

# Naviator: Unmanned Aerial-Aquatic System

The first drone to seamlessly transition between swimming and flying



The Naviator can spontaneously transition from flying to underwater operation and is equally adept in either mode. It can operate in almost all weather conditions, including in wind and rough seas.

## Naviator conducts first aerial to underwater test inspection of iconic bridge

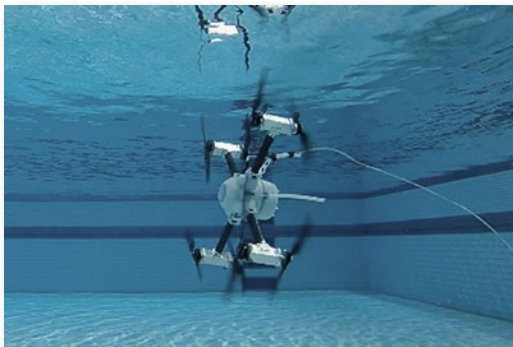
In June 2017, CAIT, Rutgers School of Engineering, the Delaware River and Bay Authority (DRBA), and SubUAS LLC coordinated the first aerial-subaquatic inspection of the Delaware Memorial Bridge. The graceful twin suspension spans carry an average of 45,000 vehicles daily between New Jersey and Delaware. DRBA engineers estimate Naviator could reduce the cost of bridge inspections by 30 percent as well as make them much safer.



## Potential applications

Initially developed for the Office of Naval Research as a security surveillance tool, Naviator's potential applications seem almost limitless:

- Evaluating bridge scour as well as condition of above-water bridge elements
- Monitoring integrity of other infrastructure with underwater elements, such as offshore drilling platforms, bulkheads, piers, locks, or underwater pipes/cables
- Conducting search and rescue in open sea and waterways
- Performing life-guarding operations
- Assessing severity/extent of man-made or natural environmental incidents such as oil and chemical spills, algae blooms, coral bleaching, etc.
- Gathering data for countless research applications
- Security monitoring for high-value infrastructure facilities and assets



## Rutgers, a leader in UAS innovation

The **Unmanned Aircraft Systems Center** and the **Center for Advanced Infrastructure and Transportation (CAIT)** are at the forefront of UAS innovation and development. They are dedicated multidisciplinary research and teaching centers that bring together academic researchers, government agencies, industry leaders, students, and partner universities to collaborate on developing cutting-edge technologies and solutions for challenges we face in the emerging drone economy.

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