

**8.12.2016**

**COMPMON CONFERENCE**

# **CONCEPT OF EMISSION MONITORING FOR EMSA**

Created by: Zacharias Sarris (Altus) / Jouko Salo (Aeromon)

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*Data submitted herein are Company confidential and shall be treated as such .No information shall be in whole or partially disclosed to any third party without the prior written approval of the proprietor.*

# ALTUS - Company Profile

- ALTUS LSA is a Hellenic company focused in the development and service provision in defense, security and innovative technology unmanned solutions.
- Our mission is to develop a European center of excellence in the field of Unmanned Systems and Target Drones with worldwide service capabilities.



- ALTUS personnel is comprised of a diversified field of expertise and accumulates more than fifteen years of experience in the area of design, development, production and services provision of Unmanned Aerial and Surface Systems (UAVs & USVs) for the benefit of international forces and organizations worldwide.
- ALTUS Operates and is certified for: ISO 9001, ISO 14001, ISO 27001, NATO/EU/NATIONAL Security Clearances, TRACE Business Ethics.

- Global UAS Service Experience



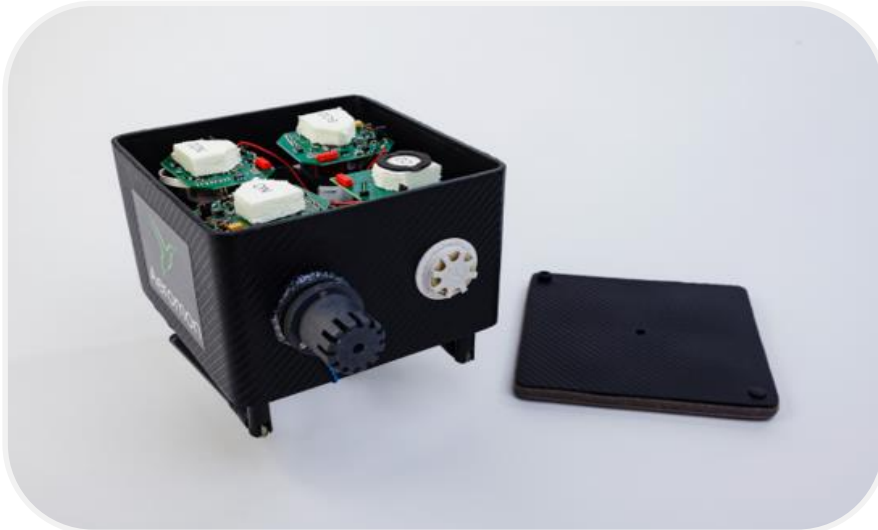
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# AEROMON - Company Profile

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- ✦ AEROMON is a Finnish start-up founded in 2014 with the aim of providing innovative services in airborne emission monitoring
- ✦ Our main verticals are maritime emissions, industrial monitoring and health&safety projects
- ✦ The AEROMON team has a strong scientific background in physics and a broad experience from multiple industries



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# RPAS System: Composition

- + STREAM Aerial Platform From THREOD Estonia
- + Payload set
  - + Gas Measuring Sensors
  - + Dual EO/Thermal gimbal
  - + AIS receiver
- + Ground Control Station
- + Data Link set
- + Launcher

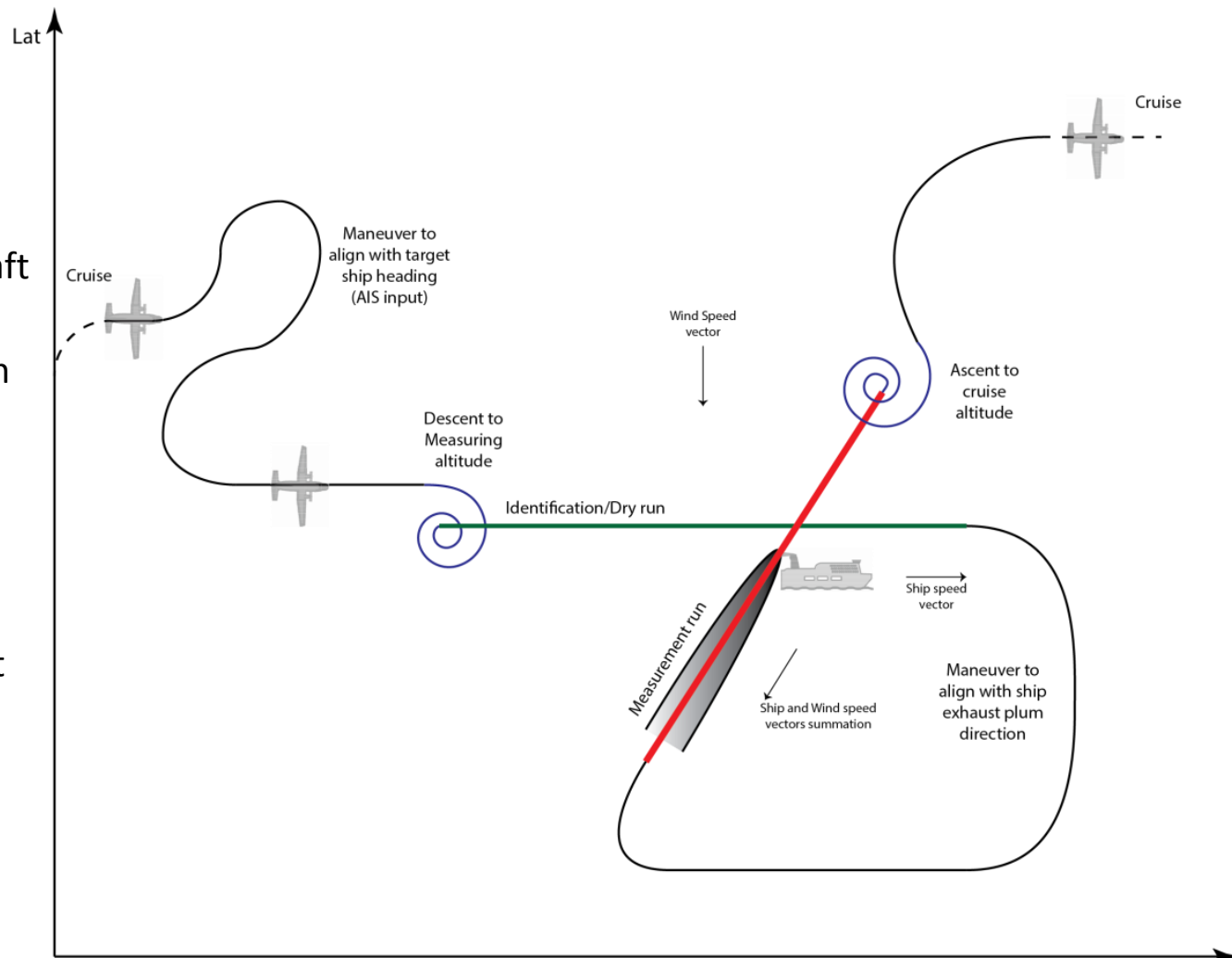


Specifications	Description
Max takeoff weight (MOTW)	30 kg
Wing Span	<4 m
Length	<2.3 m
Operating Speed	80-130km/h
Endurance	6 hours
Control Range	50km LOS
Navigation	GPS, IMU, pressure sensors, compass

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# Operational Concept

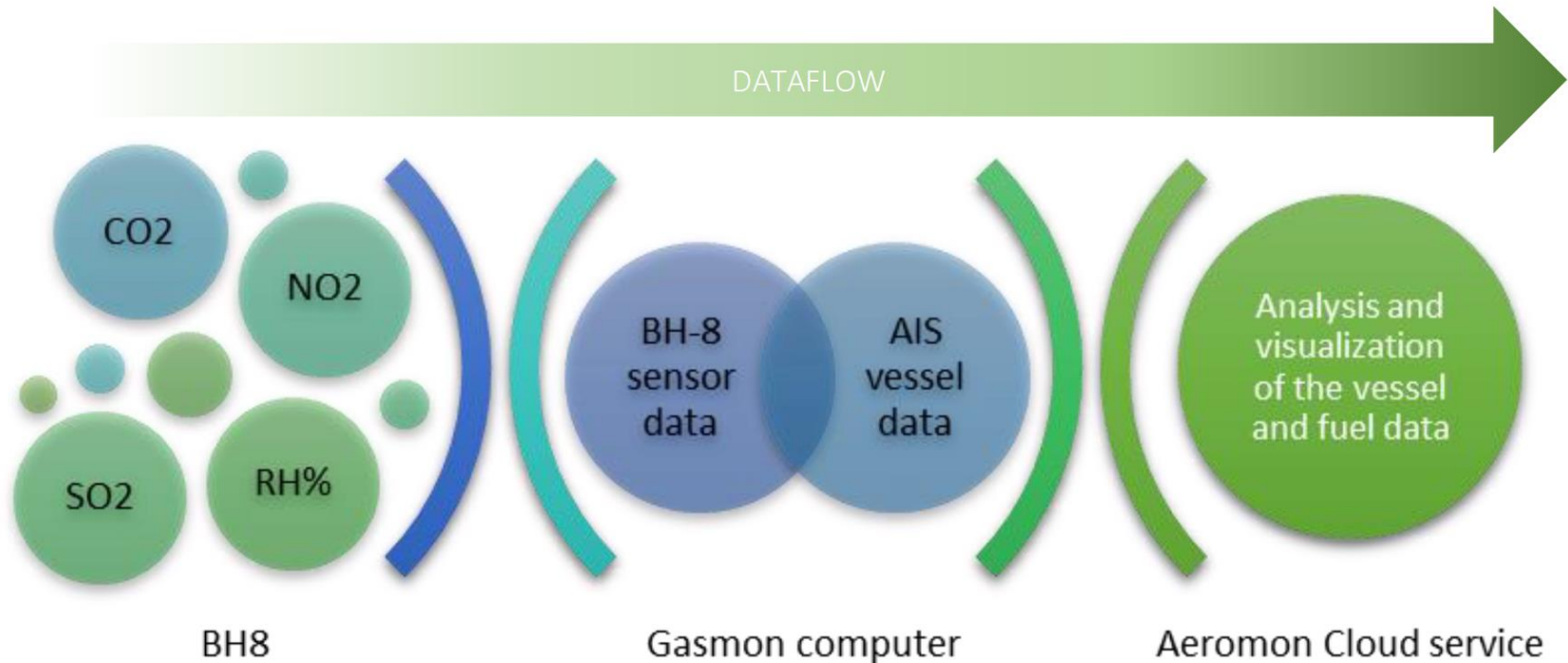
- + Minimum time necessary in exhaust plume: 1 sec
- + Measurement altitude: >50m
- + Possible to perform several measurement per flight mission; limiting factor: aircraft endurance
- + End User can monitor mission and request specific ship measurements based on live feed of EO/IR video and AIS information streamed from Cloud Service
- + Immediate Gas measurement results are reported within ~60-120 seconds after measurement



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# Measurement and Reporting Concept

- + Automatic sample capture with remotely adjustable sensitivity
- + Fusion of sensor and AIS-data in RPAS with secure transmission to shore via RPAS radio link
- + On-board back-up of data and buffering until confirmed reception on ground
- + Cloud platform which integrates the calibration, video, thermal, gas-sensor and AIS data into a common view for operators and clients
- + Sensor platform accuracy under 30% at 0.1% FSC



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