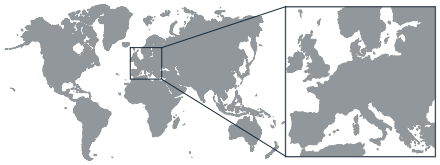
# Investigating collapsed tubing

## Measuring the extent of damage

Case study: **SPACE® Focus**

**SPACE® Focus** supplies accurate dimensions and visual understanding of a section of collapsed tubing.



**Region:** Europe
**Well Type:** Producer

**Case Benefits**
- Size of the restriction accurately measured
- Collapse profile imaged in 3D

**Key Capabilities**
- Real-time information from e-line conveyed services
- Full 360° circumferential coverage
- Scanning ahead of the tool allows obstructions to be fully evaluated
- Accurate measurements of critical dimensions in real-time
- 3D rendering to aid understanding available immediately on wellsite

**Typical Applications**
- Inspection of obstructing fish
- Parted tubing
- Collapsed tubing/casing

**Challenge**

A prolific oil-producing well suffered a decline in productivity over time, leading to a gas-lift optimization intervention. It proved impossible to reach the target depth and an LIB run indicated buckling or collapse to be the cause.

Despite several attempts with a range of different sized drifts, it proved impossible to pass the restriction. Fluid was able to pass the restriction in both directions indicating that the tubing was not completely plugged.

In order to understand the situation downhole, precise evaluation of the geometry of the collapse was needed before being able to plan remedial measures.

**Solution**

The unique ability of the **SPACE® Focus** to both look ahead as it approaches a fish and take precise measurements in non optically clear fluid made it an obvious choice for this critical intervention.

Real-time images and measurement of critical dimensions while downhole allow confident appraisal of the problem area with minimum of time expended.

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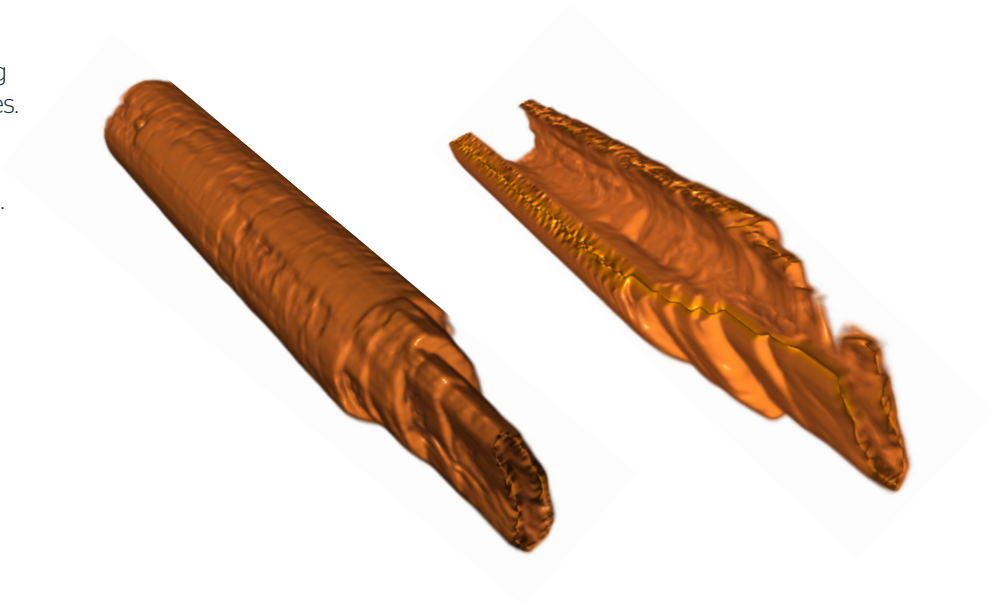
## Result

It proved impossible to reach the target depth by gravity alone, and the toolstring had to be pumped down in several places. The deviation was barely 50° indicating "sticky" hole. This was confirmed by indications of stick and slip while logging.

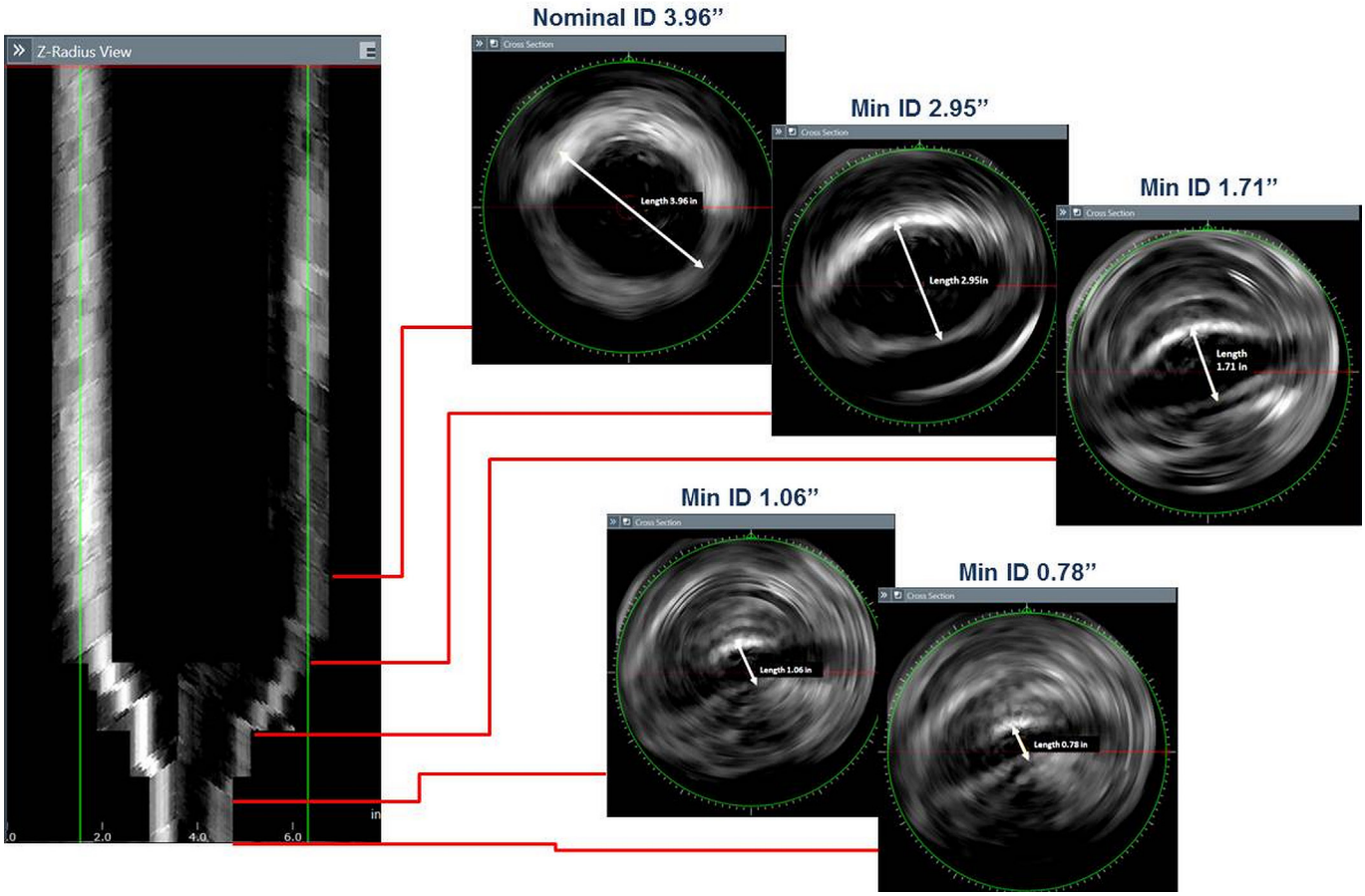
Acquired in real-time, the data showed the tubing progressively deforming until holdup depth when the tool stopped.

It can be seen that the tubing is severely damaged and almost totally collapsed.



*External and cut-away 3D views of the collapse*

Rendering the data in 3D is a powerful tool to aid understanding of the physical situation downhole, but **SPACE® Focus** also brings measurement capability to the downhole environment allowing precise dimensions to be determined.




*Minimum cross-section revealed along the collapse profile*

**Captured by SPACE®**

# Visualise your well in 3 dimensions

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