Modular recommendation system and review application for semantic mapping

Background: edenceHealth NV has developed a set of mapping suggestion frameworks that can be used in a modular way depending on the type of input. These suggestions can then be loaded in the edenceReviewer online semantic mapping tool that provides a user-friendly interface for validating the mapping suggestions.

Methods:

- LabMapper: map Measurements to the correct LOINC code, making use of the vocabulary hierarchy and Apache Lucene text searching techniques.
- RxNormBuilder: map Drugs to RxNorm or RxNorm Extension codes by mapping the individual components and combining everything using the drug hierarchy.
- edenceMapper: general tool that can be used for mapping any source code to any domain. It includes optional translation to English and is designed to use multiple mapping algorithms like for example simple fuzzy string matching, Apache Lucene search and a text embedding LLM (Multilingual-E5-small architecture).

The result of these 3 suggestion systems will be combined into a database that is then used to display the suggestions in edenceReviewer. This is a tool developed by edenceHealth to facilitate the review and validation of the suggested mappings.

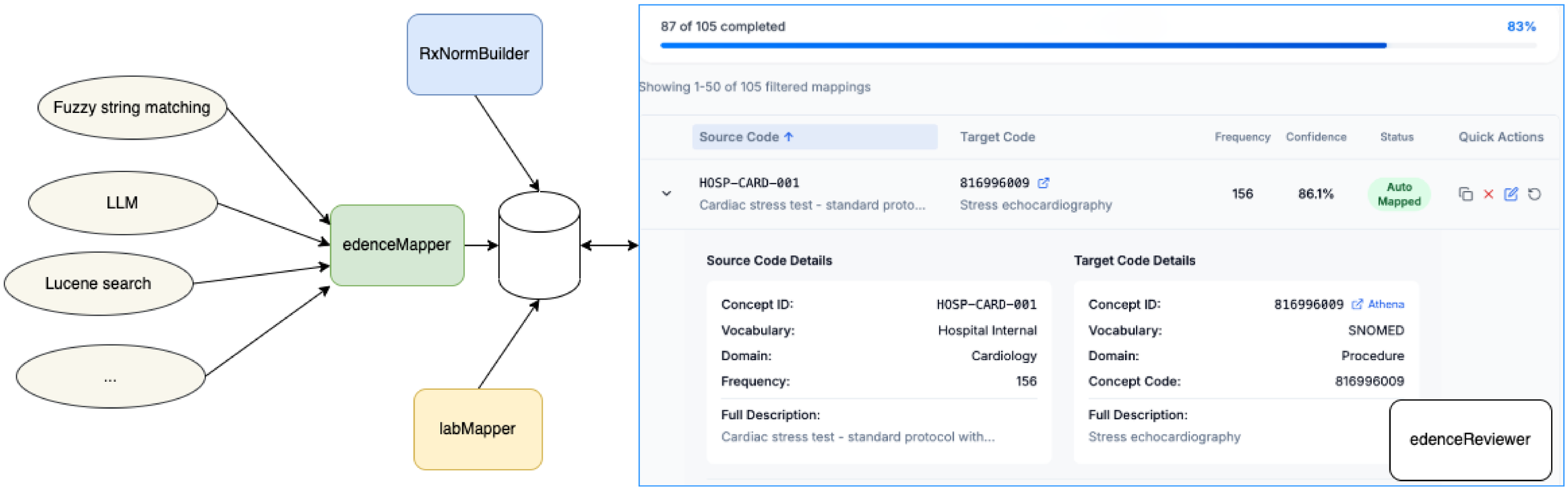

Figure 1. data flow from suggestion systems to edenceReviewer.

Conclusion: The combination of these tools makes the semantic mapping process more streamlined and facilitates the validation of the suggested mappings. It is constructed in a modular way that makes it easy to add more suggestion pipelines for specific mapping purposes or to add extra algorithms in edenceMapper.

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