
First Year Review Overview

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Rationale

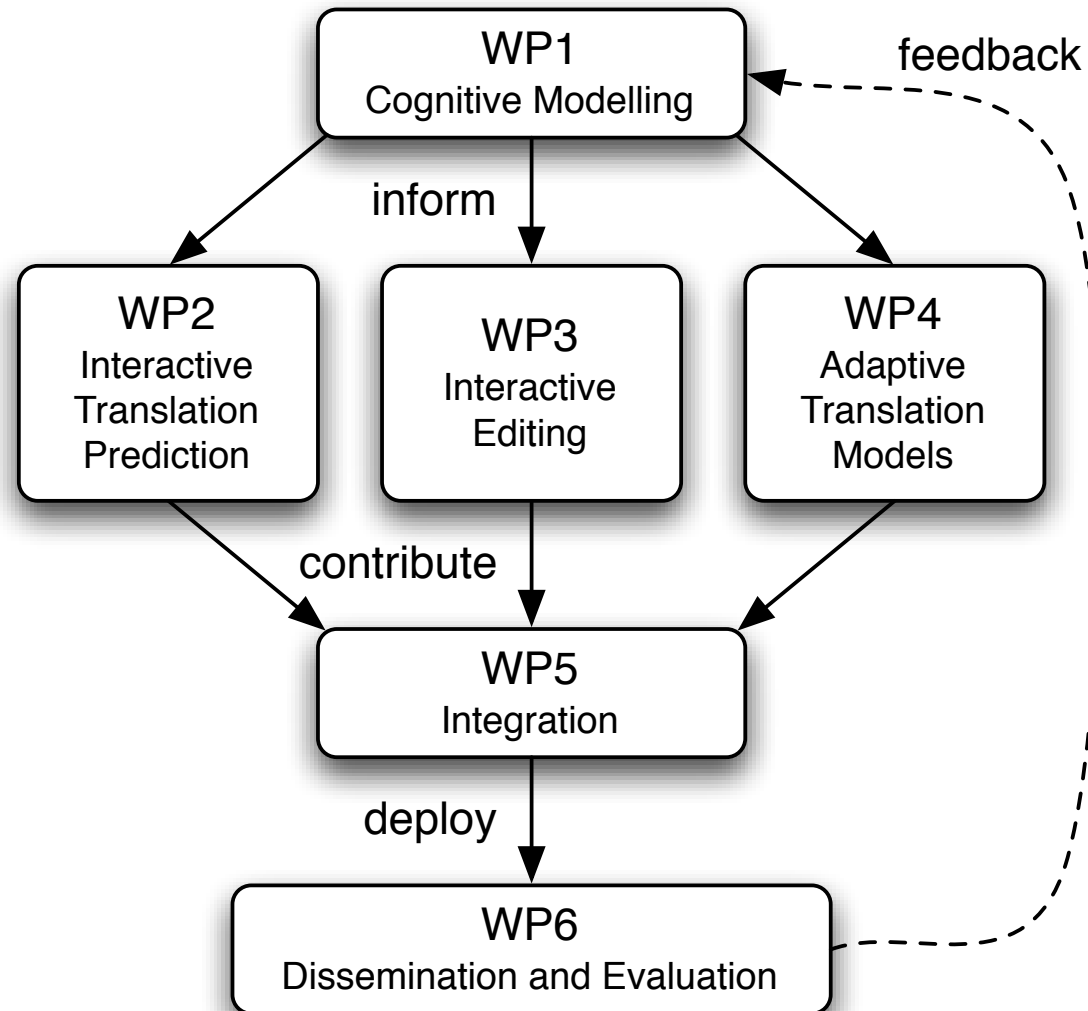
- Recently significant improvements to machine translation technology
but: vast majority of this work is targeted towards bulk translation that is *good enough* or *fit for use*
- Translation for publication still almost exclusively provided by human translators
- Development of computer aided translation tools lags behind
 - translation memory standard in the translation industry
 - adoption of machine translation slowly becoming increasingly used practice
 - but: very simplistic, limited to post-editing, MT systems insufficiently adapted
→ widely resisted.

⇒ Clear need for better CAT technology

Scope and Objectives

- Cognitive studies of translators leading to insights into interface design
 - better understanding of translator needs
- Workbench with novel types of assistance to human translators
 - interactive translation prediction
 - interactive editing and reviewing
 - adaptive translation models
 - better tools for translators
- Demonstration of effectiveness in field tests with professional translators
 - increased translator productivity

Project Organization



Partners

University of Edinburgh (UEDIN): expertise in statistical machine translation, interactive machine translation, cognitive studies

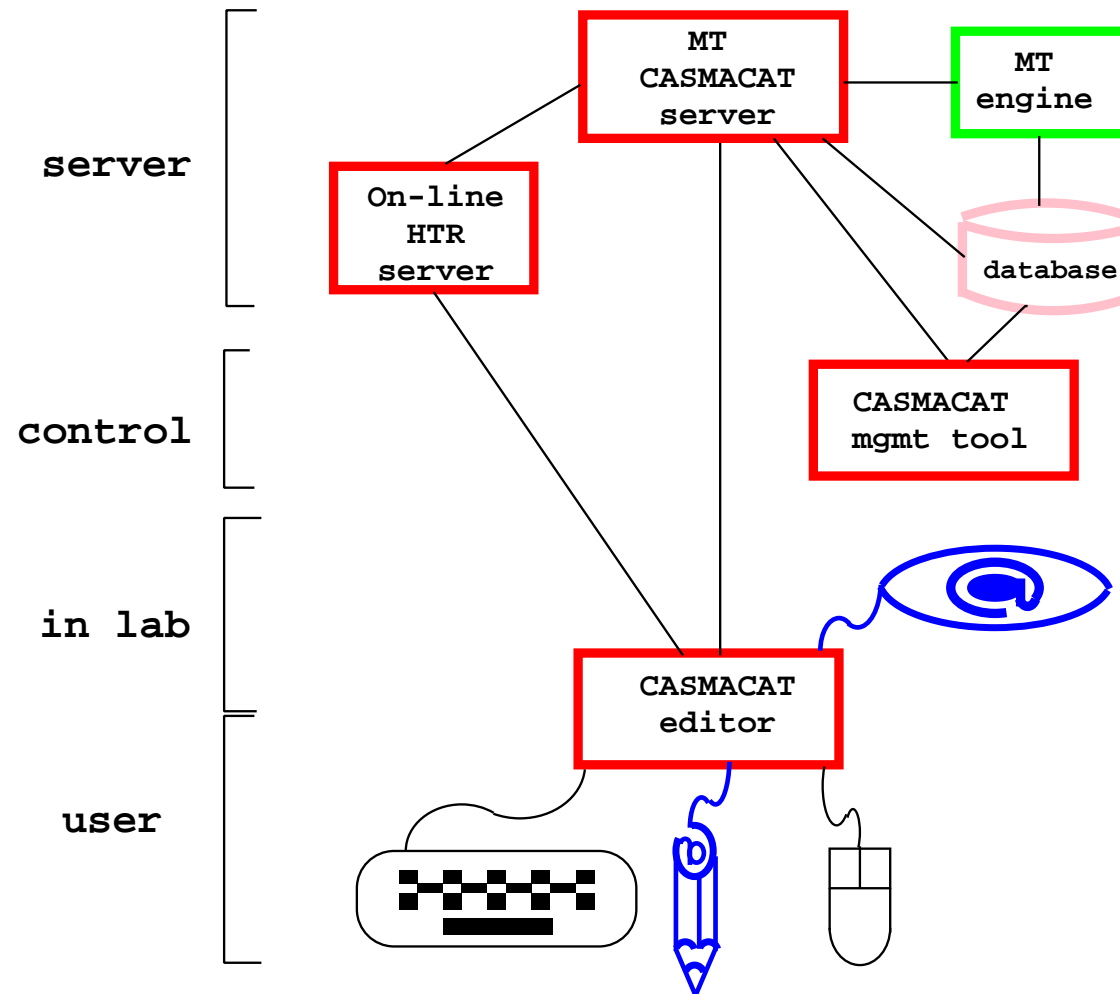
Copenhagen Business School (CBS): expertise in translation process studies

Polytechnic University of Valencia (UPVLC): expertise in statistical machine translation, interactive machine translation

Celer Solutions (CELER): expertise in employing novel computer aided technology in professional practice

All academic partners have developed a CAT tool before the project.

Workbench



Modular design allows integration into existing CAT tools

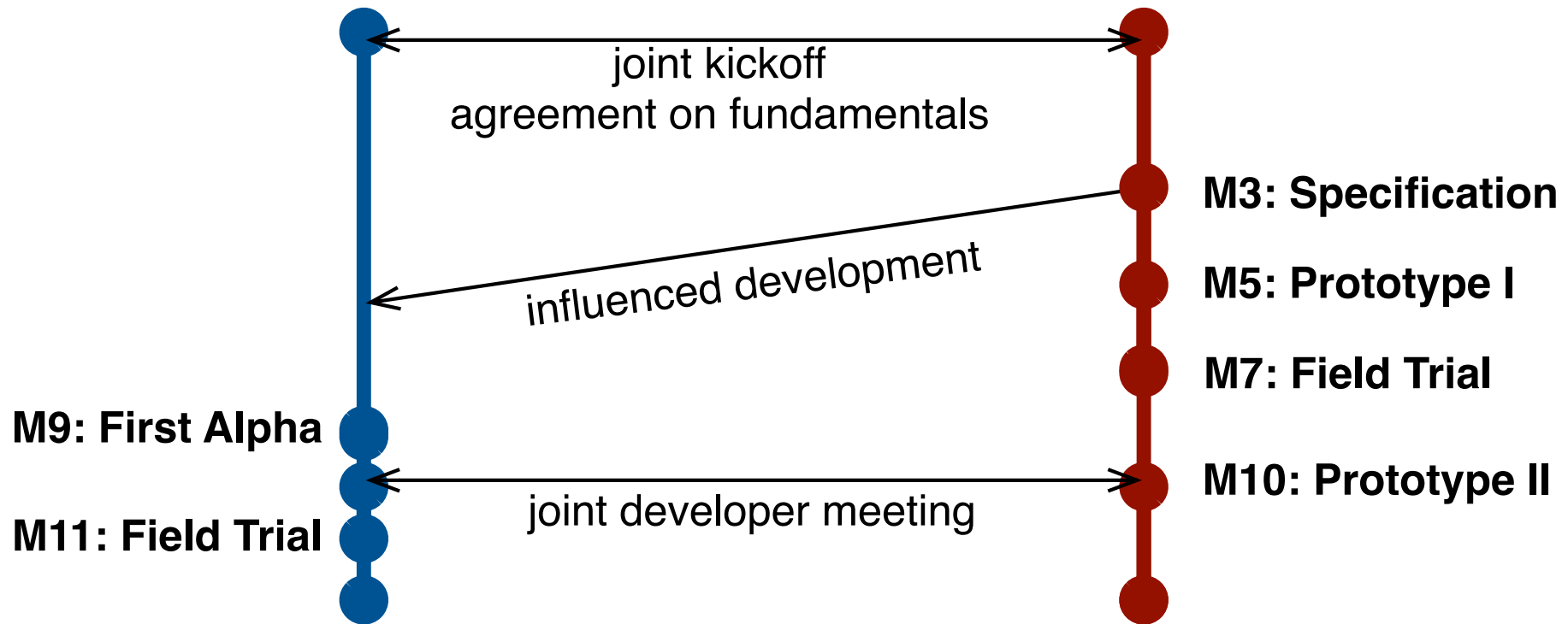
Expected Results

- Better understanding of human translation process
- Open source workbench for
 - translation process studies
 - practical use by professional and volunteer translators
- Demonstrated effectiveness of novel types of assistance
- Dissemination of project outcomes
 - workshops and tutorials
 - user group of early adopters
 - integration into community translation platforms

Scientific Overview: Year 1

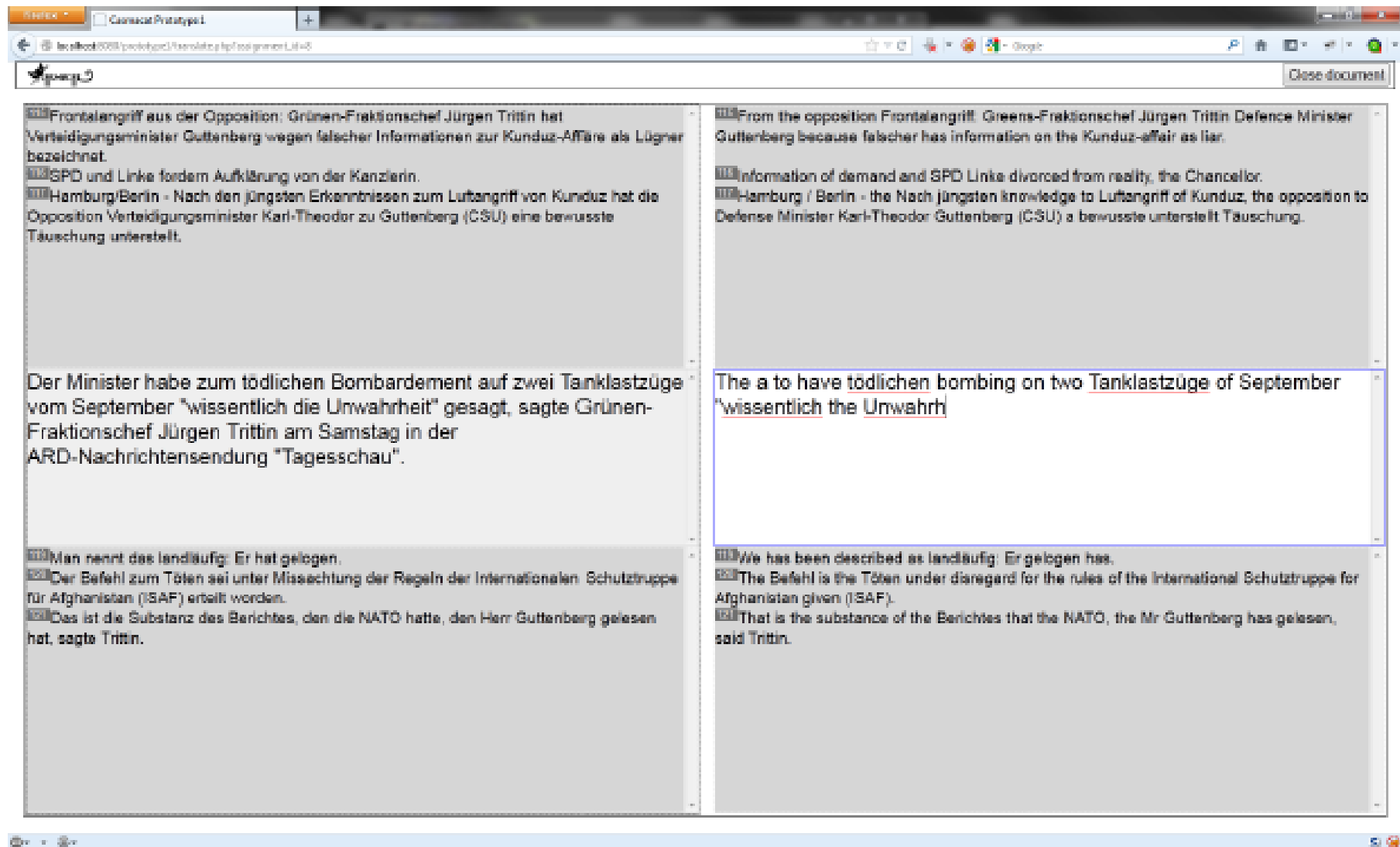
- Development of 2 prototypes
- First field trial (in month 8)
- Analysis of field trial
- Advanced methods
 - new paradigms for interactive machine translation (e-pen interaction, stochastic error-correction models, prediction for tree-based models)
 - online adaptation of machine translation
 - new machine translation models (phrase-based hidden semi-Markov models, finite-state approach)
 - new types of assistance for human translators (word alignment visualization and confidence measures)

WP5: Joint Prototype Development



Now: joint Git repository, joint bug tracker in place

WP5: Prototype I



Frontalangriff aus der Opposition: Grünen-Fraktionschef Jürgen Trittin hat Verteidigungsminister Guttenberg wegen falscher Informationen zur Kunduz-Affäre als Lügner bezeichnet.

SPD und Linke fordern Aufklärung von der Kanzlerin.

Hamburg/Berlin - Nach den jüngsten Erkenntnissen zum Luftangriff von Kunduz hat die Opposition Verteidigungsminister Karl-Theodor zu Guttenberg (CSU) eine bewusste Täuschung unterstellt.

Der Minister habe zum tödlichen Bombardement auf zwei Tanklastzüge vom September "wissentlich die Unwahrheit" gesagt, sagte Grünen-Fraktionschef Jürgen Trittin am Samstag in der ARD-Nachrichtensendung "Tagesschau".

Man nennt das landäufig: Er hat gelogen.

Der Befehl zum Töten sei unter Missachtung der Regeln der Internationalen Schutztruppe für Afghanistan (ISAF) erteilt worden.

Das ist die Substanz des Berichtes, den die NATO hatte, den Herr Guttenberg gelesen hat, sagte Trittin.

From the opposition Frontalangriff: Greens-Fraktionschef Jürgen Trittin Defence Minister Guttenberg because falscher has information on the Kunduz-affair as liar.

information of demand and SPD Linke divorced from reality, the Chancellor.

Hamburg / Berlin - the Nach jüngsten knowledge to Luftangriff of Kunduz, the opposition to Defense Minister Karl-Theodor Guttenberg (CSU) a bewusste unterstellt Täuschung.

The a to have tödlichen bombing on two Tanklastzüge of September "wissentlich the Unwahrh

Wie has been described as landäufig: Er gelogen has.

The Befehl is the Töten under disregard for the rules of the International Schutztruppe for Afghanistan given (ISAF).

That is the substance of the Berichtes that the NATO, the Mr Guttenberg has gelesen, said Trittin.

WP5: Eye Tracking

The majority of hunter-gatherer societies are nomadic. It is difficult to be settled under such a subsistence system as the resources of one region can quickly become exhausted. Hunter-gatherer societies also tend to have very low population densities as a result of their subsistence system. Agricultural subsistence systems can support population densities 60 to 100 times greater than land left uncultivated, resulting in denser populations. Hunter-gatherer societies also tend to have non-hierarchical social structures, though this is not always the case. Because hunter-gatherers tend to be nomadic, they generally do not have the possibility to store surplus food. As a result, full-time leaders, bureaucrats, or artisans are rarely supported by hunter-gatherer societies.

- Logging of eye gaze in browser with Javascript
- Log allows analysis and replay
- Some error correction required

WP5: Prototype II

CASMACAT Jobs List > progetto_test1 (1 - FR)

2184 This, as well as our total respect for the confidentiality of customers' documents, has allowed us to quickly win the trust of major multinational and government customers, such as IBM, Hewlett Packard, RAI Television, ENEL and L'Oréal to name just a few.

Questo, così come il nostro totale rispetto della riservatezza dei documenti dei clienti, ci ha permesso di vincere rapidamente la fiducia di importanti clienti multinazionali e di governo, come IBM, Hewlett Packard, la RAI TV, ENEL e L'ORA © al di nominare

100%

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Clicca qui per uno studio più dettagliato dei nostri clienti.

T→ DRAFT TRANSLATED

Translation matches

Click here for a more detailed study of our customers. Source: Anonymous 2012-07-18 100%

Clicca qui per uno studio più dettagliato dei nostri clienti.

Click here for a more detailed study of our customers. Source: MT 2012-11-26 MT

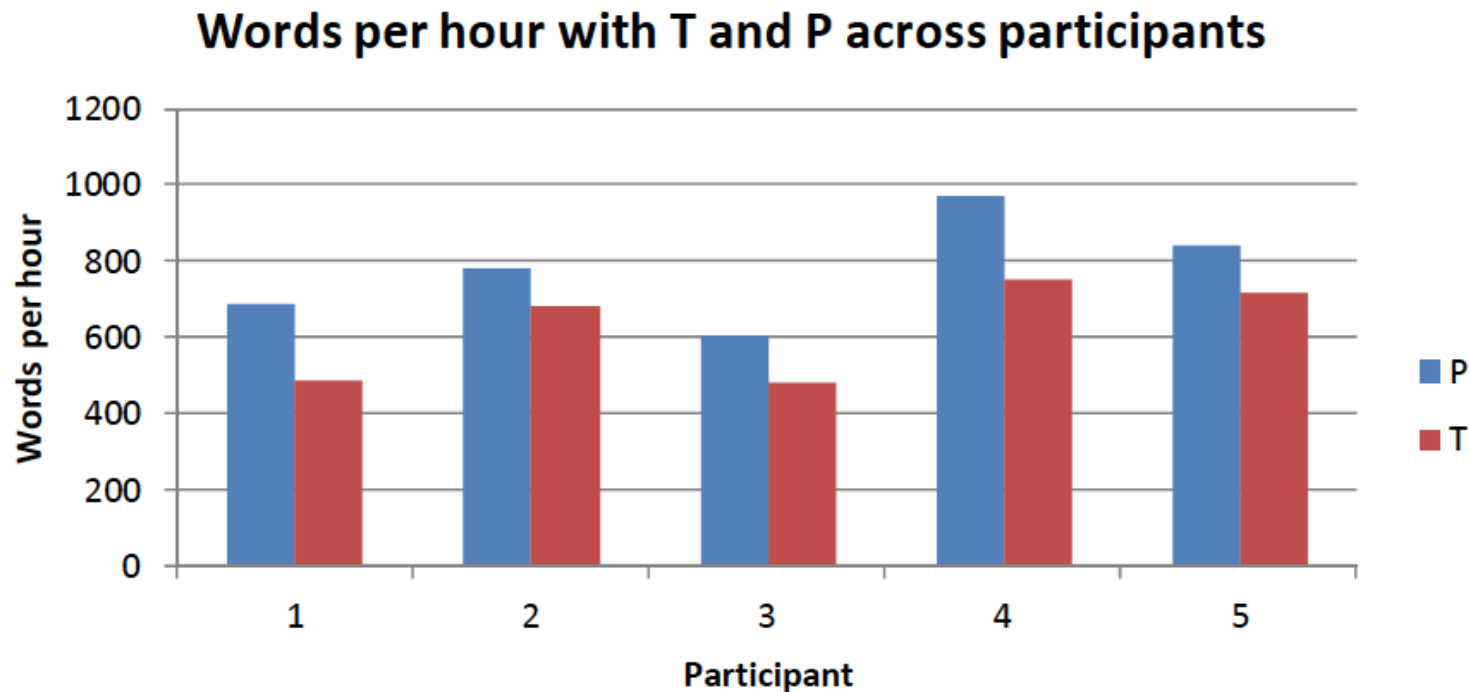
Clicca qui per uno studio più approfondito dei nostri clienti.

[Click here](#) for detailed information about creating custom groups. Source: Anonymous 2006-11-08 38%

[Fare clic qui](#) per informazioni su come creare gruppi personalizzati.

WP6: Field Trial

- News stories, English-Spanish, 5 professional translators
- Translation from scratch vs. post-editing
- Competitive machine translation system from Edinburgh (WMT 2012 system)

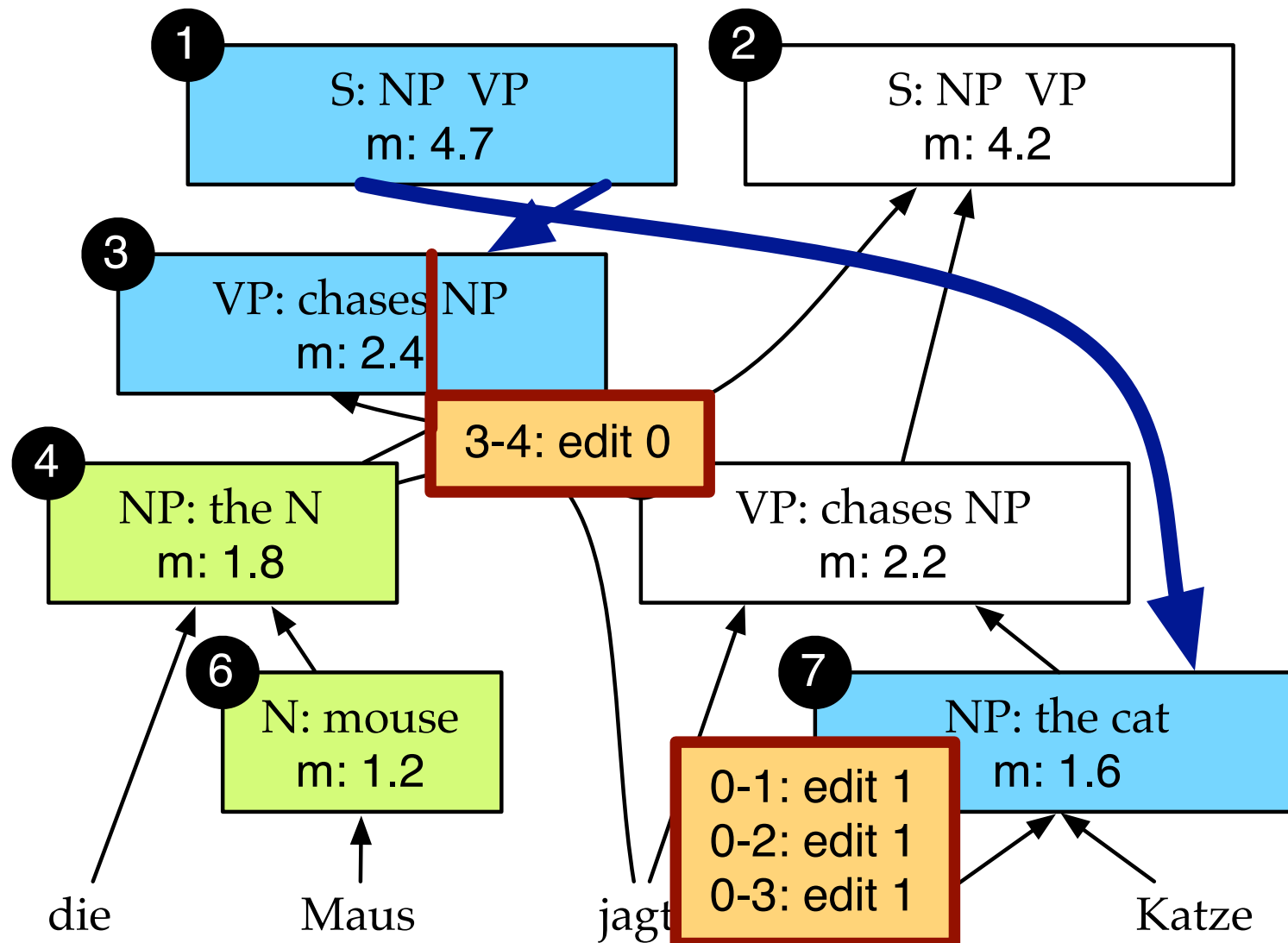


WP6: Data From Field Trial

- Many valuable data resources generated from field trial
 - ⇒ Eye-tracking data enables cognitive studies
 - ⇒ Word correction data enables better word confidence measures
 - ⇒ Postediting time enables better sentence confidence measures
 - ⇒ Test data for interactive MT research

- Data and models will be made publicly available
(likely to be used in WMT 2013 shared task on confidence estimation)

WP2: Prediction from Parse Forest



WP2: Study of E-pen Gestures

deletion

if₁ any₂ feature₃ ~~not~~₄ is₅ available₆ on₇ your₈ network₉

insertion

if₁ any₂ feature₃ *vis* not₄ is₅ available₆ on₇ your₈ network₉

substitution

if₁ any₂ feature₃ *is* ~~not~~₄ is₅ available₆ on₇ your₈ network₉

shift

if₁ any₂ feature₃ not₄ *is*₅ available₆ on₇ your₈ network₉

transposition

if₁ any₂ feature₃ not₄ *is*₅ available₆ on₇ your₈ network₉

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WP3

- Sentence-level estimation of post-editing effort
- Word-level confidence measures

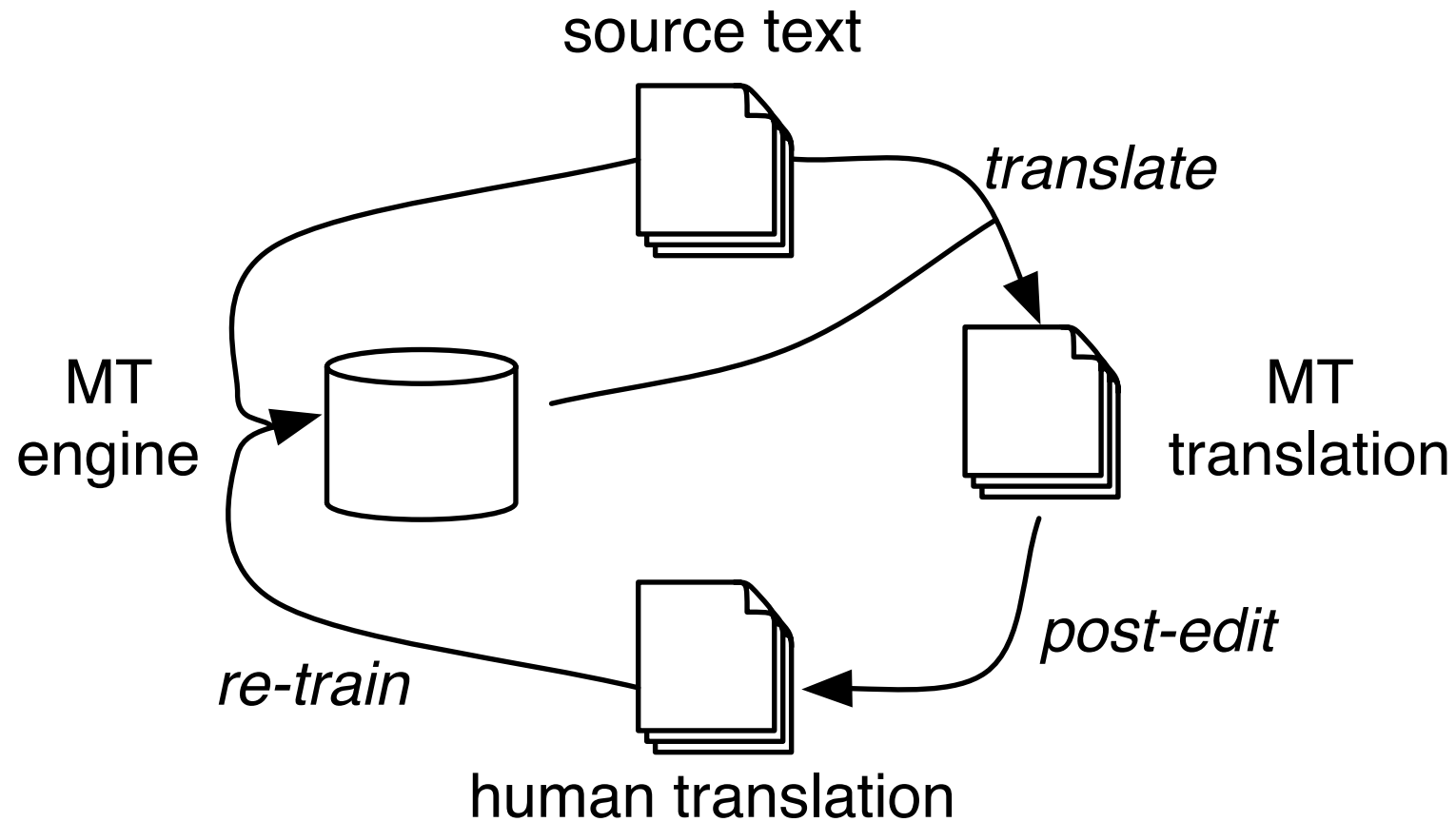
* participación de los países candidatos en los programas comunitarios .

* **applicant** countries **to take part** in Community programmes .

- Rules from translation memory matches
- Visualization of word alignments

WP4: Online Updating

Instant updating of the translation model



Dissemination

- Events
 - Second international PhD course on Translation Process Research
 - International Workshop on Expertise in Translation and Post-editing Research and Application
 - Symposium on Eye tracking in Translation and Post-editing Studies
 - Workshop Eye tracking and Natural Language Processing
 - 7th Workshop on Statistical Machine Translation
 - 7th Machine Translation Marathon
- 19 publications
- 1 MSc thesis
- Demonstration at AMTA conference
- Website soliciting subscribers to mailing list (now 48 subscribers)
- Attracted interest from commercial contacts such as Audi, Oracle, and Symantec

questions?