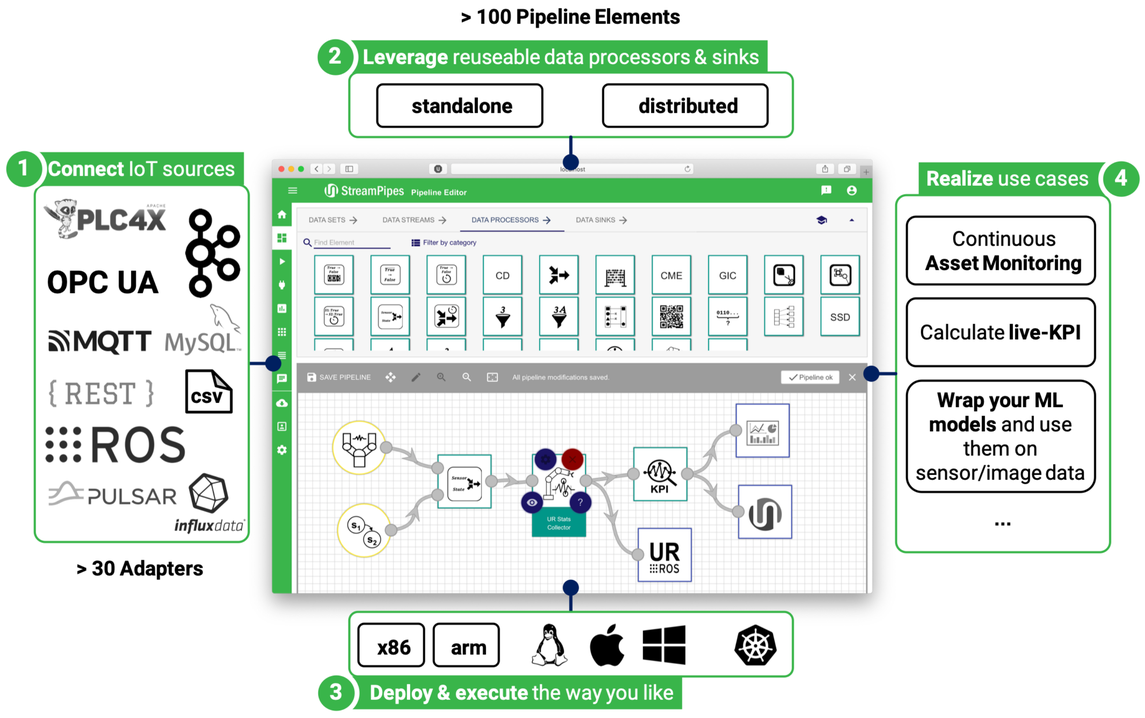
SLAPMAN: STREAMING LANGUAGE PROCESSING IN MANUFACTURING

Often underestimated, (semi-) structured textual data sources are an important cornerstone in the manufacturing sector for product and process quality tracking.

SLAPMAN develops novel methods for industrial text analytics in form of scalable, reusable and potentially stateful microservices, which can be easily orchestrated by domain experts in order to define quality anomaly patterns, e.g., by analyzing machine states and error logs.



APACHE STREAMPIPES

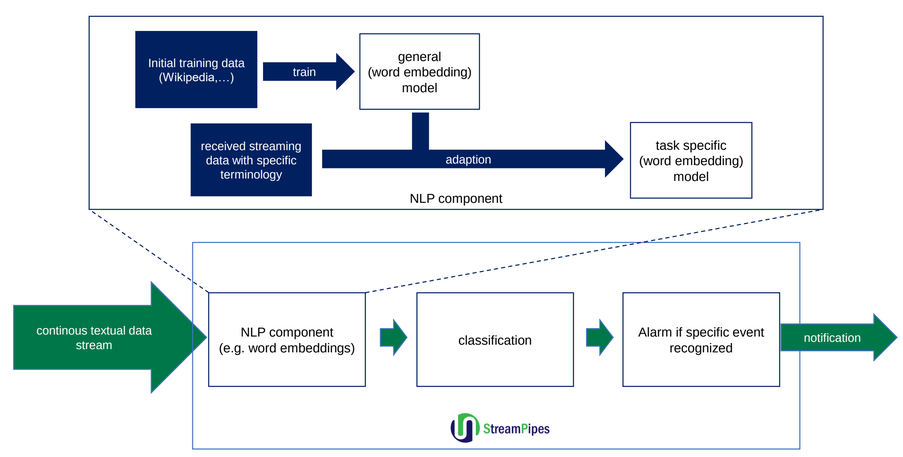
- Self-Service Data Analytics for the Industrial IoT
- Focus on data streams (time-series + images)
- Toolbox of various stateless + stateful algorithms and data sinks (> 100 pipeline elements)
- Distributed execution (cloud + edge)
- Semantics-based verification
- **streampipes.apache.org**

NLP ALGORITHMS FOR STREAMPIPES

- Development of new algorithms for StreamPipes to analyze natural language in the manufacturing sector
- Integration of existing ELG algorithms into Apache StreamPipes
- Development of new adapters for text data, data sinks and further extensions (e.g., visualizations)
- Examples: Language Detection, Sentence Detection, Named Entity Extraction, Alarming
- Development of a platform API to interact with the NLP learning component

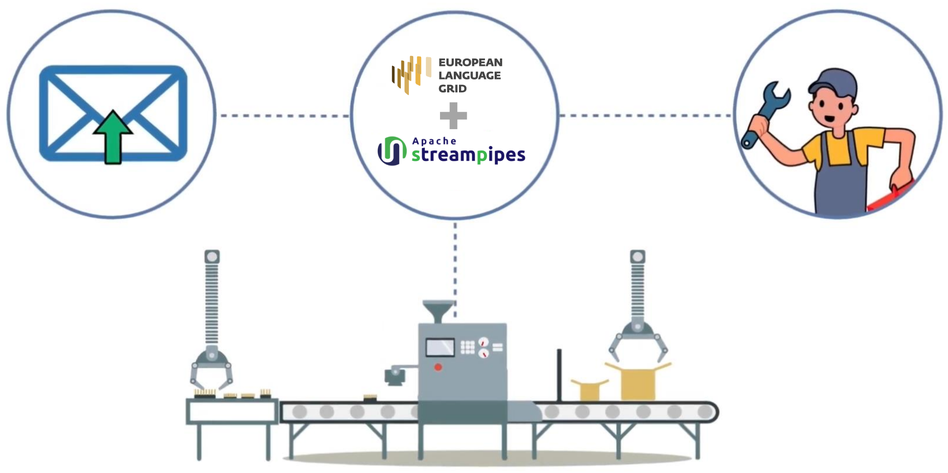
NLP LEARNING COMPONENT FOR STREAMPIPES

- Starting with an initial model, i.e.
  - pre-trained general model
  - learned on a specified text corpus
- Continuous adaptation to the use case at hand via adaptation in regards to the incoming textual data stream



EXPECTED OUTCOME

- Innovative Toolbox for text processing,e.g. classification and identification of anomal behaviours in industrial text analytics use cases
- Exploration of ELG components via an established and tested graphical user interface
- Specification and implementation of an adaption scheme for retraining NLP components like word embeddings, e.g. word2vec or BERT within Apache StreamPipes



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