

Table of Contents

CAD'I PROJECT OVERVIEW	1
1. INTRODUCTION	5
R. Anderl	
2. METHODOLOGY OF DESIGN	7
S. Rude	
2.1 General Problem Solving Principles.....	7
2.2 Derivation of the Model Space of Design.....	8
3. OVERVIEW OF THE CONCEPT FOR ADVANCED MODELLING	15
S. Rude	
3.1 The Integrated Product Model.....	15
3.2 Modelling Levels	17
3.3 General Principles of Associative Modelling.....	21
4. GEOMETRIC-ASSOCIATIVE MODELLING	29
B. Pätzold	
4.1 Subject of Specification	29
4.2 Geometric-Associative Modelling Approaches.....	31
4.2.1 Constructive Approaches.....	31
4.2.2 Language Approaches.....	34
4.2.3 Rule Based Approaches	35
4.3 System Specification of the "Handsketch" Input System (HIS)	38
4.3.1 The Recognition Process.....	40
4.3.2 The Rule Base.....	43
4.3.3 Architecture of the System for the "Handsketch" Input System	45

5. TECHNICAL-ASSOCIATIVE MODELLING	53
S. Rude	
5.1 State of the Art.....	53
5.1.1 Language Base Approaches	54
5.1.2 Constructive Approaches.....	56
5.1.3 Other Approaches.....	58
5.2 The DTT-Modeller (Design by Technical Terms).....	59
5.2.1 Sectional Surfaces	60
5.2.2 Technical Associativities.....	63
5.2.3 Form Features and Parts	66
5.2.4 Assemblies and Products.....	69
5.3 Command Language for Design.....	73
5.3.1 Command Syntax	74
5.3.2 Technical Modelling Language.....	76
5.3.3 Technical Associativities.....	80
6. DESIGN BY FEATURES	89
S. Rude and M. Pratt	
7. INTERNAL INTERFACES	95
B. Pätzold and S. Rude	
7.1 The Model Manipulation Interface.....	96
7.1.1 Examples of the HLMMI.....	98
7.1.2 Programming with the HLMMI	101
7.2 Geometric Associative Interface (GAI).....	102
7.3 Technical Modelling Interface.....	106
REFERENCES	109