GESELLSCHAFT FÜR INERTIALE MESS-,
AUTOMATISIERUNGS- UND REGELSYSTEME MBH
WWW.IMAR-NAVIGATION.DE

iICSC-OET²

Opto-Electronic Target Tracking on an Inertial Stabilised Platform

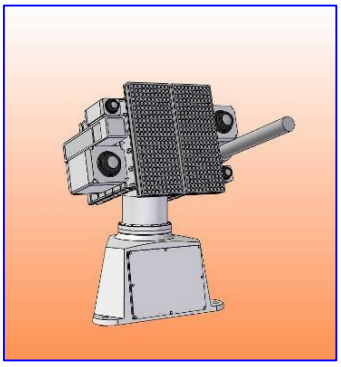
Tracking targets in the sky, on the road or in the sea requires an automatic system to perform this task. With the iIPSC-OET² we have merged two devices to a powerful platform:

- iICSC / iIPSC: gyro stabilised platform
- iOET² : **O**pto-**E**lectronic **T**arget **T**racker

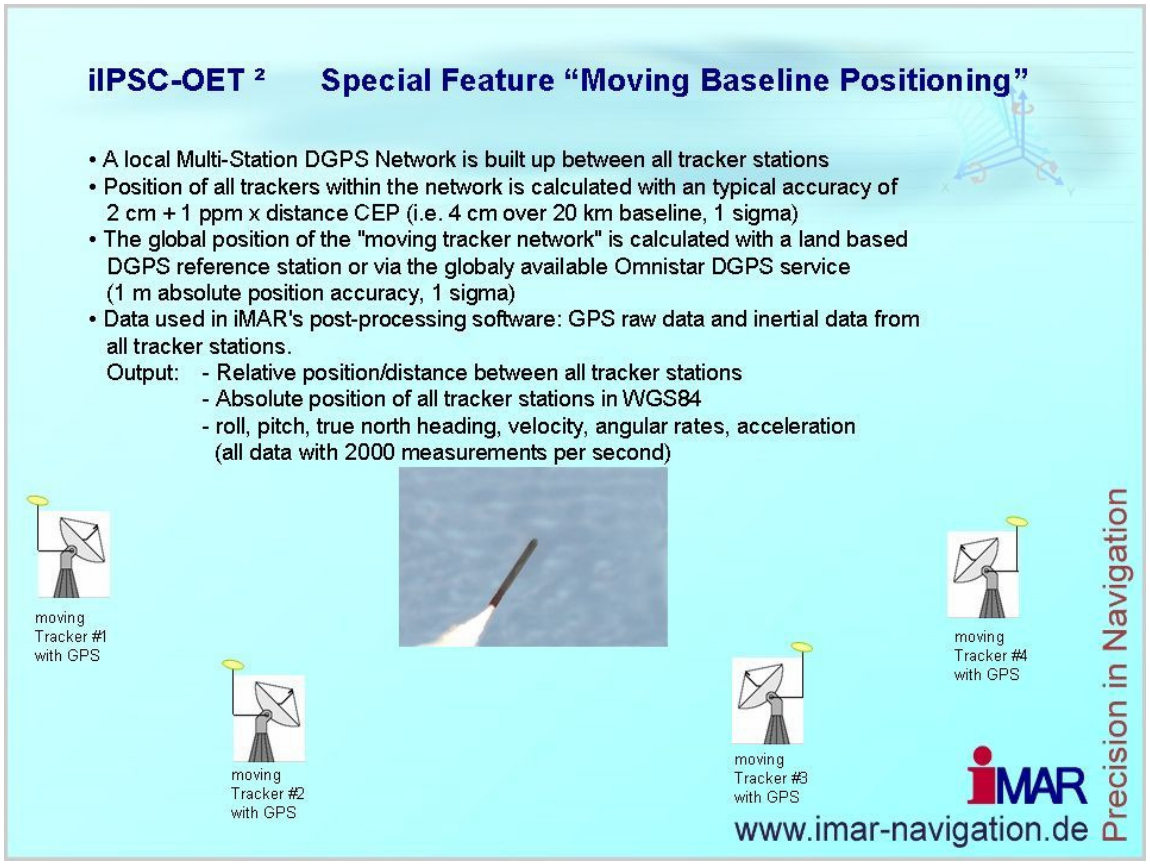
- remote controlled 2 or 3 axes stabilised platform
- daylight & infrared camera + laser ranger all on one platform
- **gyro stabilisation**; using MEMS or FOG or RLG sensor technology
- **advanced opto electronic target tracking**, processing of up to 50 images / second
- high bandwidth, fast response
- robust system design, fully sealed
- for use on helicopters, fixed wing aircrafts, drones, speed boats, naval vessels or trucks

The iIPSC-OET² can be installed on land vehicles, helicopters, fixed wing aircrafts, naval vessels or speed boats.

Where the iIPSC with its included inertial sensors is stabilising the optical platform and decoupling it from the vessels motion, the iOET²opto electronic target tracker, which is based on an advanced image processing, is able to track the target even under difficult conditions. An integrated trajectory estimator allows a continuous tracking even if the target is temporarily covered by buildings, clouds or other targets. The tracker can work with daylight cameras as well as with IR cameras.



A user friendly configuration tool is included, which allows the application specific configuration of the



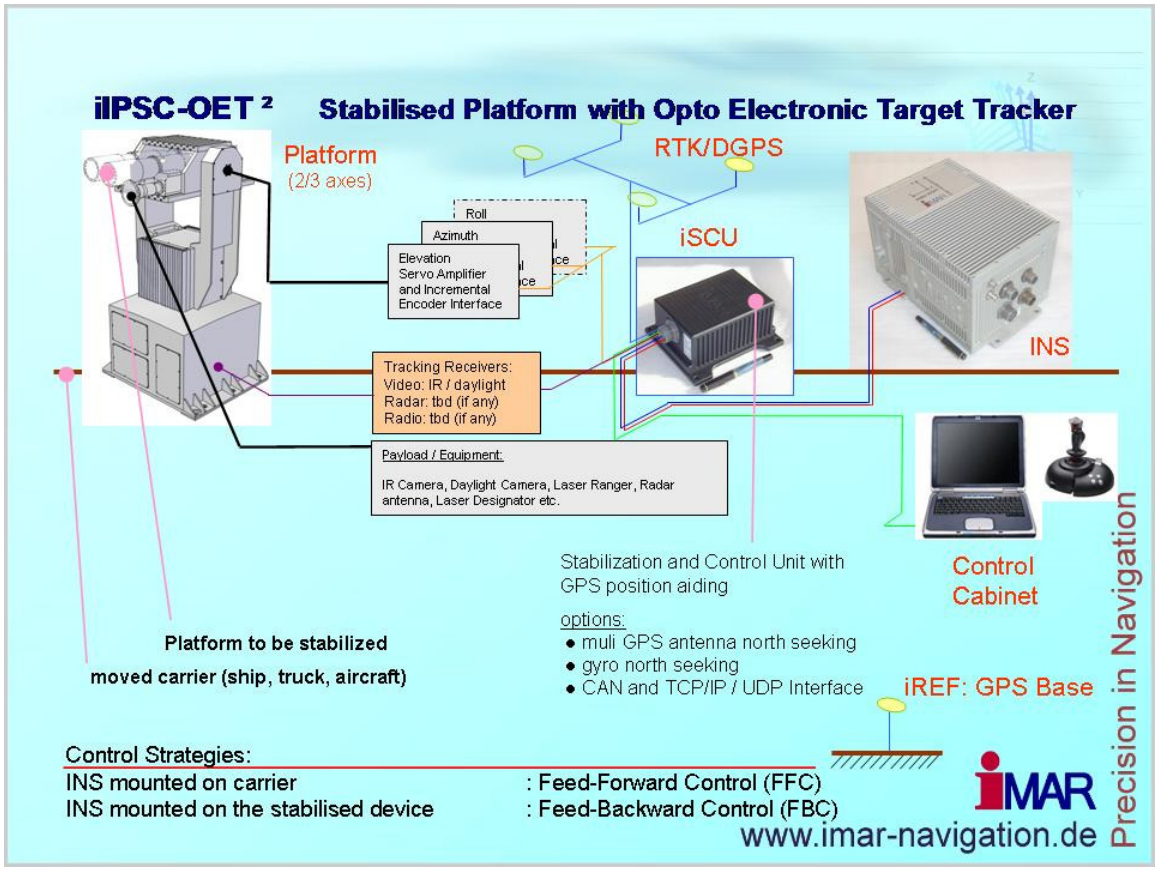
system. Furthermore a teach-in and education mode is available which can be used to educate the operator (if required) in an HIL (hardware-in-the-loop) mode. For advanced applications also a camera calibration tool is provided.

For high performance applications the optical head is equipped with a Zeiss Attica IR camera and a Sony daylight camera. Custom specific solutions will be provided on request.

For the stabilised platform typically the iIPCS-MOD or iICSC-SCM-25 is used. Both are constructed as a highly modular system with strong drive systems, designed to be operated in harsh environment (iIPSC-MOD is available also with nitrogen filling) and which can easily be adapted to the customer's needs.

The systems can be equipped with FOG based gyro system for standard applications (iVRU-FC, iVRU-FAS), with a MEMS gyro based inertial sensor system (iVRU-RSSC) for most economic applications and with a ring laser gyro based INS/GPS system (iNAV-RQH) where the application requires true heading related tracking / initial target searching and most accurate target position surveying.

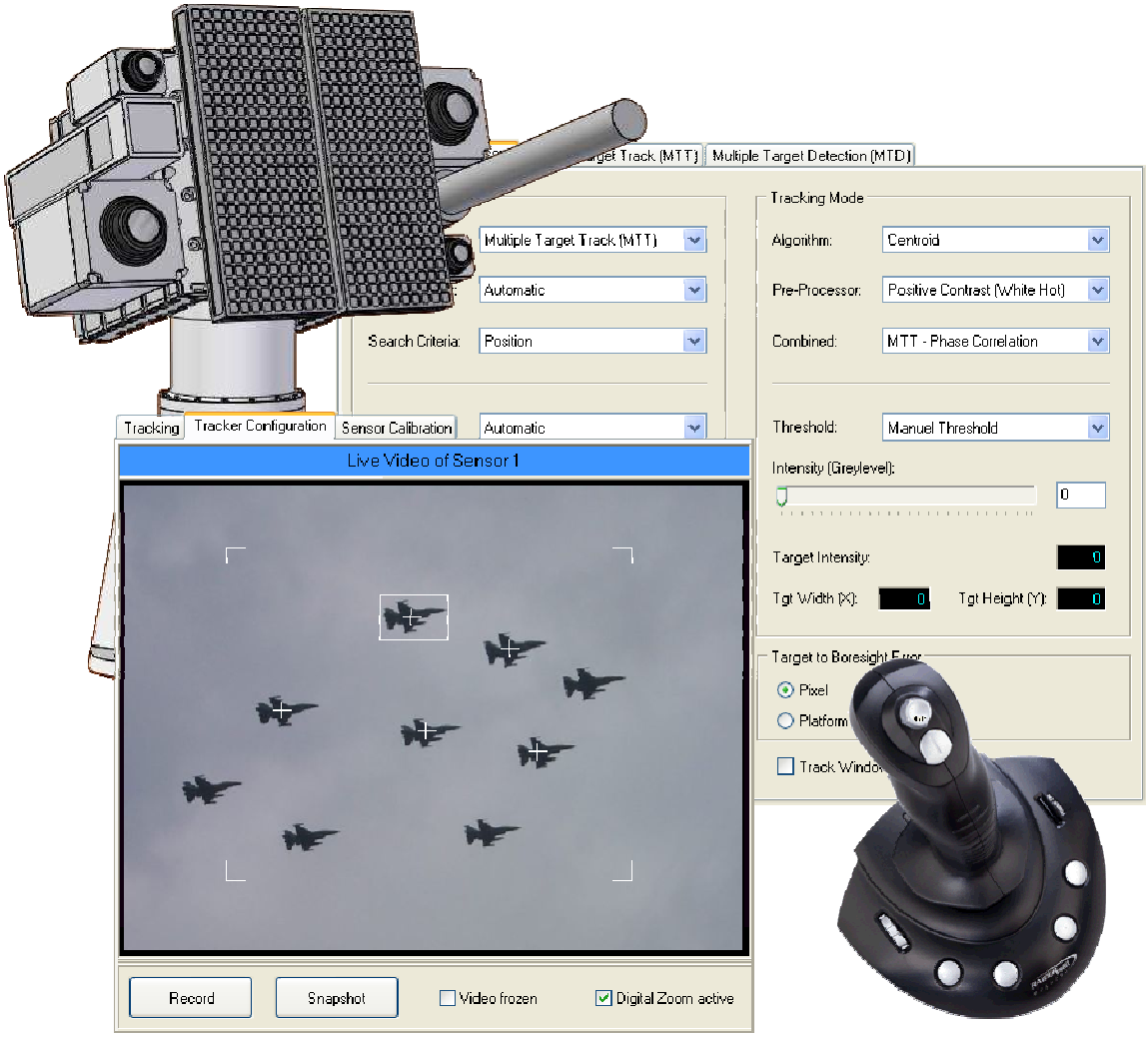
The integrated iSCU (Stabilisation & Control Unit) provides the interface between the gyro system, the image tracker, the user operated joystick (iJP) or command computer and the servo drive system.



iMAR GmbH
Im Reihersbruch 3 • D-66386 St. Ingbert, Germany
Phone: +49-(0)6894-9657-0 • Fax: +49-(0)6894-9657-22
http://www.imar-navigation.de • eMail: sales@imar-navigation.de

GESELLSCHAFT FÜR INERTIALE MESS-,
AUTOMATISIERUNGS- UND REGELSYSTEME MBH
WWW.IMAR-NAVIGATION.DE

Advanced Control Software for iOET² Operation:



The iOET² control software supports an operation by common users as well as by highly skilled tracking experts. For fast integration success several standard configurations like

- Air-to-Air Tracking
- Ground-to-Air Tracking
- Air-to-Ground Tracking
- Ship-to-Air Tracking

and many features like

- automatic search and tracking of targets
- multiple target selection and tracking
- tracking of fast or slow moving targets, even in front of demanding background environment
- automatic re-acquisition of temporary hidden targets
- each 2 channels of video input and video output

are provided. Furthermore using the Windows based software which is delivered together with the tracking system, the user can create application specific configurations with very deep access to the algorithm adjustments. It also enables the operator to use snapshot and record features during the online session. iMAR provides full support in system adaptation and integration including application specific parameter optimization support and system design consultance.

Features like multi target detection and joystick or external interface driven target selection or motion control are provided. As an option also a user operated camera calibration is supported.

iOET² supports the switching between 2 cameras (e.g. daylight and IR camera), the capability of online/offline parameter adjustment, a playback mode for optimisation and trainng purposes and it provides a direct interface to every iMAR based iIPCS/iICSC stabilisation system for automatic target tracking operated on moved vehivles (trucks, aircrafts or naval vessels).

The high processing rate of 50 images per second, combined with high performance gyro stabilisation and most accurate motion systems leads to one of the most advanced inertial stabilised Opto Electronic Target Tracking systems (iOET²) on the market.