

# iIPSC-MSG-30

# Two Axes Gyro Stabilized Gimballed Naval Platform for up to 30 kg Payload

### **Key Features**

- Two-axes gyro stabilized platform for EO/IR and antenna payloads with integrated INS/GNSS based geo-referencing. Powerful LOS (line-of-sight) control with open control interface.
- Due to customized mounting tray (IR, micro-bolometer, daylight camera, LRF, antennas, weapons etc.) adaptable to arbitrary RF and EO/IR sensors; balanced payload up to 15 kg for high dynamics and 30 kg for standard dynamics (customized solutions on request).
- Direct torque drives allow highest resolution, negligible hysteresis & fast dynamics  $(>> 100 \text{ °/s}, >> 100 \text{ °/s}^2).$
- Optical sliprings for signal transmission, gold plated sliprings for power transmission; cable wrap as option.
- Available Features:

- iSCU: Gyro based Stabilization and Control Unit with interface for remote control (ETH, CAN)

opto-electronic Video Target Tracker

- iJP: Joystick Panel for control

geo-referencing with down to centimeter-level - INS/GNSS:

accuracy and for blind-pointing support

- Video Fusion, Image Blending
- Designed to operate in harsh environment, on trucks and on naval vessels.





#### Description

- iOET2:

Direct drive brushless servo motors, combined with

high resolution encoders are ensuring the precise and smooth tracking of the iIPSC-MSG.

All axes are sealed. The selected materials are corrosion resistant and surface treated to withstand harsh land based, airborne or shipborne environmental conditions. Due to its open architecture, the instrument can be equipped with all kinds of cameras (e.g. ZEISS™ ATTICA or other cooled thermal imagers or micro bolometers, daylight cameras), laser range finders or special equipment like energy lasers or antennas.

iMAR Navigation GmbH, located in Germany, is designer, manufacturer and system integrator of the entire iIPSC-MSG (mechanics, electronics, gyro stabilization, INS/GNSS data fusion and motion control). Customer specific adaptations can be provided on request.

### **Options**

- integrated roll axis assembly, enabling 3 DOF stabilization.
- iOET2 Opto Electronic Target Tracking for Auto Video Tracking, with multi target capability and fast 50 or 100 measurements per second. Integrated video recording and time stamping as option.
- > Dynamic gyro stabilization with integrated INS/GPS positioning, including true north referencing / geo-referencing for target localization with sub-decimeter performance (e.g. with iNAT-M200, iNAT-FSSG, iNAT-FSLG or iNAT-RQT).
- Optional spring isolated base plate to prevent high frequency environmental disturbance from the instrument.
- Window cleaning utility (wiper); forced cooling for payload (air or water).



© iMAR®

10.04.2020 rev. 1.06 DocNo.: DOC180409240



## **Specification Summary**

**General Configuration** Payload: customer specific or standard sensors

(see separate datasheet "iIPSC Payload Selection"

Payload weight, nominal: 15 kg on centered, balanced platform,

30 kg with reduced dynamics Payload Signals: Slip rings for power supply, video and discretes,

fiber optic transmission for signals and video, adaptable

according to application requests

up to 1'000 W, 48 VAC (depends on acceleration) Power Consumption: Platform Weight: approx. 60 kg plus payload (depends on options)

<u>Azim</u>uth

Performance (subject to specific offer)

**Environment** 

**Gyro Stabilization (option)** 

Geo-Referencing (option)

**Image Target Tracker** 

True North Capability (option)

Command / Remote Control

Angular freedom (deg) continuous continuous Position encoder resolution better 20 bit better 20 bit resolution shaft < 5 arcsec < 5 arcsec repeatability (static) < 100 µrad < 100 µrad Rate (deg/sec)  $> \pm 100$ > ±100 Acceleration (deg/sec2) > ±100 > ±100 [30 kg payload] Acceleration (deg/sec2)  $> \pm 200$ > ±200 [15 kg payload]

Torque cont./peak (Nm) 4/16 3.5 / 8.3Perpendicularity (arcsec) <±100 Operating Temperature -20 °C to +55 °C (other on request)

up to 4'000 m above sea level or tbd. Altitude

Vibration, Shock, EMI, EMC MIL-STD810G, MIL-STD461G

> **INAT-RQT**: < 200 µrad abs. roll/pitch stabilization < 1 mrad abs. heading stabilization

< 50 µrad relative stabilization

Elevation

iNAT-FSSG-01: < 200 µrad relative stabilization

Position and Attitude Performance < 0.05 m, 0.02 deg roll/pitch, up to 0.03 deg true heading Gyro compassing or GNSS based < 0.3 deg GNSS dual antenna / 0.03 deg sec lat gyro comp. Stabilization Feedback iOET2: 50 Hz / 100 Hz, video target tracking, image blending

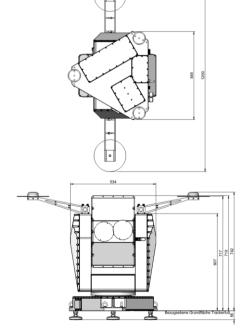
via Ethernet / CAN / UART or / and joystick (see iMAR's iSCU interface)

**Payload** The system can be delivered with special

adaptation to customer's payload. Payload can be provided by the customer or by iMAR and integrated at iMAR facilities.

Stabilization Performance





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



© iMAR®

10.04.2020

rev. 1.06 DocNo.: DOC180409240

technical modifications reserved w/o notice