OPTIMARE®

References

Airborne Projects

December 2022

Integrated system solutions and sensors for maritime missions

Our core business is to provide high-quality airborne systems for maritime surveillance. These solutions are based on our mission management system MEDUSA® as well as on own airborne sensors and third-party mission equipment.

We benefit from a strong background in embedding existing and new subsystems into a tailor-made MEDUSA® configuration. More than 30 of our MEDUSA® systems for airborne maritime surveillance were delivered to operators all over the world.

Further, we have an in-house production of unique airborne sensors for oil spill detection and monitoring. Our portfolio includes active and passive remote sensors operating from microwave to ultraviolet wavelengths. OPTIMARE is a unique and leading provider in this business area.

OPTIMARE was founded in 1992 as OPTIMARE GmbH. The primary goal of the company was to equip aircraft with sensor systems for remote sensing of marine pollution. Shortly after, the company has strongly expanded its activities and has transferred its expertise also to new applications, as for example underwater systems and polar survey aircraft.

As from 01 March 2013 OPTIMARE operates as OPTIMARE Systems GmbH. This company is a 100% affiliated company of the Aerodata Group. This notable step lead to a unique key solution provider for the airborne maritime surveillance business, combining aircraft conversion, mission systems and a range of own remote sensors from one source.

Especially OPTIMARE's active and passive remote sensing technology for the detection of marine oil pollution is a unique asset. Presently, numerous aircraft on the international market are equipped with OPTIMARE technology.

Fototerra Atividades de Aerolevantamentos Ltda.

Country	Year	Case-No.
Brasil	2021	048

One MEDUSA® system for an oil spill surveillance aircraft of type EMB-110.

Irish Air Corps

Country	Year	Case-No.
Ireland	2020	047

Two MEDUSA® systems (subsystem configuration).

Central Command for Maritime Emergencies

Country	Year	Case-No.
Germany	2020	046

Major upgrade of the MEDUSA® systems of the two German Dornier 228 maritime surveillance aircraft: This includes the mission management systems, the sensor suites, the communication systems, the spares package, and the ground segment.

The MEDUSA® System

Our approach to mission management is called MEDUSA®. The Mission Management System MEDUSA® incorporates more than two decades of experience in airborne maritime surveillance. In the majority of our reference projects we supplied a solution based on MEDUSA®.

Want to learn more?

Polish Border Guard

Country	Year	Case-No.
Poland	2019	043

Two MEDUSA® Systems for integration into two new L410 UVP E-20 aircraft.

[Undisclosed]

Country	Year	Case-No.
Great Britain	2019	045

One MEDUSA®-based airborne sensor system (2nd system) including adaption of an Inertial Measurement Unit.

[Undisclosed]

Country	Year	Case-No.
Great Britain	2019	044

One MEDUSA®-based airborne sensor system (1st system) including adaption of an Inertial Measurement Unit.

Bangladesh Navy

Country	Year	Case-No.
Bangladesh	2018	042

Two MEDUSA® Systems for RUAG for installation into Dornier 228 aircraft.

[Undisclosed]

Country	Year	Case-No.
Asia	2018	041

One MEDUSA® System including sensors.

Fototerra Survey SCP

Country	Year	Case-No.
Brazil	2016	040

One MEDUSA® System including sensors and communication equipment for an oil spill surveillance aircraft of type EMB-110.

POSEIDON powered by MEDUSA®

Fototerra operates POSEIDON, which is the most advanced aerial platform for oil spill remote sensing. The POSEIDON is equipped with the Mission Management System MEDUSA® and all available OPTIMARE sensors. In addition, POSEIDON is equipped with an EO/IR system and LOS/BLOS data link systems for optimum integration with the ground segment.

Missions

Our Mission Management System MEDUSA® is designed to cover a wide range of airborne missions such as (not limited to)

- Maritime Surveillance
- Pollution Monitoring
- Exclusive Economic Zone Protection
- Search & Rescue
- Border Patrol
- Fishery Patrol

[Undisclosed]

Country	Year	Case-No.
-	2016	039

Two MEDUSA® Systems (in subsystem configuration) for installation into two multi-purpose maritime patrol aircraft of type C295.

[Undisclosed]

Country	Year	Case-No.
-	2011	038

One MEDUSA® System in maritime security configuration for installation into a Saab 340.

State Oceanic Administration

Country	Year	Case-No.
China	2011	037

Two MEDUSA® Systems including sensors for installation into two aircraft of type Harbin Y-12 (IV).

[Undisclosed]

Country	Year	Case-No.
-	2011	036

MEDUSA® System including sensors for a belly pod installation on a DA42 MPP.

[Undisclosed]

Country	Year	Case-No.
-	2010	034

MEDUSA® System including sensors.

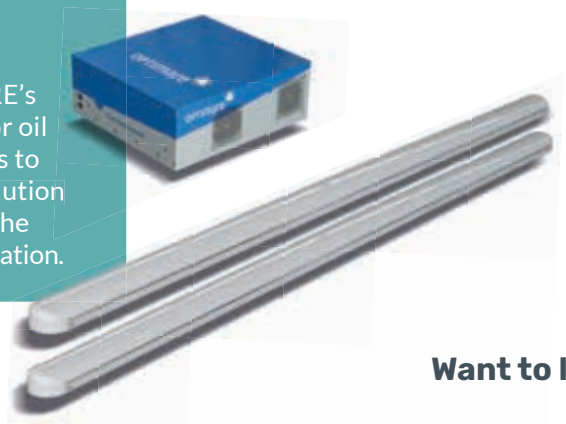
Royal Belgian Institute of Natural Sciences

Country	Year	Case-No.
Belgium	2011	035

Installation of MEDUSA® System and upgraded SLAR on a Britten-Norman Islander aircraft.

Airborne Sensors

MEDUSA® in conjunction with OPTIMARE's MEDUSA®-compatible sensor package for oil spill detection enables system integrators to fit their solution with comprehensive pollution surveillance capabilities. OPTIMARE is the leading sensor manufacturer for this application.



Want to learn more?

Central Command for Maritime Emergencies

Country	Year	Case-No.
Germany	2010	033

MEDUSA® System including sensors for a new Do228 operated by the German Navy.

German Aerospace Establishment

Country	Year	Case-No.
Germany	2009	032

Certification support for the installation of sensing equipment on a Gulfstream G550 aircraft.

Alfred Wegener Institute

Country	Year	Case-No.
Germany	2008	030

IR/UV Line Scanner and VIS Line Scanner on Basler BT-67 aircraft.

Alfred Wegener Institute

Country	Year	Case-No.
Germany	2008	029

IR/UV Line Scanner (high resolution mode) into airborne sensing aircraft.

Alfred Wegener Institute

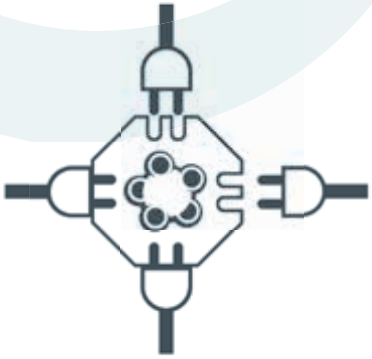
Country	Year	Case-No.
Germany	2007	028

Conducting geophysical airborne survey in Antarctica for Alfred Wegener Institute.

Portuguese Airforce

Country	Year	Case-No.
Portugal	2008 2009	031

MEDUSA® System (subsystem configuration) including sensors for three multi-purpose maritime patrol aircraft of type C295.



Support of Third-Party Systems

Numerous third-party sensors and subsystems have been integrated into MEDUSA® to date. This includes various surveillance radars, electro-optical sensors, AIS and SAR direction finders as well as LOS and BLOS communication systems.

Alfred Wegener Institute

Country	Year	Case-No.
Germany	2007	027

MEDUSA® System for geophysical, meteorological and aerochemical sensing on a Basler BT-67 aircraft.

NIPR - National Institute of Polar Research

Country	Year	Case-No.
Japan	2005	024

Geophysical airborne survey at SOWYA Antarctica for Alfred Wegener Institute.

Kustwacht

Country	Year	Case-No.
Netherlands	2006	026

Mission equipment for two maritime surveillance aircraft of type Dornier 228.

Mission Computing

OPTIMARE usually provides its own custom-tailored mission computers to account for the variety of interfaces needed for specific mission system configurations.

Spanish Maritime Safety Agency

Country: **Spain** | Year: **2005** | Case-No.: **025**

MEDUSA System (in subsystem configuration) including sensors for three multi-purpose maritime patrol aircraft of type CN235.

Alfred Wegener Institute

Country: **Germany** | Year: **2005** | Case-No.: **023**

Laser Fluorosensor for algae detection for a helicopter of type Bo-105.

Alfred Wegener Institute

Country: **Germany** | Year: **2005** | Case-No.: **022**

ASIRAS Finland Campaign for the European Space Agency.

Alfred Wegener Institute

Country: **Germany** | Year: **2004** | Case-No.: **021**

Geophysical airborne survey in Antarctica for Alfred Wegener Institute - VISA IV Project.

Alfred Wegener Institute

Country: **Germany** | Year: **2004** | Case-No.: **020**

Conducting ASIRAS Grand Tour Campaign for the European Space Agency.

Alfred Wegener Institute

Country: **Germany** | Year: **2004** | Case-No.: **019**

Conducting ASIRAS Spring Campaign for the European Space Agency, Svalbard.

Alfred Wegener Institute

Country: **Germany** | Year: **2004** | Case-No.: **018**

MEDUSA® System for air chemistry sensing on German polar survey aircraft of type Dornier 228.

Royal Thailand Navy

Country: **Thailand** | Year: **2004** | Case-No.: **016**

Additional maritime surveillance equipment for Royal Thailand Navy.

Expertise in Remote Sensing

OPTIMARE has a strong background in active and passive remote sensing ranging from microwave to ultraviolet wavelenghts. In this regard OPTIMARE benefits from its expertise in optics, electronics, mechanics, and software development through a team of highly qualified engineers.

German Aerospace Establishment

Country	Year	Case-No.
Germany	2004	017

MEDUSA® System into German polar survey aircraft of type Dornier 228.

Alfred Wegener Institute

Country	Year	Case-No.
Germany	2003	015

Geophysical airborne survey in Antarctica for Alfred Wegener Institute - VISA III Project.

Alfred Wegener Institute

Country	Year	Case-No.
Germany	2003	014

MEDUSA® System for topography sensing based on interferometric SAR and laser scanning.

Alfred Wegener Institute

Country	Year	Case-No.
Germany	2003	013

Integration of Laser Scanner LMSQ280 and Interferometric SAR ASIRAS into MEDUSA-P.

Royal Thailand Navy

Country	Year	Case-No.
Thailand	2003	012

Track-While-Scan System (developed by OPTIMARE) for Telephonics search radar for aircraft of type Dornier 228.

Alfred Wegener Institute

Country	Year	Case-No.
Germany	2002	011

Geophysical airborne survey in Antarctica for Alfred Wegener Institute - VISA II Project.

Weser-Bildmessflug GmbH & Co. KG

Country	Year	Case-No.
Germany	2002	010

Integration of VIS Line Scanner into airborne sensing aircraft.

Alfred Wegener Institute

Country	Year	Case-No.
Germany	2002	009

Installation of MEDUSA-P system into German geophysical survey aircraft of type Dornier 228.

German Ministry of Transportation

Country	Year	Case-No.
Germany	2001	007

Integration of MWR and IALFS into the MEDUSA® System on Maritime Surveillance Aircraft of type Dornier 228 (Phase II).

Alfred Wegener Institute

Country	Year	Case-No.
Germany	2001	008

Geophysical airborne survey in Antarctica at SANAE E-BASE for the Alfred Wegener Institute – VISA I Project.

Alfred Wegener Institute

Country	Year	Case-No.
Germany	2000	006

Assistance of geophysical airborne survey in Antarctica at SANAE E-BASE for the Alfred Wegener Institute – VISA I Project.

German Ministry of Transportation

Country	Year	Case-No.
Germany	1998	005

Integration of MEDUSA® System and mission equipment on German maritime surveillance aircraft of type Dornier 228 (Phase I).

German Ministry of Transportation

Country	Year	Case-No.
Germany	1997	004

Integration of commercialized IALFS into German maritime surveillance aircraft of type Dornier 228.

German Aerospace Establishment

Country	Year	Case-No.
Germany	1995	003

Integration of SLAR, IR/UV and Operating Console in conjunction with MEDUSA® network into Dornier 228.

German Ministry of Transportation

Country	Year	Case-No.
Germany	1993	002

Integration of IALFS prototype into German maritime surveillance aircraft of type Dornier 228.

German Aerospace Establishment

Country	Year	Case-No.
Germany	1991	001

First operational test flights with IALFS prototype installed onboard a research aircraft of type Dornier 228.

Research & Development

OPTIMARE constantly invests in its own research and development, e.g. in the areas of sensor fusion or artificial intelligence. Through cooperation with universities and research institutes, OPTIMARE achieves the highest level in this area.

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Our core business is to provide high-quality airborne systems for maritime surveillance. These solutions are based on our MEDUSA® Mission Management System as well as on our own airborne sensors and third-party mission equipment. For further information please visit **www.optimare.de**.