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SYSTEM OF SYSTEMS





# A SYSTEMS-OF-SYSTEMS PERSPECTIVE:

Unlocking tactical diving vehicle potential for European underwater operations

PRESENTED BY:



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## THIS PRESENTATION AIMS TO EXPLORE:

- What role can Tactical Divining Vehicles (TDVs) play in enabling European nations to overcome underwater capability gaps?
- How can TDVs complement existing submarine and surface platforms in a holistic naval strategy?
- Linking into the ISTAR artillery targeting picture – linking covert littoral intel.



## FEATURES:



### DIMENSIONS & WEIGHT

OVERALL LENGTH:	10.5m /
WIDTH:	2.8m /
HEIGHT WITH MAST:	3.5 (with fully extended mast)
WEIGHT:	4,500kg
PAYLOAD (INC DIVERS):	1200kg neutral buoyant

- + Electro Optical (EO) Mast System
- + GPS Denied / Spoofed Countermeasure
- + Navigation System (Intuitive & simple)
- + Advanced Sonar Sensors
- + Enhanced Comms Technology
- + Containerised
- + Multi-role: ISTAR, Stand-off attack, Diver Delivery.
- + Modular and Adaptable to novel mission sets
- + Multi-mode: Surface, Semi-Submerged, Fully Submerged
- + Stand-off Weapon Integration
- + Bespoke Launch and Recovery System
- + Various Launch Options  
(Landing Platform Dock/Ships Deck Crane/Heli Undersling/Parachute/Jetty/Trailer)



### OPERATOR CAPACITY



Designed to fit 40ft container

**SIDE**



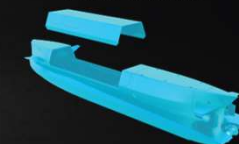
**FRONT**

**BACK**




2.8m


Modular cabin/hull





## TACTICAL DIVING VEHICLE - 3 MODES



 **SURFACE**  
High Speed Tactical Insertion



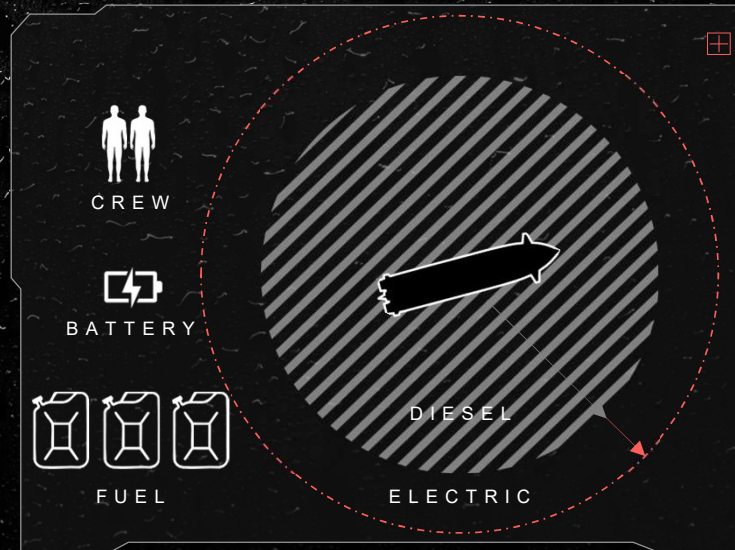
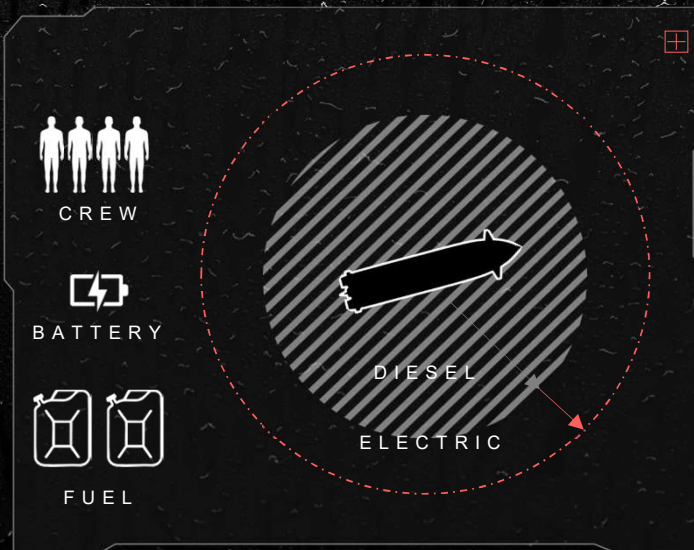
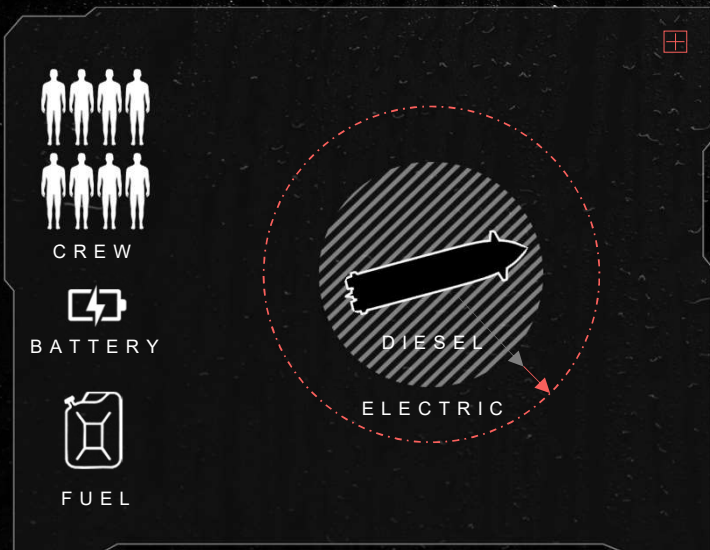
 **SEMI-SUBMERGED**  
Low Signature Reconnaissance



 **SUBMERGED**  
Covert Infiltration



## TACTICAL DIVING VEHICLE - RANGE





## MISSION PROFILES

- + Sig Int
- + Vis Int
- + Mining
- + Ship Attack
- + Beach Recce
- + Mine Clearance
- + Stand-off Attack
- + Target Designation
- + Harbour Security & Survey
- + Operator Dropoff/Extraction
- + Remote/Autonomous Resupply
- + Offshore & Shallow Seabed Infrastructure
- + Maritime Counter Terrorism Interdiction and boarding
- + Deep Seabed Transit/Bell/Dive Platform & Deco Transit





## STANDARD CONFIGURATION OUT AND RETURN

DIESEL - 150Nm  
6 hours in cruising  
speed 25 knots

ELECTRICAL - 15Nm  
3.75 hours in cruising  
speed 4 knots

## TACTICAL DIVING VEHICLE - RANGE





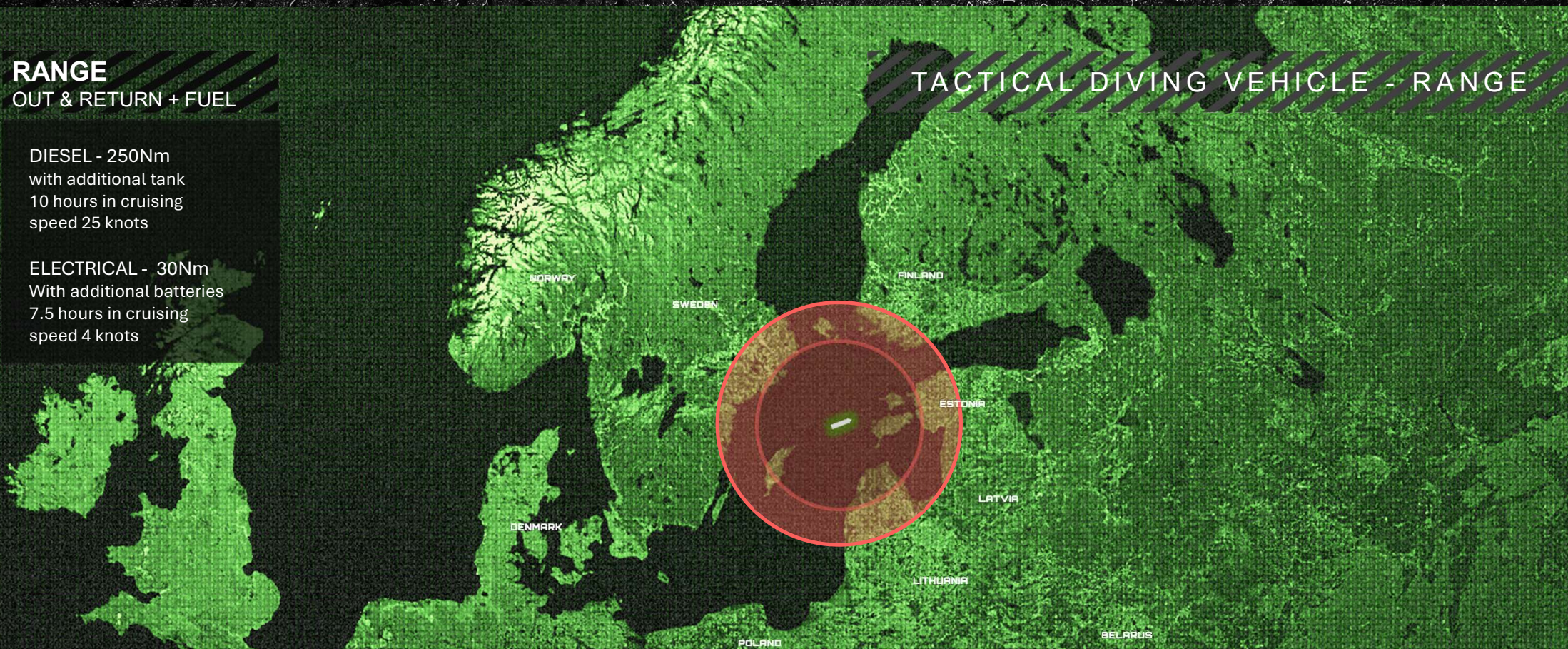
## RANGE

OUT & RETURN + FUEL

**DIESEL** - 250Nm  
with additional tank  
10 hours in cruising  
speed 25 knots

**ELECTRICAL** - 30Nm  
With additional batteries  
7.5 hours in cruising  
speed 4 knots

## TACTICAL DIVING VEHICLE - RANGE





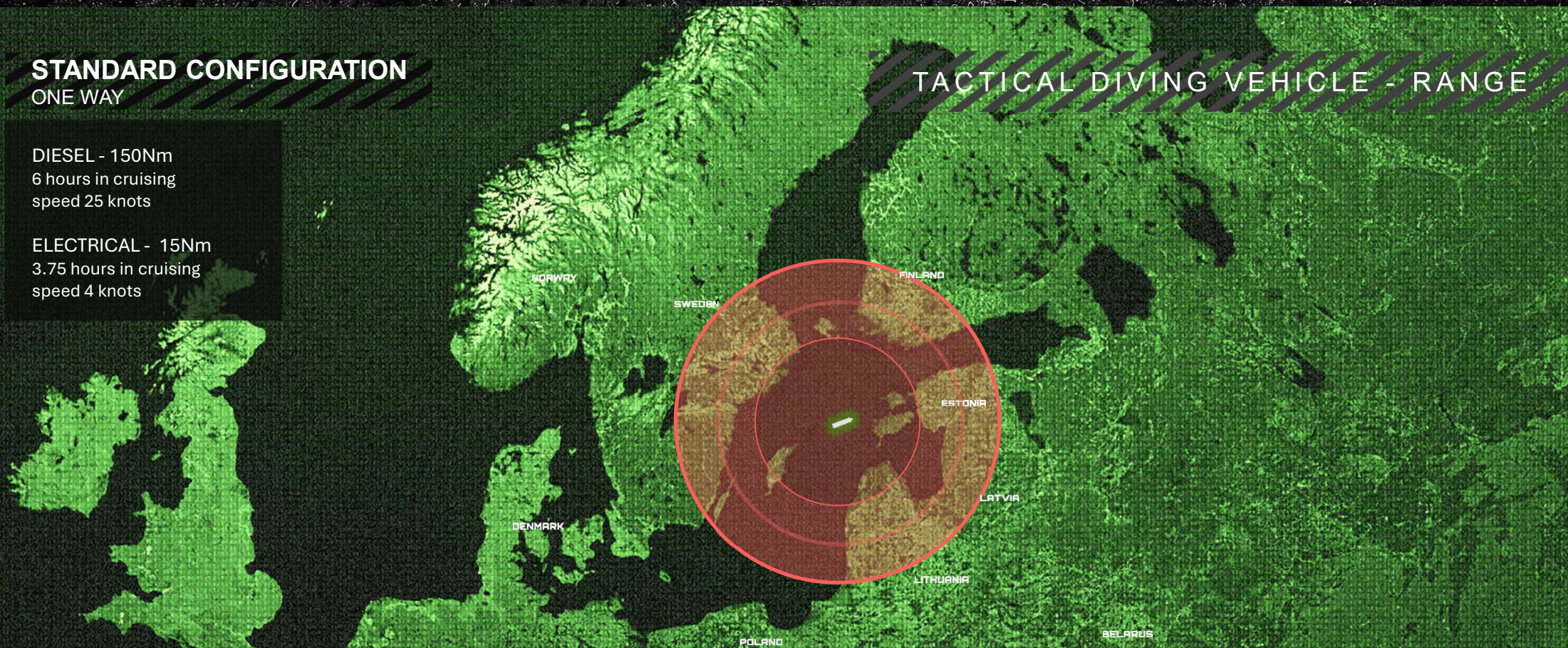
## STANDARD CONFIGURATION

### ONE WAY

DIESEL - 150Nm  
6 hours in cruising  
speed 25 knots

ELECTRICAL - 15Nm  
3.75 hours in cruising  
speed 4 knots

## TACTICAL DIVING VEHICLE - RANGE





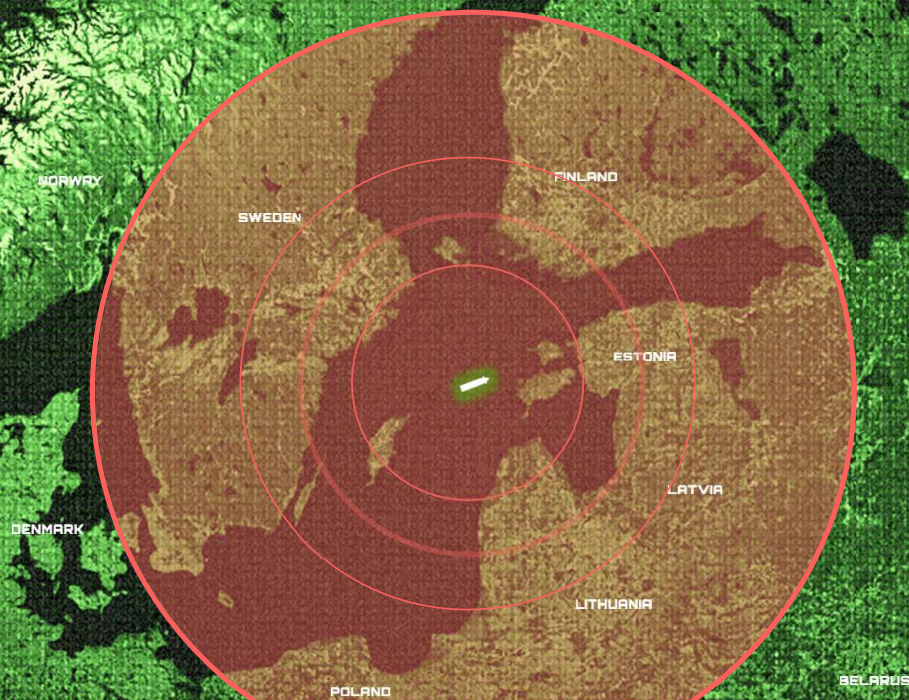
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## TACTICAL DIVING VEHICLE - RANGE





## TDV VERSATILITY

The TDV is not a System of Systems in its own right – it extends the System of Systems:

- Surveillance and Reconnaissance
- Coastal Defence and Deterrence
- Special Operations Support
- Anti-Submarine Warfare (ASW)
- Search and Rescue Operations
- Logistical Support and Resupply
- Environmental Monitoring
- Liaison and Communication Platform
- Covert CNI/cable inspection





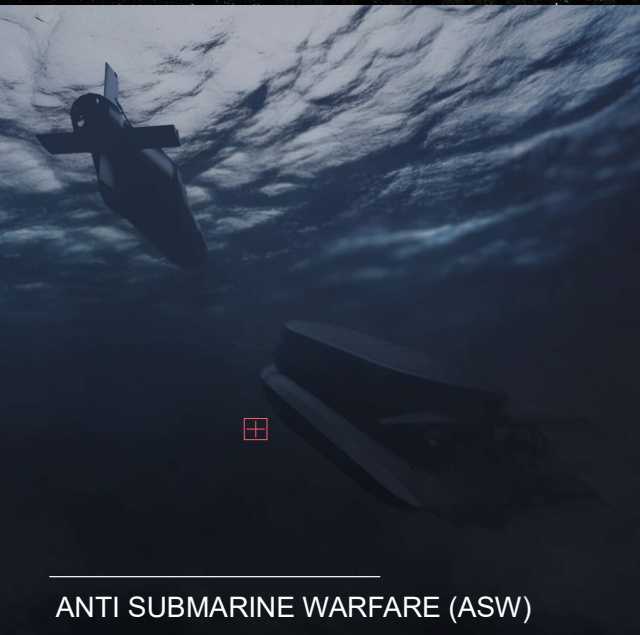


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## TDV VERSATILITY







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OPERATIONAL AWARENESS

ISR

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12-02-2025



# ORGANIC CARRIER SEAL CONOP







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TDV VERSATILITY - LETHALITY

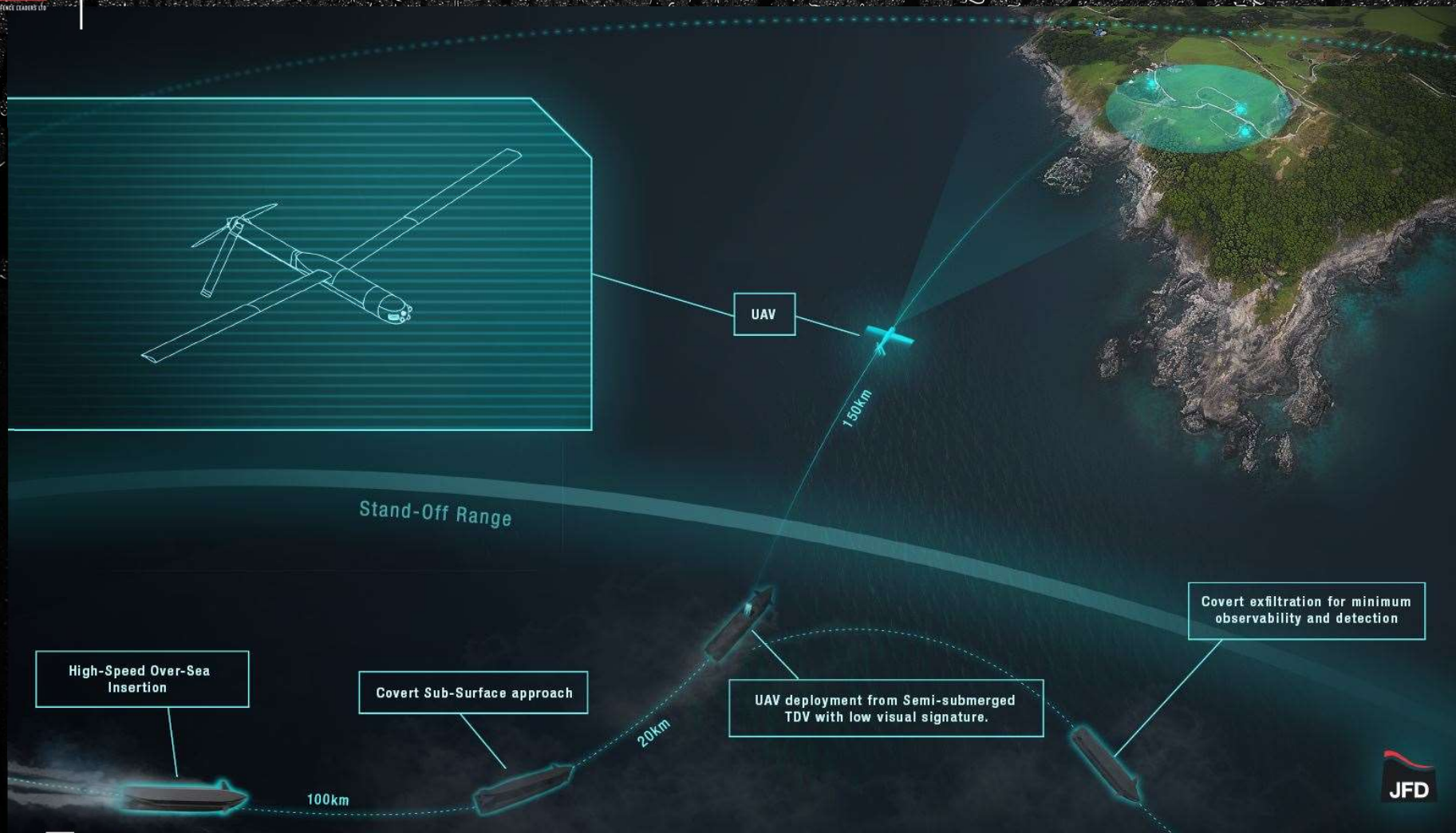


MAN PACKABLE AAV

MULTI MISSION LOITERING MUNITION











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WHAT DOES REAL DETERRENCE LOOK LIKE?



Scale



Multi-role



Covert Positioning



Mobility





PEACE TIME

GREYZONE

TOTAL WAR

 REGULATIONS VERSUS NEED



## TDV VS. UUV

- TDV vs UUV – Realtime data collection in TDV, TDV has the ability to deploy UUV covertly from payload bay – for ‘dull, dirty and dangerous’ work
- Legality of autonomy vs manned vs cost vs time
- UUV autonomy technology is heavily focused on “safe movement and sensing” and preprogrammed mission sets – incorporating AI to improve mission dynamism/responsivity or deploying lethality is still embryonic and prohibitively expensive.



UUV



TDV



XLUUV



## SUMMARY

### DETERRENCE | DEFENCE | COUNTER-ATTACK/ATTACK

It's all about the Deterrent but in a system of systems where persistent presence is key. TDVs offer a cost-effective alternative, or at the very least a complimentary capability to the following:

1. Fast surface response craft
2. Underway Boarding
3. Divers on short notice
4. Kinetic Response if required
  - a. Assaulters
  - b. Torpedo
  - c. Missile
  - d. ISR
  - e. Energetic UAVs/Loitering overwatch
5. Placement of Sensors/Mines





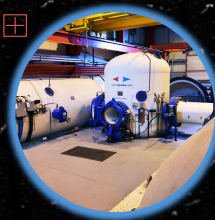
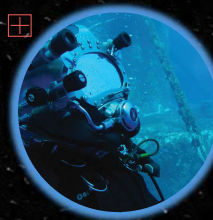
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