

A man and a woman are in a server room. The man, with a beard and wearing a grey sweater over a white shirt, is holding a laptop. The woman, wearing a white shirt and a blue lanyard, is pointing at the laptop screen. They are both looking intently at the screen. In the background, there are rows of server racks with blue lights.

Your Innovation Partner



The
Oil & Gas
Technology
Centre

Your Innovation Partner

Pathfinder Workshop

5th Nov 2019

Our Goals



Unlock

Unlock the full potential of
the UK Continental Shelf

Anchor

Anchor the supply chain
in North East Scotland

Inspire

Inspire a culture of innovation
and transformation



£180 million funding from the Aberdeen City Region Deal

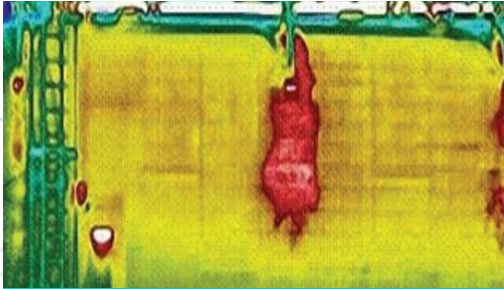
Technology Vision



Fix today



Data access



Asset inspection



Production optimisation



Revitalise exploration

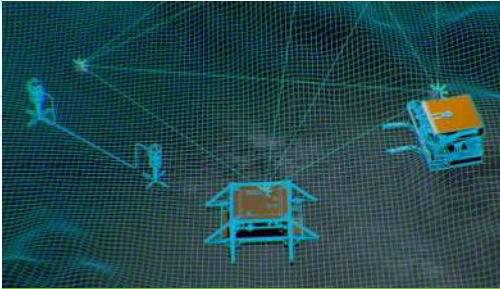


Efficient decommissioning



Alternative well barriers

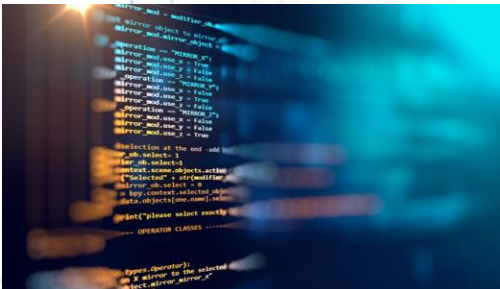
Maximise recovery



Tieback of the Future



Integrated energy



Automation



Remote operations



Artificial intelligence



New materials

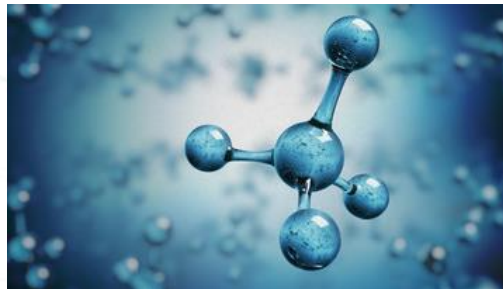
Transform tomorrow



Low carbon operations



Reusable infrastructure



Hydrogen delivery



Data driven



Unmanned facilities



Zero carbon developments

Transforming the industry for the low carbon future

How We Work



Driving

Action through technology roadmaps to achieve MER UK and grow the supply chain



Delivering

Projects that move the dial on key challenges and opportunities across the UKCS and beyond



Connecting

Industry, governments, regulators and academia to drive technology investment and deployment



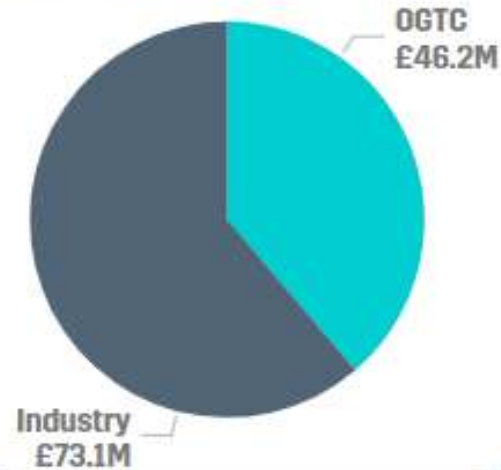
Partnering with industry, government and academia

Our Track Record



£119M Invested

Co-investing in industry-led projects to develop and deploy new technologies.



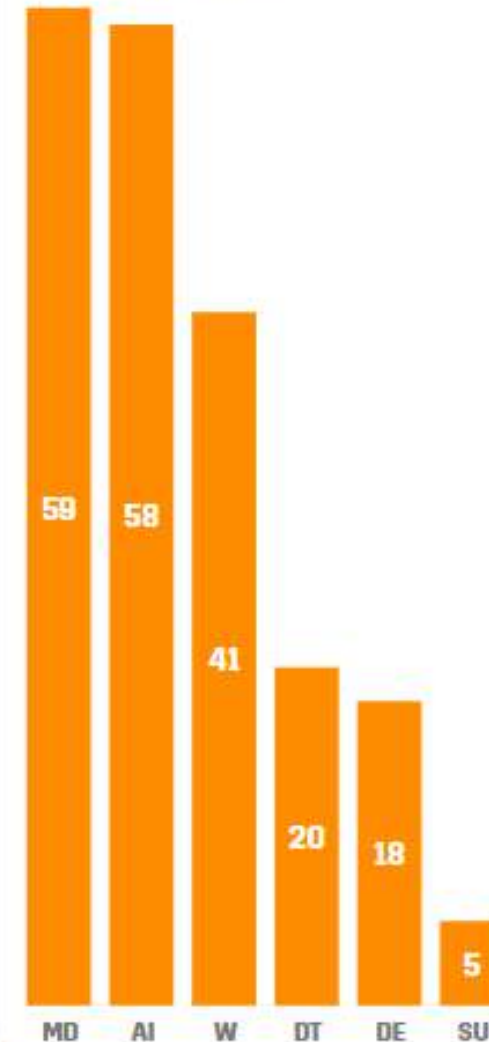
850+ Technologies Screened

Harnessing the power of an ever-expanding range of transformational new technologies.

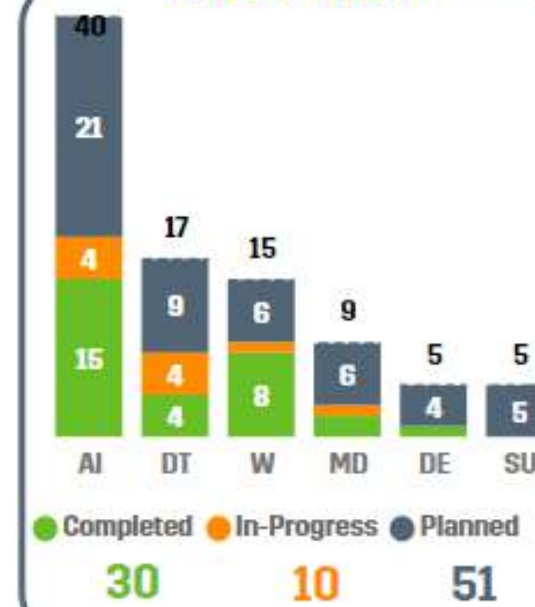


201 Approved Projects

Delivering technology projects to fix today, maximise recovery and transform tomorrow.



Field Trials

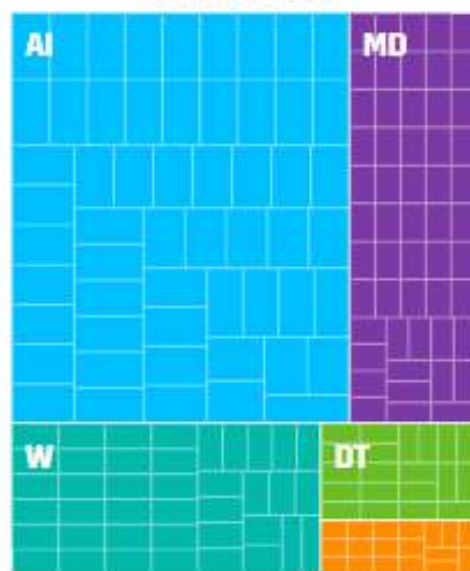


Memberships

123 Bringing together Operating, Supply chain and technology companies to drive innovative new solutions.

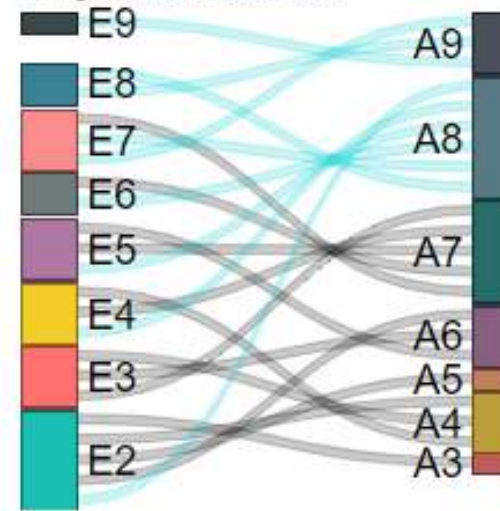


GVA Model



TRL Readiness

Entry TRL to Achieved TRL.



22+ TechX Startups

Accelerating innovation by helping a new generation of entrepreneurs take their technologies to market - faster.



Government Industry Schools Community



Visitors
17,500+

Creating a culture of innovation in the region through exciting events and workshops.

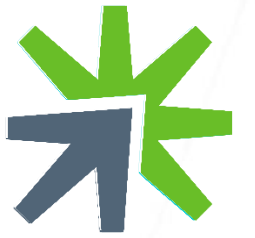
Delivering strong results



Are we all flying in the same direction?

*The OGTC shaping the future of UAVs in the
Energy industry.*

Solution Centres



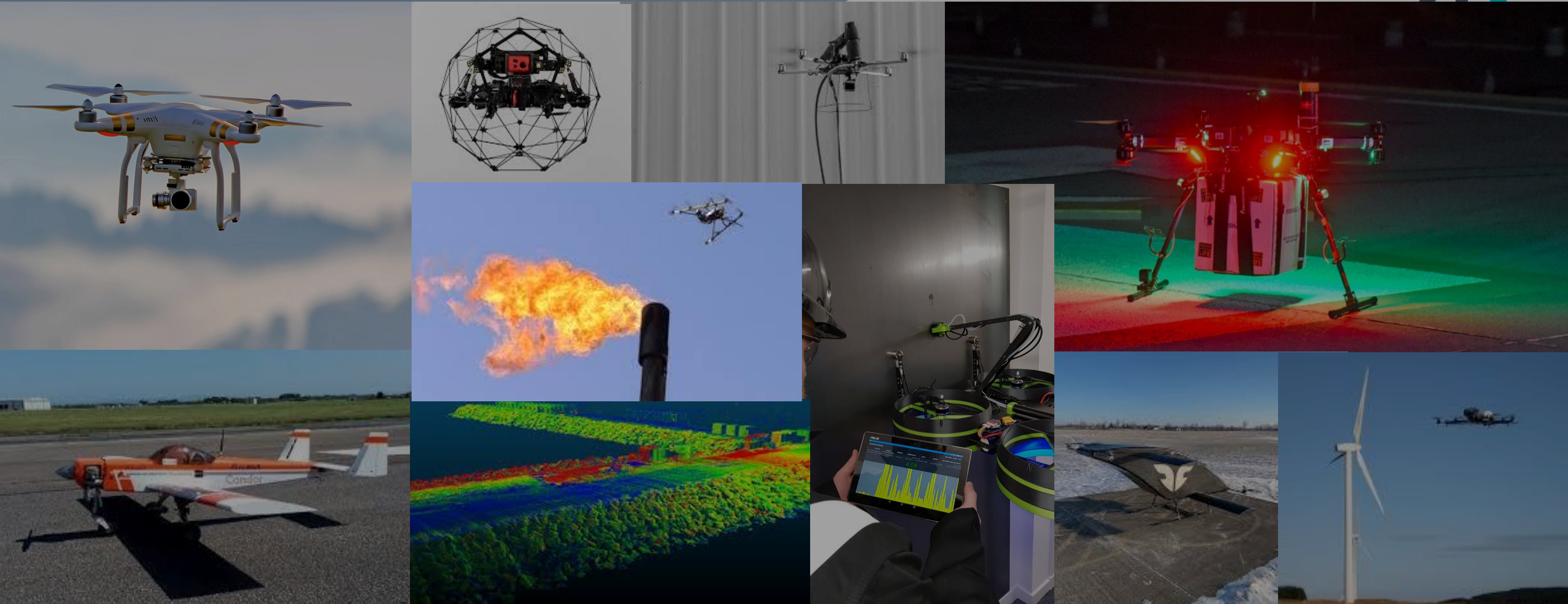
Driving



| Digital | Subsurface | Decom | Wells | Marginal Developments | Asset Integrity |
|---------------------------------------|---------------------------|-------------------------|-----------------------------------|------------------------|----------------------------------------|
| 10% increase in production efficiency | MER UK up to 20bn barrels | 35% cost reduction | 50% lower well construction costs | 50% under development | 50% cost reduction |
| Digitally enabled supply chain | Discover more | Late life management | Optimise design | Tieback of the Future | Risk based inspection & data analytics |
| Digital & data architecture | Develop more | Post COP OPEX reduction | Flawless delivery | Facility of the Future | Detection & condition based monitoring |
| Smart facilities | Recover more | Innovative removal | Maximise production | Integrated energy | Enhanced inspection techniques |
| Digitally enabled worker | | Optimise abandonment | Optimise abandonment | | Repair & mitigation solutions |
| Production optimisation | | | | | |

Delivering solutions to industry challenges

Unmanned Aerial Vehicles

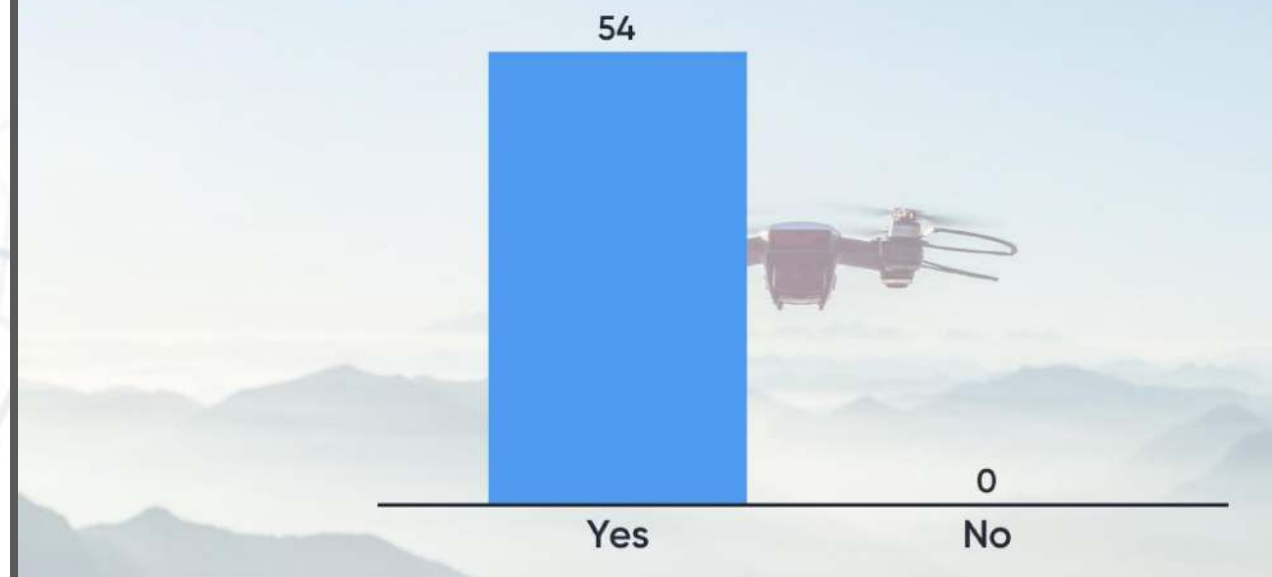


User Engagement Event – 4th July 2109

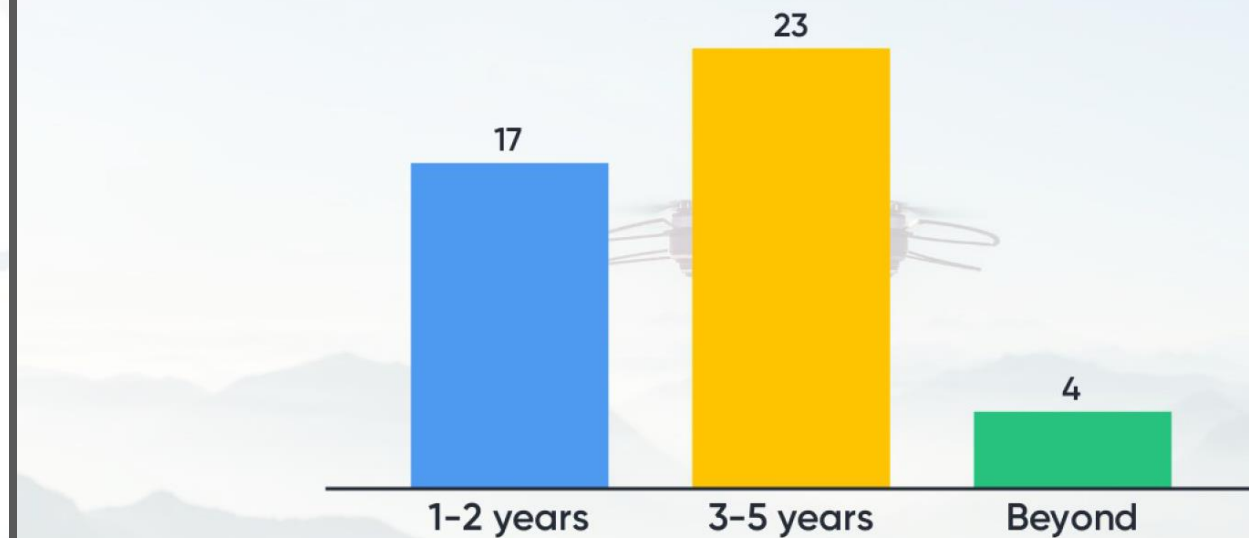
Workshop Outputs



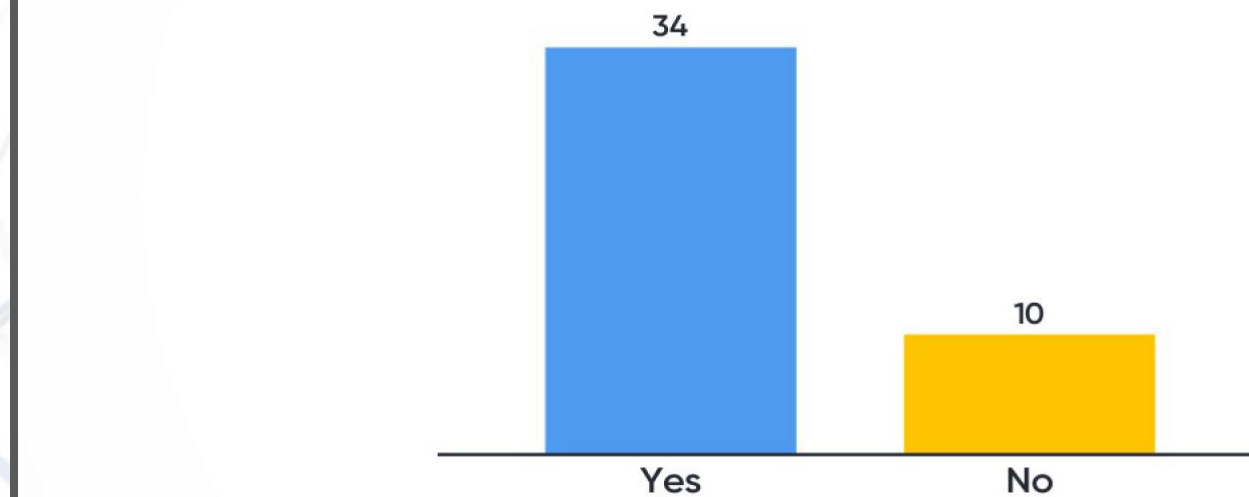
Do we need to develop UAVs?



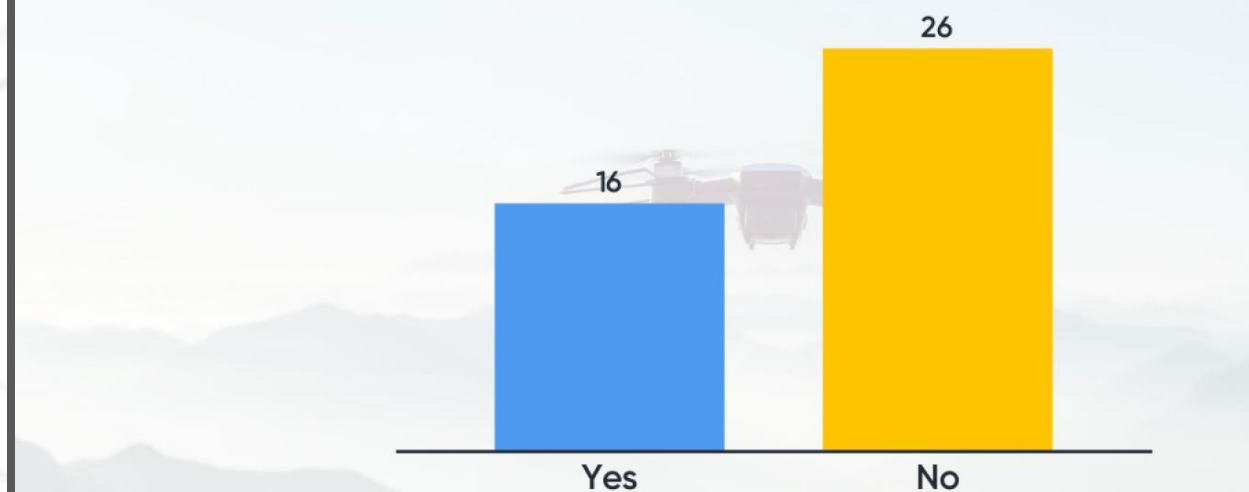
How close do you think we are to BvLOS?



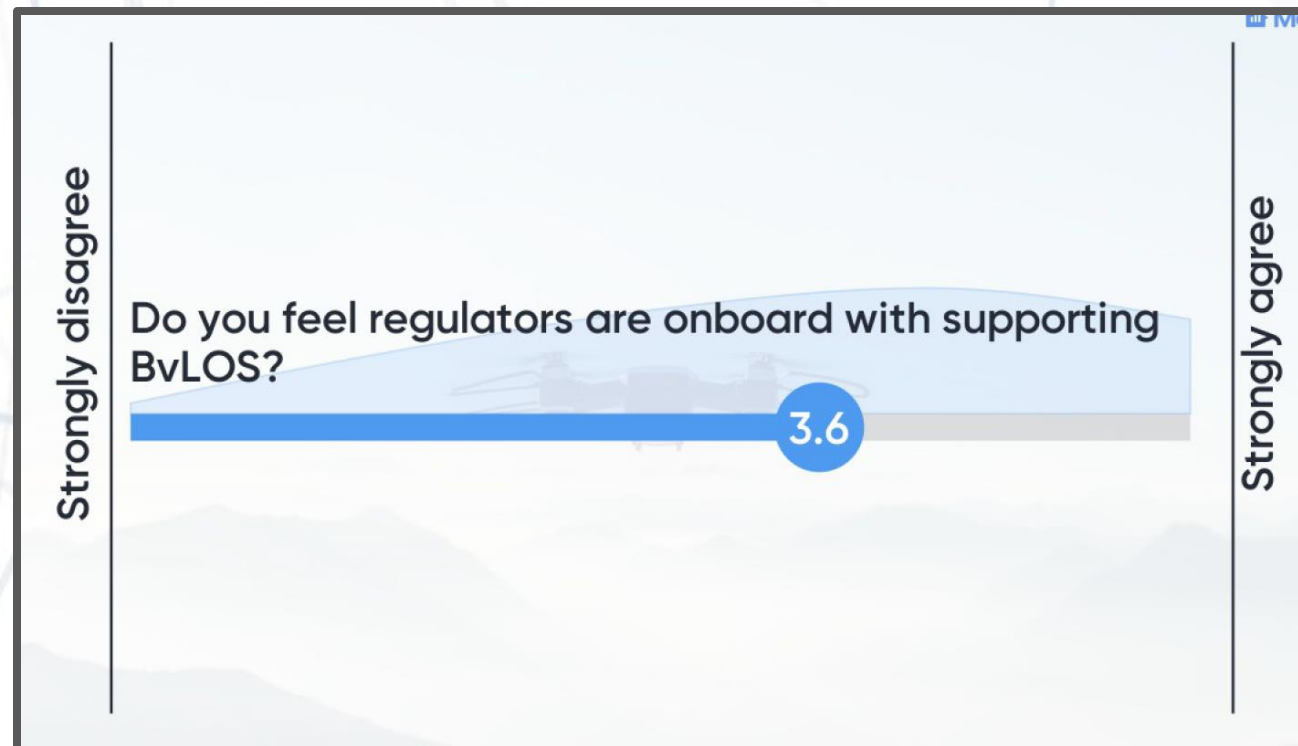
Is there a difference in requirements between renewables and O&G regulations?



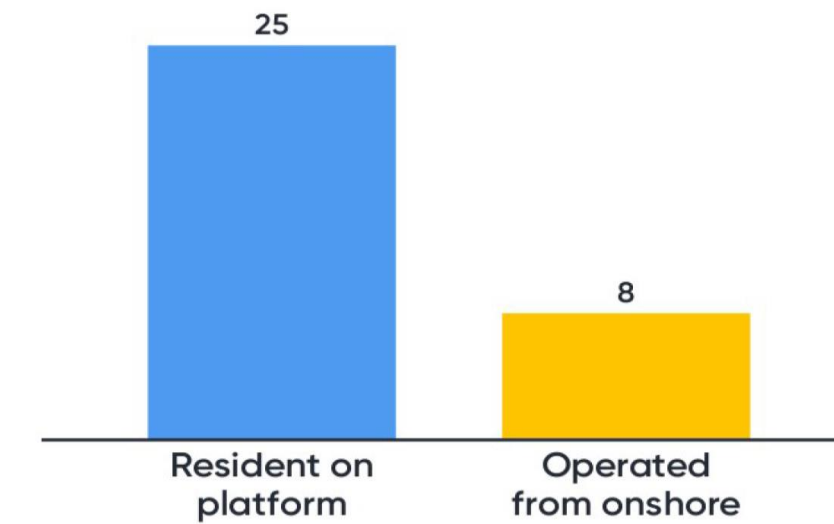
Should we aim to replace NDT technicians / OIEs with UAVs?



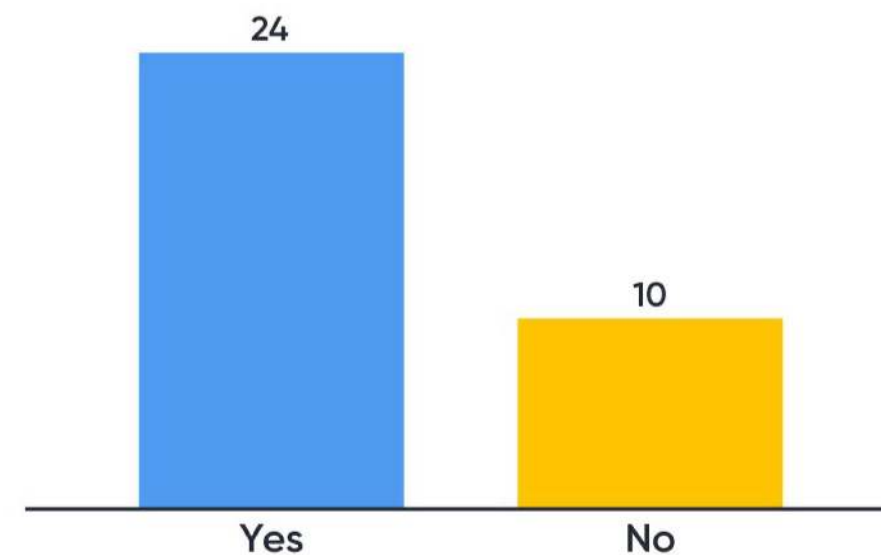
Workshop Outputs



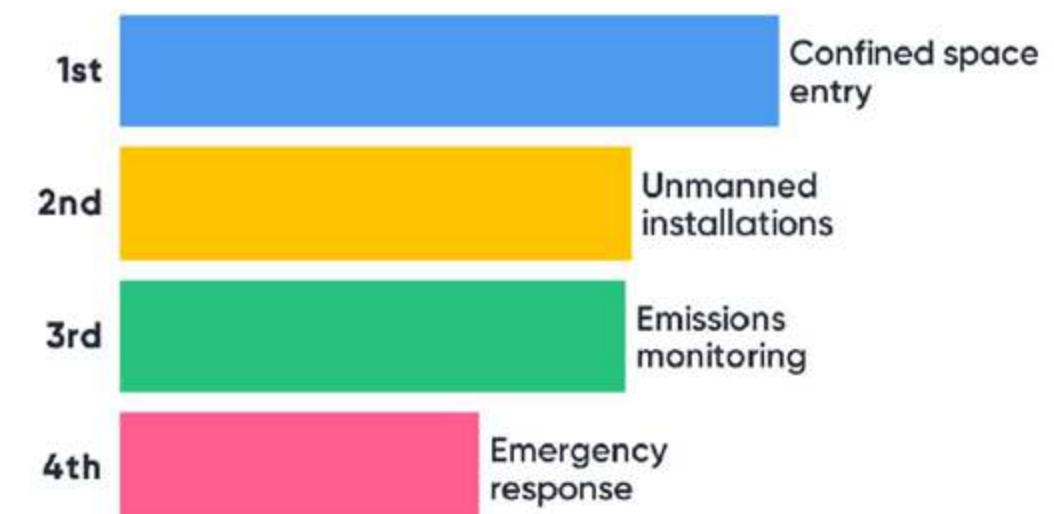
Should UAVs be resident on platforms or operate from onshore?



Is there a need for UAVs to be ATEX Certified?



In order of preference what abilities should a certified UAV have?

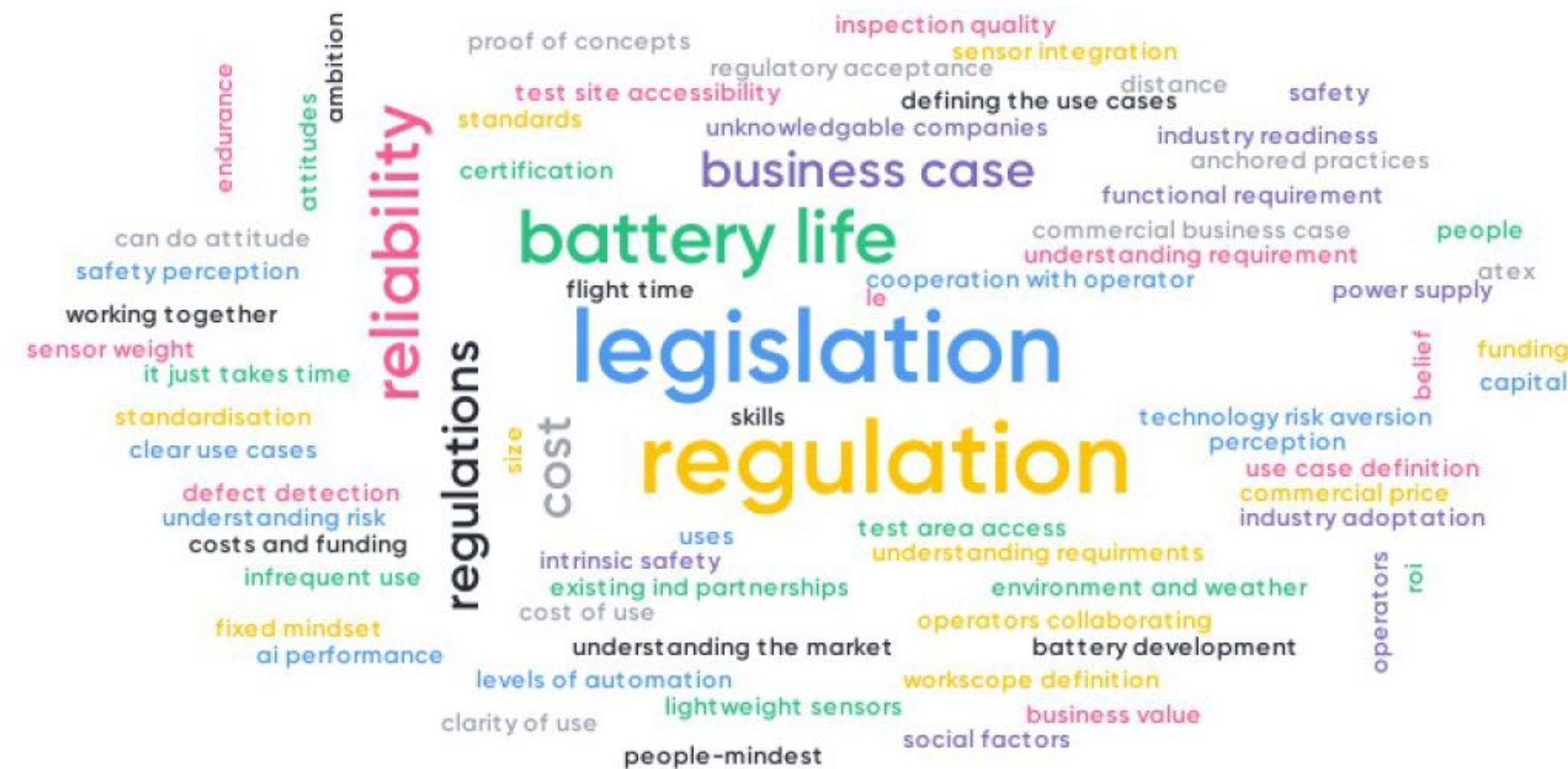


Workshop Outputs



What are the barriers in developing and deploying the next generation of UAVs?

Mentimeter





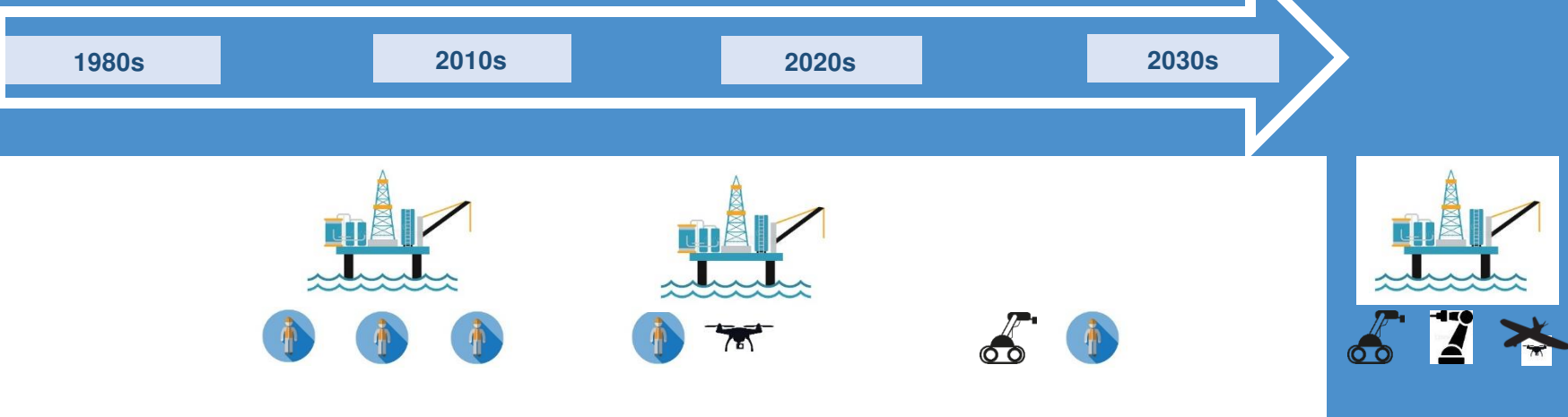
TOTAL

Case Study

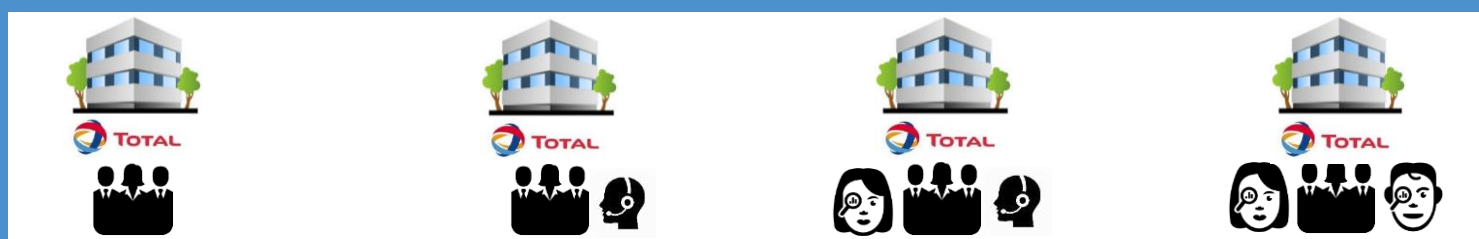


Challenges & Opportunities for BVLOS UAVs in Oil & Gas

Vision

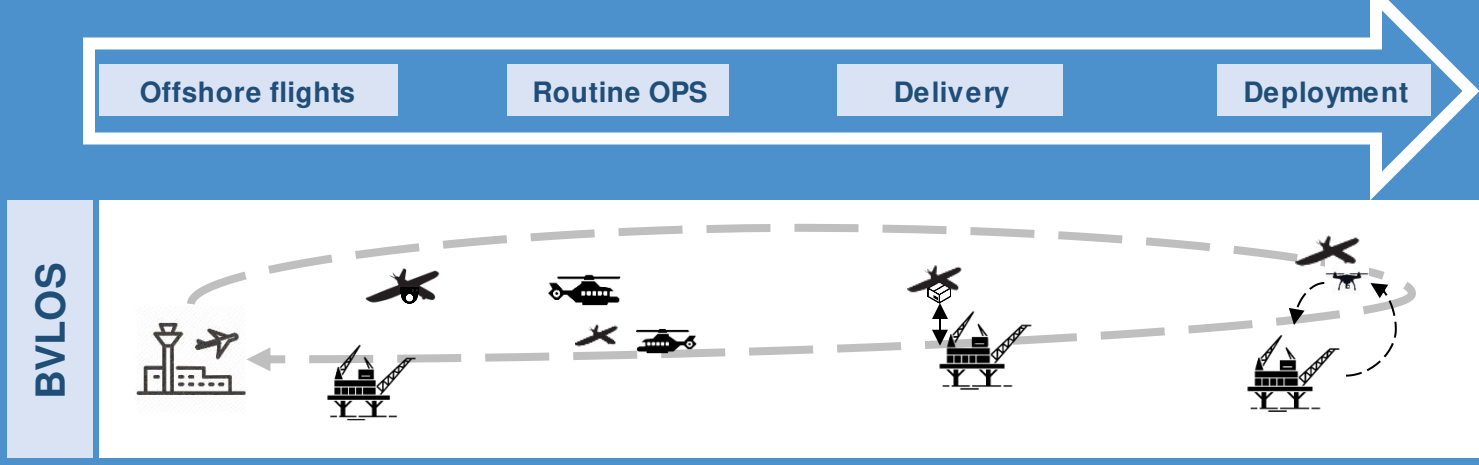


- Many workers offshore
- Difficult jobs offshore
- Limited support onshore
- Less workers offshore
- Facilitated jobs offshore
- Developed support onshore
- Few workers offshore
- Supervising jobs offshore
- Extensive support onshore
- No workers offshore
- Operations completely run onshore



- RAS (Robotics & Autonomous Systems) are a key driver of modern industry
- O&G → Extreme & Harsh Environments, seek to leverage RAS
- Goal → Enhance Safety, Reduce OPEX and increase Efficiency in our Operations

Beyond Visual Line of Sight Drones



- BVLoS - Unlocking the Maximum Business Value
 - Mind-set, Connectivity, Long Range Inspection, Delivery & Vehicle Choice
- Drivers
 - Data Connectivity architecture → Surrounding digital
 - Ensuring Flight Safety → Trials
 - Technology Progression → Vision & next phases



Challenges & Opportunities for BVLOS UAVs in Oil & Gas



Challenges

- Challenging coms availability → control and data management
- Forefront technology → build stakeholders confidence
- Co-activity in busy airspace → simultaneous operations procedures

Opportunities

- Emergency response capability
- Unmanned remote inspection
- Access to facilities
- Enabler to NUIs

- BVLOS Pilots
 - Asset Engagement → a change from the Norm
 - Regulators acceptance
 - Building Confidence → Phases
- BVLOS Build for Routine Operation:
 - Flylogix Forefront of engagement with regulators (CAA, NATS & ATC),
 - Flylogix/TOTAL jointly with OGTC to develop the procedures to enable drones to operate along-side manned aviation outside segregated airspace.
- Key deliverables for this project:
 - Acceptance by, Authority, Facility End Users and UAV Operators;
 - Review and develop ATC procedures, including identifying required airspace changes;
 - Continued Field Trials of unmanned flights under controlled conditions.





The Oil & Gas Technology Centre

Your Innovation Partner

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