

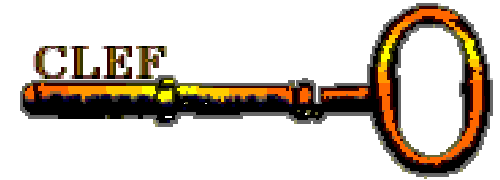
# Cross-Language Evaluation Forum (CLEF)

---

Carol Peters  
IEI -CNR, Pisa

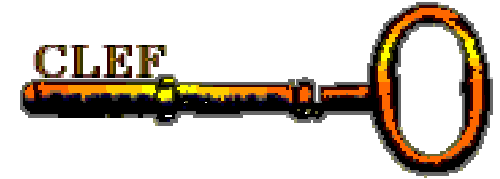


# What is an Evaluation Campaign?

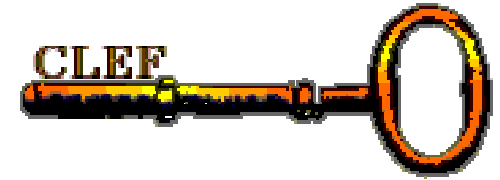


- An activity that allows system developers to test their systems and compare approaches and technologies under controlled objective conditions

# Cross-Language Evaluation Forum



- CLEF2000 - 2001: funded by DELOS Network of Excellence for Digital libraries and US National Institute for Standards and Technology (NIST)
- Extension of CLIR track at TREC (1997-1999)
- Coordination is distributed - national sites for each language in multilingual collection

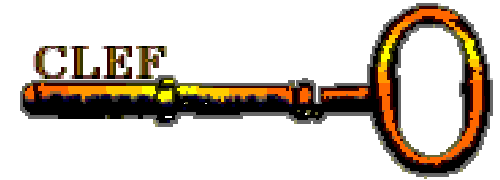


# CLEF - Main Goals

Promote research by providing an appropriate infrastructure for:

- CLI R system evaluation, testing and tuning
- comparison and discussion of results
- building of test-suites for system developers

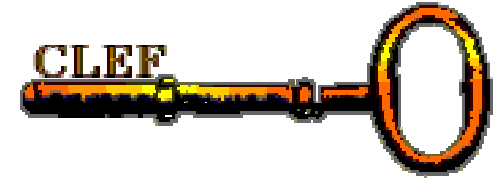
# CLEF2001 Organizers



- **Dutch:** University of Twente
- **English:** NIST, Gaithersburg MD
- **French:** University of Hildesheim
- **German:** IZ Sozialwissenschaften, Bonn,
- **Italian:** IEI-CNR, Pisa, Italy (Coordinator)
- **Spanish:** IEEC-UNED, Madrid
- **Test Collections/Processing Results:**  
Eurospider, Zurich

# CLEF 2001

## Task Description



Four main evaluation tracks in CLEF 2001:

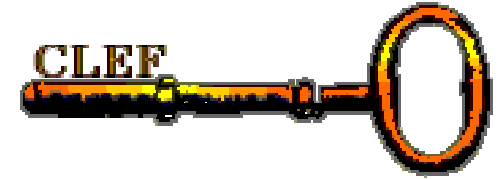
- multilingual information retrieval
- bilingual information retrieval
- monolingual (non-English) information retrieval
- domain-specific IR

plus

- experimental track for interactive C-L systems

# CLEF 2001

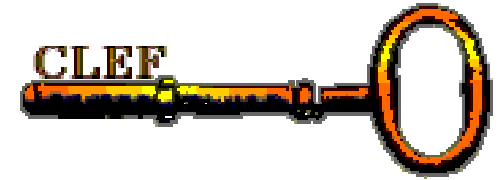
## Data Collection



- Multilingual comparable corpus of news agencies and newspaper documents for six languages (DE, EN, FR, I T, NL, SP). Nearly 1 million documents
- Common set of 50 topics (from which queries are extracted) created in 9 European languages (DE, EN, FR, I T, NL, SP+FI, RU, SV) and 3 Asian languages (JP, TH, ZH)

# CLEF 2001

## The Queries



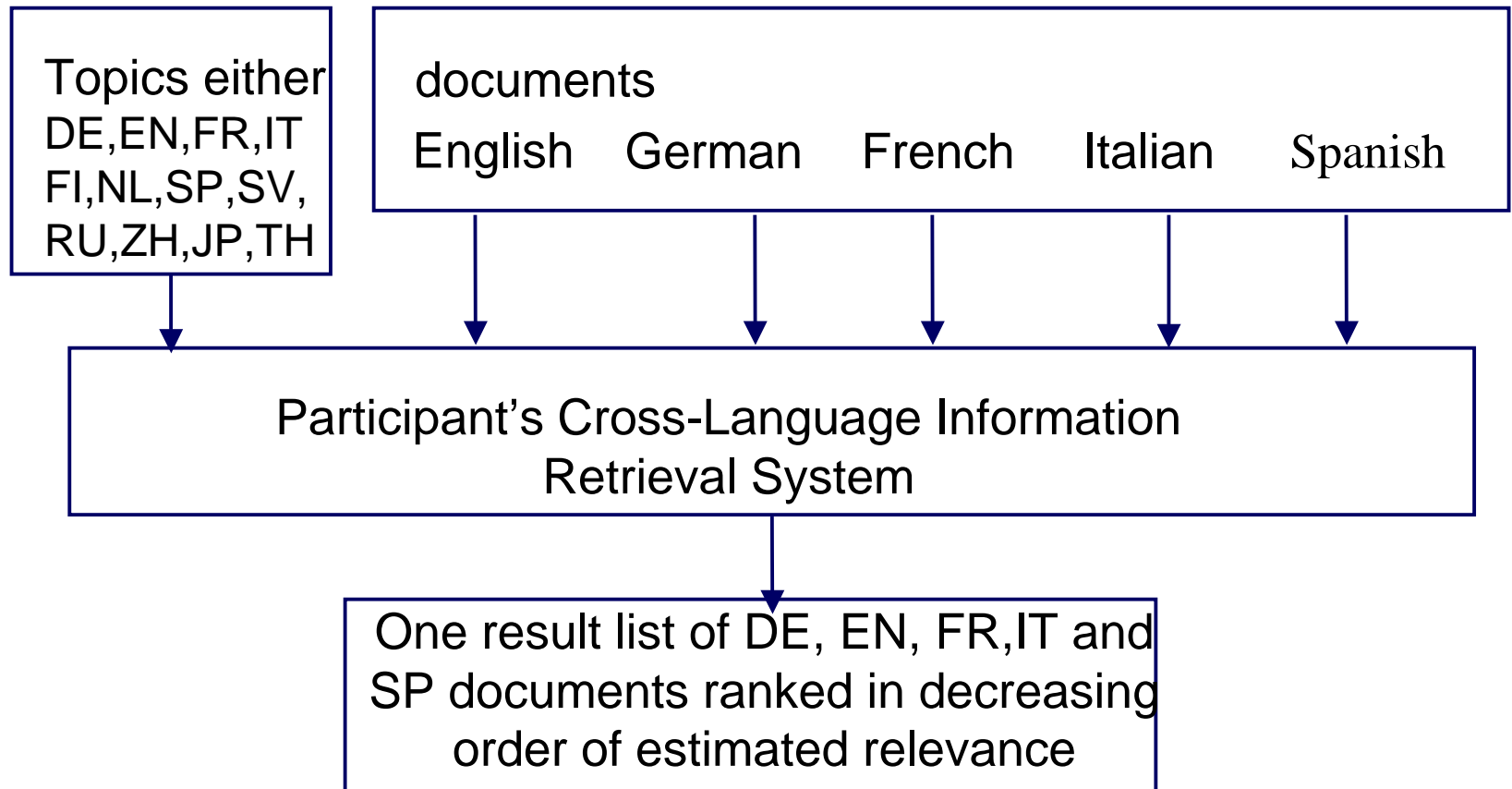
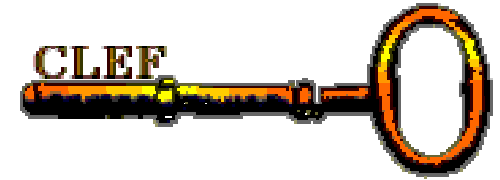
### TREC-style topics:

- **Title:** European Industry
- **Description:** What factors damage the competitiveness of European industry on the world's markets?
- **Narrative:** Relevant documents discuss factors that render European industry and manufactured goods less competitive with respect to the rest of the world, e.g. North America or Asia. Relevant documents must report data for Europe as a whole rather than for single European nations.



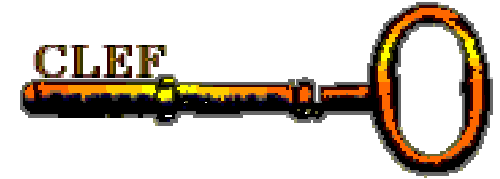
# CLEF 2001

## Multilingual IR



# CLEF 2001

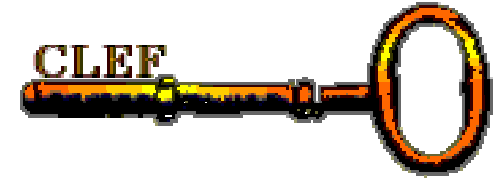
## Bilingual IR



- **Task:** query English or Dutch target document collections
- **Goal:** retrieve documents for target language, listing results in ranked list
  - Easier task for beginners !

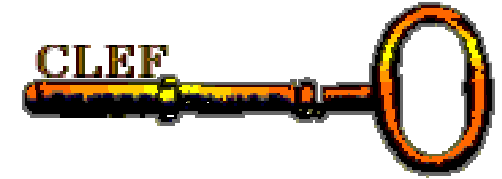
# CLEF 2001

## Monolingual I R



- **Task:** querying document collections in FR|DE|IT|NL|SP
- **Goal:** acquire better understanding of language-dependent retrieval problems
  - different languages present different retrieval problems
  - issues involved include word order, morphology, diacritic characters, language variants

# CLEF 2001

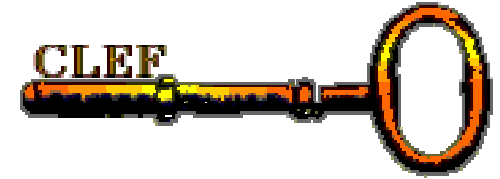


## Domain-Specific IR

- **Task:** querying a structured database from a vertical domain (social sciences) in German
  - German/English/Russian thesaurus and English translations of document titles
  - Monolingual or cross-language task
- **Goal:** understand implications of querying in domain-specific context

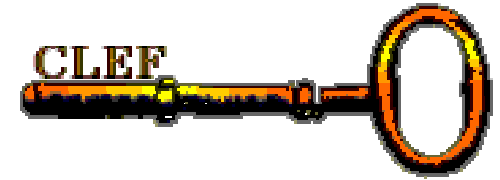
# CLEF 2001

## Interactive C-L



- **Task:** interactive document selection in an “unknown” target language
- **Goal:** evaluation of results presentation rather than system performance

# CLEF 2001 Participation



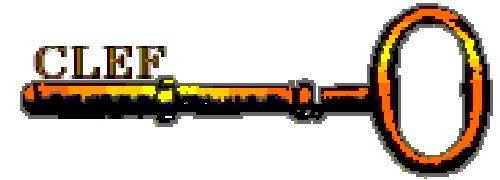
34 Participating groups:

N.America = 9; Asia = 4; Europe = 21

Runs submitted for all tasks and all  
languages

# CLEF2001

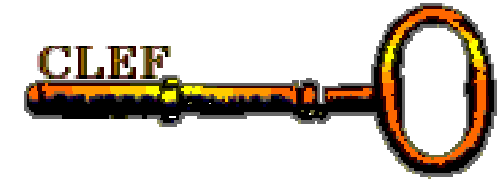
## Approaches



All traditional approaches used:

- commercial MT systems (Systran, Babelfish, Globalink Power Translator, )
  - both query and document translation tried
- bilingual dictionaries (on-line and in-house tools)
- aligned parallel corpora (web-derived)
- comparable corpora (similarity thesaurus)
- conceptual networks (Eurowordnet, ZH-EN wordnet)
- multilingual thesaurus (domain-specific task)

# CLEF2001



## Techniques Tested

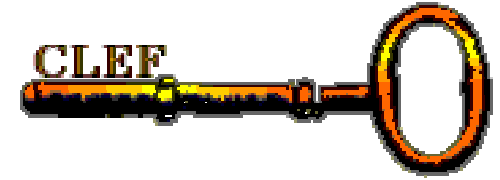
---

Text processing for multiple languages:

- Porter stemmer, Inxight commercial stemmer, on-site tools
- separate stopword lists vs single list
- morphological analysis
- n-gram indexing, word segmentation, decompounding (e.g. Chinese, German)
- use of NLP methods, e.g. phrase identification, morphosyntactic analysis



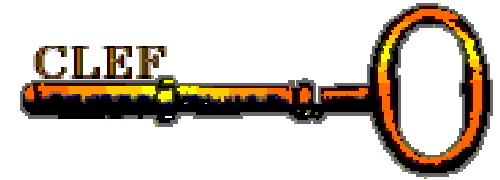
# CLEF2001



## Techniques Tested

Cross-language strategies included:

- integration of methods (MT, corpora and MRDs)
- pivot language to translate from L1 -> L2 (DE -> FR, SP, IT via EN)
- N-gram based technique to match untranslatable words
- prior and post-translation pseudo-relevance feedback
- vector-based semantic analysis (query expanded by associating semantically similar terms)

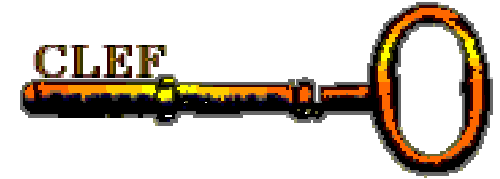


# Summing up

- system evaluation is not a competition to find the best
- evaluation provides opportunity to test, tune, and compare approaches in order to improve system performance
- an evaluation campaign creates a community interested in examining the same issues and comparing ideas and experiences

# Workshop Schedule

## Day 1



CLEF 2001 Campaign - Participants only

### Morning

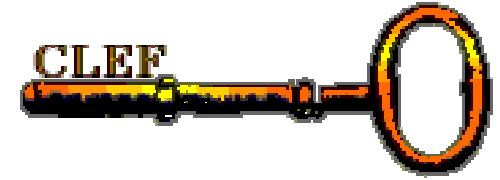
- Multilingual Task - Presentations and Discussion

### Afternoon

- Bilingual and Monolingual - Presentations and Discussion
- Posters

# Workshop Schedule

## Day 2



## Looking to the Future

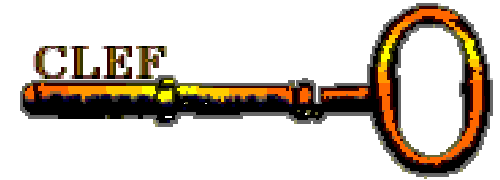
### Morning

- Suggestions for New Tasks
- Reports from other Evaluation Campaigns
- Philosophy of Evaluation

### Afternoon

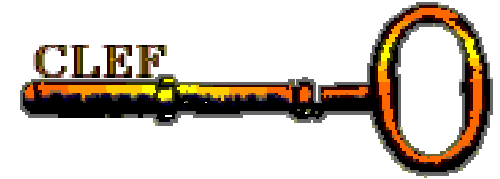
- Creating the Topics and Making the Assessments
- Preparing for CLEF 2002

# Cross-Language Evaluation Forum



## ■ Intentions for the Future

- addition of more languages
- addition of new tasks
- C-L evaluation for other document types
- study evaluation methodologies wrt user needs
- produce CLIR system test-suites for the R&D community



# How to Participate

■ For more information:

<http://www.clef-campaign.org>

or

[carol@iei.pi.cnr.it](mailto:carol@iei.pi.cnr.it)