

## System Demonstration

### LOGOS INTELLIGENT TRANSLATION SYSTEM

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#### 1 System builders and contacts

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#### 2 System category

Commercially sold

### **3 System characteristics**

#### **3.1 Translation speed**

Approximately a page per minute. Depends on the server.

#### **3.2 Domains covered**

General purpose, especially tuned for use by professional translators.

#### **3.3 Input formats**

AmiPro  
ASCII  
Interleaf  
FrameMaker  
HTML  
Microsoft Word/RTF  
SGML  
WordPerfect

#### **3.4 Output quality**

70-95% with appropriate dictionary data

### **4 Resources**

#### **4.1 Size of lexicons**

##### **4.1.1 German source**

100,000 dictionary entries  
20,000 semantic rules (German - English)

##### **4.1.2 English source**

60,000 dictionary entries  
10,000 - 13,000 semantic rules (depending on language pair)

#### **4.2 Size of grammars**

##### **4.2.1 German source**

30,000 grammar rules

##### **4.2.2 English source**

35,000 grammar rules

### **5 Hardware and software**

#### **5.1 Hardware platforms**

Sun SPARCstation  
All Microsoft Windows platforms

#### **5.2 Operating systems**

SunOS and Solaris

## **6 Functionality description**

### **6.1 General**

Logos Intelligent Translation is designed to facilitate the translation of text input into other languages. The system can be customized by adding terminological and grammatical information. The effect of the added information is a dramatic improvement in translation quality. Post-editing the automatically translated output is much easier than translating the text by hand.

### **6.2 Language Pairs**

English - French/Italian/German/Spanish  
German - English/French/Italian

### **6.3 System features**

#### **6.3.1. Architecture**

- \* The Logos Intelligent Translation System is a Client/Server system.
- \* The translation engine, principal databases and system administrative programs are located on the Logos Server.
- \* User access to the server may be via LAN, dial up or Browser (Netscape 2.0 or equivalent) using LogosClient or NetClient software.

#### **6.3.2. Terminology and terminology management**

- \* *ALEX* is the dictionary management system which enables users to add, edit and delete their own Logos dictionary data quickly and easily.
- \* *SEMANTHA* is the semantic rule management tool which enables users to add, edit and delete semantic rules for Logos machine translation.
- \* Terminology searches for found and unfound words are easily accomplished using the same access as translation.
- \* Semiautomatic dictionary coding of user's glossary files is possible from the client.

#### **6.3.3. Translation process**

- \* Translation jobs are submitted from standard word processing and desktop publishing packages.
  - \* Users can submit their own glossaries and/or dictionary entries to be used as part of the translation process.
  - \* Automatic pre- and postprocessing of texts is possible using a pattern matcher.
  - \* The system easily handles multiple files for translation.
  - \* Logos can translate into multiple languages.
- 4 Integration with translation memory packages provide users with the double benefits of TM and MT.

## **7 System internals**

### **7.1 Theoretical approach**

The Logos system proper uses the transfer approach, but with an internal representation that shares features with the interlingual approach. The dictionary data representation, grammar formalism, parser and other features are all proprietary.

### **7.2 Dictionary**

The Logos dictionary currently uses a database of word pairs. Entries consist of relevant morphological, syntactic and semantic information. All source entries are given a Semantico-Syntactic Abstraction Language (SAL) code. SAL is a representation language, approximating an metalinguistic representation.

### **7.3 Grammar**

The Logos grammar is based on Semantico-Syntactic Abstraction Language (SAL). The English source grammar consists of rules for resolving homographs and clause boundaries followed by the analysis and synthesis rules. Two passes are used for the resolution process and four for the parsing process. Each parse learns from the previous, creating a grammar similar to a neural network.

### **7.4 Semantic rules**

Users, as well as developers, can write semantic rules that affect the action of the grammar and allow context-sensitive translation.