

## WINGER'S CAT SYSTEM

**Interest in Machine Translation in Denmark is by no means limited to the Centre for Language Technology. Neither, as suggested in *Language Industry Monitor* last year, do PC-based machine translation efforts appear to be a strictly American dream.**

Winger, a small company of six which is located in the outskirts of Copenhagen, created a splash in Denmark several years ago by announcing an English-Danish PC-based translation system under the name Winger92. The first version relied heavily on the dictionary; more recent versions of this machine-aided translation package have shown enhancements in grammatical processing.

Winger92 is the brainchild of Ib Elfving, a computer scientist who has been developing the system with an approach which is admittedly appealing from a software engineering point of view. Under his direction, three other language pairs have since been produced, Danish-English, Spanish-English, and English-Spanish.

### **The Crowsky Engine**

At the core of Winger's system is the Crowsky Engine, a language-independent translation kernel. Surrounding layers include three programming languages for implementing new language pairs: UPSA, Universal Programming language for Sentence Analysis; SALT, Structured Analysis Language for Translation; and UPCUP, Universal Phrase Classification Utility Programme. Winger92 has an optimized database structure which Winger maintains makes it possible to implement an MT system on a PC. Further, Winger provides an API to allow third-party developers to build the Crowsky translation engine into their own systems. An additional module has just been released which offers a multitasking environment for MS-DOS 3.3 or higher. This module allows users to edit text while it is being translated.

Elfving says the system has been designed to be modular from the ground up, facilitating the creation of new language pairs. Clearly designed and color-coded entry screens mean it takes just a few minutes to add a new word to the Winger dictionaries and to enter basic attributes such as *static*, *dynamic*, *temporal*, *singular*, *plural*, etc. Currently, Winger92 supports both static and dynamic phrases (i.e. several grammatical forms) up to 256 characters in length.

The grammar of Winger92 is implemented in the SALT program specific to a given language pair. According to Elfving, you program grammatical analysis in SALT much the same way as you would in Prolog or a similar language. Any lack of grammatical information in the English-Danish language package, adds Elfving, is due to that language pair's SALT program, not the Crowsky Engine. Responsibility for the system's grammaticality is thereby essentially shifted from its developer to its vendor or end-user.

The English-Danish version, for instance, knows the difference between verbs which take "have" or "be" auxiliaries but does not recognize reflexive verbs. Elfving indicated that an upcoming version of Winger92 would handle "intelligent phrases" such as the embedded pronouns common in the Germanic languages (e.g. *er ruft zie an*). As such, Winger92 is reasonably competent at handling noun phrases and other basic elements while it is less adept at entire sentences.

Tempered by experience, Elfving says his company is now careful not to raise the expectations of new customers too high, particularly with regard to the time it takes to adapt the system to specific situations. He explains that Winger92 (like most computer translation systems of any size or price) is best suited to a familiar diet of simple, repetitive material destined for internal use. The company's most recent letterhead likewise demonstrates tempered ambitions, identifying the company as developers of Computer Aided Translation Software.

Armed with DKR six million (US\$ 1 million) in venture capital from the Danish Development Finance Corporation (an organization which actively promotes enterprises with export potential), Winger is setting its sights beyond the Danish market. Realizing that Winger is too small to develop and market such ambitious software internationally, the efforts of Managing Director Gunnar Aass have centered on finding technology partners with whom they can collaborate, ideally

on translation modules which can be casually accessed from standard wordprocessing software.

Winger92 costs Dkr 6,000 (US\$ 1000) for the basic software and one language pair. Additional language pairs cost Dkr 2500 (US\$ 400).

---

Winger a/s  
Skodsborgvej 48, DK-2830 Virum, Denmark  
Tel +45 45 83 11 66, Fax +45 45 83 02 44