

# ONEBOX

Versatile Vehicle Management System



ENABLING NEXT-GENERATION  
ELECTRICAL PROPULSION  
AND FLY-BY-WIRE TECHNOLOGIES



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## MULTI-PLATFORM SOLUTION: AIR, LAND AND SEA

Vehicle control is becoming more critical as the level of autonomy of the platforms increases. New solutions are required to meet the demanding safety requirements while reducing volume, weight.

Key to success is an unprecedented level of integration, achieved by powerful computing architectures and partitioning techniques to perform a broad set of functions on a single hardware platform.

Connectivity, high computing power and scalability are the essential features that are required to fulfill the requirements of future Vehicle Control Systems.

## AUTONOMOUS NAVIGATION

Controlling a vehicle means first of all be capable to determine its position and instruct it to move to follow a defined route. Although GNSS-based navigation is widely used, it does not provide the suitable level of integrity and availability required by safety critical applications, as the satellites signals can

be jammed, spoofed or subject to degradation due to propagation issues. The solution is High Integrity Inertial Navigation.

Inertial Navigation Systems calculate direction moved over time, with a varying degree of drift, and with the use of high-precision oscillators provide continuity of time. The great advantage of the Inertial Navigation System is that it cannot be spoofed or jammed.

Civitanavi is leader in the design and development of ITAR free, high accuracy, true solid state inertial sensors for navigation and vehicle stabilization. Civitanavi sensors are widely used by a broad range of applications, from industrial to avionic. **ONEBOX** solution, by providing additional computing power and connectivity, provides the fundamental building block around which a Vehicle Control System can be built.

**ONEBOX** advanced architecture is capable to host a large number of applications, providing the basic services required by a safety critical application and the resources for high integrity inertial sensing and navigation. Space and weight are saved by drastically reducing the number of equipment required while providing an enhanced level of flexibility thanks to the virtualization of these equipment through software functions.

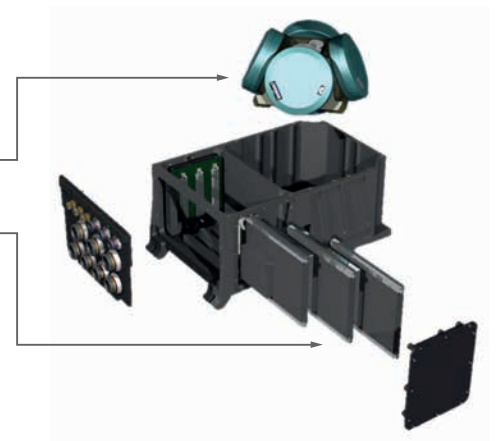
## APPLICATION EXAMPLES:

- FLIGHT CONTROL/STABILIZATION
- MISSION SYSTEM/NAVIGATION
- PROPULSION CONTROL
- POWER PLANT MANAGEMENT
- AUTONOMOUS NAVIGATION
- HEALTH MONITORING
- COLLISION AVOIDANCE

## A NEW APPROACH TO SYSTEM DEVELOPMENT

**ONEBOX** is an integrated, high computing power platform which provides all the basic services required by safety critical applications - redundant resources, redundancy management, data consolidation - along with native **high integrity (multiple redundant) high performance Inertial Navigation** functions.

**ONEBOX** triple redundant multi-core processors and EMI power supplies modules pave the way for a new generation of avionic. By allowing a wide range of possible configurations, ONEBOX gives the opportunity to fulfill the requirements of an incredible amount of system configurations.



## Why ONEBOX?

- Integrated System-in-a-box architecture
- Dissimilar computing and inertial sensing resources
- High integrity
- Cybersecurity
- High speed digital interfaces
- Conceived for hosting applications
- Fast time-to-market, streamlined integration
- Optimized space, power and weight
- "Safety first" design concept
- Targeted to next generation Fly By Wire applications including Urban Air Mobility

