



SB Pro PE 2.460

Version History and Release Notes

Note: You need an existing Pro PE license to try this. This version will not run without it.

The installer will install this Upgrade 2.460 into the default directory so that the old beta 2.370 can be retained and run if necessary; it is recommended however that **all *previous* versions should be uninstalled**. Scenarios made with 2.460 are not compatible with previous versions.

The installer will overwrite the standard shortcut in the start menu, so be prepared to create a new one if you want to run an older version.

The installer *should* detect 64 bit operating systems and install the corresponding CodeMeter runtime software. If this fails, the first remedial step is to uninstall the CodeMeter software, and download and install the 64 bit version from <http://codemeter.com/us/service/downloads.html>

If the problem persists, please contact eSim support staff through the discussion board at www.SteelBeasts.com

Things that have changed since the previous beta, 2.370

New features

- **Infantry** will now **find cover** in **any** terrain, depending on the *Bumpiness* value of the applied terrain theme for each given terrain type. With bumpiness "0" – the default for old scenarios – dismounted soldiers won't have cover. At 100% bumpiness they will disappear. The controlling player of a dismounted squad will still see them somewhat elevated to make it easier to see the location of his own soldiers. This also addresses bug #1289
- Added an **air strike** option for 2x500lb bomb drops per strike. Note that you have to set the proper checkmark in the support window in the mission editor first
- Added an **H-hour** display to the map screen to facilitate artillery fire plan development training. You set the H-hour in the mission editor, *Options* menu. H-hour can also be referenced in conditionals, like *Mission time* and *Incremental time*
- Added an option to the mission editor to define the **Time of Day** of a scenario. This will adjust the lighting of the scenery (still no shadows though, or the rendering of a sun) and update the brightness level and direction of the light source at runtime. To make it work properly, it's important to select the correct local time offset from UTC based on the longitude of the map used. Old scenarios will not automatically adopt the dynamic lighting, it must be set and saved with this version (or later)
- Added **new sky textures** to the standard installation, and a dialog box in the Mission Editor's *Options...* menu to select a scenario specific sky texture.
In the mission editor *Alt+S* allows bringing up the file selection dialog box in the F1 view for a quicker preview.
Guidance for texture artists:
 - The center of the texture orients south; west is at the left quarter, east is to the right of the center
 - The lowest line determines the color of the fogging that is applied to the scene, so it should be a nearly neutral grey, usually
 - Texture dimensions should be 2:1, e.g. 1024x512
- Added a function for **suppressive fire**. In the 3D view, select the current unit's context menus and select "Shoot here", then click on the target location in the 3D environment. This corresponds with a new waypoint tactic called "suppress" which is similar to "stay" except for shooting at the focus spot. Essentially, the "shoot here" command sets up the unit into a BP with suppress tactics, similar to how the "observe here" tactic sets up a unit into a BP with guard (IIRC) tactics. The shooting behavior is due for further refinement; right now, if there are enemy around, then it is the same as stay tactics. If there are no enemy detected the unit will fire at a random line between the left and right boundary of the battle positions focus area, and between the ground and about 2.5 meters above the ground. Currently the focus area can only be changed through the map screen. Firing will start out rather rapid and then will become less frequent over time (so as not to exhaust ammo). To increase the intensity of suppressive fire the player needs to re-issue the "shoot here" command. Eventually the detection of an enemy will also restart the counter for rapid shooting.

- Added the **MT-LB FO**, a forward artillery observer vehicle based on the MT-LB
- Added a **TECHNICAL** vehicle – an SUV with a 106MM RECOILLESS RIFLE
- Added a **TECHNICAL** vehicle – an SUV with a 14.5MM DSHK HMG
- Added the option of a **dismounted artillery observer**
- Added **RBS70** dismounted air defense missile
- Added **2S6 Tunguska** air defense vehicle
- Added the **CENTAURO** 105mm gun system (external view)
- Added the **LEOPARDO 2E** (crewable)
 - 3D driver's place; navigation display remains non-functional
 - Gunner's day sight view has two magnification settings, 12x (like all Leo 2S) and 3x
 - Added eight tutorials (gunnery, so far)
 - Added a hotkey (ZÜ HOTKEY; default is *Arrow down*) for the TIVI target designator in the LEOPARDO 2E's vision block view (*F4*)
 - Added 13 more tutorials for the LEOPARDO 2E
 - Added an option for the LEOPARDO 2E commander to manually type in the range while in KH MODE
 - The LEOPARDO 2E commander can now change the properties of the gunner's primary sight – as long as there is no human gunner present.
 - Loader's hatch now open by default
 - ballistic shield doors now rotate inwards
 - Changed a texture of the commander's monitor
 - Commander's thermal monitor now limited to 12x zoom
 - Added rear view mirrors if driver is unbuttoned
 - Added frontal tow hooks
 - More tolerance for the operation of the peri's ballistic shield flap
 - Peri control panel now activated (PERI ON/OFF switch)
 - Gunner's day sight magnification switch now clickable
 - If the day sight is in 3X, the laser range finder can now longer be fired, even if the thermal sight is in 12x
 - PELE and CANISTER rounds now available for LEOPARDO 2E
 - With battlesight active, the primary sight will now read F150x instead of F100x (x for any ammo type code)
 - Adjusted letter assignments for primary sight display
 - A for CL3143 and DM53
 - b for DM33 and DM33-PELE
 - C for SLGR95; also DM12A1, but with SLGR95 ballistic parameters(!)
 - d for coax MG, as usual
 - Vehicle speed shown in driver's place
- Finalized **CV90/35DK prototype**.
 - Added the barrel camera and TIS views to the VIS screen
 - Changed surround view cameras to black & white
 - Changed the hotkey for the VIS screen. NUMPAD* now toggles through the different views
 - Changed the initial state of the fire control system to STATIONARY GUNNERY MODE
 - The troop leader can now direct the mounted combat by using the "*shoot here*" and related commands
 - To access the squad peri and the VIS screen go to the commander's position (*F7*); while the squad leader is mounted in the CV9035 you can also access some views of the CV9035 itself from the F7 position:
 - F4 will take you to the CV9035 squad peri

- *Alt+F1* is the rear camera view
 - *Alt+F2* is the left camera view
 - *Alt+F3* is the right camera view
- For the gunner and commander the VIS screen will display either view; the lower right button on the VIS screen will toggle between the three camera views
- As with the VCS screen, press the magnification hot key (N) when the mouse cursor is over the screen and the viewpoint will move much closer to the screen. Pressing N again will toggle the viewpoint back to normal. As with other vehicles, pressing N when the mouse is not over anything special will move the viewpoint forward a bit, and pressing N again will move it back.
 - The hot keys *Alt+F1*, *Alt+F2* and *Alt+F3* will show the camera views in the full window
- Now with hull sensor for roll movement, and the fire control system compensates for it as well as for pitch (other CV90 variants still won't have roll compensation)
- Updated the multi-function panel (MFP) display
- Disabled the rendering of troop sprites while the player is in the mounted troop leader's position
- Adjusted the size designator for teams to be NATO Stanag 2019 (App 6) compliant
- Fixed a troop team icon error which gave the fire team icon to both parts of the squad
- Added "umbrella position" for commander's hatch
- Adjusted the position of the squad leader in the troop compartment
- Made the troop compartment's VIS screen accessible in the 3D view (troop leader)
- To accommodate the new position of the troop leader, some hot-keys needed to be changed:
 - *F10* = (reserved for future use)
 - *F11* = squad position
 - *Alt+F10* = Next unit
 - *Shift+F11* = next engaged unit
 - *Shift+F12* = screen captureMoving to and from the squad position actually changes the unit that the player occupies (vehicle or squad) and the unit icon in the 3D view will reflect this. However, when the squad is mounted, this unit switching is pretty transparent and it just appears as if the vehicle has another crew position called the squad position. When the troops dismount, the shortcuts to the vehicle crew positions are disabled
- IFV **PIZARRO**:
 - The computer-controlled commander of the IFV PIZARRO will no longer be stuck in a loop to override the gunner on a target while in the process of clearing the Bushmaster gun's empty brass bag, then overriding again to the bag clearing position
 - In the case of ballistic computer damage, the light "FALLO" on the gunner's manual range input control panel will now light up in red
 - Buttons "SEGUR" and "FUEGO" now switch the weapon arming state correctly. Depending on system state it may not be possible to operate them however
 - If "SEGUR" is active, and a computer controlled gunner spots a target, and the human TC presses Space to order the gunner to fire, he will now automatically activate "FUEGO", then open fire

- Adjusted the ammo count, since the 30mm gun doesn't chamber rounds in advance
- Adjusted the ammo stowage limits to 118/134 and 80/70
- Turret lock lever now flips 180°, not 90. Will only work in 12 and 9 o'clock turret positions.
- Adjusted firing prediction.
 - Track target for about 2 to 3 seconds
 - Press laser, keep it pressed (this stores the averaged tracking rate in the ballistic computer's memory (and while the laser button is pressed, the tracking rate does NOT (!) get updated)
 - With the first laser shot, the reticule gets displaced practically instantaneously
 - The now displaced reticule must be centered on the target again
 - Fire
 - If the target changes direction, the laser button must be released and a new tracking sequence must be started
- The TC can no longer override the gunner while not seated
- Adjusted the procedure to empty the bag of spent cartridges and ammo chain links
 - Procedure time reduced to three minutes
 - Servo power will disconnect as soon as turret is at approximately 7 o'clock position (green servo light blinks on main control unit, yellow "ESTAB ON/OFF" light remains on)
 - Added activity message to inform the user about the procedure in progress
 - Added a countdown in *F8* view for the remaining cartridge capacity of the spent brass bag
- "Reload all" command with a computer-controlled gunner will make him rotate the turret to 2 o'clock. Servo power will be disconnected (see above)
- Initial status when starting up the PIZARRO is now
 - "SEGUR" active
 - Gun not ready
 - 7.62mm coax selected
 - Battlesight 600m range activated
- Increased the speed with which smoke and HE rounds for the grenade discharger are reloaded
- Added "open protected", and "170°" states for turret hatches; commander's hatch now "open protected", gunner's hatch now closed by default
- Added "Lead prediction" damage in the mission editor's context menu
- Disabled the "lase to waypoint" method for the TC while inside the turret
- Laser results that will be displayed in the sights range from 0.2.0. to 9.9.9. (9995m, actually)
- Ranges accepted for firing are from 100m to 3000m; below (99m) or above (3001m+) battlesight will be activated.
- If a range beyond 3000m has been lased, the range reading (all four digits, e.g. 3.4.1.P.) will now blink
- Turret "boot sequence":
 - Commander removes turret and gun lock
 - Commander pulls Big Red Button from MAIN CONTROL UNIT (MCU)
 - Commander activates "SERVOS" button
 - Commander activates "ESTAB ON/OFF" button which will blink for a few seconds while the gyros speed up
 - Gunner switches on manual range control panel

- Day sight now shows 0.6.0.A, MG with RAF6 selected
- Gunner activates battlesight
- Gunner turns laser key "on"
- Gunner switches on thermal sight (cool-down period 5min)
- Gunner tests a manual range input (enter random figure)
- Added a laser key in the 3D interior to see the laser status more easily
- With battlesight selected, and a change of the ammunition type, the battlesight range will now update immediately
- In case of stabilization damage, now the "ESTAB ON/OFF" button of the MCU will start blinking. It is still possible to use powered turret traverse though
- Manual range inputs below 100m or above 3000m will now activate the battlesight
- Made sure that the "FIN CINTA" button is now synchronized between gunner's and commander's place in network sessions
- Added prototype of **NH-90 helicopter** (MRH 90)
- Added a function to **extract a theme file** from any given scenario. In the mission editor, select the menu *Map... Extract theme*. Save it, then start the map editor and open the theme in it, edit it to your liking, and save it. Back in the mission editor you can now update the scenario file.
This was necessary to allow you to adapt the mobility properties of the terrain according to the activation of the "bumpiness" factor (see below, version 2.374).
- Added **heterogeneous platoons**. In order to mix different vehicle types in one platoon, create a platoon as normal, split it into individual vehicles, change their type, and then merge them back into one platoon
- Added artwork of the Kongsberg Protector **remote weapon station**
- Added **dry river beds** (Wadis). In the map editor, start the theme editor and designate a terrain as of "Wadi" type. Then paint apply that terrain as you would with water. The maximum depth of a Wadi is 15m below its surrounding surface; it will get deeper the more Wadi terrain tiles are adjacent to each other

Changed features & minor additions

- Supports now MATROX® TRIPLEHEAD2Go™ multi-screen rendering by extending the field of the eye view depending on monitor screen aspect ratio
- Updated the electronic user manual PDF
- Adjusted the *Stay* position tactic so that units will not reposition to maintain the formation if a vehicle of the same platoon is being killed
- Adjusted the BUSHMASTER's ready ammo loadout
- Adjusted the gun sound of the 1.2t TECHNICAL-T "106mm RR"
- Animated the troop door of the BMD-2 now
- Adjusted the LEOPARD AS1's ready ammo loadout to include one round of WP and HESH each
- Adjusted the strength of artillery barrage and air strikes
- In the AAR, the status message "Destroyed" will no longer be shown red if the vehicle was dead already
- All troops' unit descriptions in the lower left status bar of the map screen will now describe correctly whether they are a heavy weapons team of a general rifle squad
- Increased the sensing distance of units *under indirect fire* to 50m
- Infantry behaves now with more self-preservation on *Engage* routes; if under direct fire they go prone and attempt to fire back to suppress the attacker. This also addresses bug #1129
- Replaced the old September 2000 artwork of the BMD-2
- Dismounted infantry on the move will assume prone positions faster now when coming under fire, and be more reluctant to move out again
- Adjusted the treatment of HEAT warhead impacts which could occasionally result in less or no damages, depending on the frame rate
- Adjusted message transfer between Host and Client for infantry combat related events
- Adjusted the targeting behavior of computer-controlled PIZARRO units
- Adjusted the behavior of computer-controlled units in the presence of water obstacles. They should avoid water more now, but will enter it on routes with Breach tactics. This should allow the fording of small streams at suitable spots while avoiding large losses to careless maneuver near rivers
- Adjustment of scoring control logic:
 - To **capture a region** you must have three times the force strength of the enemy in the region. Capturing implies that you initially don't control the region and should be used in that case
 - To **hold a region** you need only have at least a third the force strength of the enemy in the region. Holding a region implies that you initially control the region and again, that's when it should be used
 - The **combat value** of forces is being used to determine the force strength ratio. With a single rifle soldier being 1, an IFV being 10, and MBTs being worth 25 points each. An additional bonus is given for unit coherence (a platoon of MBTs is worth a lot more than four MBTs of the same type scattered all over the place). Damages result in negative modifiers (e.g. a mobility kill reduces the value of a vehicle by half)

- Simplified user interface for CV90/35 and PIZARRO for non-Danish and non-Spanish versions respectively
- Reduced the excessive strength of HE grenades fired from various AFVs' smoke discharger tubes
- In the assembly hall infantry units are now listed as teams and squads, no longer as "platoon"
- Air strikes send an automatic "End mission" command to the queue once that they are executed now, and can no longer be repeated.
- Helicopters can now be resupplied from trucks
- Adjusted the performance parameters of a number of APFSDS rounds if fired from the L55 barrel of the LEOPARDO 2E
- Updated the armor files of
 - BRDM-2
 - BRDM-2/AT
 - BTR-80
 - CENTAURO
 - CH-47 CHINOOK
 - CH-146 GRIFFON
 - LEOPARD 2A4
 - LEOPARDO 2E
 - M1A1(HA) (this also addresses bug #743 where certain spots were particularly vulnerable to HESH ammunition)
 - Mi-24 HIND
 - T-72M1 (this also addresses bug #743)
 - T-80U
 - URAL truck
- Units with Guard tactics will no longer automatically unload troops
- For the dismounted artillery observer it is now possible to use the zoom hotkey (*N*) while accessing the observation device
- The *Shoot here* command will now work also with zoomed view
- The dismounting squad of the CV90/35 is now equipped with AT-4 launchers instead of RB57
- For dismounted troops the hotkey (*F7*) will now give the squad leader's point of view
- The BRDM-2/AT is now realistically limited to a +/-70° traverse of its missile launcher
- Changed the implementation of Shot result resolution in network sessions
- Changed the implementation of the 35mm KETF round to be more reliable in the CV90/35's Point Target mode
- Dismount team leaders are now selectable positions in the network session Assembly Hall
- The laser range finder will now work in the Leo 2A5's thermal sight even if wide field of view has been selected
- The TC of the last vehicle in column formation will now focus his attention to the rear; the vehicle turret will remain oriented forward or to the sides
- While loading and unloading troops, the vehicle icon in the F1 view will now blink in magenta and grey
- Changed the screen rendering to maintain an aspect ratio for all sights that will preserve essential elements, e.g. the range reading of a primary sight, which used to be clipped off for extreme cases of wide aspect ratio screens
- Troops will now enter buildings only on "Hold" orders to allow better control about their autonomous positioning

- Improved the stability of the UGV while driving it in network sessions
- Driving in reverse will no longer add fuel to a vehicle
- Adjusted the power of tandem HEAT warheads with a uniform additional value to retain the power of the main warhead after passing through ERA protected areas. These tandem warheads are now overpowered when confronting non-reactive armor arrays and therefore should be replaced with their non-tandem warhead counterparts to avoid absurd combat results
- Added the AGM-114K HELLFIRE missile, and renamed the AGM-114A to the more appropriate designation AGM-114C
- The last vehicle in column formation will now cover the rear
- Updated texture files for IFV PIZARRO (radios) and MBT LEOPARDO 2E (radios, and exterior desert and thermal)
- Raised the road travel speed of computer controlled units from 7 km/h to be proportional to the light level
- Multispectral smoke now available for Russian vehicles too, looks white in daylight (unlike GALIX smoke grenades)
- Changed the ammunition dialog box for squads. There's now a distinction between squad MG and rifles, with 1250 rounds default for the MG and 200 rounds per rifle
- The firing rates of small arms for squads have been reduced
- Multi-scene rendering enabled for LEOPARD 2A5 DK too. It will now render the surrounding terrain and the TIM view for the commander
- Updated the armor file for the LEOPARDO 2E
- Changed the properties of all medium caliber delayed-fuse high explosive multi purpose rounds. They're no longer on steroids now
- Slightly improved the contrast and brightness of illuminated instrument panels in the IFV PIZARRO
- Pressing the ammo counter reset button in the IFV PIZARRO while reloading the ammunition will no longer result in eternal repetition of the "Traverse right!" voice command
- Changed some pathfinding routines in the presence of point obstacles
- For heterogeneous platoons the individual vehicle icons in the F1 view will now show the correct icon
- Updated 14 of Volcano's scenarios (5 single, 9 multiplayer)
- Added 25 of Volcano's new scenarios (3 single, 22 multiplayer)
- Eight scenarios added from Scenario Design Contest #1
- Added seven new high detail textures, mostly water
- Updated the 29 PALMS map
- Added a 29 PALMS theme, with WADIS enabled
- Computer controlled crews are less reluctant to using CANISTER munitions now
- LEOPARD 2:
 - Further refinements of the RÜCKSTEUERUNG (parallax motion compensation now enabled)
 - ZÜ mode now enabled in BEOBACHTEN fire control mode
 - RÜCKSTEUERUNG now fully implemented for all variants. While on the move and shooting a stationary target (dynamic lead not activated) the LEOPARD 2 now adds or reduces the range to target for up to 170m from the point of last laser usage, as well as compensate for its own angular motion (VERSCHLEPPUNGSKORREKTUR)
 - Changed acceleration and top speed of the peri

- If coax is selected, the gun will now immediately leave the loading position and be ready to fire. The loader will continue to load the main gun.
- TCs can no longer change the properties of the gunner's primary sight if the gunner is incapacitated
- Changed the resource file structure to facilitate smaller downloads for future patches and minor updates
- Enabled simultaneous scene rendering; the commander's place of the LEOPARDO 2E now renders vision blocks, map screen, and the thermal imaging monitor simultaneously. The driver's place shows the vision blocks as well as the rearward driving cam.
- Changed the method of camera positioning in internal 3D views
- Added a rule to the target prioritization algorithm to reduce a target's threat level if immobilized and with no way to operate the turret
- Improved the frame rate when there is lots of smoke and dust in the foreground – most noticeably on slower computers
- Added sound buffers to prevent small arms fire clipping effects
- The BMP-1 now *really* fires the 73mm gun sound
- Narrowed the coincidence window for the CV90/35 to prevent rounds falling short after changing the ammunition feed
- Added and updated new ambient sounds
- New M1A1 external model and damage model
- New item in the mission editor's *Options menu* to set a lower limit for the light level of a mission, which would apply when the sun goes down. This can prevent the screen from going completely dark which would only frustrate the player
- The light level will now affect the detection range and detection time of crew positions without thermal sights, although a target that fires can still be seen in the dark up to the maximum visibility range. The visibility setting in the mission editor should be set for fog or dust or haze at full brightness, not for reduction because of darkness. Otherwise muzzle flashes and eventually headlights, flares, etc..., will not be seen
- Low light levels will slow down the computer-controlled drivers. In near pitch blackness they go about 7 km/h
- Improved six existing sound effects, and added eleven new ones
- Thermal imaging systems are now degraded by (thick) dust
- The dust splashes from artillery will now show up in the thermal sights, with a similar heat level as the ground
- Added airstrike sounds
- Improved sound effects for cluster munitions
- The "woosh" sound for incoming artillery fire has been reduced to about one second
- The time between cluster munitions air burst dispersal and effect on the ground has been reduced to five seconds
- Artillery map graphics will show up only 20 seconds after impacts, if it was not called by the player (otherwise it's shown as normal). The Instructor Host can still see all impacts immediately
- Reduced the density of the dust clouds while making them a bit bigger to preserve a high frame rate
- Artillery animations and effects changed
 - HE barrage now comes without smoke, but creates dark explosion clouds and dust clouds that will linger and drift (but not with a cycling animation)

- It is now possible to call barrages with a 50:50 mix of HE and smoke (similar to old HE barrages). Again, only smoke objects will have repeating animations while other dust effects will last longer, but linger and drift
- Improved the control loop for position measurement/position control to improve the coincidence behavior for all vehicles
- Response times for all time-on-target artillery calls have been reduced
- UGVs are no longer a global option for all troops, but must be activated on a per-unit basis; only the platoon leader vehicle will have one by default. If all vehicles are to receive this equipment, split the platoon into individual vehicles, check the option, then merge them back into one
- The passwords dialog box has been moved from the *Options* menu to the *File* menu
- Updated the LEOPARD AS1 3D model and armor file (closed a ballistic hole in the hull front)
- Mission briefings:
 - Much longer Summary texts are now allowed
 - Editing an existing text no longer deletes text at the end, nor makes it other text show up (e.g. the format tags)
- Set the default sky textures
 - Desert: Day Hazy01.bmp
 - Winter: Day Overcast03.bmp
 - Woodland: Day Cloudy01.bmp
- Reduced elevation and depression of many cal .50 mounts to more realistic levels of approximately +30°/-20°
- A screenshot is now automatically generated when the Host/Instructor Host clicks on the Go button in the network session Assembly Hall
- Time-stamped text messages are now saved in the HTML reports
- Modified the LOS calculations to avoid situations where computer-controlled units remain oblivious to enemy presence which is in plain sight but where the LOS ray sample is accidentally being blocked
- Disabled suspension damage when a vehicle is deeper than about half a meter in water
- It is now possible to copy route chains and paste them to other units during the execution phase
- AARs are now incrementally saved to disk every 30 seconds (and purged from system memory)
This eliminates the problem of long missions with huge maps crashing that are always close to the 2GByte RAM limit for 32 bit applications. New AAR files are incompatible with older SB Pro versions (but old AAR files can still be read)
- AAR files sizes in the dialog box are now shown in MBytes, not Bytes
- Added color coding to the vehicle symbols in the F1 view; the vehicle icons at the bottom of the 3D view will show purple when there are troops loaded and gray otherwise. The occupied vehicle will now be shown brighter than the others
- Ground clutter is now not drawn around all buildings and bunkers (out to about 3 meters)
- Troops will no longer seek cover unless given an SB battle position with Hold, Defend or Guard tactics. As before,
 - **Hold** and **Defend** will also cause the troops to go inside nearby buildings.

- **Guard** will cause them to stay outside nearby buildings. If there are no nearby buildings they will look for cover in nearby woods.
- Having "**no tactic**" or **Stay** tactics will result in the troops not looking for any cover and so staying where they are.

Note that if you click on a unit icon at the bottom of the 3D view and order the troops to a new position the waypoint at the end of the new route will have no BP (none tactics) unless you use the "*assault to*" order. So, if you want the troops to move to a spot and go into a nearby building or find cover, use "*assault to*". If you want the troops to NOT go in a building nor find cover, use another movement order such as "*advance to*" or "*retreat to*".

- With unlimited ammo activated, the PIZARRO will now no longer stop after firing 130 rounds to clear the bag for scabbards and spent brass
- Helicopter door gunners' MGs' (cyclic) rate of fire is now reduced to a more realistic rate of about 1000 RPM
- Actual ammo designations now displayed instead of "SPEC. A" and other cryptic "slot labels"
- Tweaked the stab system a bit to remove some jitter
- The soldiers' attached guns were not being carried with them at times, which caused them to be scattered about when they were killed in their vehicles
- The B team of dismounted infantry now carries an MG3.
- Adjusted the stabilization imperfection. It is now restricted to the gun elevation but not the turret rotation
- The menu entry *View... Unity Sight* has been removed from the LEOPARD AS1, CH146, CH47, M2 BRADLEY, M3 BRADLEY, STRV122, and TIGER which had the menu entry but no unity sight
- The menu entry *View... Peri* has been removed from the CH47, FIST-V, HIND, M113AS4, MRH90, and TIGER which had the menu entry but no commander's periscope
- The menu entry *View... GPSE* has been removed from the BUSHMASTER truck, CH146, CH47, M1025 HMMWV, M113 ENGINEER, M113 REPAIR, M88, MRH90, and TIGER which had the menu entry but no sight extension
- The menu entry *View... GAS* has been removed from the CH47, HIND, and Tiger which had the menu entry but no auxiliary sight
- Added five new artillery tutorials, and updated some Bradley tutorials.
- A line of sight algorithm has been refined to allow computer-controlled units more often to fire on detected enemy inside of buildings.
- 7.62mm coax ammunition now comes in belt segments of 250 rounds (for all vehicles).
- Further refinements to the suspension and coincidence model.
- In the ballistic model for the LEOPARD 2 the GAS is now zeroed to 1500m and the coax to 500m.
- The first event and condition of one side can now be referenced in the control logic of the other side.
- "Copy Route Chain" now includes formation spacing.
- Formation changes are executed faster now.
- AARs now capture a few more details.
- Railway lines now get bridged in the map editor's automatic bridging function.
- Improved the path finding in urban environments.

- Reduced the amount of position adjustments to maintain formation while under fire.
- Added a platoon-wide reload command.
- The CV90s no longer use the hull's roll (cant) in the stabilization.
- Weapon coincidence model: A decidedly non-scientific stabilization fudge factor is also in place, with most Russian vehicles having worse stab systems than Western vehicles. The sights will be pretty stable, but the guns will move around a bit if the hull is rocking and rolling.
- Reintroduced the option to split and merge platoons in the planning phase.
- The CV90s now have the variable coincidence window in place to disable firing when out of coincidence.
- A new suspension model is in place. It will be related to the bumpiness factor that is set in the terrain theme that is currently loaded. This means that you should critically review existing terrain themes. High bumpiness should be reserved for terrain with extreme roughness, e.g. a boulder-strewn mountain or desert terrain.
Bumpiness will now influence the top speed of vehicles. MBTs are a bit more resilient against bumps (since they have a high mass/inertia and also because they're tracked), but they will suffer suspension damage if crashing at top speed into bumpy terrain; the computer-controlled drivers are supposed to reduce speed then, but can be overridden by a new acceleration command.

Bug fixes

- Fixed a typo in an instrument of the IFV PIZARRO
- Fixed the naming of resource files to restore some seemingly missing thermal textures
- Fixed a bug where troops in the process of dismounting "flickered" between prone and standing position for clients in network sessions
- Fixed a bug with the LEOPARDO 2E where the roll angle of the gunner's daysight wasn't shown in the TIM
- Fixed a bug with the reloading of CV90/40 ammunition magazines
- Fixed a bug which prevented on re-runs of the same scenario the transfer of network messages between host and client machines that infantry units were shooting
- Fixed a bug with the procedure of emptying the spent brass bag of the IFV PIZARRO that occurred when a human player entered a previously computer-controlled vehicle
- Fixed a bug that would crash SB Pro if a UAV accelerated to maximum speed at high altitude
- Fixed a bug that would disable powered traverse if the damage "Stabilization" was active at mission start
- Fixed a number of scaling issues with wide aspect ratio screens and unusually stretched windows
- Fixed the ammunition count for all M2A2 and M3A2 ODS BRADLEYS
- Fixed another bug with the ammunition reload command
- Fixed a bug that made the ASLAV-CS disappear from the scenario editor
- Fixed a bug that replaced the CH-47 with a model of the Mi-24
- The MT-LB FO no longer dismounts troops
- Fixed a bug where a change of daylight for old scenario files was not shown in the preview unless the scenario was saved again with the "File... Save as..." function
- Suspension damage will now only slow down helicopters rather than crashing them
- A position offset between CH-47 LODs has been corrected to improve collision detection
- The thermal view of many helicopter rotors have been corrected
- Fixed a bug where when deleting all subscores from the scoring formula of an existing mission the "OK" button was greyed out so a bogus score had to be added to close the dialog box
- Fixed the flight trajectory for the Hellfire missile
- Fixed a problem with the ammo load-out of all those vehicles that previously started with 0 rounds of a particular type. In cases where a scenario made with previous versions shows a problem with an incorrect ammo type being loaded, it should now be opened in the mission editor, the ammunition settings be reset, and then saved again to remedy the situation.
- Fixed a problem with certain cases when reloading ammo resulted in a crash
- Fixed a bug with the LEOPARD 2 fire control system; if ranges of under 200m are lased, the fire control system will now activate battlesight range
- Fixed a bug with the LEOPARD 2 that would induce the wrong range if a target closer than 200m was lased
- Fixed a bug that would show the damage "Unknown" in the *Damage, if...* dialog box
- Fixed a bug where the fire location of a windmill would originate at the wing tip of a windmill; it is now the rotor head
- Fixed a bug with the LEOPARD 2; it will now correctly show F000x as the range if a target closer than 200m was lased
- Fixed a bug where crashed helicopters would continue to twitch while lying on the ground
- Fixed the ammunition assignment of the 1.2t TECHNICAL-T "HMG"
- Fixed the ammunition assignment of the BMD-2
- Fixed a bug with the PIZARRO IFV's ammo count
- A bug was fixed that caused troops to occasionally wander far away
- Fixed a bug where unbuttoned troops were vulnerable to direct MG fire against IFV side hulls even if the hull strength was sufficient.
- Fixed a bug with the T-80's APU damage.
- Fixed a bug with the T-72 and T-80 carousel loader vulnerability.
- Fixed a bug so that disabled crew positions remain locked during network sessions.
- Fixed a bug where computer-generated artillery missions were not being deleted from the queue after their execution.

- Fixed a bug where some ammunition types did not register as AAR events.
- Fixed a bug where spawned units became uncontrollable under certain circumstances.
- Fixed a bug where computer-controlled units would not fire on bunkers.
- Fixed a bug where for some light vehicles the driver was seemingly invulnerable.
- Fixed the armor definition file of the Strv122.
- Fixed several issues in the ballistic model, including a reduction of the DM12A1 dispersion from .30 to .24 mil standard deviation (.16mil for 50% threshold). Also a number of sources for (small) deterministic errors could be eliminated. One deterministic error of .03mil remains which will get bigger at very long engagement distances.
- Fixed a bug where in missions with spawning units the AAR would show two vehicles overlapping each other.
- RBS70 SAM now correctly shows in the map as an air defense unit right after being placed in the mission editor
- Fixed a bug where, if BMP was the selected file format, the automatic screenshot of the assembly hall at the start of a network session was stored in JPG format but with *.BMP suffix
- Found and fixed a bug with the ammunition selection dialog box (pressing the new buttons "DEFAULT A" or "DEFAULT B" could lead to problems)
- Fixed a CTD bug that could cause any INSTANT ACTION scenario to crash
- Fixed a bug with the LVC Game gateway
- Fixed a bug that may have caused a massive number of air burst animations over HE barrage zones
- Fixed a bug that caused vehicles in reverse to go forward
- Fixed a bug where the infantry of a spawned IFV would remain under computer control once that the dismount command was given
- Fixed bug in which the position of a tank plow that a human player manually lowered on a client machine was not being transmitted to the host machine
- Fixed bug in which *Ctrl+S* while in the planning phase was errantly trying to save the mission to file, which would corrupt the mission file
- Fixed a crash bug that would occur if line of sight calculations were confronted with lots of smoke objects
- Fixed a glitch with the LEOPARD 2's ballistic shield doors for the primary sight (missing texture, opening angle)
- Fixed a bug that would show merged units in the AAR immediately after finishing a scenario (would not happen if the AAR was loaded from the *Main Menu*)
- Fixed some issues with the HTML report
- Fixed HIND's ammo count from 14,700 to 1,470
- Fixed a problem with the option "*print displayed map*" that caused a black printout
- Fixed a bug which made the map editor crash if the map data contained a certain object type.
- A bug was fixed where the ground would show the skybox in certain situations (amphibious landings against a steep shore)
- Fixed a number of issues with the ASLAV-25's reticule
- Fixed a bug that allowed PELE rounds on occasion to penetrate deeper than they were supposed to before fragment generation
- Fixed a bug that generated one lase event in the gunnery AAR for every camera movement of a UAV in "TARGET LOCK" mode. Which were *a lot*
- Fixed a bug where, if the troops of the lead vehicle were killed, the rest of the platoon's vehicles would no longer mount or dismount the vehicle
- Fixed a bug where the icons of tanks drowned in rivers would turn purple, or blink in grey and purple
- Fixed a bug that erroneously limited the maximum distance at which vehicle emplacements are rendered
- Fixed a bug that set the same lighting conditions in the map editor as last used in the mission editor. The map editor will now preview the terrain with full lighting again, and maximum visibility
- Fixed a bug that could cause a CTD when moving a selected route point of a unit close to the unit itself

- Fixed bug #274 (Suspension damage will now reduce the top speed that a vehicle can have).
- Fixed bug #349 (using the laser range finder on own platoon members resulted in erroneous range readings)
- Fixed bug #381; the *Player, if...* function now also hands over the ownership of organic infantry
- Fixed bug #384 by adjusting the behavior of vehicles in the presence of water obstacles
- Fixed bug #469; the drop-down menu of players showed incorrect crew position assignments
- Fixed bug #485; helicopters now no longer turn to 235° direction if arriving at a battle position. Instead they will behave like normal vehicles, facing forward
- Fixed bug #605; the "stun time" for the commander after pressing the "7" hotkey was increased from 25 seconds to two minutes. There will be a reset when the player enters the gunner's position again or presses the "I" key
- Fixed bug #627 so that *Driver* damage will now result in a vehicle immobilization (also see bug #1286), including direct driving commands from a human operator in the external observer's position
- Fixed bug #639; spawned troops of APCs are now properly under control for human operators in network sessions
- Fixed bug #684 – winter trees no longer have their foliage in the thermal view
- Fixed bug #688; Sound propagation is now dampened in the vertical axis as well
- Fixed bug #698; all ground vehicles with SACLOS guided missiles will no longer erect their launchers if the battle position is tilted sideways beyond the tolerance limits for proper missile guidance. This should serve as a visual clue about the suitability of any given spot
- Fixed bug #704; invalid
- Fixed bug #779; smoke and dust particles now have a randomized lifetime
- Fixed bug #820; added the option of a dismounted artillery observer. Press the F2 button to access the observer's sight view
- Fixed bug #925 (ASLAV default ammo load with no HE rounds)
- Fixed bug #939; if the CO drops from a network session, control of spawned units will be transferred to the player next in the command hierarchy
- Fixed bug #945, where a crew member could be duplicated if the turret crew were all dead, the player would jump to the driver's place, then back into the turret. The vehicle could then be given drive commands from any turret crew position (see also bug #627)
- Fixed bug #950; there was a size discrepancy between the M1's LOD3 and LOD1 model.
- Fixed bug #964; units marked as known to the other side will no longer disappear during the planning phase
- Fixed bug #966; HEAT rounds will no longer be able to perforate multiple target vehicles even if their residual energy is not used up
- Fixed bug #978; now that *Apply if* works properly, the scaled scoring works as intended too
- Fixed bug #983 where *Apply if...* conditioned scoring feature did not work properly
- Fixed bug #1023; occasionally impact events were recorded twice in the AAR and displayed as separate events
- Fixed bug #1039; *Coil* and *Herringbone* formations now work again
- Fixed bug #1042; computer controlled units will now properly engage troops inside of buildings with HE or HEAT ammunition where this is available and useful
- Fixed bug #1063; invalid (RTFM)
- Fixed bug #1084; user names are now being stored in the AAR files correctly
- Fixed bug #1137 (reloading process); turrets are now being oriented forward if the loading process gets interrupted (driving at speeds in excess of 6km/h, manually or on a route)
- Fixed bug #1150; Improved the ammunition selection for moving targets obscured by foliage. The computer-controlled vehicle commander will now put preference on kinetic energy rounds
- Fixed bug #1151; The visibility checkmark for routes of computer-controlled units will now update immediately
- Fixed bug #1159; Selecting the mine roller equipment will now unselect the mine plow (and vice versa)
- Fixed bug #1161 (the MICLIC didn't work properly in missions created from version 2.386 and newer)

- Fixed bug #1202; heterogeneous platoons will now keep their ammunition settings. This will however only work with scenarios made from scratch. Old scenarios still might run into trouble (vehicles ending up with no ammunition at all, or firing the ammunition of a different weapon system, ...)
- Fixed bug #1216 where JAVELIN teams seemed to blow themselves up upon missile launch
- Fixed bug #1222 where the icons in the lower right 3D view of the CENTAURO and VEC were missing
- Fixed bug #1226 where TOW-2B missiles were seemingly flying over the target without detonating
- Fixed bug #1229 partially where in network sessions computer controlled PIZARRO crews seemed to shut down turret power occasionally, thus rendering the thermal imager useless
- Fixed bug #1238 where PELE and CANNISTER rounds were accidentally disabled as selectable munitions for 120mm gun systems
- Fixed bug #1240 (vehicles with a remote weapon station had no ammo by default)
- Fixed bug #1251; the LEOPARD 2A4 is now allowed to unload rounds from the gun, too
- Fixed bug #1254 where popping turrets would always begin their flight from a default orientation with the hull, not their actual position at the moment of detonation
- Fixed bug #1261; vehicles with automatic loaders should now correctly be registered as "killed" if their crew is incapacitated
- Fixed bug #1262, and automatically also #1260 and #1280; adjusted a line of sight calculation glitch – dismounted infantry will no longer spot through hills, or fire
- Fixed bug #1263; added an automatic adjustment of the sound variations to the limit of channels that the sound hardware can play simultaneously
- Fixed bug #1264 and #1265, also #1093; the user interface and automated behavior now are more consistent with respect to the mounting/dismounting of troops. While the player is in the vehicle commander's position (F7) the troops will mount/dismount only on direct command (*Shift+U* and *U*). In the external observer's position (F8) however the procedure will be automated to avoid unintentional separations of troops and their supporting transport vehicle
- Fixed bug #1267; vehicles will try harder now to avoid collisions with buildings
- Fixed bug #1268; the tutorial "CV90/40 Gunnery G" will no longer crash
- Fixed bug #1269; assault bridges laid by BIBER or MT-55 will no longer show up on the other party's map in network sessions
- Fixed bug #1285 so that air defense artillery units will be the primary weapon system to engage UAVs (which have very low priority for computer-controlled units), while other units will fire only small and medium caliber weapons
- Fixed bug #1286 partially; a tank with incapacitated driver will now stop moving until the driver has been treated by an ambulance unit (e.g. M113 Medic)
- Fixed bug #1287 where missiles in flight were not visible to client machines in a network session