Index

A

access routers (ARs) 244
Adaptation Database 64
Additive White Gaussian Noise (AWGN) 112, 121
ad hoc on-demand vector (AODV) 190-191
Aeronautical Data Networks (ADN) 20
Aeronautical Networks (ANs) 23
Aeronautical software defined radio (ASDR) 29
aircraft station (AS) 23
Air Traffic Control (ATC) 29
Air Traffic Management (ATM) 29
Akaike Information Criterion (AIC) 278
Analog to Digital Converter (ADC) 22
application programming protocols (APIs) 143, 147
Application-to-Network Interface (ANI) 153
asymmetric digital subscriber line (ADSL) 27
Automatic Dependent Surveillance-Broadcast (ADS-B) 56-57
available bit rate (ABR) 155
Average Variance Extracted (AVE) 234

B

Base Areas (BAs) 68-69, 95
Base Station (BS) 1, 70, 115
Base Station Controller (BSC) 70
Base Stations (BS) 24
Base Transceiver Station (BTS) 70
bit error rate (BER) 97-98, 103
Browne-Cudeck Criterion (BCC) 278
business process models (BPM) 150

C

Cabled-Wireless END USER ACCESS (C-W EUA) 109
Call Delivery (CD) 69
Call Delivery Scheme Using Base Area (CDBA) 76
call-to-mobility ratio (CMR) 241
care-of-address (CoA) 242, 245
Cellular IP 1-4, 6, 10, 17-18, 243, 259-261
Channel Indexing Function (CIF) 173
CIP network 1-4
cloud computing 213-228
Cloud Software as a Service (SaaS) 216
Cognitive Aeronautical Software Defined Radio (CASDR) 21
Cognitive Radio (CR) 167, 169
Cognitive Radio Networks (CRN) 167
Composite Reliability (CR) 234
Computer Online Forensic Evidence Extractor (COFEE) 223, 225, 228
Condominium Set Top Box (C-STB) 109
constant bit rate (CBR) 155, 200
Continuous Times Markov Chain (CTMC) 155
core network (CN) 139
costumer classification (Qi) 172
CPU Time Management 2, 6-7, 18
cross-layer interface (CLI) 117
customer relationship management (CRM) 217
Customer Unit (CU) 110
cyclic prefix (CP) 27

data source identifiers (DSID) 60
defuzzification 53-54
Denial of Service (DoS) 24
dense wave division multiplexing (DWDM) 154
department of defense (DoD) 22
digital audio broadcast (DAB) 27
digital signal processor (DSP) 22, 154
digital subscriber line (DSL) 107
digital video broadcast (DVB) 71
discrete cosine transform (DCT) 119, 123
discrete times markov chain (DTMC) 161
domain mobility agent (DMA) 244
domain name system (DNS) 224
Doppler spread 26-27, 121
downlink (DL) 173
Driving Profile 182-183, 186
Driving Time 182
dynamic host configuration protocol (DHCP) 222

E
Elastic Compute Cloud (EC2) 214
electronic data interchange (EDI) 217
electronic news-gathering tools (ENG) 264
enterprise resource planning (ERP) 217
entity-relationship-attribute (ER) 58
Error Sensitivity Descriptor (ESD) 117, 119
European Telecommunications Standards Institute (ETSI) 97
European Union (EU) 20
Extended Markup Language (XML) 63
extrinsic information transfer (EXIT) 97-99

F
Federal Aviation Administration (FAA) 20
Femtocell Access Points (FAPs) 106
femtocells 105-108, 116
Field Programmable Gate Array (FPGA) 22, 33
file transfer protocol (ftp) 158
foreign agents (FAs) 241
Forensic Tool Kit (FTK) 223, 225
fuzzy inference 52-54

G
gatekeeping dimension 274
Gateway Foreign Agent (GFA) 243
General Purpose Processor (GPP) 22
Global position system (GPS) 31
Global System for Mobile (GSM) 69
Goodness of Fit Indices (GFIs) 278
Ground Station (GS) 23

H
Hierarchical Mobile IP (HMIP) 241, 243
home agent (HA) 241-242, 244
Home Location Register (HLR) 68-69
Hop-by-Hop routing 3-4, 7, 19
Huffman Encoding 120, 123
Human Factors 143, 188
Human-to-Human (H2H) 133

I
identification, authentication, authorization and accountability (IAAA) 221
inertial measurement unit (IMU) 31
information technology decision makers (ITDMs) 226
Infrastructure as a Service (IaaS) 216
Institute of Medicine (IOM) 145, 151
Intercarrier interference (ICI) 28
interleavers 98, 103
intermediate frequency (IF) 22
International Telecommunication Union (ITU) 23
internet protocol (IP) 24, 222, 224
Internet Protocol Security (IPSec) 223
Iterative Behavior of Linear Turbo Systems 97-98

J
Joint Tactical Radio System (JTRS) 22
Least Significant Bits (LSB) 120

L
line of sight (LOS) 23, 25, 110
link expiration time (LET) 190, 192-193, 195
local area networks (LAN) 221
local mobility agent (LMA) 244
Location Area (LA) 68-69
location management (LM) 68-69
low-density parity-check codes (LDPCs) 103

M
machine communication identity module (MCIM) 136
machine-to-machine (M2M) 133
macro-registration area (MacRA) 245
Markov reward models (MRM) 152-153
Mean Square Error (MSE) 122
media access control (MAC) 119, 222
media gatekeeping model 262, 268, 279, 281, 283
media gateway nodes (MGW) 153
Mel-Frequency Cepstral Coefficients (MFCC) 119
message authentication code (MAC) 135
micro-registration areas (MicRA) 245
mobile Ad hoc networks (MANETs) 50
Mobile Hosts (MHs) 1
Mobile Switching Center (MSC) 70
Mobile Terminals (MTs) 68-69
mobility agent (MA) 243
model-based systems engineering (MBSE) 58, 66
Most Significant Bits (MSB) 120
Moving Picture Experts Group (MPEG) 37
Multipath fading 121, 212

N
National Aeronautics and Space Administration (NASA) 20
National Airspace System (NAS) 56-57
National Institute of Standards and Technology (NIST) 214
National Safety Council (NSC) 187
NetWitness Investigator 225, 227
network interface cards (NIC) 221
Network-to-Network Interface (NNI) 153
news production and delivery technologies (NPDT) 276
Next Generation Air Transportation System (Next-Gen) 56-57
next generation networks (NGNs) 152
Non Line-of-Sight (NLOS) 121
normalized routing load (NRL) 202
Notice to Airmen (NOTAM) 57

O
Open Systems Interconnection Basic Reference Model (OSI) 117, 119
Optimized Link State Routing (OLSR) 50
Organizational implementation 221
Orthogonal Frequency Division Multiplexing (OFDM) 27, 117, 120, 123
over-the-air management (OAM) 136

P
packet arrival rate 1, 6-10, 51, 247, 253-254, 259
Packet Data Convergence Protocol (PDCP) 139
packet delivery ratio (PDR) 202, 206
packet processing rate 1, 6-10
Partial Least Squares (PLS) 229-230, 238
partial overlapped link (POL) 155
Particle Swarm Optimization (PSO) 1-2, 5
Peak Signal-to-Noise Ratio (PSNR) 122
Pervasive Applications 143
PhoneListener API 183
Platform as a Service (PaaS) 216
probability mass function (PMF) 163
public key infrastructure (PKI) 223
public switched telephone network (PSTN) 24

Q
Quality-of-Service (QoS) 50, 190

R
radio frequency (RF) 172
Radio Technical Commission for Aeronautics (RTCA) 64
random access memory (RAM) 215
Random Early Detection (RED) 48
redundant arrays of independent disks (RAID) 219
regional FA (RFA) 242, 245
Region Of Interest (ROI) 118
registration area (RA) 242
Relay Stations (RSs) 107
Reliable Mobile Multicast Protocol (RMMP) 3
Root Mean Square Error of Approximation (RMSEA) 278
route disconnections (RERR) 192
route replies (RREP) 192
route requests (RREQ) 192

S
satellite communication (SATCOM) 22
Secure Authentication for EnCase (SAFE) 225
secure sockets layer (SSL) 223
self-organizing neural map (SOM) 153
Sensor Data 143-150
Sensor Networks 142-143, 147-151
Service Area (SA) 69
Session Data Unit (SDU) 139
Session Initiation Protocol (SIP) 38
Signal to Noise Ratio (SNR) 172
simulation parameters 9
Small Office 155
Small Office-Home office (SOHO) 105
Software Communications Architecture (SCA) 22
Software Defined Radio (SDR) 120
speed-aware routing protocol (SARP) 190, 192, 194
Structural Equation Modelling (SEM) 275
Subscriber Stations (SS) 24
supervisory control and data acquisition (SCADA) 133
supplier relationship management (SRM) 217
Supply Chain Management (SCM) 230
Index

T
Terrestrial Digital Video Broadcasting 97
Threat Management Gateway (TMG) 222
Threshold Speed 182-184
Time-To-Cache (TTC) 75-76
Time-To-Delete (TTD) 75-76
transmission control protocol (TCP) 201
Turbo Codes 97, 99, 103-104, 131
Type of Service (ToS) 48

U
Unequal Error Protection (UEP) 120
Unified Modeling Language (UML) 148
uniformly random allocation 176
Universal Access Transceiver (UAT) 57
Universal Mobile Telecommunications System (UMTS) 71
uplink (UL) 173
user datagram protocol (UDP) 201
user equipment (UE) 107
User-to-Network Interface (UNI) 153

V
variable bit rate (VBR) 155
Vector Quantifications (VQs) 161
Vendor Managed Inventory (VMI) 229, 238
Video Coding Experts Group (VCEG) 37
virtual private networks (VPN) 223
Visitor Location Register (VLR) 69
Visual Information Fidelity measure (VIF) 122
Voice over Internet Protocol (VoIP) 37

W
Wavelet Packet Multiplexing (WPM) 120, 123
Weighted Fair Queuing (WFQ) 48
wide area networks (WAN) 221
wide-sense stationary uncorrelated (WSSUS) 26
wireless local area networks (WLAN) 36
wireless sensor network (WSN) 144
Work Loss Costs 187
World Radio communication Conference (WRC) 29

Z
Zone and Link Expiry based Routing Protocol (ZLERP) 193