Index

Abstraction, 3
Access
    Modifying, 21
    Read, 19
    Write, 20
Active component, 27
Activity, 57
Ad hoc modeling, 7
Agent, 3, 13, 15, 19, 301
Agent-bordered sub-net, 77
Alternatives, 35
Annotation, 217
Arc, 303, 307
Arc trees, 192
Arc weight, 89
Architecture elicitation, 239
Automaton, 59
Bipartite graph, 55
Block diagram, 3, 9, 15, 55, 72, 300
Bridging model, 162, 210
Bridging models, 162
Buffered communication, 126
Capacity, 89
Cardinality, 45
Causal order, 29
Channel, 13, 14, 23, 301
Class, 42
Class diagram, 226, 234, 235, 242, 243
Communication, 303
Compiler, 114
Complementary place, 89
Component, 235
    Active, 27
    Passive, 27
Compositional structure, 17
Conceptual distribution, 120
Concurrency, 35, 70, 123, 303
Concurrent access, 22
Concurrent tasks, 130
Conflict resolution, 33
Connector, 235
Containment
    Consists-of relationships, 73
    Layout reasons, 74
Control state, 29, 60
Control unit, 70
Control variable, 63, 72
Data path, 70
Delay, 96
Diagram
    Block, 15
    Entity relationship, 9, 42, 306
Directed arc, 303
Directed system, 22
Discrete control loop, 69
Distributed system, 120
Distribution, 123
Documentation, 177
Domain model, 107
Duplex connection, 23
Duration, 96
Dynamic structure, 29
Dynamic system, 13

E/R diagram, 9, 42, 306
Entity, 307
Entity node, 51
Entity relationship diagram, 9, 42, 55, 306
Entity set, 42, 307
Equivalent model, 18, 76
Event, 57
Exception handling, short notation, 212

Firing rules, 31, 89
FMC, 56
  Meta model, 57
  Model, 53
Forking server, 258
Functional decomposition, 76
Fundamental aspect, 54
Fundamental modeling concepts, 56
Guidelines, 182, 189
  Block diagram, 27
  E/R diagram, 51
  Petri net, 39
Half-duplex connection, 24
Hierarchical refinement, 78

I/O devices, 119
Information, 15
Information processing system, 15
Input place, 31
Instance, 42
Inter-task communication, 125
Interrupt handling, 116
Interviews, 161

IT system, 15
Iterative modeling, 4, 161, 165

Labeling, 199
Layout, 194
Leader / followers, 272
Linestyle, 191
Listener / worker, 255, 268, 275
Location, 3, 14, 301
Location-bordered sub-net, 78
Loop, 35, 303

MDA, 233, 243
Meetings, 173
Mental prototype, 5, 165, 238, 240, 242
Mental prototyping, 164
Meta model, 57
Min/max notation, 46
Model, 2, 53
Model Driven Architecture, 233, 243
Modeling, 2
Modifying access, 21, 301
Modifying arcs, 21
Multitoken place, 89, 305
Multiplex, 117

Nesting, 72
Nominalization, 48
Non-hierarchical transformation, 97, 101
NOP transition, 31, 303

Object Management Group, 233, 244
Object orientation, 235, 236
Object-oriented analysis, 236
Object-oriented design, 236
Object-oriented methods, 235, 236
OMG, 233, 244
OOA, 236
OOD, 236
Operation, 57
Operational state, 60
Operational unit, 70
Operational variable, 72
Orthogonal partitioning, 307
Output place, 31

Parameterization, 83
Partition, 48
Partition symbol, 48
Passive component, 27
Petri net, 9, 29, 55, 85, 302
Physical distribution, 120
PIM, 244
Place, 31, 303
    Complementary, 89
    Input, 31
    Marked, 31
    Multitoken, 89, 305
    Output, 31
    Return, 91, 305
    Stack, 92, 305
Platform Independent Model, 244
Platform model, 108
Platform Specific Model, 244
Pointer, 161
Predicate
    of a relation, 46
    Petri net, 33
Presentations, 176
Processor system model, 111
PSM, 244
Queue, 126, 219
Range of value structure, 44
Read access, 19, 301
Receiver, 23
Recursion, 305
Recursive Petri net, 90
Re-engineering, 239
Refinement of block diagrams, 73
Reification, 49, 307
Relation, 307
Relationship, 42
Relationship node, 51
Request–response channel, 25
Requirements Analysis, 240
Return place, 91, 305
Role multiplex, 116
Role piggyback, 113
Role system model, 111
Safe Petri net, 86, 130
Scope boundary, 36
Secondary notation, 208
Semantic layer, 99
Semaphore, 130
Semaphore place, 131
Sender, 23
Sequence, 34, 303
Sequence, short notation, 212
Sequential machine, 59
Shared memory, 126
Shared storage, 301
Simplex connection, 23
Stack place, 92, 305
State, 59
    Control, 60
    Operational, 60
State machine, 59
Steuerkreis, 69
Storage, 14, 18, 301
Structure entity set, 307
Structure variance, 301
Structure variance storage, 81
Structure variant system, 80
Structured Analysis, 221
Sub-net
    Agent-bordered, 77
<table>
<thead>
<tr>
<th><strong>Sub-net (Continued)</strong></th>
<th><strong>Transition–bordered sub-net, 85</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location-bordered, 78</td>
<td>Transition–like sub-net, 85</td>
</tr>
<tr>
<td>of Petri net, 36</td>
<td>Type, 42</td>
</tr>
<tr>
<td>Place–bordered, 214</td>
<td></td>
</tr>
<tr>
<td>Transition–bordered, 85</td>
<td></td>
</tr>
<tr>
<td>Transition–like, 85</td>
<td></td>
</tr>
<tr>
<td>Swimlane, 36, 303</td>
<td></td>
</tr>
<tr>
<td>Synchronized access, 132</td>
<td></td>
</tr>
<tr>
<td>System</td>
<td></td>
</tr>
<tr>
<td>Directed, 22</td>
<td></td>
</tr>
<tr>
<td>Dynamic, 13</td>
<td></td>
</tr>
<tr>
<td>Information processing, 15</td>
<td></td>
</tr>
<tr>
<td>Theory, 59</td>
<td></td>
</tr>
<tr>
<td>System architecture refinement, 240</td>
<td></td>
</tr>
<tr>
<td>System description, 108</td>
<td></td>
</tr>
<tr>
<td>System Map, 8, 165, 170</td>
<td></td>
</tr>
<tr>
<td>System structure, 108</td>
<td></td>
</tr>
</tbody>
</table>

| **Temporal order, 29** |
| **Time-stamp, 92**    |
| **Timing constraints, 95** |
| **Token, 31**         |
| **Transition, 31, 303** |
| **Transition Interval, 22** |
| **UML, 232, 238, 242, 243** |
| **UML class diagram, 234, 235, 242, 243** |
| **UML use case diagram, 240** |
| **Undirected channel, 24** |
| **Unified Modeling Language, 232, 238, 242** |
| **Use case, 240**     |
| **Use-case diagram, 165, 240** |
| **Value structure, 41** |
| **Variable**          |
| Control, 63, 72       |
| Operational, 62, 72 |   |
| **Virtual machine, 116** |
| **Visual perception, 190** |
| **WORKER POOL, 262** |
| **WORKER POOL MANAGER, 265** |
| **Write access, 20, 301** |