

# Content

<b>1</b>	<b>Result-driven Testing.....</b>	<b>1</b>
1.1	The Importance of IT .....	1
1.2	A Statement about Quality .....	3
1.3	The Perception of Testing .....	6
1.4	A Common Goal .....	7
1.5	Tying in with the Business .....	10
1.6	Result-driven Testing .....	11
1.7	Focus on the Goal .....	13
<b>2</b>	<b>TestGoal and the Ten Test Principles.....</b>	<b>15</b>
2.1	Test Principles.....	15
2.2	Focus on Result.....	16
2.3	Build Trust .....	17
2.4	Take Responsibility.....	19
2.5	Master the Testing Profession .....	20
2.6	Build Bridges .....	22
2.7	Test in Phases.....	23
2.8	Facilitate the Entire Product Life Cycle .....	24
2.9	Provide Overview and Insight.....	25
2.10	Ensure Reusability .....	27
2.11	Keep in Mind: Testing is Fun.....	28
2.12	Applying the Test Principles .....	29
<b>3</b>	<b>Test Expertise .....</b>	<b>31</b>
3.1	The Test Manager .....	32
3.2	The Test Coordinator .....	32
3.3	The Test Analyst .....	33
3.4	The Test Engineer .....	33
3.5	The Test Specialist.....	33

<b>4</b>	<b>The Approach .....</b>	<b>37</b>
4.1	Context of the Test Project.....	38
4.2	Test Levels.....	42
4.3	The Details of the Test Project.....	44
4.3.1	The Step Plan .....	45
4.3.2	Sequence of Activities.....	46
4.4	Testing a New Program.....	47
4.4.1	Step 1: Goal.....	48
4.4.2	Step 2: Approach.....	49
4.4.3	Step 3: Design .....	51
4.4.4	Step 4: Set up.....	54
4.4.5	Step 5: Execution.....	56
4.4.6	Step 6: Assurance .....	58
4.4.7	Goal (Information and Communication) .....	59
4.4.8	Review and Acceptance .....	61
4.5	Testing in a Maintenance Environment .....	61
4.6	Testing Conformity and Interoperability.....	65
4.6.1	Introduction .....	65
4.6.2	Applying the Step Plan.....	67
4.6.3	Certification Tests .....	69
4.7	Testing Performance .....	71
4.7.1	Introduction .....	71
4.7.2	Applying the Step Plan.....	72
4.7.3	Test Design Techniques .....	73
4.7.4	Test Tools.....	74
4.7.5	Dependencies .....	75
4.8	Testing Security .....	77
4.8.1	Introduction .....	77
4.8.2	Approach.....	77
4.8.3	Applying the Step Plan.....	79
<b>5</b>	<b>Getting Started .....</b>	<b>83</b>

---

### Step 1 – Goal

---

<b>6</b>	<b>Assessing the Anticipated Goal .....</b>	<b>87</b>
6.1	Introduction.....	87
6.2	Aim of the Assessment .....	88
6.3	Goal Description .....	90
6.4	Information Gathering.....	93
6.4.1	Product Development .....	93
6.4.2	People.....	94
6.4.3	Guidelines and Documentation .....	95

---

**Step 2 – Approach**


---

<b>7</b>	<b>Test Risk Analysis .....</b>	<b>101</b>
7.1	Introduction .....	101
7.2	The 1D Test Risk Analysis .....	104
7.2.1	Introduction .....	104
7.2.2	Identify Stakeholders and Kick-off .....	105
7.2.3	Determine the Functions and Areas of Attention .....	106
7.2.4	Determine the Relative Importance .....	108
7.2.5	Process the Data .....	111
7.2.6	Agree on the TRA .....	112
7.3	The 2D Test Risk Analysis .....	113
7.3.1	Introduction .....	113
7.3.2	Identify Stakeholders and Kick-off .....	116
7.3.3	Establish the Risks .....	116
7.3.4	Data Processing .....	117
7.3.5	Agree on the TRA .....	118
<b>8</b>	<b>Generic Test Strategy .....</b>	<b>119</b>
8.1	Introduction .....	119
8.2	The Generic Test Strategy .....	120
8.3	Test Strategy in the DTP and MTP .....	123
<b>9</b>	<b>Test Budget and Planning .....</b>	<b>125</b>
9.1	Introduction .....	125
9.2	Create the Test Budget .....	126
9.2.1	General .....	126
9.2.2	Work Breakdown Structure .....	127
9.2.3	Assessing the Requisites .....	135
9.2.4	Establishing the Budget .....	136
9.3	Test Planning .....	137
9.3.1	Generic Planning .....	137
9.3.2	Detailed Planning .....	138
9.4	Key Indicators .....	141
<b>10</b>	<b>Test Plan .....</b>	<b>143</b>
10.1	Introduction .....	143
10.2	Description of the Assignment .....	145
10.3	Test Base .....	146
10.4	Test Strategy .....	148
10.4.1	Description of the Test Strategy .....	149
10.4.2	Test risk analysis .....	151
10.4.3	Quality Attributes .....	152
10.4.4	Strategy Matrix .....	155

10.4.5	Technique Matrix .....	157
10.4.6	Previous and Next Phases.....	158
10.4.7	Test Environment .....	159
10.4.8	Assuring the Quality of the Test Project .....	160
10.4.9	Release Advice.....	163
10.4.10	Change and Error Management.....	164
10.4.11	Transfer .....	164
10.5	Planning .....	166
10.6	Test Organization.....	167
10.6.1	Organization Chart .....	167
10.6.2	Responsibilities .....	168
10.6.3	Meeting Structures .....	169
10.7	Deliverables .....	170
10.8	Requisites for the Test Process .....	171
10.9	Changes and Deviations.....	171

---

### Step 3 – Design

---

<b>11</b>	<b>Sanity Check.....</b>	<b>175</b>
11.1	Introduction.....	175
11.2	Filling out the Sanity Check Checklist.....	176
11.3	Continuous Learning.....	178
11.4	Test Base Review.....	178
11.5	Registration .....	180
11.6	Formal Review and Inspection Procedures .....	181
<b>12</b>	<b>Logical Test Design .....</b>	<b>183</b>
12.1	Introduction.....	183
12.2	Test Design Techniques .....	185
12.3	Use Test Design Techniques Cleverly .....	191
12.4	Little Experience with Test Design Techniques?.....	191
12.5	No Test Design Techniques .....	192
12.6	Using Test Design Techniques.....	193
12.6.1	Syntax Testing.....	193
12.6.2	EP: Equivalence Partitioning.....	196
12.6.3	BVA: Boundary Value Analysis .....	199
12.6.4	C/E: Cause-effect Graphing .....	203
12.6.5	State Transition.....	206
12.6.6	CRUD Testing.....	208
12.6.7	PCT: Process Cycle Test / AT: Algorithm Test .....	210
12.6.8	Load Tests .....	215
12.6.9	Stress Testing .....	221
12.6.10	Reliability Testing .....	223

12.6.11	Concurrency Tests .....	225
12.6.12	HT: Heuristic Testing .....	226
12.6.13	ET: Exploratory Testing .....	227
12.7	Test Design Techniques and Security Testing .....	234
<b>13</b>	<b>The Physical Test Design .....</b>	<b>237</b>
13.1	Introduction .....	237
13.2	Relationship Between the TRA and the Logical Test Design .....	237
13.3	Physical Test Case .....	238
13.4	Test Actions .....	243
13.5	The Physical Test Scenario .....	245
13.6	Test Data .....	246
<b>14</b>	<b>Test Data .....</b>	<b>247</b>
14.1	Test Data Elements .....	247
14.2	Test Data Repository .....	249
14.3	Live Data Versus Test Data .....	250
14.4	Test Data Management Strategy .....	251
14.4.1	Input from the Application .....	251
14.4.2	Input from the Database .....	252
14.4.3	Closed Loop .....	253
14.5	Including Data in the Physical Test Design .....	254
14.6	Automated Tests .....	255
14.7	Test Data and Exploratory Testing .....	256
14.8	Back-up and Restore .....	256
<b>15</b>	<b>Test Environment .....</b>	<b>257</b>
15.1	Introduction .....	257
15.2	Determine the Requirements of the Test Environment .....	258
15.2.1	Module Tests and Module Integration Tests .....	258
15.2.2	System Tests .....	259
15.2.3	Functional Acceptation Tests .....	260
15.2.4	User Acceptance Tests .....	261
15.2.5	Production Acceptance Tests .....	262
15.2.6	Chain Tests .....	262
15.2.7	Pilot .....	263
15.2.8	Performance Tests .....	264
15.2.9	Security Tests .....	265
15.2.10	Training Purposes .....	266
15.3	Test Environment Requirements Checklist .....	267
15.4	Setting up the Test Environment .....	270
15.5	Configuration and Smoke Test .....	271
15.5.1	Configuring the Test Environment .....	271
15.5.2	Smoke Test .....	271

15.6	Maintaining the Test Environment.....	272
15.6.1	Configuration Management.....	272
15.6.2	Release Management.....	273
15.6.3	Back-up and Restore .....	274

---

## Step 4 – Set up

---

<b>16</b>	<b>Test Automation .....</b>	<b>277</b>
16.1	Introduction.....	277
16.2	What is Test Automation?.....	278
16.3	Dynamic Test Tools.....	278
16.3.1	Additional Testing Possibilities.....	278
16.3.2	Time Saving .....	279
16.3.3	Log files.....	279
16.3.4	Comparing Results .....	280
16.3.5	Extensive Repeatability .....	280
16.4	Static Test Tools .....	282
16.5	Supporting Tools.....	282
16.6	Test Automation: Yes/No .....	283
16.6.1	Business Case.....	283
16.6.2	Making a Well-Informed Decision.....	285
16.7	Developing Test Scripts .....	285
16.7.1	Record and Playback .....	286
16.7.2	Programming Test Scripts.....	288
16.8	Automated Testing for Systems with More Than One Interface...	289
<b>17</b>	<b>Smoke Test.....</b>	<b>293</b>
17.1	Introduction.....	293
17.2	Filling out the Checklist.....	295
17.3	Maintaining the Checklist .....	296

---

## Step 5 – Execution

---

<b>18</b>	<b>Test Execution .....</b>	<b>299</b>
18.1	Test Execution and its Activities.....	299
18.2	Activities During the Test Execution.....	301
18.3	Test Run and Regression Tests .....	303
18.4	Leaving the Beaten Track .....	305
18.5	When is Testing Finished? .....	306
<b>19</b>	<b>Error Logging and Management .....</b>	<b>309</b>
19.1	Introduction.....	309
19.2	Filling out the Error Log .....	310

19.3	Error Attributes .....	311
19.4	Error Management .....	316
<b>20</b>	<b>Test Reporting .....</b>	<b>321</b>
20.1	Introduction .....	321
20.2	Elements in the Test Report .....	323
20.2.1	Scope .....	323
20.2.2	Release Advice .....	324
20.2.3	Hour Estimate .....	325
20.2.4	Project Risks and Bottlenecks .....	326
20.2.5	Product Status .....	327
20.2.6	Completed Versus Planned Tests .....	327
20.2.7	Error Status .....	328
20.2.8	Defect Detection Rate .....	332
20.2.9	Open Errors .....	333
20.2.10	Test Result by Risk Category or Test Cluster .....	334
20.2.11	Test Progress – Executed Versus Planned Tests .....	337
20.2.12	Outstanding Product Risks .....	339
20.3	The Dashboard .....	340
20.4	Clarity of the Test Report .....	342

---

## Step 6 – Assurance

---

<b>21</b>	<b>Assurance .....</b>	<b>349</b>
21.1	Introduction .....	349
21.2	Evaluating the Test Project .....	349
21.2.1	Purpose of the Evaluation .....	349
21.2.2	Points of Attention .....	350
21.2.3	Lessons Learned Report .....	352
21.3	Determining the Regression Test Set .....	353
21.4	Archiving and Securing the Testware .....	354
21.5	Handover .....	354
21.6	Discharging the Test Team .....	355
	<b>Appendix A – Checklist: Sanity Check on the Design .....</b>	<b>357</b>
	<b>Appendix B – Checklist: Sanity Check on the Testware .....</b>	<b>363</b>
	<b>Appendix C – Checklist: Checklist smoke test system .....</b>	<b>367</b>
	<b>Appendix D – Checklist: Test charter exploratory testing .....</b>	<b>369</b>
	<b>Appendix E – Glossary .....</b>	<b>371</b>
	<b>References .....</b>	<b>389</b>
	<b>Index .....</b>	<b>393</b>

TestGoal

Result-Driven Testing

de Grood, D.-J.

2008, XXIV, 397 p., Hardcover

ISBN: 978-3-540-78828-7