In Memoriam: Jean D. Ichbiah

Jean David Ichbiah, the chief designer of the Ada language, passed away on January 26, 2007.

Mr. Ichbiah was born in Paris in 1940. He attended the engineering school École Polytechnique, majoring in Civil Engineering at the École des Ponts et Chaussées. He later enrolled as a doctoral student at the Massachusetts Institute of Technology, obtaining a Ph.D. in Civil Engineering and Operations Research in only two years.

Returning to France in 1967, Mr. Ichbiah was employed as a computer scientist by the then recently formed French company CII-Bull. It was at CII-Bull, later associated with Honeywell U.S., that Mr. Ichbiah did his seminal work on programming language design, first on the LIS language and subsequently on Ada. He was a member of IFIP Working Group 2.4 (System Implementation Languages) during this time.

Mr. Ichbiah's work on Ada was a major advance of the state of the art in language design. This was in the late 1970's, when the impact of programming languages on software quality was a topic of growing interest in the research community. The ambitious specifications that underlay the development of Ada included requirements for strong typing, data abstraction, information hiding, generic templates, separate compilation, exception handling, and multithreading (tasking). Furthermore, the resulting language was intended for real-time embedded systems, often with demands for safety and/or security. Not surprisingly, some felt that defining and implementing a language to meet these requirements would be impossible. Not surprisingly to those who knew him, Jean proved them wrong.

Jean Ichbiah's genius was in several areas: having the skill and vision to realize a technical solution to difficult language design problems, and having the ability to manage a team of technical experts and mold their ideas into a consistent and elegant whole. Ada, an ISO standard and in fact the first internationally standardized Object-Oriented language, has been successfully deployed in applications ranging from aircraft avionics (e.g., Boeing 777) to database services. The language continues to be used for new systems where safety, efficiency and adaptability are required, for example the next-generation iFACTS Air Traffic Control system for the UK.

Ada has been revised twice since its inception, first with Ada 95 and more recently with Ada 2005. New features have been added: full support for Object-Oriented Programming, hierarchical namespaces for separate compilation, and many others, but it is a tribute to the original design that these features seem a natural extension and fit cleanly into Ada's syntactic and semantic framework.

In the early 1990s Jean Ichbiah transitioned from Ada and language design to the general end-user software industry. He developed an innovative fast text entry system for PCs and a virtual keyboard layout (Fitaly) optimized for handheld computers, and he and his family founded Textware Solutions to market these products.

Jean Ichbiah was a member of the French Legion of Honor and the French Academy of Sciences, and he received the Grand Prix de la Technologie from the City of Paris. He was awarded a Certificate of Distinguished Service from the U.S. Department of Defense for his work on Ada, and he also received an ACM SIGAda Award for Outstanding Ada Community Contributions.

In a 1984 interview with the Association for Computing Machinery, Mr. Ichbiah was asked to express his feelings about the language he had masterminded. The response is befitting of a designer trained in civil engineering and becoming a preeminent computer scientist: "I see Ada as a cathedral, with all the architectural lines interwoven in a harmonious manner. I would not do it differently if I had to do it over again."

by Ben Brosgol, AdaCore