

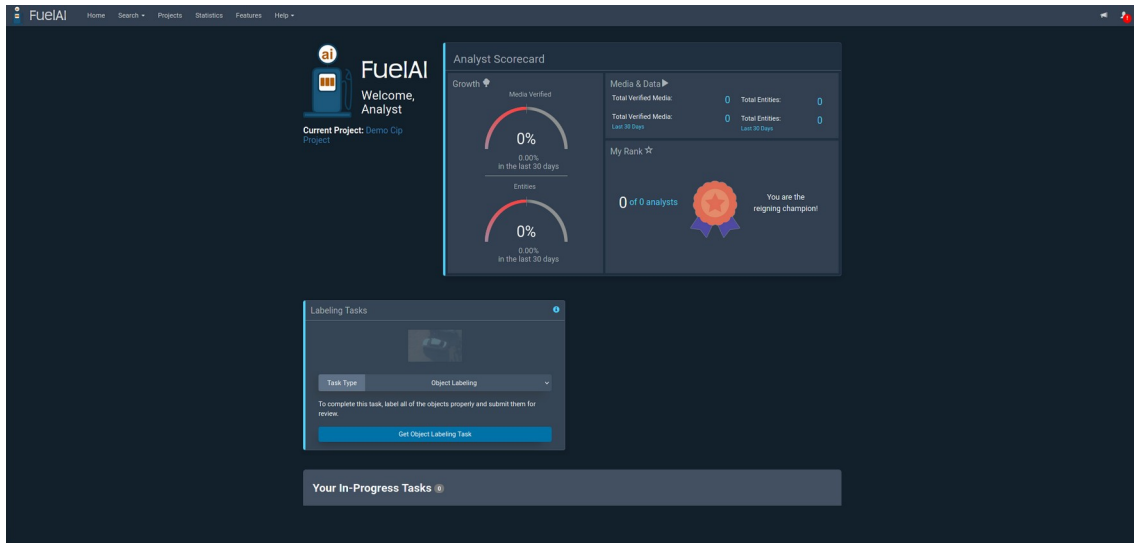
# **FuelAI Users Guide**

Neuromorphic Fusion of Timely Intelligence (NFTI)

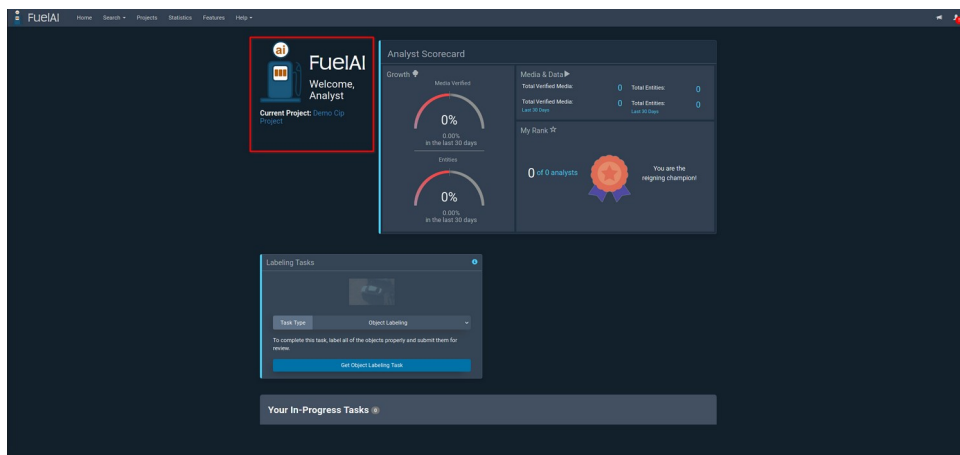
<b>1</b>	<b>FuelAI Homepage</b>	<b>3</b>
1.1	Homepage view in Classic Workflow	5
1.2	Homepage view in Focused Workflow	5
<b>2</b>	<b>FuelAI Workflow</b>	<b>6</b>
2.1	Classic Workflow	6
2.2	Focused Workflow	7
<b>3</b>	<b>Media Viewer</b>	<b>8</b>
3.1	Video Clip Viewer	8
3.1.1	Classic Workflow Clip Viewer	8
3.1.2	Focused Workflow Clip Viewer	8
3.2	Image Viewer	9
3.2.1	Classic Workflow Image Viewer	9
3.2.2	Focused Workflow Image Viewer	9
3.3	Audio Viewer	9
3.3.1	Classic Workflow Audio Viewer	9
3.4	Ontology Sidebar	10
3.5	Clip Playback Bar	11
3.6	Annotation Tooling	13
3.5.1	Object Tracking	13
3.5.2	Copy Track Painting	14
3.5.3	Zooming, Panning and Drawing Assistance	15
<b>4</b>	<b>Annotating Media</b>	<b>16</b>
4.1	Annotating Clips	16
4.2	Annotating Images	16
4.3	Entity Related Operations	16
4.3.1	Deleting Entity	17
4.3.2	Deleting a Single Key Frame	17
4.3.3	Deleting an Entire Entity	17
4.3.4	Ending Entities	18
4.3.5	Updating an Entity's Class	19
4.3.6	Marking an Entity as Occluded	19
4.3.7	Locking an Annotation	20
4.3.8	Copy/Paste Entities	20
<b>5</b>	<b>Annotation Tooling</b>	<b>21</b>
5.1	Zooming in FuelAI	21
5.2	Intelligent Object Tracking	21
5.2.1	Available Tracking Algorithms	21
5.3	Drawing Assistance	22
5.4	Single-Click Labeling	22
5.5	Viewing Metadata	22
5.6	Annotation Settings	23
5.7	Feedback	24
5.8	Changing Password	25
5.9	Training Videos	27
<b>6</b>	<b>FuelAI Terminology</b>	<b>29</b>

# 1 FuelAI Homepage

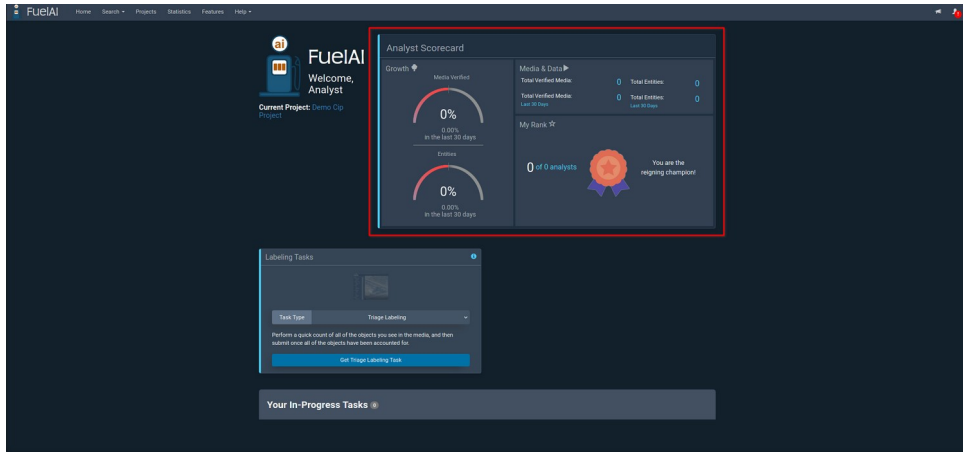
After authenticating with FuelAI, the user is taken to the main landing page of the application, this page is separated into sections.



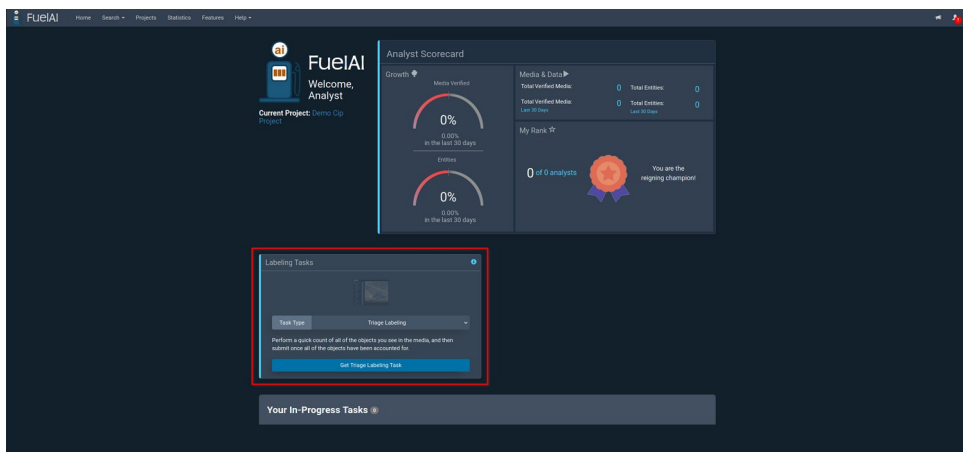
The top left section displays a welcome message and denotes the current project the user is in.



To the right of the welcome message, the Analyst Scorecard is shown. The Analyst Scorecard is a statistics feed that allows the user to monitor and track their growth. FuelAI keeps track of how many objects the user has labeled, all verified pieces of media and even ranks the user compared to other analyst users in the project.

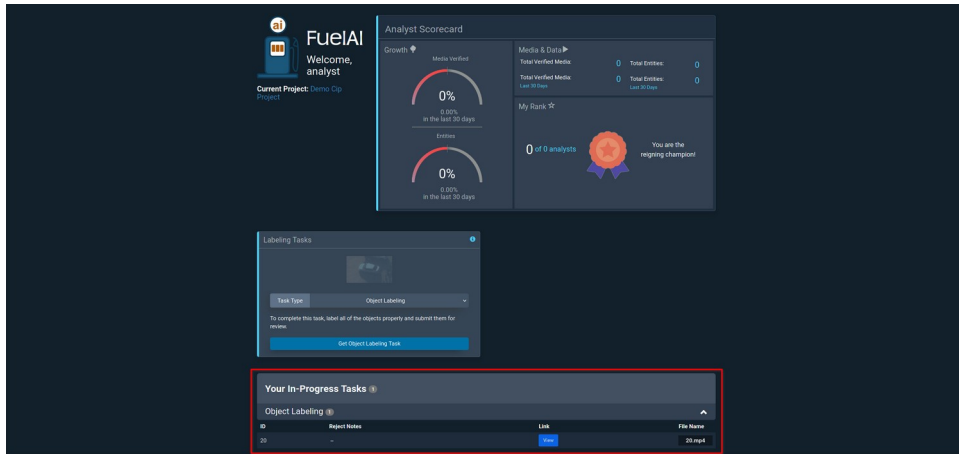


Next is the current tasks available to the user for the given project. For an analyst user, this is a Labeling Task. A labelling task is defined as the process of annotating (drawing a box) around an entity of particular interest. This is usually defined by the project’s manager (the user who created the project). More information on this can be found in the Annotating Media section.



At the very bottom of the homepage is the list of all currently saved in-progress media displayed on a table. That is, all types of media that have been claimed by the user for a labeling task. From here, the user can click ‘View’ to continue labeling the media where they left off.

**Note:** There is a limit to the number of in progress media each user can have. FuelAI recommends all in-progress media be completed before taking on a new labeling task.



The view of the homepage may differ from project to project, depending on what type of workflow is being implemented in the current project. More information on project workflows can be found in the FuelAI Workflow section.

### 1.1 Homepage view in Classic Workflow

If the current project is in classic workflow mode, the Labeling task can have up to two task types, configurable by the Project Manager: Object Label, and/or Triage Label. The classic mode combines all steps during the labeling process for an analyst into a condensed format. This is further explained in the FuelAI Workflow section.

### 1.2 Homepage view in Focused Workflow

If the current project is in a focused workflow mode, the Labeling task can have a variation of multiple task types, which are defined by the Project Manager. These task types will be further explained in the FuelAI Workflow section.

## 2 FuelAI Workflow

The FuelAI media annotation process is divided into multiple workflow steps. For each media type, the steps must be completed in order, and each step will use data created in the previous step. The default workflow steps are:

1. **Triage** – During the Triage step, the analyst will view the media and keep a running count for entities of interest. Once a rough count for each entity type can be established, the analyst submits this survey for review and verification.
2. **Object Labeling**
  - a. **Object Identification** - In this step, the analyst will draw boxes around every object the first time it becomes visible in the clip.
  - b. **Object Tracking** - After all objects have been identified, the analyst will label the position of each object throughout the entire clip's playback.
  - c. **Object Rotation** - After all objects have been tracked, a separate step is used so that the analyst can rotate each box to snugly fit the object and re-label throughout the clip with the rotation applied.

### 3. Sensor Mode Labeling

Note that all tasks may not be active for a given project in FuelAI. It is possible, for example, that a piece of media is not required to go through Triage or Sensor Mode Labeling.

The FuelAI workflow for each task is as follows:

1. The analyst goes to the FuelAI homepage and selects a task type from the available labeling task section. The user will be automatically redirected to a piece of media that is ready to be analyzed by the user and reviewed. The analyst may save changes to the clip multiple times during this step. Analysts also have the option to release a clip, in this case, the clip will be removed from their in-progress queue, but previously made annotations will remain.
2. Once each task is complete, the analyst will click the Submit button in the upper right of the screen. At this point, the analyst has the option to provide notes/questions to the verifier.
3. A QC (Quality Control) analyst will then monitor clips available for verification. When a clip is available the QC person will review and either reject or verify the clip. If the supervisor rejects the clip, the analyst will have to make the needed corrections and resubmit.
4. It is possible for a Project Manager to disable verification for each of the workflow steps. In this case, the clip will automatically be verified in the system without having to be reviewed by QC.
5. Once verified, the FuelAI process is complete. Later, data can be extracted from the system to help train AI (Artificial Intelligence) models based on verified data labels.

### 2.1 Classic Workflow

While a project is using a classic workflow, all workflow steps are condensed.

1. The analyst goes to the FuelAI homepage and selects either Triage Labeling (depending on project configuration) or Object Labeling. In the Triage Labeling

step, the user examines a piece of media and keeps a running count of the type of entities that are in the piece of media. The analyst then submits their analysis to be reviewed and verified by a quality control analyst.

2. Object Labeling is a combination of Object Identification, Object Tracking, Object Rotation, and Event Identification. The analyst user can identify and label all entities in the piece of media (as well as determine image/video sensor type if present) before submitting for review and verification.

## 2.2 Focused Workflow

If a project was configured to use the focused, a combination of workflow steps can be used.

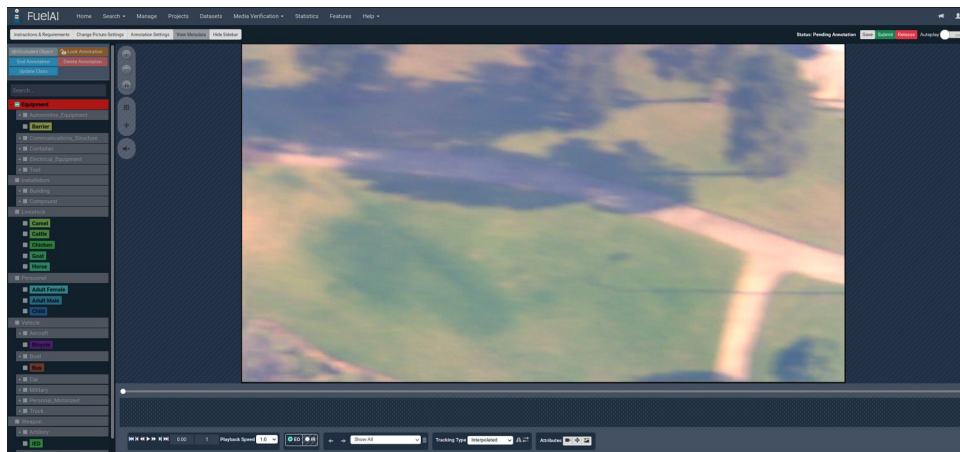
1. If the current project has the Triage step enabled, the analyst goes to the FuelAI homepage and selects the Triage Labeling step in the Labeling Task section. The analyst user examines the piece of media and screens the number of entities in the video. Once completed, the media will be returned to the assignment pool to begin the labeling process described Object Labeling.
2. During the Object Labeling step, the analyst user claims the media to begin the labeling process and is redirected to the Media Viewer. In Focused workflow, the analyst user is only able to label and classify one entity at a time. Furthermore, the quality assurance analyst can only verify or reject that single entity. The analyst user tracks the entity throughout the media, rotating and adjusting the annotation to conform to the entity label standards. Once complete, the user submits their annotation for review.
3. If the current project has been configured Sensor Mode Labeling, the analyst user can claim an image or video and mark the media as Infrared (IR) or Electro-Optical (EO). For videos specifically, different sections can utilize different types of sensor modes and can be marked accordingly in FuelAI.

## 3 Media Viewer

The media viewer is where the analyst user will complete their label tasking. This view changes slightly depending on the type of media being worked on.

### 3.1 Video Clip Viewer

The video clip viewer is used for labeling full motion video. Apart from being able to analyze the video frame by frame, the user also has access to tools like Tracking, which allows them to use computer vision algorithms to automatically track the entity through the video highlighted by the user. Further details of these tools can be found in the FuelAI Tooling section



#### 3.1.1 Classic Workflow Clip Viewer

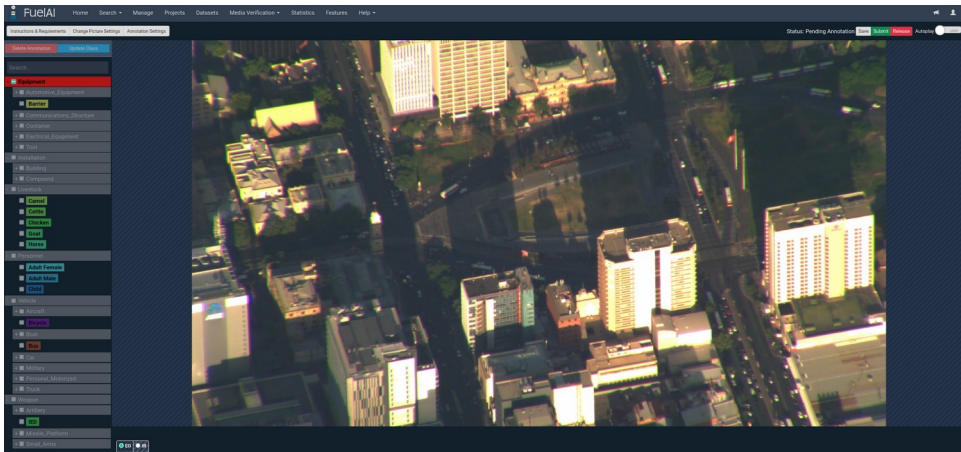
If the current project is in classic mode, the video may not be considered complete without labeling all entities in the clip. Therefore, the Analyst can create as many new annotations as needed.

#### 3.1.2 Focused Workflow Clip Viewer

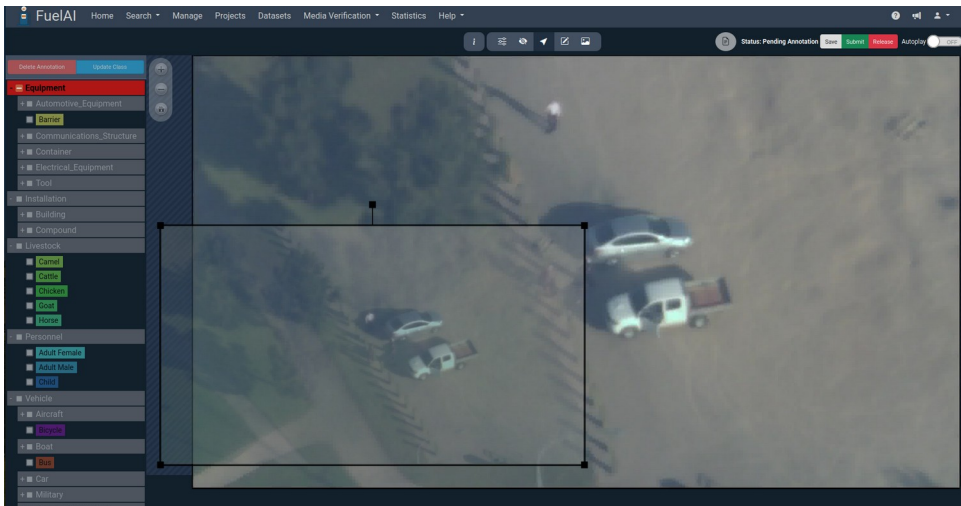
While a project is in focused mode, the analyst can only label one annotation at a time. Once the entity has been fully labeled throughout the clip, it can be submitted for review by a Quality Control user. If the Analyst user receives a clip that has already been reviewed with past annotations, they will be unable to modify verified annotations.



## 3.2 Image Viewer



There are two different views that a user may come across when working with images, depending on the type of project that they are working with. There is the view that is available when the image project is Object Detection (see above), and when the image project has the type of Change Detection (see below).



### 3.2.1 Classic Workflow Image Viewer

While in Classic Mode, the analyst user can label all entities in the image before submitting.

### 3.2.2 Focused Workflow Image Viewer

If the current project is in Focused Mode, the analyst is only able to label one entity at a time.

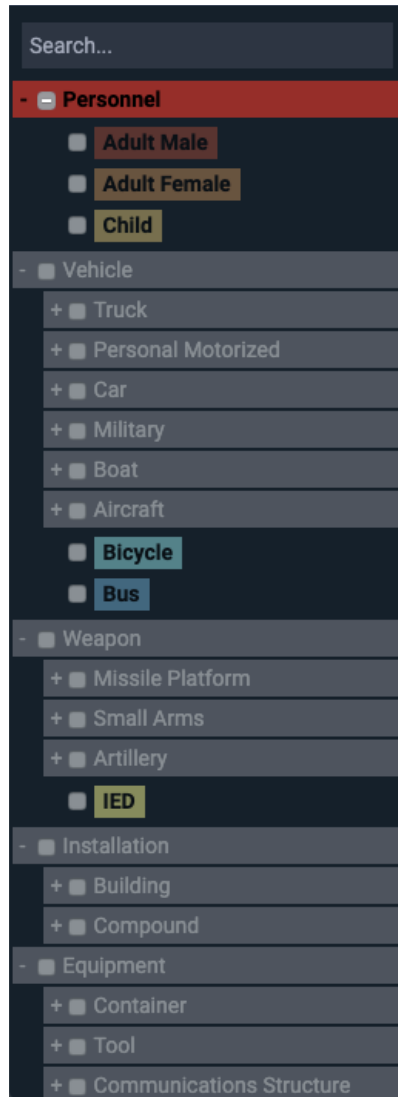
### 3.3 Audio Viewer



#### 3.3.1 Classic Workflow Audio Viewer

While in Classic Mode, the analyst user can label all entities in the audio before submitting.

### 3.4 Ontology Sidebar

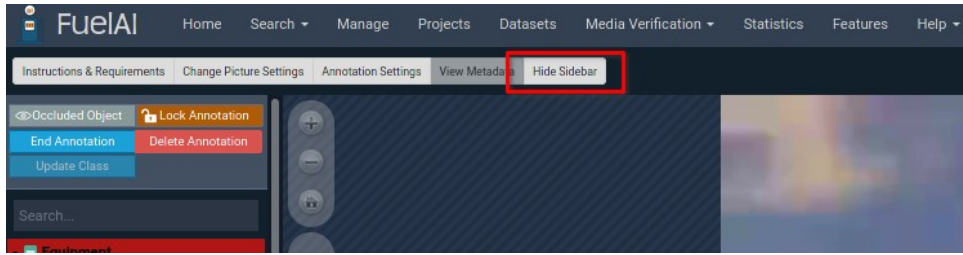


In FuelAI, labeled objects in a clip are bound to an ontology item classification that represents what the object is with the highest amount of certainty. Take, for example, a Sedan in a clip, in this case, Vehicle > Car > Sedan would be chosen as the ontology item. However, if the Analyst user could not determine with certainty that the object was a sedan, the Analyst would use Vehicle > Car instead to generalize the object. In the case where the user can be more specific than the ontology allows the user to select the best, most specific available item. For example, if Jeep is not in the project ontology, the user would classify the object as an SUV.

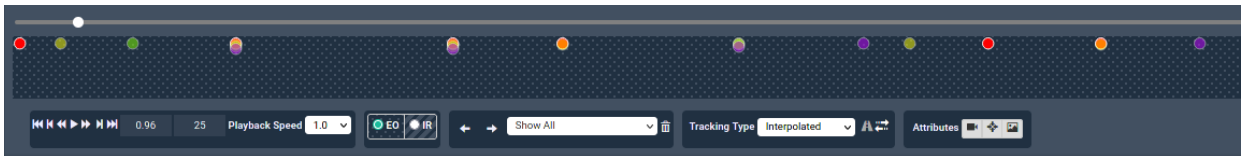
FuelAI displays the available ontology items on the left-hand side of the media viewer, and the items are organized in a hierarchy from least specific to most. Users can expand or collapse the ontology items by clicking the parent item. To select which label you wish to create click the small square, then perform your labeling.

Users can also search the ontology by typing in the edit box at the type of the ontology tree. As the user enters letters, the list will automatically filter to show available matches.

The option to hide or show the ontology sidebar appears on the left-hand side of the main window. With the sidebar collapsed the application will increase the size of the clip window.

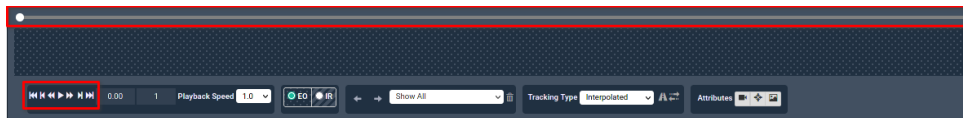


### 3.5 Clip Playback Bar

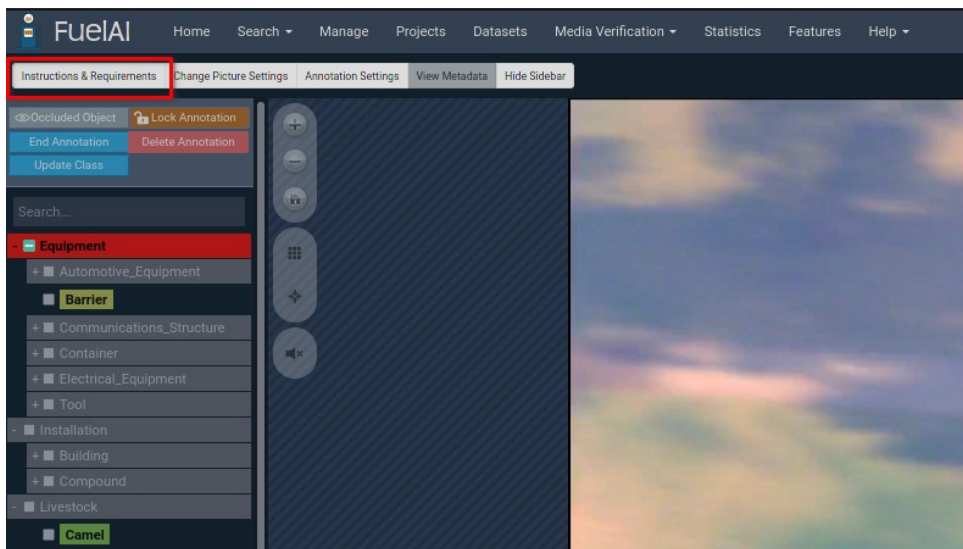


The section of the Clip Viewer displayed above contains several key components.

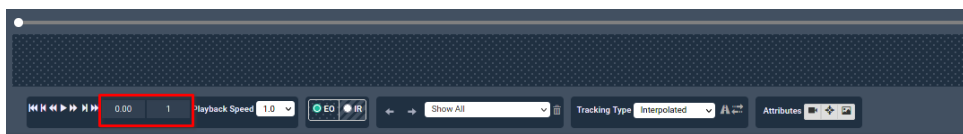
This area contains clip playback-related controls, including a scrubber bar which allows the user to jump to sections in the clip, as well manual clip playback buttons.



FuelAI also offers buttons and keyboard shortcuts for playback. For additional details, click the 'Instructions & Requirements' button at the top left of the Media Viewer.



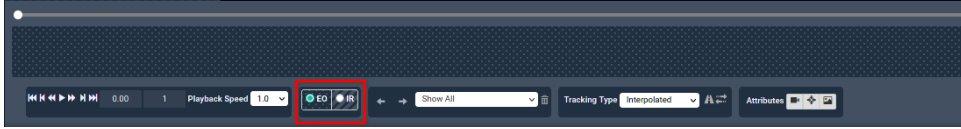
The clip playback bar also contains an input box that displays the current position's time and frame in the overall clip. The control can be edited to adjust the place in the clip.



Options for EO and IR are also present here, and the user can select these options based on the state of the clip at various locations in the timeline. The user must select

one at the beginning of the clip (0.0). If the clip changes later, the user must switch the button at the exact frame when the clip switches. The user can make as many switches as they need to.

To delete an unwanted or incorrect EO/IR annotation, the user must select the unwanted mark and then click on the opposite button. For example, if the unwanted marking is IR, then the user must click on the EO button, and vice versa.



The keyframe bar is the area that displays the colored circles which represent keyframes on the clip. The user can click on the circles to move the clip to the frame that contains the selected entity. The view also provides a quick look at the labeled data in the clip. Keyframes will appear in the bar after the user labels an object.

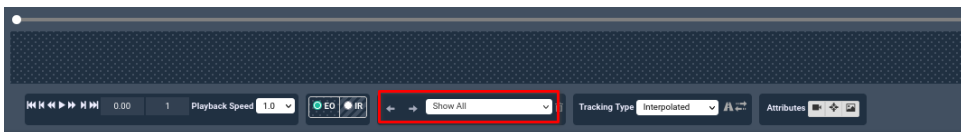
The keyframe bar will vertically stack overlapping keyframe icons as well as highlight the associated bounding box in the clip to allow the user to select the specific item of interest. Users can also vertically scroll over the expanded keyframes if necessary. These features are particularly useful in busy areas of a clip.

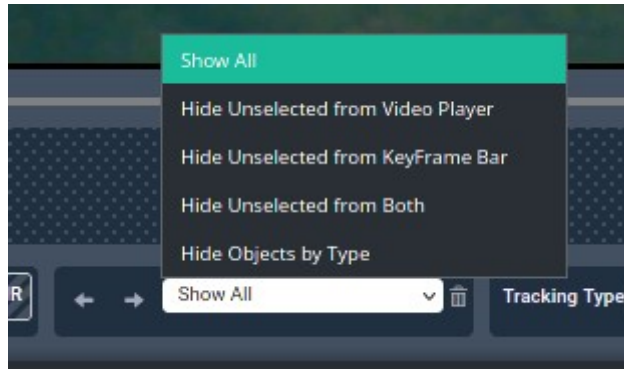
When hovered over a keyframe, the related entity will be highlighted in the media player. When having multiple entities of the same object type, this functionality makes it easier to find the correct one.



If the number of annotations becomes overwhelming, the user can filter down what annotations are displayed on the screen. The dropdown box is located along the bottom of the Media Player along with the playback controls that have the following options:

- Show All - The default option, this will show all entities in FuelAI
- Hide Unselected from Media Player - With this option, all entities will appear in the Keyframe Bar but only the selected entity in the player. The user has the choice to change the chosen entity by clicking on the other items in the Keyframe Bar.
- Hide Unselected from Keyframe Bar - Like Hide Unselected from Media Player except all entities appear in the Media Player instead of the Keyframe Bar.
- Hide Unselected from Both - Only shows the selected entity in both views.

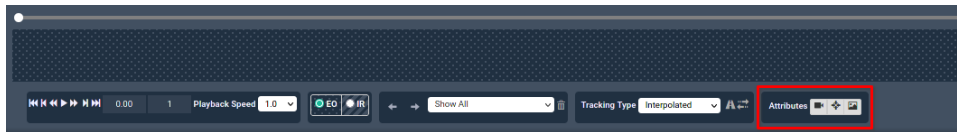




Attributes allow for a more detailed labeling experience. Attributes are used to further properties that should be noted on an entity. The currently supported attribute types are:

- **String** – A description regarding the annotation
- **Boolean** – Whether or not an annotation fits or contains a certain criteria or property
- **Integer** – A number representing a property on the annotation
- **Float** – A decimal number representing a property on the annotation
- **Selection** – A choice of property options

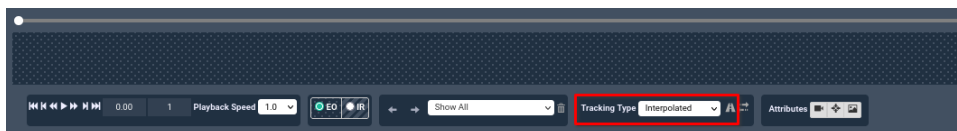
These attributes can be scoped to the entire video, just to the annotation, or to a specific frame the annotation exists on.



## 3.6 Annotation Tooling

### 3.5.1 Object Tracking

FuelAI also offers several options for automatic intelligent object tracking within the media player. To track an object, the user would draw a bounding box as they usually would and then select a tracking algorithm from the lower right-hand corner combo box. Once an algorithm is selected, click the tracking button which appears immediately to the right of the Tracking Type combo box.



The software will then attempt to track the object in the clip for 5 seconds (tracking length is a system configurable option). The analyst should then review the tracking result (via clip playback) to ensure an accurate track. If tracking does not correctly follow the object, the analyst should adjust the bounding box as needed and restart tracking from that point.

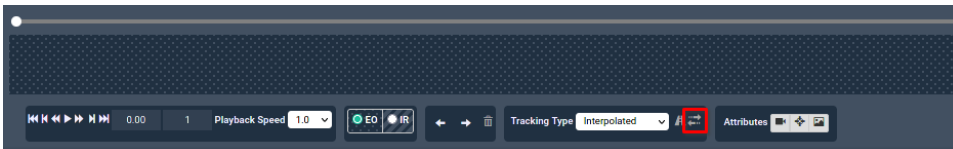
This functionality should help reduce the amount of time it takes to perform the clip labeling task.

FuelAI offers a variety of available tracking algorithms. The variety is intended to give the analyst several options to handle the wide range of environments and objects found in FMV. The process for selecting an algorithm will require some trial and error, and as the FuelAI team gathers tracking metrics, the group will be able to offer more guidance.

- MIL - Good tracker though it does struggle with objects becoming occluded and can take longer to complete as compared to the other options.
- Kernelized Correlation Filters (KCF) - Improved performance as compared to MIL; however, still struggles with occlusion.
- Tracking, Learning, and Detection (TLD) - This option will handle object occlusion better than the previous items; however, it can often report false positives.
- MEDIANFLOW - Works very well when the motion is predictable and small in scale, and there is no occlusion.
- Minimum Output Sum of Squared Error (MOSSE) - This option handles light variations well and is also a good performer.
- CSRT - In testing, this option is the best performer.

### 3.5.2 Copy Track Painting

While labeling, the user can copy the tracking path from previously tracked objects onto other objects within the video. Clicking the tracking painter button with a tracked annotation selected will copy the tracking sequence and notify you that the painter is enabled. Clicking on other annotations will apply that tracking sequence to the newly selected objects. To disable the painter, click the tracking painter button again, press the ESC button on your keyboard, or simply click off the annotation. Upon successful deactivation of the painter, the system will provide you with a notification that the feature has been disabled.



### 3.5.3 Zooming, Panning and Drawing Assistance



The FuelAI media player allows the user to zoom into the canvas to achieve the best data labels possible; the user can also perform clip playback when zoomed. Zooming is also performed by scrolling with the mouse, and the user can then pan around the clip by doing a Click and Drag to the area of interest. To return to the original zoom level the user can use the keyboard shortcut 'h' or click the home icon.

The application has features available to assist in the drawing of accurate bounding boxes; these options can be found in the upper left of the clip panel itself.

- Grid Overlay - When enabled, this will draw a basic grid over the clip, which can help with box drawing and alignment.
- Cursor Guidelines - This option will draw dashed lines according to the mouse's position within the clip. This option aids in determining the best place to start drawing the box to ensure the entire object is captured within.

While analyzing clip media, the analyst user may want to adjust volume levels if present. This is achievable with the volume icon shown.



## 4 Annotating Media

The primary function of FuelAI is to label and annotate full-motion clips in an efficient way to generate a high volume of labeled imagery to train AI/ML algorithms to aid in the clip and image investigation process.

### 4.1 Annotating Clips

Once the analyst user has selected the appropriate ontology item from the ontology bar for an entity of interest within the clip drawing a bounding box around the object is done using a SHIFT + click-and-drag drawing technique. The user would then advance the clip and adjust the bounding box (size, position, rotation, etc.) to continue to identify the object correctly through the length of the clip. Once all relevant objects are labeled, submit the clip for verification. When a supervisor completes the verification step, FuelAI will use interpolation to generate keyframes for all available clip frames between the analyst-drawn keyframes. It is this functionality that allows FuelAI to obtain a high volume of labeled data.

**Note:** The features in the FuelAI annotator will be restricted depending on which workflow task the analyst is completing. Refer to the FuelAI Workflow section for more information.

Once the bounding box is drawn, the user has several options available to manipulate the shape to ensure the object is correctly labeled. It is recommended to get the bounding box as tight to the object in question as possible, leaving as little 'white space' as possible.

- Grab handles - After drawing, handles will appear, and the user can click and drag to resize the box as needed. There is also a rotation handle that appears from the top of the shape.
- Keyboard Shortcuts - FuelAI also offers several keyboard shortcuts for more precise adjustments. Users will find additional details on the keyboard shortcuts by clicking the 'Instructions & Requirements' button located in the main view.
- Moving Shapes - Users can move a shape by clicking and dragging on the shape at a point which is not one of the grab handles.

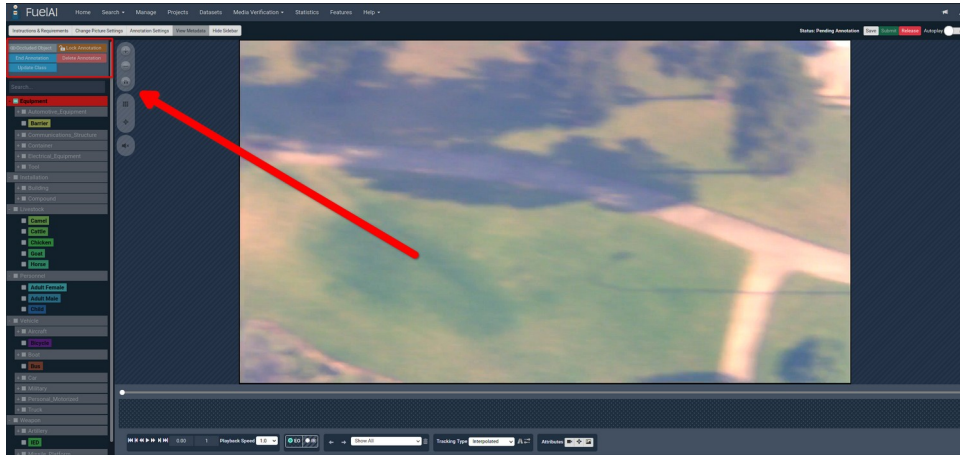
### 4.2 Annotating Images

The process of annotating images is like that of annotating full motion video. The clip controls, as well as clip scrubber and keyboard shortcuts are not present when annotating images. The analyst user simply selects the classification from the ontology bar, draws the bounding box around the entity of interest, adjusts the box to conform to the labeling standards and finally submits the annotation(s) for review.

For projects that are change detection, there is an extra bar available at the top. This bar allows the user to hide or show the overlaying image, as well as move the overlaying image around to line up with the base image. There is another button to enable the ability to draw a paragon, and finally a button to view the image attributes.

## 4.3 Entity Related Operations

Many of the options to control and manipulate the status of annotations are found in the top left corner of the Media Viewer.

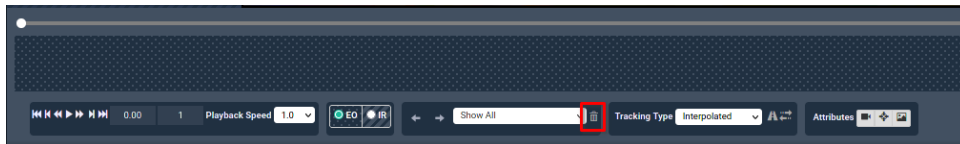


### 4.3.1 Deleting Entity

While annotating a clip, users may find the need to remove erroneous labels or keyframes, FuelAI offers assorted options for this task.

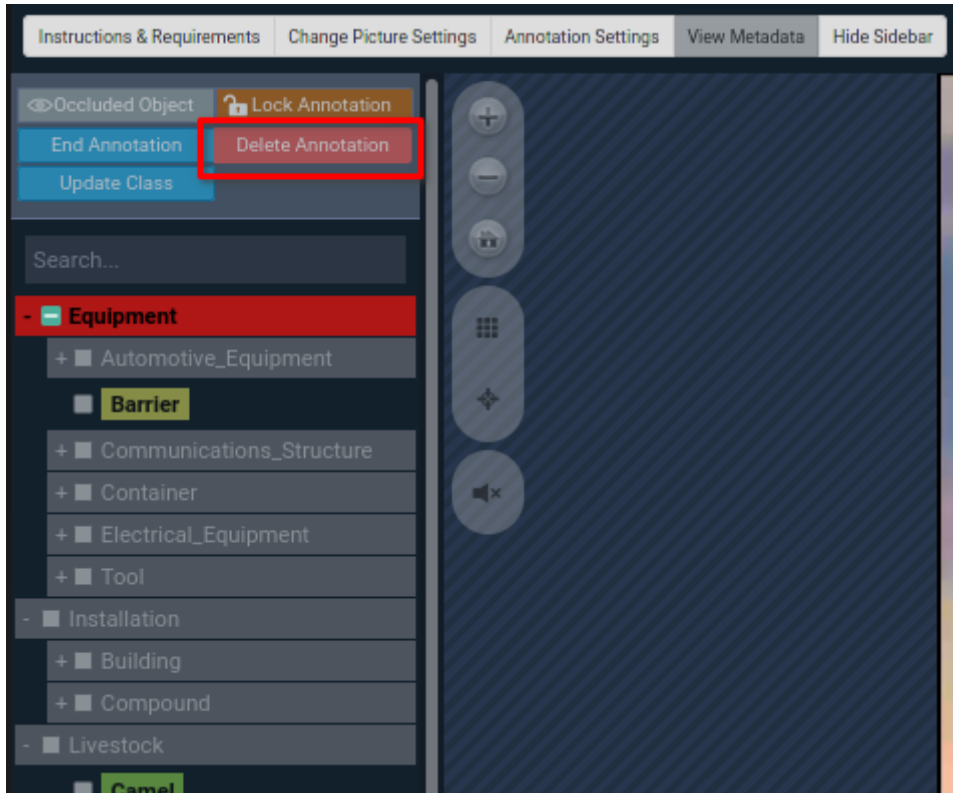
### 4.3.2 Deleting a Single Key Frame

In this case, the user wishes to remove a single drawn keyframe from the clip rather than the entire entity. First, the user must select the exact keyframe they want to delete. Next, remove it by hitting "d" on their keyboard, or clicking the small trash can at the bottom left of the Clip Playback bar.



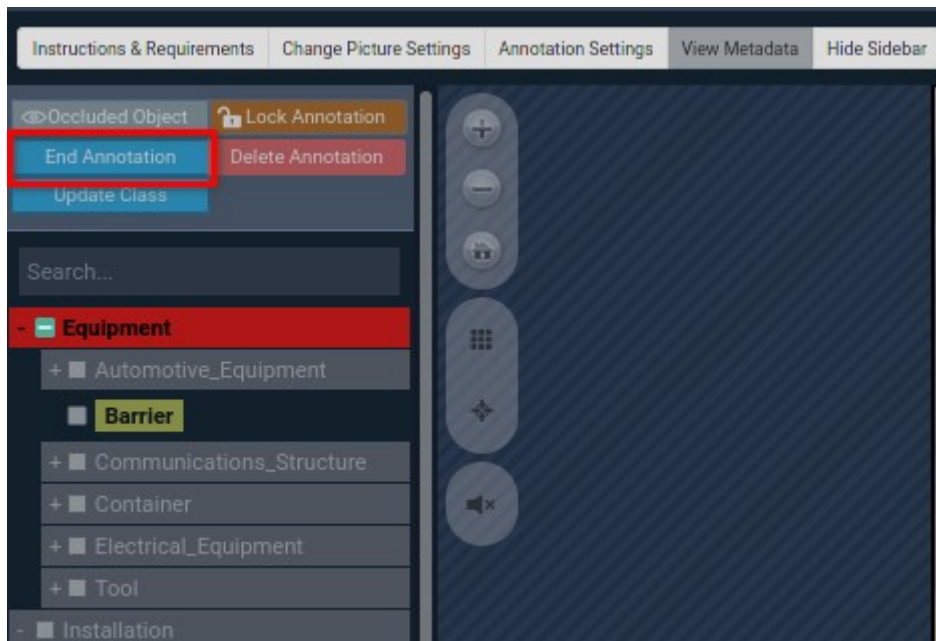
### 4.3.3 Deleting an Entire Entity

To delete all keyframes of an object, the user must select the entity to be removed and then click on the red "Delete Annotation" button in the top left of the screen, above the ontology bar. FuelAI will display a confirmation dialog to ensure the user wishes to continue as this operation is unrecoverable.



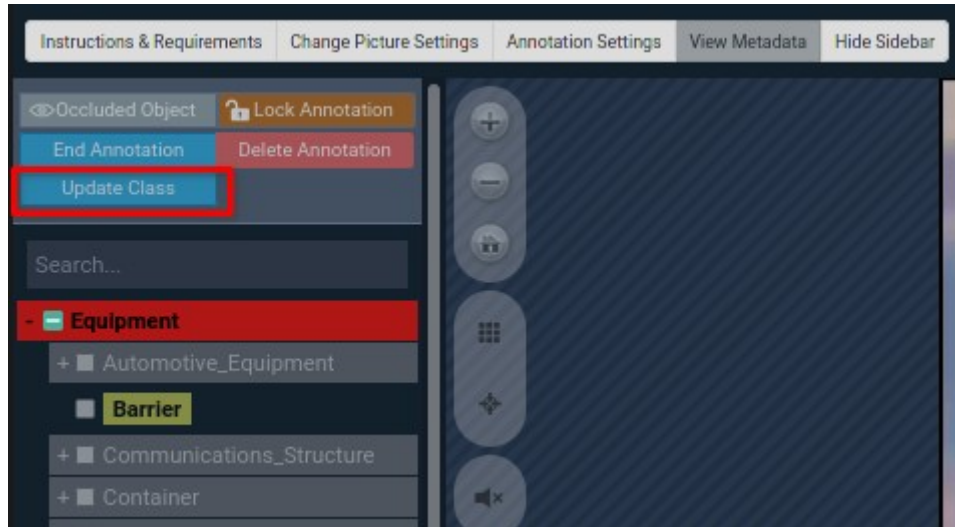
### 4.3.4 Ending Entities

Ending an entity is necessary when the object in question leaves the clip frame entirely. In this case, the user would select the object from the last available frame where the object is fully viewable and click the 'End annotation' button located in the top left of the screen. Once the user advances the clip to the next frame that the entity will no longer appear.



### 4.3.5 Updating an Entity's Class

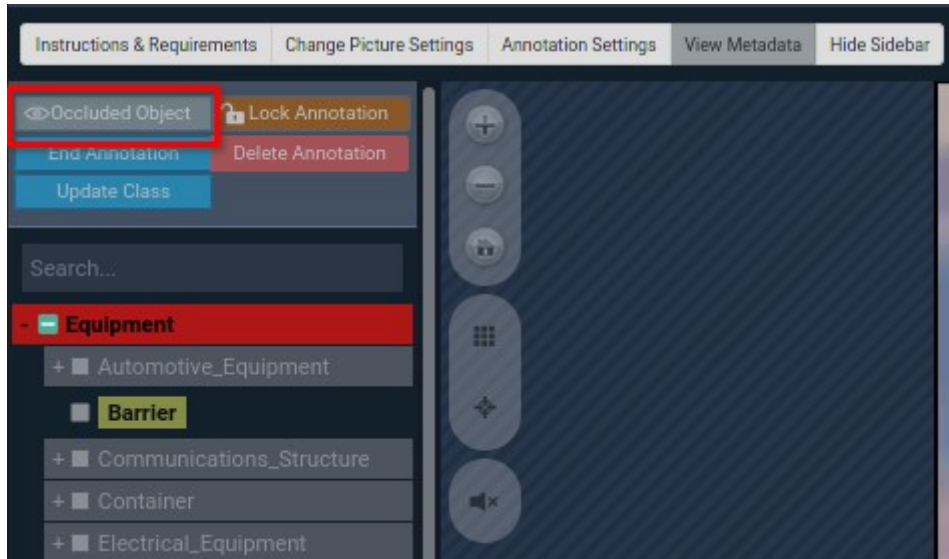
In some situations, it may be necessary to change the associated ontology item (or class) for an object in the clip; after closer analysis, the item is indeed a Sedan instead of a Truck. In this case, the user would select the entity to be updated, select the new ontology item and click the 'Update Class' button in the upper left of the screen to switch the object's associated class.



### 4.3.6 Marking an Entity as Occluded

FuelAI offers users the ability to mark an object as occluded during clip playback. This state is for the scenario where the object of interest is obscured (less than 70% visible) by something else, however, it remains in the clip frame. In some cases, the object may return to view. Take for example a person walking behind a bus, in the frames before the bus the person would be labeled appropriately, the moment they pass behind the bus the entity would be marked occluded and once on the other side marked un-occluded. The occlusion feature can also be used for cases where the clip quality temporarily degrades to the point the imagery would be unusable.

To mark an entity as occluded, select the item of interest and click the 'Occluded Object' button in the upper left and side of the screen. Once enabled, a checkmark will appear on the button, and the bounding box will also appear white. To un-occlude an object, click the button again.



### 4.3.7 Locking an Annotation

While annotating an image or video media, the option to lock an annotation is available. This restricts the selected annotation from being accidentally modified in any way. The analyst user, however, can still copy the annotation and replicate it.

### 4.3.8 Copy/Paste Entities

FuelAI offers the ability to copy and paste entities when labeling clips. The copy operation is performed via the keyboard shortcut (CTRL + C) and then paste operation uses (CTRL + V). The copy/paste functionality will be beneficial to users who are annotating clips that have multiple, similarly placed objects in a clip such as vehicles in a parking lot or the gathering of several people.

## 5 Annotation Tooling

### 5.1 Zooming in FuelAI

The FuelAI media player allows the user to zoom into the imagery to achieve the best data labels possible; the user can also perform clip playback when zoomed. Zooming is performed by scrolling with the mouse, and the user can then pan around the clip by doing a Click and Drag to the area of interest. To return to the original zoom level the user can use the keyboard shortcut 'h'.

FuelAI also has buttons available in the UI for zooming in the clip; these appear in the upper left-hand corner of the clip panel.

### 5.2 Intelligent Object Tracking

FuelAI also offers several options for automatic object tracking within the media player. To track an object, the user would draw a bounding box as they usually would and then select a tracking algorithm from the lower right-hand corner combo box. Once an algorithm is selected, click the tracking button which appears immediately to the right of the Tracking Type combo box.



The software will then attempt to track the object in the clip for 5 seconds (tracking length is a system configurable option). The analyst should then review the tracking result (via clip playback) to ensure an accurate track. If tracking doesn't correctly follow the object, the analyst should adjust the bounding box as needed and restart tracking from that point.

This functionality should help reduce the amount of time it takes to perform the clip labeling task.

#### 5.2.1 Available Tracking Algorithms

FuelAI offers a variety of available tracking algorithms. The variety is intended to give the analyst several options to handle the wide range of environments and objects found in FMV. The process for selecting an algorithm will require some trial and error, and as the FuelAI team gathers tracking metrics, the group will be able to offer more guidance.

- MIL - Good tracker though it does struggle with objects becoming occluded and can take longer to complete as compared to the other options.
- Kernelized Correlation Filters (KCF) - Improved performance as compared to MIL; however, still struggles with occlusion.
- Tracking, Learning, and Detection (TLD) - This option will handle object occlusion better than the previous items; however, it can often report false positives.
- MEDIANFLOW - Works very well when the motion is predictable and small in scale, and there is no occlusion.
- Minimum Output Sum of Squared Error (MOSSE) - This option handles light variations well and is also a good performer.
- CSRT - In testing, this option is the best performer.

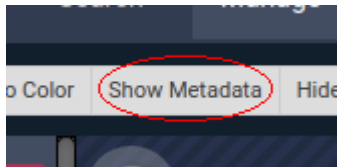
## 5.3 Drawing Assistance

The application has features available to assist in the drawing of accurate bounding boxes; these options can be found in the upper left of the clip panel itself.

- Grid Overlay - When enabled, this will draw a basic grid over the clip, which can help with box drawing and alignment.
- Cursor Guidelines - This option will draw dashed lines according to the mouse's position within the clip. This option aids in determining the best place to start drawing the box to ensure the entire object is captured within.

## 5.4 Viewing Metadata

While labeling, the user has access to the View Metadata Sidebar. Metadata is currently supported for Clip media annotation. Click the Show Metadata button as shown below to reveal the sidebar.



Once revealed, the sidebar will show metadata that has been pulled for frame the user is on. Initially, the user will see data from frame one of the videos. When the data needs to be refreshed, click the green Refresh Metadata button to pull data for the current frame. To show data from either 0903 or 0601 tables, click the button to the right of the table name to expand the data. Use the scroll bars to navigate the table and view different data entries.

Initial View:

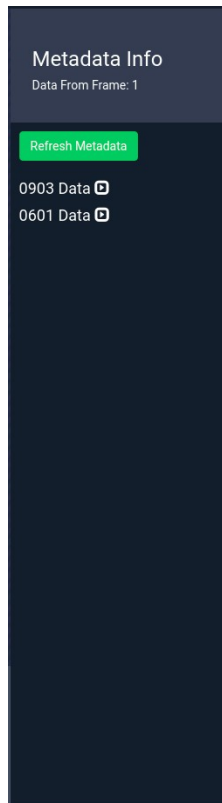
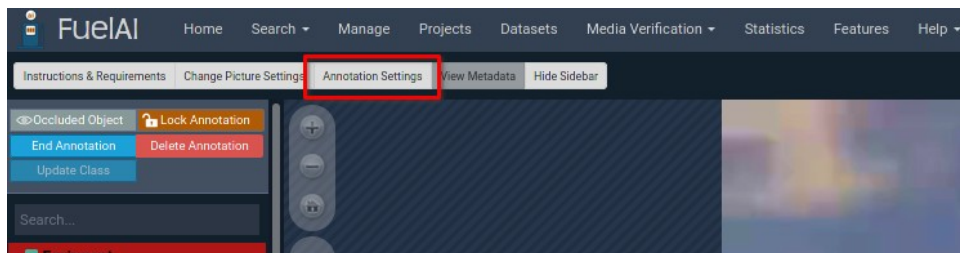


Table View:



## 5.5 Annotation Settings

A user has access to a variety of preferences. These preferences included changing how they draw annotations and toggling grid lines to show by default while annotating. To access this preference list, click the "Annotation Settings" button on bar above the Ontology tree. A modal will appear for a user to specify their preferences.



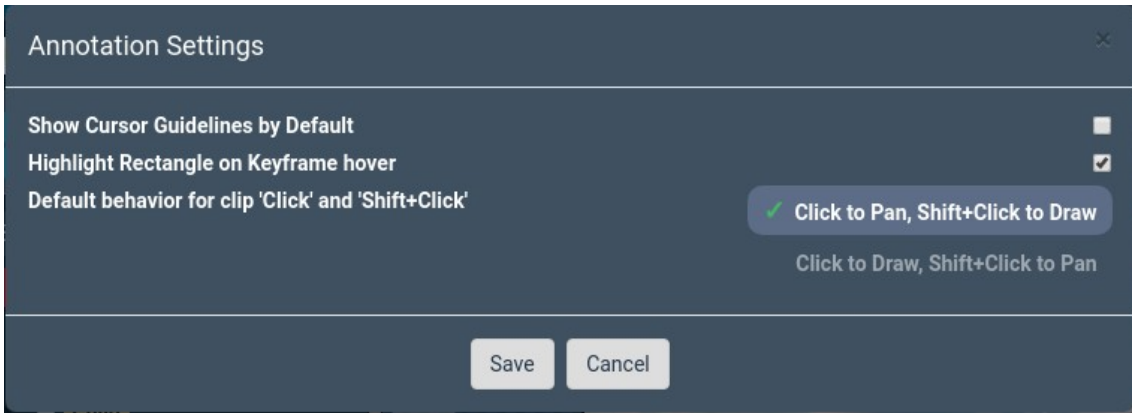
Preferences, such as increasing or decreasing the saturation, hue, brightness, contrast as well as inverting the image or converting to greyscale can all be configured. The user can adjust each setting by dragging the slider to their preferred configuration. The user has the option to save their clip settings for use later in the application.

To do this:

1. Adjust the settings to reach the desired clip appearance
2. Select the 'Create' button
3. Provide a name for the color setting
4. Select 'Save'



Previously saved color settings appeared with the default option in the combo box on the color modal. Users can adjust already saved color settings as well as delete settings that are no longer needed.

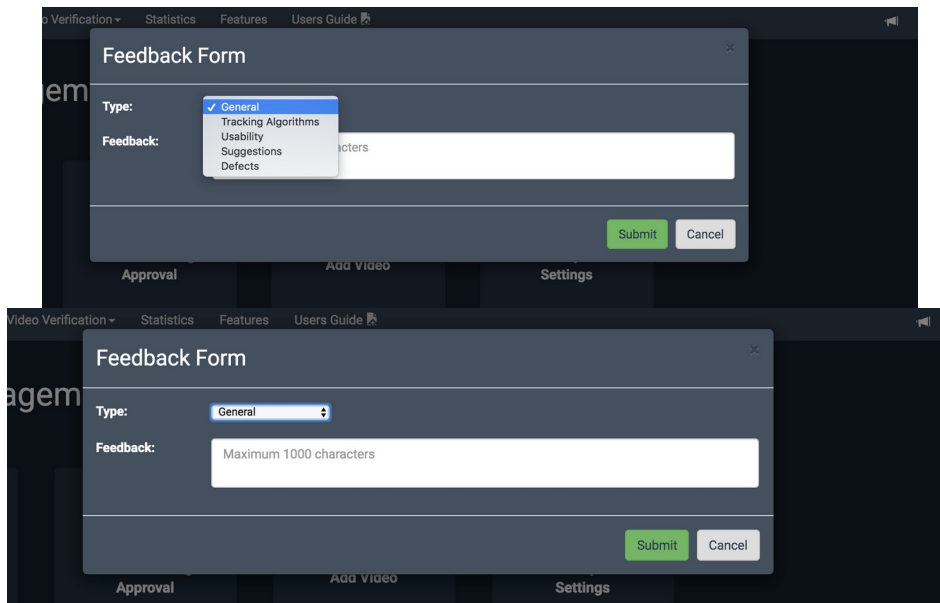


## 5.6 Feedback

Once logged in, the user can select the feedback button on the right side of the navbar:

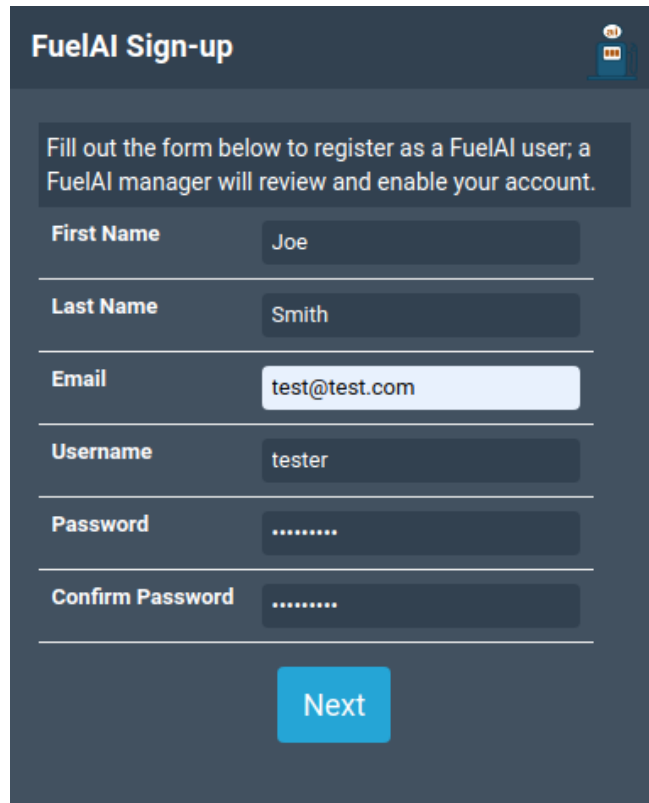


A modal will appear via which the user may enter feedback comments. On the backend, the feedback text will be stored under the Feedback table along with the user, the feedback type (a reference table with five categories), and an identifying key. Modal displayed below:



## 5.7 Changing Password

When a user registers for an account, they will be asked to answer three security questions. These security questions will be used to recover their account.



**FuelAI Sign-up**

Fill out the form below to register as a FuelAI user; a FuelAI manager will review and enable your account.

**First Name** Joe

**Last Name** Smith

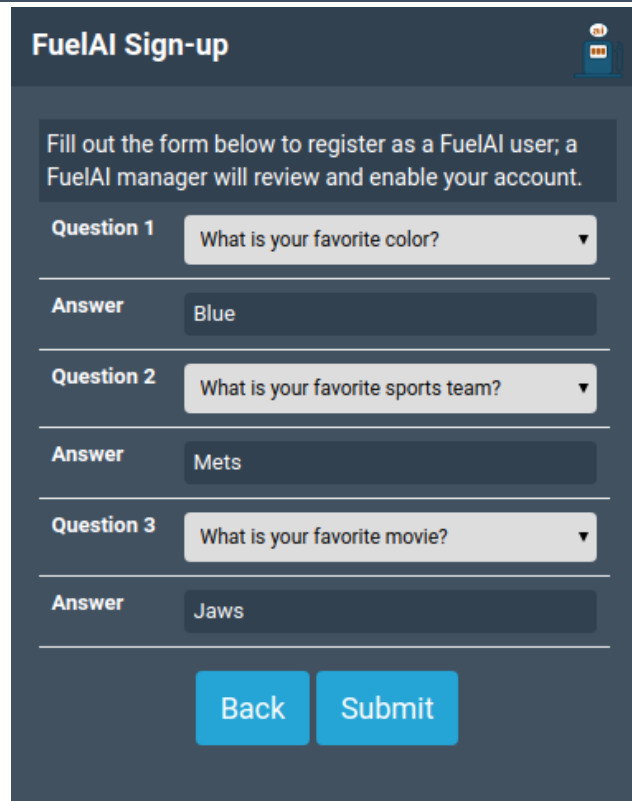
**Email** test@test.com

**Username** tester

**Password** .....

**Confirm Password** .....

Next



**FuelAI Sign-up**

Fill out the form below to register as a FuelAI user; a FuelAI manager will review and enable your account.

**Question 1** What is your favorite color? ▼

**Answer** Blue

**Question 2** What is your favorite sports team? ▼

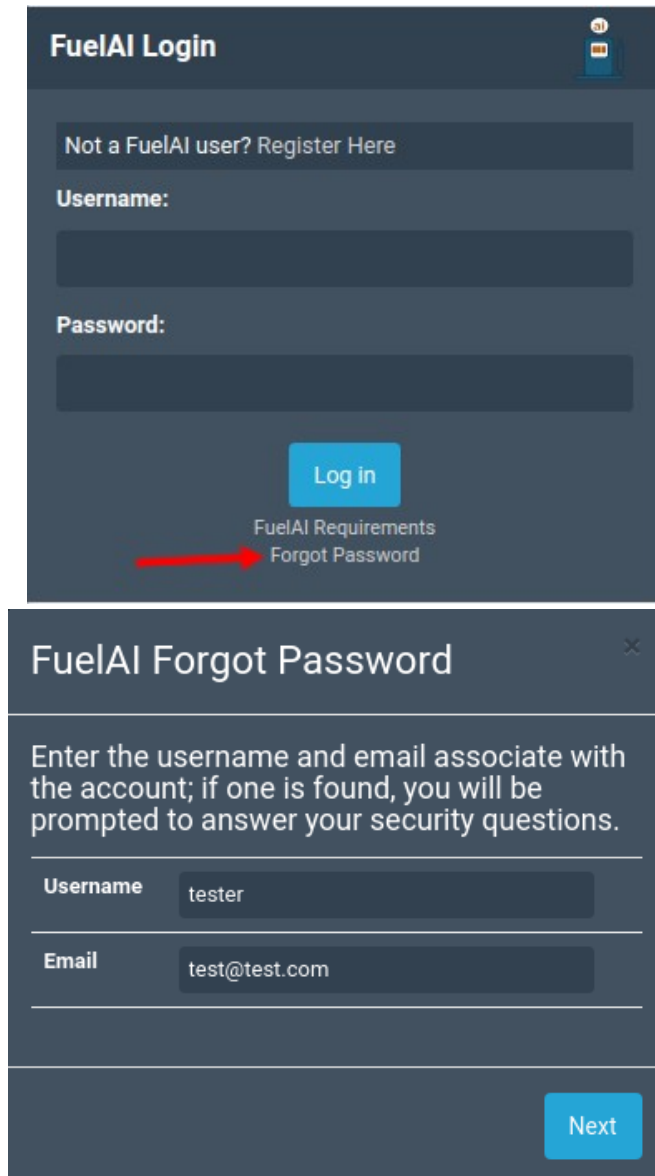
**Answer** Mets

**Question 3** What is your favorite movie? ▼

**Answer** Jaws

Back Submit

To recover a user's password, navigate to the login page. While there, click on "Forgot Password" A user will then enter the answers to the security questions. If they all match, a user will be prompted to change their password.



### FuelAI Forgot Password

Please answer your security questions

**Question 1** What is your favorite color?

**Answer**

**Question 2** What is your favorite sports team?

**Answer**

**Question 3** What is your favorite movie?

**Answer**

### FuelAI Password Reset

Fill out the form below to set your password

**New password:**

- Your password can't be too similar to your other personal information.
- Your password must contain at least 8 characters.
- Your password can't be a commonly used password.

**New password confirmation:**

## 6 FuelAI Terminology

Term	Description
Ontology	The FuelAI ontology represents object categories that are available to be labeled in a clip. The classes are organized in a way that allows the analyst to describe an object in the greatest detail available. For example, if an object is labeled as a 'Sedan' then it is also considered a 'Vehicle' as well as a 'Car' since 'Sedan' belongs to those nested categories.
Annotation	A collection of bounding boxes, both human drawn and generated, represents a specific object in a clip. For example, a clip might have a single annotation for Vehicle: Sedan that has several identified frames.
Entity	An object specified by its collection of bounding boxes.
Keyframe	A human-drawn bounding box around an object of interest.
Generated Frame	A bounding box that is created by the software through interpolation between two keyframes.
Clip Status: Submitted	The submitted status indicates that the analyst has completed the labeling task and is ready for an administrator or supervisor to review the clip for accuracy.
Clip Status: Verified	The verified status indicates that a supervisor has reviewed the clip and considered it acceptable. At this stage, the software will perform the frame generation step.
UI Element: Keyframe Bar	The keyframe bar appears at the bottom of the main FuelAI page and will display circles that represent each drawn keyframe. The user can click one of the circles to move the clip to that point in time and select the bounding box within the player.
UI Element: Grab Handles	The grab handles appear when the user selects a bounding box. When clicking and dragging the handles, the shape's size and rotation will adjust.