

Moving Terrain Air Navigation Systems AG · Sparenberg 1 · 87477 Sulzberg, Germany · Phone +49 (0) 8376 - 9214-0 · Fax +14 · www.moving-terrain.de

Are you already flying ... or still planning?

EASA-Registered Aircraft

Commercial Flights (JAR-OPS, new: EU-OPS)

According to EU-OPS-1-1040 the following information has to be on board:

- complete flightlog
- MET info for DEP, DEST, ALT and Enroute
- W&B calculation
- NOTAMs
- ATC flightplan, where applicable, e.g. IFR flight
- current charts
- fuel calculation
- papers and documents

Private Flights

Requirements for private flights are very vague (see Luft-VO §3a). Having the commercial information available will be more than necessary. Finally, there is no mention of printed out information. It is sufficient, if correct computations are available on board (on paper or EFB). With a copy mailed to the OPS center or office.

N-Registered Aircraft

Part 61 (private) and part 91 (operations, non-scheduled):

- Glass cockpits information and Electronic Flight Bag is fully accepted.
- Pilots have to be familiar and be able to cross-check the computations provided verify.

Luft-VO §3a (Flugvorbereitung):

1. Bei der Vorbereitung des Fluges hat der Luffahrzeugführer sich mit allen Unterlagen und Informationen, die für die sichere Durchführung des Fluges von Bedeutung sind, vertraut zu machen und sich davon zu überzeugen, dass das Luffahrzeug und die Ladung sich in verkehrssicherem Zustand befinden, die zulässige Flugmasse nicht überschritten wird, die vorgeschriebenen Ausweise vorhanden sind und die erforderlichen Angaben über den Flug im Bordbuch, soweit es zu führen ist, eingetragen werden.
2. Für einen Flug, der über die Umgebung des Startflugplatzes hinausführt (Überlandflug) und vor einem Flug nach Instrumentenflugregeln hat sich der Luffahrzeugführer über die Flugwettermeldungen und -vorhersagen ausreichend zu unterrichten. [...]

For Part 61 (private) and part 91 (operations, non-scheduled) the following requirements are given:

91.103 – Preflight Action **NWKRAFT**

- Before any IFR flight, the pilot must become familiar with:
- **N**OTAMs
 - **W**eather
 - **K**nown ATC delays
 - **R**unway lengths
 - **A**lternate
 - **F**uel Requirements
 - **T**akeoff Data

Version 7.5 ... more than you need for any RAMP-CHECK

All preflight Computations and Planning on Board in Minimum Time



Waypoint	Ident	Airway	MEA	TC(*)	MT	TAS	WD(*)	Air-Temp	Leg	ETE
Coordinates	Level	MORA	MC(*)	MH	GS	WV(KTS)	Temp	Rem.	ACC	
LICP (LI)	N 35° 06.31'									00:00
E 013° 19.48'										605.4
LURON (LI)	N 35° 51.32'	DCT	348	348	200	330	-30°C	45.8	00:32	
E 013° 06.56'	F220		348	342	129	72		559.6	00:32	
DORAS (LI)	N 39° 35.55'	UM726	F195	357	356	200	338	-30°C	44.4	00:21
E 013° 03.35'	F220	F175	356	350	128	74		515.2	00:53	
BEROL (LI)	N 40° 12.17'	UM726	F195	357	356	200	343	-31°C	36.4	00:17
E 013° 00.47'	F220	F175	356	351	126	75		478.8	01:10	
ENSOT (LI)	N 40° 31.59'	UM726	F195	357	356	200	347	-31°C	19.7	00:09
E 013° 59.14'	F220	F175	356	353	126	75		459.1	01:20	
UNDO (LI)	N 40° 46.30'	UL50	F195	316	316	200	349	-30°C	20.1	00:09
E 013° 40.54'	F220	F175	316	328	122	76		438.9	01:29	



More Safety: Cross-checked Terrain Data

1. Terrain Data filtering from the latest high resolution satellite earth scan
2. More safety by cross-checking of 2 independent databases
4. New safer warning colour settings
red: -200 feet, amber: -400 feet, green: -600 feet
3. Lake and waterway filter:



In the new improved MFD presentation, waterbodies are visualized now, providing better orientation and position awareness.

Update MT-TAWS

Update for MT-TAWS owners: 380,- €
New MT-TAWS module: 980,- € (same price)



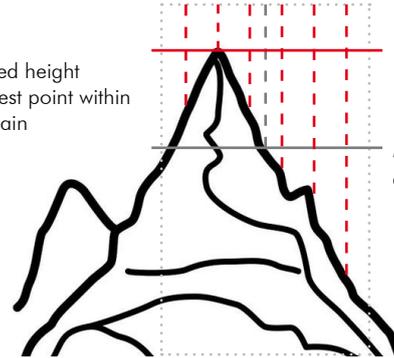
5. High resolution:

- Conventional: 900 meter (0,5 NM) information
- Moving Terrain: 50 meter information, 1 meter in altitude

More Safety thru increased sampling rate

NEW

displayed height
= highest point within domain



„CONVENTIONAL“
displayed height
= center point within domain



The Better Airshow

MT-Passenger Entertainment & Information System for convenient and versatile viewing of maps, DVDs, Apple iPod, videos or camera signals on a 10,4" display with a huge viewing angle of 85° each side.

Dimensions (w x h x d):
228mm x 181mm x 12mm



Easy mounting,
e.g. bulkhead
installation >>

Eurocopter: Tharsys Converter to THALES Displays



This converter allows to display MT-VisionAir signals on THALES displays in EC 135, EC 145 and EC 155.





MT-EFIS – 1 year now: Digital Backup for Mechanical Gyroscopes

Moving Terrain AG has repeatedly brought worldwide innovations and patents to the market of GA cockpits. One year ago, an artificial horizon has been presented that needs no extra sensors at all, but utilizes the on board GPS only – One GPS is sufficient to generate a full Attitude Reference System.

MT-EFIS „reverse engineers“ the attitude from the knowledge of the current flight path. Initially a very efficient mathematical flight tool monitors a true high frequency GPS output. In a second step, a 3D flight dynamics model is employed to render the temporary attitude from the temporary flight path. Virtually any acceleration effect resulting out of the flightpath is evaluated and is traced back to the slightest change of ACFT Pitch Roll and Yaw.

brated installation as other attitude sensors do.

MT-EFIS is meant to provide redundancy, if your primary instruments fail. Or if you observed a discrepancy between your primary horizons (beginning vacuum pump failure).



„Die Fluglage lässt sich mit Hilfe des rein GPS-basierten EFIS problemlos kontrollieren, Kurse sowie vorgegebene Steig- und Sinkflugraten lassen sich sauber steuern.“

„The Flight Attitude can be controlled without problems with the sole means of this merely GPS based EFIS. Courses, climb and descent rates can be precisely piloted.“
 „Pilot und Flugzeug“ 2009/01

Is there a delay in the reaction of such a system? Yes, there is a fraction of a second delay. How well flyable is a horizon that is slightly delayed? The system has been test-flown by various aviation magazines. A judgement on the flying qualities is provided in their articles.

„Die Anstellwinkelanzeige, die den Piloten vor der Annäherung an gefährliche Flugzustände warnt, und die Anzeige der Flugbahnneigung bringen für ein Leichtflugzeug eine ganz neue Informationsqualität ins Cockpit“

„The Angle of Attack indication, cautioning the pilot before entering hazardous situations together with the indicated Flight Path Angle provide an entirely new quality of information to the (GA) cockpit.“ Aerokurier 2009/02

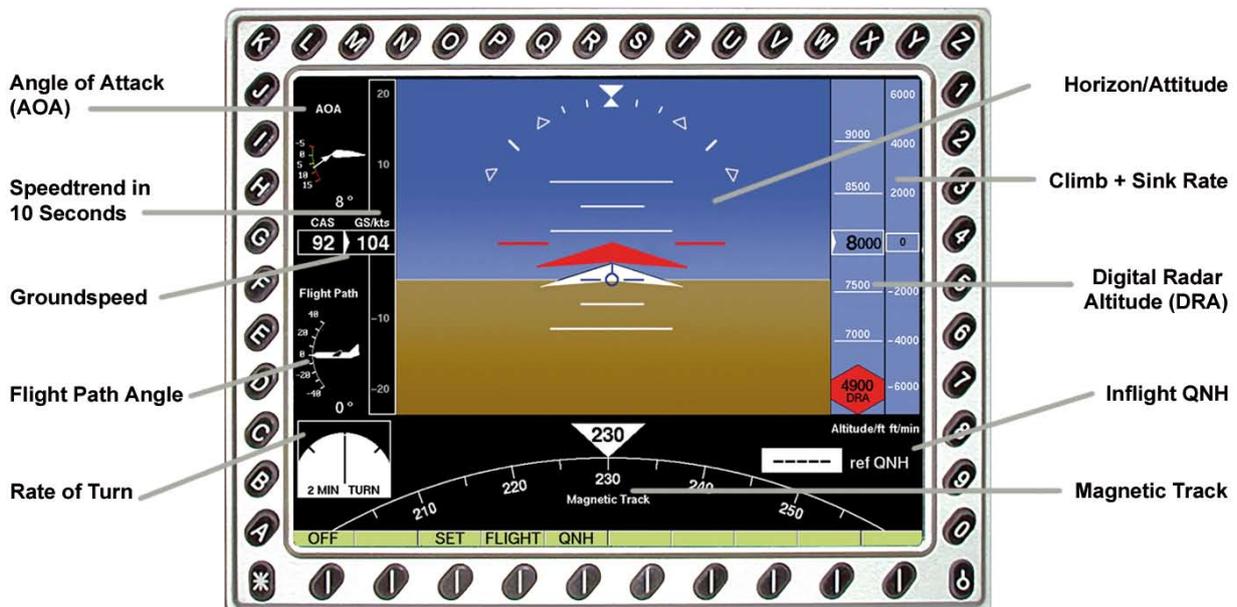
Installation is rather simple. The high performance GPS is typically installed inside the cockpit. On top, regardless whether you have this panel mounted or mobile, it always shows the correct attitude, even if you move (tilt) it different from the aircraft position. If it was mounted, it doesn't need a cali-

Your Choice before 15 December 2009

MT-EFIS Module: ~~1480,- €~~ **980,- €**

MT-EFIS with a new MT-VisionAir: ~~1480,- €~~ **750,- €**

MT-EFIS: Displayed Information



Certified Installation

Moving Terrain maintains a close and intensive contact to many European installers and completion centers. For many of our MT units in helicopters and aircraft there are STCs and Minor Change Approvals available.



Hardy Truelsen,
Scandinavian Avionics Group

„Scandinavian Avionics is pleased to be partner in the Moving Terrain concept, we feel their products fit very well into our philosophy about installing and certifying high quality and dedicated products for specific aircraft and applications in order to obtain highest customer satisfaction and cost-effectiveness.“

Scandinavian Avionics Group A/S proudly shows a retrofitted and certified EC120B with a MT-VisionAir EP III.



before



after



New Traffic Alert Systems

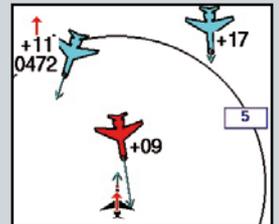
Following customer request for Low Cost Traffic Detection Systems MT is announcing 2 new products.



ZAON The ZAON System, manufactured in Addison, Texas, has been flight tested and an interface subsequently developed. It is visualized on the MT-VisionAir in a flashing ARC symbology. SW-Interface: 480,- €



FLARM The well known gliderplane traffic system for collision prevention with MT-Dynamic Synchronized Simulator Technique shows target trend and 15 sec position. SW-Interface: 480,- €



Still Available: **Ryan/Avidyne TAS 600 series**

EGNOS is now!

EGNOS, the European WAAS System will be aviation-certified a long time down the road. What only few people realize is that the system itself is ready now, just like in the nineties when GPS became a fact, and aviation authorities did not know what to do with it.



The Fast Integral GPS uses EGNOS today in Europe and WAAS in North America. Plus besides its superaccuracy, it is superfast and super sensitive.

Interior and exterior mounting is possible with this small module as well as the usability in a partly shielded environment (e.g. heated windscreens).

Training Sessions...

... for **pilots** and ... for **installers** are offered regularly in German, English or French. Please see our website for further information and schedule.

Online MT Videos

- **YouTube** (www.youtube.de) and

- **MOVING TERRAIN** (www.moving-terrain.de)