UAV Operating Manual

(created by EMSI)

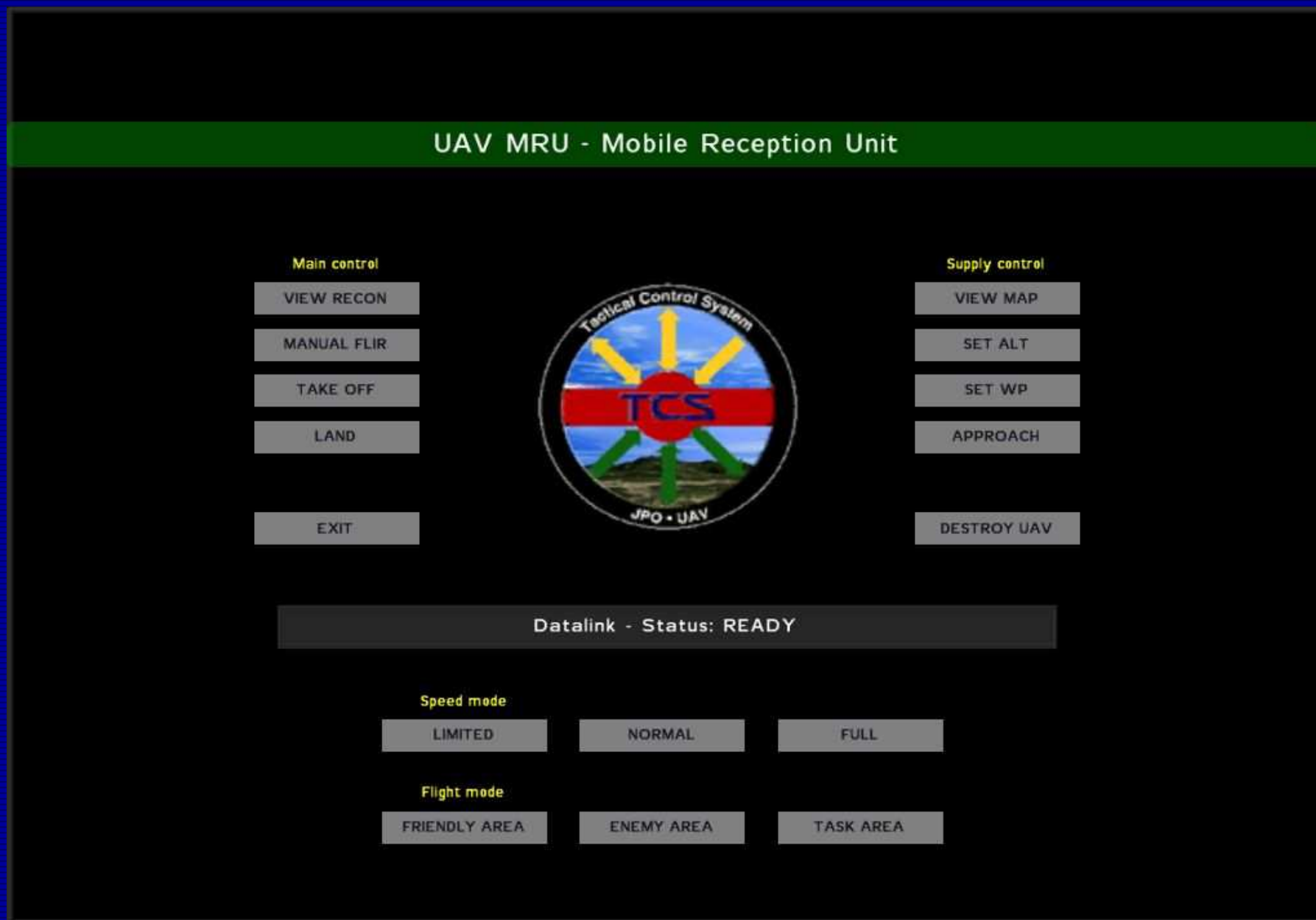## Contents

How to create and launch UAV recon in mission

1) Copy all files and directory EMSI_Data from zip archive to your mission directory.
Beware to **description.ext** and **stringtable.csv** files.

2) Create your soldier (player) which want to be connected during mission with UAV.

3) Create UAV (or another plane) with name "**predator**".
– if you want, place a UAV directly waiting on taxiway and remove him fuel or if you want it direct in flight set him "In Flight" option.

4) Place an MRU addon (or any car, object etc.) with name "**mru**" anywhere you want.

5) If you use your own MRU unit like for example any car, create around this object cycled trigger with activating to unit (player) for launching an MRU display with command **[] exec "EMSI_Data\EMSI_UAV_console.sqs"** in activation field.

6) If you have an UAV in group then you not need to set any WPs, but if you are alone (without UAV in group), set him few WPs to and over target recon area.

7) Save mission and try.

UAV MRU display

UAV MRU - Mobile Reception Unit

Main control
- VIEW RECON
- MANUAL FLIR
- TAKE OFF
- LAND
- EXIT

Supply control
- VIEW MAP
- SET ALT
- SET WP
- APPROACH
- DESTROY UAV

Datalink - Status: READY

Speed mode
- LIMITED
- NORMAL
- FULL

Flight mode
- FRIENDLY AREA
- ENEMY AREA
- TASK AREA

UAV MRU display description

This MRU (Mobile Reception Unit) display is launched at every startup when player approaches the MRU unit. Here you may see few groups of buttons and one Data bar.

Main control buttons

VIEW RECON - Starts the view through UAV camera display with some measured data. Hit at anytime a "**V**" key to switch OFF this view and return to the main MRU display.

MANUAL FLIR – Use this function for manual switch ON the FLIR on the camera. The automatic function works from approx. **20:40** to **4:40**, but a few minutes before this time (and after) are surroundings too dark for normal view and too light for automatic FLIR. This manual mode is using lower FLIR value. After having switch OFF the UAV display, this function is set to default values according to the current time.

TAKE OFF – Taking off command for UAV. This function works only if the plane is on the taxiway and ready for recon mission.

LAND - UAV automatically lands at the nearest airport (recommended airport is Paraiso for its standard runway). Be careful to use this command. If the enemy has in its hands any airport across recon area and you use this command with the UAV, it will land at this airport. So if you have an UAV in your group, order him to move near your airport and then command him to land. Otherwise if UAV isn't in your group, you must wait for him to approach any friendly airport and then use this command for landing.
Another way is to set waypoint to airport through the "**SET WP**" button.
You may also use "**APPROACH**" button. After that the UAV break all tasks and reach shortest WP to MRU operator.

EXIT – Switch OFF this MRU display and return to normal combat mode.

Supply control buttons

VIEW MAP – Pressing this button launches a map with current position of UAV. The position on the map is marked with a red square dot and you may read the current coordinates on top of this view like Df51. In this view is also displayed the current direction of the UAV. You may also launch the recon camera from this map through button "**VIEW RECON**". To switch back to the main MRU display use the button "**BACK**".

SET ALT – This button launches a small dialog window where you can assign a specific flight level for the UAV. Use only numbers. Simply **100** means 100 meters, **350** means 350 meters and so on …
But be careful, lower altitude means higher risk of shut down.

SET WP – When you need to set a waypoint for the UAV to specify the recon area, hit this button. Now is launched another small dialog window where is described a short step by step manual how to provide this setting.
So after having clicked on "**OK**" button is main MRU display closed and you may open the map with the "**M**" key and then simply click with left mouse button on map to an area where you want that your UAV goes for recon.

APPROACH – This button sends to UAV a command to approach the operator station (MRU or GCS etc.). This is useful for easy approaching to airfield before landing without any settings for WPs.

DESTROY UAV – With this button you may easily destroy your UAV. This is useful in situation where you have your UAV on a taxiway and enemy quickly reaches the airport. If you don't have time to take it off, use this option. Otherwise if you have the UAV in recon above enemy area and some AA units damages the UAV too much to reach your airport, it's better to destroy it in order to prevent it to be taken by the enemy. Be careful to use this but once you've released this button, a confirmation dialog is launched which will ask you if you are sure that you want to destroy it because when you destroy your UAV no other one will be available…

Speed mode buttons

LIMITED – After releasing this button, the UAV switches to limited flight speed. This is recommended to use during landing or recon at a high flight level.
Beware: in combination with low altitude means the highest risk of being shutdown.

NORMAL – Command for setting a normal aerial speed. Routinely used during recon task.

FULL – With this setting, the UAV reaches its maximum aerial speed. Beware: this is not recommended to use with a low flight level, because it may hit the relief of mountains – AI have sometimes long response for changing ground level. This is recommended to use during a move to far-away recon area.

Flight mode buttons

FRIENDLY AREA – With this button you may set the UAV to a "careless" behaviour mode. This is recommended above friendly areas or during moving to a far-away recon area at a high flight level.

ENEMY AREA – Use this setting for a "combat" behaviour when moving above enemy areas to target recon areas.

TASK AREA – Use this "stealth" behaviour setting during recon at a low or middle flight level.

Datalink bar

On this bar you may see all the messages and status notes during commanding the UAV. If you set any value (e.g. flight level) or send any command to the UAV, you may see here a short message which will confirm you the sent order.

UAV map display

UAV map display description

This map view is launched after having clicked on the button "**MAP VIEW**" on the main MRU display. Here you may see the map with the current position of the UAV marked as a small red square dot with a continuous refresh of the position and direction. On top of this view is displayed the current GPS grid position and current direction of UAV. On the bottom are a few buttons to switch directly to the recon view, to switch ON the manual FLIR or to go back to the main MRU display. Between those buttons is also displayed the current time in format HH:MM:SS.

Metering controls

UAV GPS – Current GPS position of the UAV in format horizontal (letters) - vertical (numbers) value.

UAV DIR – Current direction of the UAV in world sides format (e.g. North North-East).
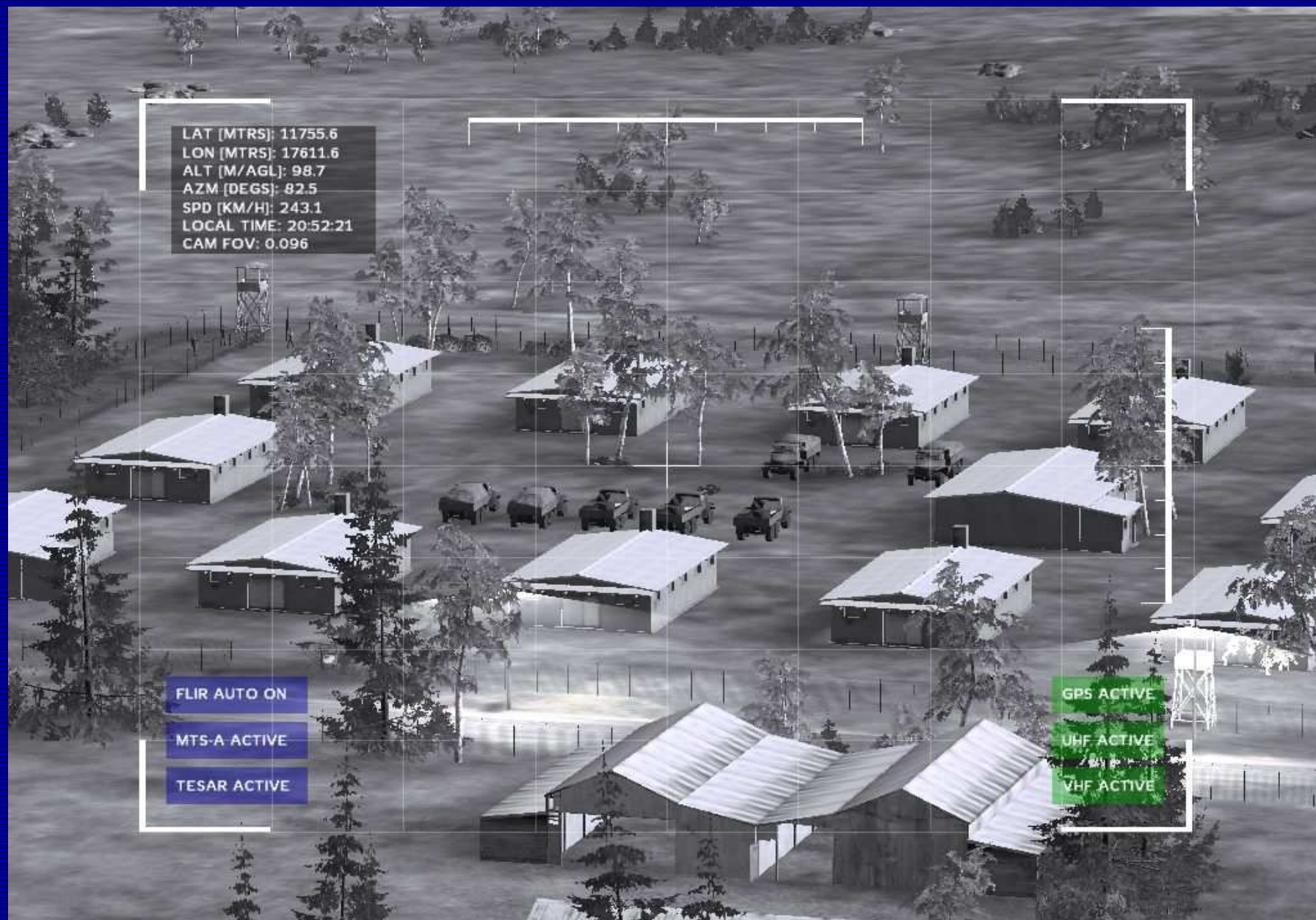
Buttons

VIEW RECON – Same function as on the main MRU display.

MANUAL FLIR – Same function as on the main MRU display.

BACK – Push this button to return to the main MRU display.

UAV recon display

LAT [MTRS]: 11755.6
LON [MTRS]: 17611.6
ALT [M/AGL]: 98.7
AZM [DEGS]: 82.5
SPD [KM/H]: 243.1
LOCAL TIME: 20:52:21
CAM FOV: 0.096

FLIR AUTO ON

MTS-A ACTIVE

TESAR ACTIVE

GPS ACTIVE

UHF ACTIVE

VHF ACTIVE

UAV recon display description

After you've pressed the "**VIEW RECON**" button on the main MRU display this camera view is launched. You can see then the direct scene around the UAV. On the left top corner of this view you may see a few measured data and also you may use the numeric pad keys to turn and zoom the UAV camera. More info in the "*UAV Operating Camera keys*" section.

Measured data display

LAT [MTRS] – Current measured Latitude in meters.

LON [MTRS] – Current measured Longitude in meters.

ALT [M/AGL] – Current measured Altitude of the UAV in meters above ground level.

AZM [DEGS] – Current measured Azimuth in degrees.

SPD [KM/H] – Airspeed in kilometers per hour.

LOCAL TIME – Recon Mission Time in format HH:MM:SS.

CAM FOV – Camera Field Of View as simple number where 0.1 is maximal and 1.1 minimal zoom.

Recon controls

Here are a few "simply nice" labels, just for the eyes…

FLIR AUTO ON – A forward looking infrared (FLIR) is a camera that takes pictures using the infrared portion of the electromagnetic spectrum. This camera has an automatic setting. This means that at night hours you see recon area through this FLIR option like on the example image.

MTS-A ACTIVE - The Raytheon Multi-spectral Targeting System is active.

TESAR ACTIVE - The Northrop Grumman Tactical Endurance Synthetic Aperture Radar is active.

Communication controls (also for the eyes)

GPS ACTIVE – This control mark means Global Positioning System which is the only fully functional Global Navigation Satellite System (GNSS). Utilizing a constellation of at least 24 medium Earth orbit satellites that transmit precise microwave signals, the system enables a GPS receiver to determine its location, speed, direction, and time.

UHF ACTIVE – Activated communication via UHF link. UHF (Ultra High Frequency) is designated as a range (band) of electromagnetic waves with frequencies is between 300 MHz and 3 GHz. Also known as the decimeter band or decimeter wave as the wavelengths range from ten to one decimeter.

VHF ACTIVE – Activated communication via VHF link. VHF (Very High Frequency) is the radio frequency range from 30 MHz to 300 MHz. It is also known as the meter band or meter wave as the wavelengths range from ten to one meter.

UAV camera operating keys

With these few keys you may move and zoom the view during the recon through the UAV display. You may also lock the view to any place in recon area.

Key "**8**" at Numeric pad – moves the camera up
Key "**2**" at Numeric pad – moves the camera down
Key "**4**" at Numeric pad – moves the camera left
Key "**6**" at Numeric pad – moves the camera right

Key "**W**" – zoom in the camera (or move mouse to the front)
Key "**S**" – zoom out the camera (or move mouse to the back)

Key "**/**" at Numeric pad – lock the target (camera is locked to the pointed position on the ground or on the nearest known target)
Key "**5**" at Numeric pad – unlock the target (or hit one of movement keys)

Key "**L**" – switch OFF/ON the center cross (or square marker on locked target)

Key "**V**" – switch OFF the camera during recon at any time you want

Credits

EMSI – http://www.arma.szm.sk

Special thanks to:
Sirglider – for many inspirations from his Ranger UAV (with MRU) and help with some scripts
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