Short Overview of the taraXÜ Project
taraXÜ aims at the comparative study and parallelization of current major LT and MT paradigms

- Statistical
- Rule-based
- Translation memories
- Pattern-based

Additionally, document quality is automatically assessed
Design an informed selection mechanism that

- leads to better overall translation results
- helps improve individual systems
- provides new scientific insights, especially in the context of statistical processing.

Facilitate human post-editing to make MT part of an innovative, cost-efficient workflow.
Partners and Language Pairs

Overview
Motivation
Goals
Partners and Language Pairs
Realistic Human Evaluation
Appraise Interface
Selection Mechanism
Cooperation

Partners
- Euroscript
- Acrolinx
- Yocoy
- DFKI

Language Pairs
- English
  - French
- German ⇔ Japanese
  - Russian
  - Spanish
- English ⇔ Chinese
  - Czech
Realistic Human Evaluation

Takes into account the needs of the industry partners

- Much more reliable basis for scientific progress

First evaluation round

- Task 1
  - Ranking translation quality (Moses, Lucy, Trados, +Google)
  - Indicate error classes of best translation (-Google)

- Task 2: Post-edit the translation that is **easiest** to post-edit
Task 1: Ranking and Error Classification

Select best sentence and classify the errors it shows.

Source: Der amerikanische Präsident Barack Obama kommt für 26 Stunden nach Oslo, Norwegen, um hier als viertes US-Präsident in der Geschichte den Friedensnobelpreis entgegenzunehmen.

System A: US President Barack Obama arrives for 26 hours to Oslo, Norway, for a fourth US President in history to receive the Nobel Peace Prize.

Please check all error classes which apply for the selected sentence.
- Missing content word(s)
- Word(s) wrong in meaning
- Incorrect word form(s)
- Incorrect word order
- Incorrect punctuation
- Other error

Submit (Ctrl-Alt-S)  No Errors (Ctrl-Alt-N)
Source: Der amerikanische Präsident Barack Obama kommt für 26 Stunden nach Oslo, Norwegen, um hier als viertter US-Präsident in der Geschichte den Friedensnobelpreis entgegenzunehmen.

System A: US President Barack Obama arrives for 26 hours to Oslo, Norway, for a fourth US President in history to receive the Nobel Peace Prize.

Please do a minimal post-correction for the selected sentence.

US President Barack Obama arrives for 26 hours to Oslo, Norway, for a fourth US President in history to receive the Nobel Peace Prize.

Submit (Ctrl-Alt-S)
Develop a selection mechanism to choose the best hypothesis. Possible features to use:

- Source sentence features
- Target (translation) sentence features
- System metadata (translation probabilities, analysis trees, etc.)

Use ML techniques using the results of the human evaluation as training data.
Starting Points for a Cooperation Berlin – Prague
Possible Contributions

Translation systems or models from and into Czech
Both in rule-based and statistical systems. The output of
the human evaluation can be used to improve the
performance of the systems.

Selection mechanism

- TectoMT: System-internal information for the
translation process, e.g. indicators for good or a bad
translation:
  - unknown words
  - failed search
  - failed parse
  - bad alignment matches
  - ...

- Treed with Moses: help to improve our Czech SMT
  baseline system
Possible Contributions (cont.)

- **Linguistic Tools**
  For improving the translation systems or use them to produce features in the selection mechanism
  - Language simplification (interesting for Czech!)
  - Grammar checking
  - Named entity detection
  - Linguistic annotation (POS taggers, base forms, . . . )

- **Error analysis**
  Contributions in automatic or manual error analysis
- Additional data
  Additional domains (specially Czech)

- Supervision and/or quality assurance
  Both of the data and the evaluation procedure for Czech

- Improvements in TectoMT?
  Using the result of the human evaluation

- ML tools?