TRANSLI™
Trusted Automated Translation at the Service of Justice

NLPTECHNOLOGIES
Natural Language Processing

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Adjunct professor at the Department of Computer Science at the Université de Montréal, RALI

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Introduction

- NLP Technologies Inc.
- TRANSLI Machine Translation Solution
- TRANSLI domain adaptation

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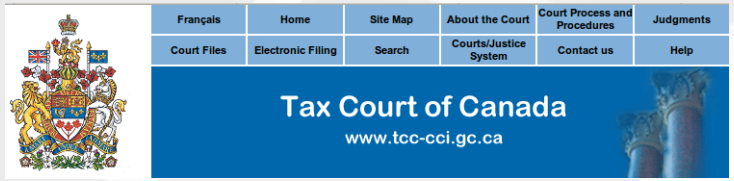
Legal field

- To contribute to the improvement of justice by way of technological innovation
- Thousands of decisions
  - 200 000/y in Canada X 10 for US
- Multilingual, multiple fields
- Access to specific decisions
  - Classification
- Access to relevant content
  - Summarization
  - Translation



Partners

Research

Université de Montréal

CNRC-NRC Canada

SFU SIMON FRASER UNIVERSITY THINKING OF THE WORLD

UNIVERSITY OF WOLVERHAMPTON

Industry:

Raytheon BBN Technologies

LANGUAGE WEAVER

Clients:

CSST

Barreau du Québec

Fisheries and Oceans Canada
Canadian Coast Guard

TRIBUNAL ADMINISTRATIF du Québec

Commission des droits de la personne et des droits de la jeunesse Québec

Alberta EDUCATION

Federal Court

NLP Solutions: TRANSLI

- NLP Translation Solutions for Legal and governmental documents
  - Large volumes of information
  - High speed
  - High accuracy

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Machine Translation of Legal Information

- NLP Translation Solutions for Courts and Tribunals
- Statistical machine translation (SMT)
  - Contextual approach and use of domain-specific vocabulary
  - Domain adaptation for SMT
  - SMT integrated to a fully automated Translation Management workflow

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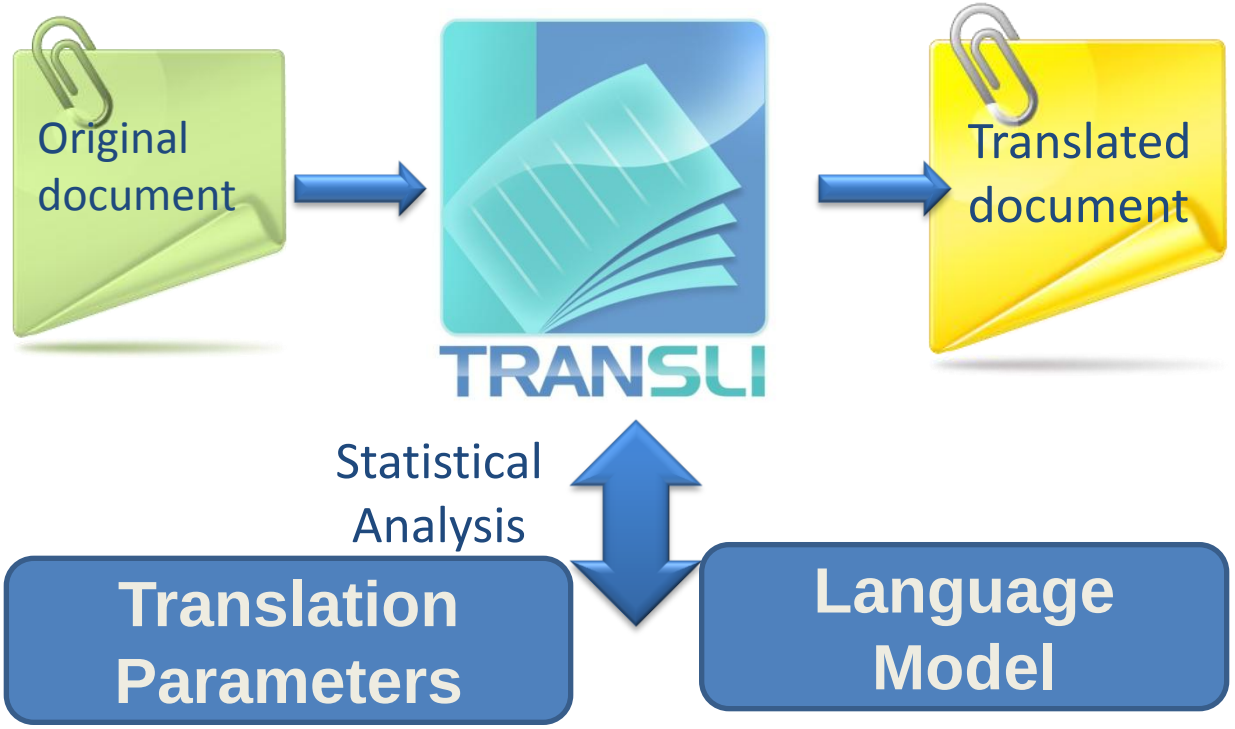
Certifications & Achievement

- In order to protect the intellectual property of its innovative automatic summarization and translation technologies:
  - NLP Technologies has filed two patents
  - Trademarks for DecisionExpress™ and TRANSLI ™
- Certified technology by:

LICS Language Industry Certification System EN 15038
CERTIFIED NCERT ÖNORM EN 15038 SERVICE
CERTIFIED AILIA CERTIFIÉ CAN/CGSB-131.10-2008
Microsoft GOLD CERTIFIED Partner

TRANSLI

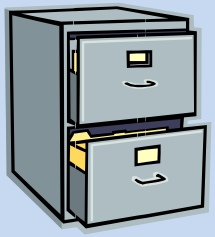
- **Run-Time Translation Process**



How TRANSLI Works?

Translation Memories

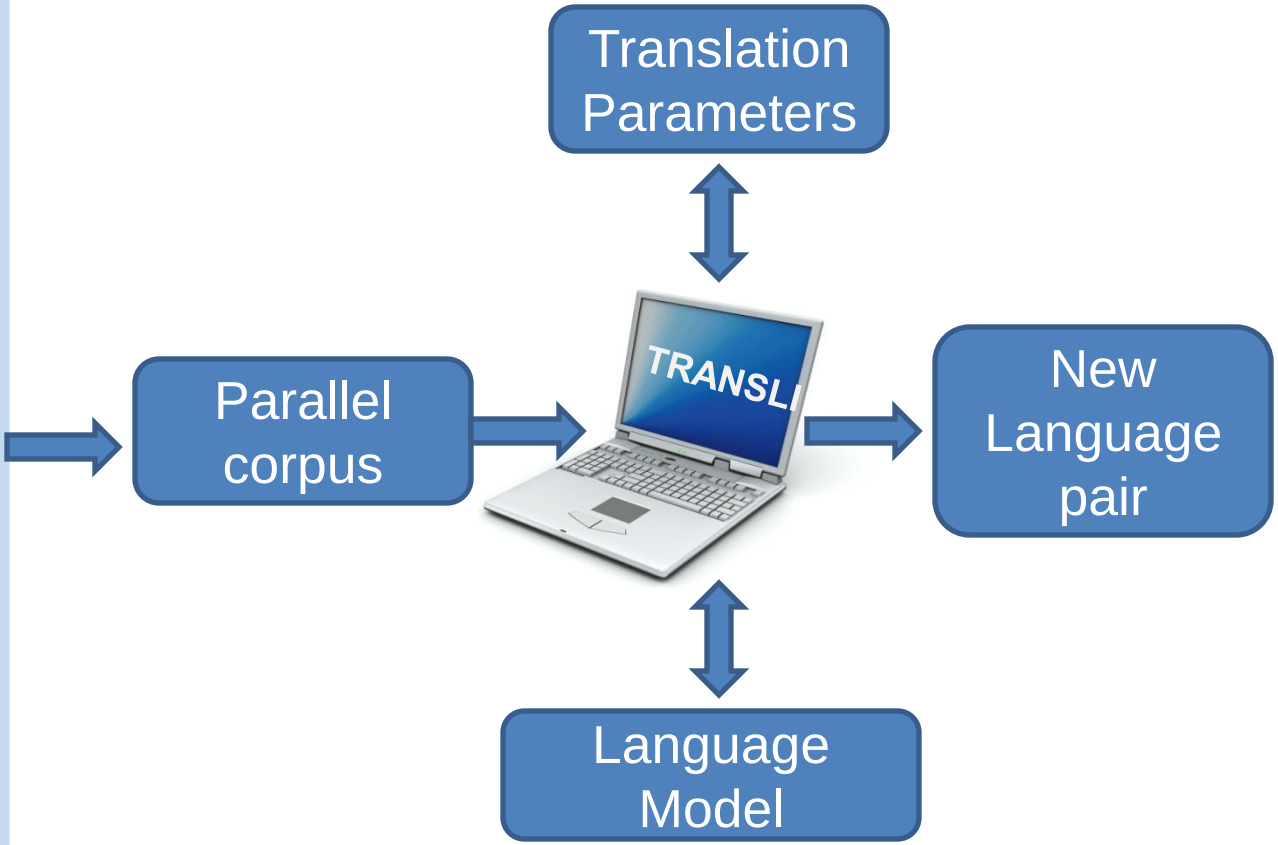
Translated Archives



Dictionnaires/glossaries

Internet

Human Translations



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Need for translation at Federal Courts

- 200 new judgments each week
- 75% in English, 25% in French
- By law, a translation in the other language must be provided
- Delay of many months before it is available
- Original goal: use SMT for draft before the official translation becomes available

Revised goal of TRANSLI

- Remarkably good quality translations
- By adding a post-editing process
- MT output can be used as official translations
  - Reduces translation delay
  - Savings on the cost of translation
- Pilot study conducted to determine the type of modifications done by the human editor
  - Done in collaboration with Federal Courts, UdeM and NLP

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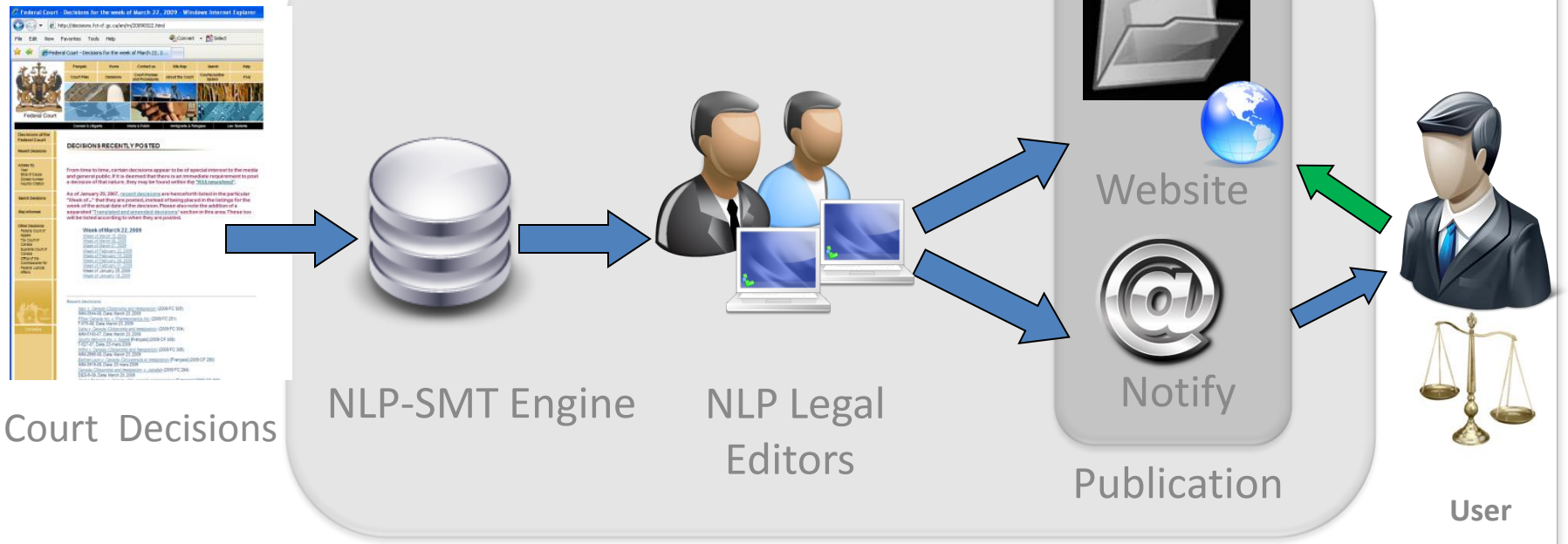
Main steps of the translation chain

- Corpus building
- Training the statistical models
- Tuning the models (determine the best configuration)
- Text Translation (decoders)
- Translation quality evaluation

Components of the NLP's translation platform

- **TRAINED SMT** –on countless legal documents to improve translation accuracy
- **TRANSLATION MEMORY** – uses domain-specific terminology
- **DOCUMENT MANAGEMENT SYSTEM** – secure platform ensures confidentiality of user's documents
- **POST-EDITING** – edited version made available by our team of legal reviewers
- **WEB-BASED SERVICE** – end user requires a simple internet connection to access service

Automatic Translation Management System



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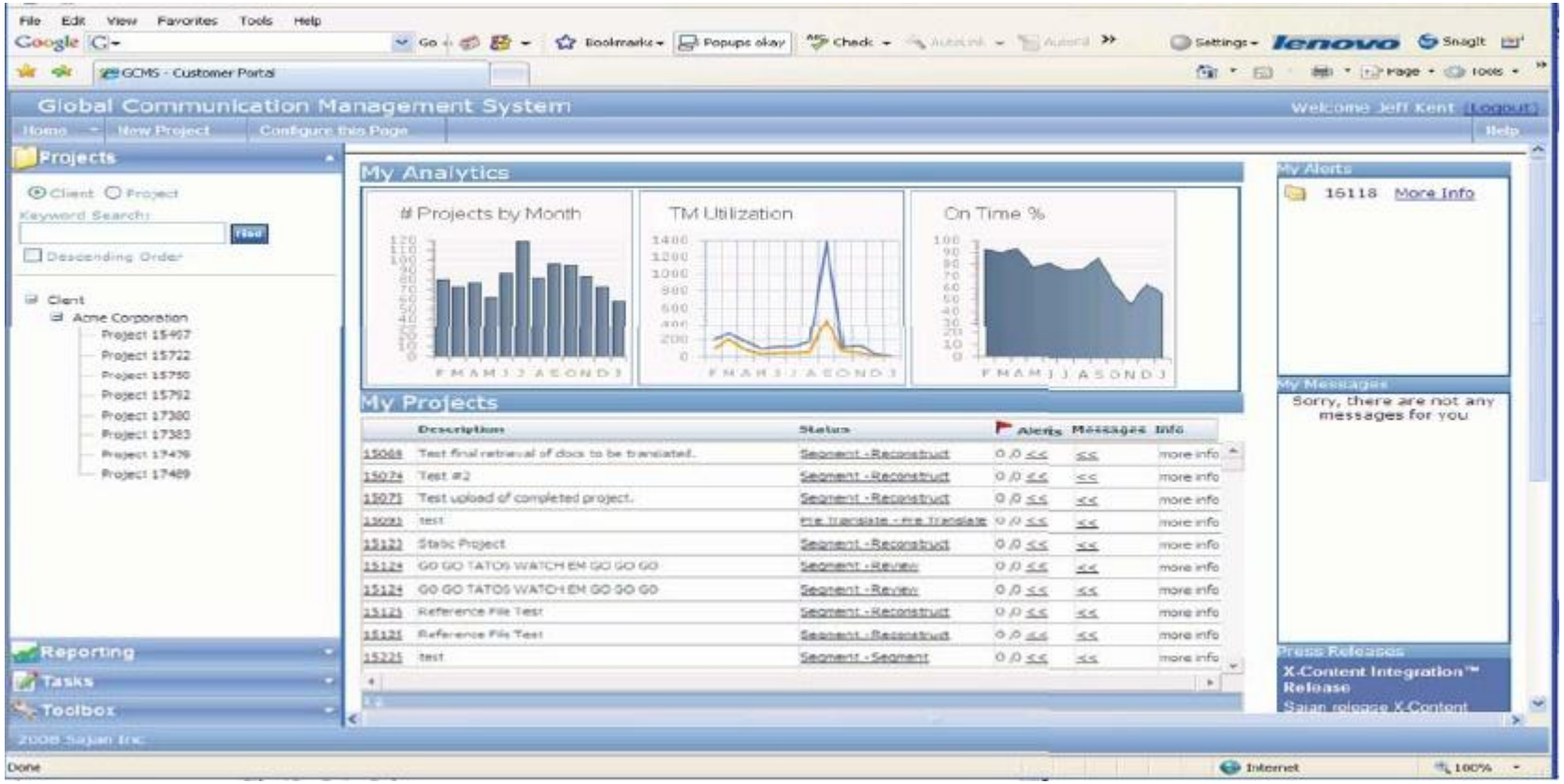
NLP's Workflow management system



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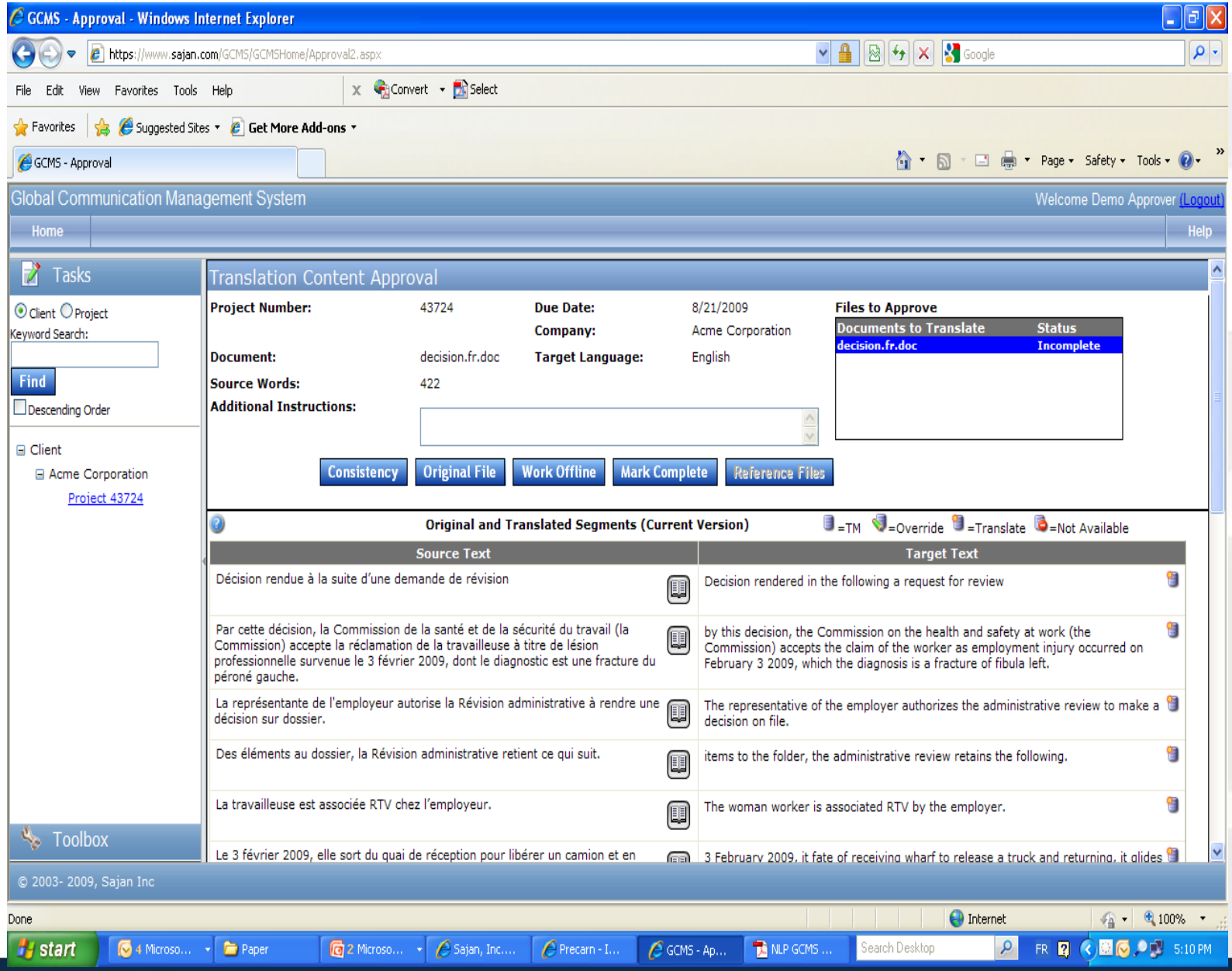
GCMS - Approval - Windows Internet Explorer
https://www.sajan.com/GCMS/GCMSHome/Approval2.aspx
File Edit View Favorites Tools Help
Convert Select
Favorites Suggested Sites Get More Add-ons
GCMS - Approval
Page Safety Tools
Global Communication Management System
Welcome Demo Approver (Logout)
Home
Help
Tasks
Client Project
Keyword Search:
Find
Descending Order
Client
Acme Corporation
Project 43724
Toolbox
Translation Content Approval
Project Number: 43724
Due Date: 8/21/2009
Company: Acme Corporation
Document: decision.fr.doc
Target Language: English
Source Words: 422
Additional Instructions:
Files to Approve
Documents to Translate
Status
decision.fr.doc
Incomplete
Consistency
Original File
Work Offline
Mark Complete
Reference Files
Original and Translated Segments (Current Version)
=TM
=Override
=Translate
=Not Available
Source Text
Target Text
Décision rendue à la suite d'une demande de révision
Decision rendered in the following a request for review
Par cette décision, la Commission de la santé et de la sécurité du travail (la Commission) accepte la réclamation de la travailleuse à titre de lésion professionnelle survenue le 3 février 2009, dont le diagnostic est une fracture du péroné gauche.
by this decision, the Commission on the health and safety at work (the Commission) accepts the claim of the worker as employment injury occurred on February 3 2009, which the diagnosis is a fracture of fibula left.
La représentante de l'employeur autorise la Révision administrative à rendre une décision sur dossier.
The representative of the employer authorizes the administrative review to make a decision on file.
Des éléments au dossier, la Révision administrative retient ce qui suit.
items to the folder, the administrative review retains the following.
La travailleuse est associée RTV chez l'employeur.
The woman worker is associated RTV by the employer.
Le 3 février 2009, elle sort du quai de réception pour libérer un camion et en
3 February 2009, it fate of receiving wharf to release a truck and returning, it glides
© 2003- 2009, Sajan Inc
Done
Internet
100%
start
4 Microso...
Paper
2 Microso...
Sajan, Inc....
Precarn - I...
GCMS - Ap...
NLP GCMS ...
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FR
5:10 PM

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Future work

- Domain adaptation issues in SMT sys**tems**
- Natural Language Processing techniques to develop the quality of TRANSLI™
- To show significant improvements in translation with test and training data collected from different domains

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THINKING OF THE WORLD

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Summary

- Collaboration between the university and industry
- Our experience with domain-based technologies : **Legal field**
- Cost effective, near real-time machine translation service
- Allows for prioritization and maximization of translation resources
- Platform of post editing: legal experts and certified translators

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www.nlptechnologies.ca

Thank you!
Questions?

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