

Index

Symbols

7C model 111, 112, 115, 116, 118, 123
 802.1X 30, 31, 32, 33, 43
 α -secure Key Distribution Schemes (α -sKDSs)
 170, 171

A

abstract syntax 73, 74, 77, 78, 79, 80, 81,
 86, 88, 89, 90
 access control 29, 30, 31, 35, 41, 42, 43,
 63, 103, 138, 192, 247, 248, 249,
 251, 252, 255, 259
 access control lists (ACLs) 139, 247
 access points (APs) 31
 access to medical literature 112, 113
 active digital aura (ADA) 167
 active digital aura (ADA) module 167
 activities of daily care 148, 149, 150
 activities of daily living (ADL) 143, 151
 activity-aware server 153, 154
 ad hoc network 139, 140, 166
 adopted information 71
 advanced encryption standard (AES)
 33, 173, 192
 Aiemagno, Sonia A. 4, 21
 alcoholism 4
 ambient displays 143, 144, 145, 147, 148,
 151, 156, 157, 158
 ambulatory cardiac monitoring 131
 America's Health Insurance Plans (AHIP) 59
 American College of Radiology (ACR) 84

American National Standards Institute (ANSI)
 59, 84
 AMON prototype 210, 211
 angle of arrival (AOA) 264
 anonymity 134, 139, 140, 200
 anorexia nervosa 129, 132
 application availability 290, 295
 apraxia 93
 arp spoofing option 37
 artificial entities 92, 100, 101, 102, 103,
 104, 105, 106, 107, 108
 artificial objects 272
 assignment constraint 296
 asynchronous connection less (ACL) 191
 asynchronous transfer mode (ATM) 185
 audio-visual data 71
 audit log 63
 authentication, authorization and accounting
 (AAA) protocols 32
 authentication header (AH) 34
 authorisation policy 247, 256
 average heart-rate 219, 220
 awareness 145, 158, 212, 269

B

back filled entries 11
 barcode 1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 16,
 17, 20, 169
 barcode ed application 5, 8, 9, 12
 barcode ed skills 8
 base station controller (BSC) 193
 battery-powered entities 130

battery lifetime 290, 295
 blood glucose 58, 67, 182
 blood oximetry 211
 blood pressure sensor (BPS) 254
 Blue Cross and Blue Shield Association
 (BCBSA) 59
 BMA policy model 246, 247
 body-coupled communication (BCC)
 159, 160, 166
 body area network (BAN) 164, 176, 210, 287
 body sensor network (BSN) 165, 167
 bulimia 280, 281

C

cell-ID 264, 268
 central repository (CRep) 26
 chaining message authentication code protocol
 (CCMP) 33
 chronically ill 1, 2, 4, 13, 19, 141, 160
 chronic kidney disease (CKD) 2, 20
 chronic obstructive pulmonary disease (COPD)
 130, 182
 chronic pain 129, 132
 cipher protocol 33
 circulatory collapse 272
 CKD patients 2, 6, 7, 17, 19, 20
 clinical decision support system (CCDSS) 95,
 98, 108
 clinical usage 173
 clustering algorithm 266
 Cochrane Library 117
 code division multiple access (CDMA) 67
 collective intelligence 111, 112, 115, 116,
 120, 123
 competition 208, 209, 210, 211, 212, 220,
 221, 222, 223, 231, 232, 233, 234,
 235, 236, 237, 238, 239, 240, 243
 Completely Automated Public Turing test to tell
 Computers and Humans Apart (CAPT-
 CHA) 20
 computer-based applications 47
 computer-based tools 211
 conceptual structure 72, 78, 89
 consumer purchase 49
 consumer purchase model 50
 consumer subscription 49

consumer subscription model 50
 context 20, 31, 72, 75, 79, 80, 82, 94,
 122, 131, 145, 146, 153, 165, 168,
 171, 174, 232, 245, 246, 248, 252,
 254, 255, 259, 260, 261, 262, 263,
 264, 265, 268, 269, 271, 283, 285,
 286, 287, 288, 289, 291, 304
 context-aware 157, 261
 context management 261, 262
 cooperative clinical decision support system
 (CCDSS) 98
 cryptographic functions 33

D

data security 129, 130, 132, 135, 185, 195,
 200, 203, 289
 decision support system (DSS) 95, 97, 98, 108
 denial of service (DoS) 36, 37
 departmental information systems (DIS) 26
 Department of Health and Human Services
 (DHHS) 51
 Deterministic Key Pre-Distribution Scheme
 (DPKPS) 172
 diagnosis-related tasks 92
 diagnosis algorithm 102
 diagnostic module 102
 digital form 78
 Digital Music Library (DML) 212, 218
 disarthria 93
 disease monitoring 131
 drug interaction database 117

E

e-activity 153
 ECG model 77, 84
 Egyptian era 92
 electrocardiogram (ECG) 131, 160, 213
 electromagnetic compatibility (EMC) 200
 electronic health record (EHR) system 45, 247
 electronic monitoring 9
 electronic patient record 24
 electronic pharmacopoeias 112, 113
 emergency flowers 154, 155
 employee support model 50
 encapsulating security payload (ESP) 34
 end-to-end delay 290

Index

end of study compliance 18
enhanced-observed time difference (EOTD) 264
epileptic seizure detection 287, 288, 289, 290, 304
equivalency 82
ettercap tool 36
evaluation model 58
event-condition-action (ECA) 250
event-condition-action (ECA) policies 250
event-driven model 160
evidence-based medical guidelines (EBMG) 117
evidence-based medical procedures 248
evidence-based medicine 112, 113, 114
extensible authentication protocol (EAP) 30

F

familiarity 13, 260, 261, 262, 264, 265, 266, 268, 269
free model 50
frequency hop synchronization (FHS) 191
fundamental challenge 130, 203

G

general practitioner 72, 122
geographic objects 272
getting lost behaviour 283
glanceable interface 208, 209, 210, 212, 220, 223, 231, 236, 239
global system for mobile communication (GSM) 185
group ad-hoc network (GN) 189
GSM cell 268
GSM networks 264, 267
GSM phone 265

H

health-related quality 4
Health 2.0 46, 52
healthcare applications 43, 52, 72, 75, 76, 80, 83, 165, 170, 178, 179, 245, 246, 258
healthcare environment 25, 45, 135

healthcare information 24, 25, 47, 57, 68, 69, 111, 112, 113, 115, 117, 120, 123, 246, 247, 248, 249, 258
healthcare information system 111, 112, 113, 117, 120, 123
healthcare institution 25, 30, 41
healthcare professionals 24, 25, 26, 28, 35, 75, 76, 99, 108, 183, 187, 237, 246, 248
healthcare provider 46, 53, 287
healthcare system 56, 75, 76, 77, 83, 137, 140, 159, 160, 161, 182, 184, 192, 200, 285, 286, 304, 305
healthcare treatment 24
health informatics 5, 113, 124
Health Insurance Portability and Accountability Act (HIPAA) 170
health level seven (HL7) 46, 58
health monitoring 25, 58, 160, 166, 174, 203, 208, 209, 210, 211, 237, 241, 288
healthy lifestyle 2
heart rate 149, 214, 217, 218, 220, 226, 229, 241
Helzer, John E. 4, 20, 21
hospital-based 5, 59, 182
hospital patient record (SAM) 28
host controller interface (HCI) 190
hypertension 129, 132, 142
hyper text transfer protocol (HTTP) 104

I

ICT environment 73
iHospital 145, 146
individual-social dichotomy 119
industrial scientific medical (ISM) 189
information model 104
information systems 24, 27, 42, 63, 67, 68, 69, 108, 111, 112, 113, 114, 115, 116, 120, 123, 177, 246, 258, 270, 271, 277, 282, 284
Information technology (IT) 45
infra-red cameras 246
Infrared Data Association standard (IrDA) 186
Institute of Electrical and Electronics Engineers (IEEE) 32, 200

integrated services digital network (ISDN) 185
 integrated voice response system (IVRS)
 1, 2, 12
 integration model 27
 integrity 28, 29, 34, 41, 44, 62, 100, 129,
 130, 132, 134, 170, 173, 186, 203,
 252
 International Organization for Standardization
 (ISO) 73
 internet key exchange (IKE) 34
 intervention 2, 3, 4, 5, 58
 IP security 33
 IP security (IPSec) 33
 IVR-based data collection 5

K

key distribution 173
 key distribution center (KDC) 171
 key management 175
 knowledge management 114, 123, 284

L

lightweight directory access protocol (LDAP)
 32
 link control and adaptation protocol (L2CAP)
 190, 191
 link manager (LM) 190
 literacy skills 5, 7, 9, 10, 18
 local syntax 77, 78, 89
 location-based 261, 263
 longitudinal data 122

M

m-health 45, 65, 178, 180, 182, 185, 187,
 188, 285, 287, 306
 m-health system 180, 287, 288, 289, 290,
 291, 292, 294, 296, 297, 303
 MADE middleware 289, 291, 302, 305
 man-in-the-middle (MITM) 36
 Medical Implant Communication Service
 (MICS) 163
 medical literature 112, 113, 114
 medical records 48, 62, 64, 129, 130, 150,
 246, 248, 249, 264, 269
 medical system 142, 205, 268

medical team 92, 105
 Medicine Working Group 114, 124
 medium access control (MAC) 31, 176, 177
 memorandum of understanding (MOU) 59
 message integrity check (MIC) 31
 methodology 2, 98, 148, 161, 233, 243
 Metronome condition 225, 229, 230
 Microsoft 3, 32, 43, 44, 46, 49, 52, 64,
 66, 214, 243
 mobile computing module 212
 mobile healthcare information 111, 112, 113,
 117, 120, 123
 mobile healthcare information system
 111, 112, 117, 120, 123
 mobile personal health record (MPHR) 45
 mobile PHR 60
 mobile PHR system 63
 mobility 146, 157, 158, 265, 266, 267
 Mobility Index 265, 266, 267
 multi-media 71
 Mundt, James C. 4, 22
 musical feedback 208, 209, 212, 213, 223,
 225, 226, 231, 239
 music finding module 213

N

National Committee on Vital and Health Statis-
 tics (NCVHS) 47
 National Health Information Network (NHIN)
 59
 National Health Service (NHS) 247
 Network Access Point (NAP) 187, 188,
 189, 191, 201
 network attacks 25, 36
 network connectivity 264
 network formation 168
 next action module 213
 non-intrusive 209, 210
 NP-hard 295, 299, 305
 nutrition monitoring systems 20

O

off-line processing 210
 open systems Interconnections (OSI) 73
 OSGi framework 286, 303, 305

OSI presentation layer model 77
outpatient dialysis unit 5

P

pace information 212
parking lot compliance 18
PDA technology 3
personal area network (PAN) 189, 210
personal digital assistant (PDA)
2, 20, 161, 183, 188
personal health information (PHI) 51
personal health record (PHR) 45, 60
personal health record system functional model
(PHR-S FM) 58
personal identifier (PI) 166
personal records of healthiness 282
persuasive interfaces 238
persuasive technologies 211
pervasive 21, 22, 90, 141, 142, 143, 157,
158, 176, 178, 183, 202, 205, 242,
245, 261, 269, 283, 306
pervasive computing systems 245
pervasive healthcare application 258
pervasive technologies 143
Pharmaca Fennica 117, 118, 121, 126
pharmacology database 117
pharmacopoeias 113
photoplethysmography (PPG) 186
photoplethysmogram (PPG) 161
PHR functional model 67
PHR systems 45, 46, 48, 49, 52, 53, 55,
59, 60, 62, 64, 67, 68
physiological state 212
Piette 3, 4, 21, 22
Piette, John D. 3, 4, 21, 22
place lab system 262
plain old telephone service (POTS) 185
policy enforcement point (PEP) 35, 249
Ponder policy language 250
post-study interview 11
professional mobile radio (PMR) 196
public-key cryptography 172, 173
public switched packet data network (PSPDN)
193

Q

quality of care 180, 181, 285
quality of service (QoS)
183, 187, 286, 305, 306
Questionnaire for User Interface Satisfaction
(QUIS) 8

R

radio frequency (RF) 195
Rand, C. S. 18
real-life environment 129, 132
real-time analysis 210
real-time physiological monitoring 208, 209
record managed objects (RMO) 251
remote access dial-in user service (RADIUS)
32
remote monitoring systems 182, 286
research prototype 208
role-based access control (RBAC) 29, 246
rule-based DSS 95

S

scanner input 2
score function 221, 222, 240, 243
secure digital (SD) card 213
secure logical network 35
secure socket layer (SSL) 67, 104
secure socket layer (SSL) protocol 104
secure wireless architecture 25, 35
security domain (SD) 170
security protocols 25, 30, 31, 34, 35, 134,
174
sensing module 212
sensor managed objects (SeMO) 251
service discovery protocol (SDP) 191
short message service (SMS) 67, 198
SIM card 63
simple object access protocol (SOAP) 104
situation flowers 154, 155
smart body-worn medical sensors 160
smart environment 145, 153
spatial health system 271, 282
spatial representations 272, 273
spatial scale 274, 283
spatiotemporal behaviour patterns 273

spatiotemporal developments 271, 274
 spreading of diseases 272
 stakeholder 75
 Stephen Intille 3
 storage capacity 56
 Stuart, Gail W. 4, 22
 subject-return authorisation (SRA) 252
 subject managed objects (SMO) 250
 symbolic data 266

T

target-return authorisation (TRA) 252
 task assignment 296, 297, 306
 task redistribution 285, 286, 287, 289, 290,
 291, 303, 304, 305
 technical committee (TC) 84, 196
 telemedicine 91, 110, 133, 135, 141, 142,
 178, 181, 186, 187, 204, 205, 206,
 238, 243, 286, 306
 telemedicine solutions 129, 130
 temporal key integrity protocol (TKIP) 31
 testbed 36
 time difference-of-arrival (TDOA) 264
 time division multiple access (TDMA)
 193, 194, 196, 200
 time division multiplexing frame (TDM)
 193, 200
 tobacco use 2
 training zones 218, 224, 235, 236, 237
 transfer syntax 73, 75, 77, 78, 86, 87, 88,
 89
 transport layer security (TLS) 31
 trend sign 74
 TripleBeat's Digital Music Library (DML) 218
 TripleBeat system 208, 210, 214, 223, 231,
 239
 trusted computing (TC) 140, 141
 typical running 220

U

unified modeling language (UML) 74, 81
 United States Department of Agriculture
 (USDA) 3
 universal mobile telecommunications system
 (UMTS) 185, 201

universal serial bus (USB) 55, 187
 user-centric systems 210
 user identification 29, 42, 159, 160, 167,
 168, 171, 173, 175, 179

V

VEPR architecture 25
 virtual competition 208, 209, 212, 220, 223,
 231, 233, 234, 239
 virtual electronic patient records (VEPR) 24
 virtual LAN access control lists (VACL) 34
 virtual LANs (VLANs) 32
 virtual private networks (VPNs) 34
 vital sign 71, 72, 73, 74, 75, 76, 77, 79,
 80, 81, 82, 83, 87, 89, 129, 130,
 132, 144, 149, 150, 160, 173, 182,
 183, 187, 188, 203, 211, 242, 273,
 281

W

wearable physiological monitoring 210, 211
 web-based interface 26
 web-services 27
 web interfaces 27
 Weiler, Kay 4, 22
 Wi-Fi protected access 31
 wireless architecture 25, 29, 35, 41
 wireless body area networks (WBANs) 163
 wireless body sensor networks (BSNs) 159
 wireless local area network (WLAN) 30
 wireless medical telemetry systems (WMTS)
 163
 wireless personal networks (WPANs) 163
 wireless technology 24, 25, 28, 29, 165,
 183, 186, 189, 194, 200
 wireless version 25
 work community 111, 112, 120, 123, 126
 workflow 94, 112, 114, 245, 247, 248,
 249, 250, 254, 255, 256, 257, 258,
 259, 292
 workout goal 221, 224, 227, 229, 234
 World Wide Web Consortium (W3C) 104

Y

YAWL system 250

Index

Z

ZigBee 163, 173, 179, 196, 197, 198,
201, 202, 203, 207
ZoneAccur 221, 222, 243