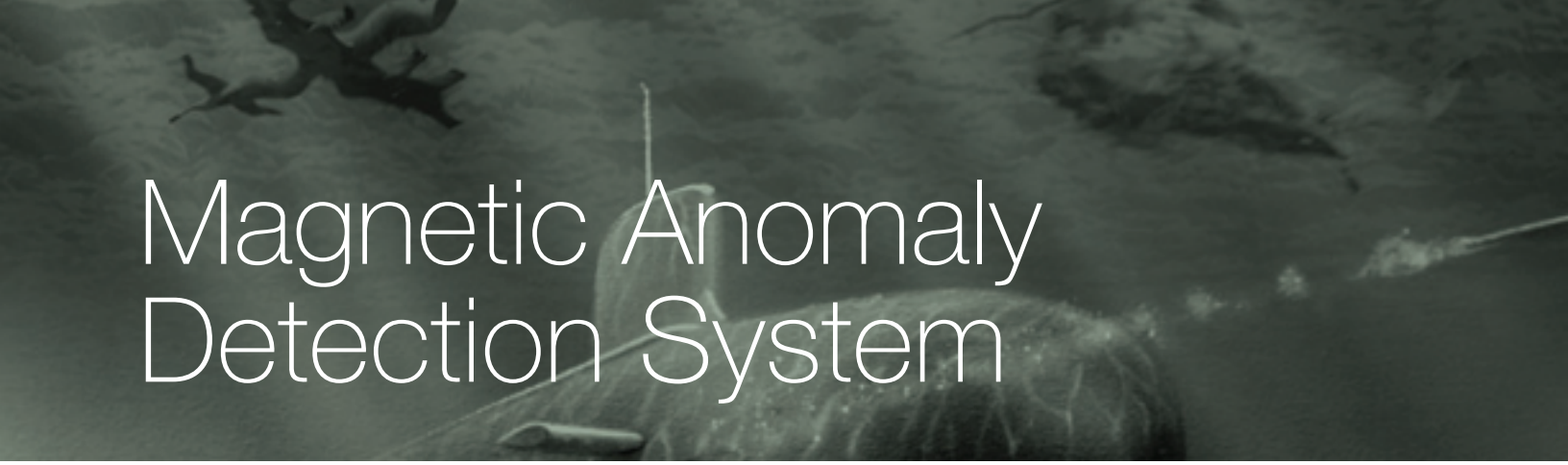
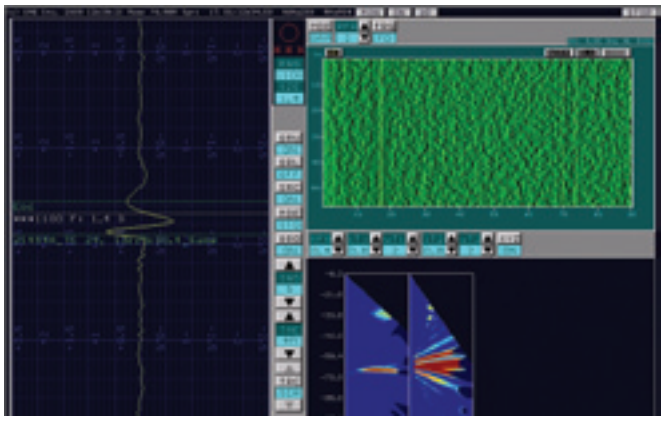


Magnetic Anomaly Detection System

CAE is the world leader in the design, manufacture, and integration of magnetic anomaly detection (MAD) systems. The company has been designing MAD systems for over 40 years and has delivered over 2,000 MAD systems and equipment to military forces around the world. The latest CAE MAD system is called the advanced integrated MAD system (AIMS), which is also designated by the military nomenclature AN/ASQ-508(V). Most of these systems have been installed on anti-submarine warfare (ASW) aircraft, including both fixed and rotary wing aircraft, and used primarily for the detection of submarines. With the changing state of warfare, however, there are potentially new applications in the use of MAD technology.



How MAD works

The MAD system consists of a highly sensitive magnetometer, which is designed to sense changes in the Earth's magnetic field due to metallic objects in the vicinity. Typically, the MAD system is mounted in the tail area of an aircraft to minimize magnetic interference. The range of the MAD system varies, but will generally detect anomalies at approximately 1,200 metres. When the MAD system detects a magnetic anomaly, an audio alert signals the crew and the display provides contact and range information.

CAE is currently working on new software that allows for submarine location in the form of lateral and vertical separation (left/right indication) at the closest point of approach (CPA). The new algorithm opens the route for recommended tactical flight path to optimize target localization and detection. The inclusion of high bandwidth frequency to digital conversion provides better detection due to reduced background noise in higher frequencies as well as potential classification on the signature of the submarine.

MAD system components

CAE's AIMS is a fully integrated MAD system that includes a detecting head, amplifier computer, and magnetometer assembly. The AIMS can also include a digital recording and display unit (DRDU) if the system is configured as a stand-alone unit instead of as a subsystem that is part of the aircraft's avionics suite.

- Detecting head – uses a sensor to monitor the Earth's magnetic field and detect changes created by magnetic anomalies.
- Amplifier computer – provides all interfacing and power for system operation. This unit performs information gathering, compensation and detection processing, and delivers digital outputs.
- Magnetometer assembly – monitors the transverse, longitudinal, and vertical vectors of the Earth's field relative to the aircraft's position and orientation for compensation of the aircraft maneuvers.

Program examples

CAE's MAD systems have been delivered to a range of military customers worldwide, including:

Customer	Aircraft
U.K. Royal Navy	Sea King and Lynx
Royal Australian Air Force	Orion P-3C
Canadian Forces	Sea King and CP-140
Royal Air Force	Nimrod Mk2 and MRA4
U.S. Navy	P-3, SH-60, SH-2
Royal Australian Navy	S-70B-2 Sea Hawk
Republic of China Air Force (ROCAF)	S-2 (T) Turbo Tracker

In addition, CAE's MAD systems have been tested in a range of other aircraft platforms.

The latest customers who have selected CAE's MAD systems for their maritime patrol aircraft include:

- Boeing for the U.S. Navy's P-8A Multi-Mission Maritime Aircraft (MMA)
- Kawasaki Heavy Industries and Mitsubishi Electric Corporation for Japan's new maritime patrol aircraft
- Turkish Navy for the CN235 maritime patrol aircraft
- Republic of Korea Navy for the P-3C maritime patrol aircraft

Potential MAD applications

Magnetic anomaly detection has traditionally been associated with submarine detection and overlooked as a possible solution for land-based surveillance and detection. Recent conflicts have demonstrated the need for enhanced detection capabilities. CAE has been evaluating the potential use of MAD technology for the detection of concealed metal objects on land. With a MAD system mounted on some type of ground vehicle or unmanned aerial vehicle (UAV), the system could detect a variety of targets, such as armoured vehicles or artillery. The MAD system is capable of detecting metallic objects through walls, buried underground, or hidden in dense forest canopies. CAE is currently evaluating ways to reduce the size, weight, and power requirements of its existing MAD system to expand its potential use to other applications.

Canada
CAE - Attn: Marketing
8585 Côte-de-Liesse
Saint-Laurent, Quebec
Canada H4T 1GS

Tel +1-514-341-6780
Fax +1-514-734-5718
milsim@cae.com

United States
CAE USA
4908 Tampa West Blvd.
Tampa, FL 33634

Tel +1-813-885-7481
Fax +1-813-901-6429
cae_usa@cae.com

Europe
CAE GmbH
Steinfurt 11
D-52222 Stolberg, Germany

Tel +49-2402-106-0
Fax +49-2402-106-270
info@cae-gmbh.de

United Kingdom
CAE UK plc
Innovation Drive, Burgess Hill
West Sussex RH15 9TW
England

Tel +44 (0) 1444-247535
Fax +44 (0) 1444-244895
cae_plc@cae.co.uk

Australia
CAE Australia Pty Ltd
Unit 40, Slough Business Park
Slough Avenue
Silverwater, NSW 2128

Tel +61-2-9748-4844
Fax +61-2-9714-0300
caeaus@cae.com.au

Singapore
CAE Singapore (S.E.A.) Pte Ltd
33 Ubi Ave 3 #08-04 VERTEX
Singapore 408868

Tel +65-6886-9012
Fax +65-6886-9021
milsim@cae.com

India
CAE India Pvt Ltd
Survey No.26 & 27, IVC Road
Bandaramanahalli Village, Uganvadi
Post Devanahalli Taluk, Bangalore - 562110 India

Tel +91-80-2625-6000
Fax +91-80-2625-6160
caeindiapvtltd@cae.com

CAE