

- R. Hawley, chapter 10, pp. 177–196. Ellis Horwood (1987).
40. D. C. Littman, J. Pinto, S. Letovsky and E. Soloway, Mental models of software maintenance. In *Empirical Studies of Programmers*, edited E. Soloway and S. Iyengar, pp. 80–98. Ablex Publishing Corporation (1986).
 41. M. E. S. Loomis and T. P. Loomis, Prototyping and artificial intelligence. In *Prototyping: State of the Art Report*, edited M. E. Lipp, chapter 6, pp. 65–73. Pergamon Infotech (1986).
 42. M. D. Lubars, The IDEa design environment. In *Proceedings of the 11th International Conference on Software Engineering*, pp. 23–32 (1989).
 43. M. Minsky, Why programming is a good medium for expressing poorly-understood and sloppily-formulated ideas. In *Design and Planning II – Computers in Design and Communications*. Hastings House (1967).
 44. D. L. Parnas, Designing software for ease of extension and contraction. *IEEE Transactions on Software Engineering SE-5* (2), 128–137 (1979).
 45. D. Partridge, *Artificial Intelligence: Applications in the Future of Software Engineering*. Ellis Horwood (1986).
 46. D. Partridge and Y. Wilks, Does AI have a methodology which is different from software engineering? *Artificial Intelligence Review* 1 (1), 111–120 (1987).
 47. B. Patel, Understanding exploratory software development. Unpublished Imperial College research report (November 1988).
 48. M. J. Rochkind, The source code control system. *IEEE Transactions on Software Engineering SE-1* (4), 364–370 (1975).
 49. E. Sandewall, Some observations on conceptual programming. In *Machine Intelligence 8*, edited E. W. Elcock and D. Michie, Ellis Horwood (1977).
 50. E. Sandewall, Programming in an interactive environment: the LISP experience. *ACM Computing Surveys* 10 (1), 35–71 (1978). (Also in ref. 5.)
 51. M. Sanella, *The Interlisp-D Reference Manual* (1984).
 52. B. Sheil, Power tools for programmers. *Datamation* (1983). (Also in ref. 5.)
 53. R. M. Stallman, EMACS: the extensible, customizable, self-documenting display editor. In *Interactive Programming Environments*, edited D. R. Barstow, H. E. Shrobe and E. Sandewall, pp. 300–325. McGraw Hill (1984).
 54. G. Steele, *Common LISP: the Language*. Digital Press (1984).
 55. M. Stefik, D. G. Bobrow, S. Mittal and L. Conway, Knowledge programming in LOOPS. *AI Magazine* (Fall 1983).
 56. W. Swartout and R. Balzer, On the inevitable intertwining of specification and implementation. *Communications of the ACM* 25 (7), 438–440 (1982). (Also in ref. 1.)
 57. D. Swinehart, P. Zellweger, R. Beach and R. Hagmann, A structural view of the Cedar programming environment. *ACM Transactions on Programming Languages and Systems* 8 (4), 419–490 (October 1986).
 58. W. Teitelman and L. Masinter, The Interlisp programming environment. *IEEE Computer* (April 1981). (Also in ref. 5.)
 59. W. F. Tichy, What software engineers can learn from artificial intelligence. *IEEE Computer* 20 (11), 43–54 (1987).
 60. E. C. Van Horn, Software must evolve. In *Software Engineering*, edited H. Freeman and P. M. Lewis II, Academic Press Inc. (1980).
 61. R. C. Waters, User format control in a LISP prettyprinter. *ACM Transactions on Programming Languages and Systems* 5 (4), 513–531 (1983).
 62. J. R. Weitzel and L. Kershberg, Developing knowledge-based systems: reorganizing the system development life cycle. *Communications of the ACM* 32 (4), 482–488 (April 1989).
 63. B. J. Wielinga, AI programming methodology. In *Proceedings AISB/GI-78 Conference* (1978).

Announcement

15–17 May 1991

ELEDIS '91, Jolly Hotel, Milan, Italy, the second international conference on the use and application of Electronic Data Interchange Systems, an annual rendezvous for user and service organisations seeking to learn of and to implement the new data, image and voice exchange techniques and standards – technology applied to your business.

The Conference

Systems for collecting, storing, manipulating, communicating and using data, image and voice have the potential to change the structure and performance of the world economy. Supported by the quickening pace of standardisation and by new storage and handling facilities, these systems are experiencing dramatic growth.

The pace of development and take-up will quicken to the point where, within ten years, no organisation of substance will be able to do without some form of data, image and voice exchange in-house and with their partners and competitors.

This fast growth, dictated by shifts in technology, is opening up new ways of manufacturing, buying, selling and communicating. A company's success will depend, in future, on the continuous reappraisal of Information Technology and its components

as a strategic tool rather than its use as an instrument for mechanising things.

The technological change is built upon solid pillars that have their foundations on the international effort in standardisation, in the worldwide move towards the establishment of cooperative systems and projects, and in the growing use of information and data in electronic form to replace outdated paper-bound methods of information transfer.

Obviously, the process of data management, interconnection and data exchange whether in-house or with suppliers and customers, whether between private and public, small and large companies, implies familiarisation with the emerging data exchange, handling, storage and communication techniques – be these text, image or voice – with national and international standards and with the industrial strategies of the leaders and the policies of the administrators.

The second **ELEDIS** conference aims at answering these and other pressing questions by means of a complete rundown of **ELEDIS** advances in Europe and in the world.

The **ELEDIS** series of conferences is the recognised pace-setter in the world of data exchange and systems in Europe. Its objective is to increase understanding and ensure promotion of the **ELEDIS** concepts. A must for all executives who want to learn how to use the technology to increase the efficiency and competitiveness of their organisations.

Conference presentation

The second international conference, **ELEDIS '91**, will run over a 3-day period dedicated to the industrial, technological and administrative aspects of electronic data interchange systems.

Papers have been invited on the following topics.

- (1) Understanding **ELEDIS**
- (2) Management and business systems
- (3) Application of **ELEDIS**
- (4) Standardisation
- (5) Legal and security aspects
- (6) Technology and advanced **ELEDIS** technology
- (7) End-user applications and technologies
- (8) Storage, handling and retrieval techniques

For further information please contact:

The Secretariat, **ELEDIS '91**, XCOMS International, 23 Via dell'Orsa Maggiore, Cassina de' Pecchi (MI), Italy. Tel: +39.2.9522102. Fax: +39.2.95343321.

Further documentation

Should you require any early information about **ELEDIS '91** or about **ELEDIS**, or papers and documents from the previous conference, please contact the conference secretariat as above.