

iPEGASUS-HP-H & -SHP

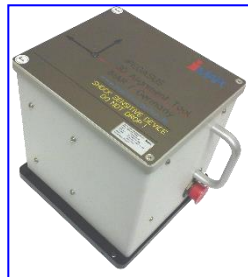
Surveying and Alignment of Machining Centers, Antennas, Guns, Fire Control Systems
Autonomous Determination of Differential Angles in Space

With increasing quality requirements and the need for a continuous monitoring of quality, the surveying or aligning of machining centers and robots or the transfer alignment for mounting inertial navigation systems, fire control systems, guns, missile attack warning systems or the alignment of communication and radar antennas has gotten of significant importance during the last couple of years.

Therefore, iMAR provides iPEGASUS, a patented highly precise inertial based transfer alignment system, which provides a three dimensional attitude/ heading information relative to a reference orientation with an accuracy up to 0.01°.

The system works without external aid and is easy to handle for everybody, where only one single person is

necessary for operation. Thus the measurement time for aligning or surveying is reduced dramatically compared to traditional laser or camera aided systems. iPEGASUS is a handy tool which generates up to 300 measurements per second, shows results on screen and plots a protocol



designed for your application. Using two iPEGASUS in differential mode allows furthermore the transfer alignment of fire-control systems, guns and antennas even on moving naval vessels.

Technical Data of iPEGASUS-HP-H and iPEGASUS-SHP

Measured data	: $\varphi_x, \varphi_y, \varphi_z$ (angles around space coordinate axes)
Measuring range	: ± 360 deg (any rotations in space)
Resolution	: 300 μ deg
Linearity error	: < 0.001 % (incertainty due to rotation, 1 σ)
Measuring incertainty	: < 0.002 deg over 1 minute of measuring < 0.004 deg over 5 minutes of measuring < 0.005 deg over 10 minutes of measuring
Random walk / Q	: < 0.0025 deg/sqrt(hr)
Random constant	: < 0.003 deg/hr
Data rate	: 1 ... 100 Hz via RS232 (internally 300 Hz)
Output	: in real-time, on file, as plot, Tablet output on request (roll, pitch, yaw, time)
Power supply	: 11...34 V, < 20 W
Self testing	: automatically
	<u>Standard System</u> <u>SHP Miniature System</u>
Mass	: 6.2 kg 2.98 kg (meas. head) + separate electronics
Size	: 275 x 200 x 205 mm ³ 145 x 145 x 145 mm³ (meas. head)
Export Control	: US export license required; iPEGASUS-SHP is furthermore ITAR controlled

The iPEGASUS is in operation worldwide at weapon manufactureres and helicopter manufacturers like Rheinmetall, Oerlikon Contraves, Westland Augusta, Airbus, BAe Systems, UK MoD, German MoD (Naval Weapons), Turkish Armed Forces etc.

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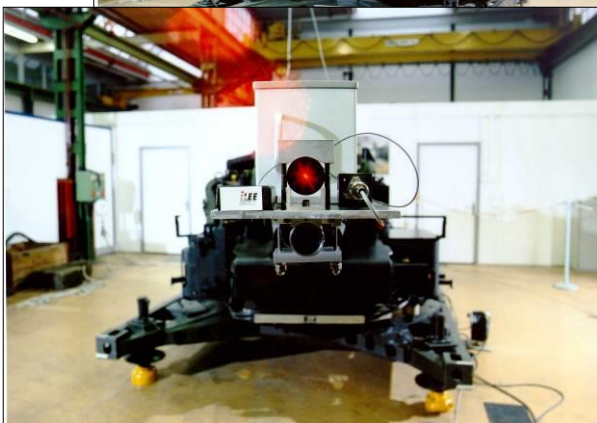


Technical Information:

Example for the Usage of iPEGASUS in Calibrating Kinematic Chains (Pictures: Surveying of turrets with Oerlikon-Contraves AG, Zurich)



- Automatical surveying of turrets in azimuth and elevation for **quality assurance** and **calibration**.
- Improvement of positioning accuracy of guns due to the usage of the data of surveying for calibration purposes.
- Mobile and accurate **determination of geometrical relations** between gun and fire control system at army and navy applications

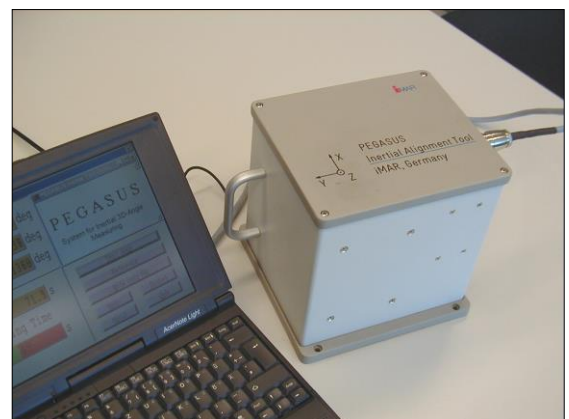


Advantages of iPEGASUS:

- Calibration or surveying can be done by **unskilled employees**.
- No external

equipment required (no mirrors, theodolites etc.). Therefore high mobility and **very short time needed for installation and surveying**.

- Surveying also possible on moved vehicles with use of two measuring heads in differential mode.
- Direct communication with field computer. Open interface.



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