWAP- Size Weight & Power

Price

End-User Sensitivity

Improving Connected Oilfield
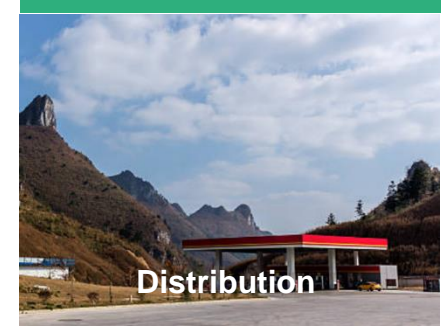

Exploration

- High speed access to offshore/land drilling
- Create secure common telecom network
- Build a solution flexible enough to adapt to O&G Market conditions
- Maximize existing Satcom investment

Production

- Highly reliable network for automation and R/C
- High availability for monitoring unmanned sites
- High bandwidth and cost effective satcom for production center
- Single network to carry IoT/SCADA/Corporate data reduces infrastructure costs

Transformation

- Network tailored to carry IoT data, remote-control command and video
- Cost effective network backup solution

Distribution

- Scalable network that can accommodate thousands of gas stations
- Flexible network that can carry video, IoT Data, and robot control over a complete pipeline

ST Engineering

Digitalization of Oil Field

Key benefits that will increase value and reduce cost
- Increase uptime
- Reduce service and maintenance costs
- Reduce human intervention
- Faster detection of pipeline leak
- Device optimization

IoT at the heart of digitalization
- Connect physical assets
- Predict condition
- Automate operations
- Optimize equipment performance

Digital Twin

Digital Twin delivers operation cost efficiency

Example of digital twin benefits

- Production Tech Digital Twin: monitor equipment and remotely initiate and schedule maintenance
- Smart leak detection sensors & video based analysis are used for prevention and safety of field personnel
- Rig-in-a-box at the drill site stream real time downhole for edge analytics to assist drilling process
- Wearable & voice recognition enabling hands free support, improved efficiency, and safety of field personnel – **Connected Work Force**

Typically requires fast, reliable global connectivity (VSAT) and secure, ultra-low latency provided by private 5G networks

New highly-efficient and scalable Mx-DMA MRC

- Seamless dynamic bandwidth allocation with the best of efficiency, scalability and performance

Standalone SCPC modem that can be used in shared pools

- MDM5010 – A modem that grows with your business needs

IoT – Cost effective data collection critical to extract value

- Low to High data rates

5G in a Box – Easyily deploy Nokia based 5G network for connected work force

- Maximize value of IoT Data and Digital Twin.
- Multi-Orbit – SD-WAN to enable LEO/MEO/GEO

New Developments for O&G

ST Engineering

Powerful Modem Portfolios

- Outstanding DVB-S2X performance

- New MDM3315

- High performance MDM5010

- Versatile iQ Series Portfolio

- Board, desktop and rackmount

MDM 2510   MDM3315   MDM5010

ALL POWERED BY
MX-DMA MRC

Flexible IoT Solutions

To ease the entry into IoT markets

- Leverages our scalable Evolution, Velocity, and Dialog platforms

- Incorporates an IoT optimized waveform

- Utilizes a cloud-based NMS powered by hiSky

- Provides a low-cost, small form-factor IoT terminal with flat-panel antenna and integrated satellite modem

- Two terminal variants for mobility or fixed uses cases

Mining   **Pipeline**   **Oil Pump**   **Maritime**

YOUR KEY TO IoT

Enabling the Energy Digital Transformation

As a Leader in High-end Enterprise Connectivity our Product Portfolio Delivers

- Highest speed and reliability for corporate networks

- Best UX with robust QoS engine to serve any SLA

- Lowest OPEX, highly efficient waveform technologies coupled with low latencies

- Seamless integration into terrestrial infrastructure with advanced IP features

- Fast, easy deployments and large-scale network support with workflows, APIs

- Forward compatibility to MEO/LEO and 5G cloud-based to protect investment

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Corporate Network   IoT   Offshore   Last Mile Connectivity

Questions?

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