The Alegion Platform:
A platform built for your managed workforce
At Alegion we recognize that truth and have created a platform with the necessary tools to streamline and increase the throughput for workforces. Workforces are able to easily toggle across use cases; from complex big video to taxonomy translation. The Alegion platform was built with the smart tooling, workflow flexibility, conditional logic, and the QA / QC controls necessary to annotate with speed, accuracy and quality across all types of use cases.

In some cases, Alegion reduced the total time of annotation by 85%.

This one-stop solution holds 3 key elements to increase the speed and efficacy of the workers while also creating an ease of use for both the annotators as well as their managers. Alegion’s Worker Scoring and QC review portal, smart annotation tooling, and ML pre-labeling gives the teams the added help they need to reduce the tedious task time and create a streamlined workflow.
Alegion’s Capabilities Overview

**Annotation Efficiency - Our tooling for CV & NLP**

The Alegion platform contains a number of tools that allow for time and cost savings, reducing the number of tedious tasks the worker needs to complete in order to annotate assets. Whether you are annotating an image, video or text record, we have the tools necessary to create efficiencies and quality annotations. These Alegion proprietary tools include:

- **Smartpoly**
- **Entity groups**
- **ML pre-labeling**
- **Multi-stage workflows**
- **Rich relationship & classification models**

**SmartPoly**

Alegion’s SmartPoly tool is an ML based polygon generator for super fast instance segmentation. In just 4 clicks annotators are able to accurately segment an object.

- Four clicks on extreme points for accurate segmentation
- Average 35% increase in efficiency over manual methods
- Polygons returned in milliseconds with scalability to thousands of annotators

[Image of car with bounding boxes indicating SmartPoly functionality]
Entity Groups

The Alegion platform was built with extra care and thought to the annotation process for the annotators themselves. It is a guided annotation selection and view that allows for complex sets of related objects. It is a painstaking process for the annotator to label a complex set of related objects, having to sift through potentially hundreds of possibilities. With Entity groups the annotator is able to easily and smoothly label objects within each taxonomy, without having to reference training documents or other material.

- Ideal for projects like keypoint annotation that require sets of grouped annotations
- **Guided annotation increases annotation efficiency by approximately 35% and reduces error**
- Simplifies review and quality assurance

ML Pre-labeling

Machine learning is at the core of Alegion’s offering. Our ML pre-label records can reduce human judgement for verification and refinement. Annotators are able to simply verify object proposal and make adjustments only if needed.*

- Provide annotators with pre-annotated images and video that only need refinement
- Validate and correct pre-processed model output
- Augment human QA and review with model based consensus

*Assumes use of customer-provided model or existing Alegion model. New model development not included.

Multi-Stage Workflows

Our multi-stage workflow approach allows for annotators to break complex annotation work into specialized sub-tasks, creating unlimited efficiencies and assuring quality at every stage.

- Apply specialized workers where they are needed most
- Simplify worker training and reduce cognitive load
- Easily add stages for review, consensus, presorting records, and more

Rich Relationship and Classification Model

Our built-in support for temporal and atemporal object relationships for image and video annotation allows for:

- Capturing events easily, relationships and properties as they change over time
- Annotations can preserve the full context of video data
- Powerful capability for retail, logistics, manufacturing, and security use cases for both image and video data
Smart Video Annotation

Alegion has helped many companies develop some of the most demanding video-based computer vision applications. Guided by our in-house computer vision and data science teams, we use ML extensively inside of our platform to help accelerate annotation and drive quality control processes. As practitioners ourselves, we understand the challenges and roadblocks teams must address when bringing an ML project to production.

Capabilities include:

– Scalable Video Annotation
– Object Tracking
– Linear Interpolation

Scalable Video Annotation

Annotate long running and 4K videos in their native format

– Annotate videos intact - avoid splitting videos into images or small clips
– Annotating the full video in context increases quality and consistency
– Deliver more frames of annotated video faster
– No need for stitching or performing entity resolution
Object Tracking

ML powered object tracking for video annotation

- Automatically localizes objects in video with non-linear changes in speed and direction
- Annotators can expect to manually annotate a small fraction of frames, resulting in extreme efficiency gains
- Simple and easy to use user interface

Linear Interpolation

Automatic tracking for objects in video with linear motion

- Annotators can skip manual annotation of every video frame when objects have linear motion
- In typical videos with linear motion, annotators manually annotate every 5th to 20th frame
- Can be used in conjunction with ML object tracking
Quality at Scale - Our QC

In order to create quality annotations, annotators and their managers need to undergo a training and review cycle. The Alegion platform allows clients to confidently qualify and train a workforce, easily monitor workforce quality, and efficiently deliver high quality annotations. Additional professional services available through Alegion’s Learning and Development team can help you build training curriculum, create qualification and training tasks, and develop intermodal training tips in the task design. Our platform was built with the capabilities for you to:

- Qualify and train a workforce
- Monitor workforce quality
- Efficiently deliver high quality annotations

Qualify and train a workforce

The platform was built with workflows for better curating a workforce by offering the best environments for:

- Testing for annotations skills
- Qualifying for specific use cases

It also includes comprehensive evaluation capabilities:

- IOU for polygons, bounding boxes, cuboids, and ellipses
- Pixel distance for keypoints
- Mean squared error for polylines
- Various comparison methods for select list and textual tasks
Efficiently deliver high quality annotations

The Alegion QC portal ultimately allows you to efficiently deliver high quality annotations by creating multiple customized stages to:

- Deconstruct work into small chunks
- Enable workers to specialize within a task

As well as creating an environment for expert workers to conduct review through:

- Confidence score-based review
- Random sample-based review

Which includes detailed reporting of worker performance by worker or annotation type and values.

Monitor workforce quality

In order to understand the work of the annotators, Alegion has built in quantitative scoring including both:

- Gold based (baseline)
- Review based

As well as worker performance scoring

- Average task time
- Volume of submitted and cancelled assignments

As well as scoring for complex tasks:

- Per annotation scoring by frame for video
- Entity resolution for tasks requiring the annotation of multiple classes and instances

Conclusion

Whether you are looking for image annotation, video annotation, or NLP projects, at Alegion we recognize that your annotators are only as good as the tools they are given. Machine learning is at the core of our labeling solution and smart tools are the core of our platform. Streamline and increase the throughput for workforces with smart tooling, workflow flexibility, conditional logic, and the QA / QC controls necessary to annotate with speed, accuracy and quality across all types of use cases.

Contact Alegion to see how you can reduce the total time of annotation by 85%.