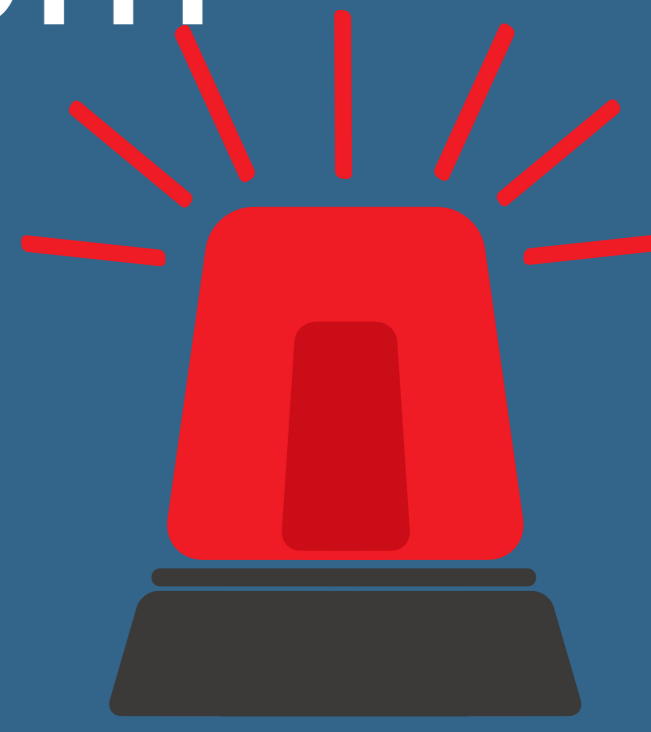


# Extraction of key information from emergency calls



Author: Bc. Marek Sarvaš  
 Supervisor: Ing. Petr Schwarz, Ph.D.

## Motivation

- Shorten emergency calls and speed up the reaction of rescue teams.
- Human is not capable to extract, verify and use relevant information fast enough, AI is faster.
- Create models and labeled training datasets that can extract necessary information fully automatically.

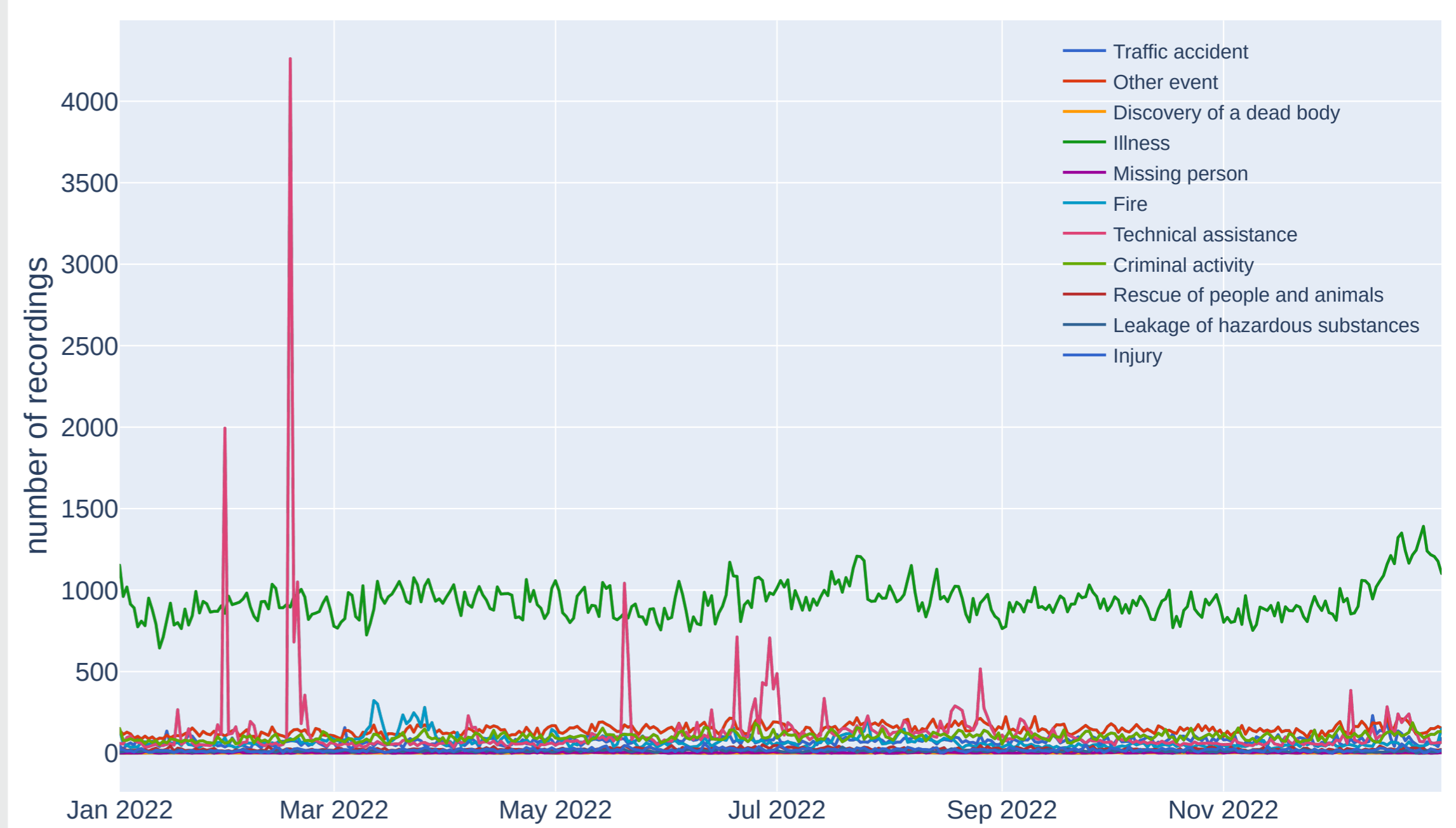


Figure 1: Number of calls per emergency event type

## Experimental pipeline

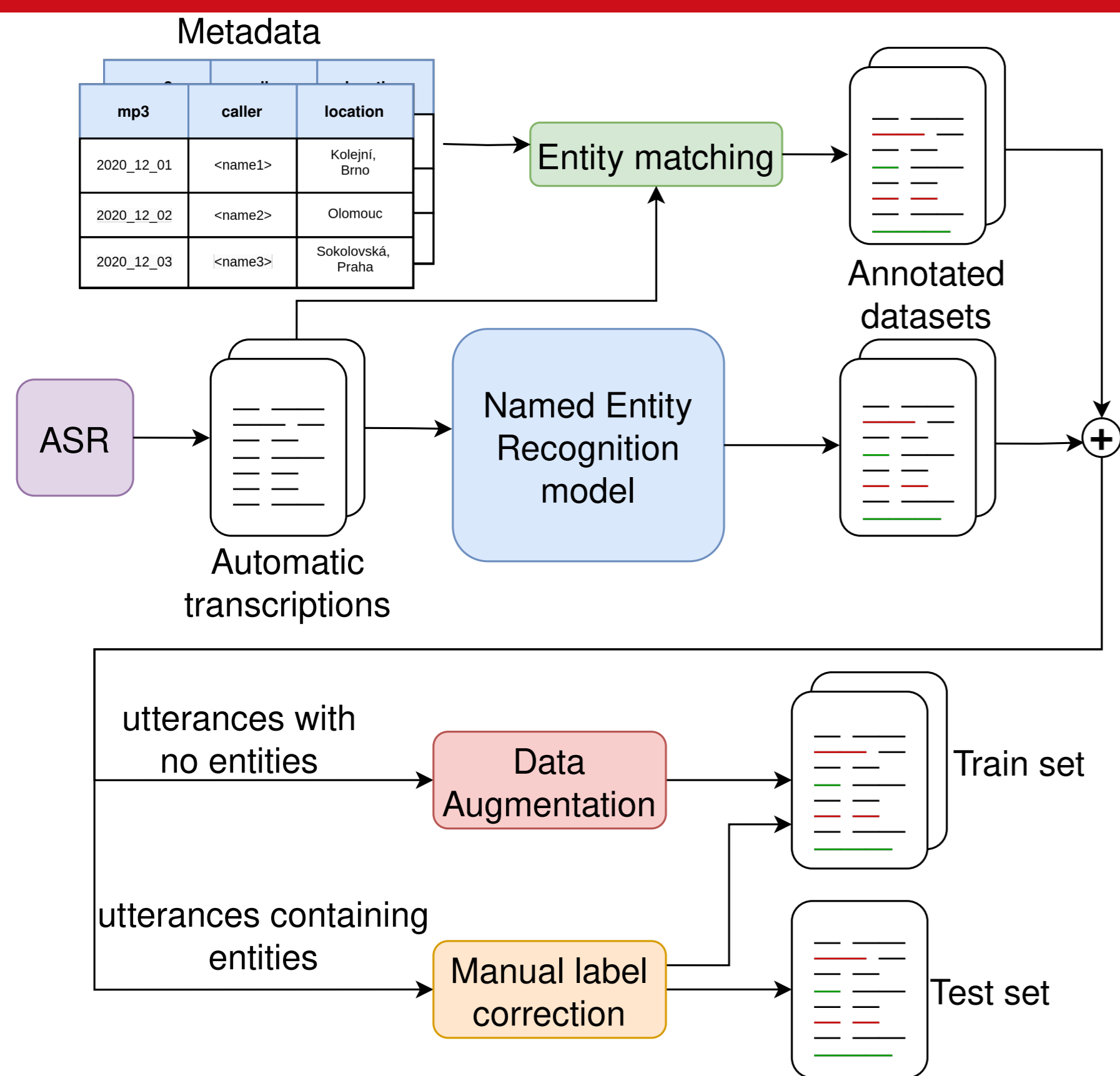


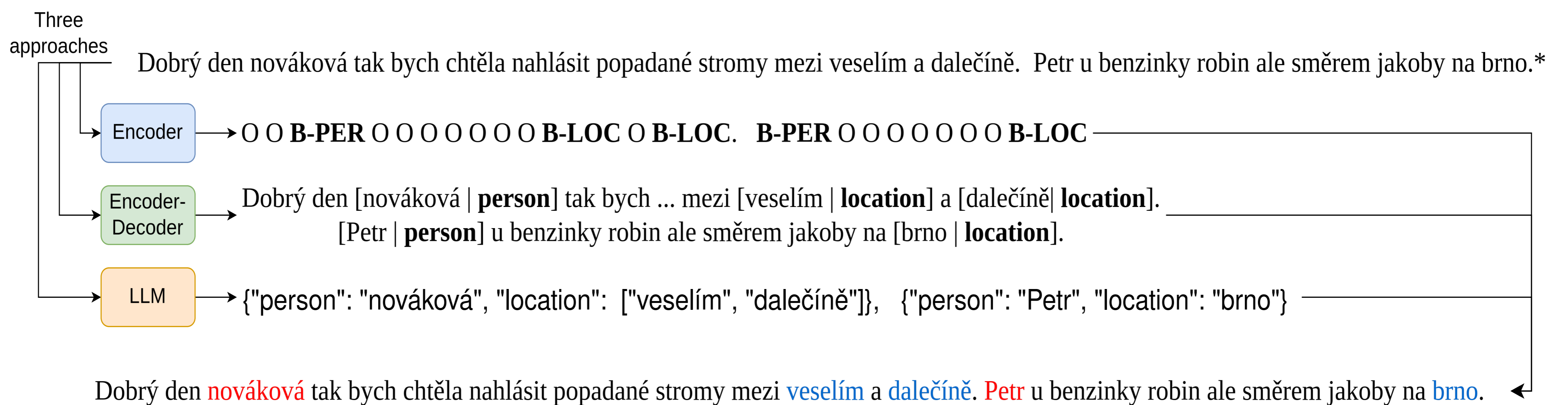
Figure 2: Dataset creation and model evaluation pipeline

## Results

dataset	XLM-R model	Person ↑			Location ↑		
		F1	P	R	F1	P	R
Tornado	tc	0.637	0.659	0.617	0.595	0.512	0.711
	tc,lc	0.522	0.395	0.766	<b>0.339</b>	0.206	0.944
	tc, lc +finetuned	<b>0.570</b>	0.398	1.000	0.307	0.183	0.944
2022 + 2020 manual	tc	0.450	0.841	0.307	0.143	0.517	0.087
	tc,lc	0.711	0.704	0.719	<b>0.761</b>	0.855	0.685
	tc, lc +finetuned	<b>0.909</b>	0.901	0.916	0.758	0.738	0.779

Table 1: Entity recognition model performance for name and location extraction.

## Anonymized examples of real data



\*names are generated randomly and locations are randomly shuffled across all recordings