U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

CLASSIFICATION ORDER 1903

JANUARY 4, 2011

PROJECT E-6701

The following classification changes will be effected by this order:

	Class	**Subclass**	**Art Unit**	**Ex'r Search Room**
Abolished:	714	4-9, 38, 47	2113	OS0001
Established:	714	4.1, 4.11, 4.12, 4.2, 4.21, 4.3-4.5, 5.1, 5.11, 6.1, 6.11-6.13, 6.2, 6.21-6.24, 6.3, 6.31, 6.32, 38.1, 38.11-38.14, 47.1-47.3	2113	OS0001

The following classes are also impacted by this order:

365, 369, 370, 398, 702, 703, 707, 709, 710, 711, 713, 717

This order includes the following:

A.   CLASSIFICATION MANUAL CHANGES

B.   LISTING OF PRINCIPAL SOURCE OF ESTABLISHED AND DISPOSITION
        OF ABOLISHED SUBCLASSES

C.   CHANGES TO THE USPC-TO-IPC CONCORDANCE

D.   DEFINITION CHANGES AND NEW OR ADDITIONAL DEFINITIONS

CLASSIFICATION ORDER 1903

JANUARY 4, 2011

PROJECT E-6701

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100	**DATA PROCESSING SYSTEM ERROR OR FAULT HANDLING**
1	.Reliability and availability
2	..Fault recovery
3	...By masking or reconfiguration
4.1	....Of network
4.11	.....Backup or standby (e.g., failover, etc.)
4.12	......Hot swapping (i.e., while network is up)
4.2	.....Isolate or remove failed node without replacement (e.g., bypassing, re-routing, etc.)
4.21	......Reintegrate node back into network
4.3	.....Repair failed node without replacement (i.e., on-line repair)
4.4	.....Remote repair
4.5	.....Bus network (e.g., PCI, AGP, etc.)
5.1	....Of peripheral subsystem
5.11	.....Access processor affected (e.g., I/O processor, MMU, or DMA processor, etc.)
6.1	....Of memory
6.11	.....Within single memory device (e.g., disk, etc.)
6.12	......Recovery partition
6.13	......Isolating failed storage location (e.g., sector remapping, etc.)
6.2	.....Plurality of memory devices (e.g., array, etc.)
6.21	......Array controller
6.22	......RAID
6.23	.......Mirror (i.e., level 1 RAID)
6.24	.......ECC, parity, or fault code (i.e., level 2+ RAID)
6.3	......Backup or standby (e.g., failover, etc.)
6.31	.......Remote repair
6.32	......Replacement of failed memory device
10	....Of processor
11	.....Concurrent, redundantly operating processors
12	......Synchronization maintenance of processors
13	.....Prepared backup processor (e.g., initializing cold backup) or updating backup processor (e.g., by checkpoint message)
14	....Of power supply
15	...State recovery (i.e., process or data file)
16	....Forward recovery (e.g., redoing committed action)
17	.....Reexecuting single instruction or bus cycle
18	....Transmission data record (e.g., for retransmission)
19	....Undo record
20	....Plural recovery data sets containing set interrelation data (e.g., time values or log record numbers)
21	....State validity check
22	....With power supply status monitoring
23	...Resetting processor
24	...Safe shutdown
25	..Fault locating (i.e., diagnosis or testing)
26	...Artificial intelligence (e.g., diagnostic expert system)
27	...Particular access structure
28	....Substituted emulative component (e.g., emulator microprocessor)
29	.....Memory emulator feature
30	....Built-in hardware for diagnosing or testing within-system component (e.g., microprocessor test mode circuit, scan path)
31	....Additional processor for in-system fault locating (e.g., distributed diagnosis program)
32	...Particular stimulus creation
33	....Derived from analysis (e.g., of a specification or by stimulation)
34	....Halt, clock, or interrupt signal (e.g., freezing, hardware breakpoint, single-stepping)
35	....Substituted or added instruction (e.g., code instrumenting, breakpoint instruction)

36	....Test sequence at power-up or initialization
37	...Analysis (e.g., of output, state, or design)
38.1	....Of computer software faults
38.11	.....Memory dump
38.12	.....Time-out (i.e., of program)
38.13	.....Interrupt (i.e., halt the program)
38.14	.....By remotely
39	....Monitor recognizes sequence of events (e.g., protocol or logic state analyzer)
40	...Component dependent technique
41	....For reliability enhancing component (e.g., testing backup spare, or fault injection)
42	....Memory or storage device component fault
43	....Bus, I/O channel, or network path component fault
44	....Peripheral device component fault
45	...Output recording (e.g., signature or trace)
46	...Operator interface for diagnosing or testing
47.1	..Performance monitoring for fault avoidance
47.2	...Threshold
47.3	...Trends (i.e., expectancy)
48	..Error detection or notification
49	...State error (i.e., content of instruction, data, or message)
50	....State out of sequence
51	.....Control flow state sequence monitored (e.g., watchdog processor for control-flow checking)
52	.....Error checking code
53	....Address error
54	....Storage content error
55	...Timing error (e.g., watchdog timer time-out)
56	....Bus or I/O channel device fault
57	...Error forwarding and presentation (e.g., operator console, error display)
699	**PULSE OR DATA ERROR HANDLING**
700	.Skew detection correction
701	.Data formatting to improve error detection correction capability
702	..Memory access (e.g., address permutation)
703	.Testing of error-check system
704	.Error count or rate
705	..Pseudo-error rate
706	..Up-down counter
707	..Synchronization control
708	..Shutdown or establishing system parameter (e.g., transmission rate)
709	.Data pulse evaluation/bit decision
710	.Replacement of memory spare location, portion, or segment
711	..Spare row or column
712	.Transmission facility testing
713	..For channel having repeater
714	..By tone signal
715	..Test pattern with comparison
716	...Loop-back
717	..Loop or ring configuration
718	.Memory testing
719	..Read-in with read-out and compare
720	...Special test pattern (e.g., checkerboard, walking ones)
721	..Electrical parameter (e.g., threshold voltage)
722	..Performing arithmetic function on memory contents
723	..Error mapping or logging
724	.Digital logic testing
725	..Programmable logic array (PLA) testing
726	..Scan path testing (e.g., level sensitive scan design (LSSD))
727	...Boundary scan
728	...Random pattern generation (includes pseudorandom pattern)
729	...Plural scan paths
730	...Addressing
731	...Clock or synchronization
732	..Signature analysis
733	..Built-in testing circuit (BILBO)
734	..Structural (in-circuit test)
735	..Device response compared to input pattern

736	..Device response compared to expected fault-free response
737	..Device response compared to fault dictionary/truth table
738	..Including test pattern generator
739	...Random pattern generation (includes pseudorandom pattern)
740	...Having analog signal
741	...Simulation
742	...Testing specific device
743	...Addressing
744	...Clock or synchronization
745	..Determination of marginal operation limits
746	.Digital data error correction
747	..Substitution of previous valid data
748	..Request for retransmission
749	...Retransmission if no ACK returned
750	...Feedback to transmitter for comparison
751	...Including forward error correction capability
752	..Forward correction by block code
753	...Double error correcting with single error correcting code
754	...Error correction during refresh cycle
755	...Double encoding codes (e.g., product, concatenated)
756	....Cross-interleave Reed-Solomon code (CIRC)
757	...Parallel generation of check bits
758	...Error correcting code with additional error detection code (e.g., cyclic redundancy character, parity)
759	...Look-up table encoding or decoding
760	...Threshold decoding (e.g., majority logic)
761	...Random and burst error correction
762	...Burst error correction
763	...Memory access
764	....Error correct and restore
765	....Error pointer
766	....Check bits stored in separate area of memory
767	....Code word for plural n-bit (n>1) storage units (e.g., x4 DRAM's)
768	....Error correction code for memory address
769	....Dynamic data storage
770	.....Disk array
771	.....Tape
772	....Code word parallel access
773	....Solid state memory
774	...Adaptive error-correcting capability
775	...Synchronization
776	...For packet or frame multiplexed data
777	...Hamming code
778	...Nonbinary data (e.g., ternary)
779	...Variable length data
780	...Using symbol reliability information (e.g., soft decision)
781	...Code based on generator polynomial
782	....Bose-Chaudhuri-Hocquenghem code
783	....Golay code
784	....Reed-Solomon code
785	....Syndrome computed
786	..Forward error correction by tree code (e.g., convolutional)
787	...Random and burst errors
788	...Burst error
789	...Synchronization
790	...Puncturing
791	...Sequential decoder (e.g., Fano or stack algorithm)
792	...Trellis code
793	...Syndrome decodable (e.g., self orthogonal)
794	...Maximum likelihood
795	...Viterbi decoding
796	...Branch metric calculation
797	..Majority decision/voter circuit
798	.Error detection for synchronization control
799	.Error/fault detection technique
800	..Parity bit
801	...Parity generator or checker circuit detail
802	...Even and odd parity
803	...Parity prediction
804	...Plural dimension parity check
805	...Storage accessing (e.g., address parity check)

806	..Constant-ratio code (m/n)
807	..Check character
808	...Modulo-n residue check character
809	..Code constraint monitored
810	...Multilevel coding (n>2)
811	..Forbidden combination or improper condition
812	...Specified digital signal or pulse count
813	...Two key-down detector
814	...Data timing/clocking
815	...Time delay/interval monitored
816	...Two-rail logic
817	...Noise level
818	...Missing-bit/drop-out detection
819	..Comparison of data
820	...Plural parallel devices of channels
821	....Transmission facility
822	...Sequential repetition
823	....True and complement data
824	...Device output compared to input

E-SUBCLASSES

The following subclasses beginning with the letter E are E-subclasses. Each E-subclass corresponds in scope to a classification in a foreign classification system, for example, the European Classification system (ECLA). The foreign classification equivalent to an E-subclass is identified in the subclass definition. In addition to U.S. documents classified in E-subclasses by U.S. examiners, documents are regularly classified in E-subclasses according to the classification practices of any foreign Offices identified in parentheses at the end of the title. For example, "(EPO)" at the end of a title indicates both European and U.S. patent documents, as classified by the EPO, are regularly added to the subclass. E-subclasses may contain subject matter outside the scope of this class. Consult the E-subclass definitions, or the documents themselves, to clarify or interpret titles.

E11.001	**ERROR DETECTION; ERROR CORRECTION; MONITORING (EPO)**
E11.002	.Error detection other than by redundancy in data representation, operation, or hardware, or by checking the order of processing (EPO)
E11.003	..By time limit, i.e., time-out (EPO)
E11.004	..By count or rate limit, e.g., word- or bit count limit, etc. (EPO)
E11.005	..By other limits, e.g., analog values, etc. (EPO)
E11.006	..By bit configuration check, e.g., of formats or tags, etc. (EPO)
E11.007	.Error correction, recovery or fault tolerance using at least two different redundancy techniques and at least one technique not involving redundancy (EPO)
E11.008	..Fault tolerant software (EPO)
E11.009	..In regular structures, i.e., all of the systems nodes have the same number of connections per node (EPO)
E11.01	...Interconnection networks, i.e., comprising interconnecting link and switching elements (EPO)
E11.011	...Fault-tolerant routing (EPO)
E11.012	...In rings and buses (EPO)
E11.013	...In n-dimensional structures, e.g., arrays, trees, cubes, etc. (EPO)
E11.014	...Neural networks (EPO)
E11.015	..By degradation, i.e., a slow-down occurs but full processing capability is maintained, e.g., discarding a faulty element or unit, etc. (EPO)
E11.016	..In systems, e.g., multiprocessors, etc. (EPO)
E11.017	.Security measures, i.e., ensuring safe condition in the event of error, e.g., for controlling element (EPO)
E11.018	.Protecting against parasitic influences, e.g., noise, temperatures, etc. (EPO)
E11.019	.Identification, e.g., of a performed repair, of a defined circuit, etc. (EPO)

E11.02   .Reliability or availability analysis (EPO)
E11.021   .Responding to the occurrence of a fault, e.g., fault tolerance, etc. (EPO)
E11.022   ..Error or fault processing without redundancy, i.e., by taking additional measures to deal with the error/fault (EPO)
E11.023   ...Error or fault handling (EPO)
E11.024   ...Error or fault detection or monitoring (EPO)
E11.025   ...Error or fault reporting or logging (EPO)
E11.026   ...Error or fault localization (EPO)
E11.027   ....By collation, i.e., correlating different errors (EPO)
E11.028   ....By identifying the faulty software code (EPO)
E11.029   ...Error or fault analysis (EPO)
E11.03   ..Error detection or correction by redundancy in data representation, e.g., by using checking codes, etc. (EPO)
E11.031   ...Using codes with inherent redundancy, e.g., n-out-of-m codes (EPO)
E11.032   ...Adding special bits or symbols to the coded information, e.g., parity check, casting out 9's or 11's, etc. (EPO)
E11.033   ....Using arithmetic codes i.e., codes which are preserved during operation, e.g., modulo 9 or 11 check, etc. (EPO)
E11.034   ....In memories (EPO)
E11.035   .....In static stores (EPO)
E11.036   ......Integrated on a chip (EPO)
E11.037   ....In cache or content addressable memories (EPO)
E11.038   ....In sector programmable memories, e.g., flash disk, etc. (EPO)
E11.039   ....In multilevel memories (EPO)
E11.04   ......To protect a block of data words, e.g., CRC, checksum, etc. (EPO)

E11.041   ......To protect individual data words written into, or read out of, the addressable memory subsystem of data processing equipment (EPO)
E11.042   ....Codes or arrangements adapted for a specific type of error (EPO)
E11.043   ....Error in accessing a memory location, i.e., addressing error (EPO)
E11.044   ....Error in check bits (EPO)
E11.045   ....Identification of the type of error (EPO)
E11.046   ....Adjacent error, e.g., error in n-bit (n>1) wide storage units, i.e., package error, etc. (EPO)
E11.047   ....Simple parity (EPO)
E11.048   ....Unidirectional errors (EPO)
E11.049   ....Arrangements adapted for a specific error detection or correction feature (EPO)
E11.05   ....Bypassing or disabling error detection or correction (EPO)
E11.051   ....Updating check bits on partial write, i.e., read/modify/write (EPO)
E11.052   ....Correcting systematically all correctable errors, i.e., scrubbing (EPO)
E11.053   ....Using single parity bit (EPO)
E11.054   ..Error detection or correction of the data by redundancy in hardware (EPO)
E11.055   ...Error detection by comparing the output signals of redundant hardware (EPO)
E11.056   ....In static storage, e.g., matrix, registers, etc. (EPO)
E11.057   ....In coding, decoding circuits, e.g. parity circuits (EPO)
E11.058   ....In communications, e.g., transmission, interfaces, etc. (EPO)
E11.059   ....Control processors, e.g., for sensors, actuators, etc. (EPO)
E11.06   ....With exchange of data between units (EPO)
E11.061   ....With data processors, i.e., data processors compare their computations (EPO)

E11.062 ....In storage with relative movement between record carrier and transducer, e.g., tapes, disks, etc. (EPO)

E11.063 ....In systems, i.e. comprising a multiplicity of resources, e.g., cpu with its memory and I/O, etc. (EPO)

E11.064 ....In arithmetic, logic or counter circuits or a combination thereof, e.g., alu, adder, etc. (EPO)

E11.065 ....In I/O devices or adapters therefor (EPO)

E11.066 .....Displays (EPO)

E11.067 ...Timing and synchronization therein (EPO)

E11.068 ....By using fault tolerant clocks (EPO)

E11.069 ...Using passive fault-masking of the redundant circuits, e.g., by quadding or by majority decision circuits, etc. (EPO)

E11.07 ....Synchronization therefor (EPO)

E11.071 ...Using active fault-masking, e.g., by switching out faulty elements or by switching in spare elements, etc. (EPO)

E11.072 ....In systems, e.g., multiprocessors, etc. (EPO)

E11.073 .....In distributed systems (EPO)

E11.074 ......In regular structures (EPO)

E11.075 ....Array of processors, e.g., systolic arrays, etc. (EPO)

E11.076 ....Hypercubes (EPO)

E11.077 ....Trees (EPO)

E11.078 ....In interconnections, e.g., rings, etc. (EPO)

E11.079 .....Bus (EPO)

E11.08 ....Data exchange between units, e.g., for updating backup units, etc. (EPO)

E11.081 ....For control, e.g., actuators, etc. (EPO)

E11.082 ....In arithmetic units (EPO)

E11.083 ....Redundant power supplies (EPO)

E11.084 ....Masking faults in storage systems using spares and/or by reconfiguring (EPO)

E11.085 .....Removing defective units from operation (EPO)

E11.086 ......Bypassing defective units on a serial bus (EPO)

E11.087 .....With address translations and modifications (EPO)

E11.088 ......Handling defects in a Redundant Array of Inexpensive Disks (RAID) by remapping (EPO)

E11.089 .....Managing spare storage units (EPO)

E11.09 ......Hot spares (EPO)

E11.091 .....Via redundancy in hardware accessing the storage components (EPO)

E11.092 ......Using redundant I/O processors, storage control units or array controllers (EPO)

E11.093 ....With serial buses (EPO)

E11.094 ....To file servers (EPO)

E11.095 ......Connection redundancy between storage system components (EPO)

E11.096 ....With serial buses (EPO)

E11.097 ....To file servers (EPO)

E11.098 .....Using the replication of data, e.g., with two or more copies, etc. (EPO)

E11.099 ......Duplex memories, e.g., twin boot ROMs, etc. (EPO)

E11.1   ....Duplexed caches, e.g., cashe paired with non-volatile storage, etc. (EPO)

E11.101 ......Mirroring, i.e., the concept of maintaining data on two or more units in the same state at all times (EPO)

E11.102 ....Resynchronization of failed mirrors (EPO)

E11.103 ....Mirror management, e.g., pairing of units, etc. (EPO)

E11.104 ....Mirroring on the same storage unit (EPO)

E11.105 ....Mirroring on different storage units with a common controller (RAID 1) (EPO)

E11.106 ....Mirroring with multiple controllers (EPO)

E11.107 ....Asynchronous mirroring (EPO)

E11.108 ....Synchronous mirroring (EPO)

E11.109 ......De-clustering of replicated data (EPO)

E11.11 ......Using more than two copies (EPO)

E11.111 ....In Logic Arrays, e.g., programmable or iterative logic arrays, etc. (EPO)
E11.112 ..Error detection or correction of the data by redundancy in operation (EPO)
E11.113 ...Saving, restoring, recovering or retrying (EPO)
E11.114 ....At machine instruction level (EPO)
E11.115 .....Checkpointing the instruction stream (EPO)
E11.116 .....For bus or memory accesses (EPO)
E11.117 ....Of application data (EPO)
E11.118 .....Backing up, restoring or mirroring files or drives (EPO)
E11.119 ......Backing up, i.e., point-in-time backup (EPO)
E11.12 ....Hardware arrangements for backup (EPO)
E11.121 ....Backup Management techniques (EPO)
E11.122 ....Recovery techniques (EPO)
E11.123 ....Selection of contents (EPO)
E11.124 ....Scheduling policy (EPO)
E11.125 ....For networked environments (EPO)
E11.126 ....Nondisruptive backup (EPO)
E11.127 ......Mirroring (EPO)
E11.128 ......Distributed database systems; Replica control (EPO)
E11.129 ....Synchronization between mobile agents and networked agents (EPO)
E11.13 .....Using logs or checkpoints (EPO)
E11.131 .....In transactions (EPO)
E11.132 ...At operating system level (EPO)
E11.133 .....Boot up procedures (EPO)
E11.134 .....Reconfiguring to eliminate the error (EPO)
E11.135 .....During software upgrading (EPO)
E11.136 .....At file system or disk access level (EPO)
E11.137 .....Restarting or rejuvenating (EPO)
E11.138 .....Resetting or repowering (EPO)
E11.139 .....Cleaning up resources (EPO)

E11.14 .....Suspending and resuming a running system (EPO)
E11.141 .....Transmit or communication errors (EPO)
E11.142 ...Error detection (EPO)
E11.143 ....By time redundancy (EPO)
E11.144 .Error avoidance, e.g., error spreading countermeasures, fault avoidance, etc. (EPO)
E11.145 .Detection or location of defective computer hardware by testing during standby operation or during idle time, e.g., start-up testing, etc. (EPO)
E11.146 ..Verification or detection of system hardware configuration (EPO)
E11.147 ..Logging of test results (EPO)
E11.148 ..Test methods (EPO)
E11.149 ...Power-On Test, e.g., POST, etc. (EPO)
E11.15 ....Configuration test (EPO)
E11.151 ...Background testing (EPO)
E11.152 ...Periodic testing (EPO)
E11.153 ...Test trigger logic (EPO)
E11.154 ..Marginal checking (EPO)
E11.155 ..Testing of logic operation, e.g., by logic analyzers, etc. (EPO)
E11.156 ...Using Fault Dictionaries (EPO)
E11.157 ...Using Expert Systems (EPO)
E11.158 ...Using Neural Networks (EPO)
E11.159 ..Functional testing (EPO)
E11.16 ...Reconfiguring circuits for testing, e.g., LSSD, partitioning, etc. (EPO)
E11.161 ....Test of buses, lines or interfaces, e.g., stuck-at or open line faults, etc. (EPO)
E11.162 ....Test or error correction or detection circuits (EPO)
E11.163 ....Test of input/output devices or peripheral units (EPO)
E11.164 ....Test of ALU (EPO)
E11.165 ....Test of interrupt circuits (EPO)
E11.166 ....Test of CPU or processors (EPO)
E11.167 ...By simulating additional hardware, e.g., fault simulation, (EPO)
E11.168 ....Emulators (EPO)
E11.169 ...Built-in tests (EPO)

E11.17   ...Tester hardware, i.e., output processing circuits, etc. (EPO)
E11.171   ....Test interface between tester and unit under test (EPO)
E11.172   ....Using a storage for the test inputs, e.g., test-ROM, script files, etc. (EPO)
E11.173   ....Remote test (EPO)
E11.174   ....Using a dedicated service processor for test (EPO)
E11.175   ....With comparison between actual response and known fault-free response, e.g., signature analyzer, etc. (EPO)
E11.176   ....In Multi-processor systems, e.g., one processor becoming the test master, etc. (EPO)
E11.177   ...Generation of test inputs, e.g., test vectors, patterns or sequences, etc. (EPO)
E11.178   .By checking the correct order of processing (EPO)
E11.179   .Monitoring (EPO)
E11.18   ..With visual or acoustical indication of the functioning of the machine (EPO)
E11.181   ...Visualization of programs or trace data (EPO)
E11.182   ...Display for diagnostics, e.g., diagnostic result display, self-test user interface, etc. (EPO)
E11.183   ....Display of waveforms, e.g., of logic analyzers, etc. (EPO)
E11.184   ...Display of status information (EPO)
E11.185   ....By lamps or LED's (EPO)
E11.186   .....For error or online/offline status (EPO)
E11.187   ....Alarm or error message display (EPO)
E11.188   ....Computer systems status display (EPO)
E11.189   ..Recording or statistical evaluation of computer activity, e.g., of down time, of input/output operation, etc. (EPO)
E11.19   ...Of interconnections, e.g., interconnecting networks, etc. (EPO)
E11.191   ...Of parallel or distributed programming (EPO)
E11.192   ...Performance measurement (EPO)

E11.193   ....Workload generation, e.g., scripts, playback etc. (EPO)
E11.194   .....Benchmarking (EPO)
E11.195   ....Time measurement, e.g., response time, etc. (EPO)
E11.196   .....Of active or idle time (EPO)
E11.197   ...Performance evaluation by modeling or statistical analysis (EPO)
E11.198   ...Performance evaluation by simulation (EPO)
E11.199   ....Trace driven simulation (EPO)
E11.2   ...Performance evaluation by tracing or monitoring (EPO)
E11.201   ....For interfaces, buses (EPO)
E11.202   ....For systems (EPO)
E11.203   ....Address tracing (EPO)
E11.204   ....Data logging (EPO)
E11.205   ....Circuit details, i.e., tracer hardware (EPO)
E11.206   ....For I/O devices (EPO)
E11.207   .Preventing errors by testing or debugging software (EPO)
E11.208   ..Software debugging (EPO)
E11.209   ...Compilers or other tools operating on the source text (EPO)
E11.21   ...Debuggers (EPO)
E11.211   ...Error checking code in the program under test (EPO)
E11.212   ...Tracing methods or tools (EPO)
E11.213   ...By using additional hardware (EPO)
E11.214   ....By making modifications to the CPU (EPO)
E11.215   ....By monitoring the bus (EPO)
E11.216   ....By emulating the CPU (EPO)
E11.217   ..User interfaces for testing or debugging software (EPO)
E11.218   ..Methods or tools for writing reliable software and for evaluating software (EPO)
E11.219   ...Methods or tools to render software testable (EPO)
E11.22   ...Software metrics (EPO)

FOREIGN ART COLLECTIONS

FOR 000 **CLASS-RELATED FOREIGN DOCUMENTS**

Any foreign patents or non-patent litera-
ture from subclasses that have been
reclassified have been transferred
directly to FOR Collections listed below.
These Collections contain ONLY foreign
patents or non-patent literature. The par-
enthetical references in the Collection
titles refer to the abolished subclasses
from which these Collections were derived.

DIGITAL LOGIC TESTING (371/22.1)
FOR 100 .Scan path testing (LSSD) (371/
22.3)
FOR 101 .Including test pattern generator
(371/27)
**DIGITAL DATA ERROR CORRECTION
(371/30)**
FOR 102 .Block code (371/37.1)
FOR 103 ..Memory access (371/40.1)
FOR 104 .Convolutional code (371/43)
FOR 288 **ERROR/FAULT ANTICIPATION (371/4)**
.Replacement with spare device or
system (371/8.1)
FOR 289 ..Transmission facility or
channel (371/8.2)
FOR 290 ..Memory (371/10.1)
FOR 291 ..Transmission facility (371/
11.2)
FOR 292 ..Data processor or computer
(371/11.3)
DIAGNOSTIC TESTING (371/15.1)
FOR 293 .Programmable processor testing
(371/16.1)
FOR 294 ..Emulator device (371/16.2)
FOR 295 ..Watchdog timer (e.g., time-out)
(371/16.3)
FOR 296 ..Processor within diverse
(microwave, photocopier) (371/
16.4)
FOR 297 ..Error or fault, logging or
tracking (371/16.5)
FOR 298 ..Dedicated maintenance subsystem
(371/18)
FOR 299 .Testing of external device by
programmable digital computer
(371/20)
FOR 300 **ERROR DETECTION FOR
SYNCHRONIZATION CONTROL (371/
47.1)**
**DATA PROCESSING SYSTEM ERROR OR
FAULT HANDLING (714/100)**
.Reliability and availability
(714/1)
..Fault recovery (714/2)

...By masking or reconfiguration
(714/3)
FOR 306 ....Of network (714/4)
FOR 307 ....Of memory or peripheral
subsystem (714/5)
FOR 308 .....Redundant stored data
accessed (e.g., duplicated
data, error correction coded
data, or other parity-type
data) (714/6)
FOR 309 ......Reconfiguration (e.g.,
adding a replacement storage
component (714/7)
FOR 310 .....Isolating failed storage
location (e.g., sector
remapping) (714/8)
FOR 311 .....Access processor affected
(e.g., I/O processor, MMU, DMA
processor (714/9)
..Fault locating (i.e., diagnosis
or testing) (714/25)
...Analysis (e.g., of output,
state, or design) (714/37)
FOR 312 ....Of computer software (714/38)
FOR 313 ..Performance monitoring for
fault avoidance (714/47)

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PROJECT E-6701

SOURCE CLASSIFICATION(S) OF PATENTS
IN NEWLY ESTABLISHED SUBCLASSES REPORT

Generated by Data Control Division

New Classification	Number of ORs	Source Classification	Number of ORs
714/4.1	1	714/47	478
	1	714/6	974
	1	714/9	77
	21	714/4	873
	265	714/4	873
714/4.11	1	714/47	478
	1	714/8	232
	3	714/7	266
	25	714/4	873
	57	714/4	873
714/4.12	1	714/47	478
	1	714/6	974
	3	714/7	266
	10	714/4	873
	51	714/4	873
714/4.2	1	714/47	478
	1	714/6	974
	2	714/8	232
	4	714/7	266
	4	714/9	77
	15	714/4	873
	52	714/4	873
714/4.21	1	714/47	478
	3	714/4	873
	27	714/4	873
714/4.3	1	714/8	232
	8	714/4	873
	81	714/4	873
714/4.4	1	714/6	974
	20	714/4	873
	137	714/4	873
714/4.5	1	714/7	266
	9	714/4	873
	75	714/4	873
	86	714/47	478
714/5.1	2	714/6	974
	2	714/9	77
	8	714/8	232
	9	714/7	266
	152	714/5	386

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PROJECT E-6701

SOURCE CLASSIFICATION(S) OF PATENTS
IN NEWLY ESTABLISHED SUBCLASSES REPORT

Generated by Data Control Division

New Classification	Number of ORs	Source Classification	Number of ORs
714/5.11	1	714/4	873
	3	714/8	232
	4	714/6	974
	7	714/7	266
	11	714/9	77
	27	714/5	386
	47	714/9	77
	177	714/5	386
714/6.1	21	714/5	386
	44	714/6	974
	151	714/6	974
714/6.11	5	714/7	266
	10	714/6	974
	33	714/6	974
714/6.12	1	714/9	77
	2	714/7	266
	13	714/6	974
	239	714/6	974
714/6.13	5	714/6	974
	5	714/9	77
	21	714/8	232
	189	714/8	232
714/6.2	2	714/4	873
	2	714/5	386
	2	714/8	232
	13	714/6	974
	13	714/7	266
	33	714/6	974
714/6.21	10	714/6	974
	54	714/6	974
714/6.22	1	714/5	386
	2	714/7	266
	9	714/6	974
	56	714/6	974
714/6.23	1	714/5	386
	13	714/6	974
	37	714/6	974
714/6.24	1	714/5	386
	2	714/9	77
	7	714/6	974
	50	714/6	974

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PROJECT E-6701

SOURCE CLASSIFICATION(S) OF PATENTS
IN NEWLY ESTABLISHED SUBCLASSES REPORT

Generated by Data Control Division

New Classification	Number of ORs	Source Classification	Number of ORs
714/6.3	1	714/38	732
	1	714/5	386
	2	714/4	873
	4	714/7	266
	11	714/6	974
	67	714/6	974
714/6.31	1	714/7	266
	1	714/8	232
	3	714/6	974
	64	714/6	974
714/6.32	1	714/4	873
	1	714/47	478
	1	714/8	232
	8	714/6	974
	20	714/7	266
	24	714/6	974
	186	714/7	266
714/38.1	1	714/4	873
	1	714/47	478
	1	714/6	974
	26	714/38	732
	218	714/38	732
714/38.11	1	714/5	386
	1	714/6	974
	15	714/38	732
	78	714/38	732
714/38.12	1	714/6	974
	16	714/38	732
	51	714/38	732
714/38.13	1	714/7	266
	1	714/8	232
	2	714/4	873
	2	714/6	974
	18	714/38	732
	147	714/38	732
714/38.14	1	714/4	873
	1	714/5	386
	1	714/7	266
	3	714/6	974
	34	714/38	732
	121	714/38	732

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SOURCE CLASSIFICATION(S) OF PATENTS
IN NEWLY ESTABLISHED SUBCLASSES REPORT

Generated by Data Control Division

New Classification	Number of ORs	Source Classification	Number of ORs
714/47.1	1	714/6	974
	1	714/7	266
	2	714/38	732
	2	714/4	873
	2	714/8	232
	188	714/47	478
714/47.2	1	714/6	974
	2	714/7	266
	3	714/38	732
	5	714/4	873
	28	714/47	478
	142	714/47	478
714/47.3	1	714/47	478
	1	714/5	386
	1	714/7	266
	2	714/38	732

CLASSIFICATION ORDER 1903

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PROJECT E-6701

DISPOSITION CLASSIFICATION(S) OF PATENTS
FROM ABOLISHED SUBCLASSES REPORT

Generated by Data Control Division

Source Classification	Number of ORs	New Classification	Number of ORs
714/4	873	714/47.1	2
714/47	478	714/47.1	188
714/7	266	714/47.1	1
714/9	77	714/5.11	47
714/6	974	714/6.24	7
		714/6.23	13
714/4	873	714/4.1	265
		714/4.4	137
714/8	232	714/6.31	1
		714/5.1	8
714/47	478	714/4.21	1
714/9	77	714/5.1	2
		714/6.12	1
714/38	732	714/6.3	1
714/6	974	714/6.32	24
714/47	478	714/4.11	1
714/38	732	714/38.12	16
714/47	478	714/47.3	1
714/6	974	714/6.2	13
714/47	478	714/47.2	28
		714/4.1	1
714/6	974	714/4.2	1
		714/6.21	54
714/5	386	714/6.22	1
714/4	873	714/6.3	2
		714/4.2	52
714/47	478	714/4.2	1
714/9	77	714/6.24	2
714/6	974	714/6.31	64
714/38	732	714/38.12	51
714/9	77	714/6.13	5
714/7	266	714/38.13	1
714/6	974	714/4.12	1
714/7	266	714/6.2	13
714/38	732	714/38.13	147
714/7	266	714/38.14	1
714/47	478	714/47.2	142
714/6	974	714/6.12	239
714/5	386	714/5.11	177
714/4	873	714/4.11	25
714/6	974	714/6.11	10
		714/6.1	44
714/7	266	714/6.3	4

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PROJECT E-6701

DISPOSITION CLASSIFICATION(S) OF PATENTS
FROM ABOLISHED SUBCLASSES REPORT

Generated by Data Control Division

Source Classification	Number of ORs	New Classification	Number of ORs
714/4	873	714/38.14	1
		714/4.11	57
714/7	266	714/47.3	1
714/8	232	714/4.11	1
714/7	266	714/6.31	1
714/38	732	714/38.11	78
714/7	266	714/6.32	20
714/47	478	714/6.32	1
714/6	974	714/47.2	1
		714/6.24	50
714/5	386	714/6.2	2
714/6	974	714/6.23	37
		714/6.3	67
714/8	232	714/6.32	1
714/4	873	714/38.1	1
714/38	732	714/38.14	121
714/9	77	714/47.3	4
714/6	974	714/47.1	1
		714/6.31	3
714/7	266	714/6.32	186
714/4	873	714/4.5	9
714/38	732	714/38.14	34
714/8	232	714/6.13	189
714/4	873	714/4.21	27
714/6	974	714/38.11	1
714/7	266	714/4.5	1
714/5	386	714/38.11	1
714/7	266	714/4.2	4
714/6	974	714/38.13	2
714/7	266	714/6.12	2
714/4	873	714/4.12	51
714/6	974	714/6.21	10
		714/6.22	9
714/4	873	714/4.21	3
714/38	732	714/38.1	26
		714/38.13	18
714/6	974	714/6.32	8
714/38	732	714/47.2	3
		714/47.3	2
714/5	386	714/6.24	1
714/4	873	714/4.3	81
714/5	386	714/6.3	1
714/6	974	714/5.11	4

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DISPOSITION CLASSIFICATION(S) OF PATENTS
FROM ABOLISHED SUBCLASSES REPORT

Generated by Data Control Division

Source Classification	Number of ORs	New Classification	Number of ORs
714/7	266	714/5.1	9
714/4	873	714/6.32	1
714/5	386	714/38.14	1
		714/6.1	21
714/38	732	714/38.11	15
714/6	974	714/6.22	56
714/7	266	714/4.12	3
714/9	77	714/5.11	11
714/4	873	714/6.2	2
714/47	478	714/4.12	1
714/6	974	714/6.11	33
714/38	732	714/38.1	218
714/5	386	714/5.1	152
714/8	232	714/5.11	3
714/7	266	714/6.11	5
714/6	974	714/6.2	33
714/8	232	714/38.13	1
714/4	873	714/47.2	5
714/6	974	714/4.4	1
714/4	873	714/4.5	75
714/6	974	714/38.12	1
714/8	232	714/47.1	2
714/4	873	714/4.1	21
		714/4.4	20
		714/4.2	15
		714/4.3	8
714/9	77	714/4.1	1
714/47	478	714/38.1	1
		714/47.3	86
714/5	386	714/6.23	1
714/8	232	714/4.2	2
		714/4.3	1
714/7	266	714/5.11	7
714/8	232	714/6.2	2
714/7	266	714/6.22	2
714/38	732	714/47.1	2
714/6	974	714/6.12	13
		714/6.3	11
714/4	873	714/4.12	10
714/5	386	714/5.11	27
714/6	974	714/38.14	3
		714/4.1	1
714/9	77	714/4.2	4

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PROJECT E-6701

DISPOSITION CLASSIFICATION(S) OF PATENTS
FROM ABOLISHED SUBCLASSES REPORT

Generated by Data Control Division

Source Classification	Number of ORs	New Classification	Number of ORs
714/4	873	714/38.13	2
714/6	974	714/5.1	2
		714/6.13	5
714/7	266	714/4.11	3
714/6	974	714/6.1	151
714/4	873	714/5.11	1
714/8	232	714/6.13	21
714/6	974	714/38.1	1
714/7	266	714/47.2	2
714/5	386	714/47.3	1

C. CHANGES TO THE USPC-TO-IPC CONCORDANCE

USPC		IPC	
Class	Subclass	Subclass	Notation
714	4.1	G06F	11/00
	4.11	G06F	11/00
		G06F	11/16
	4.12-4.5	G06F	11/00
	5.1-5.11	G06F	11/00
	6.1-6.21	G06F	11/00
	6.22	G06F	11/00
		G06F	11/16
	6.23	G06F	11/00
	6.24	G06F	11/00
		G06F	11/10
	6.3	G06F	11/00
		G06F	11/16
	6.31-6.32	G06F	11/00
	38.1-38.14	G06F	11/00
	47.1-47.3	G06F	11/00

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PROJECT E-6701

D.   CHANGES TO THE DEFINITIONS

CLASS 365 – STATIC INFORMATION STORAGE AND RETRIEVAL

Subclass 200: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 5.1
through 6.32 for memory or peripheral subsystem affected recovery, subclass 42
for memory or storage device component fault, subclass 54 for storage content
error reliability testing in digital data processing systems, subclasses 710 and
711 for fault recovery of a memory system, subclasses 718-723 for diagnostic
testing of a memory system, and subclasses 763-773 for digital data error
correction during memory access.

Subclass 201: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 5.1
through 6.32 for memory or peripheral subsystem affected recovery, subclass 42
for memory or storage device component fault, subclass 54 for storage content
error reliability testing in digital data processing systems, and subclasses 718-
723 for diagnostic testing of a memory system.

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PROJECT E-6701

D.   CHANGES TO THE DEFINITIONS

CLASS 369 – DYNAMIC INFORMATION STORAGE OR RETRIEVAL

Subclass 53.13: Under SEE OR SEARCH CLASS

Delete:

The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection /Recovery, subclasses 5.1
through 6.32 for recovery from a fault of memory or peripheral device, subclass
42 for fault locating specific to a fault in a memory, subclass 54 for detection or
notification of error of storage state, subclasses 710-711 for fault recovery of
memory system, subclasses 718-723 for diagnostic testing of an information
signal storage device, and subclasses 769-771 for forward error correction of
encoded data stored or retrieved from a dynamic storage device.

Subclass 53.2:   Under SEE OR SEARCH CLASS

Delete:

The reference to Class 714.

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PROJECT E-6701

D.   CHANGES TO THE DEFINITIONS

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 5.1
          through 6.32 for recovery from a fault of a memory or peripheral device,
          subclass 42 for fault locating specific to a fault in a memory, subclass 54 for
          detection or notification of an error of storage state, subclasses 710-711 for fault
          recovery of memory system, subclasses 718-723 for diagnostic testing of an
          information signal storage device, and subclasses 769-771 for forward error
          correction of encoded data stored or retrieved from a dynamic storage device.

Subclass 53.41: Under SEE OR SEARCH CLASS

Delete:

          The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection /Recovery, subclasses   5.1
          through 6.32 for recovery from a fault of memory or peripheral device, subclass
          42 for fault locating specific to a fault in a memory, subclass 54 for detection or
          notification of error of storage state, subclasses 710-711 for fault recovery of
          memory system, subclasses 718-723 for diagnostic testing of an information
          signal storage device, and subclasses 769-771 for forward error correction of
          encoded data stored or retrieved from a dynamic storage device.

Subclass 53.42: Under SEE OR SEARCH CLASS

Delete:

          The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 5.1
          through 6.32 for recovery from a fault of memory or peripheral device, subclass
          42 for fault locating specific to a fault in a memory, subclass 54 for detection or
          notification of error of storage state, subclasses 710-711 for fault recovery of
          memory system, subclasses 718-723 for diagnostic testing of an information
          signal storage device, and subclasses 746-797 for generic data error correction.

JANUARY 4, 2011

PROJECT E-6701

D.   CHANGES TO THE DEFINITIONS

CLASS 370 – MULTIPLEX COMMUNICATIONS

Class definition: Under SECTION III – REFERENCES TO OTHER CLASSES, SEE OR
SEARCH CLASS

Delete:

The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclass 3 or
replacement with spare devices, subclasses 4.1 through 4.5 for reconfiguring
transmission facility, and subclasses 712-717 for transmission facility testing.

Subclass 228:   Under SEE OR SEARCH CLASS

Delete:

The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 4.1
through 4.5 for replacement with spare transmission facility or channel which is
not a multiplex communication system.

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PROJECT E-6701

D.   CHANGES TO THE DEFINITIONS

CLASS 398 – OPTICAL COMMUNICATIONS

Subclass 5:   Under SEE OR SEARCH CLASS

Delete:

The reference to Class 714.

Insert:

714,   Error Detection /Correction and Fault Detection /Recovery, subclasses 4.1 through 4.5 for masking or reconfiguration of transmission network which is not limited to optical communication.

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D.   CHANGES TO THE DEFINITIONS

CLASS 702 – DATA PROCESSING: MEASURING, CALIBRATING, OR TESTING

Subclass 186:   Under SEE OR SEARCH CLASS

Delete:

The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 5.1 through 6.32 for fault recovery of a memory or a peripheral subsystem of a computer, subclasses 40-44 for a computer component dependent technique for fault locating, and subclasses 718-723 for memory testing.

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D.   CHANGES TO THE DEFINITIONS

CLASS 703 –   DATA PROCESSING: STRUCTURAL DESIGN, MODELING, SIMULATION, AND
EMULATION

       Class definition: Under SECTION II – REFERENCES TO OTHER CLASSES, SEE OR
                    SEARCH CLASS

          Delete:

             The reference to Class 714.

          Insert:

          714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 25 through
             46 for locating fault in a computer system or processor, subclasses 38.1 through
             38.14 for locating fault in a computer program or software, and subclasses 724
             through 745 for digital logic test event generating.

       Subclass 22:   Under SEE OR SEARCH CLASS

          Delete:

             The reference to Class 714.

          Insert:

          714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 38.1
             through 38.14 for locating fault in a computer program or software.

D.   CHANGES TO THE DEFINITIONS

CLASS 707 –   DATA PROCESSING: DATABASE AND FILE MANAGEMENT OR DATA
                STRUCTURES

Subclass 655:   Under SEE OR SEARCH CLASS

      Delete:

            The reference to Class 714.

      Insert:

      714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 6.1
              through 6.32 for reliability and availability by redundant stored data access on a
              network.

Subclass 687:   Under SEE OR SEARCH CLASS,

      Delete:

            The reference to Class 714.

      Insert:

      714,   Error Detection/Correction and Fault Detection/Correction, subclasses 1 through
              57 and subclass 100 for data processing system error or fault handling including
              state recovery, and subclasses 47.1 through 47.3 for actively preventing errors;
              appropriate subclasses for state validity checks, error and fault detection, and
              monitoring.

D.   CHANGES TO THE DEFINITIONS

CLASS 709 –   ELECTRICAL COMPUTERS AND DIGITAL PROCESSING SYSTEMS:
MULTICOMPUTER DATA TRANSFERRING

Subclass 224:   Under SEE OR SEARCH CLASS, in the reference to

Delete:

The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclass 39 for
protocol analyzers and logic analyzers, and subclasses 47.1 through 47.3 for
performance monitoring for fault avoidance.

JANUARY 4, 2011

PROJECT E-6701

D. CHANGES TO THE DEFINITIONS

CLASS 710 – ELECTRICAL COMPUTERS AND DIGITAL DATA PROCESSING
SYSTEMS: INPUT/OUTPUT

Subclass 15:   Under SEE OR SEARCH CLASS,

Delete:

The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclass 1 for
furthering the reliability or availability of peripherals, especially subclasses 5.1
through 6.32 for memory or I/O subsystem affected faults, subclass 43 for bus or
I/O channel device fault, subclasses 47.1 through 47.3 for performance
monitoring, subclasses 712-717 for transmission facility testing, and subclasses
718-723 for memory testing.

Subclass 308:   Under SEE OR SEARCH CLASS

Delete:

The reference to Class 714.

Insert:

714,   Error Detection /Correction and Fault Detection /Recovery, appropriate
subclasses for detecting or correcting errors in generic electrical pulse or pulse
coded data and for detecting and recovering from faults of computers,
particularly subclass 5.11 for access processor affected; digital data processing
systems, and logic level based systems, particularly subclass 702 for memory
access (e.g., address permutation, etc.); subclasses 710-711 for replacement with
spare memory components or portion thereof; subclasses 718-723 for memory
testing; and subclasses 763-773 for memory access with error correction, error
pointer, or error checking.

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D.   CHANGES TO THE DEFINITIONS

CLASS 711 –   ELECTRICAL COMPUTERS AND DIGITAL DATA PROCESSING
               SYSTEMS: MEMORY

Subclass 114:   Under SEE OR SEARCH CLASS

        Delete:

                The reference to Class 714.

        Insert:

        714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 5.1
                through 6.32 for systems directed to reliability and availability of DASDs.

Subclass 141:   Under SEE OR SEARCH CLASS

        Delete:

                The reference to Class 714.

        Insert:

        714,   Error Detection/Correction and Fault Detection/Recovery, subclass 1 for
                reliability and availability in digital data processing systems, per se, including
                subclasses 5.1 through 6.32 for memory or peripheral subsystem affected fault
                recovery.

Subclass 161: Under SEE OR SEARCH CLASS

        Delete:

                The reference to Class 714.

D.   CHANGES TO THE DEFINITIONS

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclass 1 for diagnostic testing or monitoring of a digital data processing system for reliability purposes comprising power fail-safe functions, fault detection, or anticipation of a failure; more specifically, subclasses 5.1 through 6.32 for memory or peripheral subsystem affected recovery, subclass 42 for memory component fault, and subclass 54 for storage content error detection or notification, subclasses 718-723 for reliability and availability in memory accessing and control such as isolating failed memory and storing redundant data with recitation of the recovery, fault, or failure.

Subclass 162:   Under SEE OR SEARCH CLASS

Delete:

The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 5.1 through 6.32 and subclasses 718-723 for reliability and availability in memory accessing and control such as isolating failed memory and storing redundant data with recitation of the recovery, fault, or failure.

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PROJECT E-6701

D. CHANGES TO THE DEFINITIONS

CLASS 713 – ELECTRICAL COMPUTERS AND DIGITAL PROCESSING SYSTEMS:
               SUPPORT

Subclass 187:   Under SEE OR SEARCH CLASS

Delete:

The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 38.1
        through 38.14 for error analysis of computer software.

Subclass 188:   Under SEE OR SEARCH CLASS

Delete:

The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 38.1
        through 38.14 for error analysis of computer software.

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D.   CHANGES TO THE DEFINITIONS

CLASS 714 – ERROR DETECTION/CORRECTION AND FAULT DETECTION/RECOVERY

Definitions Abolished

Subclasses

4-9, 38, 47

Definitions Modified

Subclass 15:   Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The reference to subclasses 6+

Insert:

6.1 through 6.23 for recovery by accessing redundant stored data.

Subclass 24:   Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The references to subclasses 4, 5, and 8

Insert:

4.1 through 4.5, for network affected fault recovery.

5.1 through 6.23, for memory or peripheral subsystem affected.

6.13, for isolating failed storage locations.

Subclass 45:   Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The reference to subclass 47

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Insert:

47.1 through 47.3, for error logging without recording.

Subclass 48:   Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The reference to subclass 47

Insert:

47.1 through 47.3, for performance monitoring for fault avoidance in combination with error detecting or notifying.

Definitions Established

4.1   Of network:
This subclass is indented under subclass 3. Subject matter further including means or steps for recovery from nodal failure at a network level.

(1)   Note. This subclass is for the recovery and integration of the processing within the node itself, as opposed to the data flow/routing of the network via a communication channel. This subclass definition specifically states that it handles the failure of the processing aspects of the node, and not the impact on the network itself.

(2)   Note. Subject matter that involves hardware devices such as switches to re-route communications in the multiplex environment are classified elsewhere.

SEE OR SEARCH CLASS:

340,   Communications: Electrical, subclass 2.23 for alternate routing in a plural stage communication system, and subclasses 286.01-333 for residual electrical communication systems.

342,   Communications: Directive Radio Wave Systems and Devices (e.g., Radar, Radio Navigation), subclasses 1 through 465 for alternate routing in a plural stage radar network.

343,   Communications: Radio Wave Antennas, subclasses 700 through 916 for alternate routing in a plural antenna system.

D. CHANGES TO THE DEFINITIONS

      370,   Multiplex Communications, subclasses 216 through 228 for fault recovery, and subclasses 229-240 for data flow congestion prevention and control in a multiplex communication system, i.e., the hardware devices (switches, etc.) to re-route communications in the multiplex environment.

      375,   Pulse or Digital Communications, subclass 356 for network synchronizing more than two stations.

4.11   Backup or standby (e.g., failover, etc.):
This subclass is indented under subclass 4.1. Subject matter wherein the network has a spare substitute node ready to take over in the event the main one crashes.

      SEE OR SEARCH THIS CLASS, SUBCLASS:

      13,   for prepared backup processor or updating backup processor.

      SEE OR SEARCH CLASS:

      370,   Multiplex Communications, subclasses 216 through 228 for fault recovery, and subclasses 229-240 for data flow congestion prevention and control in a multiplex communication system.

      379,   Telephonic Communications, subclass 112.02 for call traffic recording by redundant processor or backup processor, and subclass 221.04 for restoring failed network routing.

      700,   Data Processing: Generic Control Systems or Specific Applications, subclass 82 for relating to the protection and reliability of the control system.

      707,   Data Processing: Database and File Management or Data Structures, subclasses 640 through 686 for archiving, backup, or recovery under database management.

      711,   Electrical Computers and Digital Processing Systems: Memory, subclasses 161 through 162 for archiving and backup under memory accessing, and subclass 165 for internally relocating data.

      713,   Electrical Computers and Digital Processing Systems: Support, subclass 323 for relating to sleep/resume, suspend/resume or standby of data processing systems.

D. CHANGES TO THE DEFINITIONS

4.12   Hot swapping (i.e., while network is up):
This subclass is indented under subclass 4.11. Subject matter wherein the failed node is replaced without significant interruption to the network.

4.2   Isolate or remove failed node with replacement (e.g., bypassing, re-routing, etc.):
This subclass is indented under subclass 4.1. Subject matter further comprising means or steps to separate, detach, bypass, or re-route a failed node.

4.21   Reintegrate node back into network:
This subclass is indented under subclass 4.2. Subject matter further comprising means or steps for putting back or establishing a failed node back into network without replacement of the failed node.

4.3   Repair failed node without replacement (i.e., on-line repair):
This subclass is indented under subclass 4.1. Subject matter further comprising means or steps to fix the failed node through dial-up, or dedicated communications links, or through the Internet without replacing the node.

4.4   Remote repair:
This subclass is indented under subclass 4.1. Subject matter further comprising means or steps to repair nodes located at a site remote from the network.

SEE OR SEARCH THIS CLASS, SUBCLASS:

6.31, for repair at the plurality of memory devices.

4.5   Bus network (e.g., PCI, AGP, etc.):
This subclass is indented under subclass 4.1. Subject matter wherein the network shares a common path such as Peripheral Component Interconnect (PCI) or Accelerated Graphics Port (AGP) for enabling redundancy in the communication between a plurality of peripheral devices and a host.

SEE OR SEARCH CLASS:

370,   Multiplex Communications, subclass 258 for a bus network having a closed transmission path.

5.1   Of peripheral subsystem:
This subclass is indented under subclass 3. Subject matter further including means or steps for recovery from a faulted peripheral device.

SEE OR SEARCH THIS CLASS, SUBCLASS:

710-711, for replacement of memory spare location, portion, or segment.

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SEE OR SEARCH CLASS:

710,   Electrical Computers and Digital Data Processing Systems: Input /Output,
         subclasses 1-74 ,for transferring data from one or more peripherals to one or
         more computers for the latter to process, store, or further transfer or for
         transferring data from the computers to the peripherals.

711,   Electrical Computers and Digital Processing Systems: Memory, subclasses 100-
         317 for means (e.g., processor, controller, etc.) or steps for governing memory in
         a digital data processing system or the passage (e.g., reading or writing, etc.) of
         data thereto, and subclasses 133-136 for entry replacement strategies and page
         fault recovery.

5.11   Access processor affected (e.g., I/O processor, MMU, or DMA processor, etc.):
This subclass is indented under subclass 5.1. Subject matter further comprising means or
steps for recovery from a fault limited to a specialized processor accessing I/O processor,
Memory Management Unit (MMU), or Direct Memory Access (DMA) processor.

SEE OR SEARCH CLASS:

712,   Electrical Computers and Digital Processing Systems: Processing Architectures
         and Instruction Processing (e.g., Processors), appropriate subclasses for digital
         data processing system architecture, per se.

6.1   Of memory:
This subclass is indented under subclass 3. Subject matter further including means or
steps for recovery from a fault of a memory function level.

(1)   Note. "Page faults" are a species of faults peculiar to memory accessing which
         are classified elsewhere. See the SEE OR SEARCH THIS CLASS, SUBCLASS
         notes below.

SEE OR SEARCH THIS CLASS, SUBCLASS:

710-711, for replacement of memory spare location, portion, or segment.

SEE OR SEARCH CLASS:

710,   Electrical Computers and Digital Data Processing Systems: Input /Output,
         subclasses 1-74 for transferring data from one or more peripherals to one or
         more computers for processing or storing.

711,   Electrical Computers and Digital Processing Systems: Memory, subclasses 100-
         132 for means (e.g., processor, controller, etc.) or steps for governing memory in
         a digital data processing system or the passage (e.g., reading or writing, etc.) of

D.   CHANGES TO THE DEFINITIONS

data thereto, and subclasses 133-146 for entry replacement strategies and page fault recovery.

6.11   Within single memory device (e.g., disk, etc.):
This subclass is indented under subclass 6.1. Subject matter further including means or steps for recovery of a fault within a single memory device such as a floppy disk, micro-floppy disk, removable cartridge, or hard disk.

6.12   Recovery partition:
This subclass is indented under subclass 6.11. Subject matter further including means or steps for recovery of a fault within a distinct portion of single memory.

6.13   Isolating failed storage location (e.g., sector remapping, etc.):
This subclass is indented under subclass 6.11. Subject matter further including means or steps for recovery by disabling or detaching access to a failed single memory location.

(1)   Note. Classification herein requires more than selecting a correct output from a concurrently active redundant functional unit in place of the output of the failed component.

SEE OR SEARCH THIS CLASS, SUBCLASS:

710-711, for replacement of memory spare location, portion, or segment.

SEE OR SEARCH CLASS:

365,   Static Information Storage and Retrieval, subclasses 200 and 201 for bad bit and testing of static storage.

711,   Electrical Computers and Digital Processing Systems: Memory, subclasses 170-173 for automatically determining memory space allocation.

6.2   Plurality of memory devices (e.g., array, etc.):
This subclass is indented under subclass 6.1. Subject matter further including means or steps for recovery of a fault within a plurality of memory devices, e.g., array, etc.

SEE OR SEARCH CLASS:

326,   Electronic Digital Logic Circuitry, subclasses 39-45 for programmable gate arrays.

710,   Electrical Computers and Digital Data Processing Systems: Input /Output, subclasses 20-21 for systems directed to parallel data transfer.

711,   Electrical Computers and Digital Processing Systems: Memory, subclasses 170-173 for automatically determining memory space allocation.

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6.21   Array controller:
This subclass is indented under subclass 6.2. Subject matter wherein a memory array controller performs the recovery of the fault.

6.22   RAID:
This subclass is indented under subclass 6.2. Subject matter wherein the plurality of memory devices are redundant array of inexpensive disks (RAID) for recovery of a fault.

6.23   Mirror (i.e., level 1 RAID):
This subclass is indented under subclass 6.22. Subject matter wherein the RAID has a level one that has one disk drive and an exact backup on a second disk, i.e., all data is redundantly recorded on a second disk for recovery of a fault.

6.24   ECC, parity, or fault code (i.e., level 2+ RAID):
This subclass is indented under subclass 6.22. Subject matter wherein the RAID has a level more than two, which has error checking and correcting code, parity data, or fault code for recovery of a fault.

6.3   Backup or standby (e.g., failover, etc.):
This subclass is indented under subclass 6.2. Subject matter wherein the plurality of memory devices has a spare standby memory ready to take over in the event of the main one crashes.

SEE OR SEARCH THIS CLASS, SUBCLASS:

4.11,   for prepared backup or updating backup memory devices.

6.31   Remote repair:
This subclass is indented under subclass 6.3. Subject matter further comprising means or steps to repair a memory located at a site remote from the network.

SEE OR SEARCH THIS CLASS, SUBCLASS:

4.4,   for repair of a network remotely.

6.32   Replacement of failed memory device:
This subclass is indented under subclass 6.2. Subject matter further comprising means or steps for replacing a malfunctioning memory device within a plurality of memory devices for recovering a fault.

38.1   Of computer software faults:
This subclass is indented under subclass 37. Subject matter further including means or steps for locating a fault in software or testing software for determining the location of a fault.

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(1)   Note. This subclass also provides for detecting an error in instruction data in combination with a digital data processing system. Analysis or monitoring of program code execution is used for the purpose of fault location and recovery during actual use of computer software, and it is used subsequent to software development.

(2)   Note. This subclass also provides for fault locating in software analysis by mechanisms such as debugging, automatic code generating, object oriented design, etc.

(3)   Note. Generic coded information error detection for determining efficiency of a program during execution, so as to utilize the determination in debugging of the software during the development process, is classified elsewhere. See SEE OR SEARCH CLASS notes below.

SEE OR SEARCH THIS CLASS, SUBCLASS:

799   through 824, for coded information error detecting.

SEE OR SEARCH CLASS:

703,   Data Processing: Structural Design, Modeling, Simulation, and Emulation, subclass 22 for modeling (i.e., artificially mimic) a computer software program so as to predict or analyze its performance.

717,   Data Processing: Software Development, Installation, and Management, subclasses 131 through 133 for determining efficiency of program execution time analysis.

38.11   Memory dump:
This subclass is indented under subclass 38.1. Subject matter further including means or steps for generating a memory image of the existing state of software executing on the system at the time of a crash.

38.12   Time-out (i.e., of program):
This subclass is indented under subclass 38.1. Subject matter further including an event which occurs at the end of a predetermined interval of time during testing of the software.

38.13   Interrupt (i.e., halt the program):
This subclass is indented under subclass 38.1. Subject matter comprising means or steps for executing reset interruption or interruption signal, for example, for a break command.

38.14   By remotely:
This subclass is indented under subclass 38.1. Subject matter wherein fault location determination during software testing or analysis is performed remotely.

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47.1   Performance monitoring for fault avoidance:
This subclass is indented under subclass 1. Subject matter further including means or steps for monitoring event duration and event counts for anticipating or recognizing faults.

(1)   Note. This subclass relates to the fault avoidance species of reliability.

(2)   Note. This subclass includes event duration and counting arrangements for statistical analysis of system operations and predictive methods of fault avoidance.

SEE OR SEARCH CLASS:

368,   Horology: Time Measuring Systems or Devices, subclasses 1 through 327 for time measurement.

377,   Electrical Pulse Counters, Pulse Dividers, or Shift Registers: Circuits and Systems, subclasses 64 through 81 for shift registers, and subclasses 107-111 for counters.

702,   Data Processing: Measuring, Calibrating, or Testing, subclasses 182 through 186 for performance or efficiency evaluation in a computer data processing system for measuring, calibrating, or testing purposes.

705,   Data Processing: Financial, Business Practice, Management, or Cost /Price Determination, subclasses 7 through 11 for operations research.

708,   Electrical Computers: Arithmetic Processing and Calculating, subclasses 200 through 714 for various arithmetic data processing operations performed by digital calculating computers.

709,   Electrical Computers and Digital Processing Systems: Multicomputer Data Transferring, subclass 224 for computer network managing including monitoring.

47.2   Threshold:
This subclass is indented under subclass 47.1. Subject matter further including means or steps for establishing the minimum value of a signal that can be detected by the system for monitoring event duration and event counts for anticipating or recognizing faults.

47.3   Trends (i.e., expectancy):
This subclass is indented under subclass 47.1. Subject matter further including means or steps that use the data from measured characteristics, events, or conditions to calculate the length of time to a potential future failure.

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FOREIGN ART COLLECTIONS

FOR 306   Of network (714/4):
This foreign art collection is indented under unnumbered placeholder 714/3. Foreign art collection further including means or steps for recovery at a network level (e.g., recovery from nodal failures).

FOR 307   Of memory or peripheral subsystem (714/5):
This foreign art collection is indented unnumbered placeholder 714/3. Foreign art collection further including means or steps for recovery from a fault of a memory function level or the peripheral function level, or for recovery limited to a specialized processor accessing either memory, peripheral, or other I/O device.

(1)   Note. "Page faults" are a species of faults peculiar to memory accessing and are classified elsewhere.

FOR 308   Redundant stored data accessed (e.g., duplicated data, error correction coded data, or other parity-type data) (714/6):
This foreign art collection is indented under FOR 307. Foreign art collection further including means or steps for recovery by accessing redundant stored data.

(1)   Note. This and indented subclasses rely on information which is a function of the actual data of concern   as exemplified in one simple form by parity data. The species of fault recovery or avoidance concerned with storing archival verbatim copies of data is classified elsewhere.

(2)   Note. Parity and error-correction coded storage of general utility in a system without data processing features claimed are classified elsewhere in this class.

FOR 309   Reconfiguration (e.g., adding a replacement storage component) (714/7):
This foreign art collection is indented under FOR 308. Foreign art collection further including means or steps for statically replacing a failed memory component.

(1)   Note. Classification here requires more than selecting a correct output from a concurrently active redundant functional unit in place of the output of the failed component.

FOR 310   Isolating failed storage location (e.g., sector remapping) (714/8):
This foreign art collection is indented under FOR 307. Foreign art collection further including means or steps for recovery by disabling access to a failed memory location.

(1)   Note. Classification here requires more than selecting a correct output from a concurrently active redundant functional unit in place of the output of the failed component.

D.   CHANGES TO THE DEFINITIONS

FOR 311   Access processor affected (e.g., I/O processor, MMU, DMA processor) (714/9):
This foreign art collection is indented under FOR 307. Foreign art collection further including means or steps for recovery from fault of an access processor (e.g., memory management unit (MMU), direct memory access (DMA) processor, I/O processor, etc.).

FOR 312   Of computer software (714/38):
This foreign art collection is indented unnumbered placeholder 714/37. Subject matter further including means or steps for locating a fault in software or testing software.

(1)   Note. This subclass also provides for detecting an error in instruction data in combination with a digital data processing system. Generic coded information error detection is classified elsewhere.

(2)   Note. This subclass also provides for fault locating in software analysis by mechanisms such as debugging, automatic code generating, object oriented design, etc.

FOR 313   Performance monitoring for fault avoidance (714/47):
This foreign art collection is indented unnumbered placeholder 714/1. Foreign art collection further including means or steps for monitoring event duration and event counts for anticipating or recognizing faults.

(1)   Note. This subclass relates to the fault avoidance species of reliability.

(2)   Note. This subclass includes event duration and counting arrangements for statistical analysis of system operations and predictive methods of fault avoidance.

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CLASS 717 – DATA PROCESSING: SOFTWARE DEVELOPMENT, INSTALLATION, AND MANAGEMENT

Subclass 111:   Under SEE OR SEARCH CLASS

      Delete:

          The reference to Class 714.

      Insert:

      714,   Error Detection/Correction and Fault Detection/Recovery, particularly subclasses 38.1 through 38.14 for analysis of software.

Subclass 112:   Under SEE OR SEARCH CLASS

      Delete:

          The reference to Class 714.

      Insert:

      714,   Error Detection/Correction and Fault Detection /Recovery particularly subclasses 38.1 through 38.14 for analysis of software.

Subclass 154:   Under SEE OR SEARCH CLASS

      Delete:

The reference to Class 714.

      Insert:

      714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 38.1 through 38.14 for analysis of software for the purpose of locating fault/error during execution of a developed software.

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Subclass 157:   Under SEE OR SEARCH CLASS

Delete:

The reference to Class 714.

Insert:

714,   Error Detection/Correction and Fault Detection/Recovery, subclasses 38.1 through 38.14 for analysis of software for the purpose of locating fault/error during execution of a developed software.