

# *U-line™ Roller Technology*



**Reducing the Cost and Carbon Impact of Well-Intervention Operations**

# *U-line™ Roller Advantage*

**U-line™ Roller**, now deployed over **400 times** globally, delivers unmatched performance and benefits to Operator's cased-hole well-intervention activity.

- **Cost Advantage:** Reduce £/boe
- **Technical Advantage:** Improving the outcomes
- **Environmental Advantage:** Reduce CO2/boe

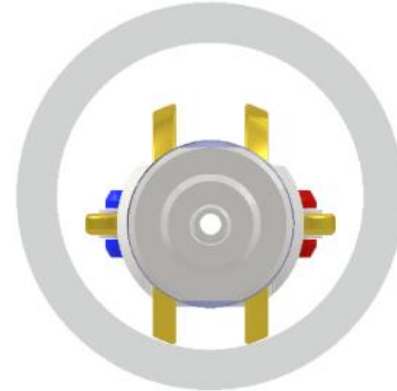


# Our Solution

## U-line™ Roller Technology

**U-line™ Roller** is a novel, cost-effective, Universal System approach to Well-Intervention Conveyance

- Extending the Reach of Intervention in deviated wells
- Modular - dual e-line & slick-line function
- The strongest, most flexible, roller on the market

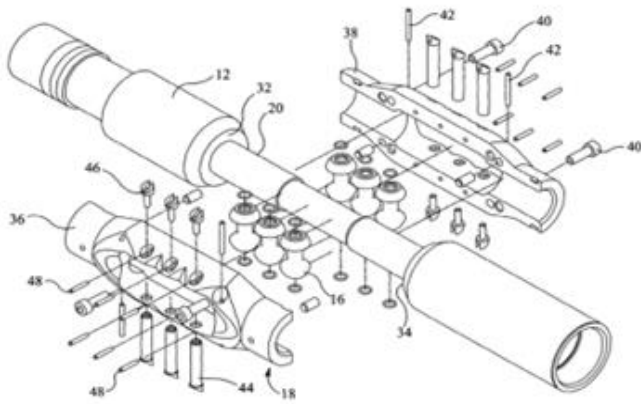


*Cross Section in  
tubing*



# Current Industry Conveyance Limitations . . .

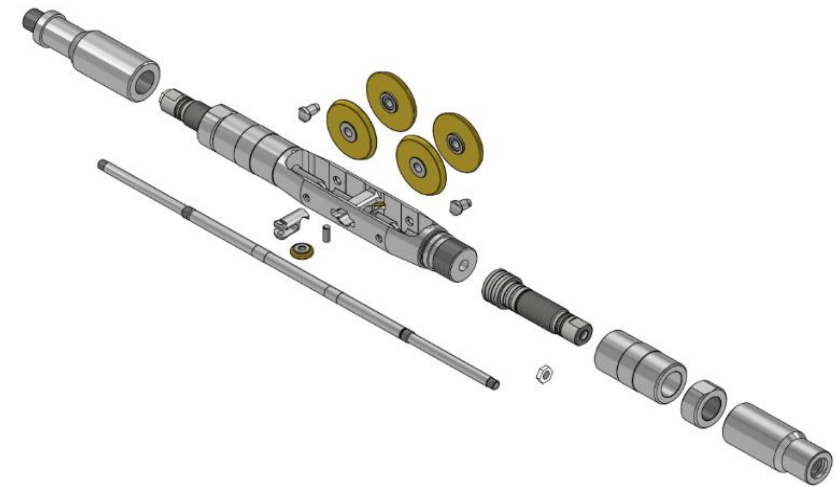
## First Generation Roller Technology



**48 Components**

**24+ Products**

## Next Generation *U-line*<sup>™</sup> Roller Technology



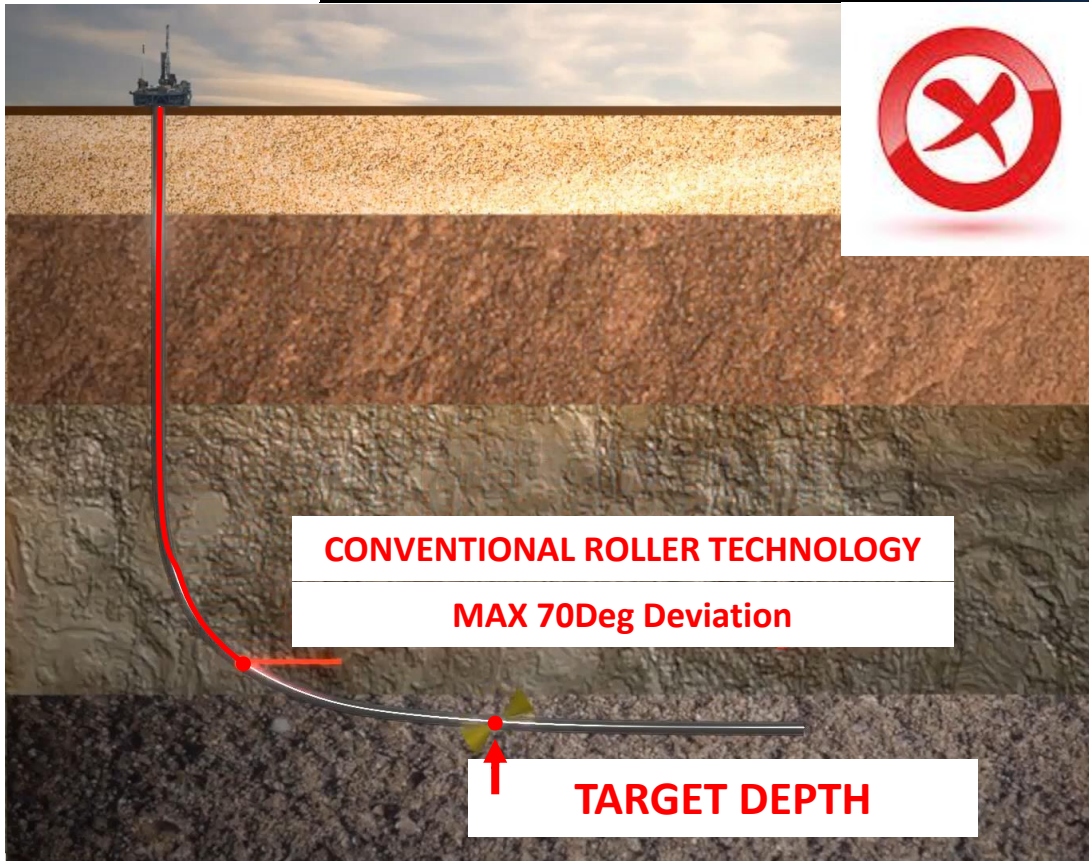
**12 Components**

**2 Products (+wheels)**

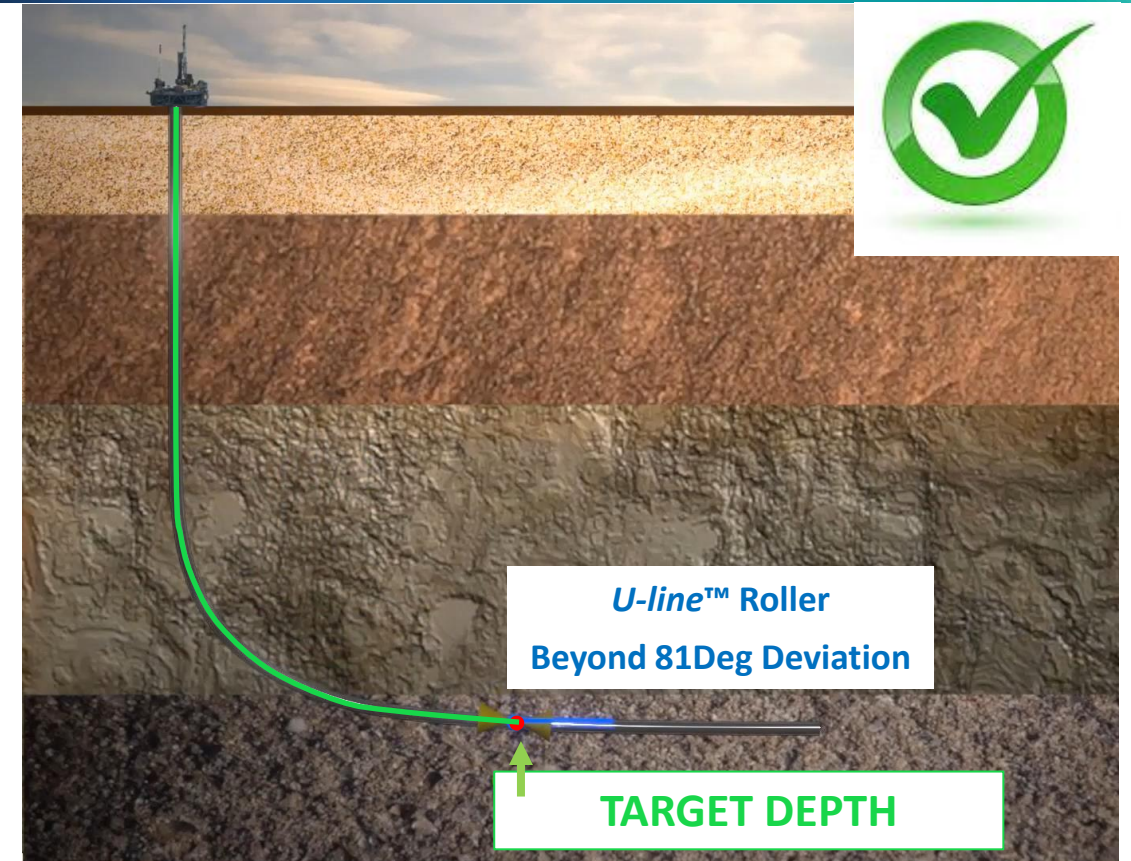
**75%** reduction in components – Reduces Risk

**96%** reductions in Manufacturing – Lowers Carbon Footprint

# Current Industry Conveyance Limitations . . .



**Outcome:** Intervention **failed** need coiled tubing or tractor to complete the Operation



**Outcome:** Intervention **successful**, huge cost/carbon saving, onto the next well!

# Current Industry Conveyance Limitations . . .

## DOWNHOLE CONVEYANCE TECHNOLOGY COMPARISON

<u>Features/Benefits</u>	<b>GARD U-line™</b>	<u>Current Rollers</u>	<u>Coiled Tubing</u>	<u>Tractor</u>
Design	Simple	Complex	Simple	Very Complex
Strength	High	Medium - High	Medium	Medium
Wheel Retention	No Screws	Screws	n/a	Screws
Modular	Yes	No	No	No
Debris Clearance	Good	Poor	n/a	n/a
Extended Reach	Yes	No	Medium	Yes
Well Integrity Risk	Low	High	Low	Medium
Universal	Yes	No	No	No
Inventory	Low/Low Cost	High/Costly	Low/Costly	Low/ Very Costly
Set Up - Time	Short	Medium	Medium	Long
Set Up - Cost	Low	Medium	High	Very High
Set Up - Competence	Low	Medium	Medium	Very High
Run Time	Fast	Medium	Slow/Medium	Very slow
Field Servicing	Fast/Simple	Slow/Complex	n/a	Very Slow/Complex

# *U-line™ Roller Technology*

## *‘What it means for our Clients’*

**U-line™** Roller Technology Now operational globally (400+ runs) reducing Operators costs and CO2/BOE whilst expanding well-intervention options






- Enables lighter / faster intervention e.g. slickline vs tractor / coiled tubing
- Small, agile fleet, adaptable, reduced maintenance & man-hour requirements
- Instantly reducing costs and changing approach to well-intervention





# U-line™ Roller Technology

## Examples of Achievements to-date

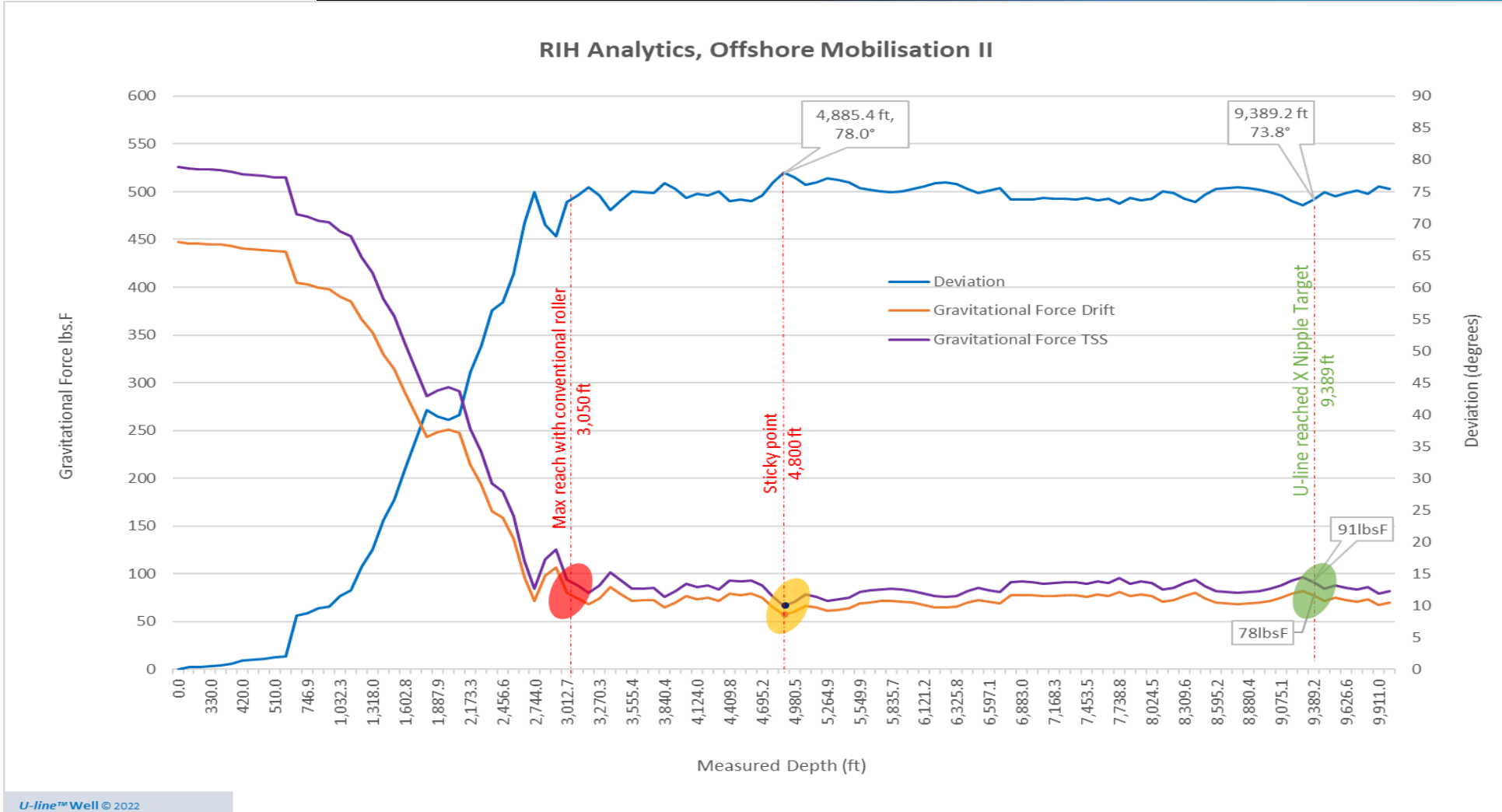
-  **W.Africa, delta:** Tubing diagnostics, slickline - reduces intervention cost by 75% Vs wireline tractor 13 slickline runs in total to 10,850ft / 79° deviation
-  **Malaysia, offshore:** Gas lift change-out - valve changed-out successfully at 11,800ft / 72° – negotiating a long tangent (7,880ft holding at an average of 71°) to reach TD, effective jarring at target
-  **Malaysia, offshore:** Thru Tubing Sand Screen – enables access to target nipples at 9,389ft / 75° deviation and delivers effective mechanical jar action to set 'X' lock / TTSS when there were no other intervention solutions – 2023 SPE/ICOTA conference paper
-  **India, offshore:** U-line Conveyance Technology widely adopted by the National Oil Company via Expro in order to reduce field intervention\$\$
-  **UKNS, offshore:** Compaction & Pulsed Neutron log - HPHT, 169.4degC, 8,300psi reservoir – toolstring reaching 16,463ft (5,018m) / 44° deviation





# U-line™ Roller Technology

## ‘What it means for our Clients’



= Furthest achieved by 4 'competitive' technologies

= Only U-line™ reaches to TD

# U-line™ Roller Advantage

- **Cost Advantage:** Up to 75% Cost Reductions
- **Technical Advantage:** Unlocked 'stranded reserves' and retrieved reservoir data
- **Environmental Advantage:** Replaced heavy carbon intensive activity

## NORTH SEA CHALLENGE

- 1661 operating wellbores – Intervention to enhance production
- 781 shut-in wells – Intervention to restore production
- 15% Intervention-rate – We can increase!





*Thank You!*

***U-line*<sup>™</sup> is now PROVEN technology.**  
**Help us bring these benefits to your North Sea assets.**

**Yerasimos Angelis, UK MD**

**[y.angelis@ga-rd.co.uk](mailto:y.angelis@ga-rd.co.uk)**

**+44 (0)1224 515980**

**[linkedin.com/in/yerasimos-angelis-17b80870](https://www.linkedin.com/in/yerasimos-angelis-17b80870)**

**Brian Archer, BD Director**

**[b.archer@ga-rd.co.uk](mailto:b.archer@ga-rd.co.uk)**

**+44(0)1224 518144**

**[Brian Archer | LinkedIn](#)**

**[www.ga-rd.co.uk](http://www.ga-rd.co.uk)**

**Please also Visit the GA R&D Ltd YouTube Channel  
for access to all animations!**