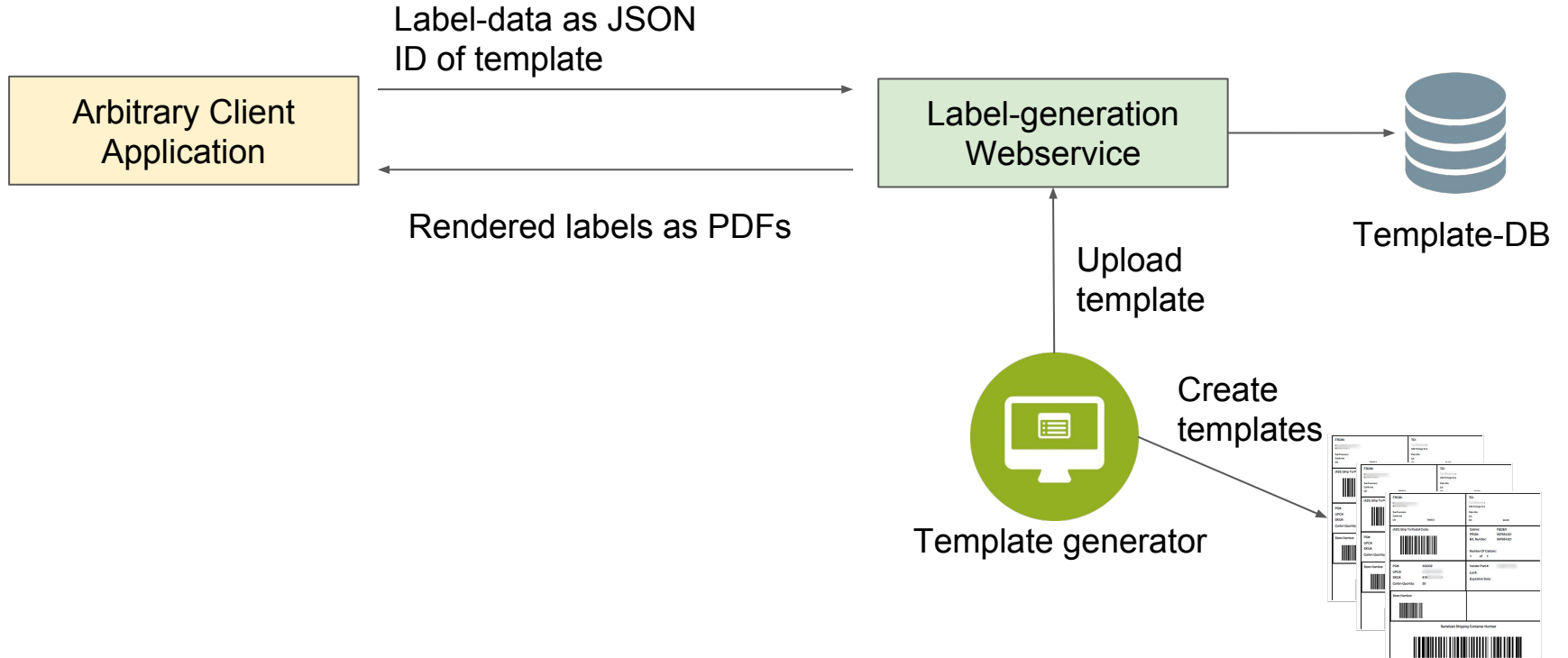# PDF-label generator service

Problem

Nowadays, the industry makes heavy use of semi-automated supply-chain management processes. In order to support these automated processes, goods, packing-units, and transportation-containers are labeled with bar-codes and standardized textual descriptions.

As of today, label-generation-software is mainly provided as standalone-applications in which human personnel needs to manually import data from other applications. This process is tedious, error-prone and slowing down the entire supply-chain.

The goal of this project is to develop a label-generation web-service that can be called to generate a variety of labels based on dynamic templates.

Architectural Vision

Arbitrary Client Application

Label-data as JSON
ID of template

Rendered labels as PDFs

Label-generation Webservice

Template-DB

Upload template

Create templates

Template generator

(Technological) aspects of the envisioned solution

- RestFul web-service for generating labels using Java (e.g. Spring Boot)
  - Apart from rather simple "search&replace" templates, the label generator needs to be able to cope with lists, lists in lists, and conditional elements on labels
- JSON as data-format
- A database (SQL or NoSQL) for storing label-templates in the backend
- A simple client-application to demonstrate that the label-service works as expected
- An approach for defining templates
  - One idea would be to use SVG-files as templates. Such files can be created with many different tools. Additionally, SVG files use IDs for all elements, which is required to be able to fill different template elements with data during the generation process
  - The approach needs to support using images on labels, text in diverse fonts and font-styles and a large variety of barcodes (EAN-8, EAN-13, CODE 128, ITF)