# Rinalogy Classification API Use Case
## *Sentio Software*

## Business Problem

In the legal industry when companies are faced with a need to review a large set of documents, e.g. 100,000 or more, they typically address it by using a team of reviewers. The reviewers are given a set of documents and a list of issue tags. Each reviewer who reads a document must decide which issue tags are relevant to this document. As the time to review a document set is typically limited, the more documents need to be reviewed the larger the team of reviewers is typically used. When a reviewer reads a document, he makes a judgment regarding which issue tags should be assigned to the document.

It is common in the legal industry today to manually review a certain number of documents out of the total set and then, using some kind of modeling technology build a model for each issue tag based on the classified documents and then apply the model on the rest of the population to determine which documents belong to each issue tag, without performing an extensive human review.

However, each reviewer has a certain chance of making an error by misclassifying a document with an incorrect issue tag. Errors result in building lower quality models which may lead to misclassifying and/or missing important documents.

Another problem is that a majority of companies in this space are already using a review platform and any solution that improves the document review process has to be integrated with the platform of the client's choice.

## Solution

Rinalogy Classification API is a scalable machine learning service that can easily integrate with your application and run in your own environment. Unlike cloud machine learning APIs that run in an environment out of your control and require you to transfer all of your data, Rinalogy Classification API can be deployed in your IT infrastructure, close to your data and behind your firewall.

Rinalogy Classification API performs Exhaustive Sequential Classification by applying models to all documents in the collection.

Models are saved and can be improved with more training data or used to predict new documents later. Its scalable cluster deployment allows you to adjust the number of workers depending on your workload. Rinalogy Classification API can be used to add text classification, search, and recommendation capabilities to a client application.

The RESTful APIs can be integrated with any programming language or platform.

Implementing Rinalogy Classification API in Sentio Software's technology solutions has allowed the company to introduce a process called Continuous Active Learning together with a new workflow that reduces errors in reviewing documents and results in building better models therefore significantly reducing the number of misclassified and/or missed important documents together with reduction of the review time.

The new workflow includes an ongoing quality control of the documents selected by the Rinalogy Classification API as possible false positives or false negatives. This allows users to correct errors in a timely manner which leads to creating better models during the review process and to reviewing more relevant documents earlier, therefore completing the review sooner.

Sentio's new workflow shifts focus from creating better models on the reviews produced by reviewers, to making sure the models are built using error free reviews as much as possible. This has led to the analysis of errors which proved [1] that the larger the number of reviewers involved in a document set review, the more difficult it is to make a conclusion based on their opinions about the information. As a result, the current recommendation is to have no more than two reviewers and one senior reviewer to review a document set, regardless of the set size.

It is ideal to apply models built on the reviewed documents to all documents in the population that have not yet been reviewed to find the most promising relevant documents. For a large document set the time required to run models on all documents could introduce unacceptable delays. To avoid these delays, the Rinalogy Classification API has a specifically designed queuing system that makes the models created by the API run on the full document set, without delays. As a result, the new approach in Sentio's software improves accuracy of reviews, saves times and costs                                                                                                                          less.

In addition, it has now become possible for Sentio clients to analyze each reviewer's performance during and after the review, which improves the process by both training and selecting reviewers based on their performances.

Sentio software has been developed as both a standalone product and is integrated with the three leading legal industry platforms:

Relativity$^®$ [www.relativity.com](www.relativity.com)
Relativity App Hub Listing for Sentio AI
        [https://www.relativity.com/ediscovery-software/app-hub/sentio-ai/](https://www.relativity.com/ediscovery-software/app-hub/sentio-ai/)
Relativity App Hub Listing for Sentio Maestro
        [https://www.relativity.com/ediscovery-software/app-hub/sentio-maestro/](https://www.relativity.com/ediscovery-software/app-hub/sentio-maestro/)
Reveal$^{TM}$[www.revealdata.com](www.revealdata.com)
iConect$^®$[www.iconect.com](www.iconect.com)

Sentio software works in multiple languages such as English, Spanish, German, Russian, Chinese, Japanese and Korean

During the period 2016 to present, Sentio software has been used on more than 100 legal cases. Rinalogy Classification API has been licensed by DOJ for use in their COBRA software platform.

More than 500 million documents have been processed using Sentio software, and counting.

## Examples of Benefits

[http://www.sentiosoft.com/static/upload/SS-42.pdf](http://www.sentiosoft.com/static/upload/SS-42.pdf)
[http://www.sentiosoft.com/static/upload/SS-43.pdf](http://www.sentiosoft.com/static/upload/SS-43.pdf)

## Testimonials

After facing a daunting review project that was understaffed, we turned to Sentio Software. This solution was intuitive for my team to learn. We were able to separate irrelevant documents from the key case documents quickly and efficiently. In the end, Sentio saved our client a significant amount of time and expense while allowing our litigation team to identify documents we needed for the trial. We have used other predictive coding solutions. Not only was Sentio the easiest to use but it provided superior results.

*Matthew Horvitz, Trial lawyer, Goulston & Storrs*

We were in a competitive situation against other law firms to win a new client. The reason the client went with our firm over the others is because we demonstrated how using Sentio's technology could create efficiencies and reduce costs while increasing accuracy in the discovery process.
*Partner, DC firm*

## References

1. http://www.sentiosoft.com/static/upload/Reviewing%20Large%20Quantities%20of%20Documents%20-%20Sentio%20Software%20v_2.pdf