

# **GLT AVIONICS SYSTEMS**

## **3.3**

### **GPS/INS GUIDANCE SYSTEM**

### **USER MANUAL**

## INTRODUCTION

Congratulations to the purchase of the GLT GPS/INS Guidance System. This System can be included into nearly any avionics system available on the market. It allows you to precisely guide your GPS/INS guided weapons into target with high accuracy. It also allows you to deliver a wide range of area denial systems like the AGM-154A.

### IMPORTANT NOTE:

The underlying avionics operating system needs to be updated to at least version **1.5x or higher**. The GLT GPS/INS guidance system does not work with older versions.

### PACKAGE CONTENT:

As a full service package, the GLT GPS/INS guidance system comes with a „all-inclusive“ package, which includes:

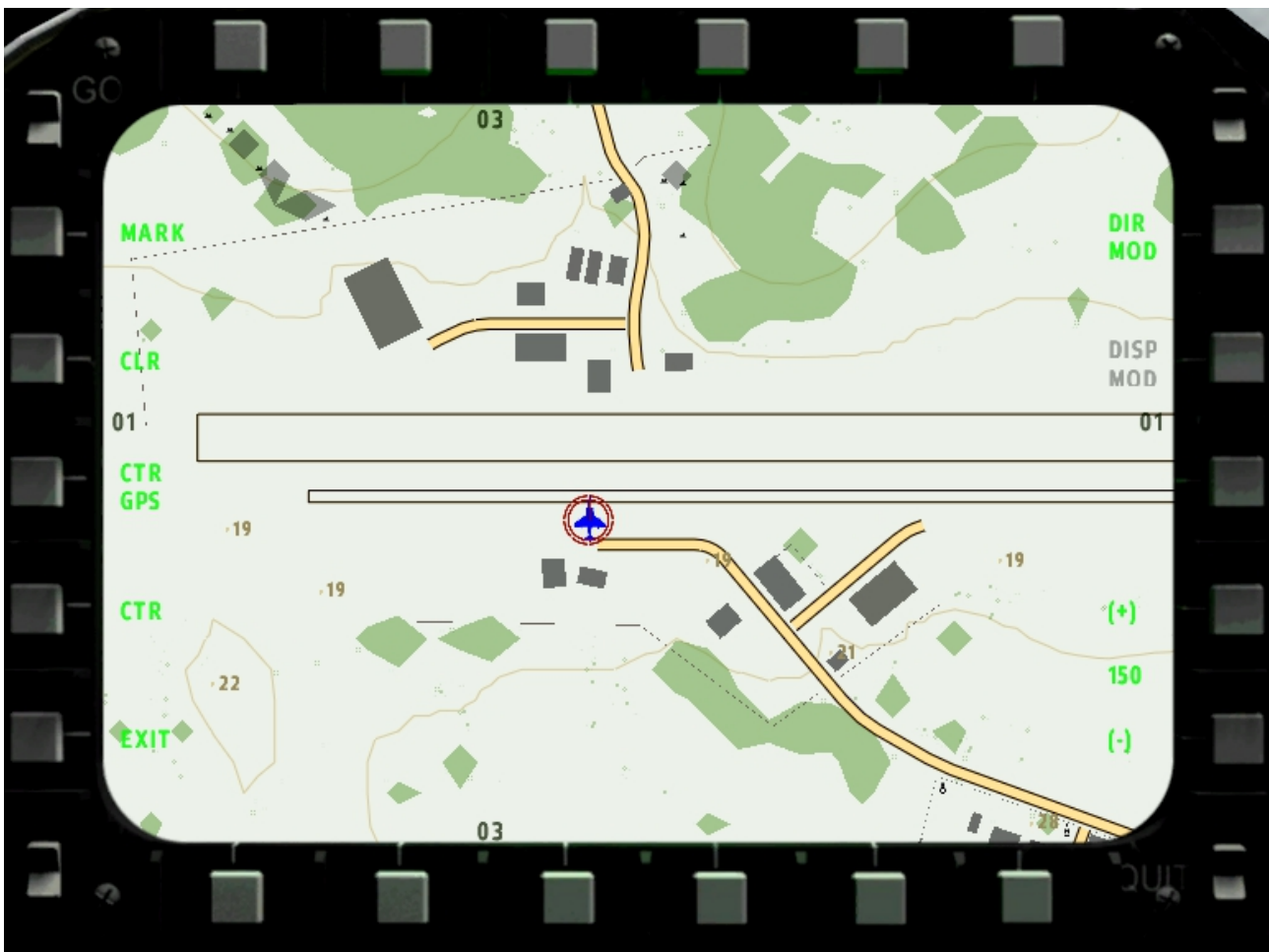
- a wide variety of A-A, A-G, unguided and guided bombs (see addendum for details)
- a MLU for most of your already purchased weapon systems
- several vehicles with updated avionics and loadout (GLT GPS/INS guidance system included, see addendum for details)

Not yet included is the MLU for your GBU-43/B Massive Ordnance Air Blast systems as we're still working on a software update.

## VERSION CHANGES:

- [added] BGM-109 Tomahawk ammo, a gift for Mandobles MMA
- [tweaked] AGM-65 splitted up into IR guided and Laser guided versions
- [tweaked] AGM-114 splitted up into IR guided and Laser guided versions
- [fixed] AGM-114 behaved wrong when used with Big Dawg's Hellfire fix
- [fixed] AGM-114 particle effects was positioned wrong
- [added] BRU-61A Bomb rack to be used together with GBU-39 SDB
- [fixed] Su-34 & Su-39 replacements switched back to default loadout
- [fixed] MOAB scripts weren't MP compatible
- [added] FFAR pods (19 rockets) magazines added
- [added] FFAR unguided Launcher weapon and magazines
- [added] FFAR Laser guided Launcher weapon and magazines
- [improved] splitted Kh-15, Kh-22 and Kh-31 into subvariants for MMA use.
- [new] R-60 A-A Missile added
- [fixed] some weapons were missing TI textures
- [new] AN/AAQ-28 Litening targeting pod
- 
- [added] GBU-39 SDB (for F-22A)
- [tweaked] added countermeasure code to config (thx to Mankyle)
- [tweaked] bombs tweaked for AI use (mainly Gnat's Tu22M3)
- 
- [added] Autopilot added to GPS/INS MFD ("EBL A/P")
- [added] KAB-500SE GPS/INS guided bomb (equivalent to GBU-53 JDAM)
- [added] Su-34 and Su-39 with 4 KAB-500SE GPS/INS guided bombs
- [fixed] Kh-22, Kh-31 and Kh-15 weren't able to lock on GPS/INS (fix for Gnat's Tu-22M3)
- [improved] Kh-22 proxy has now folded bottomwing
- [fixed] raised lock range for included A-10 and AV-8B
- [fixed] AV-8B, Su-39 and Su-34 were missing countermeasures
- [improved] AGM-154 JSOW was too fast
- [included] GBU-43/B MOAB included into Missilebox
- [added] applied GPS/INS guidance system to C-130 (GBU-43/B needs to be loaded first)
- [fixed] GBU-24 fly had no texture
- [fixed] GBU-24 proxy was not positioned correctly in model space
- [fixed] "You cannot play/edit this mission..." error reappeared, fixed now (hopefully)
- 
- [added] GBU-24 Laser guided bomb
- [added] AIM-132 ASRAAM
- [added] MBDA Meteor BVRAAM
- [improved] several config settings, mainly russian weapons (thanks to [APS]Gnat)
- [added] GPS/INS guidance system
- [included] Aerial weapons replacement (please delete glt\_airweapons\_rep\_oa\_cfg.pbo and related .bisign files)
- [improved] missile exhaust particle effects reworked
- [added] AV-8B JDAM and A-10 JDAM versions
- 
- [fixed] AGM-154 wasn't included in the Missilebox addon, therefor causing a "missing files" error message.
- 
- [fixed] "You cannot play/edit this mission due to deleted downloadable content: GLT\_Missilebox\_config", Thanks to Sickboy and UNN

## Control Elements on the MFD:



- **MARK** : stores the latest programmed GPS coordinate
- **CLR** : clears the stored GPS coordinate
- **CTR GPS** : centers the map on the latest stored GPS coordinate
- **CTR** : centers the map on your actual position
- **EXIT** : closes the GPS/INS menu
- **EBL A/P** : enables autopilot to keep plane levelled
- **DIR MOD** : direct attack mode for direct hit weapons
- **DISP MOD** : dispenser mode for area denial systems (AGM-154A)
- **(+)** and **(-)** : adjust release height of area denial systems

The controls on the right side will take immediate effect without setting a new GPS coordinate.

### IMPORTANT NOTE:

On DISP MODE the GPS coordinate represents the release position for the submunition, not the impact area. Please take your direction and vector on approach into consideration when setting a DISP MOD coordinate.

## ADDENDUM

MLU for the following systems:

- AGM-65 by BISystems
- AGM-114 by BISystems
- FAB-250 by BISystems
- AIM-9L by BISystems (updated to AIM-9M)
- GBU-12 LGB by BISystems
- Mk-82 by BISystems
- Ch-29 by BISystems (updated to T and L versions)
- R-73 by BISystems

Refitted planes:

- Su-39: 4 x Ch-29T, 2 x R-73, 80 x S-8T
- Su-39: 4 x KAB-500SE, 2 x R-73, 80 x S-8T
- Su-34: 4 x Ch-29L, 2 x Ch-29T, 4 x R-73, 40 x S-8T
- Su-34: 4 x KAB-500SE, 2 x Ch-29T, 4 x R-73, 40 x S-8T
- AV-8B2 JDAM: 2 x GBU-53 JDAM, 4 x GBU-12 LGB
- A-10 JDAM: 2 x GBU-53 JDAM, 2 x AIM-9M, 4 x GBU-12 LGB, 14 x FFAR

### Weapon Systems and magazines:

GLT\_AIM9M\_Launcher

"GLT\_2Rnd\_AIM9M",  
"GLT\_4Rnd\_AIM9M",  
"GLT\_6Rnd\_AIM9M",  
"GLT\_8Rnd\_AIM9M",  
"GLT\_10Rnd\_AIM9M",  
"GLT\_12Rnd\_AIM9M"

GLT\_AIM9X\_Launcher

"GLT\_2Rnd\_AIM9X",  
"GLT\_4Rnd\_AIM9X",  
"GLT\_6Rnd\_AIM9X",  
"GLT\_8Rnd\_AIM9X",  
"GLT\_10Rnd\_AIM9X",  
"GLT\_12Rnd\_AIM9X"

GLT\_AIM120\_Launcher

"GLT\_2Rnd\_AIM120",  
"GLT\_4Rnd\_AIM120",  
"GLT\_6Rnd\_AIM120",  
"GLT\_8Rnd\_AIM120",  
"GLT\_10Rnd\_AIM120",  
"GLT\_12Rnd\_AIM120"

GLT\_AIM7\_Launcher

"GLT\_2Rnd\_AIM7",  
"GLT\_4Rnd\_AIM7",  
"GLT\_6Rnd\_AIM7",  
"GLT\_8Rnd\_AIM7",  
"GLT\_10Rnd\_AIM7",  
"GLT\_12Rnd\_AIM7"

GLT\_AIM54\_Launcher

"GLT\_2Rnd\_AIM54",  
"GLT\_4Rnd\_AIM54",  
"GLT\_6Rnd\_AIM54"

GLT\_R3\_Launcher

"GLT\_2Rnd\_R3",  
"GLT\_4Rnd\_R3",

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        "GLT_6Rnd_R3",
        "GLT_8Rnd_R3",
        "GLT_10Rnd_R3",
        "GLT_12Rnd_R3"
GLT_R60_Launcher
        "GLT_2Rnd_R60",
        "GLT_4Rnd_R60",
        "GLT_6Rnd_R60",
        "GLT_8Rnd_R60",
        "GLT_10Rnd_R60",
        "GLT_12Rnd_R60"
GLT_R27_Launcher
        "GLT_2Rnd_R27",
        "GLT_4Rnd_R27",
        "GLT_6Rnd_R27",
        "GLT_8Rnd_R27",
        "GLT_10Rnd_R27",
        "GLT_12Rnd_R27"
GLT_R73_Launcher
        "GLT_2Rnd_R73",
        "GLT_4Rnd_R73",
        "GLT_6Rnd_R73",
        "GLT_8Rnd_R73",
        "GLT_10Rnd_R73",
        "GLT_12Rnd_R73"
GLT_R77_Launcher
        "GLT_2Rnd_R77",
        "GLT_4Rnd_R77",
        "GLT_6Rnd_R77",
        "GLT_8Rnd_R77",
        "GLT_10Rnd_R77",
        "GLT_12Rnd_R77"
GLT_R550_Launcher
        "GLT_2Rnd_R550",
        "GLT_4Rnd_R550",
        "GLT_6Rnd_R550",
        "GLT_8Rnd_R550",
        "GLT_10Rnd_R550",
        "GLT_12Rnd_R550"
GLT_AIM132_Launcher
        "GLT_2Rnd_AIM132",
        "GLT_4Rnd_AIM132",
        "GLT_6Rnd_AIM132",
        "GLT_8Rnd_AIM132",
        "GLT_10Rnd_AIM132",
        "GLT_12Rnd_AIM132"
GLT_METEOR_Launcher
        "GLT_2Rnd_METEOR",
        "GLT_4Rnd_METEOR",
        "GLT_6Rnd_METEOR",
        "GLT_8Rnd_METEOR",
        "GLT_10Rnd_METEOR",
        "GLT_12Rnd_METEOR"
GLT_AGM114_Launcher
        "GLT_2Rnd_AGM114",
        "GLT_4Rnd_AGM114",
        "GLT_6Rnd_AGM114",
        "GLT_8Rnd_AGM114",
        "GLT_10Rnd_AGM114",
        "GLT_12Rnd_AGM114",
        "GLT_14Rnd_AGM114",

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//IR guided variant
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        "GLT_16Rnd_AGM114",
        "GLT_18Rnd_AGM114"
GLT_AGM114K_Launcher                                //Laser guided variant
        "GLT_2Rnd_AGM114K",
        "GLT_4Rnd_AGM114K",
        "GLT_6Rnd_AGM114K",
        "GLT_8Rnd_AGM114K",
        "GLT_10Rnd_AGM114K",
        "GLT_12Rnd_AGM114K",
        "GLT_14Rnd_AGM114K",
        "GLT_16Rnd_AGM114K",
        "GLT_18Rnd_AGM114K"
GLT_AGM65_Launcher                                //IR guided variant
        "GLT_2Rnd_AGM65",
        "GLT_4Rnd_AGM65",
        "GLT_6Rnd_AGM65",
        "GLT_8Rnd_AGM65",
        "GLT_10Rnd_AGM65",
        "GLT_12Rnd_AGM65"
GLT_AGM65E_Launcher                                //Laser guided variant
        "GLT_2Rnd_AGM65E",
        "GLT_4Rnd_AGM65E",
        "GLT_6Rnd_AGM65E",
        "GLT_8Rnd_AGM65E",
        "GLT_10Rnd_AGM65E",
        "GLT_12Rnd_AGM65E"
GLT_AGM84_Launcher
        "GLT_2Rnd_AGM84",
        "GLT_4Rnd_AGM84",
        "GLT_6Rnd_AGM84"
GLT_AGM88_Launcher
        "GLT_2Rnd_AGM88",
        "GLT_4Rnd_AGM88",
        "GLT_6Rnd_AGM88"
GLT_CH15_Launcher                                //GPS/INS guided
        "GLT_1Rnd_CH15",
        "GLT_2Rnd_CH15",
        "GLT_4Rnd_CH15",
        "GLT_6Rnd_CH15",
        "GLT_10Rnd_CH15",
        "GLT_12Rnd_CH15"
GLT_CH15A_Launcher                                //Special weapon for MMA
        "GLT_1Rnd_CH15APS",
        "GLT_2Rnd_CH15APS",
        "GLT_4Rnd_CH15APS",
        "GLT_6Rnd_CH15APS",
        "GLT_10Rnd_CH15APS",
        "GLT_12Rnd_CH15APS"
GLT_CH15P_Launcher                                //Special weapon for MMA
GLT_CH15S_Launcher                                //Special weapon for MMA
GLT_CH29L_Launcher
        "GLT_2Rnd_CH29L",
        "GLT_4Rnd_CH29L",
        "GLT_6Rnd_CH29L",
        "GLT_8Rnd_CH29L"
GLT_CH29T_Launcher
        "GLT_2Rnd_CH29T",
        "GLT_4Rnd_CH29T",
        "GLT_6Rnd_CH29T",
        "GLT_8Rnd_CH29T"
GLT_CH59_Launcher

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        "GLT_1Rnd_CH59",
        "GLT_2Rnd_CH59",
        "GLT_4Rnd_CH59"
GLT_AM39_Launcher
        "GLT_1Rnd_AM39",
        "GLT_2Rnd_AM39",
        "GLT_4Rnd_AM39"
GLT_AS4_Launcher                                     //GPS/INS guided
        "GLT_1Rnd_AS4",
        "GLT_2Rnd_AS4",
        "GLT_3Rnd_AS4"
GLT_AS4PSI_Launcher                                   //Special weapon for MMA
        //GPS/INS guided
GLT_CH31_Launcher                                     //GPS/INS guided
        "GLT_1Rnd_CH31",
        "GLT_2Rnd_CH31",
        "GLT_4Rnd_CH31"
GLT_CH31P_Launcher                                   //Special weapon for MMA
        "GLT_1Rnd_CH31P",
        "GLT_2Rnd_CH31P",
        "GLT_4Rnd_CH31P"
GLT_FAB250_Launcher
        "GLT_2Rnd_FAB250",
        "GLT_4Rnd_FAB250",
        "GLT_6Rnd_FAB250",
        "GLT_8Rnd_FAB250",
        "GLT_10Rnd_FAB250",
        "GLT_12Rnd_FAB250",
        "GLT_36Rnd_FAB250"
GLT_FAB500_Launcher
        "GLT_2Rnd_FAB500",
        "GLT_4Rnd_FAB500",
        "GLT_6Rnd_FAB500",
        "GLT_24Rnd_FAB500"
GLT_MK81_Launcher
        "GLT_2Rnd_MK81",
        "GLT_4Rnd_MK81",
        "GLT_6Rnd_MK81",
        "GLT_8Rnd_MK81",
        "GLT_10Rnd_MK81",
        "GLT_12Rnd_MK81"
GLT_MK82_Launcher
        "GLT_2Rnd_MK82",
        "GLT_4Rnd_MK82",
        "GLT_6Rnd_MK82",
        "GLT_8Rnd_MK82",
        "GLT_10Rnd_MK82",
        "GLT_12Rnd_MK82"
GLT_MK84_Launcher
        "GLT_2Rnd_MK84",
        "GLT_4Rnd_MK84",
        "GLT_6Rnd_MK84"
GLT_AGM154A1_Launcher                                //GPS/INS guided
        "GLT_1Rnd_AGM154A1",
        "GLT_2Rnd_AGM154A1",
        "GLT_4Rnd_AGM154A1"
GLT_AGM154A_Launcher                                //GPS/INS guided
        "GLT_1Rnd_AGM154A",
        "GLT_2Rnd_AGM154A",
        "GLT_4Rnd_AGM154A"
GLT_GBU12_Launcher

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        "GLT_2Rnd_GBU12",
        "GLT_4Rnd_GBU12",
        "GLT_6Rnd_GBU12",
        "GLT_8Rnd_GBU12",
        "GLT_10Rnd_GBU12",
        "GLT_12Rnd_GBU12"
GLT_GBU53_Launcher //GPS/INS guided
        "GLT_2Rnd_GBU53",
        "GLT_4Rnd_GBU53",
        "GLT_6Rnd_GBU53",
        "GLT_2Rnd_GBU53BIS"
GLT_GBU39_Launcher //GPS/INS guided
        "GLT_4Rnd_GBU39",
        "GLT_8Rnd_GBU39",
        "GLT_12Rnd_GBU39",
        "GLT_16Rnd_GBU39"
GLT_MOAB_Launcher //GPS/INS guided
        "1Rnd_GBU43_GLT"
GLT_GBU24_Launcher
        "GLT_2Rnd_GBU24",
        "GLT_4Rnd_GBU24",
        "GLT_6Rnd_GBU24"
GLT_KAB250_Launcher
        "GLT_2Rnd_KAB250",
        "GLT_4Rnd_KAB250",
        "GLT_6Rnd_KAB250",
        "GLT_8Rnd_KAB250",
        "GLT_10Rnd_KAB250",
        "GLT_12Rnd_KAB250"
GLT_KAB500_Launcher
        "GLT_2Rnd_KAB500",
        "GLT_4Rnd_KAB500",
        "GLT_6Rnd_KAB500",
        "GLT_8Rnd_KAB500"
GLT_KAB500SE_Launcher //GPS/INS guided
        "GLT_2Rnd_KAB500_JDAM",
        "GLT_4Rnd_KAB500_JDAM",
        "GLT_4Rnd_KAB500_JDAMBIS",
        "GLT_6Rnd_KAB500_JDAM",
        "GLT_8Rnd_KAB500_JDAM"
GLT_KAB1500_Launcher
        "GLT_1Rnd_KAB1500",
        "GLT_2Rnd_KAB1500",
        "GLT_4Rnd_KAB1500",
        "GLT_5Rnd_KAB1500"
GLT_FFARLauncher_unguided
        "GLT_38Rnd_HYDRA70_unguided",
        "GLT_76Rnd_HYDRA70_unguided",
        "GLT_114Rnd_HYDRA70_unguided",
        "GLT_152Rnd_HYDRA70_unguided"
GLT_FFARLauncher_laser //Laser guided variant
        "GLT_38Rnd_HYDRA70_laser",
        "GLT_76Rnd_HYDRA70_laser",
        "GLT_114Rnd_HYDRA70_laser",
        "GLT_152Rnd_HYDRA70_laser"

```

Special purpose magazines

Bomb Rack Unit BRU-61A, for use with GBU-39 SDB. Needs special proxy settings on vehicle

```

        GLT_1Rnd_BRU61A
        GLT_2Rnd_BRU61A

```

GLT\_3Rnd\_BRU61A  
GLT\_4Rnd\_BRU61A

19 Round FFAR Hydra70 Pods in paired magazines. For use with GLT FFAR launchers and magazines.

GLT\_2Rnd\_FFARPOD  
GLT\_4Rnd\_FFARPOD  
GLT\_6Rnd\_FFARPOD  
GLT\_8Rnd\_FFARPOD

AN/AAQ-28 Targetting pod (no functionality, just decoration/immersion)  
GLT\_1Rnd\_ANAAQ28

Several filler magazines to keep proxies empty.

GLT\_empty\_2  
GLT\_empty\_4  
GLT\_empty\_6  
GLT\_empty\_8  
GLT\_empty\_10  
GLT\_empty\_12  
GLT\_empty\_14  
GLT\_empty\_16  
GLT\_empty\_18  
GLT\_empty\_20  
GLT\_empty\_22  
GLT\_empty\_24  
GLT\_empty\_26  
GLT\_empty\_28  
GLT\_empty\_30  
GLT\_empty\_32

Special purpose ammo:  
GLT\_BGM109\_AG

cfgVehicles classnames added:

GLT\_Su39\_laser  
GLT\_Su39\_JDAM  
GLT\_Su34\_Laser  
GLT\_Su34\_JDAM  
GLT\_AV8B2\_JDAM  
GLT\_A10\_US\_EP1\_JDAM  
  
glt\_MOABdisplay

### Credits:

**IrishDeviant** for: AGM-88, KAB-250L, KAB-500L and KAB-1500L. Outstanding work, mate. Thanks again.

**RKSL-Rock** for: AGM-84, parts of the GBU-12 (guidance) aswell for offering his UK Missilepack.

**wld427** for: FAB-500 MLOD (created by **godhammer**), inspiration for the AGM-154 and the Kh-15.

**NodUnit** for: reference pictures of the AGM-114 texture. Thanks again.

**[APS]Gnat** for adjusted config values of a bunch of russian weapons.

**[GLT]Turrican** for a lot of help with the GPS/INS dialog.

**Irishdeviant**, thanks for those outstanding models. I tried to reach your standard with my own models but surely failed.

**RKSL-Rock**, thanks for your contributions and help.

**wld427**, also thanks to you for sharing some MLOD's although i didn't used all.

Also would say thanks to **southy** as he sent also a whole bunch of MLOD's.

Most i already had and some will probably follow in a additional pack later.

**NodUnit** & **Keshman**, thanks for your help on some textures.

If i forgot someone, please let me know and i'll fix this. Over the time i had so many contacts, often hardly to remember who helped me on what. If you feel left out, let me know.

### INCLUDE GLT GPS/INS GUIDANCE SYSTEM INTO ANOTHER ADDON

All systems are initialized automatically. All you need to do is to include this action into your addon config:

```
class UserActions {
    class defaultAction {
        priority = 0;
        shortcut = "";
        displayNameDefault = "";
        position = "";
        radius = 2;
        onlyforplayer = 1;
        displayName = "GPS/INS System";
        condition = "(isengineon this) && (player == (driver this))";
        statement = "createDialog 'glt_airgpsmfd'";
    };
};
```

To use other weapon systems than those delivered in the Missilebox, add these config entries into the repsective cfgWeapons class:

GLT\_isGPSguided = true;

If the weapon is meant to release bomblets, add this to the respective weapons class:

GLT\_bomblets = 145; //number of bomblets released

GLT\_bombletType = "Sh\_105\_HE"; //ammo classname of bomblets spawned