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Address by the Federal Minister for Research and Technology

The general conditions which will characterize industrial production in the next century have already become visible; they include increasing complexity, greater demands for flexibility and quality, growing division of labour, and even shortening cycles of development and production.

Good provision for the next century is the preparation for future systems that allow rapid and independent access to general knowledge whenever required for solving particular problems while being capable of handling even incomplete and inaccurate knowledge, in other words: preparation for systems of artificial intelligence.

This is a complex goal, however, which undoubtedly involves enormous difficulties. The approach should be via reasonable and reachable subgoals in order to avoid setbacks and frustration.

The Federal Minister for Research and Technology has been supporting research and development projects in the field of artificial intelligence since 1984; up to now about DM 225 million have been earmarked predominantly for expert systems as well as for image and natural-language processing systems.

This support has contributed substantially to the dissemination and further development of the scientific methods for artificial intelligence in universities and research institutions throughout the Federal Republic of Germany; cooperative projects provide a direct link with the industry. Germany's efforts in this field are recognized by the international community.

In Germany today a number of enterprises offer tools for expert systems, and various system houses using the relevant additional knowledge market complete expert systems. Mainly in industry as well as in the banking and insurance business such systems have so far been applied above all for diagnosis, counselling, configuration and planning.

When supporting artificial intelligence research in the years to come the Federal Minister for Research and Technology will attach increasing importance to the subsequent application of research results. This does not mean, however, that the need for further basic research is questioned.

All the best for the success of the Fifth International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems in Paderborn.

Dr. Heinz Riesenhuber

Address by the General Chairman and the Program Chairmen

Welcome to The Fifth International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems (IEA/AIE-92). Through this annual international conference we have been achieving our objective of providing a forum for the international community to discuss recent successes in Artificial Intelligence, Expert Systems, Neural Nets, CAD/CAM, and many other related areas in the industrial and engineering environment. The 72 reviewed papers and 5 invited papers presented at this conference cover these areas from various perspectives and multilateral points of view.

This is the first time that an IEA/AIE conference is taking place outside USA. We have received more than 120 papers from 23 countries, clearly indicating the international character of this conference series. Each paper has been reviewed by at least three referees. The organization of the IEA/AIE-92 was made possible only because of the intensive and diligent efforts of many people, and because of the sponsorship of several companies and of the University of Paderborn, Southwest Texas State University, and the FAW Ulm/Germany. Our thanks are due also to the members of the program committee, to the external referees, and - last but not least - to the authors who submitted their papers. Our special thanks go to the Springer-Verlag for the excellent cooperation.

We hope you will gain deeper insight into the multidimensional research concerning applied Artificial Intelligence topics in industry, interact with other participants in addressing your own challenging research problems, and enjoy the exciting settings of Paderborn and Central Germany.

Moonis Ali **Fevzi Belli** **Franz Josef Radermacher**

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