

UNMANNED UNDERWATER VEHICLES: ENABLERS OR DISRUPTORS OF THE PEACEFUL USES OF THE SEA?

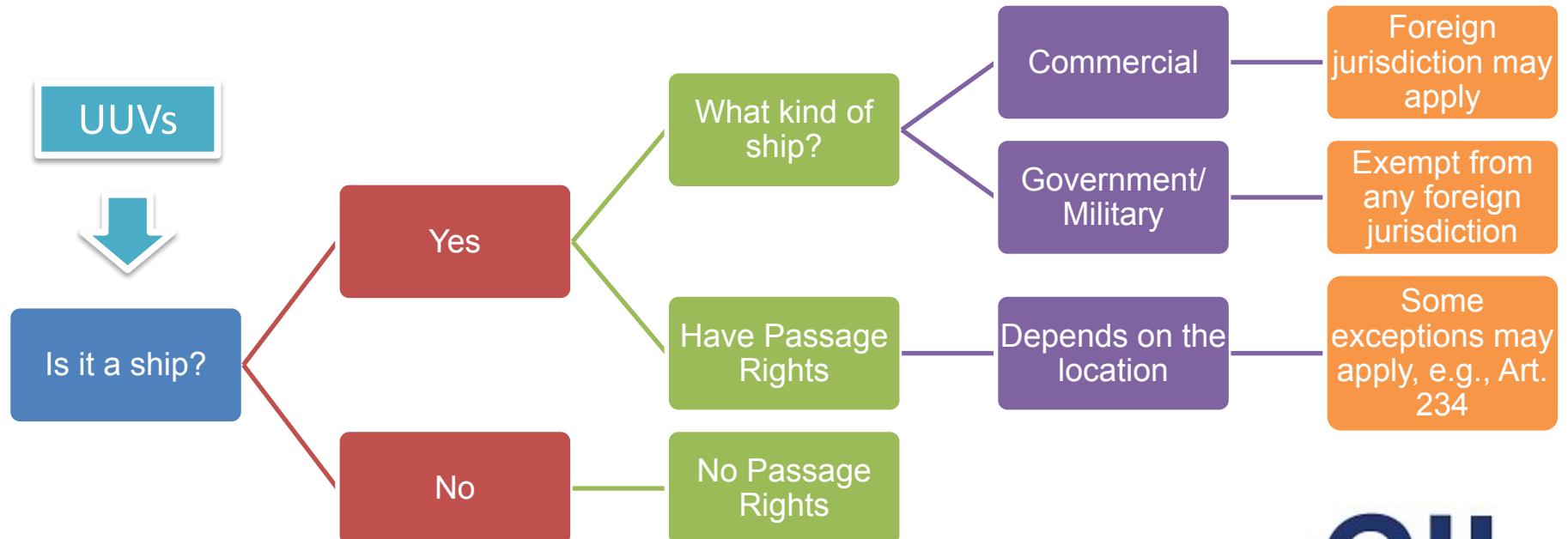
**Ocean and Peace Conference
9 December 2025, Shangri-La Hotel, Jakarta, Indonesia**

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Centre for International Law (CIL), National University of Singapore (NUS)

Legal Definition

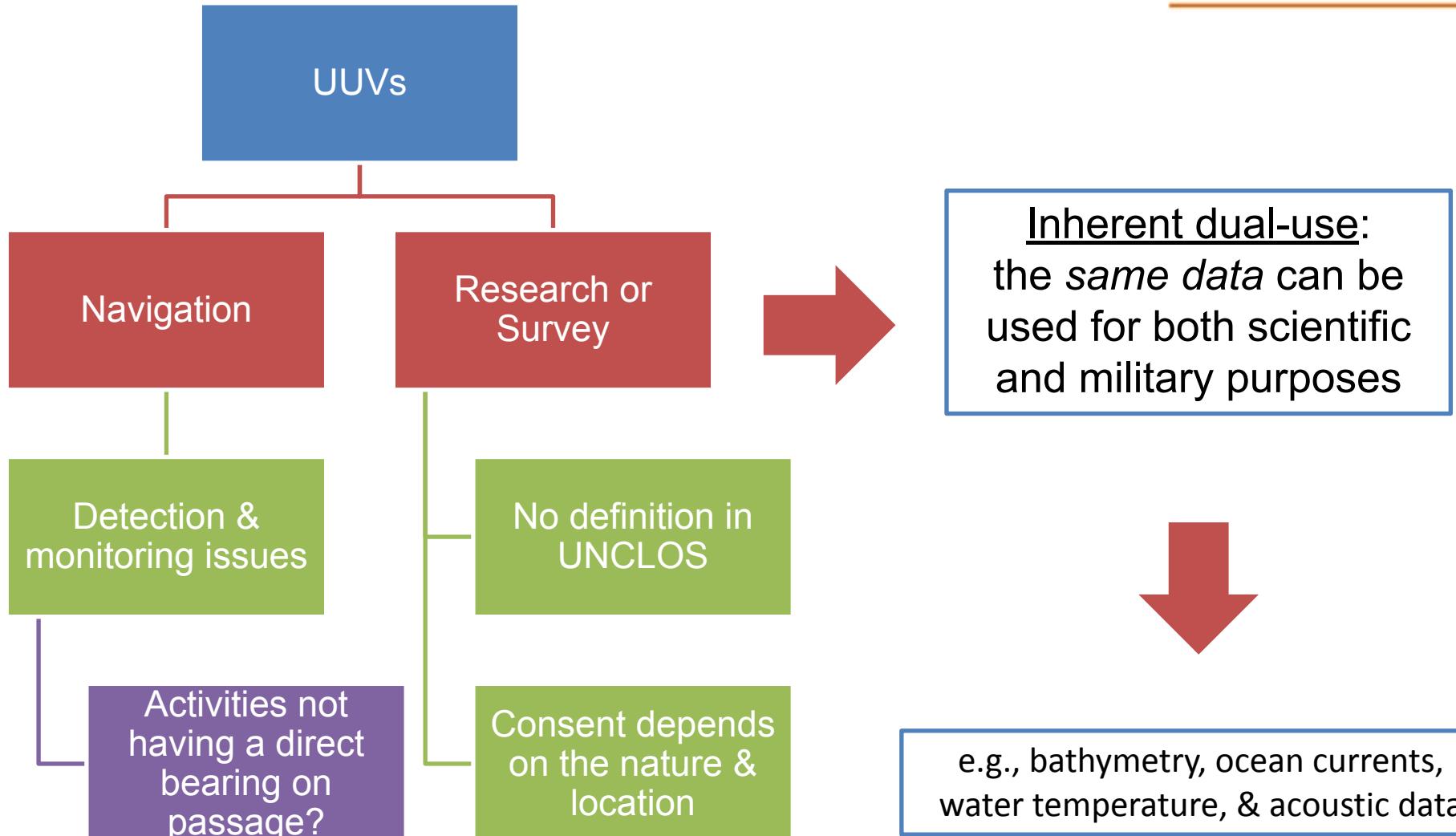
UNCLOS provides no definition of 'ship,' defining only 'warships' (Art. 29) and using terms like 'vessel' and 'underwater vehicles' without clarifying their meaning or relationship.



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The Problem



UVVs found in Indonesian waters

Indonesian fisher finds drone submarine on possible covert mission

Navy seizes UUV, likely a Chinese Sea Wing, that experts say could be used to plot routes for military subs



Suspected Chinese Seawing drone recovered by a fisher and the Indonesian navy. Photograph: @Jatotint/Twitter

An Indonesian fisher has found what experts say is likely to be a Chinese submarine drone in waters on a strategic maritime route from the South China Sea to Australia.

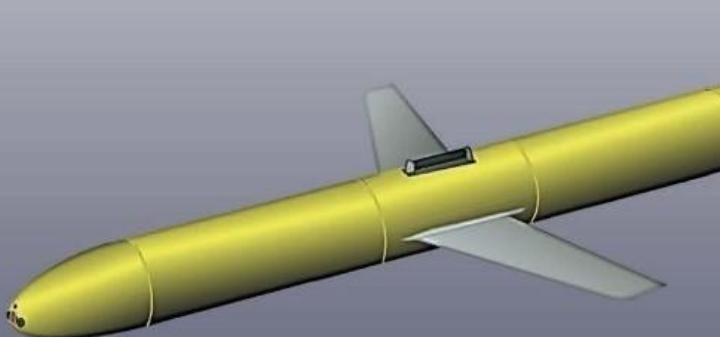


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Other Reported Incidents in Asia

Chinese 'Sea Wing' (Haiyi) underwater gliders found in Asia



Reported Incidents of Sea Wing gliders found:

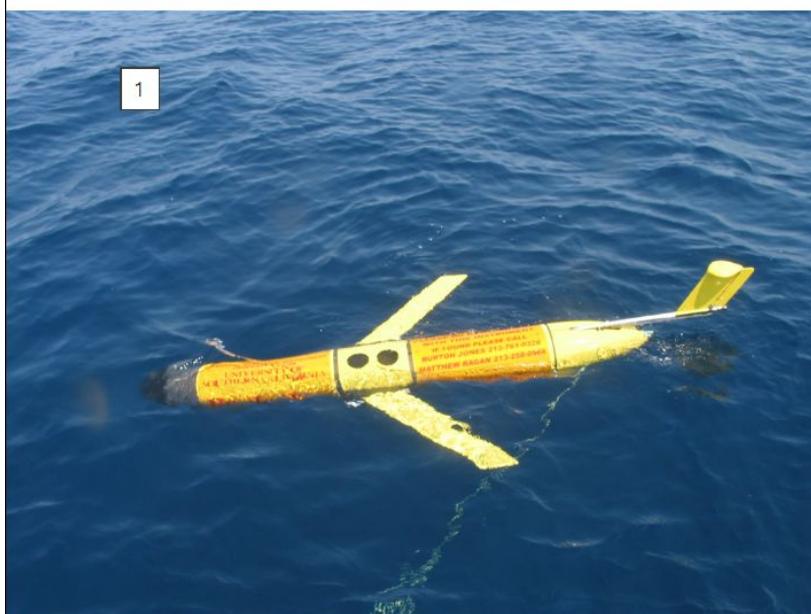
- (A) 16 November 2016. Quang Ngai, Vietnam
- (B) 12 February 2019. Bangka, Indonesia
- (C) 23 March 2019. Riau Islands, Indonesia
- (D) 22 January 2020. Masalembu, Indonesia
- (E) 20 December 2020. Selayar Islands, Indonesia

1. Malacca Strait, 2. Sunda Strait, 3. Lombok Strait

Red lines are ship tracks of selected Chinese survey ships, 2019–20. Data provided by MarineTraffic.com



UUVs for Military Surveys



SG ECONOMY 4 min. Read

China seizes US glider in latest attempt to stamp sovereignty over South China Sea



"It was taken" by China, Capt Davis said during a press briefing on Friday.

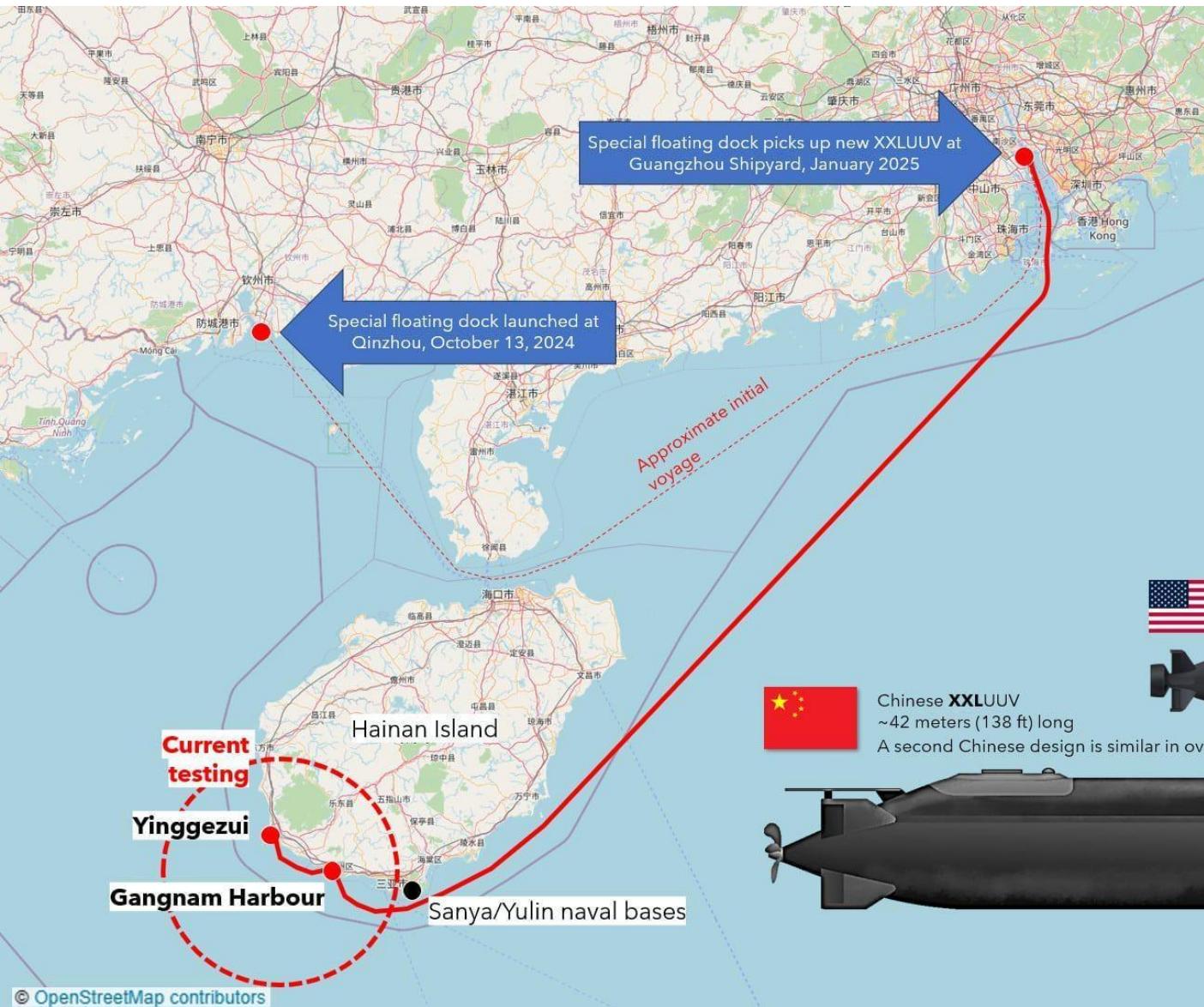
"The UUV [unmanned underwater vehicle] was lawfully conducting a military survey in the waters of the South China Sea," he added.

"It's a sovereign immune vessel, clearly marked in English not to be removed from the water - that it was US property."

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Uncrewed Submarines

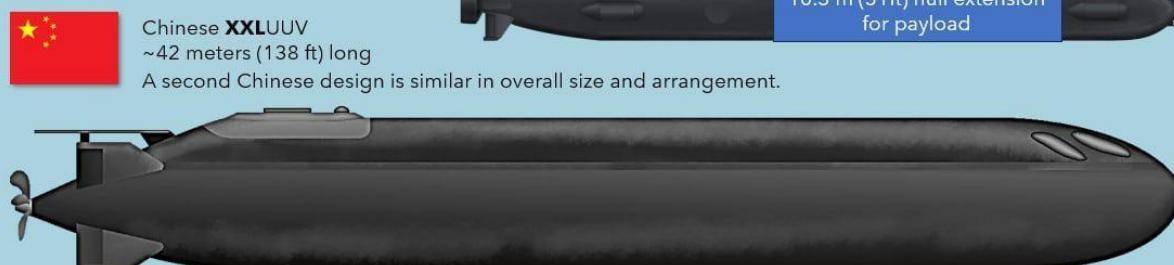


China Testing 'XXL' Uncrewed Submarines in South China Sea

China has deployed two extra-large uncrewed submarines to Haian in the South China Sea, where they appear to be undergoing trials. The two designs may represent competing prototypes. Both are kept inside specialized floating docks that conceal them from passing ships and local observers.



U.S. Navy 'Orca' XLUUV
15.5 meters (51 ft) long, extendable to 26 meters (85 ft)



H I Sutton © 2025

UUVs for Criminal Activities

BBC

Drug smuggling: Underwater drones seized by Spanish police

5 July 2022

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Leo Sands

BBC News



Spanish police

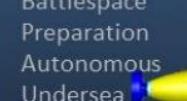
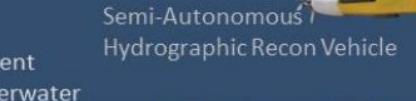
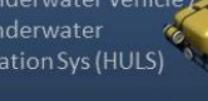
Spanish police released this video of drones

Spanish police have seized three underwater drones built to smuggle drugs across the sea from Morocco.

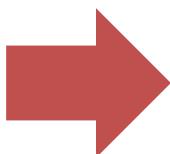
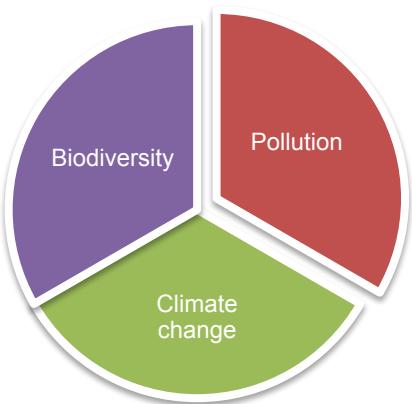
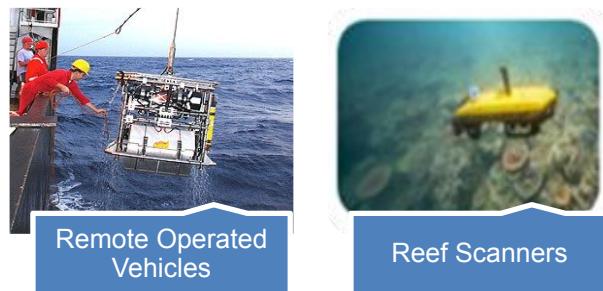
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UVUs for Maritime Law Enforcement

Unmanned Maritime Systems (PB13 and beyond)		
Unmanned Surface Vehicles (USV)	Mine Counter-Measures (MCM)	Maritime Security
Unmanned Undersea Vehicles (UUV)		
Unmanned Surface Vehicles (USV)	 Mine Countermeasure (MCM) USV	 SeaFox Mk I  MK II Modular Unmanned Surface Craft Littoral (MUSCL) Use Operational Evaluation Sys  Sea Stalker  Sea Maverick
Unmanned Undersea Vehicles (UUV)	 Surface Mine Countermeasure (SMCM) User Operational Evaluation Sys Increment 1  Large Displacement Unmanned Underwater Vehicle (LDUUV)  Battlespace Preparation Autonomous Undersea Vehicle (BPAUV)  MK18 Mod 1 Swordfish UUV Sys  MK 18 Mod 2 Kingfish UUV Sys  Surface Mine Countermeasure (SMCM) UUV	 Semi-Autonomous Hydrographic Recon Vehicle  Hull Underwater Vehicle / Hull Underwater Localization Sys (HULS)  Littoral Battlespace Sensing AUV  Littoral Battlespace Sensing Glider

UUVs for Scientific Data Collection



- Phytoplankton biomass & diversity
- Zooplankton biomass & diversity
- Fish abundance & distribution
- Sea turtle abundance & distribution
- Marine mammal abundance & distribution
- Sea bird abundance & distribution
- Coral cover & composition
- Seagrass cover & composition
- Mangrove cover & composition
- Macroalgal Canopy



Woods Hole Oceanographic Institution, USA: Slocum Gliders carrying a wide variety of sensors, they can be programmed to **patrol for weeks** at a time, surfacing to transmit their data to shore while downloading new instructions at regular intervals.



National Oceanography Centre, UK, 2022: Over a period of five weeks the *Autosub Long Range 1500* travelled from Plymouth out to the continental shelf edge south of Ireland and back to Plymouth, covering a distance of almost **2,000km** while venturing to depths of over 1,000m.

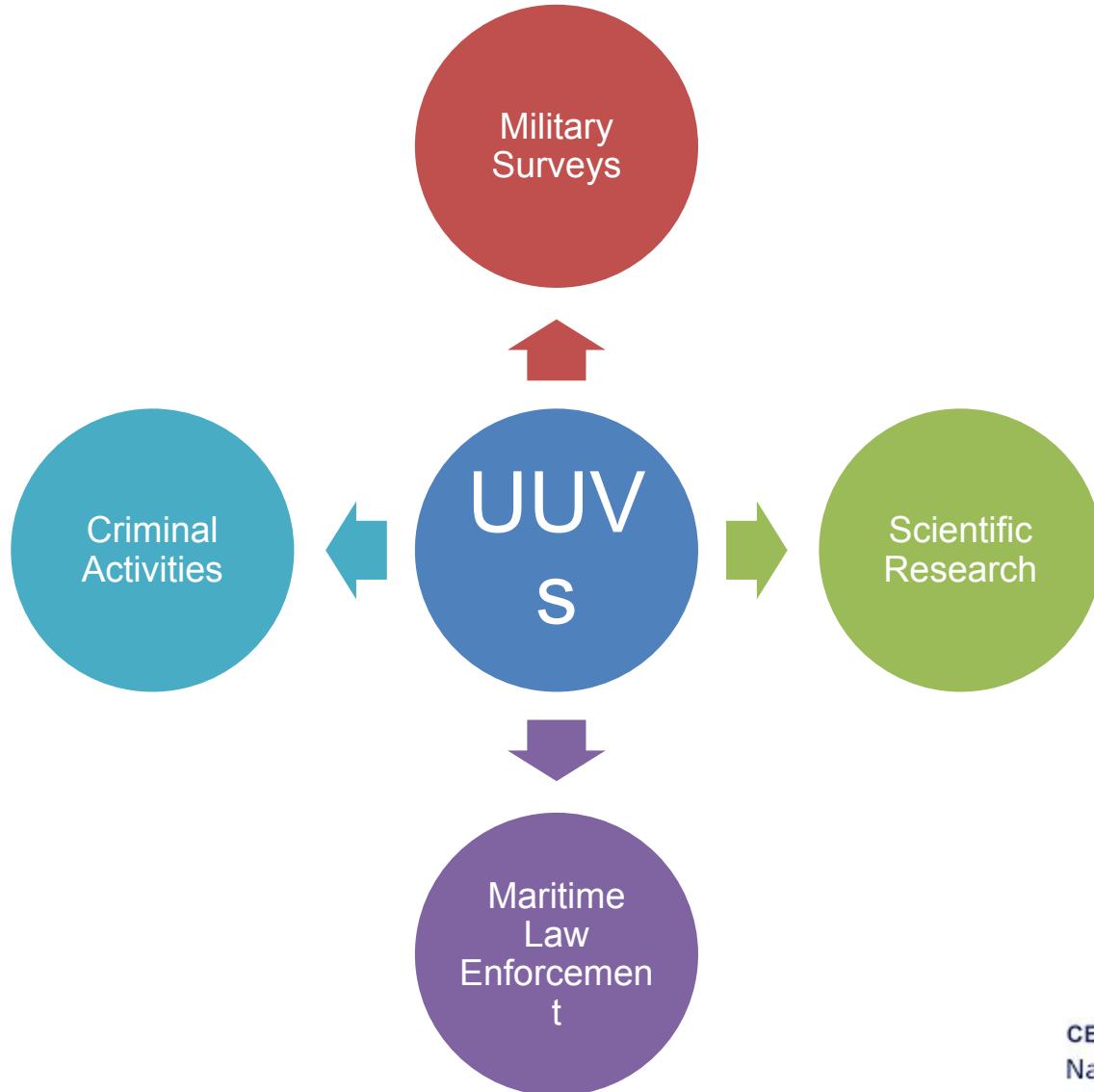


Harbin Engineering University China 2021: The autonomous underwater vehicle *Wukong* has broken records by reaching the incredible depth of **10,896 meters** in the Mariana Trench.

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Enablers or Disruptors?



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