Index

A

action maps 117 action maps, generalizing 120 adopting organizational rules 326 agent, group, role (AGR) 29 agent-based human team support 285-313 agent-based models for organizations 488 agent autonomy 316 agent capability, ability and activity 224 agent communication language 348 agent composition 557 agent group role (AGR) model 316 agent interactions, message-centric approaches 108 agent network language, design 177 agent organizations 4 agent organizations, a logic 220-241 agent organizations, dynamics 328 agent organizations, modelling dimensions 18-50 agent organizations, models 316 agent organizations, structural evaluations 211 agent organizations and models 20 agent reasoning-model, event processing 323 agent roles in human teams 287

agents and groups 222 agent societies 172-189 agent society, building 183 agent spawning 554 agent support systems 289 agent systems, role of organization 1 agent teams 571 AGR and beyond 54 AGR family limits 57 AGR to AGRE 54 animation 471 argumentation protocol 463 artificial institutions in the event calculus 335-366 autonomous agents adopting organizational rules 314-334 autonomous agents in organizations 322 autonomous decision making 323 autonomy, guarantee 328 autonomy, reconciling 254

B

beliefs-desires and intentions (BDI) 3 bounded rationality 483 brute interaction 64 brute space 62 brute space vs. culture 70

С

chaired meeting institution 369, 383 commitment-based Semantics 269 commitment protocols, verifying 271 commitments 265 communication management 524 communicative acts 348 conditional power 354 critical adoption 255

D

declarations 350 decomposability 486 delegation, open vs. closed 255 delegation ontology 253 Discrete Event Calculus Reasoner 1.0 358 dynamic agent organizations, a framework 446–459 dynamic argumentation protocol 468

E

enterprise information system (EIS) 144 event-processing rules, specification 325 event calculus 340 event calculus (EC) 462 expectation-based protocols, verifying 275 expectation-based Semantics 272

F

failure propagation modes 583 FIEVeL, modeling institutions with 377 functional violation/disregard of norms (FVN) 256 functions for institutionalized environments verification language (FIVeL) 369

G

GAIA methodology 145 goal-adoption 251 goal-driven multi-agent systems 570 group capability, ability and activity 228

H

Hermes 105–140 Hermes design process 112 Hermes designs, implementing 126 hierarchical teamplan 577 hierarchical teamplan to individual plans 580 human organizations 19 human teams, agent roles 287 human teams, aiding 289

I

individuals' dependence networks 249 informal and formal networks 487 informal networks emergence 500 institutional concepts 372 interaction goal hierarchy 114 interactions via commitments and expectations 263-284interaction system, specification 339 ISLANDER 28, 35

L

literal adoption 255 logic for agent organization (LAO) 223 logic for agent organizations 220–241

M

MAS-ML 28 MASQ, a four-quadrant approach 57 MASQ description 60 MAS with dynamic PopOrg structure 433 mental state, effects on 324 meta-modelling language 27 meta-reasoning about event-processing rules 329 metamodels 24 model checking 368 model checking agent organizations 385 modelling languages 24 model of organization for multi-agent systems (MOISE+) 32 MOISE+ 28 multi-agent system based on quadrants (MASQ) 51 multi-agent systems (MAS) 2, 52 multi-agent systems (MASs) 19 multi-agent systems, recovery systems and architectures 571 multi-agent teams and Petri Nets 569

N

NetBill protocol, executing 271 NetBill protocol, modelling 270 NetBill protocol specification in SCIFF 274 NetBill Transaction protocol 268 norm-governed systems, dynamic specifications 460–479 normative multi-agent systems, programming language 397-418

0

OCeAN meta-model 338 OMACS model 78 OperA 28, 37 OperA model 317 operational Semantics 406 organisational model for adaptive computational systems (OMACS) 476 organization-based multiagent systems engineering (O-MaSE) 83 organization-oriented multi-agent systems 144 organizational agents (OA) 83 organizational change, detecting the need 553 organizational description, example 318 organizational modelling 25 organizational models comparison 41 organizational performance 489 organizational routines 485 organizational self-design 546 organizational self-design (OSD) 541-567 organizational structure 484 organizational structure, measuring 204 organizational structure in MAS 192 organizational structures and dynamics, analysis 166 organization centered MAS 54 organization dynamics 6 organization in agent systems 1-17 organization model for adaptive computational systems (OMACS) 76-104 organization modeling and analysis, case study 147 organization performance without informal structure 498 organizations: structure and strategy 230 organizations as complex systems 482 organizations per agents (OperA) 37 organizations regulated by institutions 367-396 organization theory 143 organization theory (OT) 2 organization types 233 organizing agents 3 over-adoption 255

P

personal assistants, modeling 524 personal assistants for human organizations 514– 540 Petri Net based model for team monitoring 568–590 Petri Nets in planning 572 PopOrg model, evaluation 422 PopOrg model, moral system 434 PopOrg model with periodic social exchanges 425 population-organization (PopOrg) model 419 prior organizational knowledge 325 programming multi-agent systems 399 programming multi-agent systems with norms 403

R

reasoning algorithm (RA) 91 recognition-primed decision model (RPD) 289 reorganization algorithms 88 reorganization requirements 10 reorganization types 9 resource allocation protocol (RAP) 451 resource allocation protocol, properties 453 robustness 211 role dependencies 231 roles' dependence networks 249 rule resolution mechanism 182

S

social agents 174 social expectations 265 social network analysis (SNA) 174 social networks 174 social networks, interference 180 socio-cognitive organization pillars 251 software personal assistants (SPAs) 515 SPA effects on communication management 529 SPA effects on task contingency management 534 STEAM 28 structural aspects of organizations 190–219 structural interplay 202 structural soundness? 203 structure with formal meaning 195

Т

TAEMS 28
TANDEM simulation 290
task allocation protocol 450
task analysis, environment modeling, and simulation (TAEMS) 31
task analysis, environment modeling and simulation (TÆMS) 543
task contingency management 525
taxonomies and social networks 175

team as a dynamic organization 573 team coordination 288 team level architecture 89 teamplan 573 teamplan Petri Net 575 teamplan repair 582 team self-organization 300 temporal trace language (TTL) 371 time-variant PopOrg model 426 TRACE, effectiveness evaluation 455 TRACE system 449 transition protocol 469 TROPOS methodology 145

W

Warbot 70 worth-oriented domains 541–567