5DT ReVUE™
TRAINING SIMULATORS

Mobile Phone Detected | Seatbelt Off Detected | Distracted Driver Detected
Hands Off Steering Wheel Detected | Dirty Camera Detected | Occupants: 2

Description

ReVUE™ is an artificial intelligence (AI) system that rapidly scans large amounts of camera data to determine if there were pre-defined events (e.g. mobile phone use by drivers) or conditions (e.g. malfuntioning cameras) present in the data. ReVUE™ tags (annotates) the relevant images or video clips. ReVUE™ also facilitates the validation of tagged images and video clips by human operators. These validated images and video clips are then used by ReVUE™ to improve the AI algorithms that are used to determine (infer) events and conditions. ReVUE™ rapidly converts large amounts of camera data into actionable metrics.

Features

- High Throughput
- Self Learning
- High Accuracy

Benefits

- Saves Money
- Reduces Liability
- Improves Driver Safety
- Saves Time
- Reduces Insurance Premiums
- Promotes Better Camera Health

Application Areas

- Fleets with large datasets of camera data that are not analysed frequently.
- Fleets with large datasets of camera data that are analysed, but lacks the required throughput.

Determinations (Inferences)

The system determines (infers) the following *typical* behaviors and/or conditions. ***Other models may be developed rapidly on request.***

Driver Behavior:

- Mobile Phone Usage
- Drowsiness
- Hands Off Steering Wheel
- Seat Belt Off
- Vehicle Occupant Count
- Distracted Driving

Camera Health:

- Black Image (camera not working at all)
- Partial or Missing Image
- Tinted Image
- Camera Covered
- Infrared Illuminator Not Working
- Distorted Image
- Missing or No Metadata on Image
- Camera Dirty
- Camera Angle Incorrect
- Missing Item Detection

Other Behaviors or Conditions:

- Day/Night
- Overexposed Images

How Does It Work?
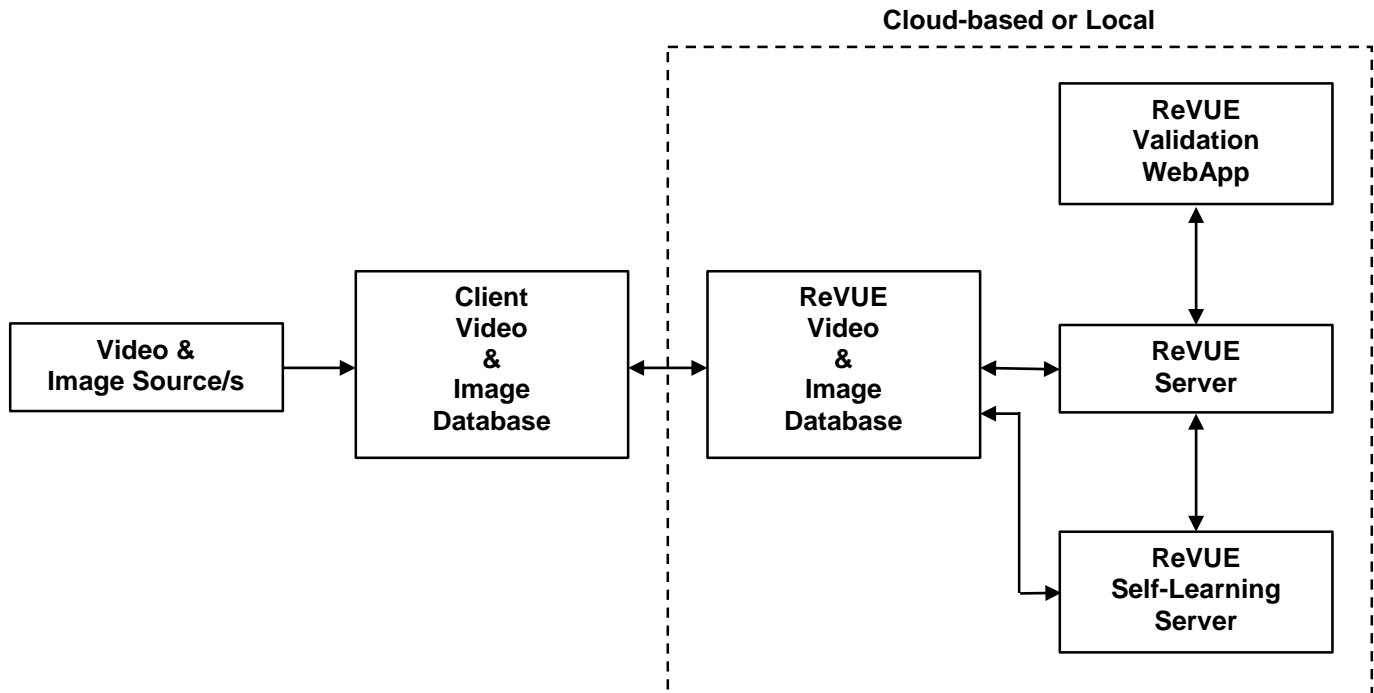
For ReVUE™ implementation, the **Client Video & Image Database** is streamed into the **ReVUE™ Video & Image Database**. The ReVUE™ servers, database and hardware may be hosted in the cloud or locally.

The **ReVUE™ Server** fetches images or video clips from the database and runs artificial intelligence (AI) algorithms on these images & video clips. The AI algorithms (commonly referred to as models) determine (infer) certain driver behaviors or camera conditions. The images are then tagged (annotated) with the relevant determinations and sent back to the database.

The **ReVUE™ Validation WebApp** receives AI annotated images via the **ReVUE™ Server** when requested. These annotated images are then submitted to a human (Junior Validator) for validation. If the human validation is the same as the AI annotation, the image is stored in the database. If the human validation differs from the AI annotation, the same image is submitted to another human (Senior Validator) for final validation. The best 2-out-of-3 result is stored on the server.

The **ReVUE™ Self-Learning Server** fetches fully validated images from the database and uses these images to further train the AI algorithms (models). Once an AI algorithm has been re-trained, the model determines (infers) reference images and the results of the new determinations (inferences) are analysed by means of accuracy metrics. If the new model proves to be more accurate than the previous model, the new model will subsequently be used for determination (inference). This means that the human validated images are used to improve the AI algorithms.

About 5DT

5DT (Fifth Dimension Technologies) is a high tech company specializing in Machine Learning and Training Simulators for the Mining, Construction, Trucking, Aerospace and Defense Industries.

5DT has been in business for more than 27 years. It has more than 220 simulators deployed worldwide. 5DT has developed simulators for more than 145 different vehicles & machines from more than 40 manufacturers.

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