

Combat Diver Navigation Module

Undersea Defence Technology 2018

Military Diver Capabilities

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SEC, Glasgow

Mini Nambiar – Project Manager

JFD – United Kingdom



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Unclassified



Joint International Development Program - United States and United Kingdom -



Combating Terrorism Technical
Support Office



Defence Science Technology
Laboratory



Naval Surface Warfare Center
Panama City Division

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Combat Diver Underwater Navigation



Unclassified

Tactical (TAC) Navigation Boards

- Analog Compass
- Depth Gauge
- Chronometer
- Auxiliary Lighting



Unclassified

...this is the real world

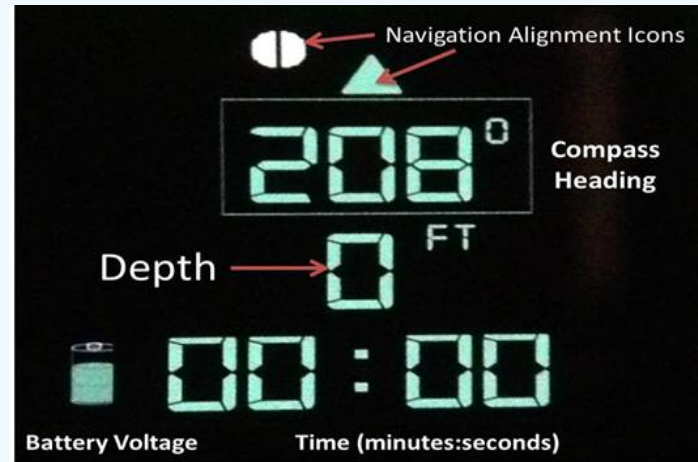
Unclassified

Combat Diver Navigation Mask

First Prototype



- Compass Heading (degrees)
- NAVLOK feature
- Green LEDs for navigation cues
- Depth (ft or m)
- Time (min:sec) - Start/Stop/Rest
- Battery Status (icon)
- Battery Life (~1.5 hours)



High resolution micro-display (AMOLED)

Combat Diver Navigation Mask

Underwater Navigation Exercises

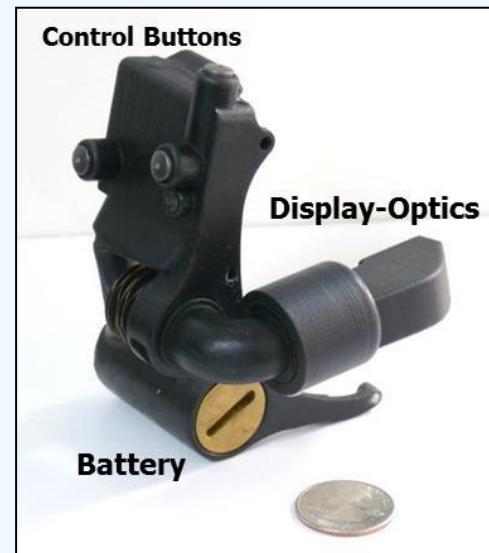
First Prototype

User Feedback

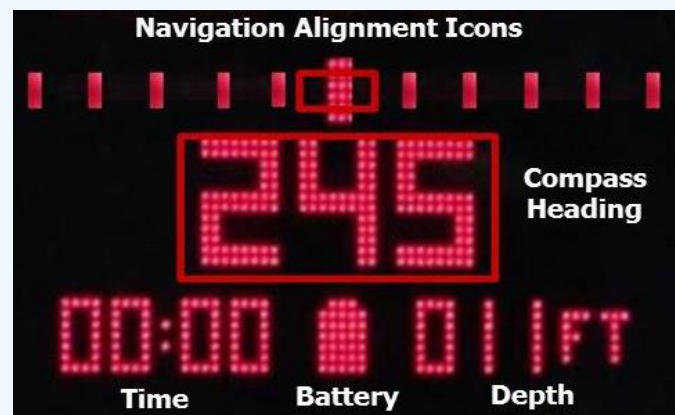
- No LEDs
- Low volume mask
 - Operational Battery Life (> 8 hours)
- Display should be directly in front of the eye
- Externally mounted module (flip-down/flip-up)
- Use low light red characters to preserve night vision
 - Needs to be affordable

Combat Diver Navigation Module

Second Prototype



- Compass Heading (degrees)
- NAVLOK feature
- Depth (ft or m)
- Time (min:sec) - Start/Stop/Rest
- Brightness adjustment
- Battery Status (icon)
- Battery Life (>>8 hours)



Lower resolution micro-display (PMOLED) ⁸

Combat Diver Navigation Module

Underwater Navigation Exercises

Second Prototype

User Feedback

- Single window mask
- Rugged (Military Use)
- Affordable
- Accelerate this into the fleet !

Technology Transition Phase

Cooperative Research and Development Agreement
(CRADA)



Exclusive Patent Licensing Agreement



Technology Transition Phase



- Joint development of a final production version CDNM
- Conduct joint testing (U.S. and U.K.) by combat divers
- Transition to full production and sales this year

Questions ?



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