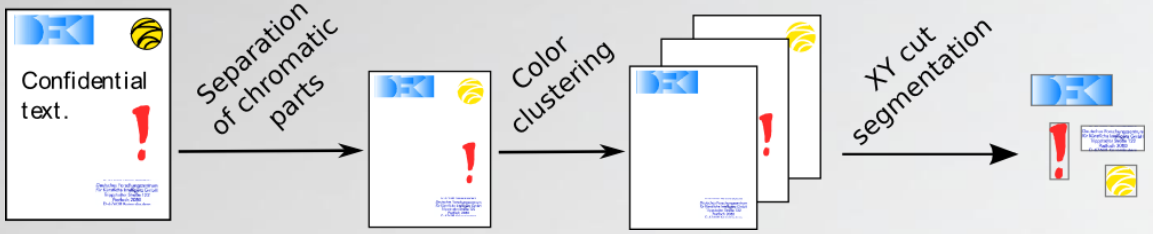
# Verification of Stamps in Documents

## Challenge

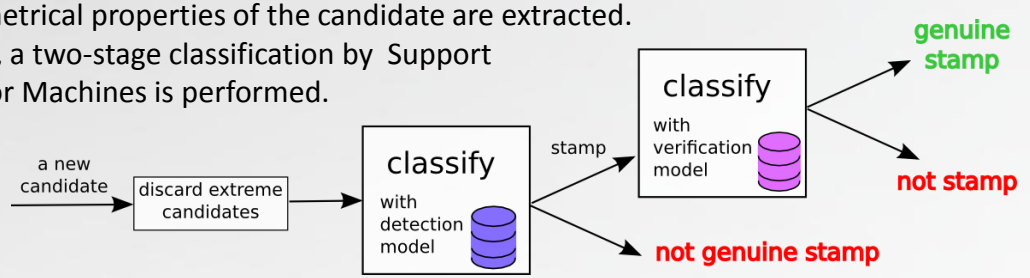
Classical **ink stamps** and seals used for authentication of a document content have become relatively easy to forge by the **scan & print** technique since the technology is available to general public. For environments like insurance companies where a huge volume of documents is processed, an automatic **system for optical verification** of authenticity of stamps is needed.


To verify the authenticity of a stamp, it has to be first detected and segmented from a document image. However, a reliable **detection** of stamps in images **is not a trivial task** and no general solution has been given yet.

## Approach

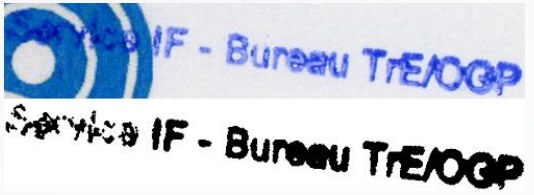



A new method based on **colour clustering** is used to segment the page to obtain **candidate solutions** to the detection and verification problem.
To differentiate **original** stamps from the **falsified** ones and from other objects on the page (such as logos), features related to the **quality of the print**, colour and geometrical properties of the candidate are extracted.
Then, a two-stage classification by Support Vector Machines is performed.




## Results


Evaluation of the **detection** algorithm on a collection of 400 documents with stamps and many other colour objects has been done with an **accuracy of over 90%**. Even difficult cases of overlapped stamps were segmented correctly. **Verification** was evaluated on the data set mixed with copies made on 5 different copiers and in up to **95% of cases**, the authenticity of a stamp was **correctly recognized**.



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