



# Experience The Benefits

## Integrated Sand Management Solutions

INCREASED WELL PERFORMANCE

ENHANCED SAFETY

COST REDUCTION

MORE THAN  
**21**  
**YEARS**  
EXPERIENCE



**3**

Regional Hubs – UK,  
Malaysia, UAE



**30+**

Operators Worked with  
Worldwide



**10000+**

Sensors Installed in The Oil  
and Gas Industry



**Sense.**

Our dynamic technology redefines how sensory information is realised, combining state-of-the-art hardware, intelligent realtime data and secure global connectivity.



**Understand.**

We analyse integrated data using SMART software to provide award-winning visualisation, reporting and understanding – creating a truly interactive, immersive experience.



**Perform.**

We exceed expectation, provide trusted insight and make a genuine difference to our clients' operational performance – supporting informed decision-making and maximising value.

We serve a diverse customer base consisting of Independent and National Oil Companies, plus Well Service Companies across more than 23 countries in our core regions of the North Sea, Africa, Southeast Asia, and the Middle East.



## **SMS TRULY CONTRIBUTES TO THE OPERATIONAL SUCCESS OF OUR CLIENTS, MAKING A TANGIBLE DIFFERENCE.**

SMS has established a strong reputation for providing unique and effective strategies for monitoring and managing sand at surface. Our suite of Sand Management and Erosion-Corrosion products and services includes Sand Management Studies, Acoustic Sand Monitoring, Sand Sampling, Erosion & Corrosion Probes, Erosion Modelling and Real-Time UT Wall Thickness Systems.

Our team is committed to driving our clients' operational efficiency by offering a comprehensive range of low-carbon solutions and leveraging our zero-manpower capabilities, which have been demonstrated to minimize carbon footprint and accelerate the path to net-zero.

Through the adoption of groundbreaking technologies and partnerships with multiple clients and industry players, we have experienced rapid growth over the years, facilitating the transition to a safer, more robust, resilient, cost-effective and sustainable asset life cycle.

**Sense. Understand. Perform**

# Industry Sectors



## Renewable Energy

- Integrity & Offshore Services



## Erosion & Corrosion Management

- Erosion Sand Monitoring
- Corrosion Monitoring
- Sand Management Strategy



## Marine

- Integrity Services
- Manpower & Equipment



## Midstream & Downstream

- Integrity Services
- Manpower & Equipment



## Upstream

- Well Services
- Manpower & Equipment



## Subsea

- Sand Monitoring

# Market Segments

## Upstream

Exploration, production, well test and, decommissioning

## Midstream

FPSO and terminals

## Downstream

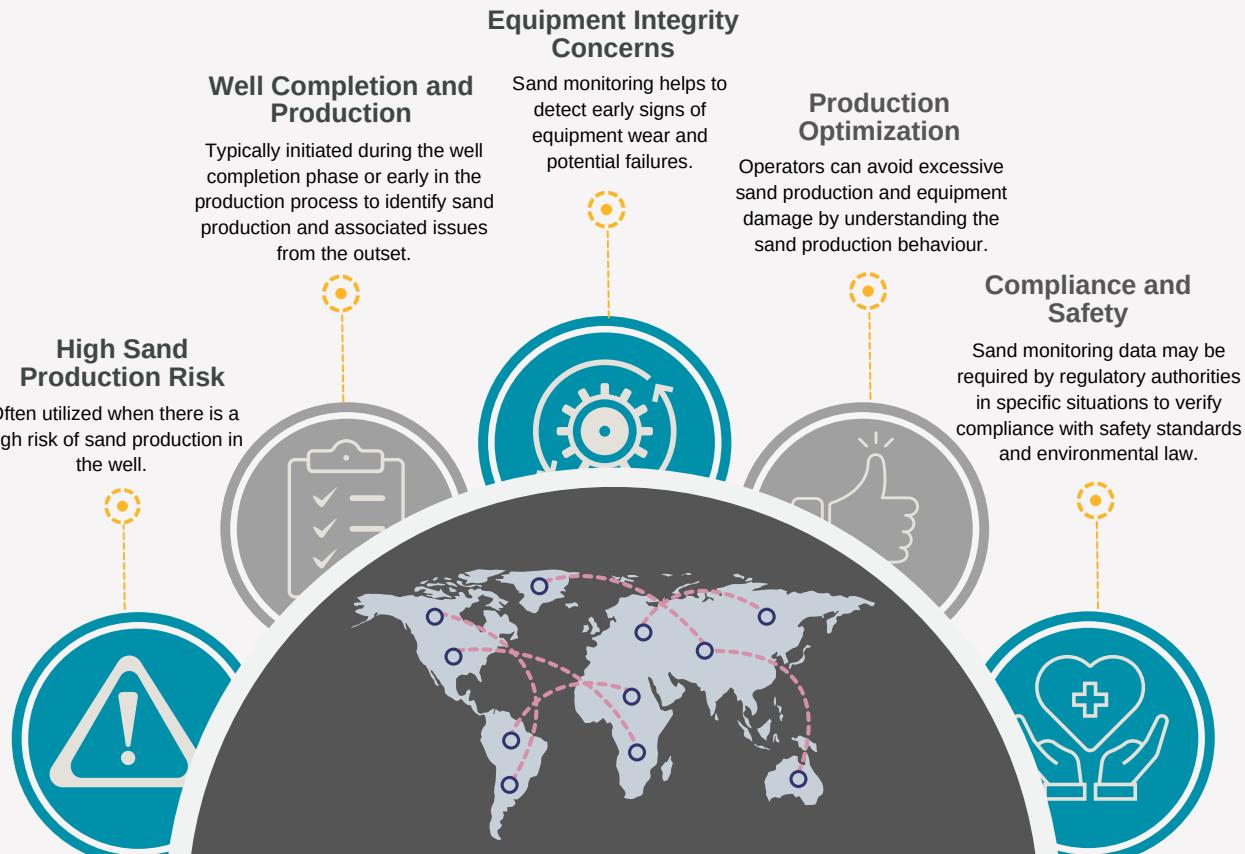
Refinery and blending plants

# SAND SERVICE APPLICATIONS



# WHEN DO YOU NEED SAND SERVICES?

The existence of sand production during oil and gas extraction is the fundamental requirement for using sand monitoring services. When reservoir formations contain unconsolidated sand particles that can be mobilised and moved along with the hydrocarbons during production, sand production occurs.



## SAND MONITORING & SAMPLING

Over time, the presence of sand can lead to equipment and plant damage on a platform. If left unaddressed, it can even result in loss of primary containment, creating a potential risk of explosion and serious injury. Sand erosion can also lead to reduced efficiency, downtime, and lower production in all cases.

To detect the unseen deterioration caused by sand erosion, sensors are essential for monitoring hidden damage and providing real-time data. With quick identification of sand presence, adjustments in production can be made, maintenance reduced, and potential equipment damage minimized.

Accurate monitoring, analysis, and interpretation of real-time data can prolong asset longevity and reduce costly repairs, replacements, and downtime.



# SAND MONITORING & SAMPLING SERVICES



## Acoustic Sand Monitoring (ASM)

- Non-intrusive design, ideal for HPHT / sour gas application
- Provides an instantaneous response to sand production
- Simple, cost effective and fully portable system

## Industry Applications:

1. Oil & Gas Upstream Operations (Exploration, Drilling and Production)
2. Mining
3. Construction
4. Applicable to other industries with sand problems



## Online Sand Sampling (OSS)

- Provides solids size distribution and quantification
- Fully portable and closed loop system design
- Flexible hose connection & interchangeable mesh size



# SAND MONITORING & SAMPLING SERVICES



## Acoustic Sand Detector Calibration System

- Ensure that the detector is accurately measuring the concentration and velocity of sand particles
- Help to optimise production and reduce costs



## Sand Injection Calibration

- Enables you to quantify the volume of sand production in your pipeline
- Improves the accuracy of the data used in the integrity evaluation process

## Industry Applications:

1. Oil & Gas Upstream Operations (Exploration, Drilling and Production)
2. Applicable to other industries with sand problems

## SEDIMENTS GRAIN SIZE / TYPE BY SERVICES

|                            |  |        |            |                             |
|----------------------------|--|--------|------------|-----------------------------|
|                            |    |        |            |                             |
| TYPE                       | CLAY   | SILT   | SAND       | GRAVEL                      |
| SIZE (MICRONS)             | < 2  | 2 - 60 | 60 - 2,000 | 2,000 - 60,000              |
| INSTRUMENT                 |  |        |            | CONDITION                   |
| REAL-TIME SAMPLING AND PSA | <br>PARTICLE SIZE ANALYSER                         |        |            | LIQUID OIL + WATER          |
| MECHANICAL SAMPLING        | <br>ACOUSTIC SAND MONITORING                       |        |            | MULIPHASE OIL + WATER + GAS |
|                            | <br>ONLINE SAND SAMPLING WITH SPECIFIC FILTER MESH |        |            | MULIPHASE OIL + WATER + GAS |

## SAMPLE SEDIMENTS FROM ONLINE SAND SAMPLING



Filter mesh size: 20micron



Filter mesh size: 20micron



Filter mesh size: 20micron



Filter mesh size: 50micron



Filter mesh size: 20micron



**Sample sediments from Sand Monitoring Exercise**

## ACOUSTIC INTEGRITY TESTER

Standard Acoustic Sand Monitoring (ASM) sensitivity tests, such as those using sandpaper or wire brush checks, can produce inconsistent results. These methods are often influenced by various factors, including the type of sandpaper, applied force, sensor distance and surface coatings, which can significantly impact accuracy.

SMS developed the 'Sand Gecko' Acoustic Integrity Tester to overcome these challenges. This innovative tool delivers reliable and precise readings, eliminating uncertainty and instilling confidence in your sensor evaluations.



## ACOUSTIC INTEGRITY TESTER

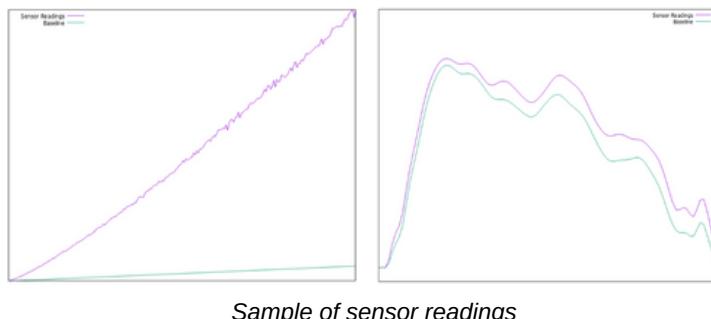


SMS's 'Sand Gecko' Acoustic Integrity Tester uses advanced signal processing to evaluate acoustic emission sensors, accurately assessing the relative health and fitness of each sensor.

Traditional practices often lack consistency and accuracy, leaving operators uncertain about the health of their sensor systems. SMS provides a reliable approach to ensure the integrity of the acoustic sensors, giving you complete confidence in the vital data they provide to keep your operations efficient and trouble-free.

### Industry Applications:

1. Oil & Gas Upstream Operations (Exploration, Drilling and Production)
2. Mining
3. Applicable to other related industries



*Sample of sensor readings*

## REAL-TIME PARTICLE SIZE ANALYSER

SMS offers in-house services for oil, gas or sand in water measurement. Our Real-Time Particle Size Analyzer simultaneously detects and measures solids, oil, and gas concentrations in water. The process is automated thus enhancing personnel safety for both onshore and offshore operations.

By utilizing our Inflow Particle Analyzer, suspended particulate (including sand, water, oil, and gas bubbles) is imaged and analyzed under multiple parameters to determine size, shape, and concentration of Total Suspended Particles (TSS).

It is also a proven alternative to LPSA for Particle Size Distribution especially when sand samples cannot be collected due to the presence of Mercury, H<sub>2</sub>S or TENORM. Our procedure is safe, repeatable, low-emission, and practical for hazardous environments.



## REAL-TIME PARTICLE SIZE ANALYSER SERVICES

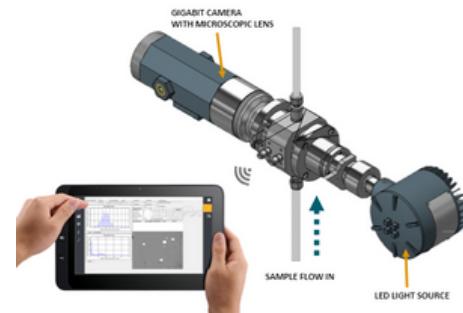


The online particle size analyser system eliminates manual handling of samples, and this allows clients to obtain live PSD data of online processes that may constitute health hazards such as presence of mercury, NORM, H<sub>2</sub>S, abnormally high levels of CO<sub>2</sub>, etc.

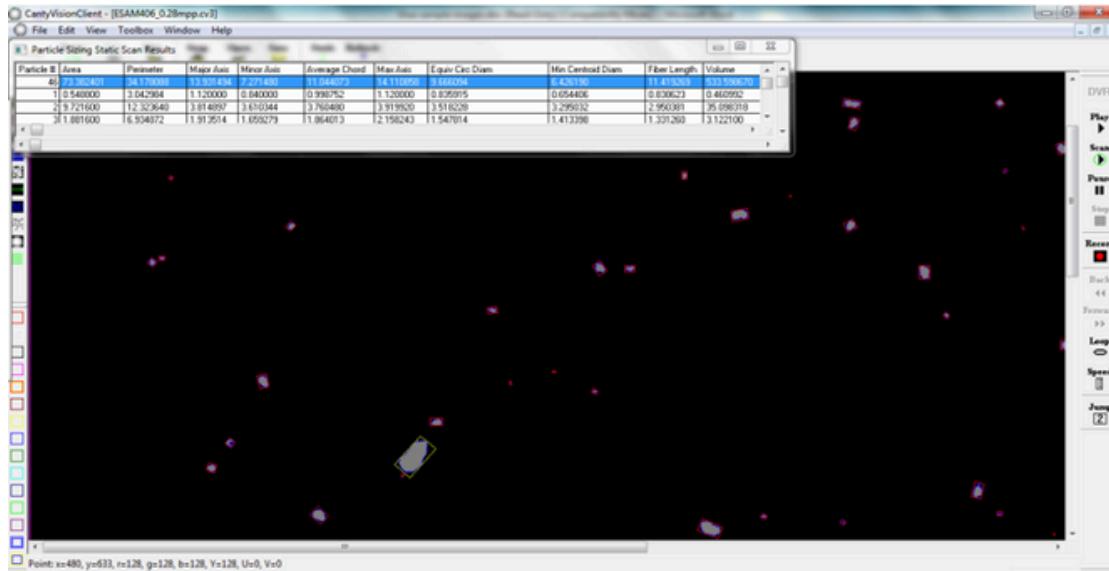
Vision-based particle analysis systems typically suffer from the limitation of requiring single-phase liquids, but SMS' system is the first of its kind in the industry as it has the capability to separate water and solids from live streams to allow the visual system to analyse and produce results immediately.

### Industry Applications:

1. Oil & Gas Upstream Operations (Exploration, Drilling and Production)
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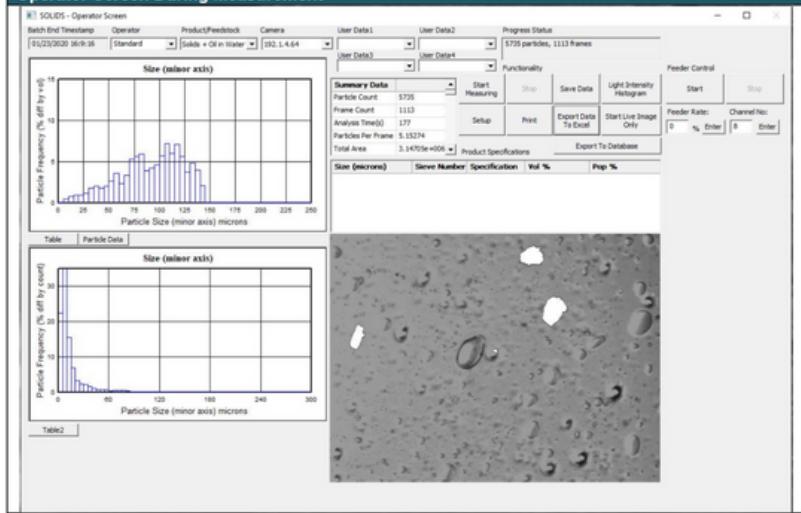
# SAMPLE OUTPUT FROM PARTICLE SIZE ANALYSER



- Size for the highlighted particle (yellow box) displayed in row highlighted blue in table
- This particle has major axis (length) of 13.93 microns and minor axis (width) of 7.27 microns

# SAMPLE OUTPUT FROM PARTICLE SIZE ANALYSER

Operator Screen During Measurement



Operator Screen

| Dv (%) | Particle Size (Microns) |
|--------|-------------------------|
| 10     | 16.5021                 |
| 20     | 23.2616                 |
| 30     | 29.1425                 |
| 40     | 35.8907                 |
| 50     | 43.652                  |
| 60     | 54.6182                 |
| 70     | 67.5006                 |
| 80     | 80.067                  |
| 90     | 115.915                 |
| 100    | 225.736                 |

Particle Size Output

**Value:** Reduced risk to personnel, real-time data, quickly repeatable, reduced handling that could damage sample.

# ADDITIONAL SERVICES

SMS is dedicated to providing top-notch services and outstanding customer support, at competitive prices. We prioritize reliability, efficiency and affordability to ensure that our customers always receive the best value for sand management.

## 1 Installation, Maintenance & Troubleshooting

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At SMS, we take pride in providing exceptional service to our valued clients, ensuring the operational integrity of their systems while helping to keep them in optimal condition. Our highly trained field engineers are passionate about ensuring the successful installation and operation of your system while meeting the necessary regulatory standards. We understand that supplying high-quality products is only part of the equation, which is why we also offer tailored maintenance programs and troubleshooting services to optimize the life and reliability of your system. With our support available both on-site and remotely, you can have peace of mind knowing that we're here to help you every step of the way - no matter where you are in the world.

## 2 Training

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We recognise that every client has unique needs, which is why we offer flexible alternatives to tailor our services to match your requirements. Our convenient training programs are designed to help you get the most out of our solutions and maximize your return. Our team is dedicated to ensuring that you have the support and resources you need to succeed, and we are always available to help you find the perfect training solution to meet your specific needs. Contact us today to learn more about our customized services.

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