

TOP GEAR | SPECIAL

MOVING TERRAIN'S NAVIGATION AND FLIGHT PLANNING SYSTEM MAKES LIGHT WORK OF IFR ROUTING AND ENABLES PILOTS TO FILE FROM THE COCKPIT. WITH SUITABLE SOFTWARE MODULES AND A SATELLITE TELEPHONE, THE SYSTEM IS ALSO CAPABLE OF PROVIDING THE PILOT WITH ON-BOARD WEATHER DATA

VisionAir

€8,000 - €15,000

www.moving-terrain.de

We've been talking to Moving Terrain for a while now and first thought about including its VisionAir in a round-up of portable GPS units that we published last year, in the December issue of *FLYER*. However, it soon became clear that although Moving Terrain's system, known as VisionAir, can easily be used as a portable GPS, it does much more besides. Moving Terrain's CEO, Stefan Unzicker, suggested the best way to understand the kit's capabilities was to fly with the unit, which is how we found ourselves talking through the VisionAir options prior to heading for the skies.

The system is more easily understood if you stop thinking about it as a simple GPS and start thinking of it as a navigation and flight management system. The hardware is a box measuring 157mm high by 125mm wide and 40mm deep. It has a high-resolution screen (1024 x 768) and no fewer than 48 buttons surrounding the screen. MT's philosophy is to make things simple, so within the 48 keys you have a full alphanumeric keypad and a set of function keys, each of which has an on-screen label. Thanks to the number of keys, there's only ever one function or action per button in any particular screen, which should help significantly when learning the system.

Three hardware versions are available: the MT VisionAir; the MT VisionAir EP III (EP meaning Extended Performance); and the VisionAir TSO, an EP III model that can be fitted to certificated aircraft. The unit can be used as a rather chunky portable or clipped into the avionics rack.

Software options

Although the hardware is impressive, the flexibility and capacity of the system only become obvious when you look at the software modules available. The base module, the moving map software, brings digitised charts that load and draw at a speed you're unlikely to see elsewhere. Moving, panning and zooming all take place without any lag, and there are no blank areas while the screen is being drawn. We've seen that with vector charts, but the processing power of the MT box brings the same experience to digitised charts. Worldwide charts are available and updates are easily achieved with new data being loaded via a CF card. The FMS (Flight Management System)



The VisionAir clicks into place in the avionics stack. Updates are easy via a CF card

software shows the benefits of building a flight plan when you fly with a GPS, as it will display calculated data such as ETE, ETA, course to waypoint, etc.

Other modules available include Terrain; TCAS which interfaces with either installed or portable traffic systems, including FLARM; a clever backup EFIS that takes the information required to create its screen from the GPS signal; an input for a camera, which will take a feed from an external IR camera for instance; and an EFB (Electronic Flight Bag) and chart option so that it is possible to load, store and use both IFR and VFR plates.

Communication interface

Those modules are impressive, but it's the addition of a communication interface that turns VisionAir from a capable GPS unit into something far more powerful. MT's units can communicate with the outside world in a couple of ways. They all contain a slot for a 3G data card which, providing a signal is available, provides a data service on the ground, or, as in Stefan's aeroplane, can be linked to a satellite telephone. The ability to send and receive data on the ground or in flight adds significant functionality to the unit.

The satellite radar module provides for uplinked weather to be overlaid on your map, enabling better weather decisions to be taken. The data updates every 15 minutes and will show for your entire route. So, for example, before Stefan had even started up, he could see

the passage of a front close to his destination in Southern Germany, and could use that information both on the ground and later in flight to plan any necessary diversions. While this may not be necessary for short duration local flying, it becomes invaluable (and addictive) for longer legs and touring.

Impressive as it is, it's not the in-flight weather module that is the most impressive thing about MT's system, the ability to communicate and MT's 'BlitzPlan' module brings with it the ability to create and file IFR flight plans either on the ground or in the air – what's more, by routing these requests through the MT BlitzPlan servers there's a guarantee that the system will find an IFR route that is acceptable to the CFMU computer.

The module presents a flight plan form onscreen that the pilot fills in using the data entry buttons; that flight plan is then submitted (via sat-phone or 3G card on the ground) to MT's servers and, 45 seconds later, a CFMU compliant route can be viewed on a map that is presented to the pilot. If accepted, the route is filed (by the press of a button) with another button loading the route details into the MT's FMS module. With practice and system familiarity this entire process can be completed in just a few minutes – and that's from data entry to taxi – a significant gain over even the much improved manual methods.

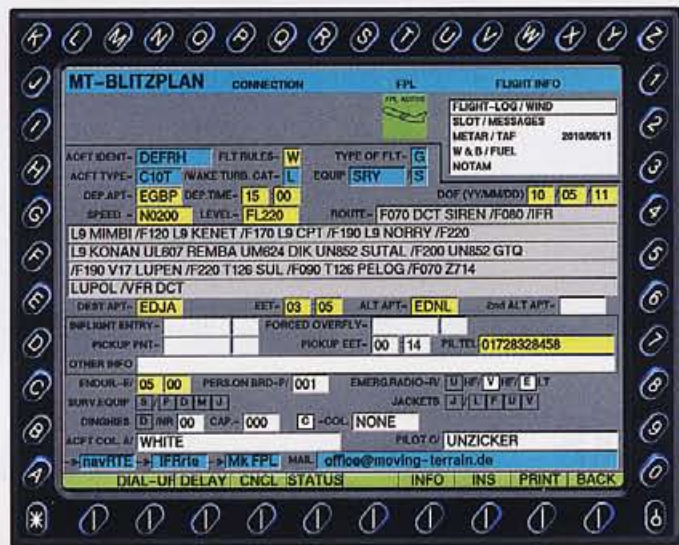
The cost of the equipment varies – not only does it depend on your hardware choice, but on which modules you pick and on how many charts you decide you want loaded (and updated) – and then of course there's the cost of installing the unit and of getting it approved,



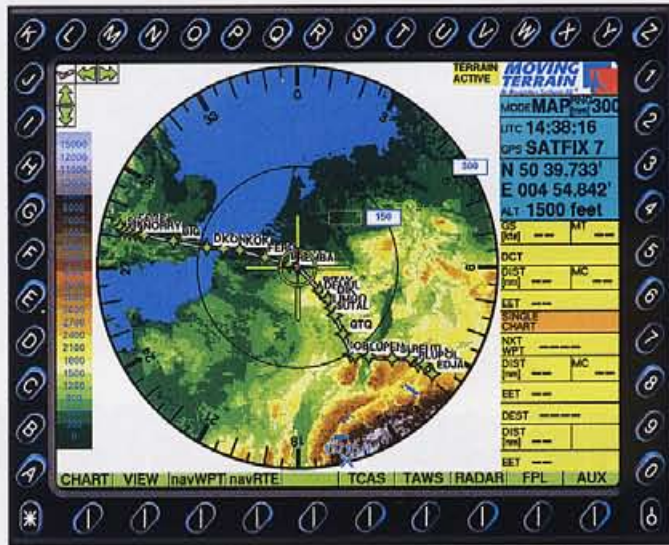
It's possible to display VFR and IFR charts – this one arriving at Kemble



Rainfall radar received through satellite phone and overlaid on CAA chart



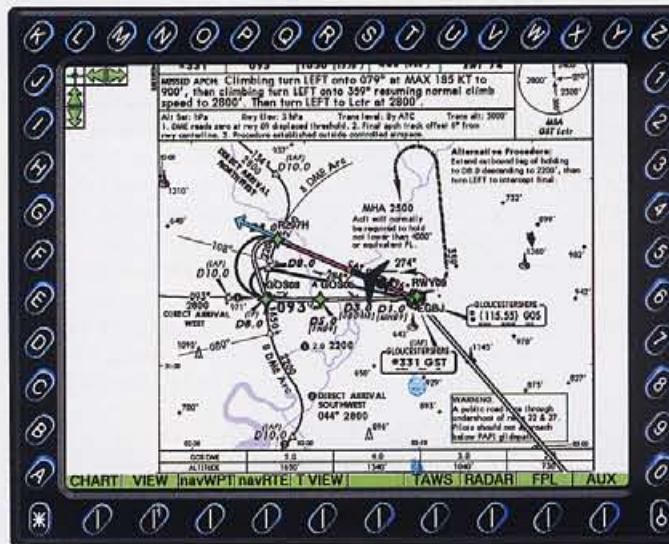
IFR flight plan completed in the aircraft and uploaded to MT's servers



CFMU-approved route is shown in full with all waypoints listed



Planned route was changed in-flight due to severe weather and CB activity



Georeferenced, true-scale approach plates make cockpit workload lighter

although most European installations are classified as an EASA minor mod. Stefan estimated that the unit and software modules would cost between €8,000 and €15,000

If you do a lot of touring, there's no doubt that the MT VisionAir, combined with a satellite phone, the satellite weather manual and MT BlitzPlan, is a

powerful tool. Even for VFR flights, the ability to see weather onscreen rather than trying to build a mental picture through countless Volmet updates is useful and enables better decision-making. But it's for regular IFR flying that the system comes into its own. The ability to plan, validate, file and load your route into the unit in the cockpit, and all

that in just minutes, is a real win. Combine that with the in-cockpit weather visuals during the flight and it is hardly surprising that the majority of MT's fixed-wing customers are regular users of European airways. Installing the MT kit is a bit like creating your own private ops department, right there in the cockpit with you. **IS**