

After Action Review



VBS4 24.1.1



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The BISim Wiki is the primary resource on VBS4 scripting:

<https://sqf.bisimulations.com/display/SQF/VBS+Scripting+Reference>

PhysX

VBS4 uses the PhysX physics engine. For more information on PhysX visit the Nvidia site.

<https://gameworksdocs.nvidia.com/simulation.html>



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1. After Action Review (AAR)

After Action Review provides a comprehensive recording and playback capability for networked (single-player or multiplayer) missions. Recorded missions are saved as AAR files, then accessed locally or downloaded from a VBS World Server or Dedicated Server for playback in the AAR UI.

During recording, AAR collates a wide range of data, including mission participant movements, communication, actions, and engagements. You can also tag specific events using bookmarks, to enable playback and analysis of an event. This enables you to evaluate participant behavior in the mission.

The following topics describe the overall workflow of AAR:

1. Record a network mission and save it as an AAR file.
See [Recording Scenarios for AAR \(on page 8\)](#).
2. Use bookmarks to tag specific events during mission recording.
See [AAR Bookmarks \(on page 10\)](#).
3. Download and access saved AAR files.
See [Scenario Assessment \(on page 11\)](#).
4. Play AAR files using the AAR User Interface.
See [AAR Playback and the User Interface \(on page 13\)](#).
5. Review the scenario at a tactical level using VBS Plan in AAR.
See [VBS Plan in AAR \(on page 27\)](#).
6. View statistics about events that occurred during recording.
See [Event Log and Advanced Statistics \(on page 31\)](#).
7. Hear communication between units in the scenario.
See [VBS Radio Playback in AAR \(on page 38\)](#).
8. Review VBS Call for Fire training scenarios in AAR.
See [VBS Call for Fire in AAR \(on page 40\)](#).
9. Review VBS Close Air Support training scenarios in AAR.
See [VBS Close Air Support \(CAS\) in AAR \(on page 42\)](#).
10. Stream AAR recordings in real-time to Trainee computers.
See [AAR Streaming \(on page 48\)](#).
11. As a Trainee in C2 Mode, play AAR files using the AAR User Interface.
See [View AAR \(on page 53\)](#).

12. Use visual overlays, see different viewpoints, and access player inventories during playback.

See [Other AAR Functions \(on page 55\)](#).

2. Recording Scenarios for AAR

If AAR is enabled, AAR recording starts in Execute Mode once a scenario is in progress.

Recording can be started from the Network Lobby by selecting the **Record AAR** option (see Network Lobby in the VBS4 Instructor Manual), or by using the [Recording Controls \(below\)](#) in the VBS Editor. AAR recordings are stopped in the VBS Editor. For more information about the VBS Editor, see Mission Designer Interface in the VBS4 Editor Manual.

NOTE

AAR recording can be started and stopped by any Administrator participating in a scenario, and Trainees who are using the host computer.

This topic discusses the following AAR functions:

- [Recording Controls \(below\)](#)
- [Saving the AAR Recording File \(on the next page\)](#)

2.1 Recording Controls

When you are in **Execute Mode**, the AAR recording button and timer is located at the top-right of your screen.

Recording Control	Description
Record 	Click the red circular button to start recording.
Stop 	Click the red square button to stop recording.

You can stop and start recording multiple times within the same scenario.

WARNING

Do not add or edit higher echelon command structures during AAR recording, as this affects the visibility of groups, and may impact the usability of the recording.

2.2 Saving the AAR Recording File

Saving AAR recordings is done using the AAR Recording dialog. Click the **stop** button, to open the dialog.

Image-1: AAR Recording dialog



Enter a name for the AAR recording, and click **Save**.

AAR recording files are saved to the VBS4 Admin Client that requests the save at the following location:

`\Documents\VBS4\Battlespaces\Battlespace_Name\AAR\`

If the **Record AAR** option is selected prior to starting the mission, the AAR recording is saved to the VBS4 Admin Client that started the mission.

NOTE

When a scenario is hosted locally, AAR recordings stay on the computer hosting the scenario, regardless of where the recording is stopped.

The status of AAR recordings (shown in the [Recording Controls \(on the previous page\)](#)) is synchronized across all connected clients.

AAR recordings can be uploaded to the VBS World Server and then downloaded and replayed on any VBS4 Client. For more information, see Synchronize Battlespaces in the Introduction to VBS4 Guide.

NOTE

If you exit a mission without saving the AAR file, it is automatically saved as:

`[Date] LastMission`

3. AAR Bookmarks

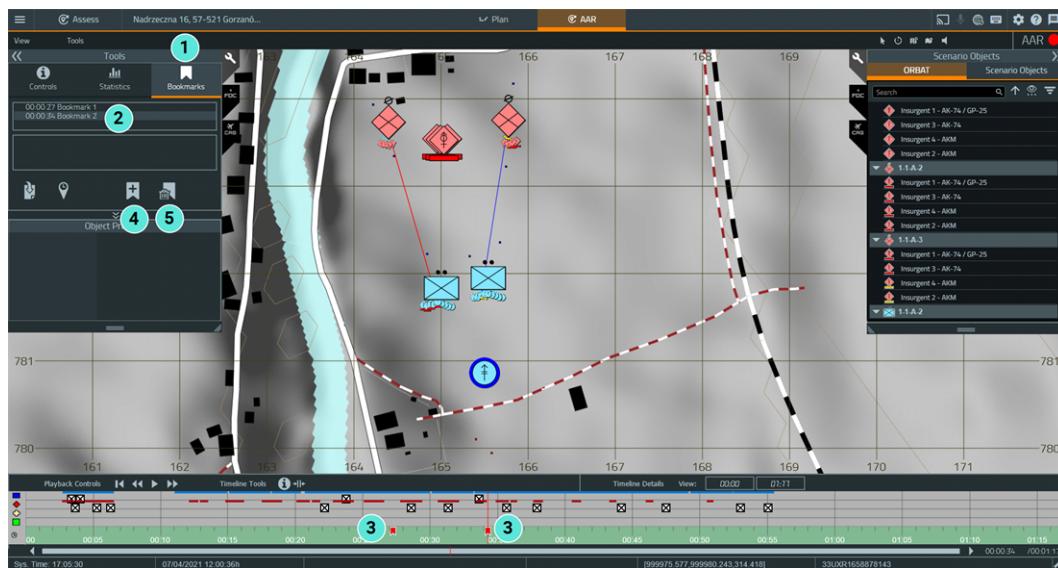
You can tag notable events in a mission during AAR Recording using bookmarks. Bookmarks are added to an AAR using the Tools Panel in Execute or AAR mode.

Follow these steps:

1. Click the **Bookmarks** tab.
2. When a notable event occurs you want to tag, click the **Add Bookmark** icon.

The bookmark is added to the Bookmarks list, and a **red** bookmark icon is added to the timeline.

Image-2: Tools panel and Bookmarks tab



The following bookmark features are available:

1	Bookmarks Tab	Click to open the Bookmarks panel.
2	Bookmarks List	List of bookmarks, and the time they were created. Click a bookmark to jump to the time the bookmark was added.
3	Bookmarks	Bookmarks (red) attached to the timeline.
4	Add Bookmark	Click this icon to add a bookmark at the current point in time.
5	Delete Bookmark	Select a bookmark in the list, and click this icon to delete it. The red bookmark icon is also removed from the timeline.

NOTE

Bookmarks can also be added during playback if desired.

During AAR Playback, access bookmarks in the [List Bookmarks Dialog \(on page 22\)](#) in the VBS4 AAR Manual.

4. Scenario Assessment

One of the primary VBS4 use cases is the recording, playback, and review of training scenarios.

Use VBS4 to record and review your training scenarios with playback control over viewpoints, overlays, and event review to enable full evaluation of mission participant behavior.

During Scenario Execution, anyone can record a scenario from a host computer, including Trainees. For more information, see [Recording Scenarios for AAR \(on page 8\)](#).

After Action Review (AAR) recordings are saved on the VBS4 Admin Client, and can be uploaded to the VBS World Server to provide access on all connected Clients. For more information, see Synchronize Battlespaces in the Introduction to VBS4 Guide.

Follow these steps:

1. Start VBS4 as an Administrator in either Online or Offline mode.

In the **VBS4 > Client** tab, select the **VBS4 Configuration** to use:

- **VBS4 Online**

Starts VBS4 Clients and Dedicated Servers connected to a VBS World Server hosting the Whole-Earth Terrain and providing access to stored Battlespaces.

Click **Refresh**, and select or input the IP Address of a VBS World Server.

- **VBS4 Offline**

Starts VBS4 Clients without a connection to a VBS World Server.



WARNING

Do not select or input the **Server IP** Address to connect to a Dedicated Server.

- Select **admin**.

- If you plan to use [AAR Streaming \(on page 48\)](#), do not disable VBS Radio (`-disableVBSRadio`).



NOTE

If you require Clients to connect from outside the local network, disable **multicast** (`-multicast=0`) on the Host computer.

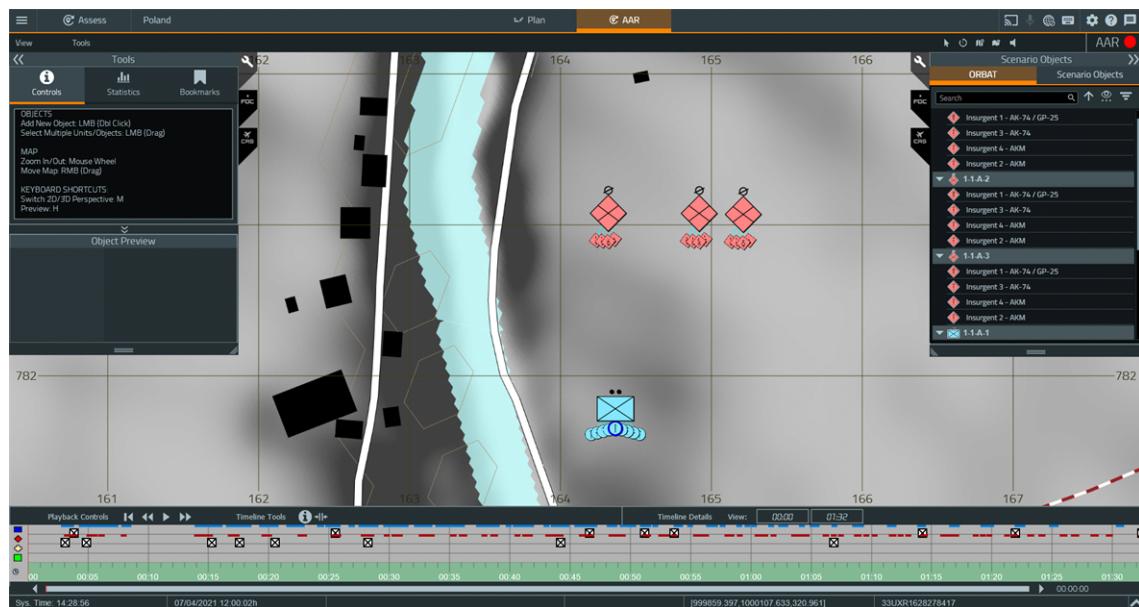
For more information, see Starting VBS4 in the VBS4 Administrator Manual.

2. Select the Battlespace in the Battlespaces List:

- **Online** - The **Assess** section of the Battlespace Functions Panel displays the AAR recordings saved on your VBS4 Client and on the VBS World Server. Click **Download** to copy an AAR recording from VBS World Server to your VBS4 Client.
- **Offline** - The **Assess** section of the Battlespace Functions Panel displays the AAR recordings saved on your VBS4 Client.

3. Highlight the recording to playback, and select **Open**.

The AAR UI opens.



Use the AAR UI controls to perform the following actions:

- To control the scenario playback, see [AAR Playback and the User Interface](#) (on the next page).
- To access the scenario playback as a Trainee in C2 Mode, see [View AAR](#) (on page 53).
- To access VBS Plan recordings, see [VBS Plan in AAR](#) (on page 27).
- To access statistical data, see [Event Log and Advanced Statistics](#) (on page 31).
- To review Radio recordings, see [VBS Radio Playback in AAR](#) (on page 38).
- To review VBS Call for Fire recordings, see [VBS Call for Fire in AAR](#) (on page 40).
- To stream an AAR recording to Trainee computers, see [AAR Streaming](#) (on page 48).

NOTE

To delete an AAR Recording, highlight it in the **Assess** section of the Battlespace Functions Panel, and click the **Trash** icon. If you are connected to the VBS World Server, the AAR Recording is deleted from there also.

5. AAR Playback and the User Interface

AAR Playback is performed in the AAR User Interface (AAR UI), which enables easy identification of unit / vehicle activity when viewing a recorded mission. Using the timeline and timeline grid, you can easily access specific time periods, or events that occurred in the mission, and replay them.

NOTE

AAR Playback can be performed by anyone participating in a scenario who is using the host computer, including Trainees.

Trainees using a host computer access AAR Playback from the Training Menu. For more information, see [View AAR \(on page 53\)](#).

This topic discusses the following subjects:

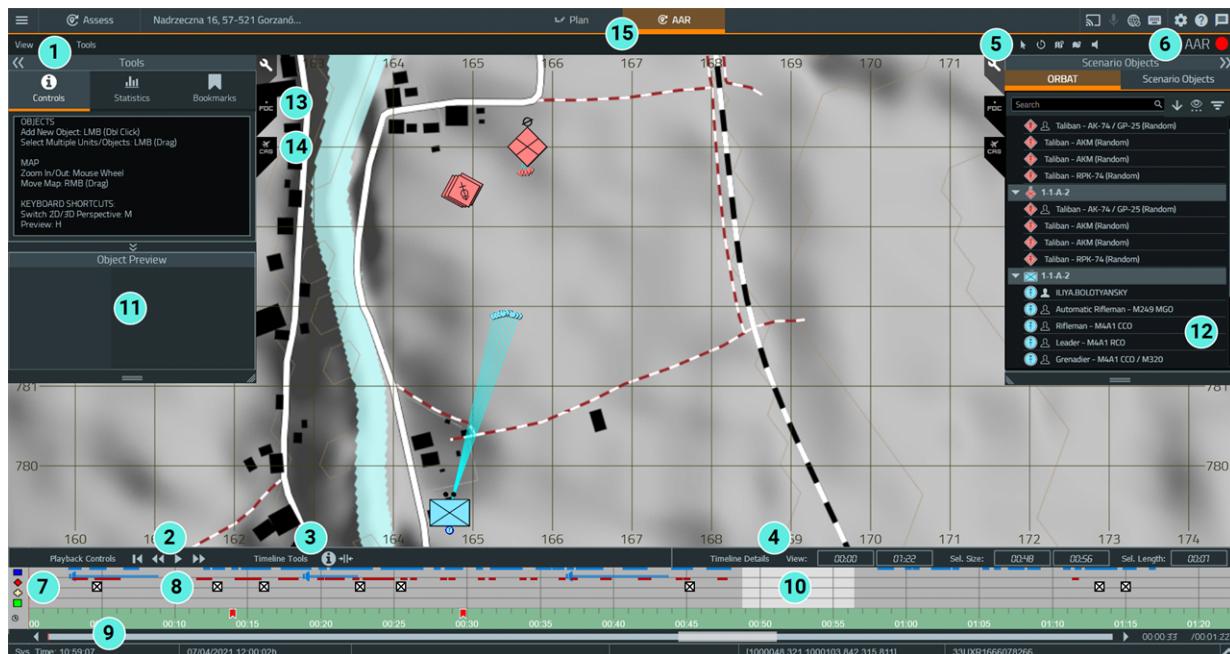
- [AAR UI \(on the next page\)](#)
- [VBS4 Main Menu for the AAR \(on page 17\)](#)
- [AAR View Menu Options \(on page 18\)](#)
- [AAR Tools Menu Options \(on page 19\)](#)
- [Timeline Grid Controls \(on page 21\)](#)
- [Playback Controls \(on page 21\)](#)
- [List Bookmarks Dialog \(on page 22\)](#)
- [Creating a Battlespace from the AAR \(on page 23\)](#)
- [Timeline Event Details \(on page 26\)](#)

5.1 AAR UI

The AAR UI features a timeline grid, with a **green** timeline running along it, enabling you to see when events actually happened, and who was involved. Editing tools are also provided, to configure AARs to show certain elements of a mission for review and teaching purposes.

Click **Expand** in the [Timeline Tools \(on the next page\)](#) to make the timeline grid larger.

Image-3: AAR UI with timeline grid



To exit AAR, go to the Main Menu, and click **Close**.

NOTE

If you hover your cursor over a control in the AAR UI, a tooltip appears.

1 AAR Menu

Contains similar options to those found in VBS Editor ([View](#), [Tools](#)), with additional options for AAR.

For more information, see [AAR View Menu Options \(on page 18\)](#) and [AAR Tools Menu Options \(on page 19\)](#).

2 Playback Controls



From left to right the options are:

- **Return to Start**
- **Rewind**
- **Play / Stop**
- **Fast-Forward**

See [Playback Controls \(on page 21\)](#) for more information.

3 Timeline Tools

From left to right the options are:

- **Statistics Info**, see [Event Log and Advanced Statistics \(on page 31\)](#).
- **Expand / Collapse** - Click to expand / collapse the timeline grid.

i NOTE

Some timeline controls are disabled in VBS4.

4 Timeline Details

From left to right: AAR start time, end time, start time of a selected segment, end time of a selected segment, length of a selected segment.

**i NOTE**

Start and end times of the AAR change when the timeline grid is zoomed in and out, and depend on how much of the timeline grid is visible.

5 AAR Toolbar

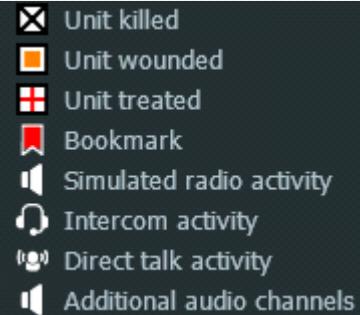
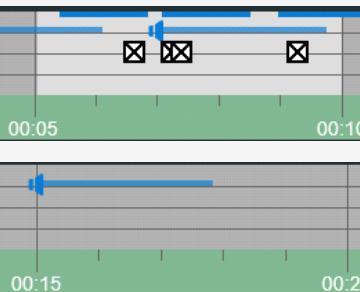
Click the following controls (left to right):

- **Select / Normal Mode** - Click to change to Select / Normal cursor mode.
- **Change Time of Day** - Click to open the Set Time dialog. Use the slider bar to select a new time of day.
- **Scale Map Up** - Scales the map up.
- **Scale Map Down** - Scales the map down.
- **Speaker Icon** - Selects VBS Radio channels to hear during AAR Playback, see [VBS Radio Playback in AAR \(on page 38\)](#).

6 AAR Indicator

Shows that you are in AAR mode:

- **Red dot** - Playback has not started, or is paused.
- **Green dot** - Playback is in progress.

7	<h3>Timeline Events and Symbology</h3>  	<p>Each side has its own row in the timeline, where their events are recorded. The side symbols indicate the side a row belongs to, and a row that shows that time events were recorded.</p> <p>Events are shown using event symbols.</p> <p>For more information, see Timeline Event Details (on page 26).</p> <p>Engagements are shown as lines, which indicate the side that was firing, and the length of the engagement.</p>
		<p>NOTE</p> <p>Symbols and lines represent events for a <i>side</i>, not individuals. For example, if all members of a group are killed by an IED, only one Unit Killed symbol is shown.</p> <p>VBS Radio transmissions are shown as lines, which indicate the side that was speaking, the mode of radio transmission (indicated by symbols), and the length of time that someone was speaking.</p> 
8	Precise Time Selection Bar	Each two second interval is indicated by a vertical line in the timeline grid, allowing for precise time selection.
9	Timeline Slider	Allows you to move to specific sections of the timeline quickly, when the timeline grid is zoomed out. Selected segments and points in the timeline are also highlighted on the slider.
10	Selected Time Period	A selected time segment, highlighted in light gray, see Timeline Grid Controls (on page 21) .
11	Tools Panel 	Click the spanner icon to open / close the Tools panel. For more information, see AAR Tools Panel (on page 20) .
12	Scenario Objects	Displays the various Editor Objects that are present in the AAR.
13	Fire Direction Center (FDC)	Opens the VBS Call for Fire UI for the AAR. For more information, see VBS Call for Fire in AAR (on page 40) .

14	Close Air Support (CAS)	Opens the VBS Close Air Support UI for the AAR. For more information, see VBS Close Air Support (CAS) in AAR (on page 42) .
15	VBS4 Toolbar	The VBS4 Toolbar in the AAR allows you to switch between the AAR UI and VBS Plan. For more information, see VBS Plan in AAR (on page 27) . Here, you can also access AAR Streaming (on page 48) functions.

5.2 VBS4 Main Menu for the AAR

In this release of VBS4, the following AAR options are available under the VBS4 Main Menu.

Click the **Main Menu** icon to expand the following options:



Option	Description
Save As	Saves the AAR as a Battlespace scenario. For more information, see Creating a Battlespace from the AAR (on page 23) .
Close	Closes the AAR.

5.3 AAR View Menu Options

Click **View** on the AAR Toolbar, and select from the following options.

Option	Description
2D Map View	Opens a 2D Map View of the loaded terrain area.
3D Camera View	Opens a 3D Camera View of the loaded terrain area.
FOV Settings	Opens the FOV Settings, see Field of View Visualization in the VBS4 Instructor Manual.
Ink-Spot Settings	Opens the Ink-Spot Settings, see Ink-Spot Visualization in the VBS4 Instructor Manual.
Map Settings	Opens the Map Settings dialog in the VBS4 Editor Manual.
Editor Settings	Opens the Editor Settings dialog, see View Menu in the VBS4 Trainee Manual.
Hide / Show Laser Target Lines	Displays the laser lines, when Laser Designators are used by units (for example, JTACs) to mark targets. <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"><p>NOTE The following considerations apply:</p><ul style="list-style-type: none">• Shown - Visible laser lines in the 2D View, PRF (Pulse Repetition Frequency) code in the 2D View, target markers in the 2D and 3D Views.• Hidden - Visible target markers in the 2D View.<p>For more information, see Laser Target Line Visualization in the VBS4 Instructor Manual.</p></div>
Hide / Show Hit Lines	Select to hide / show Hit Lines, see Hit Line Visualization in the VBS4 Instructor Manual.
Hide / Show Trails	Select to hide / show Trails made by units / vehicles on the ground, see Trail Visualization in the VBS4 Instructor Manual
Hide / Show Texture	Select to hide / show map textures, see View Menu in the VBS4 Trainee Manual.
Enable / Disable Shaded Relief	Select to show / hide contour shading to indicate changes in height on the map, see View Menu in the VBS4 Trainee Manual.
Hide / Show Briefing	Select to hide / show the Mission Briefing on screen, see View Menu in the VBS4 Trainee Manual.
Hide / Show 3D Icons	Select to hide / show 3D symbols above units, see in the VBS4 Editor Manual.

Option	Description
Camera Collision On / Off	Select to switch Camera Collision On / Off. If Off, the camera (Spectator View) cannot clip / go through the terrain.
More... > Unit Symbol Configuration	Select to open the Unit Symbols dialog, see Customizable Symbology in the VBS4 Editor Manual.
Exaggerated View Mode	Select to open the Exaggerated View dialog. For more information, see Exaggerated View in the VBS4 Editor Manual.

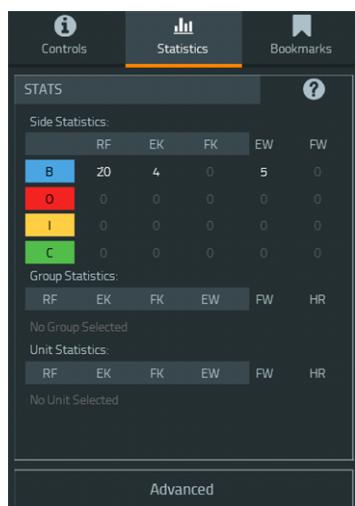
5.4 AAR Tools Menu Options

Click **Tools** on the AAR Toolbar, and select from the following options.

Option	Description
Weather Settings	Opens the Weather Settings dialog (see Weather Settings in the VBS4 Editor Manual).
Measure Distance	Opens the Measure Distance Tool (see the VBS4 Editor Manual).
List Bookmarks	Opens a list of any AAR Bookmarks (on page 10) added during recording.
Event Log	Opens the Event Log dialog (see Event Log and Advanced Statistics (on page 31)).
Change Time of Day	Opens a slider to enable you to adjust the time of day. This does not affect the timeline. <div style="border: 1px solid #0070C0; padding: 10px; margin-top: 10px;">i NOTE It is not possible to save the time-of-day changes for the AAR.</div>
Logistics Report	Opens the Logistics Report for the mission (see the VBS4 Trainee Manual).
Reference Documents	Opens the Reference Documents dialog (see the VBS4 Editor Manual).
List Forms	Opens the List Forms dialog, see List Forms in the VBS4 Trainee Manual .
Show Gateway GUI in VBS / Browser	Opens the VBS Gateway GUI in VBS4 / the default Microsoft Windows internet browser. For more information, see VBS Gateway Overview in the VBS Gateway Manual .

5.5 AAR Tools Panel

Click the tab headings to see the different AAR function panels.



Controls - Controls help.

Statistics - AAR Statistics simple view.

NOTE

The statistics show the data at a given time in the AAR Timeline. To show the final statistics, skip to the end of the AAR Timeline.

- **Side Statistics** display the statistics for a specific side (BLUFOR, OPFOR, and so on).
- **Group Statistics** display the statistics for the group that is currently selected in the Scenario Objects Panel (if a member of the group and not the group itself is selected, the information displayed is still for the whole group).
- **Unit Statistics** display the statistics for the selected unit in the Scenario Objects Panel.

Click the question mark icon in the **Stats** header to open the statistics legend:



Bookmarks - List of bookmarks, see [AAR Bookmarks \(on page 10\)](#).

5.6 Timeline Grid Controls

The following timeline controls are available.

Key	Description
LMB	Click the timeline to set a playback start time. The red gauge needle, usually at the far-left of the timeline grid, moves to the position you clicked. When you click the Play button, playback starts from where the gauge needle is positioned.
LMB + Drag	Used to select a time segment for export or deletion. Click in the timeline grid and drag your mouse to the left or right. A light gray segment is created. In addition, the start time, end time, and length of the selected segment is shown in the Time Details section.
Scroll Wheel	Scroll forwards / backwards to zoom the timeline grid in / out.
RMB	Moves the timeline view.

5.7 Playback Controls

The AAR [Playback Controls](#) (on page 14) are located at the top of the UI, and include standard playback controls and the [Timeline Slider](#) (on page 16).

To start AAR Playback, click the **Play** button. To pause or stop playback, click the **Pause / Stop** button.

To can speed up or slow down the AAR Playback, press **Time Acceleration (=) / Time Deceleration (-)**:

For a playback speed between 0.25-1:

Each use of **=** increases the playback speed by 0.25X.

Each use of **-** decreases the playback speed by 0.25X.

For a playback speed between 1-4:

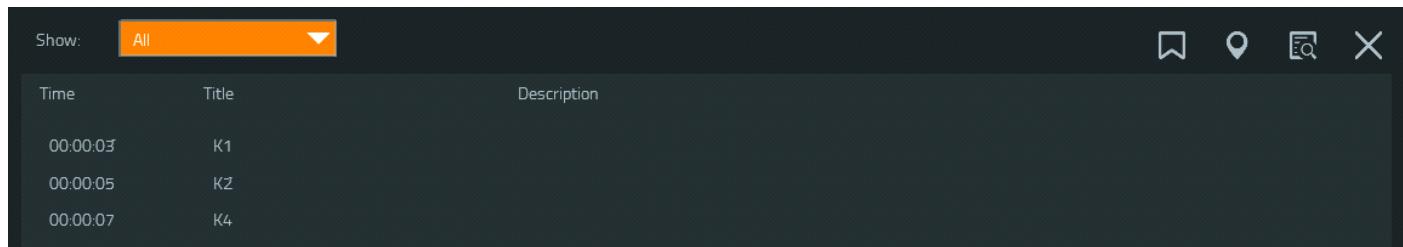
Each use of **=** increases the playback speed by 1X.

Each use of **-** decreases the playback speed by 1X.

5.8 List Bookmarks Dialog

A list of bookmarked events is available during AAR Playback in the List Bookmarks dialog. The dialog also has some additional functions.

To open the dialog, go to **Tools > List Bookmarks**.



Use the **Show** drop-down to select from:

- **All** - All bookmarks created during AAR Recording or Playback, and all forms created during the mission or AAR Recording.
- **Bookmarks** - Bookmarks created during AAR Recording or Playback.
- **Forms** - All forms created during the mission or AAR Recording.

Bookmarks appear in the dialog with the **Time**, **Title**, and a brief **Description**.

Bookmark Dialog Tools

At the top-right corner of the dialog are the following tools, which are enabled when you select a bookmark in the list:



From left to right they are:

Tool	Description
Jump to selected bookmark time	Click to jump to the selected bookmark position on the timeline.
Jump to selected bookmark position and time	Click to jump to the selected bookmark position on the timeline, and show the camera view of the scene in the mission at the time the bookmark was created.
View selected	Click to open an expanded version of the selected bookmark showing full description details, which may not be visible in the List Bookmarks dialog.

Click **X** to close the List Bookmarks dialog.

5.9 Creating a Battlespace from the AAR

You can create a new Battlespace from an AAR Recording.

NOTE

The Battlespace scenario is restored from the current position in the AAR.

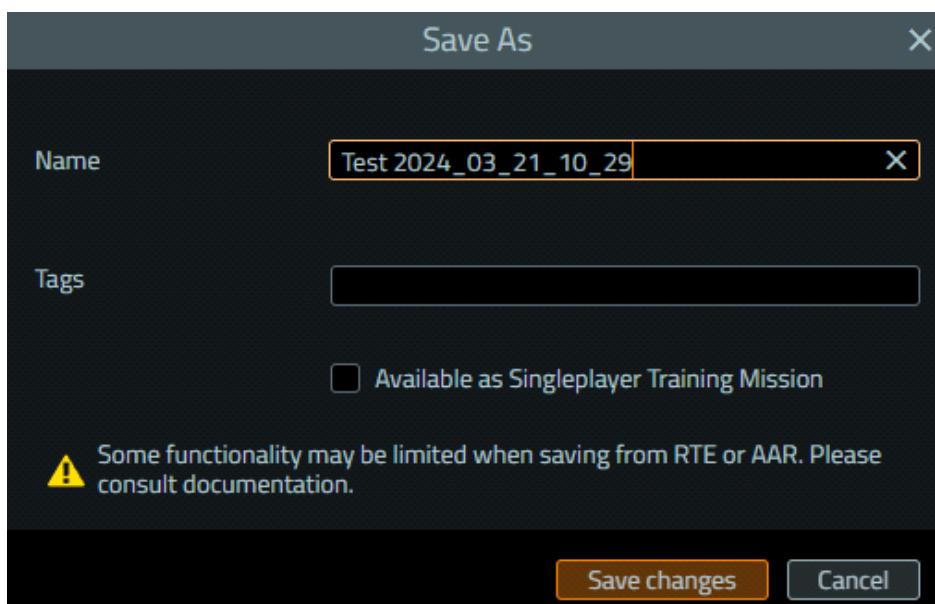
Follow these steps:

1. Click the **Main Menu** icon.



2. Select **Save As** to create a new Battlespace from the one you are running, in its current state.

The **Save As** dialog opens, with a unique Battlespace name already assigned in the **Name** field. This name consists of the original Battlespace name followed by the date and time.



3. To change the name of the Battlespace, enter a new name in the **Name** field.

WARNING

Do not make the name the same as the original Battlespace name. Otherwise, you receive the following error message: **Cannot overwrite the active battlespace.**

4. Add Battlespace Tags:

- Input a Tag name and press **Comma**, **Enter**, or **Tab**. Continue typing to create another one.
- To remove a Tag, click **X**.

5. Select **Available as Singleplayer Training Mission** to make the Battlespace available to Trainees in the Training mode (see Single Player Training in the VBS4 Trainee Manual).
6. Click **Save Changes**.

The AAR recording is saved as a new Battlespace

NOTE

The functionality saved may differ to what is saved when using **Save As** in Execute Mode (RTE). For more information, see Save As in Execute Mode (RTE) in the VBS4 Instructor Manual.

Save As from **AAR** saves the following to the new Battlespace:

General

- Entity positions and orientations.

Entity Health

- For units, the total health (%) (individual damage per body-part is not saved).
- For vehicles, the total health (%) and damage (including charring) to individual hit points.
- Advanced Wounding:
 - Configuration of the Advanced Wounding Editor Object, and links to entities.
 - Wounds sustained by units.

Unit Inventory

- State of the unit inventory at the time of saving (including UCS weapons).
- Ammunition count accurate to the number of magazines (the current number of bullets in individual magazines is not saved).

Vehicle Inventory

WARNING

Loadouts configured for new vehicles in Execute Mode (RTE) are not retained. Configure new vehicle loadouts during in Prepare Mode (OME).

- State of the vehicle inventory at the time of saving (including base UCS weapons, but without attachments).
- Ammunition is saved as a percentage of total ammunition (across all weapons).
- Equipment Tools and Objects including CREW, LWR, Electronic Warfare, APS (with configuration, links, and states intact).

- Most bridging vehicles, such as the Titan and ABLE - deployed bridges are saved on the map, and vehicles start without the bridge part if they deployed it in the original Battlespace scenario.

NOTE

Known issues with specific bridging vehicles, such as the BroBv120 will be addressed in future releases.

Terrain Effects

- Craters. Only large / permanent craters. Small / temporary craters, like those created when using heavy machine guns, for example, are not saved. The position and size of large / permanent craters is saved.
- VBS Geo edits.

Weather and Time of Day

- Weather related settings configured in Weather Settings.
- The Time of Day for the new Battlespace is set to the time that the **Save As** option was selected.

VBS Radio

- All VBS Radio configuration.

Damage Charring

- Damage charring for vehicles and objects.

UAV Control Links

- Control Links assigned to UAV vehicles.

Electronic Warfare

- Providing that they are linked to vehicles, all Electronic Warfare EO's and their settings.

5.10 Timeline Event Details

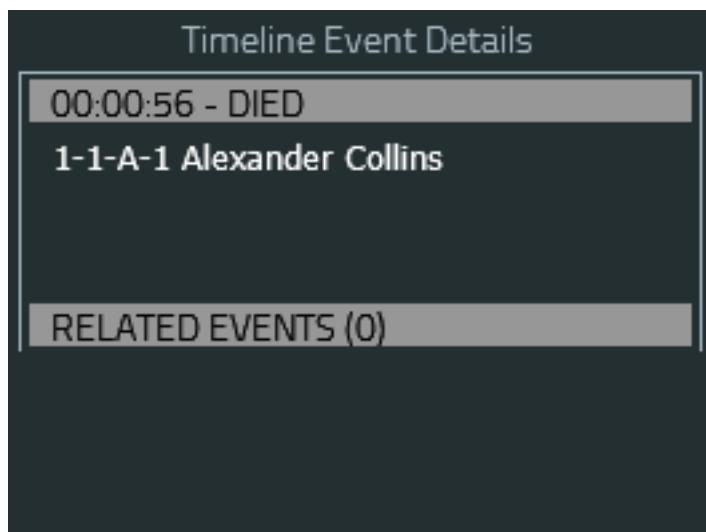
You can see more details about certain timeline events by directly clicking the **Unit killed**, **Unit wounded**, or **Unit treated** symbols in the timeline.



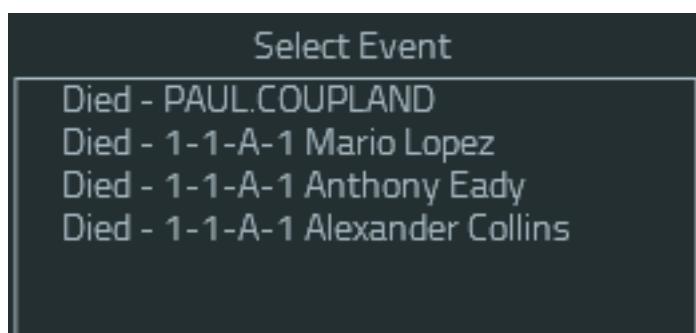
NOTE

The Advanced Wounding (see the VBS4 Editor Manual) simulation system also adds the **Unit wounded** and **Unit treated** symbols to the timeline.

If a single unit was killed, wounded, or treated for an injury, the Timeline Event Details dialog opens, showing the time of death / wounding / treatment, and any related events.



If multiple units were killed, wounded, or treated for injuries, clicking the **Unit killed**, **Unit wounded**, or **Unit Treated** symbols opens the Select Event dialog. Double-click a unit in the list to open the Timeline Event Details dialog for that specific unit.



To close either dialog, click anywhere outside it.

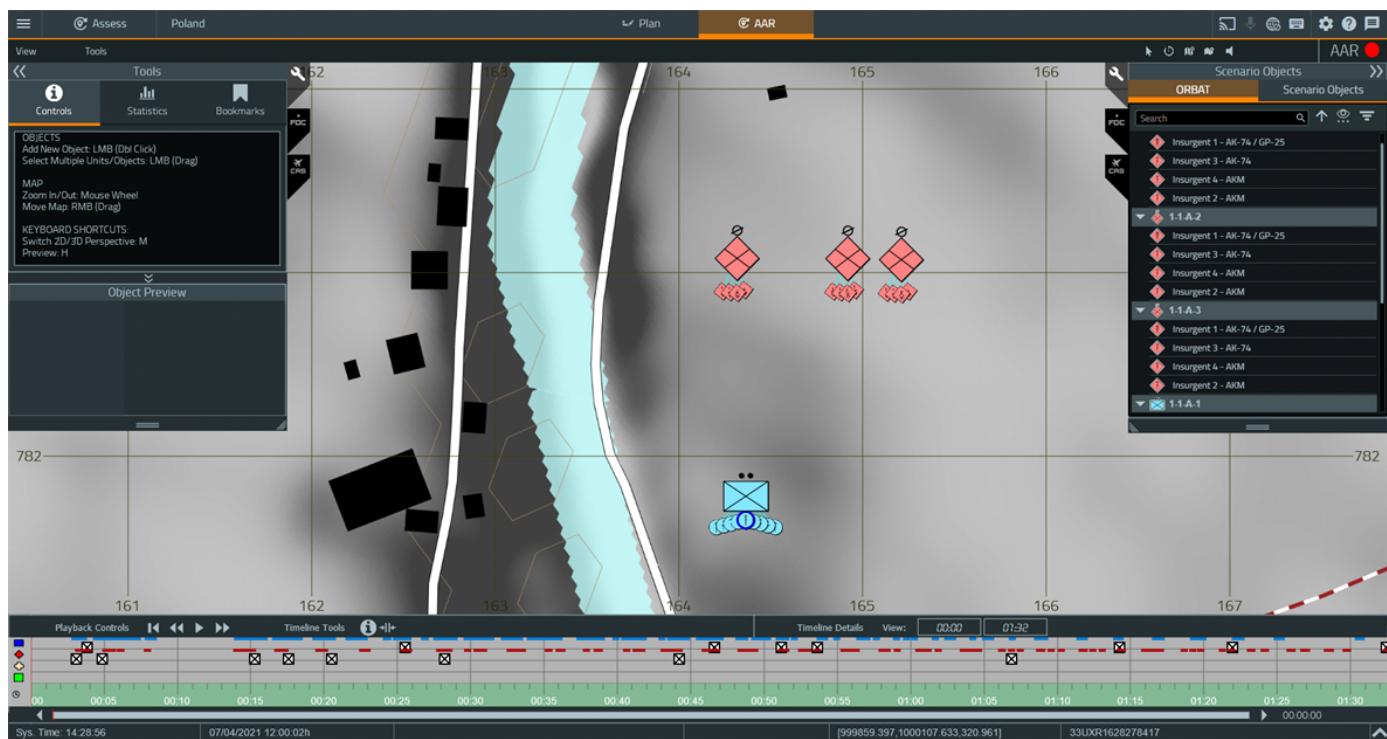
6. VBS Plan in AAR

Administrators / Instructors, and Trainees are able to review VBS Plan training scenarios retrospectively, using the After Action Review (AAR) feature. This feature enables the analysis of Trainee decision making and performance during a scenario.

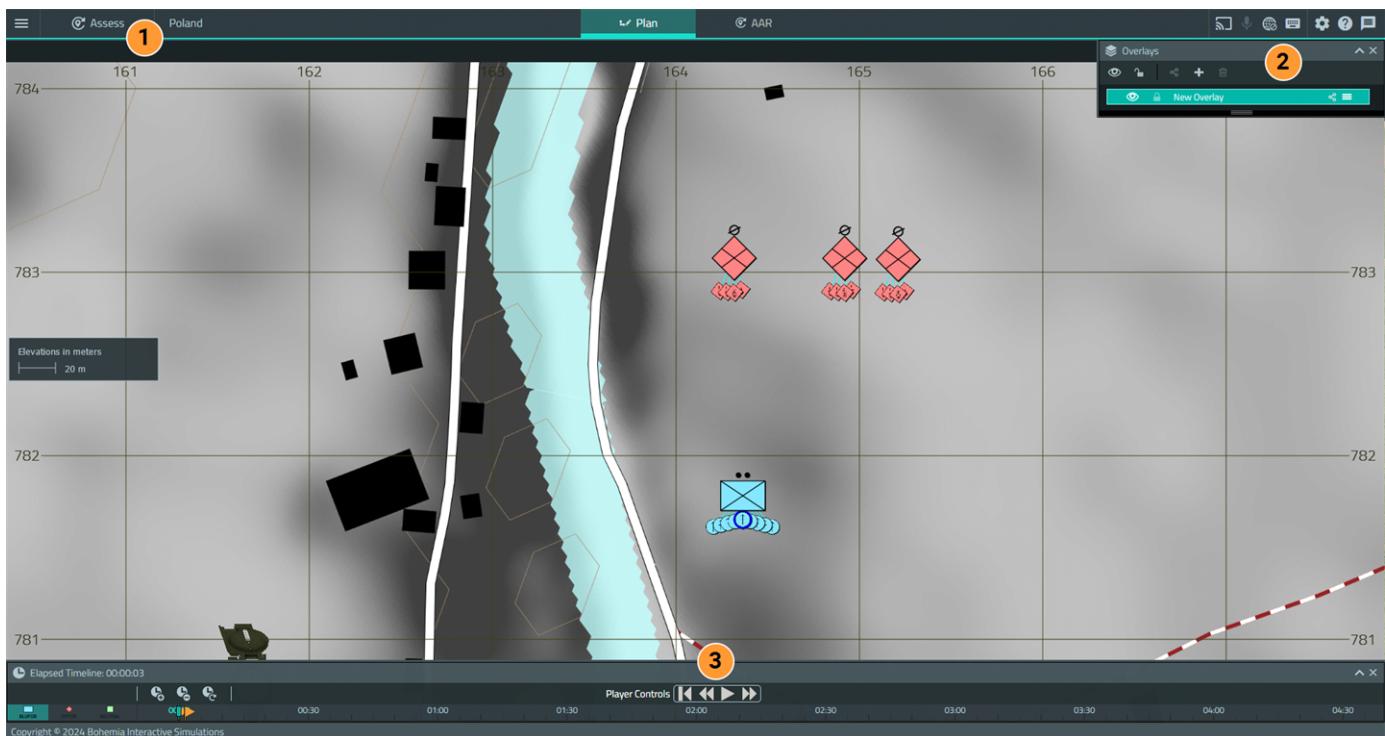
AAR scenario recordings are accessed by the Administrator / Instructor. However, the Trainee can also view them on their computer.

For more information about the AAR, see After Action Review (AAR) in the VBS4 AAR Manual.

In the Assess Mode (see Scenario Assessment in the Introduction to VBS4 Guide), with the AAR Tool UI open, select **Plan** in the VBS4 Toolbar (see the Introduction to VBS4 Guide), to access VBS Plan in AAR UI.



The VBS Plan Tool opens in AAR.



No.	Name	Description
1	VBS4 Toolbar (below)	The VBS Plan Toolbar in Assess Mode, provides access to the global Main Menu functions, Tool Selection switching to AAR, plus VBS4 Settings, Documentation, and Notifications.
2	Overlays Panel (on the next page)	Shows the VBS Plan overlays, available in the AAR recording.
3	Timeline Panel (on the next page)	The VBS Plan tactical mission execution timeline.

TIP

You can resize the panels by dragging their borders. To reset the panels to default view, select Show All Panels in the View Menu Options.

6.1 VBS4 Toolbar

The VBS Plan Toolbar in Assess Mode, provides access to the global Main Menu functions, Tool Selection switching to AAR, plus VBS4 Settings, Documentation, and Notifications.

To access the VBS4 Main Menu for the VBS4 Toolbar in Assess Mode, click the **Main Menu** icon.

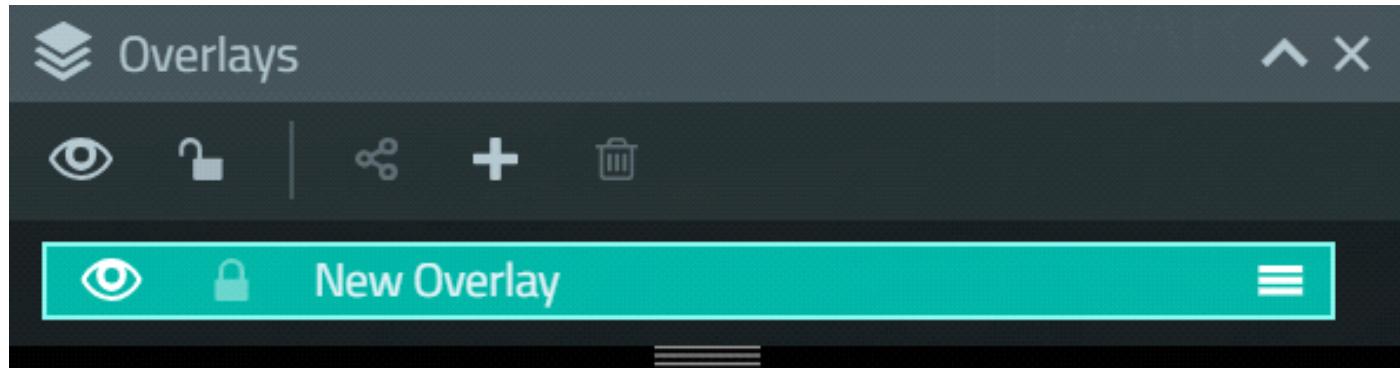


The following options are available:

Option	Description
Save As	Saves the AAR as a Battlespace scenario. For more information, see Creating a Battlespace from the AAR (on page 23) .
Close	Closes the AAR and Assess Mode.

6.2 Overlays Panel

The Overlays Panel shows the VBS Plan overlays, available in the AAR recording.



For more information on the Overlays Panel options, see [Managing Overlays in the VBS Plan Manual](#).

6.3 Timeline Panel

The Timeline Panel contains the VBS Plan tactical mission execution timeline.

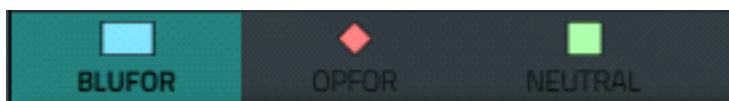
- **Player Controls** - The AAR playback controls.



The AAR playback controls are (left to right):

- Return to Start
- Rewind
- Play / Stop
- Fast-Forward

- **Timeline Legend** - The mission timeline legend, consisting of BLUFOR, OPFOR, and Neutral tactical units.



These legend icons appear in the timeline, to indicate a unit-specific event.

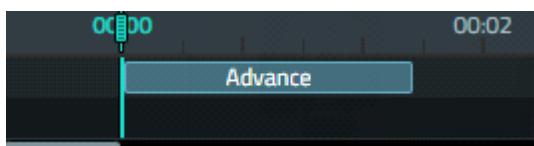
- **Timeline Density Controls** - The timeline density controls allow you to zoom in, zoom out, and reset to the default timeline density level.

Image-4: Left to right: zoom in, out, reset



- **Other Timeline Controls** - In addition to the **Timeline Density Controls**, you can also change the start and end time of orders to execute, by dragging the order time box left (to start the order earlier) and right (to start the order later) in the timeline.

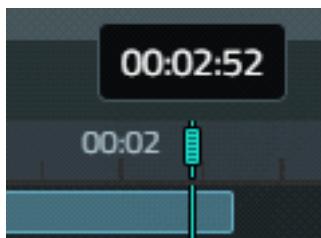
Image-5: Advance Order time box



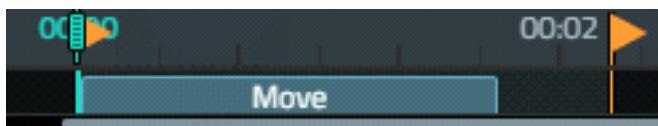
NOTE

For Suppress Orders (see Suppress Order Tool in the VBS Plan Manual), you can also lengthen / shorten the duration of the order execution by dragging the start and end positions of the order in the timeline.

The blue **Timeline Scrubber** allows you to jump to a specific mission time.



The AAR start and end recording time orange-flag indicators show the extent of the VBS Plan recording for the AAR.



7. Event Log and Advanced Statistics

The AAR features two dialogs that show event statistical data, collated during mission recording. The events detailed are primarily [Engagements \(on page 36\)](#).

This topic discusses the dialogs in detail:

- [Event Log \(below\)](#)
 - [Event Definitions \(on page 33\)](#)
- [AAR Statistics \(on page 33\)](#)
 - [Export Button \(on page 36\)](#)
 - [Engagements \(on page 36\)](#)

7.1 Event Log

The Event Log dialog allows administrators and users of AAR to view a list of all the events that took place during mission recording, including any bookmarks that were added. The information presented in the dialog can be exported as a [.CSV](#) file for later analysis.

To access the Event Log dialog during or after AAR Playback, go to **Tools > Event Log**.

Image-6: Event Log dialog

EVENT LOG		SCENARIO AARINFO AAR		CURRENT TIME 00:00:00		LOG DURATION 00:00:23.9 LOG START 00:00:00 LOG END 00:00:23.9		SHOOTER		BLUFOR		TARGET	
TIME	DUR.	TYPE	UNIT	POSITION	AMMO	SHOTS	HITS	TYPE	UNIT	POSITION			
00:00:01.1		M1A1 Commander	B MIKE PLATT 1	33UXR1671277502				Spotted	Taliban - AKM (Random)	0 0 1-1-A-1 3	33UXR167317		
► 00:00:01.1		M1A1 Driver	B B 1-1-A-1 2	33UXR1671177504				Spotted	Taliban - AKM (Random)	0 0 1-1-A-1 4	33UXR167437		
► 00:00:01.1		M1A1 Commander	B MIKE PLATT 1	33UXR1671277502				Spotted	Taliban - AKM (Random)	0 0 1-1-A-1 4	33UXR167437		
► 00:00:01.1		M1A1 Gunner	B B 1-1-A-1 3	33UXR1671277502				Spotted	Taliban - AKM (Random)	0 0 1-1-A-1 4	33UXR167437		
► 00:00:01.1		M1A1 Loader	B B 1-1-A-1 4	33UXR1671177502				Spotted	Taliban - AKM (Random)	0 0 1-1-A-1 4	33UXR167437		
00:00:03.3	1067ms	M1A1 Commander	B MIKE PLATT 1	33UXR1671277502	7.62x51mm T	2	1	Taliban - AKM (Random)	0 0 1-1-A-1 3	33UXR167317			
00:00:03.4		Bookmark K1						Bookmark	K1				
00:00:04.8	133ms	M1A1 Commander	B MIKE PLATT 1	33UXR1671277502	7.62x51mm T	3	1	Taliban - AKM (Random)	0 0 1-1-A-1 4	33UXR167437			
00:00:04.9	104.9ms	M1A1 Commander	B MIKE PLATT 1	33UXR1671277502	7.62x51mm T	5	1	Taliban - AKM (Random)	0 0 1-1-A-1 4	33UXR167437			
00:00:05.1		Bookmark K2						Bookmark	K2				
00:00:05.9	1150ms	M1A1 Commander	B MIKE PLATT 1	33UXR1671277502	7.62x51mm T	7	1	Taliban - AK-74 / GP-25 (Random)	0 0 1-1-A-1 1	33UXR167357			
00:00:07.1	1000ms	M1A1 Commander	B MIKE PLATT 1	33UXR1671277502	7.62x51mm T	2	1	Taliban - RPK-74 (Random)	0 0 1-1-A-1 2	33UXR167397			
00:00:07.3		Bookmark K4						Bookmark	K4				

NOTE

By default, events are shown for the whole AAR period. However, if a specific period is selected in the timeline grid, only the events occurring during that period are displayed. Bookmarks are always shown for the whole AAR period.

The header of the dialog shows the following information:

- **Scenario** - Name of the current recorded scenario (mission).
- **Current Time** - The current recorded mission time in the AAR.
- **Log Duration** - Length of the recorded mission.

- **Log Start** - Start time of the recorded mission.
- **Log End** - End time of the recorded mission.

Under the header are the following panels, that are divided into the listed columns:

- **Shooter**

Use the drop-down to select from: BLUFOR, OPFOR, Independent, Civilian, All to filter the data.

Column	Description
Time	Time the event happened.
Dur.	Duration of the event.
Type	Unit type.
Unit	Name of the unit involved in the event.
Position	Grid coordinates for the unit when the event occurred.
Ammo	Ammunition used.
Shots	Shots fired in the engagement.
Hits	Hits from the engagement.

- **Target**

Use the drop-down to select from: BLUFOR, OPFOR, Independent, Civilian, All to filter the data.

Column	Description
Type	Type of unit being targeted.
Unit	Name of unit being targeted.
Position	Grid coordinates for the unit when the event occurred.
Dist.	Distance from the Shooter to the Target.
Hit	Hits from the engagement.

- **Target Damage**

Column	Description
Seat	Position of unit in the vehicle (if applicable).
Status	Injury status.

At the bottom of the dialog is a slider bar that enables you to scroll between the columns.

Click **Export** to export all the currently displayed data in the Event Log dialog as an Excel ([.csv](#)) file.

Click **Close**, or press **Esc**, to close the Event Log dialog.

7.1.1 Event Definitions

The following information clarifies what the Event Log considers to be an "event":

- **Shooter and Target**

Events are specific to two objects: a Shooter (always a unit) and a Target (either a unit or a vehicle).

For example, if a unit shoots at a fully crewed T-72 and destroys it, four events are created:

- 1st event - Destruction of the T-72 vehicle.
- 2nd event - Killing of the T-72 Gunner.
- 3rd event - Killing of the T-72 Driver.
- 4th event - Killing of the T-72 Commander.

- **Multiple shots**

Multiple shots are organized into single events.

- If the Shooter engages a different target, a new event is generated.
- If the Shooter changes the ammunition type it engages the same target with, a new event is generated.
- If a Shooter resumes firing at the same target after a one-second pause, a new event is generated (this way, individual bursts are recorded as their own event).
- If a new selection / compartment is hit, a new event is generated.

- **Bookmarks**

Bookmarks are also listed as events in the Event Log dialog.

7.2 AAR Statistics

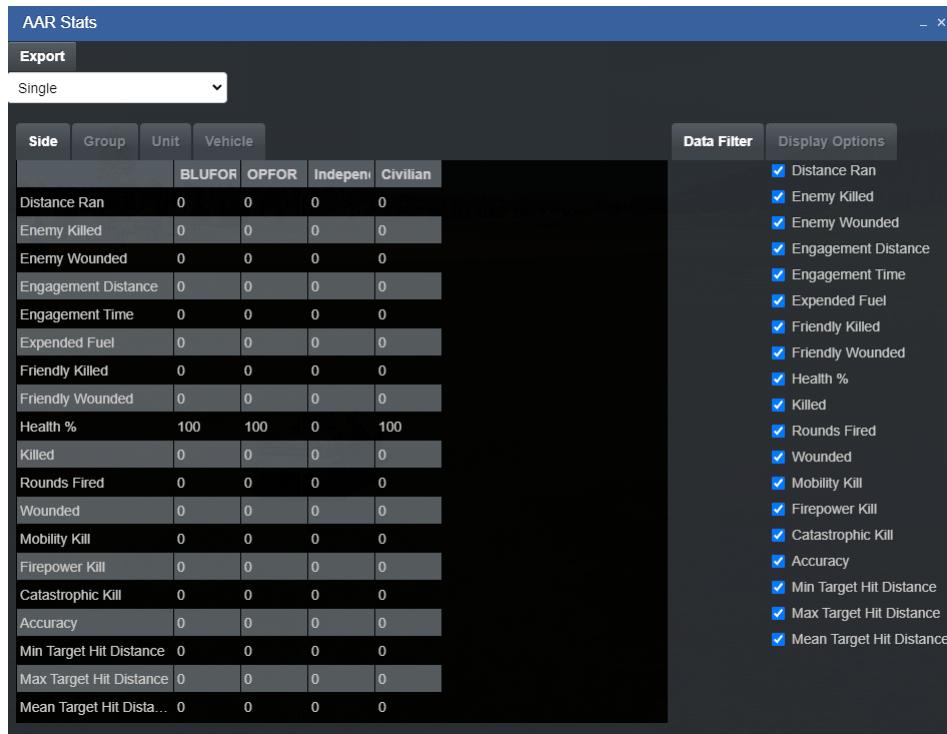
The AAR Statistics dialog provides a detailed report of mission statistical data. The data can be filtered (to make smaller or more specific reports), and the report exported as a **.CSV** file.

To access the AAR Statistics dialog, do one of the following in the [AAR UI \(on page 14\)](#):

- Click the **i** statistics information icon in **Timeline Tools**.
- Open the [AAR Tools Panel \(on page 20\)](#), click the **Statistics** tab, and click **Advanced**.

The AAR Statistics dialog opens.

Image-7: AAR Statistics dialog



The AAR Statistics dialog has the following tabs.

Tab	Description
Side	Displays data for the specific sides involved in the mission, in the following columns: <ul style="list-style-type: none"> • BLUFOR • OPFOR • Independent • Civilian
Group	Displays data for each unit / vehicle group in the mission. Each group has its own column heading which correlates with the group shown in the ORBAT tab of the Scenario Objects panel.
Unit	Displays data for the individual units in the mission. Each unit has its own column heading which correlates with the unit shown in the ORBAT tab of the Scenario Objects panel.
Vehicle	Displays data for the individual vehicles in the mission. Each vehicle has its own column heading which correlates with the vehicle shown in the ORBAT tab of the Scenario Objects panel.
Data Filter	Use the checkboxes in this tab to filter the data you want to see displayed in the dialog.
Display Options	Use the radio buttons to change the layout of the displayed data with these options: <ul style="list-style-type: none"> • Table View • Bar Chart View

The Side, Group, Unit, and Vehicle tabs can display the following data, depending on the settings configured in the [Data Filter \(on the previous page\)](#) tab, and whether the data is applicable. The data updates in real-time as the AAR is playing:

Statistical Data	Description
Distance Ran	The total distance ran (in meters).
Enemy Killed	The total number of enemy entities killed.
Enemy Wounded	The total number of enemy entities wounded.
Engagement Distance	The total traversed distance during an engagement (in meters).
Engagement Time	The total engagement time (in minutes).
Expended Fuel	The total amount of fuel spent (in liters).
Friendly Killed	The total number of friendly entities killed.
Friendly Wounded	The total number of friendly entities wounded.
Health %	The current health percentage of units or vehicles. Updated every time a unit / vehicle is injured / receives damage.
Speed (Km/h)	The current speed of units, vehicles, and groups. <ul style="list-style-type: none"> For individual units / vehicles, displays the specific unit / vehicle speed. For groups, displays the average speed of the group members (units and / or vehicles).
Killed	The total number of entities killed.
Rounds Fired	The total number of rounds fired.
Mobility Kill	Vehicles only. The vehicle is unable to move.
Firepower Kill	Vehicles only. The vehicle is unable to use weapon systems.
Catastrophic Kill	Vehicles only. The vehicle is completely destroyed.
Wounded	The total number of entities wounded.
Accuracy	The total accuracy.
Min Target Hit Distance	The minimum distance from which a target was hit (in meters).
Max Target Hit Distance	The maximum distance from which a target was hit (in meters).
Mean Target Hit Distance	The mean distance from which a target was hit (in meters).

7.2.1 Export Button

Use the **Export** button to export the statistical data as a **.csv** file, and save it to a local folder.

The drop-down menu(s) below the Export button enables you to filter specific data for export:

- **Single** - Exports all statistical data up to a point selected on the AAR timeline (default option).
- **Range** - Exports all statistical data within the range of a time segment selected in the timeline grid.
- **Engagement / <0>** - Exports the statistical data for a specific engagement, identified using a number (a second drop-down opens when **Engagement** is selected, where you can select the engagement number), see [Engagements \(below\)](#) for more information.

Follow these steps:

1. Using the drop-down menu, select **Single**, **Range**, or **Engagement** (if you selected **Engagement**, select the engagement number from the second drop-down menu).
 2. Click **Export**.
- The dialog changes.
3. Check the file path / name of the folder the **.csv** file is being exported to. If necessary, navigate to a different file location in the **Files** column.
 4. Click **Export Data**.

The file is exported to the location defined in the dialog.

Image-8: Export button and Engagement drop-downs



7.2.2 Engagements

The data listed in the AAR Statistics dialog refers to engagement activity that occurred during a mission, which is used to identify who was involved in an engagement, when, where, and for how long.

Engagements Creation

New engagements are automatically created by VBS4 when any of the following happens:

- A unit spots a new enemy.
- A unit fires a weapon.
- A unit is damaged (injured) by some form of explosion or weapon hit (not by crashing a vehicle or falling to the ground).

The unit that started the engagement is automatically added to the new engagement event. If the unit is part of a group, all group members are also added to the engagement event. In addition, the spotted, attacking, or targeted units are also added.

Engagements Merging

There can be several separate engagements (battles in different parts of the terrain) during a mission. Units can only ever be part of one engagement. This means that if a unit is added to an engagement, but is already involved in another engagement, the engagements are merged together.

Engagements End

Engagements end when the limit of one of the timeouts (Interaction Timeout or Defeat Timeout) set in the Scenario Settings is reached. Such timeouts are common to all engagements. For more information, see Define Scenario Settings in the VBS4 Editor Manual.

8. VBS Radio Playback in AAR

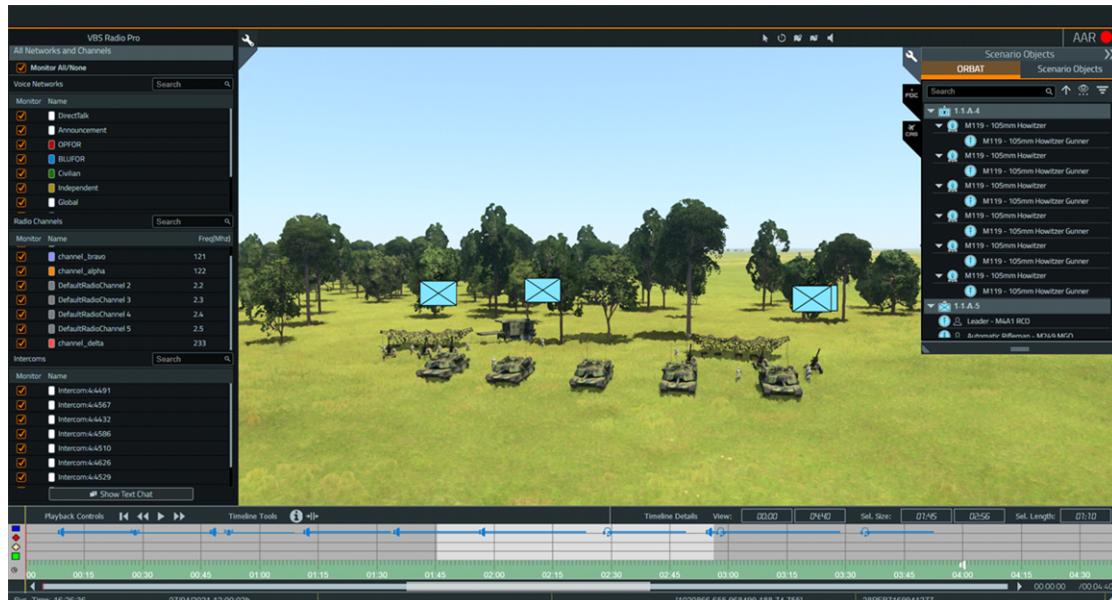
VBS Radio enables VBS AAR to replay communications transmitted by users during a scenario. Individual radio channels can be turned on or off to focus on specific group communications.

WARNING

The use of multiple channels may impact AAR recording, depending on server and network capacity.

By default, all channels are **on** during AAR Playback. However, you can control which communications are transmitted during AAR Playback by selecting which channels to play.

In VBS AAR, click the **speaker** icon on the toolbar to open the All Networks and Channels panel.



Use the following controls:

- Use the **Search** fields to look for a specific transmission channel.
- Mute / unmute channels:
 - Check the **Monitor All / None** box at the top of the All Networks and Channels panel to mute / unmute all channels.
 - Check / uncheck the boxes in the **Monitor** column to mute / unmute specific transmission channels.
- Click the **Show Text Chat** button to access the Global Text Network (see Communications Panel in the VBS Radio Manual), to see any text chats that occurred.

During playback, the following icons appear in the All Networks and Channels panel when radio transmission occurs.

Icon	Description
	Shown next to the name of a unit / channel indicating unmuted transmission.
	Shown next to the name of a unit / channel indicating muted transmission.

In addition, the icons in the following table appear on the AAR timeline and on the 2D / 3D map, followed by a colored line. The lines indicate the duration of a transmission. The color of the icons / lines indicates the side of the unit transmitting.

Icon	Description
	Simulated Radio / Additional audio channels (Pitch Voice)
	Intercom
	Direct Talk

8.1 VBS Radio AAR Limitations

The following limitations apply during VBS Radio playback in AAR:

- If Direct Talk Mode is set as **With Radio / VoIP Transmission**, icons in AAR timeline are inconsistent.
- Direct Talk sound depends on the position of the camera in 3D Camera View. You can hear Direct Talk transmissions in AAR only if you "fly" the camera close enough to the unit using it (Direct Talk cut-off distance). On the 2D Map, the initial position of a Direct Talk transmission becomes fixed, and does not move with the camera. You still hear the transmission, regardless of where the camera is.

9. VBS Call for Fire in AAR

As an Administrator / Instructor / Trainee, you are able to review CFF training scenarios retrospectively, using the After Action Review (AAR) feature. This feature enables the analysis of Trainee decision making and performance during a scenario.

AAR scenario recordings are accessed by the Administrator / Instructor. However, Trainees can also view them on their computers. For more information about accessing AAR recordings and using the AAR UI, see [After Action Review \(AAR\) \(on page 6\)](#).

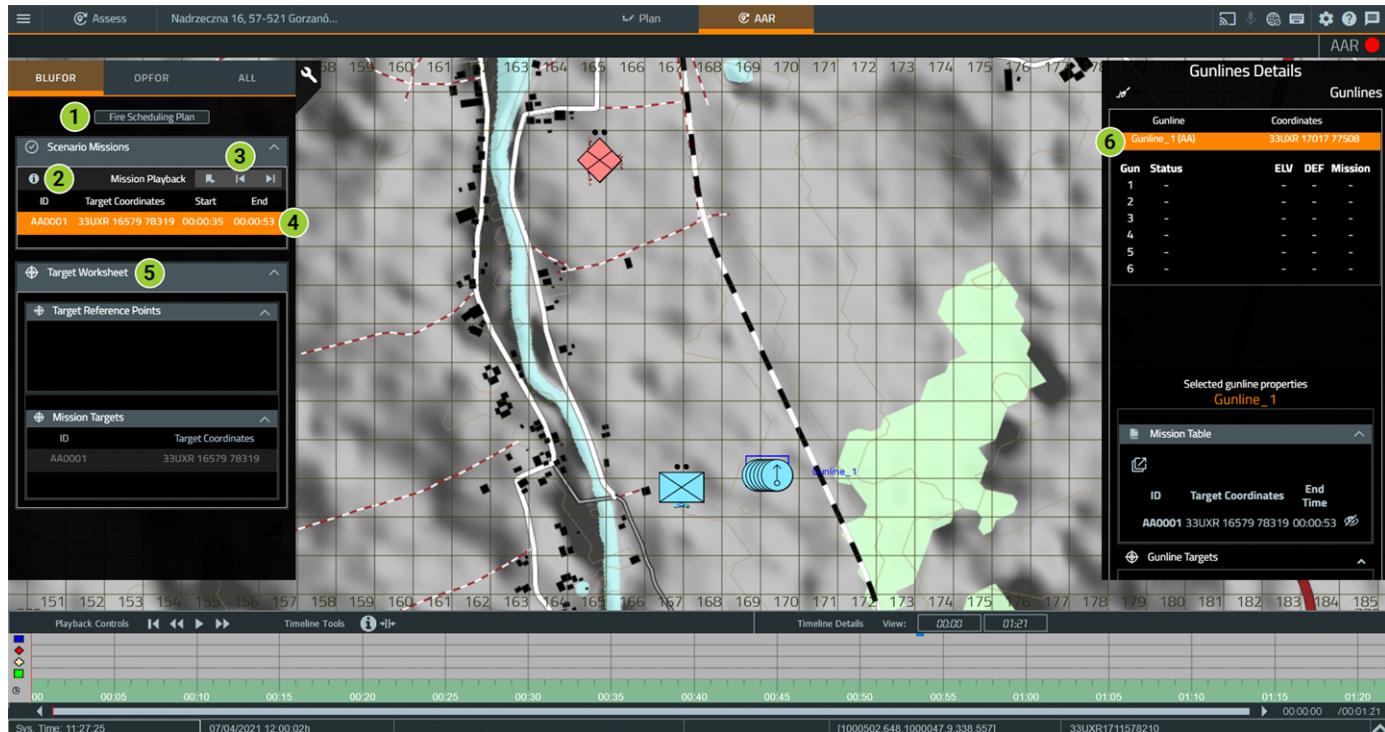
9.1 AAR FDC UI

With the AAR screen open, click the **FDC** tab to open the AAR version of the VBS Call for Fire - FDC UI.

The UI opens with the following panels on either side of your screen:

- Main FDC panel.
- Gunlines Details panel.

Image-9: FDC AAR UI



The UI has the following features:

No.	Description
1	Click to see a list of missions that were scheduled during the scenario, but not fired.

No.	Description
2	Information button. Click to open the Mission Report Panel to view data about the mission. 
3	Button controls:  Bookmark  Previous volley  Next volley
4	Mission Playback List (below)
5	Target Worksheet, see Target Management in the VBS Call for Fire Manual.
6	Gunline entry, see Gunline Data in the VBS Call for Fire Manual for more information.

9.2 Mission Playback List

This list contains all of the fire missions that are present in the recorded scenario. From here you can replay specific fire missions, so that Trainees can see how they performed.

Follow these steps:

1. Select a **fire mission** entry in the Mission Playback list, so that it is highlighted.
2. Click the **Bookmark** button to jump to the start of the fire mission.
3. Optional. Before starting fire mission playback, do the following to see these features:
 - **Volleyes**
 - a. Click the **information** icon.
 - b. Scroll down to the Volley section, and click the **eye** icon for the volley you want to view
 - c. Click **Close Report**.
 - **Gunline procedures in real-time**

Expand the gunline entry (see Gunline Data in the VBS Call for Fire Manual).

4. Press **Play** in Playback Controls to start the fire mission replay.

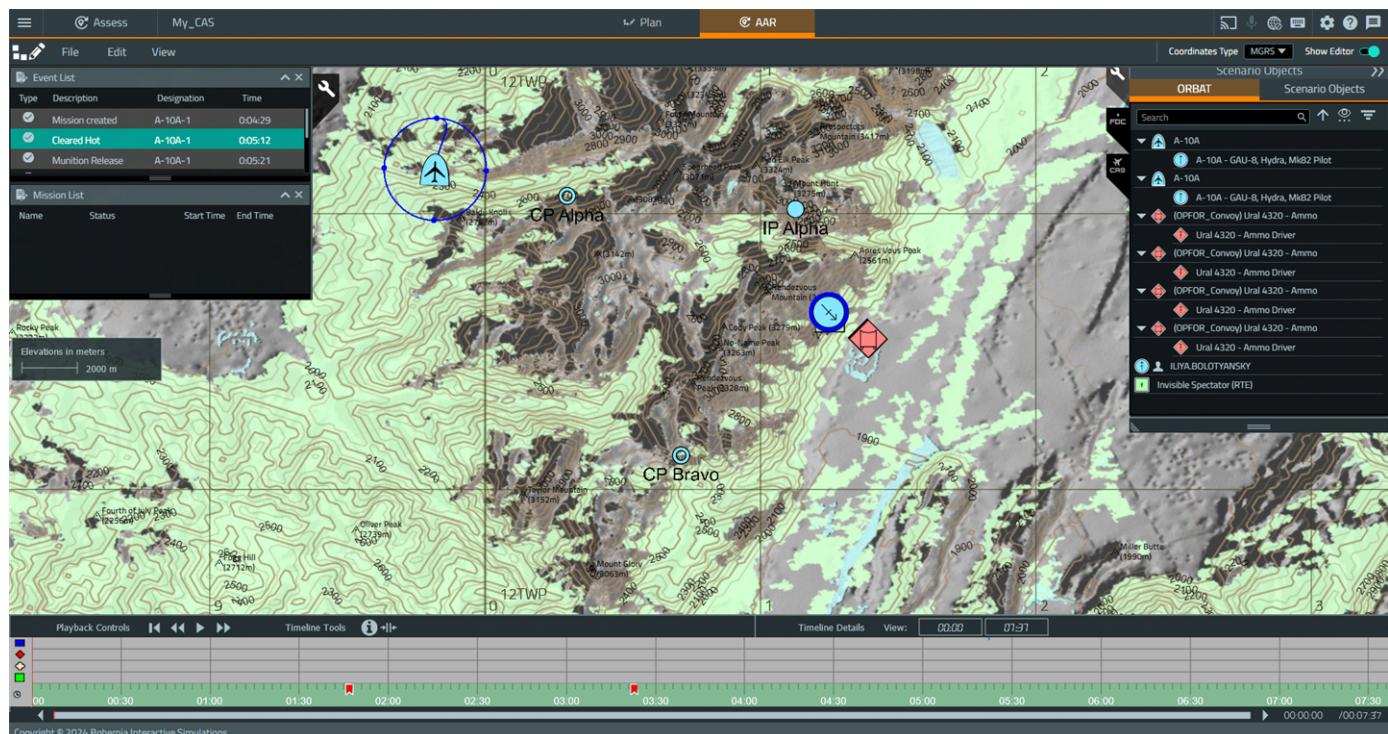
The fire mission plays. To repeat the volley, click the **Previous Volley** button. To skip to the next volley in the fire mission, click the **Next Volley** button.

10. VBS Close Air Support (CAS) in AAR

Administrators / Instructors, and Trainees are able to review CAS training scenarios retrospectively, using the After Action Review (AAR) feature. This feature enables the analysis of Trainee decision making and performance during a scenario .

AAR scenario recordings are accessed by the Administrator / Instructor. However, the Trainee can also view them on their computer.

To open the CAS AAR UI, click the **CAS** tab in the AAR.



The CAS AAR UI consists of:

- [Event List \(below\)](#)
- [Mission List \(on the next page\)](#)

In addition, VBS4 automatically adds CAS activity to the AAR Timeline as overlay commits and corresponding AAR bookmarks. For more information, see [Share Overlays - Network Collaboration](#) in the VBS Plan Manual.

10.1 Event List

The Event List Panel shows the CAS events that happened during the CAS mission.

The Event List Panel is available in the Preview / Execute / Assess Modes.

In Assess Mode, CAS Events are added to the AAR Timeline (see [AAR Playback and the User Interface \(on page 13\)](#)).

Type	Description	Designation	Time
✓	Mission created	A-10A-1	0:04:32
✓	Egressing	A-10A-1	0:09:26
✓	Off Dry	A-10A-1	0:09:26
⚠	No Cleared Hot Given	A-10A-1	0:09:26
⚠	Not Able to Fire	A-10A-1	0:09:26

For more information, see [CAS Event List Panel \(on page 45\)](#).

10.2 Mission List

The Mission List shows all the CAS missions performed by individual aircraft in the CAS Unit.

The Mission List Panel is available in the Preview / Execute / Assess Modes.

Name	Status	Start Time	End Time
A-10A	On Mission	0:04:32	0:06:45

For more information, see [CAS Mission List Panel \(on the next page\)](#).

10.3 CAS Mission List Panel

The Mission List panel shows a list of mission statuses based on the missions that CAS Units (see CAS Units Tool in the VBS Plan Manual) execute during the CAS scenario.

Name	Status	Start Time	End Time
A-10A	On Mission	0:04:32	0:06:45

The Mission List information depends on the VBS4 Mode:

- **Preview / Execute Mode** - CAS mission statuses are added to the Mission List as the CAS scenario executes.
- **Assess Mode** - All the CAS mission statuses that occur during the CAS scenario run are in the Mission List when the After Action Review (AAR) loads. For more information, see [VBS Close Air Support \(CAS\) in AAR \(on page 42\)](#).

The CAS mission statuses are:

NOTE

Other aircraft statuses are displayed in the Available Aircraft Panel (see CAS Available Aircraft Tool in the VBS Plan Manual).

Mission Status	Description
On Hold	Shows when all or individual aircraft are in a Holding Pattern (HP) either from routing or after egressing.
On Mission	Shows when one or more aircraft are conducting a CAS mission but have different individual statuses.
On Route	Shows when one or more aircraft are egressing.

10.4 CAS Event List Panel

The Event List panel shows a list of CAS events that occur during the CAS mission.

Type	Description	Designation	Time
✓	Mission created	A-10A-1	0:04:32
✓	Egressing	A-10A-1	0:09:26
✓	Off Dry	A-10A-1	0:09:26
⚠	No Cleared Hot Given	A-10A-1	0:09:26
⚠	Not Able to Fire	A-10A-1	0:09:26

The Event List information depends on the VBS4 Mode:

- **Preview / Execute Mode** - CAS events are added to the Event List as the CAS mission executes.
- **Assess Mode** - All the CAS events that occur during the CAS mission run are in the Event List when the After Action Review (AAR) loads. For more information, see [VBS Close Air Support \(CAS\) in AAR \(on page 42\)](#).

The following is discussed:

- [Event List Information \(below\)](#)
- [Possible Events \(on the next page\)](#)

10.4.1 Event List Information

The Event List information is divided into several columns:

Column	Description
Type	Event type. For more information, see Event Type (on the next page) .
Description	Event description. For more information, see Event Description (on the next page) .

Column	Description
Designation	Aircraft name / callsign.
Time	Event time.

10.4.2 Possible Events

The possible CAS event types are:

Event Type	Icon	Event Description
Abort		CAS mission aborted. For more information, see CAS Mission Order Tool in the VBS Plan Manual.
Cleared Hot		When an aircraft is ordered a Cleared Hot before weapon release. For more information on Cleared Hot, see CAS Available Aircraft Tool and CAS Mission Order Tool in the VBS Plan Manual.
Egressing		Shows after an aircraft fires the last munition.
Laser Off		Aircraft reports it has fired a PRF-guided munition 10s ago.
Laser On		Aircraft reports it is about to fire a PRF-guided munition in 30s.
Mission Created		CAS mission created. For more information, see CAS Mission Order Tool in the VBS Plan Manual.
Munition Impact		Single shot munition impacts.

NOTE

If the munition quantity (**Munitions > Quantity** property - see CAS Mission Order Tool in the VBS Plan Manual) is bigger than 1, whether the event only appears for the first munition impact or for all is determined by the **logAllImpacts** JSON parameter (see CAS Unit Parameters in the VBS Plan Manual).

Event Type	Icon	Event Description
Munition Release		Aircraft releases a single shot munition. <div style="border: 1px solid #0070C0; padding: 10px;"> <p>NOTE</p> <p>If the munition quantity (Munitions > Quantity property - see CAS Mission Order Tool in the VBS Plan Manual) is bigger than 1, the event appears for every munition release.</p> </div>
No Ammo		Aircraft runs out of shots of the currently selected munition.
No Cleared Hot Given		Aircraft is unable to fire because of delayed Cleared Hot. For more information on Cleared Hot, see CAS Available Aircraft Tool and CAS Mission Order Tool in the VBS Plan Manual.
No Fire Area Violation		Aircraft fires munitions in a No Fire Area (NFA). For more information, see CAS No Fire Area (NFA) Tool in the VBS Plan Manual. <div style="border: 1px solid #0070C0; padding: 10px;"> <p>NOTE</p> <p>If the munition quantity (Munitions > Quantity property - see CAS Mission Order Tool in the VBS Plan Manual) is bigger than 1, the event appears for every munition release.</p> </div>
No Fly Zone Violation		Aircraft enters a No Fly Zone (NFZ). For more information, see CAS No Fly Zone (NFZ) Tool in the VBS Plan Manual.
Not Able to Fire		Aircraft is unable to fire because of invalid CAS Mission Order parameters. For more information, see CAS Mission Order Tool in the VBS Plan Manual.
Off Dry		Aircraft reports it starts egressing and that no munitions were released.
Off Hot		Aircraft reports it starts egressing and that munitions were released.
Return to Base		Aircraft returns to base.
Time of Flight		Time of flight of unguided / GPS-guided munitions. Shown in brackets in seconds.

11. AAR Streaming

Instructors are able to stream AAR recordings in real-time to Trainees, providing that the Trainee client computers are on the same network as the Instructor host computer. This enables Instructors to broadcast recordings of completed AARs to Trainees who, for example, may not be at the same location as the Instructor, or other Trainees.

In addition, voice communication is available utilizing VBS Radio. This allows the Instructor to speak to all Trainees present during a broadcast, and also enables Trainees to speak to the Instructor.

WARNING

Do not disable VBS Radio (`-disableVBSRadio`) on either the host or client computers (see in the VBS4 Instructor Manual). Otherwise, the described VBS Radio voice communication functionality does not work.

The following are discussed:

- [Broadcast an AAR Recording \(on the next page\)](#)
- [Viewing an AAR Broadcast \(on page 50\)](#)
 - [Connect to an AAR Broadcast \(on page 51\)](#)

11.1 Broadcast an AAR Recording

AAR recordings are broadcast from the Instructor (host) computer using the following procedure.

Follow these steps:

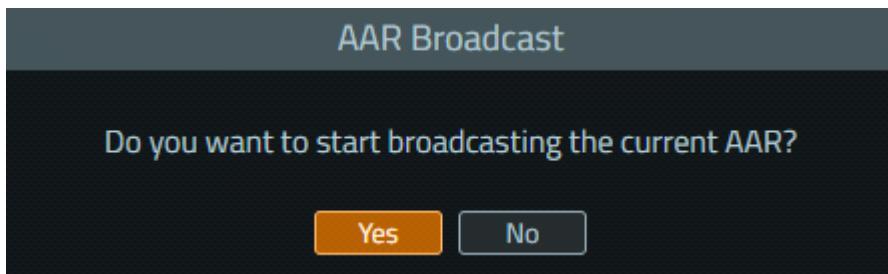
1. Follow the procedure in [Scenario Assessment \(on page 11\)](#) to open the AAR UI.
2. In the toolbar at the top-right of the AAR UI, click the gray **AAR Streaming** icon.



TIP

Hovering your mouse over the **AAR Streaming** icon shows the following tooltip: **Start AAR Streaming to connected clients.**

When you click the **AAR Streaming** icon, the following dialog appears:



3. Click **Yes** to begin broadcasting.

The Streaming icon changes to **green**, indicating that streaming is active.



4. To speak to Trainees, click the gray **Radio** icon.



- When you click the **Radio** icon, it changes to **green**, indicating that voice communication is active.



i **NOTE**

Voice communication is broadcast globally, meaning that all Trainee computers that are on the same network, and who have VBS running, can hear your voice.

- To stop voice communication, click the **Radio** icon again.

The icon turns **gray**, indicating that voice communication is inactive.

- To stop the broadcast, click the **AAR Streaming** icon.

✓ **TIP**

Hovering your mouse over the **AAR Streaming** icon shows the following tooltip: **Stop AAR streaming session, receiving clients will disconnect.**

The following dialog appears:



- Click **Yes** to stop streaming.

11.2 Viewing an AAR Broadcast

As a Trainee using a client computer (with VBS running), and depending on how your computer is set up, you are either automatically connected to an AAR Streaming broadcast when the Instructor clicks the AAR Streaming icon, or you can connect to a specific AAR Streaming broadcast / host using the AAR Streaming List dialog (see [Connect to an AAR Broadcast \(on the next page\)](#)).

If the following parameter, pointing to the IP address or DNS name of the host computer, is added to the VBS4 Launcher (see Extra Parameters in the VBS4 Administrator Manual) of your client computer, you are automatically connected to an AAR Streaming broadcast as soon as the Instructor clicks the AAR Streaming icon, and see the [AAR Broadcast View \(on page 52\)](#):



EXAMPLE

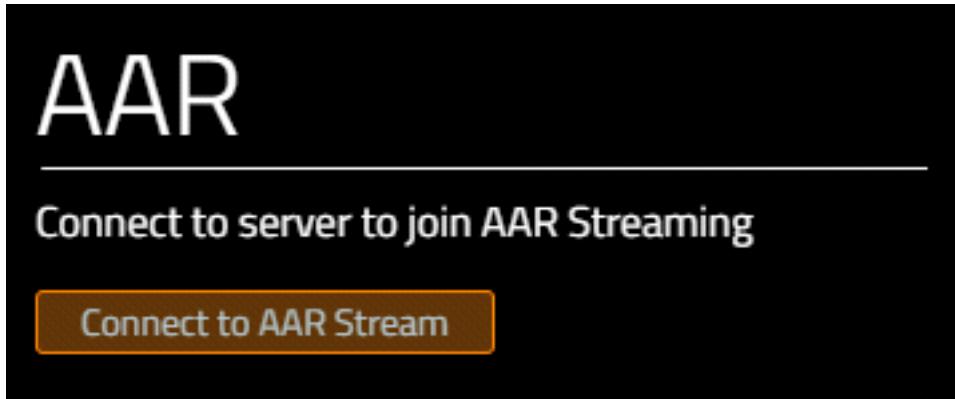
`-aarconnect=00.0.00.00`

11.2.1 Connect to an AAR Broadcast

If the **-aarconnect** parameter is not present in the VBS4 Launcher of your computer, you are able to access and connect to AAR Streaming broadcasts or a specific host using the AAR Streaming List dialog, which is accessed from the VBS4 Training Mode UI.

Follow these steps:

1. Go to the AAR section of the Training Mode UI (bottom-left).



2. Click **Connect to AAR Stream**.

The AAR Streaming List dialog opens.

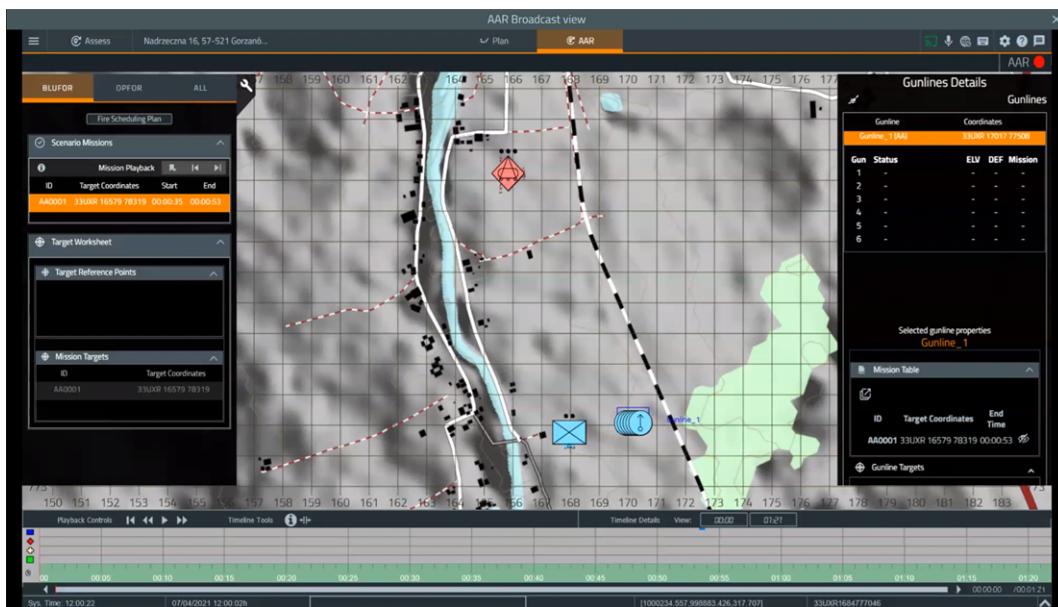
AAR Streaming List			
Server	IP Address	AAR Name	Users
✓	192.168.1.100	2022_06_08_17_25_41.Events	1
✓	192.168.1.100	2022_06_08_17_25_41.Events	1

3. Do one of the following:

- Click the **AAR Stream** in the list that you want to connect to, so that it is highlighted, and click **Connect**.
- Click **Manual** to open the Connect to Remote Server dialog. Enter the IP address and Port of the host computer, and click **Connect**.

The AAR Broadcast View opens.

Image-10: AAR Broadcast View



i NOTE

You cannot interact with the AAR Broadcast View interface, it simply shows a broadcast of the AAR recording running on the host computer.

If your Instructor utilizes VBS Radio voice communication to speak (as described in [Broadcast an AAR Recording \(on page 49\)](#)), you can respond. To do this, press and hold **Caps Lock** ("Push to Talk") on your keyboard and speak. Release **Caps Lock** when you have finished speaking.

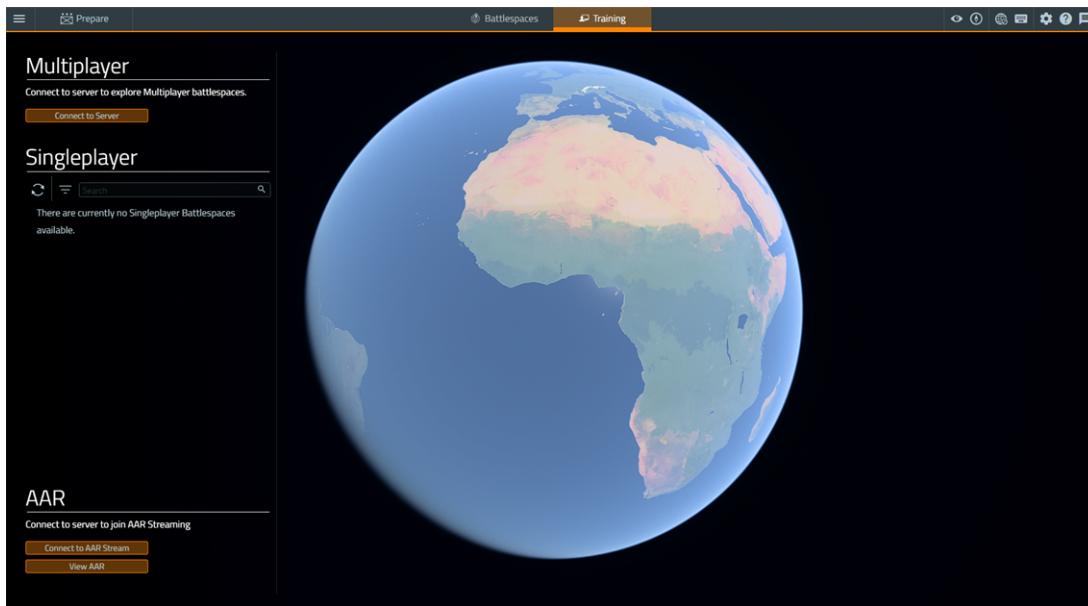
Providing that the Instructor has stopped streaming, you can exit the interface by clicking **X** at the top-right of the interface.

i NOTE

If the Instructor is still broadcasting, clicking **X** causes the interface to briefly close before reopening and reconnecting to the host computer. The interface can only be closed once the broadcast is ended by the Instructor.

12. View AAR

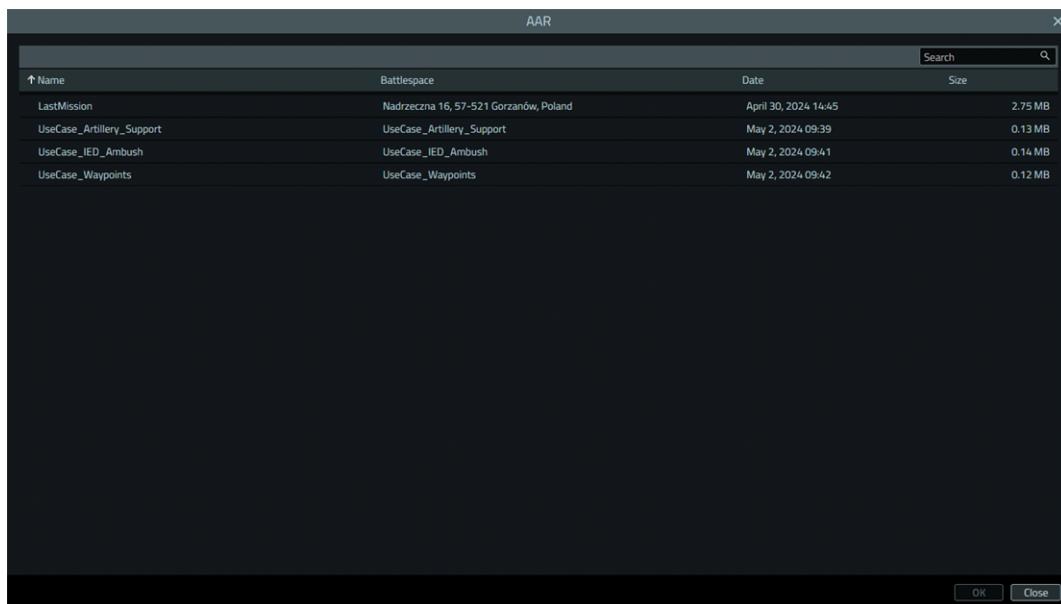
Trainees using a host computer can access and play back After Action Review (AAR) recordings from the Training Menu in C2 Mode.



Follow these steps:

1. Go to the AAR header at the bottom-left of the Training Menu, and click **View AAR**.

The AAR dialog opens.



2. In the AAR List, select the **AAR recording** you want to play back, so that it is highlighted.

 **NOTE**

This list only contains AAR recordings that are local to your computer.

3. Click **OK**.

The AAR User Interface (AAR UI) opens for the selected recording.

For information about how to use the functions in the AAR UI, see AAR Playback and the User Interface in the VBS4 AAR Manual.

 **WARNING**

Some AAR UI functions may not be available, as they are reserved for Administrator / Instructor use only.

13. Other AAR Functions

AAR includes various additional tools and functions that can help you analyze a mission recording, including: visual overlays, access to unit inventories, and ways of looking at events in a mission from different viewpoints.

The following items are discussed in this topic:

- [Visual Overlays \(below\)](#)
- [Access Inventories \(on the next page\)](#)
- [Viewpoints and Navigation \(on the next page\)](#)

13.1 Visual Overlays

After Action Review provides access to several visual overlays to enhance an assessment of a scenario:

- **Field of View** - Provides a visual indication of what a character can see.
- **Ink-Spot Settings** - Provides a visual indication of how long a unit or vehicle has been stationary.
- **Laser Target Lines** - Provides a visual indication of laser designation of targets.
- **Hit Lines** - Provides a visual indication of the path of munitions.
- **Trails** - Provides a visual indication of the path a character has followed.

NOTE

Invisible spectators and animals do not have Field of View or Ink-Spot Visualizations.

These visual overlays are accessed from the **View** menu in the [AAR UI \(on page 14\)](#):

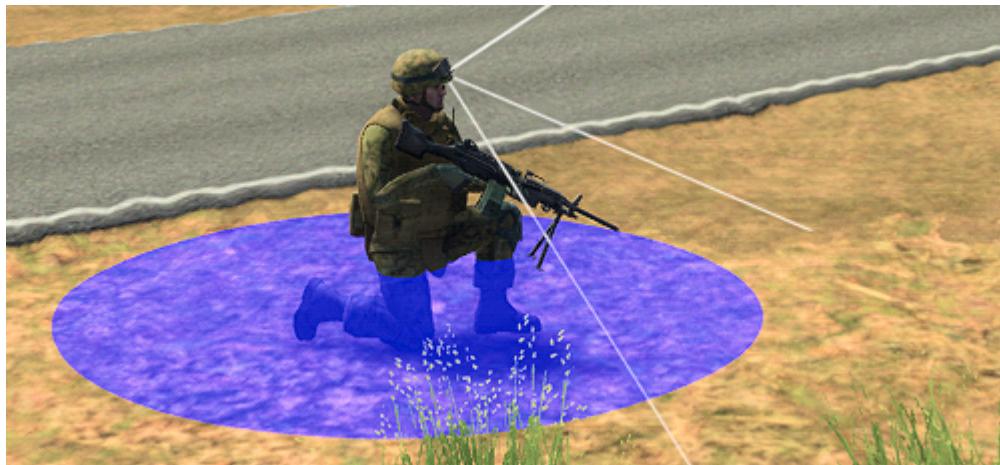
- **FOV Settings**
- **Ink-Spot Settings**
- **Show / Hide Laser Target Lines**
- **Show / Hide Hit Lines**
- **Show / Hide Trails**

For more information, see the following topics in the VBS4 Instructor Manual:

- Field of View Visualization
- Ink-Spot Visualization
- Laser Target Line Visualization

- Hit Line Visualization
- Trail Visualization

Image-11: AAR with Ink-spots and FOV activated



13.2 Access Inventories

You can view the Equipment Inventory of units and vehicles, from the 2D Map View, 3D Camera View, and the Scenario Objects Tree, using the following procedures:

- Right-click the **unit**, and select **Organization > View Unit's Inventory...** from the context menu.
- Right-click the **vehicle**, and select **Organization > View Vehicle's Inventory...** from the context menu.

The unit / vehicle Equipment Inventory dialog opens.

13.3 Viewpoints and Navigation

There are tools and settings in AAR that enable you to view events that happened in a mission in different formats or from various viewpoints. These enable you to navigate around the map / terrain of an AAR, and view equipment inventories for units and vehicles.

2D Map / 3D Camera Views

The background of the AAR Playback interface can be switched to either a 2D Map View or 3D Camera View of the terrain area that is loaded. Press **Map (M)** to toggle the view.

NOTE

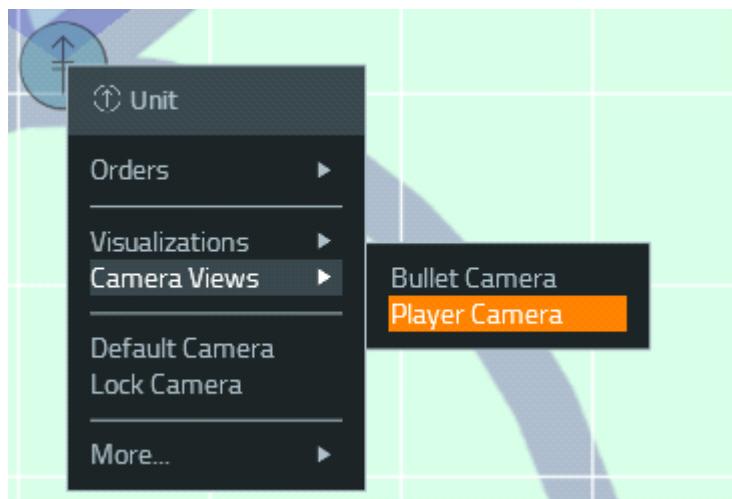
The Mini-Map is not available in AAR.

Player Camera View

You can access the first-person camera view from the unit context menu or in the Scenario Objects Panel. Click the **list** icon at the top-right of the AAR UI to expand the Scenario Objects panel, which contains the Scenario Objects Panel. This panel displays the various Editor Objects that are currently active in the AAR Playback.

To select the first-person view of a unit, right-click the **unit** or its entry in the Scenario Objects Panel, and select **Camera Views > Player Camera** from the context menu.

Image-12: Player Camera selection



Timeline Slider Navigation

When the timeline grid is zoomed out, the [Timeline Grid Controls \(on page 21\)](#) enables you to quickly navigate to specific points on the timeline over greater time periods. It works similarly to any other scroll bar.