

INDEX

A

algorithm-based fault tolerance 163
ALU 51
assertion 222
atomic broadcast 249
atomicity 228

B

backup channel 123

C

check prediction 49
checkpoint 236, 253
checksum 164, 176
code disjoint 42
code partitioning 48, 58
code, AN 44
code, arithmetic 42
code, Berger 47
code, dual-rail 6, 46
code, parity 11
code, parity 45
code, residue 45
code, SEC/DED 10
compiler transformations 139, 174
concurrent error detection 6, 38
coverage 25, 205
cyclic redundancy check 83

D

data dependence 138, 177
DCVSL 16
deadline 90, 279, 299
deadlock 75
dual-rail logic 6

E

error propagation 55
exception 142

F

fail-silent 246
failure, common mode 270
false alarm 79
fault coupling 13
fault effects 19
fault location 80
fault, stuck-at 13, 23
fault, stuck-on 53
fault, stuck-open 53
fault-secure 39
Fault-Tolerant Building Block
 Computer 8
fault/error injection 24, 206, 308

G

guard 217

I

Inertial Navigation System 309
 instruction retry 136
 interconnection network 71

J

journaling 224

L

latency 10, 135, 149

M

m-out-of-n checker 63
 Mach 218, 255
 message delivery time 79, 98
 morphic circuits 6
 multicast 248

N

N-version programming 270

O

ordering, event 227
 ordering, message 249
 ordering, packet 79

P

packet 72, 90
 parallelization 177

pipeline 24
 protocol graph 256
 protocol, membership 251

R

rate monotonic analysis 279
 real-time channel 89
 real-time communication 88
 real-time system 36, 88, 260, 266
 recovery 5, 82, 232, 253, 289, 305
 recovery block 270
 redundancy 5, 160, 267
 replicated hardware 5
 restart 249
 retry 136, 282
 RISC 36
 robustness benchmarks 222
 rollback 136, 138
 routing 72
 routing, Chaotic 75

S

schedulability 97, 279
 scheduling, instruction 143
 scrubbing 11
 self-checking 6, 38
 self-checking checker 7
 self-exercising 10
 self-testing 39
 self-timed logic 14
 sentry 217
 slack stealing 289
 speculative execution 140
 stable storage 226, 246
 state-machine 244
 super-scalar 137
 synchronization circuit 21

T

testability 14
testing 81
time-out 79

V

virtual cut-through 75
VLIW 137
VLSI 15, 36, 159

X

x-kernel 255