Index

3rd Generation Partnership Project (3GPP) 2, 30

A
adaptive modulation and coding (AMC) 268
Adaptive Streaming 52, 54-55, 58, 63, 66-69, 71-72, 185, 349
Ad-hoc On-demand Distance Vector (AODV) 104, 269
Analysis Of Variance (ANOVA) 228
application-level QoS (AQoS) 201
Asymmetric Digital Subscriber Line (ADSL) 5, 43, 172
Authentication, Authorization and Accounting (AAA) 27
Automatic Repeat Request (ARQ) 123, 247

B
Beacon-driven Leader Based Protocol (BLBP) 249
Binary Phase Shift Keying (BPSK) 143
Bit Error Rate (BER) 100, 141
BitTorrent 2, 31, 34, 38, 40, 43, 48, 50, 61, 68, 75, 93-95, 130, 156-157, 199
Bloom filter 329-336, 338-339, 345, 347-348
Border Gateway Protocol (BGP) 322

C
Call Session Control Functions (CSCF) 9
CanuMobiSim 110
Care of Addresses (CoA) 291
Carrier Sense Multiple Access (CSM) 77
Classless Inter-Domain Routing (CIDR) 322, 347
Client-Server (CS) 31
Client-Server delivery 27
coarse-grain quality scalable coding (CGS) 60
Complement Code Keying (CCK) 244
Computational Efficiency 46, 48
collection identifier (CID) 271
Constant Speed Motion (CSM) 111
Content Addressable Network (CAN) 39
Content Delivery Network (CDN) 7, 53
Content Dependent Network 164
correspondent node (CN) 319
cross-layer and P2P based solution (CLAPS) 84, 132
Cross-Layer Design 86-87, 91, 93-94

D
data handling 325
De-blocking Filter 159
Decoding DePendency (DDP) 254
Decoding Order Number (DON) 253
Deep Packet Inspection (DPI) 323
Delay Tolerant Network (DTN) 270
Destination Sequenced Distance Vector (DSDV) 103
DHT-aided Chunk-driven Overlay (DCO) 179
Differential Binary Phase Shift Keying (DBPSK) 98
Differential Quadrature Phase Shift Keying (DQPSK) 98
Digital Rights Management (DRM) 45, 188
Direct Sequence Spread Spectrum (DSSS) 98
Discrete Cosine Transform (DCT) 56, 88, 122
Discriminant Analysis 196, 227-229, 235, 237
Distance Routing Effect Algorithm (DREAM) 104
Distributed Coordination Function (DCF) 101
Distributed Hash Table (DHT) 11-12, 39, 76
Domain Name System (DNS) 39, 322
DONet 51, 62, 94, 158, 194, 239, 257-258, 264
Dynamic Adaptive Streaming over HTTP (DASH) 68
Dynamic Source Routing (DSR) 81, 104, 106, 115, 269, 276
Dynamic Topology 78, 97, 120, 131
Index

E
Electronic Programme Guide (EPG) 202
Enhanced Distributed Channel Access (EDCA) 250
Error Concealment 120, 123, 125, 139-140, 150, 157, 160, 205, 246-247
Error Resilience 61, 89, 119, 121, 123-125, 145, 150-152, 157, 160, 205, 254

F
FastTrack 34-36, 49
Fiber-To-The-Home (FTTH) 4
File Delivery over Unidirectional Transport (FLUTE) 243
Fisheye State Routing (FSR) 104, 107
Fixed-Mobile Convergence 1, 5
Flexible Macro-block Ordering (FMO) 123
Flexible MDC (F-MDC) 184
Fluid Traffic Model (FTM) 111
Forwarding Identifier (FId) 329
Frame Error rate (FER) 100
Frequency Hopped Spread Spectrum (FHSS) 98

G
Global Positioning System (GPS) 105, 143
Gnutella 11-13, 28, 34-37, 40, 49-50, 127-128, 142
Group of Pictures (GOP) 59, 122, 132, 245

H
heterogeneous asynchronous multi-source streaming (HAMS) 165
home agent (HA) 289
Home Location Register (HLR) 9
Home Subscriber Server (HSS) 9
hop-to-live (HTL) 34
Hotspot 3-5
HotStreaming 258, 264
Hybrid Error Correction (HEC) 248

I
IEEE 802.11p 96, 108-109, 113, 117, 139, 142-143, 161
iMesh 34, 36, 40, 49, 75
Initial Quality Adaptation (IQA) 62, 186
Instantaneous Decoding Refresh (IDR) 59, 133
Instantaneous Decoding Refresh (IDR) frame 59, 133
Intelligent Driver Model (IDM) 111
Interactive Connectivity Establishment (ICE) 223
International Telecommunications Union (ITU) 207
Internet Engineering Task Force (IETF) 102, 253
Internet Protocol suite (TCP 322, 324
Internet Service Providers (ISPs) 4
Interrogating Call Session Control Function (I-CSCF) 9
Intrazone Routing Protocol (IARP) 269
IP-Connectivity Access Network (IP-CAN) 8
IP Multimedia Core network (IM CN) 8

J
Jitter 80-81, 88, 120, 123, 176, 201, 204-205, 236, 239, 246
Joint Video Team (JVT) 121, 251

K
KaZaA 12, 34, 36-37, 40, 43, 49, 75, 127, 142
KQStream 260, 263

L
Layered Coding (LC) 89
Layered Encoding 54-55, 58, 63, 66, 69, 73, 185, 349
Leader-Based Protocol (LBP) 248
LimeWire 35, 49, 75
line of sight (LOS) 99-100, 140, 268
Link-Id Tag (LIT) 336
local fixed node (LFN) 290

M
Mean Opinion Score (MOS) 206
Media Aware Network Elements (MANEs) 254
Media Gateway Control Function (MGCF) 9
Medium Access Control (MAC) 114, 134, 264, 268
medium-grain quality scalability (MGS) 60
Minimum Spanning Tree (MST) 180
Mobile Ad Hoc Networks (MANETs) 74, 96-97, 119, 141, 182
mobile network (MN) 289
mobile network prefix (MNP) 289
More Reliable Group (MRG) 249
Morpheus 36, 50
Motion Compensated Temporal Filtering (MCTF) 65
Moving Picture Experts Group (MPEG) 121
MRG Service Period (MRG-SP) 250
Multicast Overlay Spanning Tree (MOST) 132, 141
multihomed mobile node 319
Multimedia Broadcast 248, 263
Multimedia Messaging Service (MMS) 203
Multiple Description Coding (MDC) 54, 63, 81, 89,
122, 181, 243, 251, 265
multiple descriptions (MDs) 64
multiple input, multiple output (MIMO) 244, 268
multiple objective optimization (MOO) 170
Multiple Path Transport (MPT) 66
MultiProtocol Label Switching (MPLS) 331
multi-tree streaming 83

N
NACK Oriented Reliable Multicast (NORM) 243
NEMO_SIM simulator 299, 302, 317
Network Abstraction Layer (NAL) 59, 121, 170,
174, 251
Network Abstraction Layer unit (NALU) 121, 150
Network Address Translation (NAT) 3, 258, 323
Network Address Translators (NATs) 223
Network Efficiency 45
network-level QoS (NQoS) 201
network mobility (NEMO) 291

O
OPNET Modeler 272
Optimized Link State Routing (OLSR) 104, 270,
278
orthogonal frequency division multiple access
(OFDMA) 268

P
P2P-Leveraged Mobile Live Streaming (P2PMLS)
258
Packet Error Rate (PER) 100, 245
Packet Forwarding 327
PAyload Content Scalability Information (PACSI)
254
Peak Signal-to-Noise Ratio (PSNR) 56, 150
PeerCast 35, 42, 50, 127, 129, 158, 199
PeerMob P2P 13-16, 19-20, 23, 27
peer protocol 17, 19
Peer-to-Peer Streaming Protocol (PPSP) 26
peer-to-peer television (P2P TV) 197
Point Coordination Function (PCF) 101
point-to-multipoint (PMP) 268
prefix scope binding update (PSBU) 292
proactive link protection (PLP) 82
Progressive Quality Adaptation (PQA) 62, 186
Propagation Model 98, 100, 145, 160
Proxy Call Session Control Function (P-CSCF) 9

Q
Quality-of-Experience (QoE) 134, 186, 196
Quality-of-Perception (QoP) 205
Quality of Service (QoS) 41, 169, 196
Quality scalability 59-60, 62, 122, 250, 252
Quarter Common Intermediate Format (QCIF) 132,
143

R
Random Way Point (RWP) 109
Really Simple Syndication (RSS) 324
Real-Time Protocol (RTP) 121, 150, 181
Real Time streaming (RT) 41
receiver-oriented adaptation (ROA) 82
Region-of-Interest (ROI) 141, 163
Resource Reservation Protocol (RSVP) 247, 263
Reversible Variable Length Codes (RVLC) 247
round trip time (RTT) 61, 168
Route Discovery (RD) 269

S
Scalable Gossip Membership (SCAM) 257
Scalable Video Coding (SVC) 54, 58, 122, 131, 162-
163, 243, 250, 265
Server diversity 80-81, 91
service level agreements (SLAs) 234
Service Oriented Architectures (SOA) 323
Serving Call Session Control Function (S-CSCF) 9
Session Description Protocol (SDP) 253, 264
Session Initiation Protocol (SIP) 254
Sharp Hybrid Adaptive Routing Protocol (SHARP)
104
Signal-to-Interference-Noise Ratio (SINR) 100, 140
Signal-to-Noise Ratio (SNR) 59
Simple Transversal of UDP through NAT (STUN)
223
Simulcast 243-244, 250, 265
single-tree streaming 82-83
Spatial scalability 60, 122, 250, 252
SplitStream 42, 48, 260-262
Stanford P2P Multicast protocol (SPPM) 61
Streaming over P2P (Sop) 45
Subscription Locator Function (SLF) 9
Super Peer Percentage 22
SVC stream 165, 175
Index

**T**
- Temporally Ordered Routing Algorithm (TORA) 104
- Time-To-Live (TTL) value 12
- Topology Dissemination Based on Reverse Path Forwarding (TBRPF) 269
- Topology Hiding Inter-network Gateway (THIG) 9
- Topology Management 260, 326
- tracker protocol 17-18
- Transcoding 54-58, 63, 69-73, 170, 237, 250, 349
- Transmission Control Protocol (TCP) 101

**U**
- Unequal Error Protection (UEP) 64
- uniform routing 104-105, 107
- Unlicensed Mobile Access (UMA) 2
- User Datagram Protocol (UDP) 101
- User Entities (UEs) 14
- User Equipment (UE) 8

**V**
- VanetMobiSim 109-110, 112, 143-144
- Vehicular Ad Hoc Network (VANET) 120

- Video Coding Layer (VCL) 121, 251
- Video-on-Demand (VoD) 186, 197
- Video Redundancy Coding (VRC) 123
- Virtual Private Networks (VPN) 323
- Voice over Internet Protocol (VoIP) 1

**W**
- Wilks’s lambda test 228
- Wireless Application Protocol (WAP) 201
- Wireless Local Area Network (WLAN) 2
- Wireless Routing Protocol (WRP) 104
- Worldwide Interoperability for Microwave Access (WiMAX) 268

**Z**
- Zone-based Hierarchical Link State (ZHLS) 104
- Zone Routing Protocol (ZRP) 104, 269