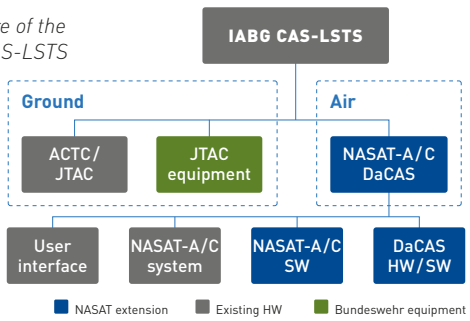
NASAT-A/C DaCAS

Digitally-aided Close Air Support (DaCAS) is a Variable Message Format (VMF) based digital data transmission and messaging technique to ensure reliable close air support (CAS) missions. Previously, target designation was only possible via the means of radio voice communication. DaCAS ensures target designation and correct engagement. Based on the principle "train as you fight" the **IABG Close Air Support Live Simulation & Training System (IABG CAS-LSTS)** offers an additional DaCAS enhancement. This system enables Joint Terminal Attack Controllers (JTAC) and Instructors to fulfil their live training requirements. This system implements the VMF capability for the Contractor Owned Contractor Operated (COCO) civil aerial targeting services (ATS).

Background

The target acquisition procedure, in the context of CAS, is a complex sequence of operating steps carried out by the pilot and the JTAC via visual means and manual input of data. The Navigation-based System for Aerial Targeting (NASAT) supplied by the ATS supports this.

Structure of the IABG CAS-LSTS



However, this procedure is susceptible to a number of possible errors, which can lead to inaccuracies and time delays.

The armed forces from different nations with different training structures, whose first language is often not English, must ensure coherent voice communications. To ensure the required level of precision and success both a great deal of training and experience are essential.

The DaCAS procedure provides digital message-based communication between the JTAC and the aircraft. This avoids time delays and inaccuracies in radio voice communications during Joint Close Air Support (JCAS) operations. Reduced error rate and time delay are a result of the one-time input of the target designation passed directly in digital form by the Aircrew and JTAC. **DaCAS** also includes the digital acquisition of DGT (Designated Ground Target)/SPI (Sensor Point of Interest) data.

IABG

Applications

Already used in current conflicts, **DaCAS is the worldwide standard** for CAS exercises (CASEX). Because of its applicability across linguistic boundaries, it is proving to be extremely useful at an international level. JCAS operations stipulate the use of DaCAS.

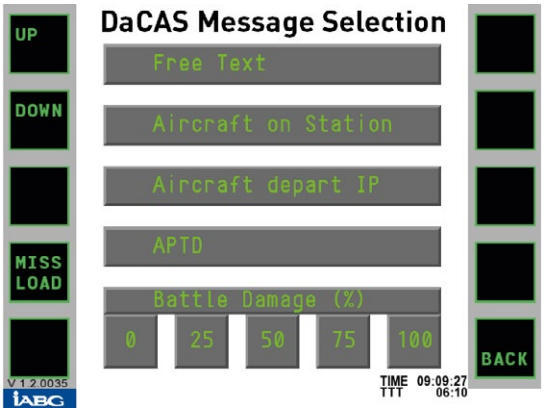
The NASAT-A/C DaCAS system complements training facilities from initial JTAC training to live simulation of complex battlefield scenarios. Like the existing NASAT-A/C module, NASAT-A/C DaCAS upgrades COCO aircraft used in Combat Training Centres (CTC) and CASEX for live simulation-based training.

The US-led Joint Fire Support Executive Steering Committee (JFS ESC), in cooperation with NATO and non-NATO countries, prepared a memorandum for the training of Joint Fire Observers (JFO), who are the interface between pilots and JTACs. It is precisely this interface, which this system supports.

The hardware components of the air segment (NASAT-A/C DaCAS) and the DaCAS software installed on the aircraft enable VMF data transmission. These form the Aircrew User Interface (UI). The system consists of a complete package of operating and installation manuals.

The High-Level Architecture (HLA) interface embedded in the **Mission Display and Analysis System (MiDAS)** captures the pertinent VMF-DaCAS Tactical Data Radio System (TDRS) content, translates and enables display and analysis of the mission data within a real time live simulation network. Recording and playback are also possible.

The DaCAS extension (plug-in) further enhances the MiDAS software and enables the visual display and analysis of operations. MiDAS is the standard system used by the German Air Force.



Aircrew User Interface

Technical Data

The NASAT-A/C DaCAS module comprises hardware (HW) and software (SW) components. Compatibility with the existing NASAT-A/C system of the ATS was taken into account when developing this extension. Components of the NASAT-A/C DaCAS extension:

- Software user interface of the operator
- VMF message parser and handler
- DaCAS Improved Data Modem (IDM)
- Physical interface layer to the ATS radio
- Message handler in the NASAT central system

Advantages at a Glance

- Secure and immediate data transfer between the JTAC trainee and the CAS aircraft
- Compatible with the DVMT (DaCAS VMF Tool)
- Compatible with the JTAC standard issue equipment of the Bundeswehr and coalition partners
- Can be integrated into the German Army Combat Training Centre (ACTC)
- Seamlessly integrates into the existing CAS Live Simulation & Training System
- In use with the JTAC Competence Centre in Idar-Oberstein, Germany
- Corresponds to the training concept of the JFS ESC

Scope of Delivery

- Software on USB/CD
- Installation, configuration and integration support
- Documentation (manuals, installation guides, and data sheets)
- DaCAS hardware

Standards

- Compatible with the aircraft models of the ATS
- DO-160G, MIL-STD-704A, -810G, -461F
- ATP 3.3.2.1 Tactics, Techniques and Procedures for Close Air Support and Air Interdiction
- STANAG 3797, MIL-STD-188-220 D C1
- ECPs DaCAS Coordinated Implementation
- MIL-STD-2045-47001 D C1, MIL-STD-6017 B

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