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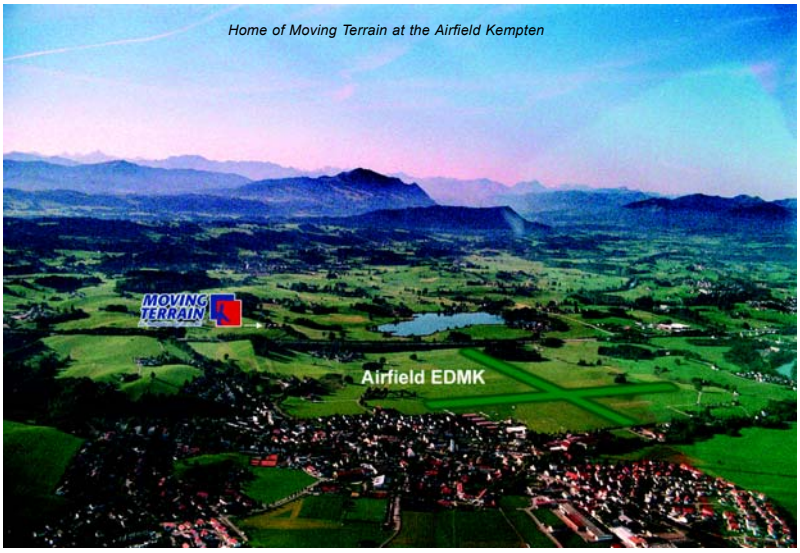
Anniversary Issue
10 Years Moving Terrain

Moving Terrain, one of the earliest moving map pioneers are celebrating their 10th company anniversary in October 2003. The idea to produce a complete, full-color moving map to cover entire continents began to take shape as a research project under the product name of “Moving Terrain” in the spring of 1993. In October 1993, Moving Terrain GmbH was founded in Munich. Moving Terrain was the first company world-wide to introduce the “true” moving map – so widely used in GA today – to the world of civil aviation.

In the following years complete systems encompassing plug-and-play hardware, charts and software were developed to suit the pilots needs in the cockpit. in 1995 the first complete Avionics unit named Cockpit I was introduced to the market.

At the AERO exhibition in 1996 the first single component unit named Cockpit II was built followed by an upright version to fit standard avionics racks. In 1998 the newly developed MT Ultra with its brilliant screen and light weight became the pilots favorite.

One version, the MT-Ultra Professional TSO, was certified to JTSO C113 as a multi-functional display.

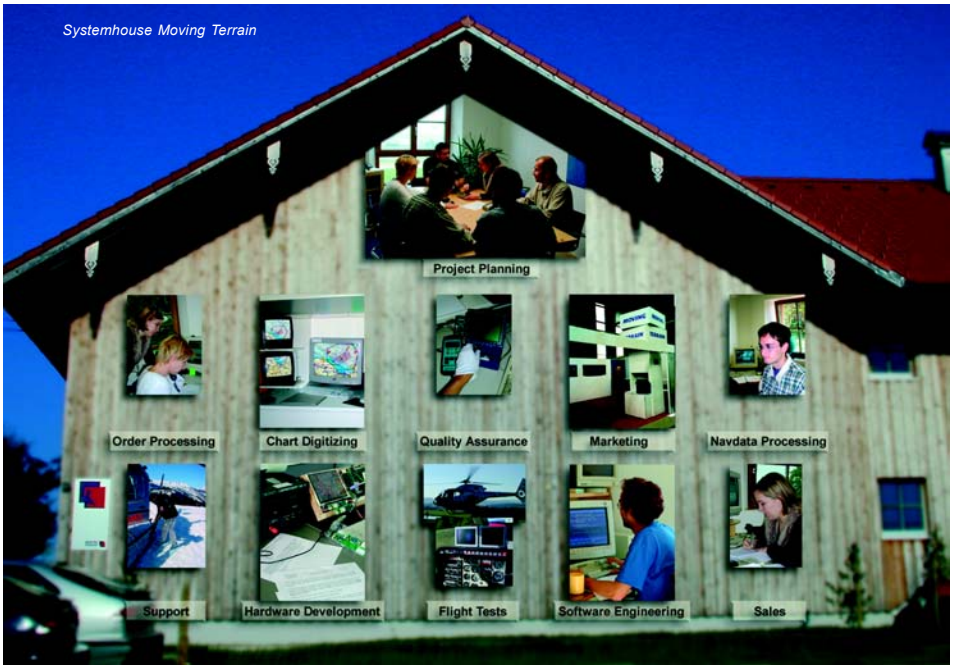


Home of Moving Terrain at the Airfield Kempten

In 2000 the corporate form was changed from GmbH to Moving Terrain AG, and the company was relocated from Munich to Sulzberg/ Allgäu. Its new business premises are now in close proximity to the airfield Kempten / Durach.

In the same year MT founded its subsidiary in Clearwater/Florida to service the growing market for its products in the US. After little more than a year of hard startup work that business had to be closed down in the aftermath of September 11th 2001 as almost all VFR activities came to a halt.

In 2001 the next step in terms of hardware was the current VisionAir and MT-VisionAir EP series.



Systemhouse Moving Terrain


Founder: Stefan Unzicker

LIDO European Enroute Charts - ships *FREE* with MT- IFR Package!

The new high-quality low-level enroute charts for Europe have now been released. As a result of our co-operation with Lido (a subsidiary of Lufthansa) we are now able to offer high-quality, current enroute charts, initially for the lower airspace.
The exciting news is that MT has decided to deliver them free of charge when an IFR package is ordered. Customers who already own the MT-IFR package will receive the new charts automatically with the next update at no extra charge!

In order to enable you to get a picture of the superior quality, Moving Terrain has decided to give away free samples. A free demo (showing Switzerland) is available for download on our webpage www.moving-terrain.com in the "NEWS"-section.

UPDATE ICAO EUROPE

The 1 : 500,000 scale ICAO chart for Europe has now been released. The format of France has completely changed to a very attractive image (see chart cutout below). Other countries represented are: Austria, Benelux, Denmark, Hungary, Czech Republic (Prague), Sweden and Southern United Kingdom (shown red on the graphic).

50% zoom factor with new Europe VFR charts 1 : 500,000

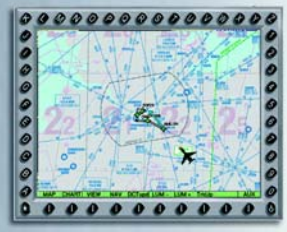
A new zoom mode is now available that represents 4 times the area on your display, still delivering crisp images. You can now obtain an overview of an area encompassing, for instance, Munich-Stuttgart-Kempten-Friedrichshafen on one screen (see cutout). This is very useful when you require a good look ahead covering a large area, e.g. in conjunction with projected WX Radar on your display, or already preflight when planning a route.This 50% zoom works in conjunction with version 6.3. (only available for MT-VisionAir and MT-VisionAir EP!)

Moving Terrain Version 6.3 released

- **Improved MFD screen**
  Simultaneous display of different sensors on the MFD: all important data at a glance. It is possible to have
  - FMS routing
  - MT-TCAS
  - MT-Stormscope
  - MT-Satellite radar

displayed at the same time in a clear track-up oriented representation of data.
Furthermore, the system is capable of superimposing these data on the corresponding map using a special cross-fading techique, that shows the map details beneath the radar layer.

In ARC ore 360° modes the scales range from 5 to 800 nautical miles, using the corners of the display for supplementary information.



- **Optimized presentation of routes and WPT symbols**
  - Clear distinction between white route legs and base maps by use of a wider black border.
  - Enlarged rhombi of WPTs, improved readability of WPT identifiers (no more map overlaps).
  - WPT names on top of route lines.

- **Zoom 50%**
- **Advanced log book function**
  -Trigger Groundspeed (GS) user-adjustable (particularly important for helicopters).
- **INVERT function for flight planning available**
  User routes can be inverted, when the same route is to be flown back & forth, saving time during flight planning.
- **CHR function** added to the USER WPT menu. A new input field allows the use of special characters (e. g. blanks).

IFR-Procedures: Projection on Moving Maps Implemented

As a new feature of the IFR packages, all standard routings and procedures can be projected as an overlay on any chart. This is a dramatic time-saver, if for instance, ATC changes your SID as you taxi out if your arrival-route is replaced during descend when you have already configured for a different one.

ASPECTS OF A PERSONAL AIRLINER

Diamond Aircraft Service of Burbach in Siegerland, Germany, took this photo showing an MT-VisionAir system in the panel of a customer's TBM 700 aircraft. With more systems to be mounted currently, Bernd Kaiser, Chief of Avionics at Diamond Aircraft Service, benefits from MT's customer support in finding answers to the challenging demands of his clients. The solution selected in collaboration with MT was a rear bulkhead installation. This not only gives the passengers the option of the repeater of the MT-VisionAir in the cockpit, but also a complete MT-Passenger Entertainment system including video and DVD playback capabilities.

Installation of MT VisionAir (photo: D.A.S.)

CUSTOMER EXPERIENCE WITH MT-SAT RADAR

Peter Malin, a successful businessman and owner of LTW Lagertechnik GmbH at Wolfurt, Austria, near to Lake Constance, used the full-feature MT-VisionAir in his Cirrus and Cessna 303 aircraft. As one of the first to purchase the MT-Satellite Radar system he was able to benefit at an early stage from the new capabilities in the aircraft. After gathering some respectable experience, he did not hesitate to supply us with feedback on the system.
Malin called us to report: „On a flight from Jena to Friedrichshafen I experienced severe WX conditions, but I was able to ask ATC for diversion vectors way before I even came close to any hazardous thunder area! And the only reason I was forced to do this was because I hadn't already used the MT-Radar in flight planning. That would easily have been possible to find the optimal flight route avoiding any adverse WX. A very important task that an ordinary onboard radar can't cope with. In future I will certainly use the MT system for flight planning– it can be a real life-saver! Congratulations to MT Chief Engineer Klaus Metzger and his team for what they have achieved. I would never fly again without my MT-Satellite Radar in difficult conditions like that" Malin had a request concerning speeding up the download process as much as possible, i.e. about one minute for a download of the complete WX data for the European area. In return we would like to say thank you, Mr. Malin, for your valued interest and help in making a perfect solution even better!

Peter Malin

MT-VisionAir in Cirrus SR 20 (Photo: P. Malin)

Radar - Uplink - in Europe tomorrow?

VHF uplink, satellite uplink, Mode-S transponder data link....
How can I buy equipment today that will still be valid, compatible and fully supported tomorrow?
Several manufacturers offer radar picture uplinks that work successfully throughout the United States via a VHF uplink. Ground-based VHF transmitting capabilities have been added to the existing air radio network stations distributed in US territory.
The most natural way of thinking calls for a similar installation of proven technology throughout Europe. However, the system requires ground-based infrastructure that would have to be initiated and paid for in part by European governments. This is why such projects involve a fairly lengthy time span and to date have hardly entered more than a vague definition phase. With the lack of support for general aviation – airlines not being a target buyer group – the fate of this ground-based technology will continue to be uncertain.
As a further means, Mode-S transponders – still to be installed – have a certain data link capability. Generally, to exploit this capability a ground network will have to be installed . No specific such plans regarding a weather uplink have been heard of so far in the transponder community. Not really is the capability of transporting these larger-sized data packages fully functional in upcoming Mode-S products even though the technological feasibility is tempting.
Considering the economic stabilization of satellite communication firms and great „economic progress" as a result of the recent Iraq war, satellite technology can count on a vast number of users especially outside the aviation community. The cost of the technology is falling continuously and in economic terms it outperforms the VHF version with every month in use. The likelihood of governments investing in it or merely coordinating a separate trans-European VHF infrastructure dwindles accordingly.
For aircraft applications such as radar picture uplink, MT has set the following criteria:
- multi-satellite system (typically in the order of 48-64 satellites) that does not require a directed and stabilized antenna platform
- modem availability by telephone
- company with economically stable operations and at least a 2-year record of commercial success
- acceptable cost structure
- technical support in Europe at least to OEM customers.

The system already exists in the form of the Iridium satellite network and has been in operation with MT-Satellite Radar since February 2003. It may be joined in the very near future by another competitor. After all, the technology that appears to be on the sunny side of economics is available now – up and running via satellite.