

# SAPIS User Manual

Sapis - Stilllett API Service, is a restful web service based on Java Spring, implementing an API with the ability to interpret options and input data as variables in an input JSON object, passed to the Sapis service in a HTTP request. The open access of the API allows for distribution of any web service uploaded to the same server domain.

The API service can be reached from a server located at:

<http://www.ida.liu.se/projects/scream/services/sapis/service/>

Accepting POST requests.

## Current services

The current services implemented in SAPIS are chosen from the research projects presented by Falkenjack et al., 2013 and Rennes and Jönsson, 2015.

1. The SurfaceMetrics (Falkenjack et al., 2013) service provides simple readability metrics such as *LIX*, *OVIX*, *Nominal ratio*, *Mean sentence length* and *Mean word length*.
2. The LexicalMetrics (Falkenjack et al., 2013) service provides a categorized frequency analysis from word occurrences in the basic Swedish vocabulary SweVoc dictionary.
3. The StructuralMetrics (Falkenjack et al., 2013) provides syntactic and morpho-syntactic features based on part-of-speech tags (openNLP) and dependency tags (MaltParser).
4. Stilllett (Rennes and Jönsson, 2015), a rule-based automatic text simplification tool for Swedish, using part-of-speech tags (Stagger) and phrase structure tags (MaltParser 1.2) to identify textual difficulties and execute simplifications as node operations.
5. Rule-based text simplification based on dependency parsed sentences

For a further description of these research projects, see *Features indicating readability in Swedish text*, by Johan Falkenjack, Katarina Heimann Mühlenbock, and Arne Jönsson 2013 and *A tool for automatic simplification of Swedish texts*, by Evelina Rennes and Arne Jönsson 2015.

## HTTP request

Sapis requires the input to be a JSON object containing the two variables `options` and `document`, where `options` specifies the choice of services and `document` specifies the string of text to be analysed/simplified. The chosen services are started in parallel and the result of each service is merged into one single response.

The output response is a JSON object containing all possible variables (even though most values are not always calculated). A suggestion is to print the response of the HTTP request to the console of your browser (in java script by using `console.log()`) in order to easily investigate the response JSON object and the values that is calculated.

## Java script examples

This section contains two examples on how to use Sapis with the services for calculating readability metrics and text simplification.

This is an HTTP request, using `jQuery.ajax`, to Sapis and the services generating readability metrics: LexicalMetrics, SurfaceMetrics and StructuralMetrics.

```
var sapis_url = 'http://www.ida.liu.se/projects/scream/services/sapis/service/';
var scream_response;
jQuery.ajax({
  headers: {
    'Accept': 'application/json',
    'Content-Type': 'application/json'
```



```
        alert(xhr.responseText);
    }
});
```

When finished; a simplified version of the input text can be found in the `simplifiedText` variable of the response JSON object.

### NEW!

To use dependency parsed sentences change the feedback option to:

```
options: "Feedback(-split -pass2act -svo -quoteInv -prox)"
```

If the dependency parser is used the output format is instead a JSON object with JSON objects for each suggested simplification:

```
"_suggestions":{
  "[simplification rule]_[sentence number]": {
    "original": [original sentence]
    "sent_suggestion": [simplified sentence]
    "suggestion": [textual explanation on how to simplify the sentence]
  }
}
```

StillLett is implemented in Sapis with the extended functionality of generate feedback strings. This functionality is not described by Rennes and Jönsson, 2015 but is defined with the same set of rules as described by them. The string:

```
"feedback{\n" +
"-straightOrder\n" +
"-pass2act\n" +
"-decker\n" +
"-split\n" +
"}\n"
```

describes which feedback module to use. The variable `suggestions` of the response JSON object contains the feedback as a list with a suggestion on how to rewrite a sentence. Each suggestion is given as a string on the form:

```
"[original sentence] FEEDBACK: [suggestion]"
```

NOTE: All services can be reached in one single HTTP request, but it is currently recommended to make a separate request to the StillLett service due to its time consuming pre-processing.

## Contact

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## References

1. Johan Falkenjack, Katarina Heimann Mühlenbock, and Arne Jönsson. 2013. Features indicating readability in Swedish text. *In Proceedings of the 19th Nordic Conference of Computational Linguistics (NoDaLiDa-2013), Oslo, Norway.*
2. Evelina Rennes and Arne Jönsson. 2015. A tool for automatic simplification of Swedish texts. *In Proceedings of the 20th Nordic Conference of Computational Linguistics (NoDaLiDa-2015), Vilnius, Lithuania.*