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PE 4.396 Release Notes

SB Pro PE 4.396 (Web Installer) Version History and Release Notes

eSim Games offers a full installer for this version of SB Pro PE; the bundle installer may also detect the option to apply a smaller patch. We recommend uninstalling any older Steel Beasts Pro PE versions than 4.379. Map Packages can remain untouched.

Installation instructions can be found from page 3 of this document.

We recommend reading this document with a dedicated PDF viewer capable of showing the embedded table of content.

Note: **This *Steel Beasts* version requires an existing license for *SB Pro PE 4.3!***

Upgrade Licenses may be purchased from the eSim Games web store (for details, see below): https://www.esimgames.com/?page_id=3165

Customers with time-limited licenses may continue to use their existing licenses.

This is a preliminary document to complement the version 4.3 User's Manual.

This document summarizes changes since version 4.379 (May 2023);

Previous Release Notes can be found on the eSim Games Downloads page:

www.eSimGames.com/Downloads.htm



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Hardware recommendations

...are unchanged:

SB Pro PE 4.3 requires a 64 bit Windows version, starting with Windows 10 or higher.

Downloading, unpacking the self-extracting archive and immediate installation requires up to approximately **40GByte harddisk space temporarily**. Of these, *Steel Beasts* will claim about **19 GByte free harddisk space permanently**; the rest may be freed up through deletion and/or copying the installation files to a USB stick. However, in order to edit maps, **100 GByte free disk space** will be required **per unpublished map** for the uncompressed map data, which will be largely freed up on publishing. Usually, it is therefore better to work on only one map at a time, and to prefer Delta maps over Base map packages as they usually consume less disk space.

We recommend a 3.0GHz multi-core CPU (faster is better, and the latest generations are considerably faster than old CPUs of nominally the same clock speed), **8GByte RAM** (16...64 recommended for high resolution map conversions), **2GByte video RAM** (more is better; much more is much better), and generally a **DirectX 9.0c** graphics card supporting **Shader Model 3.0** (which includes pretty much everything that is currently commercially available).

Mouse, keyboard, and monitor are mandatory. A sound card and internet connection are strongly recommended. Joysticks and selected control handle replicas are supported.

DirectX 9.0c is included; it is however possible to download a separate installer: <https://www.microsoft.com/en-us/download/details.aspx?id=34429>

Anti-Virus software has in the past been a **source of trouble** for some. If an installation fails on the first try, the next step should be to disable the AV program during the installation, or to create an exemption for the Steel Beasts installer program. Note that some AV programs only pretend to shut down, but a service (or the executable itself) remains listed as active in the task or in the services list.



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Installation

For all customers with or without an already existing installation of SB Pro PE: If applicable, **uninstall** prior installations of SB Pro PE (keep the map packages). Then run the **Bundle Installer** 4.396 (SBProPEBundleInstaller_4396.exe).

For customers accustomed to Steel Beasts 4.0 (or older):

With version 4.2, eSim Games introduced a web installer that will download the necessary files as you install. There's also an option to keep downloaded installer files if you are on slow or metered connections. This web installer is generally easier, and you simply run the same installer in the future; it will then automatically check for the latest version.

(Only) for those who like to retain more control at the expense of convenience:

Since version 4.1 there are now **multiple installers**. We recommend applying the **Map Package Installer** first. The *Steel Beasts Pro PE* installer will recognize your prior choice for the map package folder's location. This is important insofar as the map packages consume more than 70% of the storage space that Steel Beasts needs, and will keep growing as you may download additional map packages in the future.

1. Download **all** parts of the self-extracting archive installers into a common directory, e.g. C:\Temp or a "*Steel Beasts*" folder on your desktop – the **Maps Installer**, the **SB Map Transfer Tools**, and the **SB Pro PE 4.357 full installer**. The **Legacy Maps Installer** is only required under very specific circumstances (please visit the user forum at SteelBeasts.com) and can be installed at any later point if necessary.
2. Uninstall previous versions of *Steel Beasts*. Note that you can keep previously installed Map packages!
3. When done, run the **SBMapPackageInstaller.exe** program **first** to transfer the map data to your harddisk (unless you kept it from an earlier version; in that case skip this step). You are free to pick the target

directory; the full installation may take **up to 16 GByte of disk space**, and future in-game downloads may further increase that demand for storage space in that specific location.

The Map Package Installer will store its location in the Windows registry, so subsequent installations of *Steel Beasts* will know where to find the map data automatically.

After the first installer program is finished, it's time to install *Steel Beasts Pro PE* itself. Start `SBProPE4_357.part1.exe` for the installation (this assumes that you uninstalled the previous version of *SB Pro PE* per step 2 above). Installing *Steel Beasts* will consume about **six GByte harddisk space**.

4. If you haven't purchased your **license for SB PE 4.3** already, now would be the time to visit the eSim Games web shop:

https://www.esimgames.com/?page_id=3165

(if you did, skip forward to point 6)

You have different options there, as summarized in this YouTube video:

<https://www.youtube.com/watch?v=HPi-MA94yFO>

5. Once that your purchase has been made, the eSim Games web shop will send you **two** emails — the order confirmation and a second one with the **license ticket** (a complicated URL leading to the WebDepot). Visit the link, and activate the ticket there to generate the license.
6. Install the Map Transfer Tools (V59)
7. Play
8. Highly optionally (and typically unnecessary), download and install the *Steel Beasts Legacy Maps*
9. Play more

Steel Beasts uses an installer which can change the Windows Group Policies (access privileges) of the folder containing all the map data of SB Pro. If you do not want other users on your computer to use the Map Editor you may want to restrict access to that folder again. Note that the map data are now being installed from a separate installer, and that they can be stored in pretty much any local folder that you like.

This installer includes the **CodeMeter runtime version 8.10b**.



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3rd Party Libraries

The following software libraries are used with this Steel Beasts installation:

- adl 15.0
- apr 1.7.0
- apr-util 1.6.1
- **curl v8.6.0** (updated)
- Eigen 3.3.9
- expat 2.3.0
- GeographicLib 1.51
- gtest 1.10.0
- jpeg-turbo 2.1.0
- libjasper 2.0.32
- log4cxx 0.12.1
- lz4 1.9.3
- **OpenSSL 3.2.1** (updated)
- PolyPartition 2021.01
- RakNet 2021.05
- **SDL 2.26.4** (new)
- shapelib-1.5.0
- sqlite 3.35.5
- TinyXML2 8.0.0
- Uriparser 0.9.5
- xxHash 0.8.0
- zlib 1.2.12

Time-limited licenses

eSim Games offers a software rental option. This option is primarily aimed at users who do not already own a CodeMeter USB stick (or to residents of countries to where a CM stick cannot be shipped). Time-limited licenses are issued for one, four, and twelve months respectively:

- Licenses are bound to the computer on which they are installed.
- They do not work with virtual machines (!)
- There is **no automatic renewal of licenses**; it is not a subscription fee that requires termination. Instead, a warning will appear on program start if the license is about to expire (or if it already has expired).
- Licenses that have been purchased need not necessarily be activated immediately. You may buy five licenses but activate only one at a time if you wish. You probably should save the email with the ticket URL for future reference.



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Online Support & Documentation

Experienced users of *Steel Beasts* Pro PE may already visit the official fan page www.SteelBeasts.com with regularity. If you are reading this, and haven't been there yet, we strongly recommend that you do so. Whether you like discussion boards or not, its integrated search function may yield valuable information.

An important part of the site, though less immediately visible, is the collective effort to maintain an online documentation, the *Steel Beasts* Wiki: http://www.steelbeasts.com/sbwiki/index.php/Main_Page

Don't like to read?

Less information, but still some, can be found in the tutorials on <https://www.YouTube.com/c/eSimGamesDtl>

Even without access to the internet there is a **serious amount of documentation included with *Steel Beasts* itself**. This additional information can be found in a subdirectory of the *Steel Beasts* program group of the Windows Start Menu, incidentally named "Documents"; apparently, it's still one of the best kept open secrets since about August 2000. It contains a PDF of the *User's Manual* and other ancillary information, e.g., the NATO Stanag 2019 App. 6c about tactical signs and military map symbology as used in *Steel Beasts*.

A *User's Manual* may be available for a limited time in printed form from the eSim Games web shop, and is supplied as a PDF with the software installation.

News about *Steel Beasts* will usually be published first in the forum of the fan site, and also on eSim Games' homepage www.eSimGames.com which you may want to check out occasionally.

- © 2024 by eSim Games. All Rights Reserved.
- Updated the *User's Manual* (English, German)



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CodeMeter

- Updated CodeMeter encryption so that virtual CM containers are less likely to lock themselves under Windows 11. **Customers to which this happened since 2022 are kindly asked to contact eSim Games for reinstating their licenses**
- Updated the CodeMeter runtime software to **version 8.10b** (which, like prior versions, **no longer supports WINDOWS 7**)
- **SHADOWPC**: As this application creates a **virtual machine**, the CodeMeter runtime blocks access to time-based licenses. Permanent licenses on CodeMeter stick are not affected by this.
- **AVAST Anti-Virus** was reported to block CodeMeter runtime components years ago. If you're using this product, please set the appropriate permission.

New Maps

Copy the following map UIDs from this document into the SB Map Package Transfer Tool (**V59(!)**) to download the following new map packages.

It is recommended to Mission Designers to update scenarios, replacing the old Bergen-Soltau-Munster map package with this new one:

- Bergen-Soltau- Munster **2** 6e8060c0-0652-4c49-b71c-37fd2d9e86f2

Other map packages released with previous SB Pro PE versions remain available and are listed here for reference (they are, however, unchanged):

- Kiev East aab94a0c-2a87-45c7-a518-940a3e2c92b3
- Kiev West bb104aa2-be76-4587-87ed-2c4cd3bca5a9
- Kramatorsk 5045eb19-688a-4266-90e6-5ad4e58b3e76
- Mykolaiev-Cherson ad7d4d96-016b-4bed-8a86-4d7def2500c4
- Oksbøl Training Area 7e0e7e2e-27c9-4aad-9a85-8974d8496cd5
- Severodonetsk 952710e5-3a55-4ae7-9fbc-634f2e841bd1



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New Scenarios

- Added a Multiplayer scenario
- Added a **Gunnery Range** scenario for the T-72B3

User Interface Changes

Steel Beasts will now tolerate 'unrecognized' command line options (if specified via the Windows Registry), reporting them via logfile (WARN level) instead of shutting down with an error message.

Improved diagnostics and UI in case the (required) 'default' map package could not be located/loaded when starting up Steel Beasts, or when explicitly changing the map package path, and probably for another as-of-yet unknown reason (see entry for bug #12129).

Options Menu

In the "Language" settings, you may now define different languages for Text and Audio (this fixes bug #11213).

Controls Dialog

Moved the 'invert joystick axis' hotkey entries next to each other and added the new 'invert joystick x' command to the 'Misc' category.

The dialog received a new filter for "User Interface" entries (this fixes bug #11560).

Localization

- Added new **English (US)** strings
- Updated **Finnish** strings
- Updated **French** strings
- Updated **German** strings
- Updated **Greek** strings
- Updated **Russian** strings
- Updated **Spanish** strings
- Updated **Swedish** strings



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The Map Package Transfer Manager

Updated to V59.

MapTransferMgr_V59_Setup.exe is part of the bundle installer, as a selectable option. Highly recommended, consumes very little disk space. Also, **essential** to get the new maps from Ukraine and Denmark (see previous section “New Maps” above).

Simulation Rules

- Reduced the damage percentage caused by the chain link fence by half, and reduced the damage % of the more durable security fence. The damage is coming from the concertina wire getting tangled in the vehicle's running gear as the vehicle drags it along; now probability is between the 1 strand and 2 strand obstacles in severity (rather than identical to 2 strand).

Note: The security fence is intended as the one obstacle that is effective at hindering both infantry and vehicle movement. The chain link fence is primary an infantry and wheeled vehicle obstacle, but can also hinder tracked vehicles too (but not as much as the security fence).

- Adjusted the mobility properties of infantry trenches so that tracked vehicles do not struggle as much to get over them.
- Corrected the scale of the standard minefield M15 mine. Due to errors of the past, it was twice as large as it should have been. This means that now the standard minefield mines will be slightly harder to see.
- Adjusted the overpressure threshold to collapse a bunker
- Added a 40 minute burn/collapse time to the standard small brick house

AI Behavior / Pathfinding

Slight adjustment to infantry trench suppression duration; decreased the base duration but increased the random time added – to add a little more range in the randomness.

Generally, please note that there is a framerate dependency for all pathfinding. Pathfinding will eventually stop working if the framerate dips under 10 fps.



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Ballistics

New/Updated Munitions

- Added for 2A42/2A72 30mm guns
 - Polytech APDS-T (CN)
 - Norinco APFSDS-T (CN)

Mission Editor

General

The **Change Unit Name** popup menu will now, in case a unit's callsign has been 'blanked out' (ie is empty), list the unit's internal index instead, so that you have at least some clue whose ID you're actually reassigning.

Fixed bugs #11573, 11575, 11578, 11609, 11936, 12167, 12216, 12360 (see section Resolved Bugzilla entries).

Artwork

Added 20 additional UA nationality vehicle textures.

Added several Winter RU 2020 textures.

Added a desert (sand) color vehicle crew uniform (AU, DK 2010, ES)

Formation (and callsign) Templates

Added/Updated templates

- Added an RU unit and callsign template for the "Assault Company", a theoretical development from ongoing conflict
- Updated several OPFOR infantry unit templates to replace temporary approximated weapons with the actual ones now available

Map Editor

Fixed bugs #4604, 8218, 8288, 11583, 11584, 12216 (see section Resolved Bugzilla entries).

When trying to save a write-protected **theme file** you will now be notified by an alert box. Use the “Save as...” option instead (this fixes bug #12010).

Speaking of Theme Files. If you want to prepare for future SB Pro PE releases, please check your most beloved themes for their **Hardness** settings (and update scenarios using them).

Chances are, the hardness is set too high in most cases, and in future releases of SB Pro this will have consequences.

Very high **Hardness** settings should be reserved for rock, ranging from sandstone (0.95) to granite (1.0). **Typical dry soil** should, on average, come with a hardness of **about 0.70** +/-10.

See also [our YouTube Tutorial on the matter](#).

It may look like grassland, but if it's set to be hard as concrete, it'll *behave* like it, and nothing good will come from that.

Artwork/Render Engine

Added a graphics setting to limit the frame rate to exactly 60fps, which may reduce judder on 30, 60, 90, and 120Hz displays.

Improved contrast in black-hot thermal images.

All guided missiles now have a slightly more visible smoke trail.

Autocannons now generally produce less smoke when firing; Mauser 30mm cannons even less so due to their muzzle brake design.

Generally improved performance with billboard objects.

Added ice "low" textures for terrain.

Upscaled the billboard, info signs, and traffic signs.

Improved a terrain alpha texture to better blend/correct an artifact that was visible in some situations where two terrain types met.



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Sound

- Falling trees sound better now.

Known Issues

...here are the main issues that we know about, no need to report them again:

- Some crew-served weapons may currently not deploy in trenches; a future update shall add heavy weapon emplacements
- Changing the content of 12m obstacle containers (placed in the Mission Editor, then changed from air-filled to something else) may mutate them back into 6m variants
- 40mm DM12 MZ/HEDP for Mk 19 AGL is currently underperforming against armored targets (Bug 8607)
- Local time zone settings may be off for legacy scenarios; mission designers will need to fix this where it's still an issue
- Legacy scenarios involving the generic cal .50 Remote Weapon Station will have it replaced by the M151 Protector on most vehicles. However, on all MAN KAT series trucks the GNR's position will no longer be available (Bug 8920).
On the Pandur, it can be manually replaced by the Arrows RWS (new)

Weapon–system specific changes

Main Battle Tanks

Challenger 2

- Removed the smoke generator capability since apparently it is not possible with the later non–baseline variant

Leopard 1

- Main gun now correctly recoils into the mantlet

Leopard 1A5

- Fixed bug #12444 (see Resolved Bugzilla entries)

Leopard 2

- Added 3D tracks to all variants

Leopard 2A4

- Now comes with UA texture option
- Fixed bug #11589 (see Resolved Bugzilla entries)

Leopard 2A5, 2A6 (all)

- Now comes with UA texture option
- Fixed bug #11589 (see Resolved Bugzilla entries)

Leopard 2A5 (Danish variants)

- Re–Adjusted reticule colors that were changed due to miscommunication

Leopard 2A6M A2

- Added Dutch decals, and fixed a number of minor issues

Leopardo 2E

- Adjusted the vulnerability model to account for one special edge case

Strv 122

- Now comes with UA texture option

M1 Abrams

- Adjusted (120mm gun) **M1 series** tanks interior gun sound to include new/varied aftcap ejection sounds

M1A1 Abrams

- Now comes with UA texture option
- Fixed bug #11589 (see Resolved Bugzilla entries)

M1A2 Abrams

- Fixed bug #2677 (see Resolved Bugzilla entries)



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M60A3

- Added new interior gun and brass ejection sounds

M60A3 TTS

- Added new interior gun and brass ejection sounds

T-55

- This tank may now be reconfigured as a VBIED.
When used in this way, the turret should be disabled (damaged), all ammunition removed, and all crew but the driver disabled (damaged) (the driver being a remotely controlled system)

T-55A m. 1970

- Fixed bug #11545 (see Resolved Bugzilla entries)

T-55AM

- Fixed bugs #2470, 12325 (see Resolved Bugzilla entries)

T-64

- Fixed bugs #2470, 12325 (see Resolved Bugzilla entries)

T-72 MBTs

T-72B

- Fixed bugs #2470, 12318, 12325 (see Resolved Bugzilla entries)

T-72B1 w/ERA

- Changed the default ammo loadout to a more period-adequate type (it used to have a sort of "export configuration" loadout, but unconvincingly with a dU round from 1985)

T-72B3

- Added a **Gunnery Range** scenario
- Corrected an issue on the LOD1 that caused the buttoned commander to rotate in his chair when the peri rotated
- Fixed bugs #12156, 12325, 12388 (see Resolved Bugzilla entries)

T-80, T-90

- Fixed bugs #2470, 12325 (see Resolved Bugzilla entries)



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Infantry Fighting Vehicles

Explanation for multiple “Improvements to armor model” entries below

- Reduced the fire and explosive damage probability on autocannon ammo, as it was found to be too high for this type of ammo
- Standardized the autocannon feed chute behavior so that a low probability of fire exists, with a higher probability of gun damage (a broken feed, disabling the weapon) rather than the old approach of either causing ammo storage damage, and explosion and fire that matched the main ammo bin (making it too vulnerable).
- On applicable IFVs, split the autocannon ammo so that stored ammo will not longer cause damage when depleted.

ASCOD Pizarro F.1

- Improvements to armor model

ASCOD Pizarro F.2

- Improvements to armor model

ASCOD Ulan

- Improvements to armor model

BMP-2

- Improvements to armor model

BMP-3

- Improvements to armor model

CV90/35

- Improvements to armor model
- Took away a number of 35mm HE rounds. While the cannon *could* fire them, the fire control system can't.
- Fixed bug #8626; VIS screens will no longer shimmer/flicker during turret movement

CV90/35-NL

- Improved two LWR voices of the DAS

CV90/40

- Improvements to armor model



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CV90/40-B

- Adjusted the default ammo loadout to better represent its date of introduction

LAV-25

- Improvements to armor model

M2A2 ODS Bradley

- Improvements to armor model

Marder 1A3

- Improvements to armor model

NZLAV

- Improvements to armor model

TAM VCTP

- Improvements to armor model

FV510 Warrior

- Improvements to armor model

YPR-765

- Improvements to armor model

Armored Personnel Carriers

ASLAV-PC

- Fixed bug #11201 (see Resolved Bugzilla entries)

BTR-80

- Corrected a glitch with the ballistic shield doors

BTR-82AT

- Now drops 30mm shell casings

M113G3-DK

- Fixed bug #11553 (see Resolved Bugzilla entries)

RG-31 Nyala

- Corrected a mismatch with Desert textures (ES nationality)



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Anti-tank Vehicles

BRDM-2/AT

- CDR's sight is now "primary sight", which prevented full range engagements
- Fixed bug #10978 (see Resolved Bugzilla entries)

M901 ITV

- Fixed bug #9566 (see Resolved Bugzilla entries)

M966 HMMWV

- Improved off-road driving performance

Wiesel TOW

- Minor adjustments of automotive performance

Reconnaissance Vehicles

Explanation for multiple "Improvements to armor model" entries below

- Reduced the fire and explosive damage probability on autocannon ammo, as it was found to be too high for this type of ammo
- Standardized the autocannon feed chute behavior so that a low probability of fire exists, with a higher probability of gun damage (a broken feed, disabling the weapon) rather than the old approach of either causing ammo storage damage, and explosion and fire that matched the main ammo bin (making it too vulnerable).
- On applicable IFVs, split the autocannon ammo so that stored ammo will not longer cause damage when depleted.

ASLAV-25

- Improvements to armor model

Centauro

- Added new interior gun and brass ejection sounds, along with visual effect for the ejection of spent 105mm cartridges
- Fixed bugs #11189, 11191, 11233, 11234, 11496, 12351, 12407 (see Resolved Bugzilla entries)

Eagle IV

- Corrected the color of the UN texture

FV107 Scimitar

- Improvements to armor model

LMV

- Textures were reorganized to allow for non-Austrian variants
- Textures were improved, too

SpPz Luchs A1 /A2

- Improvements to armor model

M3A2 ODS Bradley

- Improvements to armor model

M113AS4

- Fixed bug #11577 (see Resolved Bugzilla entries)

M113C&V

- **Adjusted** the smoke grenade launcher distance

M1025 HMMWV

- Improved off-road driving performance

Piranha DF 30

- Improvements to armor model

VAMTAC ST5

- Corrected a mismatch with Desert textures (ES nationality)

VEC

- Corrected several small errors in the interior
- Improvements to armor model

Troop Transporters

Ural 4320

- Adjusted AI aim point

Remote Weapon Stations

- Adjusted the probability of certain RWS type damages from overpressure
- Fixed bug #10505 (see Resolved Bugzilla entries)

Infantry

- Fixed bug #12157
Troops may now be sent on a **Breach** route *into, through, and out of* minefields. Before this change, if infantry discovered a minefield around itself, there was no way to get them out again.
A side effect of this change is now that any infantry on breach routes will ignore all minefields. This used to be the case only for engineers. Unlike engineers, they will not clear the mines, just not step on them (remember, there are only anti-tank mines in SB)

AGL teams

- Improved detail on the **40mm Mk.19 AGL** LOD1 model, now with animated ammo belt and reloading procedure

ATGM teams

- Added red food coloring to the greyscale **152mm AT-14 Spriggan/Kornet** gunner's thermal sight (this fixes bug #11586). Apparently, the delivered launchers' sights display a rather dark shade of red.

Artillery Systems

2S1 Gvozdika

- Minor adjustments of vulnerability model

2S3 Acacia

- Adjusted the default ammo count to contain more smoke rounds than DPICM

2S23 Nona SVK

- Now glows in the dark (in thermal view)

2S35 Koalitsya

- Moved from **Prototype** to **Artillery** menu, since they seem to be in service/production
- Adjusted the default ammo count to better fit within a 4x round per tube fire mission

81 mm Mortar

- Fixed bug #11359 (see Resolved Bugzilla entries)

ACRV/MT-LBu

- Adjusted armor values for AI gunners

BM-21 Grad

- Will no longer explode if launcher pod is empty
- Adjusted AI aim point

M109A3

- Adjusted the default ammo count to better fit within a 4x round per tube fire mission

M270 MLRS

- Added a UA nationality texture

M1064A3 Mortar Carrier

- Changed the default smoke round assignment to one that better fits the period the vehicle was introduced

PzH 2000

- Adjusted the default ammo count to better fit within a 4x round per tube fire mission

Engineers

Biber

- Added a number of nationality textures

MICLIC (all)

- All MICLIC-equipped units will now display the number of remaining line charges, along with other ammo counters

UR-77 Meteorit

- **New System**
- Similar to MICLIC, but has two line charges, with longer range

Logistics

Various supply trucks may now be configured with an **Explode If** condition, in case the scenario designer wants to make them explode when destroyed (or to be used as very big VBIEDs).

ASLAV-CS

- Fixed bug #11201 (see Resolved Bugzilla entries)

Ural 4320

- Adjusted AI aim point



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Command

Piranha V/Cmd

- Fixed bug #11726 (see Resolved Bugzilla entries)

Vamtac CMD

- Corrected a mismatch with Desert textures (ES nationality)

Others

TOS-1A Solncepek

- Forced a setup time of 90 seconds, which causes the legs to lower at this speed, preventing it from being able to fire until 90 seconds pass. This is an abstracted visualization of total preparation time. In reality it certainly doesn't take that much time to simply to lower the support legs. But now their position clues you in on how close the vehicle is ready to fire. In reality the time to fire may exceed 90 seconds (by how much remains unknown so far), and the TOS-1A can "pack up" and move away in "less than a minute". We consider the uniform 90 seconds a balance between the longer prep time and the shorter bug-out time.
- Adjusted the resupply time of the launcher to take 30 minutes (+6), based on more accurate info (resupply time with the TSM-T Transloader Vehicle, which is not represented).
- Adjusted the rate of fire
This allow the TOS-1A to fire two rockets per second, instead of always one (in reality it can fire at a variable rate, but firing in pairs is possible, and is done often to put more firepower on a target area in a shorter amount of time.
TOS-1 in SB will cycle between firing one rocket per second and two per second depending on the size of the target area, and how long it is left on Suppress orders (it will slow its rate of fire over time, the longer it remains on the same Suppress command – this is standard behavior
With this improvement it is possible for it fire faster, in some situations (you may still fire a single rocket by quickly pressing H (hold fire) key after the first one is launched).
- When this vehicle is destroyed by explosion, some parts will be removed (instead of it remaining fully intact).
- Improved FAE explosion particle effects, now with random variations
- Fixed bugs #7327, 12371 (see Resolved Bugzilla entries)



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Prototypes

BMP B-11 Kurganets-25

- Adjusted default infantry composition and weapon types to make system more capable

BMP K-17 Bumerang

- Adjusted default infantry composition and weapon types to make system more capable

BMP T-15 Armata

- Adjusted default infantry composition and weapon types to make system more capable

BTR B-10 Kurganets

- Adjusted default infantry composition and weapon types to make system more capable
- Corrected a small missing system error

Typhoon-K 6x6 MRAP

- Adjusted default infantry composition and weapon types to make system more capable
- Adjusted the rifle teams' default number of RPGs
- Improved **Winter** texture
- Improved model destruction states

Aircraft

Attack Helicopters (all)

- Improved AI target prioritization to make attack helicopters more useful
- Improved the gun burst length and pause duration for various attack helicopters to be more realistic and effective.

AH-64 Apache

- Will now drop shell casings
- Fixed bug #12372 (see Resolved Bugzilla entries)

Tiger ARH

- Adjusted the burst length of on-board cannon to exactly five rounds



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Robotic Systems

UAVs

- Fixed bug #11600 (see Resolved Bugzilla entries)

UAV(I)V Bullitt Anti-Drone Drone

- Fixed a bug concerning a TIS cooldown message
- Increased the default camera resolution so that it is more useful at target recognition at higher altitude drones

UAV(M) Libelle Anti-tank Standoff Munition

- Reduced noise level (can now heard out to ca. 50m, rather than 80)

UAV(M) Swingblade AT

- Fixed bugs #11602, 12152 (see Resolved Bugzilla entries)

UAV Quadcopter

- Fixed bug #11819 (see Resolved Bugzilla entries)

UGV

- Fixed bugs #12355, 12356, 12357 (see Resolved Bugzilla entries)

Civilian

Technical trucks

- Improved power-to-mass ratio

Technical-T 1.2t

- Fixed bug #11715 (see Resolved Bugzilla entries)

Sedan-T

- Improved thermal textures

Bugfixes without Bugzilla entry

- When the **UAV(R) Munin**, **UAV(R)V Quadcopter** or **UAV(M) Swingblade AT** lose LOS, the (advanced) HUD elements will stop updating
- The 50x magnification in the **M1A2's CIVT** display is now rendered at correct resolution
- Dead combatant icons now have their mouse-click locations in the right spot
- Fewer crashes now when using the **spline** command on a map graphic
- Reordered thread priorities for **infantry**
- Fewer rendering artifacts in the **Ulan** interior
- Fewer crashes caused by the input device handling code
- The **Piranha IIIC DF90** vehicle will now transmit fewer unnecessary network messages
- The **Centauro** vehicle will now transmit fewer unnecessary network messages
- Fewer incorrect "overhead weapons state" damage reports
- Some **RWS** stabilizations will no longer over-compensate
- Fewer crashes when loading **Instant Action** or **Tank Range** scenarios
- In the **Mission Editor**, some vehicles will no longer be equipped with multiple attached guns, possibly resulting in fewer crashes during the scenario loading process
- The **Sperwer UAV** will now count toward 'force' and 'force strength' values in the scenario control logic

Resolved Bugzilla entries

- Fixed bug #2470 – Tanks with gun-missile armament: GLATGMs are no longer fired too quickly
- Fixed bug #2677 – **M1A2** GPS Magnification: **SHIFT+N** will now toggle the TIS in the opposite zoom direction (to wider FOV)
- Fixed bug #4604 – Concrete paths are now visible again in the **Map Editor**
- Fixed bug #6731 – In the UAV sight view you may no longer hear the internal rain sound
- Fixed bug #7327 – **TOS-1**: More HE/FAE explosion effects now if rockets impact a vehicle or a land object
- Fixed bug #8218 – While creating a new road in the **Map Editor**, use **Shift+S** to immediately spline it
- Fixed bug #8225 – Camouflaged dug-in positions now take longer to complete than non-camouflaged ones
- Fixed bug #8288 – Toggling **Spline On** or **Off** is now readily visible in the **Map Editor's** preview window
- Fixed bug #9566 – **M901 ITV** TI sight should be rendered in red, not green
- Fixed bug #9769 – Tank smoke rounds from main gun now explode into smoke if impacting on a tree
- Fixed bug #10283 – **AAR** can become unusable after **window resize**, reload may crash
- Fixed bug #10505 – Various **RWS** damages may get applied to vehicles at mission start without apparent reason



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- Fixed bug #10978 – **BRDM-2/AT**: The AI gunner wants to look over the right side (about 3 o'clock) when no enemy is in sight Scan FOV returned to original value.
- Fixed bug #11189 – **Centauro**: in designate mode human TC is able to fire coaxial machine gun, but cannot do the same with main gun
- Fixed bug #11191 – **Centauro**: A chat message will now remind you if the AI loader is waiting for a command to reload the main gun
- Fixed bug #11201 – **ASLAV PC** and **ASLAV CS** 50.cal no longer fires both 7.62mm and .50 cal ammo
- Fixed bug #11213 – In the **Options** menu, **Language**, it's now possible to pick different languages for Text and Audio
- Fixed bug #11233 – The **Centauro** will no longer play outdated sounds the first time you jump into a crew seat
- Fixed bug #11234 – The **Centauro** will now fire the main gun more reliably
- Fixed bug #11359 – Adjusted the dispersion of dismounted **81mm mortars**
- Fixed bug #11445 – Scripted **Mount/Dismount orders** now work with an increased cutoff range of 250 meters
- Fixed bug #11496 – The **Centauro's** main gun ejection sounds is no longer broadcast to every player in a network session
- Fixed bug #11541 – Minefield clearing scrape marks will now continue being drawn after changes in direction
- Fixed bug #11544 – The **Controls** dialog will now find assigned hotkeys with **Alt** and **Shift** modifiers
- Fixed bug #11545 – **T-55A m.1970**: CDR's binoculars came back from repairs
- Fixed bug #11553 – **M113G3-DK**: When an RWS is equipped, the armored cupola and gun shield are no longer accessible options
- Fixed bug #11560 – The **Controls** dialog now has a new filter, **UI**
- Fixed bug #11562 – When a vehicle with attached gun is resupplied in **Mission Editor Test Mode**, ammo is no longer stripped from the gun
- Fixed bug #11568 – In the **Mission Editor**, the **contour line spacing** is now set by each scenario you load; where no values were set, the default will be applied
- Fixed bug #11571 – **On map Artillery**: Airburst and PD fuses no longer have vastly different hit points
- Fixed bug #11572 – **Thermal sights** will now focus to infinity even when visibility limits exceed 5km
- Fixed bug #11573 – **Mission Editor** UI now allows to set both **mount** and **dismount** option if troops are partially loaded
- Fixed bug #11574 – Route with **Jump To End** conditions may no longer be used as a normal route
- Fixed bug #11575 – When setting **Jump To End** conditions in the **Mission Editor**, other route lines will no longer occasionally change to gray color
- Fixed bug #11577 – In the **M113AS4** gun sight reticule the 1200 and 1600 meters marks were put into their place
- Fixed bug #11578 – Attempts to duplicate an unconditioned **Claymore** no longer crash Steel Beasts
- Fixed bug #11583 – When using the **Raise selected road** function in the **Map Editor**, an alpha transparency effect will now work
- Fixed bug #11584 – **Map Editor**: position changes for buildings and powerlines are now instantly updated in 3D preview window (**Ctrl+F1**)



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- Fixed bug #11585 – Target locations in the **Call-for-Fire** dialog are now sorted alphabetically
- Fixed bug #11589 – For the **M1A1** and **Leo 2A4, A5, A6** an unintended resolution change in their Thermal sights has been reverted
- Fixed bug #11590 – fewer crashes now if a detached turret gets hit by HE
- Fixed bug #11591 – **Land Object Lines** now properly block LOS
- Fixed bug #11599 – With **Remove when killed** option active, the AAR no longer contains detached turrets
- Fixed bug #11600 – When LOS to a UAV is lost, and **UAV** does not have **return to base when LOS is lost** set, then UAV will now continue executing the last command
- Fixed bug #11602 – When an **SB600** that has lost LOS **collides with a tree**, it now gets destroyed and no longer continues to glide straight
- Fixed bug #11609 – Previewing a recently added **Mortar pit** no longer crashes SB
- Fixed bug #11651 – Adjusted durations of burst fire for a number of vehicles
- Fixed bug #11696 – DebugLogs will now log the hostname of its computer to identify clients and hosts where multiple logs from network sessions gone bad are submitted to eSim Tech Support
- Fixed bug #11715 – The **1.2t Technical-T** is no longer mistaken for an Ambulance
- Fixed bug #11726 – Deflickered the **Piranha V/Cmd's** internal display while no UAV feed was selected
- Fixed bug #11819 – The **Quadcopter UAV** must now be landed for retrieval (and redeploys at ground level)
- Fixed bug #11926 – Fonts in **RWS screens** are now easier to read; as a side effect, they are no longer as clear in all menus
- Fixed bug #11936 – When entering the execution phase of a saved-in-progress scenario, SB Pro will now crash even more rarely
- Fixed bug #12010 – the lack of Write privileges may still prevent you from saving the changes to some **Terrain Theme** files, but at least you'll now receive clear feedback, so you can **Save as...**
- Fixed bug #12086 – When under artillery fire, AI gunners will no longer turn the thermal sight off on some vehicles just because the ballistic doors were closed
- Fixed bug #12117 – In the **Joystick configuration**, Invert X axis is now an option
- Fixed bug #12137 – The destruction of a **Land Object Line** object now gets properly transmitted across the network. Also, such destroyed objects no longer block lines of sight, or cause collisions
- Fixed bug #12149 – In the **Planning Phase**, ammo types are now listed for all parties again (not just Blue) at the end of the Mission Briefing text
- Fixed bug #12152 – After launching their **UAV(M) Swingblade AT**, infantry teams may now walk away from their position more reliably
- Fixed bug #12156 – **T-72B3**: The turret no longer starts in ATGM mode with the resulting slow traverse rate
- Fixed bug #12157 – **Infantry** may now be sent on a **Breach** route into and out of minefields. Before this change, if infantry discovered a minefield while already inside, there was no way to get them out of it.
A side effect of this change is now that any infantry on breach routes will ignore



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- all minefields. This used to be the case only for engineers.
- Fixed bug #12159 – Units located off map will generate particle effects now
 - Fixed bug #12167 – Editing a scenario containing the **M113G4DK**, **Pizarro F.2**, and/or **Leopardo 2E** (the latter two with driver TI) will no longer crash SB
 - Fixed bug #12179 – Adjusted the post-penetration damage potential of full caliber KE rounds
 - Fixed bug #12216 – in the **Map Editor**, a **Map object palette** description string no longer overflows the dialog
 - Fixed bug #12260 – Addressed discrepancies in the **Mission Debugger** window that could result in **Events** seemingly activated without satisfied sub conditions
 - Fixed bug #12318 – The **T-72B** no longer counts each fired missile as two
 - Fixed bug #12325 – Computer crews may now fire **GLATGMs** even if no more conventional gun ammo is present
 - Fixed bug #12351 – When the **Centauro** main gun fires, you will no longer hear sounds that aren't intended for the ears of mere mortals
 - Fixed bug #12355 – For the **UGV** operator screen, there is now a Battery indicator in the top right corner
 - Fixed bug #12356 – The **UGV's** battery now gets replaced on retrieval
 - Fixed bug #12357 – The **UGV** now has a deployment time
 - Fixed bug #12360 – In the **Mission Editor** the contour line spacing now defaults to 5 meters for new scenarios
 - Fixed bug #12371 – **TOS-1A**: Turret and Gun will not move until the rear legs have deployed to fire
 - Fixed bug #12372 – After crashing an **AH-64**, the front sight stops rotating
 - Fixed bug #12388 – When entering a **T-72B3** GNR's position after the gunner was disabled during the execution phase, turret controls will work as intended again
 - Fixed bug #12404 – Some wall objects (such as **hedg**es) will no longer shield against HE impacts
 - Fixed bug #12407 – A computer-controlled **Centauro** will no longer fire the main gun while it's still in loading position
 - Fixed bug #12444 – **Leopard 1A5,1A5-DK**: In the interior, the barrel mesh will now move on the same axis as the exterior (breech recoil)
 - Fixed bug #12454 – Some sounds (of different kinds) will no longer be looped after some other sound was played
- Steel Beasts beta testers** found the following 18 bugs so that you won't have to.
- Guys, we owe you more than we will ever know. Thank you all for your silent service.**
- Fixed bugs #11678, 11812, 12018, 12263, 12353, 12391, 12396, 12399, 12408, 12416, 12422, 12443, 12445, 12446, 12451, 12465, 12494, 12497

4.379 (official release – May, 2023)