ACKNOWLEDGMENT

The authors wish to express their gratitude to Mr. H. Koller of the Swiss Federal Institute of Technology who kindly permitted us to use the pictoral data on which this study is based. T. S. Huang would also like to thank Dr. H. Mey of the Hasler Research Division and Prof. Baumann for making his visit at the Federal Institute of Technology possible. We also thank Dr. E. Hafner, Hasler Research Lab., for review of the paper and helpful discussions.

REFERENCES

W. F. Schreiber, T. S. Huang, and O. J. Tretiak, "Contour coding of images," presented at WESCON, Session 8, 1968.
 H. G. Musman, "Ueber lineare Transformationen zur Redundanz-Reduktion," Nachrichtentech. Fachber., vol. 40, pp. 13-27, 1971.
 T. S. Huang, "Run-length coding and its extensions," in Proc.

Symp. Picture Bandwidth Compression, Mass. Inst. Tech., Cambridge, Apr. 1969.

D. Preuss, "Redundanzreduzierende Codierung von Faksimilesignalen," Nachrichtentech. Z., vol. 24, pp. 564–568, 1971.

D. A. Huffman, "A method for the construction of minimum-redundancy codes," Proc. IRE, vol. 40, pp. 1098–1101, Sept. 1052

[6] H. Schönfelder, D. Preuss, W. Schlink, and H. Wendt, "Experimental vorführung zur Quellencodierung," Nachrichtentech.

mentalvorführung zur Quellencodierung," Nachrichtentech. Fachber., vol. 40, pp. 56-71, 1971.

J. Capon, "A probabilistic model for run-length coding of pictures," IRE Trans. Inform. Theory, vol. IT-5, pp. 157-163,

Dec. 1959.
M. D. Balkovic et al., "Highspeed voiceband data transmission performance on the switched telecommunication networks, Bell Syst. Tech. J., vol. 50, pp. 1349–1385, 1972.

"The statistical dependence of run lengths in printed R. Arps, "The statistical dependence of run lengths in printe matter," Nachrichtentech. Fachber., vol. 40, pp. 218-226, 1971.





H. Meyr received the Dip. Ing. and Ph.D. degrees from the Swiss Federal Institute of Technology, Zurich, Switzerland, in 1967 and 1973, respectively.

In 1968 he joined the Brown Boveri Corp.. Zurich, Switzerland. He was a R+D Engineer involved in the simulation of large scale power control systems on a analog computer. In 1969 he joined the Swiss Federal Institute for Reactor Research as a Research Assistant involved in theoretical studies in the field of

correlation analysis applied to neutron time-of-flight experiments. This work pertained to his graduate studies in the field of digital systems and statistical communication theory. Since 1970 he has been a Research Engineer with Hasler AG, Berne, Switzerland,

working in the fields of digital facsimile encoding and correlation measurement techniques. Presently, he is a Visiting Assistant Professor with the Department of Electrical Engineering, University of Southern California, Los Angeles.

Dr. Meyr has several patents and has published several papers.





Hans G. Rosdolsky was born in Vienna, Austria, on January 17, 1943. He received the B.S. and M.S. degrees in mathematics and physics from the University of Michigan, Ann Arbor, in 1963 and 1964, respectively. He received the Ph.D. degree in theoretical high energy physics from the University of Michigan in 1968.

From 1968 to 1970 he was a Research Associate at the University of Oregon, Eugene, working in the field of elementary

particle physics. In 1970 he joined Hasler AG, Berne, Switzerland, where he worked as a Programmer participating in the development of a fully automated telex exchange. Also, he did theoretical work on traffic signal control and picture coding with the firms research division. In 1973 he joined the DATUM research firm, Bonn, West Germany, where he was engaged in adapting the TRIPS transportation planning program package to the Siemens 4004 computer used by the German Ministry of Transport. Presently, he is with the Scientific Control Systems, Ltd., Essen, West Germany, where he is working in the field of industrial process control.





Thomas S. Huang (S'61-M'63) received the B.S. degree in electrical communication from the National Taiwan University, Taiwan, and the M.S. and Sc.D. degrees in electrical engineering from the Massachusetts Institute of Technology, Cambridge.

From 1963 to 1973, he was on the faculty of the Department of Electrical Engineering, M.I.T. During the academic year 1971-72, he was on sabbatical leave visiting ETH-Zurich, Switzerland, as a Guggenheim Fellow.

During the academic year 1972-73, he was again on leave, working at the M.I.T. Lincoln Laboratory. In 1973, he joined Purdue University, Lafayette, Ind., where he is at present a Professor of Electrical Engineering.

Dr. Huang's professional interest lies in the broad area of information and communication technology but especially the transmission and processing of multidimensional signals. He has served as a consultant to numerous industrial firms and government agencies. He is coauthor (with R. R. Parker) of the book Network Theory: An Introductory Course (Addison-Wesley) and coeditor (with O. J. Tretiak) of the book Picture Bandwidth Compression (Gordon and Breach). He is an editor of the International Journal Computer Graphic and Image Processing, and an associate editor of Pattern Recognition.