## Index

5W1H Re-Doc 1766

**A**
- abstract components 1947
- abstract evolution 545
- abstract solution space 1947
- Abstract State Machine (ASM) 2170
- Abstract Syntax Tree (AST) 704, 1856
- accessibility metrics 1806
- active replication 1503
- adapation contracts 1996
- adaptation loop 170
  - activities 170, 172
- Adaptive Educational Hypermedia (AEH) 1290
- Adaptive Software Development (ASD) 110, 140
- agile modeling 140
- agile principles 97
- agile techniques 100
- algorithmic flow 646
- ALLIANCE architecture 1151
- Amazon Machine Images (AMI) 940
- Analytic Hierarchy Process (AHP) 1490-1491
- Ansaldo STS 1120
- Ant Colony Optimization (ACO) 644
- antihumanism 895
- Apex robot 1145
- application availability 1503
- Application Creation Environments (ACE) 695-696
- Application Description Language (ADL) 695-696, 699-700
- application logic 1121
- Application Logic Design Specification (ALDS) 1124
- Application Programming Interface (API) 846, 1858, 1878-1880, 1887
  - handshake principle 1878, 1891-1894
- Application Under Test (AUT) 1842, 1844
- Appraisal Cost of Quality (ACoQ) 1563
- ArchiMate 585
- architectural erosion 1928, 1935
- architectural mismatch 1935
- architectural recovery 1906
- Architecture Analysis and Description Language (AADL) 2073
- architecture specific reengineering 751
- architecture vulnerability 940
- Archival Resource Keys (ARK) 1246, 1250, 1260
- Artifacts Management System (AMS) 840
- Artificial Intelligent (AI) planner 1835
- attack trees 2104
- Attribute-Based Architectural Styles (ABAS) methodology 1277
- automatic programming 1129
- Automatic Test Generation (ATG) 1108
- Automotive Data and Time Triggered Framework (ADTF) 1857

**B**
- Baconian method 1643
- BAMOS project 236
- basic state machine semantics 445
- Basic Support for Cooperative Works (BSCW) 850
- Battacharya’s model 871
- benchmark functions 650
- Ackley 651, 658
- Rastrigin F1 651, 659
- Rosenbrock 650, 659
- Sphere/DeJong 650, 658-659
- bespoke system 1465
- Bill of Materials (BoM) 1447
- black-box
  - reuse 1903
  - testing 1828, 2164
- Boolean query 261
- Bootstrap method 1322
- Broadcast of Local Eligibility (BLE) 1152
- broad network access 2, 937

---

*Volume I, pp. 1-550; Volume II, pp. 551-1092; Volume III, pp. 1093-1638; Volume IV, pp. 1639-2182*
bug tracking 673
bug triage 265
Building and Organizational Repository of Experiences (BORE) 256
Building Security In Maturity Model (BSIMM) 18, 25
Business Application Modeler (BAM) 285-286
Business Intelligence (BI) 1675, 1716
Business Process (BP) 370, 602
Business Process Execution Language (BPEL) 697, 1958, 2012
Business Process Execution Language for Web Service (BPEL4WS) 395
Business Process Management System (BPMS) 1930
Business Process Modeling Notation (BPMN) 198, 291, 307
Business Process Models (BPM) 285-286
business-task level 1024
business type modeling 222
business type models 221
Business Use Cases (BUC) 370

C
call centre metrics 1804, 1814
Capability Maturity Model (CMM) 206, 808, 1364, 1385, 1387, 1393, 1404, 1553
benefits 205, 1389, 1395
Capability Maturity Model Integration (CMMI) 203, 205, 733, 789, 1316, 1363, 1385-1386, 1388, 1553, 1580
benefits 1391, 1395
Capability Maturity Model Integration for Development (CMMI-DEV) 204, 1584
capture/play-back 1831
Carnegie Mellon Robot Navigation Toolkit (CARMEN) 1154
Case-Based Reasoning (CBR) 256
Causal Analysis and Resolution (CAR) 741
Center for Internet Security (CIS) 956, 959
Center of Hybrid and Embedded Software Systems (CHESS) 1853, 1859, 1873
centralized library 1228
Centre of Valorization and Transfer of Competence (CVTC) 1075
change management metrics 1468
change requests 1463
chemical communication 509
chemical networking 509
Clinical Pathway Ontology (CPO) 1039
clinical pathways 1037
adaptability 1038
modeling 1038, 1046
clone classification 418
cloud computing 2, 1659-1660, 1886
infrastructures 1931
legal issues 1660-1661, 1673
model characteristics 1886
software issues 1668
code cloning 418
code generation component 703
codon 1098
collaboration diagram 225
Collaborative Distributed Learning Activity (CODILA) 2034, 2045
collective intelligence 888, 891
combination knowledge 1676, 1709
Combined Utility Function (CUF) 1490-1491
Commercial-off-the-Shelf (COTS) 1957, 2012, 2161-2162
Common Criteria (CC) 2103
Common Object Request Broker Architecture (CORBA) 220, 1958
Common Vulnerability Scoring System (CVSS) 945
Common Weakness Enumeration (CWE) specification 941
communication bandwidth 1144
community cloud 3
competence management 255
Complex Adaptive Systems (CAS) 152, 162
complexity metrics 1805, 1820
component architecture model 227
Component-Based Development (CBD) 1927
component-based model 220
Component-Based Software Development (CBSD) 1900, 1902, 1957
Component-Based Software Engineering (CBSE) 1903, 1957
component-based system modeling 221
Component Object Model (COM) 220, 1958
component versioning 852
composite state machine 440, 444, 452
Comprehensive, Lightweight Application Security Process (CLASP) 18, 20
computational complexity 483
Computation Tree Logic (CTL) 287
Computer Aided Design (CAD) 1136
Computer Aided Software Engineering (CASE) 127, 641, 1767
Index

Computer-Assisted Testing (CAT) 1837
Computer Independent Model (CIM) 1609
concept localization 265
conceptual complexity 483
concurrent collaboration 849
concurrent validity 1707
Concurrent Version System (CVS) 850
Conditions Based Complexity (CBC) 1426, 1428
Confidentiality, Integrity, and Availability (CIA) 1002
configuration vulnerability 940
conflict handling process 871
Connection, Communication, Consolidation, Collaboration Interoperability Framework (C4IF) 592
construct validity 1707
content faults 1502
Content Management Systems (CMS) 257
content metrics 1819
Context-Aware Adaptive Processes (CAAP) 71
Context-Aware Cloud Adoption (CACA) 373
context-aware computing 1957, 2012
Context-Aware Symbolic Transition System (CA-STS) 1973, 1975
Context Information Service (CIS) 273, 279
context modeling 227
Context Privacy Service (CoPS) 275
contextual knowledge 73
continuous improvement 1167
Continuous Integration System (CIS) 1869
continuous representation 1389
Contract Net Protocol (CNP) 1510
Control Objectives for Information and Related Technology (COBIT) 1584
control table 1127
convergent validity 1707
cooperation episode 1148
Core Component Technical Specification (CCTS) 1046
COSMOS* component model 1267, 1283
critical pair analysis 1793
Cross-Language Information Retrieval (CLIR) 1223
crowdsourcing 126
Crystal 105
Crystal Space 1182
customer centered metrics 1804, 1814
Cyber-Physical Systems (CPS) 551, 569, 1852, 1877
context-aware 1859-1860
cyclomatic complexity 1425

D
Database Administrator (DBA) 959
Database Management System (DBMS) 953, 965, 1027
Data Flow Diagrams (DFD) 750, 753-754, 1525
data preprocessing 408
data privacy 937
data protection 937
data reduction 409
dataref 845
data transformation 409
Davis’ TAM 1472
Decision Support Systems (DSS) 257
defect pattern discovery 405
DELPHI technique 1713
Denial of Service (DoS) 467, 1784
Dependability and Resilience Framework (DREF) 2072
Dependability focused inspection tool (DEFECT) 1008, 1012
dependency analysis 1793
Description Logic (DL) 393
design erosion - See architectural erosion.
design for adaptation 172
Design Rationale (DR) 575, 595
Development and Evaluation Environment (DEE) 1862, 1877
development faults 1502
DevOps 12
Digital Asset Management (DAM) 1234, 1236
digital elements 1211
direct measurements 1424
discriminate validity 1707
Disease Ontology (DO) 1055
distributed libraries 1228
Distributed Software Configuration Management (DSCM) 860
Distributed Software Development (DSD) 1536
document management 255
document translation 1224
Domain Specific Kits (DSK) 1932
Domain Specific Languages (DSL) 178, 241-242, 247, 250, 570-571, 574, 595, 695-696, 1859, 1877, 1932, 2052, 2120
Domain-Specific Modeling Languages (DSML) 551, 698
draft entry profile 1353
DREAD algorithm 2106
DSDM 111
dynamic programming method 1098
E

Easy Java Simulations (EJS) 220
Eclipse Modeling Framework (EMF) 82, 183, 200, 585, 603, 698-699
Educational Recommender Systems (ERS) 1264, 1270
   functional requirements 1272-1273
Electrically Erasable and Programmable Read Only Memory (EEROM) 982
Engineering Process Group (EPG) 1324
Engineering Requirement Specification (ERS) 1561
Enterprise Architecture (EA) 585
   modeling language 585, 590
Enterprise Service Bus (ESB) 1766, 1890, 1897, 1929, 1960, 2012
Entity Relationship Diagrams (ERD) 223, 750, 754, 1067, 1525
Epsilon Generation Language (EGL) 186
Epsilon Object Language (EOL) 186
Epsilon Transformation Language (ETL) 186
Epsilon Validation Language (EVL) 186
European Committee for Electrotechnical Standardization (CENELEC) 1104
EvalProSoft 1374
Event-B specification 1417
Event-driven Process Chains (EPC) 286, 291, 294
Event Flow Graph (EFG) 1839
   event handler 854
   event transformations 449
      adherence preservation 453
      everything-as-a-service (XaaS) 1
      evolution-in-the-large 545
      evolution loop 169
      activities 171
exordium 918
Experience Factory (EF) concept 1404
Experience Management (EM) systems 256, 1402, 1406, 1411-1412
   common language 1407
   knowledge sharing 1407
Express Process Appraisal (EPA) 1371
Extended Backus-Naur Form (EBNF) 186, 252
Extended Contract Net Protocol (ECNP) 1510
Extended Cyclomatic Complexity (ECC) 1426, 1428, 1430
Extended Deterministic Finite-state Automaton (EDFA) 394
   external intelligence 468, 472
   externalization knowledge 1676, 1709
   external knowledge 73
Extraction, Transformation and Loading (ETL) 743
eXtreme Programming (XP) 53, 101, 140, 1676-1677, 2146

F

Failure Cost of Quality (FCoQ) 1563
Fair and Accurate Credit Transactions Act of 2003 (FACT) 1661, 1673
false cognates 1226
Fault-Tolerant Web Services (FTWS) 1505
Feature-Driven Development (FDD) 107, 140
   feature modeling 1938
Feature-Oriented Domain Analysis (FODA) 75, 618
Final Acceptance Testing (FAT) 632
   financial metrics 1804, 1814
   Financial Services Modernization Act 1661, 1673
   Finite State Machine (FSM) 985, 998
   fitness functions 655
   Flexibility as a Service (FaaS) 1040
   Foreign Language Learning (FLL) 1200
   formal methods 1104
   formative methods 2124
   Fraglets 507, 510
   full time equivalent (fte) 1453
   functional requirements 1742
   functional testing 2166
   Fuzzy Logic System (FLS) 648

game engine 1179
   class 1182
   game loop 1182
   game object 1187
   game services container 1181
Game Theory 1485
General Electric Transportation Systems (GETS) 1106
   Generally Accepted Accounting Practices (GAAP) 1662
   General Purpose Languages (GPL) 574, 2122
   Generic Modeling Environment (GME) 553, 603
   Generic Profile Group (GPG) 1342
   Genetic Programming (GP) 413
genome sequence analysis 1100
Global Development Software (GDS) 2033
   Global Software Development (GSD) 860, 864, 1534-1535, 1548, 1576, 1578
   Goal Question Indicator Metric (GQIM) 1593
   go-live 1070
   Goods Dominant logic (GD-logic) 150
Graphical Computational Tree Logic (G-CTL) 297
Graphical Editing Framework (GEF) 183, 306, 585, 702
   Eclipse 585
Graphical Modeling Framework (GMF) 179, 183, 250, 603, 699
   graphical notation 287
Graphical User Interaction (GUI) 2039
Graphical User Interfaces (GUI) 222, 229, 288, 497, 644, 697, 829, 1153, 1155, 1192, 1829
   modeling 1838
   test automation 1829, 1833
   graphical validation rules 286
   groupware systems 256

H
Hardware Description Language (HDL) 984, 998
   hardware Trojan horse 984
heuristic evaluation 2043
high-level modeling 1442-1443
Human as a Service (HuaaS) 7
   human capital development 1538
   human computer interactive theory 1204, 1214
Human Papilloma Virus (HPV) 1055
Human Usable Textual Notation (HUTN) 613
Hybrid Positioning Service (HPS) 275
hybrid cloud 3
Hyper Text Transfer Protocol (HTTP) 1770
   hypotetico-deductive method 1645, 1658

I
   implementation vulnerability 940
   incomplete knowledge 482
   Incremental Commitment Spiral Model (ICSM) 2142-2143, 2160
   indent server 854
   independent reengineering 752
   indirect measurements 1425
   information architecture 2038
   information flow security
   method 429, 431, 456, 459
   Information Retrieval (IR) 253, 260
   Information Systems (IS) 220
      development 1464
      development lifecycle 627, 641
      product aging 1467
   Infrastructure as a Service (IaaS) 3, 7
   infrastructure availability 1503
   Integrated Development Environment (IDE) 183, 789, 1418, 1829
   Integrated Information Systems CASE Tool
      (IIS*Case) 596-597
   Integrated Platform for Autonomic Computing
      (IPAC) 696
   Integrated Project Support Environments (IPSE) 138
   integrated Requirements Engineering Model (iREM) 360-361
   Intelligent Tutoring Systems (ITS) 1265, 1271, 1290
      interaction design 2039
      interaction diagram 225
      interaction faults 1502
      interface modeling 225
      interlocking controllers 1119
      interlocking systems 1113
   internalization knowledge 1676, 1709
   International Organization for Standardization (ISO) 1336, 1360, 1378
   Internet Speed Development (ISD) 140
   intuitive requirements 1941
   inverted file indexing 261
   iterative methods 1098

J
   Jackson Structured Programming (JSP) 136
   Java Emitter Templates (JET) 185, 244
   Java Messaging Service (JMS) 1770
   Java Server Pages (JSP) 185, 1773
   Jointed Application Development (JAD) 138

K
   Key Performance Indicators (KPI) 1592
   Key Process Area (KPA) 1389
   Knowledge Management (KM) 253, 257, 1414, 1538, 1675
   Knowledge Management Maturity (KMM) model 1409

L
   Labeled Transition Systems (LTS) 1834
   language-associated tools 580, 583
   language evaluation 2120, 2127
   language software 1202
   language specific reengineering 751, 753
   large scale reuse 1932
   late binding 167
   latent semantic indexing 261
   Latin American Colaboratory of eXperimental
      Software Engineering Research (LACXSER) 2034
Lean Software Development (LSD) 381
legacy system reengineering
design patterns use 752
lexical holes 1226
lexical mismatches 1226
lifelogging 2015, 2027
building a system 2023
challenges 2017
Location Based Service (LBS) 772
locspec 845
Logical Construction of Programs (LCP) 136
loose coupling 1885

M
machine readable dictionaries 1224
machine translation systems 1224
management support system 1586
manual refactoring 1792
Market-Driven Requirements Engineering Process
Model (MDREPM) 203-204, 212
marketing metrics 1805, 1821
Market Strategies, Inc. (MSI) 1238
Matlab Automotive Advisory Board (MAAB) 1106
Maximum Weighted Product (MWP) 1491
Mean Square Error (MSE) 655
measured service 2, 937
mechanisms goals 966
mechanisms present 970
metadata storage servers 1248
meta-model evolution 545
Meta Object Facilities (MOF) 179, 598, 2070
metaorganism 889
Mexican standard 1339, 1373
microcosm 843
micro-evaluation assessment 1370
Microlok II controller 1120
Microlok Interlocking Simulator System (MISS) 1136
Microlok system 1120
Microsoft Enterprise Library (MEL) 1933
Microsoft Secure Development Lifecycle 17-18, 22
middleware availability 1503
Minimum Marketable Feature (MMF) 1168
Minimum Weighted Sum of Ranks (MWSR) 1491
Mobile Collaboration Architecture (MoCA) 270
mobile geo-applications 773
geographic data 774
mobile maps 775
positioning 773
mobile software engineering 720
requirements analysis and specification 721
Model-Based Security Testing (MBTS) 2076
Model-Based Software Development (MBSD) 313
Model-Based Systems Engineering (MBSE) 1442
model checking 1108
Model Development Engineering (MDE) 1609
Model Driven Architecture (MDA) 545, 600, 751, 1139, 1609, 1637
Model-Driven Engineering (MDE) 178, 552, 569, 696, 1127, 1442, 2064, 2073
Model-Driven Serum for Service-Oriented Software
Reengineering (mScrum4SOSR) 1764-1765
Model-Driven Software Development (MDSD) 286, 528, 550, 597, 626
Model-Driven Software Evolution Language
(MoDSEL) 528-529
Modeling Workflow Engine (MWE) 184
Model to Model (M2M) transformation 185
Model to Text (M2T) transformation 184
Model-View-Control (MVC) framework 229
molecule metaphor 509
MoProSoft 1373
Multi-Architecture Reusable Components 1935, 1952
development methodology 1941-1942, 1952
Multi-Constrained Optimal Path (MCOP) 1484
Multi-dimension Multi-choice Knapsack Problem
(MMKP) 1484
multi-layer structural complexity 1426
multilingual interface 1227
multilingual ontology 1225
Multimedia Development Corporation (MDeC) 1322
Multimedia Super Corridor (MSC) 1322
multiword lexemes 1226
mutation testing 2166

N
Nash solution 1486
National Genealogical Society (NGS) 1244
National Institute of Standards and Technology
(NIST) 2, 938, 1660, 1886
National Vulnerability Database (NVD) 938, 940
Nature-Inspired (NI) Toolbox 644
navigability metrics 1806
NI ELVIS 1075
remote labs 1076
nodespec 845
Nominal Group Technique (NGT) 1713
Non-Developmental Items (NDI) 2143
Non-Functional Requirements (NFR) 291, 1742
Non-Polynomial (NP) algorithms 1521
noosphere 892
normalized score merging 1228
null hypothesis 2130

O
Object Constraint Language (OCL) 185, 753
Objectives, Constraints, and Alternative (OC&A) solution approaches 2144
Object Management Group (OMG) 179, 186, 307, 600, 2119
object orientation 1881
Object-oriented Graphics Rendering Engine (OGRE) 1182
Object Oriented Programming System (OOPS) 1834
obsolescence of requirements 1739, 1753
Office of Government Commerce (OGC) 137
Off-the-Shelf (OTS) 579, 581
components 1900
on-demand self-service 2, 937
Online Analytical Process (OLAP) 737
OpenArchitectureWare (oAW) 186, 699
Open Archives Initiative (OAI) 1228
open competition projects 125
Open Data Base Connectivity (ODBC) 1772
Open Grid Services Architecture (OGSA) 397
Open Hypermedia System (OHS) 839, 843
Open Service Gateway initiative (OSGi) 704
Open Software Assurance Maturity Model (OpenSAMM) 18, 24
Open Source Projects (OSP) 127
Open Source Software (OSS) 915, 933, 1900-1901
Open Web Application Security Project (OWASP) 18, 1774
Operating System (OS) 965, 1851
operation support system 1586
Ordered Binary Diagram (OBB) 1994
Ordinary Differential Equations (ODE) 508, 511
organizational culture 1408
Organizational Innovation and Deployment (OID) 741
organizational memory 256
Organizational Process Performance (OPP) 741, 1597
organizational requirements 1464
orthogonal properties 1882

P
page-transition level 1024
Paperless Medical System (PMS) 1064
param elements 57
parameters
functional/non-functional 381, 383, 386-387, 389, 396
particle string encoding 653
Particle Swarm Optimization (PSO) 644
  Global-Best (gbest) 648
  Hybrid-Best (hbest) 649
  Local-Best (lbest) 649
passive replication 1503
pattern mining 413
perfective maintenance 1609, 1611
performance metrics 1803, 1812, 1817
persistent environment 842
Personal Process Management Tool (PPMT) 792, 829
Personal Software Process (PSP) 788, 802-803, 805, 807, 836-838, 1386, 1553-1554, 1565
PESTEL analysis 1714
physical faults 1502
pivot language 1224
Planning Assisted Tester for graphHical Systems (PATHS) 1835
Platform as a Service (PaaS) 3, 7, 1661
platform evolution 545
Platform Independent Model (PIM) 432, 596, 1609
Platform Specific Model (PSM) 432, 1609
posthuman condition 888
Pragmatic Programming (PP) 140
Prevention Cost of Quality (PCoQ) 1563
preventive adaptation 174
prior social capital process 872
private cloud 3
proactive adaptation 174
process culture 135
process improvement plan 1597
process quality 36
process quality metrics 1804
product quality 36
programming languages 628
program source code 260
progressive methods 1098
Project Management Body of Knowledge (PMBOK) 137
project quality 36
project sponsorship 1068
project trust management 872
proprietary software 916
protocol independence 167
prototyping 1070
PSP Guide/Experience Repository (PSPG/ER) 792
public cloud 3
Public Company Account Oversight Board (PCAOB) 1666

Q
qualitative reasoning 1651
Quality Assurance (QA) 36, 312, 1240, 1254, 1666
quality control 36
quality culture 35
Quality Driven Software Development (QUAD) 1609
Quality Measurement Management Tool (QMT) 733
quality metrics 1805
Quality Multidimensional Repository (QMR) 737
architecture 743
Quality of Web Service (QoWS) 1512-1513
Quantitative Project Management (QPM) 741, 1597
query translation 1224
Quines 507, 510
competing 517

R
railway signaling 1112
rank queries 262
RAPID 1370
Rapid Application Development (RAD) 138, 638, 640-641
Rapid Control Prototyping (RCP) 316-317
rapid elasticity 2, 937
Rapid Iterative Production Prototyping (RIPP) 638, 640
Rational Unified Process (RUP) 118, 122, 127, 1585
raw score merging 1228
Raydium 1181
reactive adaptation 173
Read Only Memory (ROM) 986, 998
Real-Time Software Components (RTSC) 194
recommender systems 1264
Reconfigurable Conveyor Systems (RCS) 552, 569
reengineering framework
class diagram 758
sequence diagrams 755
state machine diagram 758
use case diagram 754
refactoring
automated search 1788
conflicting pairs 1792
fully automated tools 1797
interactive tools 1796
list of techniques 1789
refinement patterns 1420
measures 1417, 1427-1428
regression models 1742, 1756
regression testing 2169
repository management 841
Representational State Transfer (REST) 1766
Requirements Capability Maturity Model (R-CMM) 203-204, 210
Requirements Engineering Good Practice Guide (REGPG) 203-204, 206
Requirements Engineering Process Maturity (REPM) 203
Requirements Engineering (RE) 203-204, 351-352, 357, 465, 1738
Secure Tropos 465
structured 1744
Requirements Visualization of UML (REVU) 289
Resource Constrained Project Scheduling (RCPSP) 1522
Resource Oriented Architecture (ROA) 1770
resource pooling 2, 937, 1886
reusable component development 1933
risk identification 1712
risk management 1711
robustness testing 51, 54
rolling horizon approach 1522
round robin merging 1228
Rule Execution Environment (REE) 1052
Running processes (RP) 845

S
Sarbanes-Oxley Act (SOX) 1659
scientific method 1640, 1648
Scrum 103
S-Cube service life-cycle 169
Secure Shell (SSH) protocol 940
Secure Sockets Layer (SSL) 1780
Secure Software Development Lifecycles (SSDL) 18
Security and Exchange Commission (SEC) 1661, 1674
Security Best Practices Compliance (SBPC) 970
Security Best Practices Index (SBPI) 956, 958
security constraints modeling 466
Security Content Automation Protocol (SCAP) 940
security functional criteria 2092
Security Goal Indicator Trees (SGIT) 1000, 1002, 1010
Securosis 18, 27, 33
Self-Serv 1503
<table>
<thead>
<tr>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>semantic matching 1514</td>
</tr>
<tr>
<td>semantic monitoring 1516</td>
</tr>
<tr>
<td>Semantic Web Rule Language (SWRL) 79, 1041, 1052, 1056</td>
</tr>
<tr>
<td>Semantic Web technologies 1963</td>
</tr>
<tr>
<td>SEMPATH</td>
</tr>
<tr>
<td>conceptual architecture 1041-1043</td>
</tr>
<tr>
<td>technical architecture 1044</td>
</tr>
<tr>
<td>sequence comparison 1094</td>
</tr>
<tr>
<td>sequence data 1094</td>
</tr>
<tr>
<td>sequence diagram 225</td>
</tr>
<tr>
<td>service availability</td>
</tr>
<tr>
<td>classifications 1503</td>
</tr>
<tr>
<td>definition 1501</td>
</tr>
<tr>
<td>service behavior 385-386, 396</td>
</tr>
<tr>
<td>service composition 2055, 2164</td>
</tr>
<tr>
<td>service discovery 167, 384, 393, 1964, 2054</td>
</tr>
<tr>
<td>Service-Dominant logic (SD-logic) 150</td>
</tr>
<tr>
<td>Service Hosting Environment (SHE) 1929</td>
</tr>
<tr>
<td>service interoperability 167</td>
</tr>
<tr>
<td>service orientation 1884</td>
</tr>
<tr>
<td>Service-Oriented Architecture Modeling Language (SoaML) 186, 192</td>
</tr>
<tr>
<td>Service-Oriented Computing (SOC) 381, 1498, 1765, 2051-2053</td>
</tr>
<tr>
<td>Service-Oriented Security Architecture (SOSA) 1771</td>
</tr>
<tr>
<td>Service-Oriented Software Reengineering (SOSR) 1765, 1784</td>
</tr>
<tr>
<td>service publication 2054</td>
</tr>
<tr>
<td>service science 150</td>
</tr>
<tr>
<td>service selection 386, 388</td>
</tr>
<tr>
<td>service syndication 1889</td>
</tr>
<tr>
<td>SHIELDS repository (SVRS) 1005</td>
</tr>
<tr>
<td>side-channel attacks 987</td>
</tr>
<tr>
<td>countermeasures 991</td>
</tr>
<tr>
<td>EMR analysis 990</td>
</tr>
<tr>
<td>eror analysis 988</td>
</tr>
<tr>
<td>power analysis 989</td>
</tr>
<tr>
<td>time analysis 987</td>
</tr>
<tr>
<td>signal engineering 1125</td>
</tr>
<tr>
<td>signature file 261</td>
</tr>
<tr>
<td>Single-Human Multiple-Robot System (SHMRS) 1142-1143</td>
</tr>
<tr>
<td>Situational Method Engineering (SME) 359</td>
</tr>
<tr>
<td>Six Sigma 792, 797</td>
</tr>
<tr>
<td>Snowball English stemmer 1227</td>
</tr>
<tr>
<td>socialization knowledge 1676, 1709</td>
</tr>
<tr>
<td>social relations 908</td>
</tr>
<tr>
<td>social software 902</td>
</tr>
<tr>
<td>TechScreen 906</td>
</tr>
<tr>
<td>Soft Systems Methodology (SSM) 336</td>
</tr>
<tr>
<td>software architecture 1906</td>
</tr>
<tr>
<td>design 2073</td>
</tr>
<tr>
<td>Software as a Service (SaaS) 2, 7, 124, 351, 380, 1661, 1895</td>
</tr>
<tr>
<td>Software Assurance Forum for Excellence in Code (SAFECode) 18, 26</td>
</tr>
<tr>
<td>software audits 43</td>
</tr>
<tr>
<td>software clones 416</td>
</tr>
<tr>
<td>Software Clustering 265</td>
</tr>
<tr>
<td>software configuration management 38, 860, 879, 1314, 1337-1338</td>
</tr>
<tr>
<td>software crisis 1551</td>
</tr>
<tr>
<td>software development 55</td>
</tr>
<tr>
<td>agile method 42, 69, 96, 140, 336, 340-341</td>
</tr>
<tr>
<td>architecture centered 1268</td>
</tr>
<tr>
<td>mobile devices 236</td>
</tr>
<tr>
<td>Software Development Lifecycle (SDLc) 17, 35, 404, 641, 1000, 1556</td>
</tr>
<tr>
<td>Software Engineering Body of Knowledge (SWEBOK) 1314, 1333, 1636, 2163, 2176</td>
</tr>
<tr>
<td>Software Engineering Institute (SEI) 204, 1322-1323, 1326, 1336, 1387, 1393, 1553, 1578</td>
</tr>
<tr>
<td>Software Engineering (SE) 253, 864, 1402, 1469, 1551, 2035</td>
</tr>
<tr>
<td>computational science 665-666</td>
</tr>
<tr>
<td>forward 1767-1768, 1786</td>
</tr>
<tr>
<td>reverse 1766-1767, 1772, 1786</td>
</tr>
<tr>
<td>software evolution 1905</td>
</tr>
<tr>
<td>Software Experience Bases (SEB) 1403</td>
</tr>
<tr>
<td>software faults 51</td>
</tr>
<tr>
<td>software language evaluation 2122</td>
</tr>
<tr>
<td>Software Languages Engineering (SLE) 2120</td>
</tr>
<tr>
<td>software maintenance 1609, 1633</td>
</tr>
<tr>
<td>Software Maturity Index (SMI) 1468</td>
</tr>
<tr>
<td>software metrics 40, 674, 1802</td>
</tr>
<tr>
<td>software model checking 1110</td>
</tr>
<tr>
<td>Software Process Assessment (SPA) 1315, 1364</td>
</tr>
<tr>
<td>Software Process Improvement and Capability Determination (SPICE) 1316, 1318</td>
</tr>
<tr>
<td>Software Process Improvement (SPI) 204, 1315, 1336, 1363, 1385-1386, 1393, 1414, 1552, 1585</td>
</tr>
<tr>
<td>benefits 1386</td>
</tr>
</tbody>
</table>
Software Process Improvement Initiation (SPINI) 1371
Software Process Improvement Network (SPIN) 1371
software process models 118
Software Product Line (SPL) 76, 1927, 1931, 1953
software project 119
software quality 35
Software Quality Assurance (SQA) 722
software reengineering 749
Software Requirement Specification (SRS) 118, 721, 728
software reuse 1903, 1928
software security 17-18, 23, 25
software test automation 1829
software testing 41, 724
solar cell characteristics 1074
SolarLab 1077
    hardware structure 1080
    remote labs 1082
source code analysis 677
source code documentation 677
source code management 670, 674
source code modularization 671
source code transformation 678
Source Lines of Code (SLoC) 1909
staged representation 1389
Standard CMMI Appraisal Method for Process Improvement (SCAMPI) 1314, 1316, 1323
statechart diagrams 1418
state machines 1418
    semantics 448
static content storage servers 1248
Strengths, Weaknesses, Opportunities, and Threats (SWOT) 1065, 1072
STRIDE model 2106
structural complexity 1425
structural metrics 1805
Structured Analysis and Structured Design (SASD) 750
subtask-flow level 1024
summative methods 2124
swarm description 655
Symbolic Transition System (STS) 1973, 2012
System Development Life Cycle (SDLC) 1065
System of Systems Methodologies (SOSM) 335-336, 341
System Requirements Specification (SRS) 1561
    system specialization 1464-1465
    system state goal 966
System Under Development (SUD) 1857
System Under Test (SUT) 1857, 1877, 2073, 2078
System Use Cases (SUC) 370
T
Team Software Process (TSP) 788-789, 805, 1386, 1550-1551, 1553-1554, 1565, 1580-1581, 1585, 1588
technical language dojo 1172
Technology Enhanced Learning (TEL) 1289
Temporal Logic Visualization Framework (TLVF) 297
test automation framework 1836
test case verification process 1845
Test-Driven Development (TDD) 50-51, 368, 385, 672, 679, 1590, 1676-1677
testing oracles 483
test oracles 1859
textual editor 702
Textual Modeling Framework (TMF) 185
threads-of-reasoning 1455
threat analysis 2078
threats coverage criteria 2092
timing faults 1502
TOPS 1369
Total Cost of Ownership (TCO) 124, 1603
Total Quality Management (TQM) 1588
traceability link recovery 265
track layout 1136
traditional mentoring (t-Mentoring) 1537
traffic and usage metrics 1804, 1813, 1818
translation disambiguation 1225
Traveling Salesperson Problem (TSP) 1522
triple junction cells 1074
Turing test 888
TXT e-solutions 1004
U
Ubiquitous Discovery Service (UDS) 275
Unified Modeling Language (UML) 179, 225, 242, 337, 749, 1766, 2070
    components process 1268
    modeling tools 181
unit testing 2168
Universal Description, Discovery, and Integration (UDDI) 52, 70, 1500
Universal Resource Locator (URL) 846
Universal Serial Bus (USB) 985
Universal Service Description Language (USDL) 394
Urban Search and Rescue (USAR) 1142
Usage Tracking Language (UTL) 1289, 1313
use case modeling 223
use case models 221
Use-case Responsibility Driven Analysis and Design (URDAD) methodology 1031
User Acceptance Testing (UAC) 632
user-centered design 2121
user feedback 1466
utility functions 1484

V
vector space model 261
Verification and Validation (V&V) 287, 309, 724, 733, 2163
independent (IV&V) 735
measurement quality 738
software plan (SV&VP) 735
versioning control server 855
Very Small Enterprises (VSE) 1363
Virtual Learning Environment (VLE) 1265
virtual teams 865, 870, 876, 878, 1407
Virtual User (VU) script 1832
Virtual Web Services (VWS) 1504
visual editor 702
Visual Programming Environment (VPE) 613
Vital Cut-Off Relay (VCOR) 1121
volatile requirements 1739-1740

W
waterfall life-cycle 165, 641
web content metrics 1805
Web Distributed Authoring and Versioning (WebDAV) 850
Web Ontology Language for Services (OWL-S) 1963, 2012
Web security metrics 1806
Web Service Business Process Execution Language (WS-BPEL) 1770
Web Services Description Language (WSDL) 167, 384, 398, 1035, 1500, 1518, 1961, 2012
Web Services (WS) 2164
website usability 1802
Web structural metrics 1819
Web usability metrics 1812
Weighted Scoring Method (WSM) 1490-1491
Weight Selection Algorithm 1841
white-box
reuse 1903
testing 1828, 2164
Work Breakdown Structure (WBS) 1525, 1557
Working Group 24 (WG24) 1339
Work System Method (WSM) 335-336
World Digital Library (WDL) 1223

Y
Yet Another Workflow Language (YAWL) 1040