

Moving Terrain

Manual version 7.0 / 7.1 / 7.2 / 7.3 / 7.4 / 7.5





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Wichtige Hinweise zur Nutzung und zu eventuellen Risiken bei der Anwendung von Moving Terrain:

Sie haben ein hochleistungsfähiges System zur navigatorischen Unterstützung erworben, das Ihnen das Fliegen in einer noch nie dargebotenen Weise erleichtern wird. Wir fühlen uns aber verpflichtet, Sie auf alle damit verbundenen Gefahren hinzuweisen, die unsere Testpiloten in Erfahrung gebracht haben. Wir haben uns Mühe gegeben, das Moving Terrain System sorgfältig zu entwickeln und ein zuverlässiges Produkt zu erstellen. Das System wurde unter allen denkbaren Flugbedingungen erprobt. Dennoch, auch wenn Sie und wir zunächst keine Fehler mehr finden, wird jegliche Haftung für die Funktion des Systems ausgeschlossen.

Selbst wenn unser System zu hundert Prozent fehlerlos sein sollte, ergeben sich trotzdem Gefahren durch Fehlbedienungen und vor allem durch die Manipulation der GPS-Genauigkeit durch den Betreiber, das US-Verteidigungsministerium. Für die zukünftige Lizenzpolitik des GPS-Betreibers können wir keinerlei Voraussagen machen oder Garantien übernehmen.

Das Moving Terrain System ist ein VFR-Gerät. In keiner Weise ist es sicher, mit dieser Navigatonshilfe unter Instrumentenflugbedingungen zu fliegen, wenn Sie nicht alle vorgeschriebenen Navigationsgeräte in Betrieb haben und sich nach Instrumentenflugregeln auf Instrumentenrouten bewegen.

Ein nicht IFR trainierter und lizensierter Pilot, der in IMC fliegt, ist mit oder ohne Moving Terrain in Lebensgefahr!

Sie sind nach den Luftfahrtvorschriften verpflichtet, die entsprechenden aktuellen Karten in Papierform an Bord mitzuführen. Auch unsere Piloten haben die neuesten ICAO-Karten ständig griffbereit an Bord, obwohl wir in das System viel Vertrauen gewonnen haben.

WARRANTY AND LIABILITY ADVICE

This software is to faciliate your terrestic navigation only. It is not a certified aviation equipment and does not replace any aircraft instrument. You are explicitly cautioned to verify that the hardware employed is functioning correctly and does not interfere with the aircraft or other vessel in a hazardous manner. Data errors and computer errors are possible. This also pertains to the IFR



data and procedures implied in the respective modules. Human error can make the moving map, navdata or any supplemental information incorrect. The pilot in command remains the final authority on the accuracy and sufficiency of the hardware and software.

Warranty and Liability Disclaimer:

The manufacturer, distributor or sales agent resume no liability as to the correct function of the software, the availability of a reference signal (GPS) or the validity of the charts, navdata or any supplemental information like airport information a.o. Never will the manufacturer, producer, sales representative and neither of their staff be liable to you for any consequential incidential or indirect damages (including damages for loss of business profits, business interruption, loss of business information and the like) arising from the use of or inability to use the software even if any of the staff mentioned above has been advised.

There is no warranty, express or implied, including without limitation the implied warranties of merchantability and fitness for a particular purpose, regarding the software. The entire risk as to the results and performance of the hardware and software is assumed by you.

Notice:

For our IFR package a continuous improvement programm is being implemented. If applicable, please contact our Help Desk:

Tel: ++49 - 8376 - 9214-0

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I. General Information



Instrument Views Front

Above: Insertung the Simcard (MT Blitzplan / Sat Radar)



Central Connector







The Fast-Integral-GPS is pincompatibel with the previous MT-Integral-GPS. It has a higher data transmission rate and needs an adjusted software and an according entrance in the INI-file.





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MTUP / 16 - 02 REV M Datum: 01.07.2010



After the instrument has correctly been connected and switched on:

AGREE press key

You are now in **Flight Mode**.



The map will be positioned by GPS as soon as there are enough satellites available. The cross, which marks your position when motionless, will change into an aircraft-symbol when your aircraft is moving faster than 2 kts.

No further input is necessary. We wish you a good flight!

If the map is not positioned immediatly by your system, please check the following messages in the info-box:

NO DATA: No connection to the GPS.

- **SATACQ:** Connection to GPS is OK, but GPS found insufficient number of satellites.
- **SATFIX 11:** Positioning possible. The number after Satfix shows the number of satellites found.

DISTORTED:

Data reception is distorted or a wrong protocol has been chosen.





Basics / Glossar

Essential structural features of Version 7.0

A. Changes to previous version 6.4/6.5:

1. MFD functions on the top level: First select the instrument you want to use, then go on to details. Functions like the BlitzPlan can be accessed from the first screen.

Level 1: CHART VIEW navWPT navRTE	TCAS TAWS RADAR FPL AUX
-Handling Basis Moving Map-	-Important Modules-
Level 2:	
AUX 06cration a 7285 Noteshorn a 7297	(de) Additional D T22,400 Stanni EET
TRACK STORM	SETUP SCR AUTH RESET BACK
-Additional Modules-	-Secundary Functions-

2. The menu levels are displayed continually, so learning is more intuititive.

Menu level, i.e.:	
->navRTE -> IFRrte -> ChgApt	
SEL	DEL

3. Active Airport Philosophy: Once you choose to work with one aerodrome, it stays selected so that you only have to choose it once for Approach Charts, Approach Procedures and Terminal Waypoints.

4. Harmonisation of Flight- & Map Mode: No different windows. The maps can be handled by intuitive scroll-arrows.

5. The NAV page is divided into NAV-Route and NAV-Waypoint. On the NAV-WPT page there is no longer a NEXT-button. You can type in the APT-Identifier or the APTName directly, the system finds the AD from either inputs. On the NAV-RTE page the SIDs, STARs and APPROACHES or BlitzPlan-Routes are selected more easily than before. There are fewer submenues.

6. For those who don't have an recent update: The format of the radar-data has been changed last year by the supplier. Of course Version 7.0 is compatible.



B. News

We have used the change to implement many additional interesting ideas from pilots and customers.

1. Can I print my Flight Plan or my Approach Charts on board to be legally on the safe side?

Yes, you can. Even screenshots of Base Charts are possible.

2. Nearest Airport?

Yes, the 3 Nearest Airports will be displayed including Trend Vector, Distance, and Time, plus an Emergency Approach Circle with 1,5 nm radius, 1000 ft over the AD.

3. Automatic Airport Chart at landing?

Yes. It replaces the selection list for multiple charts, which were useful for a lot of pilots but too complex.

4. Better Status-Messages for BlitzPlans.

All news are marked in the manual with a Delta-sign.

 Δ



Tips and features are marked with an .



Basically the two Basic Modi have to be distinguished:

Map Mode

The user controls the map:

The map can be moved by pressing the buttons over/next to the arrows in the left or right top corner = scrolling (used for planning before the flight).

Flight Mode

The GPS controls the map:

The map can't be moved by buttons and will be loaded automatically onto the actual position as soon as a sufficient amount of satellites is available.

Saving the settings

To reduce the amount of writing cycles, the actual configuration will only be saved, when at least one essential parameter has changed since the last saving and the modem is idle. This change of configuration will be checked after 3 seconds.

Essential Parameters are: StartMode (Flight or Map) actual BaseChart SingleChart Selection OffCenter actual Direct actual Route Zoom MFD-Range MFD 360 or 120 **Brightness** Contrast (Gamma) Wpt Display Metric (nm bzw. km) **DialUp** Profile RotateMap CourseRose NVG **TAWS Altitude**

When you switch off the appliance after changing one of the parameters named above, the settings are saved. Only when you want to put the appliance back into the basic mode, you have to leave the program by AUX - RESET.



Glossar

Base Chart

One chart containing <u>several sheets</u> for larger regions. Displayed in the seamless flowing system (one large map), available worldwide in several scales. Examples:

ICAO Europa 1:500 000, Heli Austria 1:300 000

Single Chart

<u>Single sheet map for a specific region.</u> Examples: Approach Charts, Area Charts or self digitized maps. If you want your own maps digitized, contact us!

Navdata

Worldwide VFR/IFR database for choosing VORs, NDBs, APTs and Enroute Waypoints for creating VFR/IFR flightroutes, independent from Base or Single Charts.

Modules

Additional functions for the Moving Map, which can be activated seperately and are not included in the basic version. Some are not available for the MT-Ultra.



MT-Symbols



Position symbol

Position in the center of the cross, only in Map Mode. When using the scroll arrows (in the top left or right corner) the direction and speed you are going is indicated by the color on the symbol.



Warning symbol

No Data received from GPS, only in Flight Mode.



Warning symbol

Corrupt Data received from GPS, only in Flight Mode.

Position symbol



Shows the current position with at least 4 satellites in Flight Mode when speed is less than 2 knts.

Aircraft symbol

Appears at a speed over or equal to 2 knots. The position is marked by a red dot at the front.



Trend vector

10 m Light blue arrow: shows an extension of the airplane. On a scale of 1:500000 the tip of the arrow has a distance of 10 nm to the actual position, on a scale of 1:100000 2 nm.



User Waypoint

Green Diamond: Identifier displayed in box

Obstacles



Will be displayed in the map as layer, when the respective database is available.

Vectors

=

blue

red

- Power grid (only with database)
 - cable car or power cable (only with database)
- white = Route
 - **Direct Vector**
- cyan = magenta

- active route segment =





Frequently asked questions

Q: I have SATFIX with several satellites but the map isn't moving.

A: You have to be in FLIGHT MODE to activate the Moving Map function. In the basic menue press the corner buttons K or Z to get to the FLIGHT MODE.

Q: My appliance doesn't position itself and the infobox shows NO DATA?

A: When you use a GPS not supplied by Moving Terrain, check if your GPS is switched on, all cable connections are correct and that it transmits the correct protocol.

Q: In which voltage range can I use the MT-VisionAir? **A**: From 12 to 36 V.

Q: How much power does the MT-VisionAir need? **A:** approx. 15 W.

Q:Where can I see which software version I am using?

A: When you start your system, the first page displayed is our License Agreement. In the top right corner you can see the Software Version.

Q:Where can I see the serial number of my appliance?

- A: On the back of the appliance is a label with the serial number: MTXX/00-YYY-ZZ-SSS where YYY is your serial number, or MTUP/00-3.60-2- S/N 99YYYY.
- **Q:** When I want to purchase additional modules, do I have to send the appliance to Moving Terrain?

A: Some modules can be activated via telephone, fax or e-mail: TRACK LOG ROTATING MAP Others need additional hardware components or an initial in house installation.

Q: When I switch on the appliance, I don't see a map but a gray background.

A: You are outside the coverage of the map. I.e. you have activated "Deutsche Generalkarte mit Flugsicherungsaufdruck 1:200 000" and your position is outside Germany, a gray background is displayed until you fly into the area of the map. As the VFR/IFR database is very large, choosing a wrong WPT can also result in a positioning outside the map coverage. Please check the plausibility of your WPTs by coordinates.

Q: You pressed the wrong button when looking for a WPT?

A: Press <DOWN> once and start again. In certain areas of the program you can use the button DEL to delete a single character (for example flight plan via BlitzPlan).

Q: How can I delete a Direct?



A: Under <AUX> <SETUP> there is a button <DCT - >. By pressing this button the selected Direct will be removed.

There is only one active DCT, setting a new DCT replaces the old one.

- **Q**: How can I delete a NEAREST?
- A: Under <AUX> <SETUP> there is a button <NRST >. It deactivates the NEAR-EST function until further activation.
- **Q**:The screen is dark at reboot, you can hardly see anything.
- A: Pressing any button (except the AGREE button) will resume the original brightness.
- Q: There is no ENTER button. How can I confirm something?
- **A:** The confirmation is replaced by a specific command, for example in GOTO or DCT, in SHOW or SEL, an additional ENTER isn't nescessary.
 - GOTO going to a specificly choosen point
 - DCT Set a DIRECT to a choosen point
 - SHOW Showing a Single Chart
 - SEL Preselection of a Single Chart, which will be activated, when you fly into the area for which the map is referenced.

Q: I am on the overview map for Europe. How do I get back to the ICAO map? **A**: Press

- CHART
- SING.CH, if you are not on the "Single Chart Selection" Page
- choose the category OVERVIEW with the button << or >>
- and deselect the map "EUROPE", by pressing UNSEL



II. Basics

1. MT Basics

1.1. Switching between Flight Mode and Map Mode

- FLT Mode automatically active at start up of the system
- Active mode is displayed at top of the Info box
- Switching mode is possible with key K and is displayed as follows:



Switch to FLT Mode



Switch to Map Mode

1.2. Scrolling maps

General:

 Scrolling is accomplished in Map Mode. Switching from FLT Mode to Map Mode is not necessary. Switching to Map Mode is automatic when the arrow keys are pressed.

Handling:

- Arrows are displayed at top left, pressing the keys above/beside the arrows move the map – scrolling (I/J = below/above, L/M = left/right, K = Map or Flight Mode)
- The same function is in the top right corner but without arrows displayed on the screen (2/1 = below/above, X/Y = left/right, Z = Map or Flight Mode)
- Scrolling speed can be adjusted by repeated pressing of the arrow key for faster scrolling, pressing opposite key slows down scrolling.
- Scrolling speed is displayed as a red bar in the cross hairs (short bar = slow, long bar = fast)
- Stop key below letter K stops the map



STOP = stop map scrolling



 Diagonal scrolling is started by pressing arrow keys up/down and left/ right.



1.3. Key D for Direct Update

For a quick update of the DIRECT you can access the DCT Update from the top menu level by pressing the key D.

1.4. Display of the structure in the MT menu

• The menu structure is displayed at the lower left:

-> <mark>navR</mark>	Γ <mark>Ε</mark> − <mark>></mark> ΑU	XRte	
CLR	INV	PRINT	copyGS

- Important links can be reached at the top level, e.g. radar, TAWS, TCAS and FPL
- NAV Waypoint and NAV Routes are separate, thus structured and easy to understand and reach



1.5. NEAREST Airport

General:

- Shows the three nearest Airports to your current position within a radius of 1,5 nm around the APTs
- Centerline lengthened to 10 nm
- Elevation + 1000 ft
- with DCTs to the APTs with identifier and distance
- the DCTs are carried along

The NEAREST APTs stays the same until you request the NEAREST again!

Handling:

Nearest Airport is now activated by pressing **N on the main page** (=toolbar: CHART/VIEW/navWPT/navRTE....)



1.6. Deleting NEAREST

Nearest can be deleted via AUX SETUP NRST-

- AUX
- SETUP
- NRST-

From version 7.5b on Deactivation of the **Nearest Airport** by pressing N on the main page again.



2. CHARTS



General:

Base Charts

Seamless charts for large areas: Select by positioning the bar on the required chart and press USE.

Single Charts

Typically airport charts, but also IFR charts from the EFB

Handling:

• Base and Single Charts are selected with the menu button <CHART>

2.1. Selecting a Basechart

- Available base charts can be selected by moving the green bar with <UP> and <DOWN> (in many cases there is only one base chart, the Europe ICAO 1:500,000)
- To confirm press menu key <USE>
- The system automatically switches to the selected chart

2.2. Selecting a Single Chart:

- Single charts can be selected one menu level lower under <CHART> and then <SING.CH>
- First select a category (e.g. VFR-GER) using the keys << and >>
- · Enter airport ID via the keyboard or by using keys UP/DOWN in the list
- Preview facilitates orientation
- <SEL> selects the chart, which is automatically displayed when you fly into the area for which the chart is referenced
- The Info box displays the selected chart

Tip: In the Off-Center Mode the approach chart is displayed earlier, a switch is accomplished under <VIEW><OFF-C>



2.3. Further functions: GOTO / HIDE / UNSEL / PRINT

- GOTO jumps to the chart
- HIDE suppresses the chart without resetting the preselection
- UNSEL deselects the chart
- PRINT prints the chart in a file which can be transferred via CF (Compact Flash)

Tip: Direct to an airport automatically loads the appropriate VFR approach chart in the list, select with SEL.



Jeppview VFR Approach Charts

A special category of Approach Charts are the Jeppview VFR Approach Charts

- choosing VFR by the buttons << and >>
- type in the identifier or name of the APT with the keyboard on the frame and confirm it with SEL
- choose from the listing by pressing the buttons UP/DOWN
- <SEL> selects the chart, which is automatically displayed when you fly into the area for which the chart is referenced

2.4. Europe Overview Chart

- Europe overview chart is a special Single Chart
- It is located in the category Overview: EUROPE
- Chart is required to view long routes or to observe weather over a wide area
- Technically the Europe chart is "higher" than the ICAO chart and since it is referenced for all of Europe, it is not automatically hidden like an airport chart.
- Active suppression by the pilot using HIDE or UNSEL is required.

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3. VIEW

General:

In this menu all settings are made regarding the display of information. Screen settings such as brightness are located in the menu <SCR> (= Screen)

Handling:

• The <VIEW> menu is located at the top level



3.1. Zooming

3.2. Switch to MFD (Multi Function Display)

- 50% zoom out (ICAO Europe only)
- + 150% zoom in
- MFD switch to MFD Mode without chart
- Range setting analogous to ZOOM with indication of required range
- MAP return to chart
- RNG 0 = 100 NM
- toggle key: ARC / 360: display arc or circle
- 100% quick switch to 100% scale
- INFO- / INFO+ display or hide the Info box at the right edge



Ranges for MFD mode

nm	km	nm	km
1	2	100	200
2	5	150	300
5	10	200	400
10	20	250	500
15	25	300	600
20	50	400	800
25	75	600	1000
50	100	800	1500
75	150		

3.3. Additional functions available only in FLT Mode: Compass card, center/off-center, rotating chart

- CRS- / CRS+ display or suppress compass card
- CENTER / OFF-C aircraft position = red "nose" of the aircraft in the center or offset to the side
- ROTATE / N-UP
- TRKUP / PLAN toggle key: TRKUP / PLAN: small window in Info box

(must be activated)





4. AUX



4.1. SETUP

Delete Nearest APT, Direct, WPTs on screen, Switch between nm and km, Setting of GPS-System to be used

- WPT- delete user WPT symbols on screen
- NRST- delete Nearest APT function
- DCT- delete Direct
- DATES display date of obstacle database
- KM switch to metric system (return with NM)

type of data classical		metrical
ground speed	knots	km/h
cruise speed	knots	km/h
flight altitude	feet	m
elevation	feet	m
range	nm	km

- - GPS selection of the GPS-system to be used with the according baud rate, Setting with USE

GPS RECEIV	ER SELECTION P	AGE	MOVING TERRAIN
AVAILABLE GPS RECEIV	FR TVPES		MODEFLT 100%
INTEGRAL GPS	(4800, NMEA)		utc:
FAST INTEGRAL GPS	(9600, NMEA)		GPS NO DATA
TRIMBLE KING KLN90	(9600, AVIATION) (9600, AVIATION)		N 52 29.033' E 013 26.044'
GARMIN 430/530	(9600, AVIATION)		ALT
UNIVERSAL PINS	(9600, AVIATION)		GS MT
			DCT
			DIST MC
			EET
			SINGLE EDDT_A2
			NXT
			DIST MC
			EET
			DEST
			DIST (rm)
AUX -> SETUP ->	GPS		EET
USE INTERN			IP DOWN BACK



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4.2. SCR

Adjust screen setting to environment Set screen brightness

- RESET return to brightest setting
- NIGHT darken screen to brightest night setting.
 - Further darkening with LUM -
- DAY brighten screen to darkest day setting.
- Further brightening with LUM +
- NVG (must be activated)
- LUM reduce brightness
- LUM + increase brightness
- CON reduce contrast
- CON 0 contrast back to 0
- CON + increase contrast
- BACK return to 1st menu level

Tip:

If the system was dimmed during a night flight, it will start up for the next flight at dark setting.

If you are unable to read the AGREE page properly, press any key except AGREE and the brightness will be reset. Then start the program with AGREE.

4.3. AUTH

Authorisation of further modules

- To activate further modules press this key for approx. 3 seconds. This opens the License Manager (dark screen).
- -> Please see detailed description under authorisation menu (item 13)

4.4. RESET

- To return to original state press this key for approx. 3 seconds.
- Then restart of the system is required.

4.5. BACK

Return to 1st menu level





- To switch database press <DBASE> and select database. The template of the selected database will be opened automatically, allowing selection of the required waypoint.
- The name of the database is displayed at the top in the blue title line. To switch to a different database repeat the previous step.
- The waypoints/airports can be entered via the fully spelled out name or the ID.

5.3. GOTO: moves the cursor to the selected point

Tip:

As the database is very large and different waypoints worldwide can have the same name, check the plausibility by the coordinates. Should your screen turn gray, you are outside the chart coverage.

5.4. DIRECT: Direct track to the chosen point in the database

- DCT Direct track (line in magenta, calculation along great circle route)
- DCTupd update DCT from current position
- DCTtmp reverse DCT: a point on the chart is marked by holding the key and the Direct To the current position is continuously calculated (rarely used!)

5.5. Direct update

• **Direct Update** can be chosen with the letter **D** on the main page (=controlbar: CHART/VIEW/navWPT/navRTE....)

Tip:

Setting Direct to an airport causes selection of the appropriate VFR approach chart (in case it is available in the system) This has to be selected manually. Select with <CHART> <SING.CH>

and confirm with <SEL>.

With flightplanning (navRTE) the chart is selected automatically.

5.6. Direct can be cancelled via AUX SETUP DCT-



5.7. EDIT: Create and edit an user waypoint

	NAV PAGE		TERRAIN
			MODEFLT 100%
			UTC : :
			GPS NO DATA
			N 47 38.486'
			E 009 27.504'
	NAME		ALT 4500 feet
	"MARIGNANE (BERRE) "WAT	ER AER	[kts] MT
	ID		DCT
	LETB		DME MC
	LAT	LON	EET
	N 43 27.000'	E 005 13.000'	SINGLE CHART
			WPT
			DME MC
	COMMENT		EET
	TWR 119,5;TEL: 0442311565		DEST
			DME
	->navWPT-> EDIT		FFT
	NEW MODIFY DEL		BACK
<u>andling: C</u> EDIT	Creating a waypoint		
<u>andling: C</u> EDIT NEW	Creating a waypoint		
<u>andling: (</u> EDIT NEW	Creating a waypoint New Use	er Waypoint	
<u>andling: C</u> EDIT NEW	Creating a waypoint New Use	er Waypoint	
<u>andling: C</u> EDIT NEW	Creating a waypoint New Use SwissGrid Coordinates	er Waypoint	
<u>andling: C</u> EDIT NEW	Creating a waypoint New Use SwissGrid Coordinates	er Waypoint	
andling: C EDIT NEW	Creating a waypoint New Use SwissGrid Coordinates	er Waypoint	MODE MAP 100% UTC:: GPS SATACQ E 002 21.345'
<u>andling: C</u> EDIT NEW	Creating a waypoint New Use SwissGrid Coordinates	er Waypoint	MOVING TERRAIN MODE MAP 100% UTC:: GPS SATACQ E 002 21.345' N 48 40.067'
<u>andling: C</u> EDIT NEW	Creating a waypoint New Use SwissGrid Coordinates	er Waypoint	MOVING TERRAIN MODEMAP100% UTC:: GPS SATACQ E 002 21.345' N 48 40.067' ALT
andling: C EDIT NEW	Creating a waypoint New Use SwissGrid Coordinates	er Waypoint	MODE MAP 100% UTC: GPS SATACQ E 002 21.345' N 48 40.067' ALT
<u>andling: C</u> EDIT NEW	Creating a waypoint New Use SwissGrid Coordinates	er Waypoint	MODE MAP 100% UTC:: GPS SATACQ E 002 21.345' N 48 40.067' ALT GS [kte] MT DIST MC
<u>andling: (</u> EDIT NEW	Creating a waypoint New Use SwissGrid Coordinates	er Waypoint	MOVINC TERRAIN MODE MAP 100% UTC: GPS SATACQ E 002 21.345' N 48 40.067' ALT GS [kta] DCT DIST [rmt]
<u>andling: (</u> EDIT NEW	Creating a waypoint New Use SwissGrid Coordinates	er Waypoint	MOVING TERRAIN MODE MAP 100% UTC: GPS SATACQ E 002 21.345' N 48 40.067' ALT GS [kte] DCT DIST [nm] EET SINGLE
andling: C EDIT NEW	Creating a waypoint New Use SwissGrid Coordinates NAME WPT001_ ID WPT001_	er Waypoint	MODE MAP 100% UTC:: GPS SATACQ E 002 21.345' N 48 40.067' ALT GS [kte] MC DCT DIST MC INGLE CHART PARIS
<u>andling: (</u> EDIT NEW	New Use SwissGrid Coordinates NAME WPT001_ ID WPT001 E E	er Waypoint	MOVINC TERRAIN MODE MAP 100% UTC GPS SATACQ E 002 21.345' N 48 40.067' ALT GS [kte] DCT DIST Imm] EET SINGLE CHART PARIS NXT MXT DIST MC
<u>andling: (</u> EDIT NEW	Creating a waypoint New Use SwissGrid Coordinates NAME WPT001_ D WPT001_ E	er Waypoint	MODE MAP 100% UTC
andling: C EDIT NEW	New Use SwissGrid Coordinates NAME WPT001_ D WPT001 E COMMENT	er Waypoint	MOVINC TERRAIN MODE MAP 100% UTC:: GPS SATACQ E 002 21.345' N 48 40.067' ALT GS [kte] DIST DIST CHART PARIS NMPT DIST CHART PARIS NMPT DIST MC INST MPT DIST MPT DIST MC DIST MC INST MPT DIST MPT DIST MPT DIST MPT
<u>andling: (</u> EDIT NEW	Creating a waypoint New Use SwissGrid Coordinates	er Waypoint	MODEMAP 100% UTC: GPS SATACQ E 002 21.345' N 48 40.067' ALT GS [kta] DIST Imm] EET SINGLE CHART PARIS NXT WPT DIST DIST DIST DIST DIST DIST DIST DIST DIST
<u>andling: (</u> EDIT NEW	New Use SwissGrid Coordinates NAME WPT001 ID WPT001 E COMMENT	er Waypoint	MOVING At Respector Software AD MODE MAP 100% UTC: GPS SATACQ E 002 21.345' N 48 40.067' ALT GS [kte] DCT DIST MC CHART PARIS NXT WPT DIST MC DIST MC DIST MC DIST MC DIST MC DIST MC DIST
<u>andling: (</u> EDIT NEW	New Use SwissGrid Coordinates NAME WPT001_ D WPT001 E COMMENT SAVE GOTO D COMMENT	Pr Waypoint	MODE MAP 100% UTC: GPS SATACQ E 002 21.345' N 48 40.067' ALT GS [kte] DCT DIST MOTE CHART PARIS NXT NYT DIST DIST DIST DIST DIST DIST DIST DEST DIST ALT DIST DIST <

Edit user database



- The coordinates of the current position are automatically entered. An arbitrary name and an ID can be assigned. A comment such as frequency or telephone number can be entered in the comment field.
- Press key NEXT to move to next field and enter appropriate data.
- To create a waypoint with defined coordinates, these can also be modified.

Tip:

To define multiple waypoints it is recommended to attach an external PS/2 keyboard. An unlimited number of waypoints can be defined, there is no limit!

Further keys:

- SAVE save the waypoint.
- GOTO go to the waypoint
- DCT set Direct from current position to the waypoint
- CHAR special characters such as space . / ()
 - DEL delete
- PREV move cursor to previous field
- NEXT move cursor to next field
- UTM switch coordinates system to km
 - -> LATLON to return
- BACK return to NAV WPT PAGE



Handling: Editing a waypoint:

- navWPT
- DBASE -> USER
- Select waypoint to be edited
- EDIT
- MODIFY

Make required changes and SAVE

Handling: Deleting a waypoint

- navWPT
- DBASE -> USER
- Select waypoint to be deleted
- EDIT
- DEL

5.9. CHAR: Entering special characters for the search of WPTs

Enables search for a certain waypoint including entry of special characters:

Space . - / DEL





6. Collection of Routings: navRTE (NAV Route)

6.1. Selection of Waypoints

Initially "empty screen"

	NAV	RTE PAG	E		
WAYPOINT ID	ALT	MC	DME	EET	MODE FLT 100%
					υτς 20:31:49
					GPS SATFIX 7
					N 47 54.050'
					E 010 05.478'
					ALT 8000 feet
					[kts] 210 [™] 39
					DCT
					[nm] MC
					EET
					CHART EDDS
					WPT
					DME MC
					EET
					DEST
			CRUISE SPE	ED 170 knots	DME [nm]
> navRTE					EET
IFRrte VFRrte			AUX	(Rte	BACK

General:

The Nav Rte Page is for route planning (FMS). Any VFR and/or IFR route can be planned by entering waypoints from the NAV database or entire procedures from the IFR section.

Handling:

• Simply start typing and you will be automatically taken to the INS Nav Wpt Page in order to select waypoints (Airports, VORs, NDBs etc.)

INS WPT PAGE (VFR & IF	R WAYPOINTS)	MOVING TERRAIN
INS WPT PAGE (VFR & IF CURRENT WAYPOINT NAME "WATER AEF IDENT TYPE LFTB APT LAT LON N 43 27.000' E 005 13.000' ELEV O FT TWR 119.5; TEL: 0442311565;	SEARCH MARIGNANE (BERRE) * RUSCHER* FELDKIRCH *TARQUINIA (SAN GIORI *S GRAVENVOEREN 00E40 00E50 00E60 00N10 00N110W	MoneFLT 100% UTC ;; GPS SATACQ N 47 41.567' E 010 20.300' ALT GS MT Itts: DCT MC DME MC Imm: EET SINGLE
-> navRTE -> InsWPT	00N120W 00N140E 00N150E 00N150W 00N160E 00N160W	CHART NXT DME MC [nm] DEST DME [nm] DME DEST DME DME EET
DBASE INS INSPOS	EDIT CHAF	DOWN BACK



6.2. Insert waypoints

•

- · INS inserts the point into the FMS
- Repeat the first step until the routing is complete
- Switch databases with: DBASE -> USER, return with DBASE -> VFRIFR
- Entry/selection via ID or name
- The small arrow indicates the position at which the waypoint will be inserted, i.e. by moving the arrow with UP/DOWN the waypoint can also be inserted between two points.

NAV RTE PAGE							
WAYPOINT ID	ALT	MC	DME	EET			
EDNY		348	62	00:23			
ÉDDS			0	00:00			
				1.1			

6.3. Further function keys on the INS WPT Page:

- INSPOS insert position (coordinates in Info box)
 - EDIT access to USER WPT database
- CHAR entry of special characters: space . /
- UP/DOWN move within list

INS WPT PAGE (VFR & IFR WAYPOINTS)		MOVING TERRAIN
	SEARCH	MODEFLT 100%
FRIEDRICHSHAFEN	EDNY	
IDENT TYPE	EDNY	GPS SATACQ
EDNY APT	EDNZ	N 47 41.507
LAT LON	EDOA	E 010 20.300
E 009 30.683	EDOB	ALT
1366 FT	EDOC	[kts]
130011	EDOD	DCT
INFO 122,5 (ge, en); TWR 120,07;	EDOE	DME MC
ILS06 111,90; ILS24 111,90; TEL: (075 41)004400;	EDOF	FFT
TEL: (07341)284120; RWV 06/24 2356m ΔSPHΔLT	EDOG	SINGLE
	EDOI	NXT
	EDOJ	DME MC
	EDOK	[nm]
	EDOL	EET
	EDOLA	DEST
	EDOM	DME [cm]
->InavRTE ->InsWPT		FET
DBASE INS INSPOS	EDIT CHAP	DOWN BACK



6.4. Example for a route

	NAV	RTE PAG	E		
WAYPOINT ID	ALT	MC	DME	EET	Air Ronigentiese Spraharser All *
ÊDMK		267	97	00:36	MODEMAP 50
EDNY		308	63	00:23	utc:
EDNY-N		351	59	00:22	GPS NO DAT
EDDS			0	00:00	N 47 43 089
					E 000 05 46
					E 009 25.40
					ALT
					[kts] MI
					DCT
					DME MC
					EET
					SINGLE CHART EDDS
					NXT
					DME MC
					EET
					DEST
			CRUISE SPE	ED 160 knots	DME [nm]
> navRTE					EET
VFBrte	GOTO IC	PT DCT	DEL AU	XRte	DOWN BAC

6.5. Working with the route entered

- GOTO jump to a waypoint
- ICPT The current position is defined as the beginning of a route and the selected route point becomes the NEXT WAYPOINT. The points of the route previous to the selected point are ignored.

Remark: The key ICPT is only visible when FLIGHT Mode is active.

- DCT set Direct track to the waypoint
- DEL delete the waypoint from the FMS
- DELSEG delete flight plan or delete from memory routes or route segments from the screen (not from memory!)
 => important particularly for IFR planning.

Routes (and their segments) are loaded additively. Not all points can be made visible on the screen.

- => If the calculations in the flight plan field are not correct, please verify that only the required route (once only) has been loaded (scroll through list with UP/DOWN!)
 - UP/DOWN move green bar


6.6. VFRrte: Save, load, edit and delete of routes

General: User defined VFR routes can be:

• Saved, loaded, edited and deleted

Handling:

- NAVrte -> VFRrte (VFR ROUTE Page)
- LOAD load an existing route; selection by moving green bar with UP/DOWN
- SAVE Save route from the NAV RTE Page
- DEL delete route marked green
- UP/DOWN move green bar
- BACK return to NAV RTE Page

	VFR ROU	JTE PAC	3E		MOVING TERRAIN
					MODE MAP 100%
					UTC 08:19:18
ROUTE to LOAD/S	AVE/DEL				GPS SATACQ
Frieties POLITE					N 47 47.636'
Existing HOUTES	_				E 009 07.485'
EDNLLOWW					ALT
ELLXEDDH					GS MT
ELLXEDLM					DCT EDDS
LXHD					DME 53.9 MC 3
MAMY					FET
МКМА					SINGLE EDDN
NLAPP					NXT
NLDTMB					DME MC
RDDG					[nm]
ROUTE000					EET
					DEST
					(m)
	te	LOAD	SAVE D		EET
		LOND	SATE D		BONN BRON
	NAV R	TE PAGE			MOVING TERRAIN
WAYPOINT ID	NAV R	MC 115	DME 270	EET 01:35	
WAYPOINT ID EDNL KPT	NAV R	MC 115 79	DME 270 255	EET 01:35 01:29	
WAYPOINT ID EDNL KPT ROTIN	NAV R	ГЕ РАСІ мс 115 79 128	DME 270 255 178	EET 01:35 01:29 01:02	MODE MAP 100% UTC 08:19:25 GPS SATACQ
WAYPOINT ID EDNL KPT ROTIN CHIEM	NAV R	MC 115 79 128 84	DME 270 255 178 167	EET 01:35 01:29 01:02 00:58	MOUTERAIN MODEMAP100% UTC 08:19:25 GPS SATACQ N 47 47.636'
WAYPOINT ID EDNL KPT ROTIN CHIEM GAMLI	NAV R	ТЕ РАС 115 79 128 84 77	DME 270 255 178 167 73	EET 01:35 01:29 01:02 00:58 00:25	MODEMAP100% UTC 08:19:25 GPS SATACQ N 47 47.636' E 009 07.485'
WAYPOINT ID EDNL KPT ROTIN CHIEM GAMLI LOWW	NAV R	TE PAGE MC 115 79 128 84 77 	DME 270 255 178 167 73 0	EET 01:35 01:29 01:02 00:58 00:25 00:00	MODEMAP100% UTC 08:19:25 GPS SATACQ N 47 47.636' E 009 07.485' ALT
WAYPOINT ID EDNL KPT ROTIN CHIEM GAMLI LOWW	NAV R	нс 115 79 128 84 77 	<u>рме</u> 270 255 178 167 73 0	EET 01:35 01:29 01:02 00:58 00:25 00:00	MODE MAP 100% UTC 08:19:25 GPS SATACQ N 47 47.636' E 009 07.485' ALT
WAYPOINT ID EDNL KPT ROTIN CHIEM GAMLI LOWW	NAV R	нс 115 79 128 84 77 	<u>DME</u> 270 255 178 167 73 0	EET 01:35 01:29 01:02 00:58 00:25 00:00	MOVING TERRAIN MODEMAP100% UTC 08:19:25 GP3 SATACQ N 47 47.636' E 009 07.485' ALT GS
WAYPOINT ID EDNL KPT ROTIN CHIEM GAMLI LOWW	NAV R	нс нс 79 128 84 77 	<u>DME</u> 270 255 178 167 73 0	EET 01:35 01:29 01:02 00:58 00:25 00:00	MOVING TERRAIN MODEMAP100% UTC 08:19:25 GPS SATACQ N 47 47.636' E 009 07.485' ALT GS MI MT DCT EDDS DME 53.9 MC 3
WAYPOINT ID EDNL KPT ROTIN CHIEM GAMLI LOWW	NAV R	нс нс 115 79 128 84 77 	<u>рме</u> 270 255 178 167 73 0	EET 01:35 01:29 01:02 00:58 00:25 00:00	MOVING TERRAIN MCDEMAP100% UTC 08:19:25 GPS SATACQ N 47 47.636' E 009 07.485' ALT GS MMJ MT DCT EDDS DME 53.9 MC 3
WAYPOINT ID EDNL KPT ROTIN CHIEM GAMLI LOWW		нс нс 115 79 128 84 77 	<u>DME</u> 270 255 178 167 73 0	EET 01:35 01:29 01:02 00:58 00:25 00:00	MODE MAP 100% UTC 08:19:25 GPS SATACQ N 47 47.636' E 009 07.485' ALT
WAYPOINT ID EDNL KPT ROTIN CHIEM GAMLI LOWW		ПЕ РАСК MC 115 79 128 84 77 	<u>рме</u> 270 255 178 167 73 0	EET 01:35 01:29 01:02 00:58 00:25 00:00	MOUTE OB: 19:25 GPS SATACQ N 47 47.636' E 009 07.485' ALT
WAYPOINT ID EDNL KPT ROTIN CHIEM GAMLI LOWW		ГЕ РАСС мс 115 79 128 84 77 	<u>рме</u> 270 255 178 167 73 0	EET 01:35 01:29 01:02 00:58 00:25 00:00	MOVING TERRAIN MODEMAP100% UTC 08:19:25 GPS SATACQ N 47 47.636' E 009 07.485' ALT
WAYPOINT ID EDNL KPT ROTIN CHIEM GAMLI LOWW		те раде мс 115 79 128 84 77 	<u>рме</u> 270 255 178 167 73 0	EET 01:35 01:29 01:02 00:58 00:25 00:00	MOVING TERRAIN MODEMAP100% UTC 08:19:25 GPS SATACQ N 47 47.636' E 009 07.485' ALT GS [kb] DCT EDDS DME [tmi] 53.9 MC CHART EDDN NYT WPT DME [rmi] DME CHART EDDN
WAYPOINT ID EDNL KPT ROTIN CHIEM GAMLI LOWW		те раде мс 115 79 128 84 77 	<u>рме</u> 270 255 178 167 73 0	EET 01:35 01:29 01:02 00:58 00:25 00:00	MOVING TERPAIN MODEMAP100% UTC 08:19:25 GPS SATACQ N 47 47.636' E 009 07.485' ALT GS [Maj] DCT EDDS DME [rmi] 53.9 MC CHART EDDN NXT [rmi] DME [rmi] DME [rmi] DME [rmi]
WAYPOINT ID EDNL KPT ROTIN CHIEM GAMLI LOWW	NAV R	TE PAGE MC 115 79 128 84 77 	DME 270 255 178 167 73 0	EET 01:35 01:29 01:02 00:58 00:25 00:00	MOVING TERMINIC MODEMAP100% UTC 08:19:25 GPS SATACQ N 47 47.636' E 009 07.485' ALT GS [Maj] MT DCT EDDS DME SINGLE CHART EDDN NXT DME I'maj DME DAT
WAYPOINT ID EDNL KPT ROTIN CHIEM GAMLI LOWW		TE PAGE MC 115 79 128 84 77 	DME 270 255 178 167 73 0	EET 01:35 01:29 01:02 00:58 00:25 00:00	MOVING TERMINIC MODEMAP100% UTC 08:19:25 GPS SATACQ N 47 47.636' E 009 07.485' ALT GS MMJ MT DCT EDDS DME F3.9 MC SINGLE PMB DME F3.9 MC DAT EDDN NXT DME DEST DEST DME DME
WAYPOINT ID EDNL KPT BOTIN CHIEM GAMLI LOWW		те раде мс 115 79 128 84 77 	DME 270 255 178 167 73 0	EET 01:35 01:29 01:02 00:58 00:25 00:00	MOVING TERPINE MODEMAP100% UTC 08:19:25 GPS SATACQ N 47 47.636' E 009 07.485' ALT GS [kb] MT DCT EDDS DME SINGLE EDDN NXT DME I'mel DME I'mel DME DME DME DME I'mel





6.7. AUXrte: Entering the Cruise Speed

General:

By entering the cruise speed using the keyboard on the frame, the EET of the plan on the NAV RTE Page can be calculated.

Handling:

- NAVrte -> AUXrte
- Enter the cruise speed via keyboard

Further keys are:

- CLR delete all points of the route
- INV invert a route
 - (only User defined routes, not for procedures)
 - PRINT plan is prepared for printing for transfer to CF
- Copy GS transfer GS from GPS

	NAV RTE PAGI	E		MOVING TERRAIN
WAYPOINT ID AL	T MC	DME	EET	A Radgeffer Sectory 45
EDNL	115	270	01:35	MODEMAP100%
KPT	79	255	01:29	UTC 08:19:36
ROTIN	128	178	01:02	GPS SATACQ
CHIEM	84	167	00:58	N 47 47 636'
GAMLI	77	73	00:25	E 000 07 495
LOWW		0	00:00	E 009 07.465
				ALT
				[kts] MI
				DCT EDDS
				DME 53.9 MC 3
				EET
				SINGLE CHART EDDN
				NXT
				DME MC
				EET
				DEST
		CRUISE SPEE	D 170 knots	DME (nm)
-> navRTE -> AUXRte				EET
CLR INV	PRINT	copyGS		BACK

Routes (and their segments) are loaded additively. Not all points can be made visible on the screen. => If the calculations in the flight plan field are not correct, please verify that only the required route (once only) has been loaded (scroll through list with UP/DOWN!)

- delete positions with DEL
- delete the whole contents of NAV ROUTE PAGE with CLR



MTUP / 16 - 02 REV M Datum: 01.07.2010

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III. Module



7. VFR Approach Charts über JeppView VFR

(Supplemental module, not included in basic software)

General:

Basis for the VFR Approach Charts is the purchase of the Jeppview Initial Software for PC (once) and a JeppView Approach chart Package with a coverage of your choice (e.g. JVVDE = VFR Germany, JVVEU = VFR Europe, JVVCE = Central Europe).

During the approach the display switches automatically from the basechart (ICAO Europe) to the IFR-Approach chart. You see your position on the chart.

Important:

Please note that only maps that are to scale are referenced.

7.1. Choosing of the JeppView VFR Approach Chart

Handling:

- CHART
- SING.CH
- selection of VFR with the keys << >>



choose Active Airport: Just type in identifier or name with the keyboard



IFR APT SELECTION	TERRAIN
ACTIVE AIRPORT	MODE MAP 100%
	UTC 13:31:31
ILEPA IPALMA DE MALLORCA	GPS SATACQ
LAT LON N 39 33 100' E 002 44 333'	E 479.900
14 39 33. 100 TE 002 44.333	N 129.101
SEARCH	ALT
LEPA	GS MT
LEPA	DCT
LEPORE (LECCE)	DIST MC
LEPP	EET
LERJ	SINGLE
LERO	NXT
LES AJONCS (LA ROCHE-SUR-YON)	DIST MC
LES EPLATURES	[nm] —— ——
LES HAUTS DE CHEE (BAR-LE-DUC)	EET
LES LOGES (NANGIS)	DEST
->CHART ->ChgApt	EET
SEL DEL	UP DOWN BACK

- SEL: select the airport, i.e. only charts of the selected airport are listed.
- Selection of the chart with UP / DOWN



7.2. Viewing the VFR Approach Chart

With GOTO you jump to the Approach Chart and can familiarize yourself with the airport.





7.3. VFR Approach Chart - chosen enroute, shown at landing

With SEL you preselect a VFR Approach Chart. It will be shown automatically as soon as you enter the referenced area.

Printig of chats: see chapter 8.3.7.

8. IFR-Package incl. EFB

(Supplemental module, not included in basic software)

<u>General:</u>

The IFR package includes all necessary features for IFR flight, including:

- IFR-Procedures (SIDs, STARs, APPROACHes) as waypoints that can be inserted in the flight plan (navRTE) including terminal database (for handling see Chapter navWPT)
- Combined worldwide navigation database with APTs, VFR Navaids and IFR Enroute WPTs
- Electronic Flight Bag (all the charts from your JeppView subscription) grouped in the following categories in the Single Chart Menu: SID, STAR, APPROACH, APT and OTHERS in accordance with the coverage of the JeppView
 Approach Charts and Airport Charts are referenced, i. e. you see your position on the chart. On approach it will switch automatically to the approach chart.
- IFR airway layer: high and low airways can be displayed as a layer on the ICAO chart or in the MFD Mode.



Handling:

8.1. IFR-Procedures

Intuitive menu navigation

- navRTE
- IFRrte

INSERT RT	E PAGE (IFR	FlightPlans	5)	MOVIN TERRAII	S K
Active IFR AIRPORT					100%
LSGG				итс —-:	-:
AVAILABLE IFR FLIGH	TPLANS			GPS SATA	ACQ
NEW IFR FLIGHTPLAN	N>			E 002 21	1.345'
LOWL -> EDME 08/05	/23 0740 DEFRH			N 48 40.	067'
LOWL -> EDME 08/05	/10 0740 DEFRH	RTE OK		ALT	-
LOWL -> EDME 08/04	/30 0740 DEFRH	RTE OK		GS [kts] ——	MT
EDNL -> LOWL 08/04	/28 0515 DEFRH	RTE OK ACTI	VE	DCT	
LOWL -> EDME 08/04	/28 0740 DEFRH			DIST	MC
LOWL -> LOWS 08/04	/28 0745 DEFRH	RTE OK		FET	
LOWZ -> EDNL 08/04	/13 1530 DEFRH	RTE OK EXPI	RED	SINGLE DAD	IC
EDDL -> LOWZ 08/04	/11 1630 DEFRH	RIEOK		NXT	13
EDDH -> LSZH 08/04	/01 1500 DEFRH	RTE OK		WPT	MC
EDJA -> LEPA 08/04	/01 1500 DEFRH	RTE OK		[nm]	
				EET	
				DEST	-
				DIST [nm]	
-> navRTE -> IFRrte				EET	
ChgApt SID STAR	APPR Act FP	L Mk FPL	UP	DOWN	BACK
NOT				MOVIN	c 🗖
INSE	RT RTE PAGE	(SIDs)		MOVIN TERRAIN	ç 🔽
INSEF	RT RTE PAGE	(SIDs)			100%
INSEF	RT RTE PAGE	(SIDs)			100%
INSER Active IFR AIRPORT LSGG ROUTE to LOAD	RT RTE PAGE	(SIDs)		MODEMAP	100%
Active IFR AIRPORT LSGG ROUTE to LOAD	RT RTE PAGE	(SIDs)		MODEMAP UTC: GPS SATA E 002 21	100% 100% CQ .345'
Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS 5N (RW05)	RT RTE PAGE	(SIDs)		MODE MAP UTC: GPS SATA E 002 21 N 48 40.	100% -: CQ .345' 067'
Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS 5N (RW05) BALSI 5A (RW23)		(SIDs)	un treat	MODE MAP UTC GPS SATA E 002 21 N 48 40.1 ALT	100% -: ACQ .345' 067'
Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS 5N (RW05) BALSI 5A (RW23) BALSI 6N (RW05) DELUS 4A (RW20)		(SIDs)		MODE MAP UTC: GPS SATA E 002 21 N 48 40. ALT [tte]	100% -: \CQ .345' 067' -
INSEF Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS 5N (RW05) BALSI 5A (RW23) BALSI 6N (RW05) BELUS 4A (RW23) BELUS 4A (RW23)		(SIDs)		MODE MAP UTC GPS SATA E 002 21 N 48 40, ALT GS [kts] DCT	(100%) -:
INSEF Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS 5N (RW05) BALSI 5A (RW23) BALSI 5N (RW05) BELUS 4A (RW23) BELUS 4A (RW23) BELUS 4P (RW05)		(SIDs)	Contraction of the second seco	MODE MAP MODE MAP UTC GPS SATA E 002 21 N 48 40. ALT GS [kts] DCT DIST	G 100% -:
Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS 5N (RW05) BALSI 5A (RW23) BALSI 5N (RW05) BELUS 4A (RW05) BELUS 4P (RW05) BELUS 4P (RW05) DEPUL 1A (RW23)		(SIDs)		MODE MAP UTC GPS SATA E 002 21 N 48 40. ALT GS [kto] DIST DIST DIST CT DIST EET	CQ .345' 067'
Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS 5N (RW05) BALSI 5A (RW23) BALSI 5A (RW23) BELUS 4A (RW05) BELUS 4A (RW05) BELUS 4P (RW05) DEPUL 1A (RW23) DEPUL 1A (RW23)		(SIDs)		MODE MAP UTC GPS SATA E 002 21 N 48 40.1 ALT	A CQ .345' .67' .345' .067'
Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS 5N (RW05) BALSI 5A (RW03) BALSI 6N (RW05) BELUS 4A (RW23) BELUS 4A (RW23) BELUS 4A (RW05) BELUS 4P (RW05) DEPUL 1A (RW23) DEPUL 1P (RW05) DEPUL 1T (RW05)		(SIDs)		MODE MAP MODE MAP UTC	CQ .345' 067' M ^T M ^C
INSEF Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS 5N (RW05) BALSI 5A (RW23) BALSI 5A (RW23) BELUS 4A (RW23) BELUS 4A (RW23) BELUS 4A (RW23) DEPUL 1A (RW05) DEPUL 1A (RW05) DEPUL 1T (RW05) DEPUL 1T (RW05) DEPUL 1T (RW05)		(SIDs)		MODE/MAP WODE MAP UTC: GPS SATA E 002 21 N 48 40. ALT GS (Me) DCT DIST Imm C-CHART PARIN NXI WPT DIST	CQ .345' 067' MT MC IS
INSEF Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS SN (RW05) BALSI SA (RW23) BALSI SA (RW23) BALSI SA (RW23) BELUS 4A (RW23) BELUS 4N (RW05) BELUS 4P (RW05) DEPUL 1A (RW23) DEPUL 1P (RW05) DIPIR 4A (RW23) KONIL 2D (RW23)		(SIDs)		Important Termination Mode MAP UTC GPS SATA E 002 21 Mode MAP COLOR 201 Mode MAP Color 201 Mode MAP Color 201 Mode MAP Color 201 Mode MAP GS Mode Map GS Mode Map GS Mode Map DCT Dist Dist Color 201	CQ .345' 067' MT MC
INSEF Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS 5N (RW05) BALSI 5A (RW23) BALSI 5A (RW23) BALSI 5A (RW23) BELUS 4A (RW23) DEPUL 1A (RW23) DEPUL 1P (RW05) DEPUL 1P (RW05) DEPUL 1P (RW05) DIPIR 4A (RW23) KONIL 2D (RW23) KONIL 3D (RW23)		(SIDs)		Important MODE MAP VIC	MC
INSEF Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS 5N (RW05) BALSI 5A (RW23) BALSI 5N (RW05) BELUS 4A (RW23) BELUS 4N (RW05) DEPUL 1A (RW05) DEPUL 1A (RW05) DEPUL 1P (RW05) DEPUL 1P (RW05) DEPUL 1P (RW05) DEPUL 1P (RW05) DEPUL 12 (RW23) KONIL 2D (RW23) KONIL 3J (RW23)		(SIDs)		Important MODE MAP VITC	G 100% : CQ .345' 067' MT MC IS - MC
INSEF Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS 5N (RW05) BALSI 5A (RW23) BALSI 5N (RW05) BELUS 4N (RW05) BELUS 4N (RW05) BELUS 4N (RW05) DEPUL 1A (RW23) DEPUL 1A (RW23) DEPUL 1P (RW05) DEPUL 1A (RW23) KONIL 2D (RW23) KONIL 2J (RW23)		(SIDs)		MODE MAP MODE MAP UTC	G 100% : CQ .345' 067' MT MC IS - MC
INSEF Active IFR AIRPORT LSGG ROUTE to LOAD AVAILABLE ROUTES ARBOS 5N (RW05) BALSI 5A (RW23) BALSI 5N (RW05) BELUS 4N (RW05) BELUS 4N (RW05) BELUS 4N (RW05) DEPUL 1A (RW23) DEPUL 1A (RW23) DEPUL 17 (RW05) DEPUL 17 (RW05) DEPUL 17 (RW05) DEPUL 17 (RW05) DEPUL 18 (RW23) KONIL 2D (RW23) KONIL 3J (RW23) KONIL 4A (RW23)	RT RTE PAGE	(SIDs)		MODE MAP UTC GPS SATA E 002 21 N 48 40. ALT GIN 1000000000000000000000000000000000000	100% CQ .345' 067' MT MC IS MC

Select/change Active Airport

- ChgApt enter ID or name of the required airport
- SEL selected airport is activated

IFR APT SELECTION ACTIVE AIRPORT	MODEFLT 100%
LAT LON E 009 30.683'	N 47 43.089' E 009 25.468'
SEARCH EDNY	
EDNY EDOP	DCT DMEMC
EDPR EDOC EDOD	EET SINGLE CHART
EDQM EDRZ	NKT DMEMC
EDTD	EET
navRIE -> IFRite -> ChgApt	PME [rel]
SEL DEL	LIP DOWN BACK





8.1.1. Active Airport

The "Active APT" refers to: Terminal waypoint database TRML Terminal procedures SIDs, STARs and approaches EFB charts (CHART – SING.CH)

Please be aware that only charts included in your JeppView subscription will be available in the system.

Once an APT has been selected, it remains the "Active APT" until another airport has been selected or the MT program is exited.

The "Active APT" reduces the work load: once selected, waypoints, procedures, approach and airport charts are in reference to this airport

(only in IFR section, VFR-Approach charts will be selected separately).

MT lists all approaches per type

A scaled-down diagram on the chart provides an overview of how the procedure is to be flown.

Scroll through the various procedures with UP/DOWN.

Select required procedure by name or UP/DOWN

INS

Once the procedure is activated the route field displays the entry of the procedure. The procedure consists of more waypoints than can be displayed in succession on the screen.

To the beginning (title) of the route with

• UP

To the end of the route with

• DOWN

To view the route on the selected chart use

GOTO to jump to a point marked with UP/DOWN



8.1.2. Enroute Part

Initially it is recommended to compile the enroute section using the Blitzplan module and include it in the route field.

Alternatively the user can also compose the routing by selection of the waypoints (see navRTE).

Compiling the routing using MT-Blitzplan (see chapter MT-Blitzplan)

• FPL / MkFPL...

Bundesre	epublik hland					FLIGHT	PLAN
OBS.TEL	08154711 SALES@M	OVING-T	PILTEL 017	7548115 DE	STATE	al slot	INFO
NUMB DEP.A SPEE	A PT- ESMS D - N0200	CFT IDENT- ACFT TYPE- DEP.TIME- LEVEL-	DEFRH C10T 13 00 FL200	FLT RULES- WAKE TURB, CAT- DOF BOUTE- FSMS	L EQU	TYPE OF FLT-	4
			(m. (m.				_
DEST /	NFO	EET-	02 32	ALT APT-	EDDM	2nd ALT APT-	J
ENDUR SURVER SURVER	R-E/05 00 DUIPM S/P S D/NR L A/WHITE	PERS.ON	IBRD-P/1 JACKETS - C-		IZICKER	VHF/ELT	-
-			PERCE				10



8.1.3. First load enroute section

INS

Extract appropriate information about procedures there

8.1.4. Completing the SID

< _		N	IAV F		\GE		
WAYPOIN	IT ID	ALT	MC	LEG DIST	TOT DIST	LEG TIME	EET
EDDH				0	0	00:00	00:00
IDEKO		FL210	206	43	43	00:36	00:36
NIE		FL220	186	22	65	00:13	00:50
ROBEG		FL220	188	24	89	00:14	01:04
WRB		FL220	187	44	133	00:26	01:30
ALEXU		FL220	191	24	157	00:14	01:45
EBANA		FL220	189	4	161	00:02	01:47
GISEM		FL220	191	25	186	00:15	02:02
ABUMC)	FL220	171	30	216	00:17	02:20
BOMBI		FL220	222	7	223	00:04	02:24
UBENO		FL220	192	20	243	00:11	02:36
RINEX		FL220	184	25	267	00:14	02:51
INKAM		FL220	185	11	278	00:06	02:57
LAMGO)	FL220	156	17	295	00:10	03:08
SUL		FL190	189	31	326	00:18	03:25
IBINI		FL150	190	13	339	00:07	03:30
RILAX		FL100	190	14	353	80:00	03:36
LSZH			176	29	382	00:17	03:54
					CBU	ISE SPEED	100 knot
	-				5110		100 200
->InavRI	E						
IFBrte	VERrte	GOIO	ICP	I DC	I DEL	AUXRt	e UP

 Use UP to move to the point after the APT, there the appropriate INFO for the SID is available

8.1.5. Selecting the SID

- IFRrte
- SID (named as in the routing)
- INS (SID is inserted following the APT)





8.1.6. Completing the STAR

- Use DOWN to move to the bottom to APT
- ChgAPT using ID or name (ID has priority)
- SEL
- STAR selected
- INS



8.1.7. Similar procedure for APPROACHES

- Use DOWN to move to the bottom to APT
- APPR selected
- INS





8.1.8. Description of the flight plan field (navRTE)

Title of each route (procedure) stored in the fixed database

Example

Name of route	ALAGO 4W
Type of procedure	SID
Followed by (APT)	EDNY / RW24

	NAV R	TE PAGI	Ξ		
WAYPOINT ID	ALT	MC	DME	EET	Ak Maxigolian Systems AG *
ÂLAGO 4W	SID	EDNY	RW24		MODEFLT 100%
RWY24	1366	238	21	00:07	UTC:
(1800'+)	1800	239	20	00:07	GPS NO DATA
NY043		283	16	00:05	N 47 36 889'
NY047		10	13	00:04	E 000 24 680'
NY042	4000	53	10	00:03	L 003 24.000
NY044		336	3	00:01	ALT
ALAGO			0	00:00	[kts]
					DCT
					DME MC
					EET
					SINGLE CHART
					NXT
					Inm MC
					EET
					DEST
			CRUISE SPEE	D 160 knots	DME [nm] ——
->navRTE					EET
IFRrte VFRrte			DELSEG AUX	Rte	DOWN BACK

Followed by waypoint listing

Waypoint ID	Name of route
ALT	target altitude (minimum altitude)
MC	magnetic course
DME	in NM
EET	computed using the GS entered in the field "Speed"

Target altitude (minimum altitude) are only displayed as a recommendation.



8.1.9. Example SID Friedrichshafen



The route display is not a guidance from point to point, but rather a transformation of the procedure directives in vectors that precisely project the flight path on the chart. The chart on display is shown in the Infobox as Single Chart.

The display works on charts of varying scales, including the DFS approach charts.

Beside the green route path, the ID of the terminal waypoints are superimposed. This makes for perfect orientation, DCT to a waypoint further along the route can be easily visualized and can be created by the press of a button via the navRTE page.

8.2. Worldwide Navdatabase with APTs, VFR Navaids and IFR, Enroute WPTS

See chapter navWPT (item 5.).



8.3. Electronic Flight Bag: EFB

8.3.1. JeppView Charts: SIDs, STARs, APPROACHES, APT, OTHERS

General:

This is where the charts from the JeppView subscription are located. During the approach the system automatically switches from the base chart (ICAO Europe) to the IFR approach chart. Current position is displayed on the chart. The previously loaded procedure is also displayed on the JeppView chart.

Important:

Please be aware that only scaled charts are referenced, including approach and airport charts. SIDs, STARs and charts from the category Others are not referenced.

Handling:

- CHART
- SING.CH
- Select active airport: simply start typing, e.g. enter ID via keyboard
- SEL: airport is selected, i.e. only charts for the selected airport are listed.

IFR APT SELECTION	MOVING TERRAIN
ACTIVE AIRPORT	MODEMAP100%
ID NAME	UTC 08:36:27
EGNX EAST MIDLANDS (NOTTINGHAM)	COS SATACO
LAT LON	N 47 47 626'
N 52 49.867' W 001 19.683'	N 47 47.030
	E 009 07.485
SEARCH	ALT
E_	[kts] MT
EAST MIDLANDS (NOTTINGHAM)	DCT EDDS
EBAW	DME 53 9 MC 3
EBBR	
EBCI	SINGLE
EBFN	CHART LOWW_A
EBKT	WPT
EBLG	DME MC
EBOS	[nm]
EDAB	EET
EDAC	DEST
	DME [nm]
-> CHART -> ChgApt	FFT
SEL DEL UP	DOWN BACK

Please be aware that only airports within your JeppView coverage are displayed.



-> CHART

-> SING.CH

-> SID STAR APPROACH APT OTHERS

8.3.2. Selection of categories

with: << >>



8.3.3. SIDs and STARs displayed

SHOW return with CHART (no Moving Maps, *as not to scale*)

8.3.4. APPROACHes and APTs and Docking / Parking charts (in others)

- HIDE hide chart
- UNSEL unselect chart

8.3.5. Automatic loading of the AIRPORT chart

at speed reduction at landing (first chart in APT section)



8.3.6. Particularities of the APPROACH CHARTS

This key is only displayed in FLT Mode and enables a quick switch to the approach chart:

- TVIEW = Top View
- PVIEW = Plan View
- VVIEW = Vertical View
- POS = return to current position



8.3.7. Automatic switch to the approach chart

When the speed is reduced below 65 knots the display automatically switches to the APT chart.

Premise:

- The airport must be selected as ACTIVE AIRPORT
- An APT chart must be available
- The first chart in the category APT is always selected automatically
- In a few instances a different chart must be selected manually

8.3.8. Jeppview VFR Approach Charts

A special category of Approach Charts are the Jeppview VFR Approach Charts.

- Selection of VFR with the keys << and >>
- choose Active Airport: Just type in identifier or name with the keyboard and confirm with <SEL>
- Select in listing with UP/DOWN
- With <SEL> you chose the chart that will be automatically shown as soon as you enter the area for which the chart is referenced.



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8.3.7. Printing of charts and routes

Using PRINT charts and routings can be printed as files.

At the end of flight planning, select which print outs are required for the flight.

Possible choices for printing:

- Flight plan as a form
- Flight plan as a list (prints the entire list, even if it cannot be completely displayed on the screen, including imbedded procedures)
- The route on the map of Europe or from the MFD (print by pressing key P when the screen displays the chart)
- Charts from the EFB: SIDs, STARs, APPR, APTs

Since all charts and routes selected for printing are deleted when the device is restarted, it is necessary to complete the selection in one draw.

It is recommended to limit the selection, as the printing with photo printers takes time and is not cheap.

These print files are copied from the device using a prepared Compact Flash:

- Turn off the device, insert the CF and turn the device back on
- · All the files to be printed are automatically copied to the CF
- Turn device off
- Remove CF

The CF can be inserted in standard printers and the files printed.



8.4. MT IFR Enroute Layer

<u>General:</u> The IFR layer is a data generated layer. The layer visualizes low and high altitude airways for Europe.

Handling: Activating the layer

- CHARTS
- AWY+
- BACK

Deactivating the layer

- CHARTS
- AWY-
- BACK

BASE CHART SELE	CTION	
AVAILABLE BASECHARTS:		
#00. Europe ICAO 1.300 000 - [C]	(D)	
#01: Generalkarte mit FS-Druck 1:200 000	- [D]	ALT 5500 feet GS ALT 5500 feet GS Ikts] DCT DME Inm] EET MC CHART NXT DME Inm] DME CHART MC DME Inm] DME MC DME MC DME MC DME MC DME MC DEST DME Inmil
-> CHART		FFT
SING.CH USE AWY +		DOWN BACK



8.4.1. Display on the ICAO chart



- 8.4.2. MT-IFR Layer legend
- ✓ APT
- ✓ VOR
- ✓ VOR TAC, VOR DMI
- ✓ NDB
- ✓ ENR WPTs
- ENR Airways high = gray
- ✓ ENR Airways low = black

MTUP / 16 - 02 REV M Datum: 01.07.2010





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8.4.3. Display in MFD Mode

Handling:

- VIEW
- MFD
- Set Range with + or -

With a too large range the layer cant' be displayed



Return to map:

- VIEW
- MAP

The related database enables the direct selection of the VORs, APTs, NDBs and Enroute Waypoints. It can be found under <navWPT>.



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9. MT Track / Automatic Logbook

9.1. MT Flight Recorder

(Supplemental module, not included in the basic software)

General:

The MT Flight Recording and Tracking module enables the recording of flights. The recording begins automatically as soon as a valid position is displayed in flight mode (SATFIX).

Important: The track must be stored before the device is powered off, otherwise it will be automatically deleted.

MT Track = actual flight track

- Recording begins with valid position (SATFIX) in flight mode
- Position is recorded every 10 seconds (track points)
- Track is automatically deleted when the system is powered off, so it has to be stored if the track is to be displayed later.

Handling:

9.1.1. Select Track Page

- AUX
- TRACK





9.1.2. Further function keys:

- SAVE save the currently recorded (flown) tracks (before power off!) under an individual name (or a system provided name)
- PLAY play track
- DEL delete track
- UP
- DOWN
- BACK back to Map Mode



9.1.3. Function keys when replaying the track:

- FAST / NORM
 Fastest / delayed playback of the recorded tracks
- STOP end playback
 - BACK return to Map Mode
- LOG flight log

•



Without interrupting the Replay Mode it is possible to:

VIEWzoom the chart, hide Info boxCHARTswitch chartCHART/SIN.CHAselect Single ChartDCTestablish DirectnavWPT/navRTEwork with navWPT or navRTE Page

Replay is ended when switching back to the Map Mode.



9.2. MT Automatic Flight Log

General:

The MT Automatic Flight Log automatically documents flights and thus serves as a log book. The date, departure and arrival times as well as flight duration are automatically recorded. The other fields such as airports can be added as required.

9.2.1. The following data is transferred from the GPS

- DATE date of flight
- (Dep) TIME departure time: is recorded when the speed is larger than 40 knots over ground
- (Arr) TIME arrival time: speed less than 40 knots over ground
- D-TIME flight time: HH:MM total (calculated)

LOGBOOK							A I	AOVIN ERRAI	G I	
DATE	IDENT	TYPE	DEP	TIME	ARR	TIME	D-TIME	TYPE FLT	TRKFILE	AG -
08.05.07	D-IMTM	C551	EDNY	15:15	EDHK	16:33	01:18	IFR		
24.05.07	D-IMTM	C551	EDHK	12:13	EDNY	13:40	01:27	IFR		
03.06.07	D-IOTA	BE58	EDDF	14:07	EDNL	15:23	01:16	NORM		
08.06.07	D-IHCE	BE90	EDNY	11:12	LFPB	12:53	01:41			
12.06.07	D-GALF	PA30	EDNL	12:10	EBAW	14:15	02:05	IFRVF		
14.06.07	D-GALF	PA30	EBAW	11:00	EDMK	13:16	02:16			
15.06.07	D-GALF	PA30	EDMK	10:00	EDMA	10:34	00:34	VFR		
17.06.07	D-GALF	PA30	EDMA	12:23	LSZS	13:15	00:52	VFR		
28.06.07	D-IOTA	BE58	EDNL	11:00	ESSB	15:13	04:13	VFR		
01.07.07	D-IOTA	BE58	ESSB	12:00	EDNL	16:33	04:33	VFR		
> AUX	-> TRACK	(-> L	OG							
EDIT	INS D	EL		TXT				UP	DOWN	BAC

[fictional data, no actual flights!]



9.2.2. The following data can be appended in the log book

- IDENT tail number of aircraft
- TYPE type of aircraft
- DEP ID of departure airport
- ARR ID of destination airport
- TYPE FLT 5 characters for individual remarks, e.g. IFR
- TRACKFILE name of the associated track stored in the MT system that can be replayed

Handling:

Entries in one line each can be accomplished by pressing the key:

• EDIT

LOGBOOK							MOVIN ERRAI	IG N		
DATE	IDENT	TYPE	DEP	TIME	ARR	TIME	D-TIME	TYPE FLT	TRKFILE	
08.05.07	D-IMTM	C551	EDNY	15:15	EDHK	16:33	01:18	IFR		
24.05.07	D-IMTM	C551	EDHK	12:13	EDNY	13:40	01:27	IFR		
03.06.07	D-IOTA	BE58	EDDF	14:07	EDNL	15:23	01:16	NORM		
08.06.07	D-IHCE	BE90	EDNY	11:12	LFPB	12:53	01:41			
12.06.07	D-GALF	PA30	EDNL	12:10	EBAW	14:15	02:05	IFRVF		
14.06.07	D-GALF	PA30	EBAW	11:00	EDMK	13:16	02:16			
15.06.07	D-GALF	PA30	EDMK	10:00	EDMA	10:34	00:34	VFR		
17.06.07	D-GALF	PA30	EDMA	12:23	LSZS	13:15	00:52	VFR		
28.06.07	D-IOTA	BE58	EDNL	11:00	ESSB	15:13	04:13	VFR		
01.07.07	D-IOTA	BE58	ESSB	12:00	EDNL	16:33	04:33	VFR		
									_	
SAVE	-			201				PREV	NEXT	BAC
ONVE								THEY	NEXT	DAG

[fictional data, no actual flights!]



Enter the data using the keyboard on the frame and use the associated function keys for the following

Special characters

:

the according function keys.

Move from field to field with

- PREV
- NEXT

Confirm entries with

SAVE

The system automatically returns to the main page of the log book

To edit further lines select these with

- UP
- DOWN

Delete entire entry with

• DEL

Insert flights with

INS

By pressing

TXT

the current status is written to a general TXT file fltlog.txt in the directory MOVTER.PRO\TRACKS.

This file can be edited and processed further.

If you put an Update Chip (formatted by MT) into the swiched off unit and start the unit again, the file "fltlog.txt" will be written into the directory MISC onto the Chip. Switch the unit off after you see "Update successful" and remove the chip. The file can now be edited and processed further with any editor if you put the chip into the card reader of your office computer.



10. MT Rotating Chart

(Supplemental module, not included in the basic software)

General:

In the main window the chart rotates in the direction of flight. Rotation is performed independent of scale for all charts, Base Charts and Single Charts.

Handling:

- VIEW
- ROTATE



- In Flight Mode the chart can be displayed in 75% or 150% ZOOM.
- In Map Mode the chart can be zoomed smaller or larger.

All functions via navWPT or navRTE Page work as usual.



North Up Mode can be selected at any time:

- VIEW
- N-UP

Current position can be displayed in the center of the screen

• CENTER (in the VIEW bar)

or moved to the lower edge (see figure below)

• OFF-C (in the VIEW bar)





In the Rotating Mode the chart can be displayed in two zoom levels:

- 75 %
- 150 %

N-UP switches back to the North-Up Mode.





Further function keys (see VIEW menu):

- MFD switch to MFD Mode without chart Range setting analogous to ZOOM with indication of required range MAP return to chart RNG 0 = 100 NM Toggle key: ARC / 360: display as arc or circle Toggle key: TRKUP / PLAN: small window in the Info box
- CRS / CRS + display or hide compass card



11. Program MT Chart

(Supplemental module, not included in the basic software)

With MT Chart you can reference your own charts (scans). Using the assigned coordinates these can be controlled from the MT main program. MT Chart is a Windows program and does not run on the MT-VisionAir.

11.1 Scanning

Before launching MT Chart, the needed chart must be scanned. For interfacing with Moving Terrain, the chart must be prepared as a bitmap file in Windows BMP format (files with ending *.BMP). In addition, color resolution must be 24-bit, i.e. 16 million colors = true colors.

Otherwise it does not matter whether you scan the chart with a hand-held scanner at home, at a service center close by or send it to us for conversion to this type of file. You may use any standard scanner, as long as your file is saved as a 24-bit BMP file.

For good, color-accurate and undistorted results it is best to use a color flatbed scanner.

Your original charts must satisfy the following prerequisites:

- They must be to scale (not distorted)

- Latitude / longitude must be readable on the grid or other points must be capable of exact referencing.

- For large areas it is important to make sure that the chart is based on a cylindrical projection (e.g. Mercator). Conic (section) projections are not suitable.

The program also tolerates rotated scans. For the sake of clarity they should be north-up, although the software compensates for errors caused by rotation.

11.2. Referencing

Upon launching MT Chart you will see a special referencing symbol (diagonal crosshairs) in the center of the screen, an as yet empty Navdata box and three menu items. In the map (Alt + A) choose the "Open" function or press F2. The "Load Custom Chart" file dialog will appear. Now select the drive, directory and file (in BMP format!) you wish to reference. You can move within the rectangular areas with the direction arrows, to the next box by pressing the tabulator and back to the previous box by simultaneously pressing Shift and Tab.



Once you have selected the chart you wish to reference (its name must be visible in the single-line box under file name), confirm by pressing Enter. The file will then be automatically converted to the Moving Terrain MTC format. You now have the choice of deleting or saving the BMP file. From now on you will only need the MTC file. We recommend deleting the BMP file from your hard disk. If you lack the means to scan charts yourself and had the file created externally, it is advisable to make a backup copy on another storage medium before you start work.

Now comes the most important part in the preparation of your chart for using with Moving Terrain: referencing. The more carefully you perform this step, the better will be the results you achieve subsequently together with the GPS. For referencing you must exactly reference three points on the chart (longitude and latitude). Move the chart with the direction arrows or the right mouse button to place the referencing symbol at a point whose coordinates are known to you or which can be read off the chart. For visual approach charts we recommend, e.g. the grid at the edge of the chart. If no coordinates are provided on the chart (e.g. street map), you can also drive/fly/walk to several points on the chart and measure the coordinates with the GPS.

You must reference 3 points. Please note: your reference points should be distributed as far as possible over the chart. They should not be too close together and not lie in a straight line.

The MT program will also run if you have referenced only 2 points, but you will be forfeiting an important safety backup and verification of accuracy.

To create a reference point, move the desired chart point beneath the referencing symbol and select the referencing menu (Alt + R) or press F8. In the dialog that appears you can give this reference point a name and enter its coordinates (up to 1/1000 angular minute). Again you can move from one box to another by pressing the tabulator and to the previous box by simultaneously pressing Shift and Tab. The point can be saved by pressing Enter (Save). Save three points in this manner. The program will now evaluate the accuracy of your input and the deviation of the chart from the rectangular reference due to the projection. The following evaluations will be provided:

comments	very good	good	medium	poor but useful	unuseable
del psi *	0-1	1-2	2-6	6-10	>10

Confirm this message by pressing Enter. The referencing quality can also be seen at MAP/ INFO.

Now save the correctly referenced chart with the Save function in the map



menu (Alt + A) or by pressing function key F3. This will save the chart in the Moving Terrain format together with your referencing and it is ready for use in the Moving Terrain program.

(* Del psi is the internal evaluation criterion and is calculated from the relative angles of rotation of the chart between the earth coordinate system and the pixel system ensuing in each case from the straight line between the input points. The program simultaneously evaluates projection and referencial errors.)

11.3. Further functions in MT Chart

Map menu

In addition to the functions as outlined in Chapter 3.1 - Open, for opening BMP or MTC files, Save for saving MTC files with referencing, and Info for showing the quality of your referencing – the map menu (Alt + A) also contains the following functions:

Goto...

This function is used to check the chart into which you have entered coordinates. The referencing symbol is displayed precisely over the point stipulated by you. However, if the coordinates are off the edge of your chart, an error message will be displayed.

Zoom...

As in the main Moving Terrain program you can also view your own charts, except in the standard display, at a magnification factor of 200% or a reduction factor of 50%. Map Menü

11.4. The charts on your Moving Terrain system

The charts prepared with the MT Charting module are available as single charts on your system. They must first of all be copied into your system's \MOVTER. PRO\CUSTOM directory.

To replay self-digitized, referenced single charts on your MT-VisionAir:

Create a ZIP file (e.g. WINZIP) from your *.MTC files and name it SINGLECH.ZIP

Any number of charts may be combined in this ZIP file. Now copy the SIN-GLECH.ZIP to the existing directory

\DATA\

on the Microdrive (Compact Flash Type II) prepared by Moving Terrain That is all the preparation needed.

Now insert the microdrive (Compact Flash Type II) into the switched off MT-



VisionAir device and switch it on.

The updating process will start automatically.

Wait a few minutes (depending on the size of the file) until all the charts have been loaded onto the device.

Now switch the device off and remove the microdrive (Compact Flash Type II).

Upon restart you can activate your single charts with

- CHART
- SIN.CHA

In the event that this procedure does not run correctly, the most probable reason is that insufficient space is available for the charts on your device's hard drive (or partition thereof). In this case please contact us. We will be pleased to help you find a solution.

To replay self-digitized, referenced single charts on your MT-ULTRA: Start a burn prorgram in order to burn a CDR. Create a new directory on this CDR called CUSTOM. Now attach the *.MTC files you made in the directory CUSTOM. Burn the CD. Using the MT UPDATE UTILITY ,corresponding to your software version, you can now install the new charts you made onto your system. Choose option 1. Update from Moving Terrain CD in the update program.



12. Special Coordinates

(Supplemental module, not included in the basic software)

General:

In addition to display of the coordinates in the latitude – longitude system, there are further coordinate formats available.

Handling:

- navWPT
- EDIT
- NEW/MODIFY

Now the following coordinates are available:

LAT/LON UTM SWISSG

Once selected, a coordinate system remains active until a new choice is selected. When restarting the system the setting has to be reselected.

New User Waypoint	MOVING TERRAIN
Geographic Coordinates (WGS84)	MODEFLT 100%
	итс —— :—— :——
	GPS NO DATA
	N 47 36.889'
	E 009 24.680'
NAME	ALT 5500 feet
WPT001	[kts] MT
ID	рст
WP1001	DME MC
	EET
N/S N 47 36 889 E/W E 009 24 680	SINGLE CHART
	NXT
	DME MC
COMMENT	EET
	DEST
	DME
->navWPT-> EDIT -> NEW	
SAVE GOTO DCT CHR CLR PREV NEXT UTM	SWISSG BACK


The coordinates are shown in the INFO BOX in the selected format.



NAV WPT PAGE (VFR & IFR WAYPOINTS)		MOVING TERRAIN
CURRENT WAYPOINT NAME "MARIGNANE (BERRE) "WATER AEF	SEARCH	
IDENT TYPE LFTB APT LAT LON 31T FJ 794 132 ELEV 0 FT TWR 119,5; TEL: 0442311565;	**************************************	Bits not DATA 309 736 ALT 5500 feet GS
->navWPT	EET	
DBASE GOTO DCT DCTundDCTtr	IND NRST FDIT CHAR	DOWN BACK



11.2. SWISS Grid

is only valid for the area of Switzerland

NAV WPT PAGE (VFR & E	R WAYPOINTS)	MOVING TERRAIN
CURRENT WAYPOINT	SEARCH	MODEFLT 100%
NAME		
ZUERICH	LSZH_	
IDENT TYPE	LSZH	F 748 302
LSZH AFT	LSZI	N 275 659
LON LAT	LSZJ	N 275.050
E 683.636 IN 236.966	LSZK	ALT 5500 Teet
ELEV TATO ET	LSZL	[kts]
14 16 F 1	LSZN	DCT
TWR 118,1; ILS14 108,30; ILS16 110,50;	LSZO	DME MC
ILS34 1;	LSZP	inui
RWY 10/28 2500m CONCRETE	LSZR	EET
RWY 14/32 3300m CONCRETE	LSZS	CHART
RWY 16/34 3700m CONCRETE	LSZT	NKT
	LSZU	DME MC
	LSZV	[m]
	LSZW	EET
	LSZX	DEST
	LSZY	DME
- ReviewDT		

New User Waypoint		MOVING TERRAIN
SwissGrid Coordinates		MODEFLT 100%
		utc : :
		GPS NO DATA
		E 748.302
		N 275.658
NAME		ALT 5500 feet
WPT001		GS MT
U		DCT
WPT001		DME MC
		EET
E 748 . 302	N 275 .658	SINGLE CHART
		NXT
		DME MC
COMMENT		EET
		DEST
		DME [nm] ——
->navWPT-> EDIT -> NEW		EET
SAVE GOTO DCT CHB	CLB PBEV NEXT LAT	LON UTM BACK



INTENTIONALLY LEFT BLANK



13. MT - UPDATE

<u>General:</u>

- Updates are installed via Compact Flash.
- The data storage media must either have been acquired from us or else must be configured in house following the acquisition.

Handling:

The update itself is easy and convenient:

- With the unit turned off, please insert the CompactFlash into the side slot with the MT- label facing towards you. Then switch on the MT VisionAir. Now the update will run automatically.
- The message UPDATE SUCCESSFUL will be shown on the screen when the update is finished. Please turn off your unit again and remove the CompactFlash. The unit is now ready to use.
- Depending on the number of charts, an update can take up to 40 minutes!

Attention: Never insert or remove the CompactFlash while the unit is switched on!

Now the system has been updated with current data and is serviceable as usual.

Important:

- In case the data storage media is not recognized (which can be recognized by the fact that Moving Terrain is started!), power off the system and try again. The data storage media sometimes have startup problems.
 - During an update process all of the data is loaded from the data storage media to the system, which may take some time. Please plan for this time and do not perform the update at the last minute.

Please take notice of further notes on the screen during the update.



Loading data onto the MT-VisionAir from the Internet or from data received by e-mail:

A Compact Flash prepared by us is required. Using the appropriate adapter, insert the CF in your office computer.

The data is provided by us in the following form:

VFR/IFR Data IFR60.ZIP

Obstacle Data

OBSTACLE.ZIP

SW60.ZIP Software-Update

These data files must be copied onto your Compact Flash in the directory \DATA\ (do not unpack!).

Remove the Compact Flash from your office computer and the adapter and insert it in the powered off system MT-VisionAir.

When it is powered on, the update process will run automatically. After completion of the update, power the system down, remove the Compact Flash and restart the system.

This procedure basically works the same for Single Charts (*.MTC files) (see MT-Charting).



14. Unlocking of additional modules

<u>General:</u>

Unlocking of additionally acquired software modules can be conveniently performed on your MT-VisionAir device without having to send it in. For this purpose we need the SITE CODE of your Moving Terrain.

Handling (determining the Site Code):

- AUX
- AUTH (press and hold for approximately 3 seconds = prevents unintentional activation!) leads to Moving Terrain Licensing Manager.
- Continuing with "Y", the Moving Terrain License Manager provides information about the currently unlocked modules.
- By pressing "A" the SITE CODE is displayed.

The following OPTIONS are enabled:

z. B. FMS Track/Flight-Recording IFR Complete

[A=Authorize] [Q=Quit] Please select from the menu above: a

Site Code: xxxx xxxx xxxx xxxx xxx

Please Enter Site Key and Press any Function Button to Finish or Press <Q> to Quit:



- The Site Code must be entered into the attached form and faxed to Moving Terrain AG (+49 8376 9214-14).
- Moving Terrain will fax back the "Site Key".
- The SITE KEY is immediately entered via the keyboard on the frame.
- Please confirm by pressing one of the function keys below.
- The module is now unlocked.
- Power off system and restart.