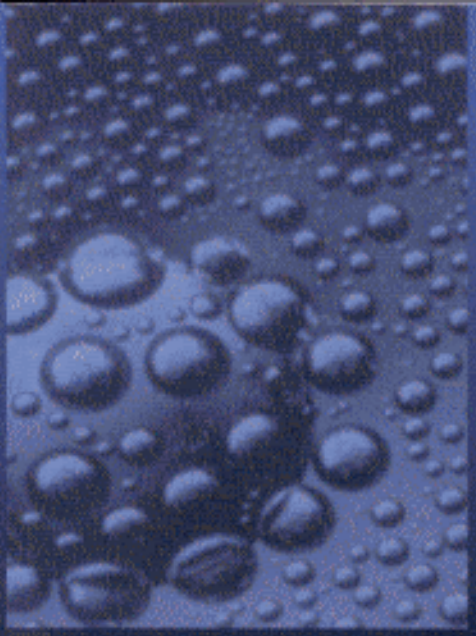

- Understand the methodology and technical implementation strategies associated with the Production and Planning module
- Learn how to develop and integrate the Productions and Planning module with your existing SAP R/3 system
- Know why the world's most successful companies are using SAP R/3's Production and Planning module

Administering SAP™ R/3: The Production and Planning Module

Suranaree University of Technology
31051000651238

The co for administering and in oduction and Planning module

Authored by **ASAP World Consultancy**, an international SAP consulting company specializing in SAP implementation,

Table of Contents

I Exploring R3 PP

1 Using PP Within an R/3 Environment 3

Deploying PP in Different Industries 4
Recognizing Differences Between Manufacturing Companies 6
Emphasizing Different Aspects of Manufacturing 7
Designing SAP R/3 Components 8
Identifying the Building Blocks of Manufacturing 11
Building a Product Data Management System 12
Arranging R/3 Systems in Manufacturing Networks 13
Configuring R/3 According to Industry Sector 13

2 Introducing the Concepts and Components of PP 17

Production Planning and Control 18
Storing Basic Data 18
Using Bills of Material 19
Setting Up Work Centers 19
Referring to Routings 19
Using Computer Aided Production Planning 20
Assigning Production Resources and Tools 20
Planning Sales and Operations 20
Master Planning the Production Quantities 21
Capacity Planning 22
Ensuring that Materials Are Available by MRP 23
Managing Production Orders 24
Order Planning 24
Controlling Production and Material Flow with KANBAN 26
Managing Long Period Repetitive Manufacturing 28
Understanding the Run Schedule Header 28
Planning for Repetitive Manufacturing 29
Planning with Run Schedule Quantities 29
Planning with Partial Orders 29
Backflushing 29
Evaluating Repetitive Manufacturing Progress 30
Assembly Processing in Make-to-Order Production 30
Assembly Processing in Repetitive Manufacturing 31
Assembly Processing in Production by Lots 31
Production Planning for the Process Industries 32
Storing Master Data in PP-PI 33
Defining PI Resources 33
Storing Master Recipes 33
Planning and Executing a Process Order 34
Specifying the Steps of Process Order Execution 34
Closing a Process Order 35
Manipulating Process Capacities 35
Interfacing PP-PI with Process Control 36
Sending Process Messages from Process Control 36
Directing Control Information to the Operator 36
Reading the Process Instruction Sheet 37
Archiving Process Data 37
Evaluating Process Data 37
Integrating PP-PI with Higher-Level Systems 38
Linking to Other Systems 38
Collecting and Displaying Plant Data 38
Recording Time Worked on Production Orders 39
Consulting the PP Information System 39
Linking PP with Sales and Operations Planning 40
Linking PP to the Logistics Information Library 41
Building a Logistics Data Warehouse 41
Setting Up Early Warning Systems 41
Integrating Supply Chain Management 41
Defining Basic Data for Production in the PP-BD Component 42

Assigning Data to Organizational Units 42
Defining a Material 43
Storing Information as a Material Data Structure 43
Confining Materials to User Departments 44
Establishing Material Types 44
Recognizing Industry Sectors 45
Managing Batches and Special Stock 45
Using Departmental Profiles for Materials 45
Creating Bills of Material 45
Exploring the BOM Data Structure 46
Maintaining a BOM 46
Using BOM Explosion Numbers 46
Directing the Materials 47
Defining Work Centers 47

II Preparing the System

3 Setting Up Bills of Material 51
Specifying Basic BOM Data 52
Defining Bills of Material 52
Establishing Control Data for Bills of Material 52
Defining BOM Default Values 54
Defining General Data for BOM Headers 55
Defining Allowed Material Types for BOM Headers 56
Associating BOMs and Particular Laboratories 57
Configuring BOM History 57
Defining BOM Item Data 57
Defining Item Categories 57
Understanding BOM Item Objects 59
Defining Material 59
Defining Document 60
Defining Class 61
Defining Intramaterial 62
Defining Allowed Material Types for BOM Items 62
Defining Formulas for Variable-Size Items 62
Defining Spare Part Indicators 62
Defining Material Provision Indicators 62
Defining Explosion Types 63
Specifying a Distribution Strategy by a Distribution Key 63
Defining the Relevance of a BOM to Other R/3 Applications 63
Interpreting a Multiple BOM 64
Defining Automatic Alternative Determination 64
Defining Applications for Alternative BOMs 65
Defining Settings for Individual Users of BOMs 66
Using BOM Tools on Legacy Data 66
Maintaining the Structure of the BOM Transfer File 67

4 Setting Up Work Centers 69
Defining the Role of Work Centers 70
Maintaining the General Data for a Work Center 72
Controlling Interaction by the Work Center Category 72
Assigning R/3 Objects to Work Centers 73
Assigning a Cost Center 73
Assigning a Qualification 73
Assigning a Position 74
Assigning a Person 74
Maintaining Work Centers 74
Building the Basic Data for a Work Center 75
Creating Language-Dependent Short Texts 75
Assigning Standard Values 76
Referencing Default Values 76
Setting Control Key Indicators 76
Creating Standard Texts 77
Defining Capacities for a Work Center 77
Using Work Center Default Values 78
Using Work Center Formulas 78
Using Standard Formula Keys 79
Creating Formulas for Work Centers 80
Understanding a Work Center Hierarchy 81
Assigning a Work Center to a Cost Center 81
Establishing the Activity Types for a Cost Center 82
Understanding Work Center Capacity Data 82
Defining Available Capacity 83
Defining Shift Values 83
Using a Shift Definition 84

Cumulating Available Capacity 84
Using Period Pattern Keys 84
Using Capacity Assignments 84
Creating Individual Capacities 85
Assigning People to Specific Work Center Capacities 85
Restricting People Assignments by Qualifications 85
Using Positions 85
Assigning Capacities 86
Maintaining Data for Capacity Planning 86
Maintaining Capacity Data in the Work Center 87
Distributing Capacity Requirements 87
Setting Data for Scheduling 87
Reviewing Available Capacity 88
Converting the Base Unit of Measure 88
Specifying a Standard Available Capacity 88
Consulting the Profile of Available Capacity 89
Displaying Intervals of Available Capacity 89
Defining Shifts 90
Displaying Available Capacity with SAP Business Graphic 90
Cumulating Available Capacity 90
Administering Work Centers 91
Finding a Work Center 91
Classifying Work Centers 91
Assigning Work Centers to Subsystems 92
Deleting Work Centers 92
Limiting Work Center Assignment Validity Periods 92
Understanding Work Center Administrative Data 92
Displaying Work Center Change Documents 93
Archiving Work Centers 93
Using Default Work Centers and Capacities 93
Using Field Modification in Work Centers 93
Creating Work Center Hierarchies 94
Using the Hierarchy Structure 96
Identifying the Work Center Additional Functions 96
Displaying a Work Center Hierarchy 97
Work Center Reporting 97
Displaying a Work Center List 97
Displaying the Assignments of Work Centers to Cost Centers 98
Displaying Work Center Capacities 98
Displaying User-Defined Reports 98

5 Routing the Steps of the Production Processes 99

Distinguishing Routings from Other Task Lists 100
Scheduling from a Routing 100
Capacity Planning from a Routing 101
Costing 101
Understanding PP Routing Types 102
Using a Routing as a Task List 102
Configuring the Routing Maintenance System 102
Identifying General Data for Routings 103
Defining Material Type Allocations 103
Defining Routing Statuses 103
Defining Task List Usage 103
Defining Overview Variants for Routings 104
Defining Relevancy to Costing 104
Defining Standard Trigger Point Usage 104
Selecting a Routing 105
Assigning Production Resources/Tools 105
Transferring Routing Data from Third-Party Systems 106
Creating and Maintaining Routings 107
Understanding Routing Groups 107
Exploring a Routing 107
Using Routing Profiles 108
Checking Authorization for Routing Access 108
Creating a Routing 109
Classifying a Routing 110
Defining Matchcodes for Routings 110
Displaying Administrative Data 110
Understanding Operations 111
Setting Up Operation Data 111
Using the Control Key for Business Functions 112
Defining Setup Types 112
Defining Wage Types 112
Defining Wage Groups 113
Defining Suitability for a Task 113

Defining Types of Standard Value Determination 113
Identifying Standard Processes as Operation Sequences 114
Exploring the Operation Details Screen 115
Calculating Standard Values 116
Maintaining Scheduling Data for Operations 116
Splitting 117
Overlapping 117
External Processing 117
Identifying the Data for External Processing 118
Using Suboperations 118
Cumulating Standard Values 119
Creating Operation Text 119
Creating a Standard Text 119
Creating Long Text for an Operation or Suboperation 120
Using a Reference Operation Set 120
Unlocking a Reference Operation Set 120
Assembling Operation Sequences 121
Using the Sequence Overview 121
Creating an Alternative Sequence 122
Deleting a Sequence 122
Changing a Routing 122
Changing a Work Center for an Operation 123
Checking a Routing 123
Checking Material Allocations 124

6 Assigning Production Resources and Tools 125

Defining Production Resources/Tools 126
PRT Categories 126
Assigning a PRT to Operations 127
Maintaining PRT Master Data 127
Establishing PRT Basic Data 128
Establishing PRT Default Values 128
Specifying Formulas for PRTs 129
Creating and Deleting a PRT 130
Creating a PRT with a Material Master Record 130
Creating a PRT with an Equipment Master Record 131
Creating a PRT with a Document Info Record 131
Creating a PRT as a Miscellaneous PRT 131
Creating a PRT by Copying 132
Deleting Material and Equipment PRT Master Records 133
Deleting a Document PRT Master Record 133
Deleting a Miscellaneous PRT Master Record 133
Assigning PRTs to Operations 134
Deleting a PRT Assignment 134
Using Material Allocations in Routings 134
Checking Consistency 135
Allocating Material Components to Reference Operation Sets and Reference Rate Routings 136
Allocating Material Components to Routings and Rate Routings 136
Specifying the Details for Material Allocations 136
Understanding the Backflush Indicator Logic 137
Using the Material Component Overview 137
Filtering Material Components in the Overview 138
Maintaining a Bill of Material from a Routing 138
Assigning Inspection Characteristics to Operations 138
Using Trigger Points 139

III Controlling the Production Facilities

7 Scheduling Routings 143

Finding Out When an Operation Begins and Ends 144
Calculating How Long an Operation Takes 144
Recognizing Scheduling Types 144
Using Floats Before and After Production 145
Calculating Operation Dates from Operation Lead Times 146
Computing Operation Lead Time 146
Calculating the Duration of Individual Operation Segments 147
Using Queue Time 148
Formulas for Calculating Setup, Processing, and Teardown 148
Calculating Move Time 149
Specifying Move Time 149

Scheduling Suboperations 149
Aligning Parallel Sequences 149
Taking Reduction Measures on the Lead Time 150
Identifying Reduction Measures for Operations 150
Overlapping in Continuous Flow Production 150
Transferring Scheduling Results to a Material Master Record 151
Releasing Scheduled Routings 151
Calling Where-Used Lists 152
Replacing Data in Routings 152
Displaying a Where-Used List for Reference Operation Sets 153
Displaying a Where-Used List for a PRT 153
Using Mass Replacement on Routings 154
Building a Super Routing for a Configurable Material 155
Assigning Actions to Operations 156
Creating Local Object Dependencies for an Operation 156
Archiving and Deleting Routings 157
Selecting Routings for Archiving and Deleting 157
Checking Dependencies Before Archiving and Deleting 157
Setting the Deletion/Archiving Criteria 158
Using the Deletion Flag and Online Deletion Indicator 158

8 Planning and Controlling Shop Floor Production Orders 159

Introducing the PP-SFC Functional Components 160
Order Planning 160
Controlling Production and Material Flow with KANBAN 162
Administering Production Orders 164
Using the Production Order Menu 165
Creating a Production Order 165
Creating a Production Order Without a Material 166
Changing Operation Data 167
Allocating Components in Production Orders 168
Allocating PRTs in Production Orders 168
Allocating Trigger Points in Production Orders 168
Converting Planned Orders to Production Orders 168
Converting a Planned Order to a Requisition 169
Selecting a Routing 170
Following the Routing Selection Priorities 170
Creating Parallel Sequences 172
Selecting a BOM 173
Exploding a BOM into a Production Order 174
Exploding Multilevel BOM Structures 174
Scheduling a Production Order 174
Using the Scheduling Parameters 175
Timing Operation Segments 176
Calling up Scheduling 177
Managing Production Order Components 177
Allocating and Changing Components in a Production Order 178
Allocating Components to Operations 181
Creating Components 181
Sorting Components in a Production Order 181
Handling a Backflushing Error 182
Using the MRP Discontinuation Functions 183
Triggering Batch Management in a Production Order 183
Managing Production Resources and Tools 184
Using Trigger Points 185
Creating Trigger Points 185
Setting Trigger Point Parameters 187
Checking that Resources Will Be Available 187
Maintaining Availability Checking Rules 188
Viewing the Results of an Availability Check 189
Defining Criteria for Collective Availability Checks 190
Carrying out an Availability Check 191
Checking the Availability of Production Resources and Tools 193
Checking the Availability of Capacities 193
Releasing Orders and Operations 194

9 Administering a Production Line 197

Taking Advantage of Collective Production Orders 198
- Working with a Collective Production Order 198
- Confirming the Completion of Collective Production Orders 200
- Posting Subassemblies to Stock in a Collective Order 200

Using the Production Order Information System 201
- Customizing the Production Order Information System 202
- Using Production Order Information System Profiles 203
- *Using the Production Order Information System for Collective Availability Checks 204*

Moving Goods for a Production Order 204
- Making Unplanned Withdrawals of Components for an Order 205
- Delivering Manufactured Material to the Warehouse 205
- Specifying an Automatic Goods Receipt 206
- Checking During a Goods Receipt 206

Arranging External Procurement and Processing of Components 207
- Delivering Externally Processed Material 208
- Costing External Procurement 208

Managing the Coproducts of a Production Order 208
- Assigning the Coproduct Indicator 209
- Costing Coproducts 209

Managing Missing Parts in Production Orders 210
- Using the Missing Parts Information System 210
- Covering Missing Parts by Backorder Processing 212
- Calling Backorder Processing 212
- Displaying Reservations for Production Orders 213
- Backorder Processing of Sales *Orders 213*

Managing Inspection Lots in Production Orders 214
- Understanding the Restrictions on Inspection Lots 216
- Arranging Rework After Faulty Processing 216
- Planning Rework 216

Controlling the Progress of a Production Order by Status Management 217
- Developing a User Status Profile 219
- *Developing a Selection Profile 220*
- Activating User Statuses 220
- Recording Status Change Documents 221

Documenting the Completion of Operations and Capacities 222
- Providing Confirmation Data 223
- Understanding the Fixed Parameters in Confirmations 224
- Entering the Variable Completion *Confirmation Parameters 225*
- Entering Completion Confirmations 225
- Confirming an Order at the Header Level 226

Entering Data for a Completion Confirmation 227
- Entering Final or Partial Confirmation 227
- Confirming Several Operations as a Collective Entry 227
- Entering Confirmations at Order Level 228
- Confirming Individual Capacities 228
- Updating Actual Values 228
- Entering a Completion Confirmation Using a Reference 229
- Posting Goods Movements in Confirmations 229

Using Special Types of Completion Confirmation 230
- Creating Summary Confirmations 231
- Entering Standard Confirmations 231
- Canceling Completion Confirmations 232
- Collecting Plant Data from Third-Party Systems 232

Settling the Costs of a Production Order 233
- Maintaining Settlement Parameters 233
- *Creating Distribution Rules 234*
- Delivering to Stock 235
- Settling the Actual Costs Incurred in a Production Order 235
- Controlling the Settlement 236

Managing Settlement with Stock Undercoverage 237
Settling Scrap 237
Printing Production Order Information 237
Identifying Printing Types 238
Archiving Production Order Records 239

10 Implementing PP in Repetitive Manufacturing 241
Managing Long Period Repetitive Manufacturing 242
Understanding the Run Schedule Header 242
Planning for Repetitive Manufacturing 243
Planning with Run Schedule Quantities 243
Planning with Partial Orders 243
Backflushing 243
Evaluating Repetitive Manufacturing Progress 244
Using the Repetitive Manufacturing Component for Production Planning and Control 244
Characterizing the Repetitive Manufacturing Situation 244
Controlling Repetitive Manufacturing by Demand Management 245
Understanding Time Buckets 246
Building a Profile for Repetitive Manufacturing 246
Discriminating Production Versions 247
Creating Production Versions 247
Planning with Repetitive Manufacturing Planning IDs 248
Planning Repetitive Manufacturing with Production Lines 249
Creating Rate Routings 249
Understanding Run Schedule Headers 250
Using Reporting Points as Milestones 250
Creating a Run Schedule Header 250
Displaying a Run Schedule Header 251
Managing RS Headers Collectively 252
Using the Run Schedule Header Functions 252
Creating a Cost Estimate for Each Production Version 253
Displaying Run Schedule Headers 253
Planning the Run Schedule Quantities in Repetitive Manufacturing 253
Interpreting the Planning Table of Run Schedule Quantities 254
Displaying the Schedule 254
Accessing Run Schedule Quantities Using an RS Header 254
Interpreting the Planning Table 255
Accessing Run Schedule Quantities Using a Material 255
Interpreting the Planning Table 256
Planning Run Schedule Quantities Using a Production Line 257
Accessing Run Schedule Quantities Using a Shift 258
Accessing Run Schedule Quantities Using a Group of Production Lines 258
Processing Run Schedule Quantities in the Planning Table 258
Changing the Time Bucket of a Planning Table 259
Changing and Assigning Quantities 259
Backflushing with Production Orders 259
Maintaining Version Links 260
Creating Goods Receipts 261
Evaluation Reporting in Repetitive Manufacturing 262
Reporting from the Controlling Module 263
Consulting LIS Statistics in Repetitive Manufacturing 263
Exchanging Information with the Plant Data Collection Interface 264

11 Assembly Processing in Make-to-Order Production 265
Making to Order 266
Assembly Processing in Repetitive Manufacturing 266
Assembly Processing in Production by Lots 266
Working with Assembly Orders 267
Scheduling an Assembly Order 268
Improving Delivery Date Reliability 268
Creating a Sales Order with Assembly Processing 269
Assembly Processing with Production Orders 270
Creating a Planned Order from a Sales Order 271

When to Use Assembly Processing with Repetitive Manufacturing 271
Assembly Processing with Projects 272
Assembly Processing with Variant Configuration 272
Setting for Assembly Processing 272
Setting for Assembly Processing with Production Orders 273
Setting for Assembly Processing with Repetitive Manufacturing 274
Setting for Projects and Networks in Assembly Processing 274
Using a Standard Network for *Production or Assembly* Processing 275

12 Managing Materials 277
Defining a Material 278
Storing Information as a Material Data Structure 278
Confining Materials to User Departments 279
Establishing Material Types 279
Recognizing Industry Sectors 279
Managing Batches and Special Stock 279
Using Departmental Profiles for Materials 279
Creating Bills of Material 280
Exploring the BOM Data Structure 280
Maintaining a BOM 281
Using BOM Explosion Numbers 281
Directing the Materials 281
Defining Work Centers 282
Planning Material Requirements 282
Choosing the Scope of Planning 284
Master Production Scheduling 285
Consumption-Based Planning 285
Planning the Size of the Production Lot 286
Optimizing the Lot Size 286
Restricting the Lot Size 286
Processing Order Proposals 287
Assembly Processing 287
Ranges of Coverage (Days' Supply) 287
Planning with Discontinued Parts 288
Using Alternative and Substitute Parts 288
Direct Procurement and Direct Production by Collective Orders 288
Evaluating the Planning Result 289
Interpreting Exception and Rescheduling Messages 289
Capacity Planning for Planned Orders in the *Planning Run* 289
Availability Checking and Backorder Processing 289
Single- and Multi-level Pegging 290
Single-Item Planning for Sales Orders 290
Planning Configurable Products 290
Event-Based MRP 290
Multiplant/Multisite Planning 290

IV Planning and Integrating

13 Master Planning 293
Introducing the PP Master Planning Components 294
Building a Demand Program 294
Assigning Consumption Strategies and Logic 295
Using Functions in Demand Management 296
Maintaining Demand Program Change Histories 296
Long-Term Planning 297
Releasing the Planning Scenario 297
Performing MRP for Long-Term Planning 298
Linking to the Purchasing Information System 298
Linking to Inventory Controlling 298
Evaluating Long-Term Planning 298
Limiting the Scope of Long-Term Planning 299
Linking to Cost Center Accounting 299
Using Computer Aided Production Planning 299
Planning Sales and Operations 300
Master Planning the Production Quantities 301
Capacity Planning 301
Ensuring that Materials Are Available by MRP 302
Defining Basic Data for Production in the PP-BD Component 303
Assigning Data to Organizational Units 303
Using the Planning Table for Sales and Operations Planning 304

Planning with Information Structures 305
Differentiating Planning Methods in SOP 306
Running the Master Data Generator in Flexible Planning 306
Planning with Mass Characteristics 307
Using Planning Types and Macros in the Planning Table 307
Using Self-Defined Macros 308
Using Events in SOP 308
Navigating the Planning Table 310
Planning in Finer Detail 311
Calculating Row Totals in the Planning Table 311
Using Standard SOP Macros in Planning Table Maintenance 312
Interacting with Graphics in the Planning Table 313
Creating and Modifying Sales Plans in Standard SOP 313
Using the Automatic Forecast Functions in the Planning Table 313
Resource Leveling in SOP 314
Planning and Leveling Work Center Capacities 314
Transferring SOP Data to Demand Management 315
Planning for Preliminary Costing 316
Understanding Cost Segments 316
Recording Planned and Actual Cost Data 316
Planning Manufacturing Costs 317
Displaying the Costs of a Production Order 318
Grouping Planned Cost Elements into Cost Components 319

Managing Resources for the Process Industries 321

Production Planning for the Process Industries 322
Storing Master Data in PP-PI 323
Defining PI Resources 323
Storing Master Recipes 323
Planning and Executing a Process Order 324
Specifying the Steps of Process Order Execution 324
Closing a Process Order 325
Manipulating Process Capacities 325
Integrating PP-PI with Other R/3 Applications 326
Relating Resources to Routings and Capacities 327
Using Standard Values 327
Assigning Resources to Other Objects 328
Calculating Capacity Requirements 328
Using Formulas 328
Using Resource Hierarchies 329
Defining a Resource Network 329
Assigning Resources to Cost Centers 329
Maintaining Capacity Data 330
Using Available Capacity 331
Using the Standard Available Capacity 331
Calculating Shift Values 331
Defining a Shift 332
Managing Resources 332
Creating Resources 333
Finding a Resource 333
Assigning a Resource to a Subsystem 334
Checking a Resource for Data Completeness 334
Deleting a Resource 334
Creating a Resource Hierarchy 334
Assigning Resources to a Hierarchy 335
Connecting Resources 335
Creating a Resource Network 336
Navigating a Resource Relationship Network 336

15 Managing Master Recipes 337

Understanding a Master Recipe 338
Maintaining Master Recipes 338
Using Recipe Groups 339
Navigating the Recipe Levels of Detail 339
Copying from a Recipe Profile 340
Meeting Recipe Documentation Requirements 340
Applying Change Rules to Recipe Maintenance 340
Maintaining a Master Recipe with Reference to a Change Master Record 341
Documentation of Changes 342
Managing Change Approvals 342
Tracing the Approval Procedure for Engineering Change Requests or Orders 342

Exploring the R/3 Standard System Status Network 343
Adding User Statuses 343
Controlling the Validity of Master Recipes 343
Checking Master Recipe Consistency 344
Creating a Master Recipe 345
Checking Recipe Data Consistency 345
Understanding the Header Data of Master Recipes 346
Classifying Master Recipes 346
Maintaining Header Data 346
Allocating a Resource Network to a Recipe 347
Understanding Primary Resources 347
Selecting Resources Automatically 348
Naming a Person 348
Using Secondary Resources in Operations or Phases 348
Working with Planning Resources 349
Classifying Resources for System-Aided Resource Selection 350
Planning Resources—Persons 350
Using Default Values from the Resource 350
Designing Operations and Phases 351
Interpreting a Control Key for Operations, Phases, and Secondary Resources 351
Ordering External Processing 352
Maintaining Data for External Processing 353
Planning Standard Values for Operations, Phases, and Secondary Resources 353
Formatting Standard Values 354
Exploring User-Defined Fields 354
Linking by Relationships Between Phases 355
Interpreting the Types of Relationship 355
Using Time Intervals in Relationships 355
Allocating Materials to the Master Recipe 355
Using the Flexibility of the Master Recipe Concept 356
Managing Coproducts 356
Allocating Material Components to Operations and Phases 357
Backflushing 358
Calculating Material Quantities in the Material List 358
Consulting Material Attributes in Calculation Formulas 359
Maintaining Material Data 359
Maintaining a Production Version 360
Maintaining Bills of Material 360
Allocating a Material Component to an Operation or Phase 361
Inspecting for Quality During Manufacturing 361
Dynamic Modification 362

16 Optimizing the Continuous Production Processes 363

Interfacing PP-PI with Process *Control 364*
Sending Process Messages from Process Control 364
Directing Control Information to the Operator 364
Reading the Process Instruction Sheet 365
Archiving Process Data 365
Evaluating Process Data 365
Integrating PP-PI with Higher-Level *Systems 366*
Linking to Other Systems 366
Collecting and Displaying Plant Data 366
Recording Time Worked on Production Orders 366
Consulting the PP Information System 367
Linking PP with Sales and Operations Planning 368
Linking PP to the Logistics Information Library 368
Building a Logistics Data Warehouse 369
Setting Up Early Warning Systems 369

17 Continuous Manufacturing with Process Orders 371

Manufacturing Batches 372
Managing Process Orders 372
Creating a Process Order 373
Scheduling a Process Order 374
Customizing the Scheduling Parameters 374
Allowing Order Floats 375
Interpreting Working/Operating Time 375

Scheduling Secondary Resources 376
Scheduling Capacity Requirements 376
Interpreting the Scheduling Log and Results 376
Monitoring the Dates and Quantities of Process Orders 377
Scheduling Material List Components 377
Exploring the General Data Screen 378
Exploring the Coproduct Item Data 379
Exploring the Coproduct Settlement Rule 380
Checking the Availability of Material 380
Checking Availability to Promise 381
Calculating the Quantity of Material Required 381
Preliminary Costing 382
Using Fiscal Year Cost Segments 382
Planning Costs for Components 383
Assigning Overhead Costs as Surcharges 384
Releasing a Process Order 384
Releasing Process Orders Collectively 385
Interpreting Actual and Planned Data After Order Release 385
Notifying Schedule Deviations 386
Using Inspection Lots to Plan and Control Quality 386
Differentiating Planned and Unplanned Inspection Lot Characteristics 386
Deleting an Inspection Lot 387
Creating Unplanned Inspection Characteristics 388
Deleting an Operation with Inspection Characteristics 388
Inspecting Partial Lots 388
Printing Shop Floor Papers 389
Printing Completion Confirmations 389
Using Fixed and Variable Parameters in Completion Confirmations 390
Entering Completion Confirmations 391
Managing Process Order Statuses 391
Managing Goods Movements for Process Orders 393
Planning the Withdrawal of Material Components 393
Moving Goods as Unplanned Withdrawals 394
Delivering Manufactured Material to the Warehouse 394
Posting Goods to Stock Automatically 395
Checking During a Goods Receipt to Stock 395
Costing a Delivery to Stock 395
Updating the Material Master by a Delivery to Stock 396
Updating the Order After a Delivery to Stock 396
Manufacturing Coproducts by Process Orders 397
Costing Coproducts 397
Using an Origin Structure with Coproducts 397

18 Controlling Self-Regulating Production by KANBANs 399
Triggering Replenishment with KANBAN 400
Replenishing with the KANBAN Pull Principle 400
Comparing KANBAN Pull with MRP Push 400
Reducing Production Lead Times and Inventory by the KANBAN Pull Mechanism 401
Choosing When to Use KANBAN Production Control 402
Controlling KANBAN Supply Areas 402
Combining KANBAN and MRP 402
Controlling Production Using the KANBAN Board 403
Establishing Master Data for KANBAN 404
Using Replenishment Strategies 405
Replenishing Using Run Schedule Quantities 406
Using an Independently Triggered Supply Source 407
Detaching Goods Receipt and Goods Issue Posting from KANBAN Status 407
Replenishing by Production Orders 407
Replenishing Using Direct Transfer Posting 408

Running KANBAN Procedural Evaluations 408
Exercising Display Options 408
Processing Error Messages from the Display 409
Consulting the Plant Overview 409
Accessing Additional Control Cycle Information 409

19 Controlling Manufacture with Process Instructions 411
Preparing Process Instructions 412
Defining Process Instruction Categories 412
Differentiating Process Instruction Types 412
Using Sequence Definitions in the PI Sheet 413
Designing Process Instructions for the R/3 PI Sheet 413
Creating Process Instructions 414
Interpreting Process Instruction Sheets 414
Using Predefined Function Calls 416
Processing PI Sheets 416
Evaluating Process Message Data 417
Evaluating Process Messages 418
Setting Up the SAP Business Graphic for Process Message Evaluation 418
Setting Up Message Evaluation Using SAP XXL List Viewer 418
Arranging the Layout for the SAP XXL List Viewer 419
Selecting Process Messages for Evaluations 419
Evaluating Process Message Data Using External Tools 420
Integrating Supply Chain Management 420

20 Relating Production to the Environment 423
Tracking Substances with the EH&S Component 424
Building a Substance Database 424
Linking to the R/3 Classification System 425
Interpreting Standard Substance Characteristic Types 425
Identifying a Particular Substance 426
Defining Substance Characteristic Usage 427
Reporting with a Substance Report Generation Variant 427
Customizing a Substance Database 427
Documenting Process Data 428
Archiving 429
Meeting GMP Requirements for the PI Sheet 430
Executing Process Data Documentation 430
Simulating Process Data Documentation 431
Inspecting Archived Process Data 431

Glossary 433

Index 463