

| Symbol           | Typ                   | Titel                                                                                                                                                                                                                                            |
|------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>G</b>         | <b>Sektion</b>        | <b>PHYSICS</b>                                                                                                                                                                                                                                   |
| <b>G06</b>       | <b>Klasse</b>         | <b>COMPUTING; CALCULATING; COUNTING</b>                                                                                                                                                                                                          |
| <b>G06F</b>      | <b>Unterkategorie</b> | <b>ELECTRIC DIGITAL DATA PROCESSING (computer systems based on specific computational models G06N)</b>                                                                                                                                           |
| <b>G06F 1/00</b> | <b>Hauptgruppe</b>    | <b>Details not covered by groups G06F 3/00-G06F 13/00 and G06F 21/00 (architectures of general purpose stored programme computers G06F 15/76) [1, 2006.01]</b>                                                                                   |
| G06F 1/02        | 1-Punkt Untergruppe   | . Digital function generators [1, 2006.01]                                                                                                                                                                                                       |
| G06F 1/025       | 2-Punkt Untergruppe   | .. for functions having two-valued amplitude, e.g. Walsh functions [5, 2006.01]                                                                                                                                                                  |
| G06F 1/03        | 2-Punkt Untergruppe   | ... working, at least partly, by table look-up (G06F 1/025 takes precedence) [5, 2006.01]                                                                                                                                                        |
| G06F 1/035       | 3-Punkt Untergruppe   | ... Reduction of table size [5, 2006.01]                                                                                                                                                                                                         |
| G06F 1/04        | 1-Punkt Untergruppe   | . Generating or distributing clock signals or signals derived directly therefrom [1, 2006.01]                                                                                                                                                    |
| G06F 1/06        | 2-Punkt Untergruppe   | .. Clock generators producing several clock signals [5, 2006.01]                                                                                                                                                                                 |
| G06F 1/08        | 2-Punkt Untergruppe   | .. Clock generators with changeable or programmable clock frequency [5, 2006.01]                                                                                                                                                                 |
| G06F 1/10        | 2-Punkt Untergruppe   | .. Distribution of clock signals [5, 2006.01]                                                                                                                                                                                                    |
| G06F 1/12        | 2-Punkt Untergruppe   | .. Synchronisation of different clock signals [5, 2006.01]                                                                                                                                                                                       |
| G06F 1/14        | 2-Punkt Untergruppe   | .. Time supervision arrangements, e.g. real time clock [5, 2006.01]                                                                                                                                                                              |
| G06F 1/16        | 1-Punkt Untergruppe   | . Constructional details or arrangements [5, 2006.01]                                                                                                                                                                                            |
| G06F 1/18        | 2-Punkt Untergruppe   | .. Packaging or power distribution [5, 2006.01]                                                                                                                                                                                                  |
| G06F 1/20        | 2-Punkt Untergruppe   | .. Cooling means [5, 2006.01]                                                                                                                                                                                                                    |
| G06F 1/22        | 1-Punkt Untergruppe   | . Means for limiting or controlling the pin/gate ratio [5, 2006.01]                                                                                                                                                                              |
| G06F 1/24        | 1-Punkt Untergruppe   | . Resetting means [5, 2006.01]                                                                                                                                                                                                                   |
| G06F 1/26        | 1-Punkt Untergruppe   | . Power supply means, e.g. regulation thereof (for memories G11C) [5, 2006.01]                                                                                                                                                                   |
| G06F 1/28        | 2-Punkt Untergruppe   | .. Supervision thereof, e.g. detecting power-supply failure by out of limits supervision [5, 2006.01]                                                                                                                                            |
| G06F 1/30        | 2-Punkt Untergruppe   | .. Means for acting in the event of power-supply failure or interruption, e.g. power-supply fluctuations (for resetting only G06F 1/24) [5, 2006.01]                                                                                             |
| G06F 1/32        | 2-Punkt Untergruppe   | .. Means for saving power [5, 2006.01]                                                                                                                                                                                                           |
| <b>G06F 3/00</b> | <b>Hauptgruppe</b>    | <b>Input arrangements for transferring data to be processed into a form capable of being handled by the computer; Output arrangements for transferring data from processing unit to output unit, e.g. interface arrangements [1, 4, 2006.01]</b> |
| G06F 3/01        | 1-Punkt Untergruppe   | . Input arrangements or combined input and output arrangements for interaction between user and computer (G06F 3/16 takes precedence) [2006.01]                                                                                                  |
| G06F 3/02        | 2-Punkt Untergruppe   | .. Input arrangements using manually operated switches, e.g. using keyboards or dials [1, 3, 2006.01]                                                                                                                                            |
| G06F 3/023       | 3-Punkt Untergruppe   | ... Arrangements for converting discrete items of information into a coded form, e.g. arrangements for interpreting keyboard generated codes as alphanumeric codes, operand codes or instruction codes [3, 2006.01]                              |
| G06F 3/027       | 4-Punkt Untergruppe   | .... for insertion of the decimal point [3, 2006.01]                                                                                                                                                                                             |

| Symbol      | Typ                 | Titel                                                                                                                                                                                                                                                    |
|-------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G06F 3/03   | 2-Punkt Untergruppe | ... Arrangements for converting the position or the displacement of a member into a coded form [3, 2006.01]                                                                                                                                              |
| G06F 3/033  | 3-Punkt Untergruppe | ... Pointing devices displaced or positioned by the user; Accessories therefor (digitisers characterised by the transducing means G06F 3/041) [3, 2006.01, 2013.01]                                                                                      |
| G06F 3/0338 | 4-Punkt Untergruppe | .... with detection of limited linear or angular displacement of an operating part of the device from a neutral position, e.g. isotonic or isometric joysticks [2013.01]                                                                                 |
| G06F 3/0346 | 4-Punkt Untergruppe | .... with detection of the device orientation or free movement in a 3D space, e.g. 3D mice, 6-DOF [six degrees of freedom] pointers using gyroscopes, accelerometers or tilt-sensors [2013.01]                                                           |
| G06F 3/0354 | 4-Punkt Untergruppe | .... with detection of 2D relative movements between the device, or an operating part thereof, and a plane or surface, e.g. 2D mice, trackballs, pens or pucks [2013.01]                                                                                 |
| G06F 3/0362 | 4-Punkt Untergruppe | .... with detection of 1D translations or rotations of an operating part of the device, e.g. scroll wheels, sliders, knobs, rollers or belts [2013.01]                                                                                                   |
| G06F 3/037  | 4-Punkt Untergruppe | .... using the raster scan of a cathode-ray tube [CRT] for detecting the position of the member, e.g. light pens cooperating with CRT monitors [3, 2006.01, 2013.01]                                                                                     |
| G06F 3/038  | 4-Punkt Untergruppe | .... Control and interface arrangements therefor, e.g. drivers or device-embedded control circuitry [2006.01, 2013.01]                                                                                                                                   |
| G06F 3/039  | 4-Punkt Untergruppe | .... Accessories therefor, e.g. mouse pads [2006.01, 2013.01]                                                                                                                                                                                            |
| G06F 3/041  | 3-Punkt Untergruppe | ... Digitisers, e.g. for touch screens or touch pads, characterised by the transducing means [2006.01]                                                                                                                                                   |
| G06F 3/042  | 4-Punkt Untergruppe | .... by opto-electronic means [2006.01]                                                                                                                                                                                                                  |
| G06F 3/043  | 4-Punkt Untergruppe | .... using propagating acoustic waves [2006.01]                                                                                                                                                                                                          |
| G06F 3/044  | 4-Punkt Untergruppe | .... by capacitive means [2006.01]                                                                                                                                                                                                                       |
| G06F 3/045  | 4-Punkt Untergruppe | .... using resistive elements, e.g. a single continuous surface or two parallel surfaces put in contact [2006.01]                                                                                                                                        |
| G06F 3/046  | 4-Punkt Untergruppe | .... by electromagnetic means [2006.01]                                                                                                                                                                                                                  |
| G06F 3/047  | 4-Punkt Untergruppe | .... using sets of wires, e.g. crossed wires [2006.01]                                                                                                                                                                                                   |
| G06F 3/048  | 2-Punkt Untergruppe | ... Interaction techniques based on graphical user interfaces [GUI] [2006.01, 2013.01]                                                                                                                                                                   |
| G06F 3/0481 | 3-Punkt Untergruppe | ... based on specific properties of the displayed interaction object or a metaphor-based environment, e.g. interaction with desktop elements like windows or icons, or assisted by a cursor's changing behaviour or appearance [2013.01]                 |
| G06F 3/0482 | 4-Punkt Untergruppe | .... interaction with lists of selectable items, e.g. menus [2013.01]                                                                                                                                                                                    |
| G06F 3/0483 | 4-Punkt Untergruppe | .... interaction with page-structured environments, e.g. book metaphor [2013.01]                                                                                                                                                                         |
| G06F 3/0484 | 3-Punkt Untergruppe | ... for the control of specific functions or operations, e.g. selecting or manipulating an object or an image, setting a parameter value or selecting a range [2013.01]                                                                                  |
| G06F 3/0485 | 4-Punkt Untergruppe | .... Scrolling or panning [2013.01]                                                                                                                                                                                                                      |
| G06F 3/0486 | 4-Punkt Untergruppe | .... Drag-and-drop [2013.01]                                                                                                                                                                                                                             |
| G06F 3/0487 | 3-Punkt Untergruppe | ... using specific features provided by the input device, e.g. functions controlled by the rotation of a mouse with dual sensing arrangements, or of the nature of the input device, e.g. tap gestures based on pressure sensed by a digitiser [2013.01] |
| G06F 3/0488 | 4-Punkt Untergruppe | .... using a touch-screen or digitiser, e.g. input of commands through traced gestures [2013.01]                                                                                                                                                         |
| G06F 3/0489 | 4-Punkt Untergruppe | .... using dedicated keyboard keys or combinations thereof [2013.01]                                                                                                                                                                                     |

| Symbol           | Typ                 | Titel                                                                                                                                                                                                                                                |
|------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G06F 3/05        | 1-Punkt Untergruppe | . Digital input using the sampling of an analogue quantity at regular intervals of time [1, 2006.01]                                                                                                                                                 |
| G06F 3/06        | 1-Punkt Untergruppe | . Digital input from, or digital output to, record carriers [1, 2006.01]                                                                                                                                                                             |
| G06F 3/08        | 2-Punkt Untergruppe | .. from or to individual record carriers, e.g. punched card [1, 2006.01]                                                                                                                                                                             |
| G06F 3/09        | 1-Punkt Untergruppe | . Digital output to typewriters [3, 2006.01]                                                                                                                                                                                                         |
| G06F 3/12        | 1-Punkt Untergruppe | . Digital output to print unit [1, 2006.01]                                                                                                                                                                                                          |
| G06F 3/13        | 1-Punkt Untergruppe | . Digital output to plotter [3, 2006.01]                                                                                                                                                                                                             |
| G06F 3/14        | 1-Punkt Untergruppe | . Digital output to display device [1, 2006.01]                                                                                                                                                                                                      |
| G06F 3/147       | 2-Punkt Untergruppe | .. using display panels [3, 2006.01]                                                                                                                                                                                                                 |
| G06F 3/153       | 2-Punkt Untergruppe | .. using cathode-ray tubes [3, 2006.01]                                                                                                                                                                                                              |
| G06F 3/16        | 1-Punkt Untergruppe | . Sound input; Sound output (conversion of speech into digital information or <u>vice versa</u> ) [1, 2006.01]                                                                                                                                       |
| G06F 3/18        | 1-Punkt Untergruppe | . Digital input from automatic curve follower [3, 2006.01]                                                                                                                                                                                           |
| <b>G06F 5/00</b> | <b>Hauptgruppe</b>  | <b>Methods or arrangements for data conversion without changing the order or content of the data handled [1, 4, 2006.01]</b>                                                                                                                         |
| G06F 5/01        | 1-Punkt Untergruppe | . for shifting, e.g. justifying, scaling, normalising [5, 2006.01]                                                                                                                                                                                   |
| G06F 5/06        | 1-Punkt Untergruppe | . for changing the speed of data flow, i.e. speed regularising [1, 2006.01]                                                                                                                                                                          |
| G06F 5/08        | 2-Punkt Untergruppe | .. having a sequence of storage locations, the intermediate ones not being accessible for either enqueue or dequeue operations, e.g. using a shift register [2006.01]                                                                                |
| G06F 5/10        | 2-Punkt Untergruppe | .. having a sequence of storage locations each being individually accessible for both enqueue and dequeue operations, e.g. using random access memory [2006.01]                                                                                      |
| G06F 5/12        | 3-Punkt Untergruppe | ... Means for monitoring the fill level; Means for resolving contention, i.e. conflicts between simultaneous enqueue and dequeue operations [2006.01]                                                                                                |
| G06F 5/14        | 4-Punkt Untergruppe | .... for overflow or underflow handling, e.g. full or empty flags [2006.01]                                                                                                                                                                          |
| G06F 5/16        | 2-Punkt Untergruppe | ... Multiplexed systems, i.e. using two or more similar devices which are alternately accessed for enqueue and dequeue operations, e.g. ping-pong buffers [2006.01]                                                                                  |
| <b>G06F 7/00</b> | <b>Hauptgruppe</b>  | <b>Methods or arrangements for processing data by operating upon the order or content of the data handled (logic circuits H03K 19/00) [1, 2006.01]</b>                                                                                               |
| G06F 7/02        | 1-Punkt Untergruppe | . Comparing digital values (G06F 7/06, G06F 7/38 take precedence) [1, 2006.01]                                                                                                                                                                       |
| G06F 7/04        | 2-Punkt Untergruppe | .. Identity comparison, i.e. for like or unlike values [1, 2006.01]                                                                                                                                                                                  |
| G06F 7/06        | 1-Punkt Untergruppe | . Arrangements for sorting, selecting, merging, or comparing data on individual record carriers [1, 2006.01]                                                                                                                                         |
| G06F 7/08        | 2-Punkt Untergruppe | .. Sorting, i.e. grouping record carriers in numerical or other ordered sequence according to the classification of at least some of the information they carry (by merging two or more sets of carriers in ordered sequence G06F 7/16) [1, 2006.01] |
| G06F 7/10        | 2-Punkt Untergruppe | .. Selecting, i.e. obtaining data of one kind from those record carriers which are identifiable by data of a second kind from a mass of ordered or randomly-distributed record carriers [1, 2006.01]                                                 |
| G06F 7/12        | 3-Punkt Untergruppe | ... with provision for printing-out a list of selected items [1, 2006.01]                                                                                                                                                                            |
| G06F 7/14        | 2-Punkt Untergruppe | .. Merging, i.e. combining at least two sets of record carriers each arranged in the same ordered sequence to produce a single set having the same ordered sequence [1, 2006.01]                                                                     |

| Symbol     | Typ                 | Titel                                                                                                                                                                                                                                                                     |
|------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G06F 7/16  | 3-Punkt Untergruppe | ... Combined merging and sorting [1, 2006.01]                                                                                                                                                                                                                             |
| G06F 7/20  | 2-Punkt Untergruppe | ... Comparing separate sets of record carriers arranged in the same sequence to determine whether at least some of the data in one set is identical with that in the other set or sets [1, 2006.01]                                                                       |
| G06F 7/22  | 1-Punkt Untergruppe | . Arrangements for sorting or merging computer data on continuous record carriers, e.g. tape, drum, disc [1, 2006.01]                                                                                                                                                     |
| G06F 7/24  | 2-Punkt Untergruppe | .. Sorting, i.e. extracting data from one or more carriers, re-arranging the data in numerical or other ordered sequence, and re-recording the sorted data on the original carrier or on a different carrier or set of carriers (G06F 7/36 takes precedence) [1, 2006.01] |
| G06F 7/26  | 3-Punkt Untergruppe | ... the sorted data being recorded on the original record carrier within the same space in which the data had been recorded prior to their sorting, without using intermediate storage [1, 2006.01]                                                                       |
| G06F 7/32  | 2-Punkt Untergruppe | .. Merging, i.e. combining data contained in ordered sequence on at least two record carriers to produce a single carrier or set of carriers having all the original data in the ordered sequence (G06F 7/36 takes precedence) [1, 2006.01]                               |
| G06F 7/36  | 2-Punkt Untergruppe | ... Combined merging and sorting [1, 2006.01]                                                                                                                                                                                                                             |
| G06F 7/38  | 1-Punkt Untergruppe | . Methods or arrangements for performing computations using exclusively denominational number representation, e.g. using binary, ternary, decimal representation [1, 3, 2006.01]                                                                                          |
| G06F 7/40  | 2-Punkt Untergruppe | .. using contact-making devices, e.g. electromagnetic relay (G06F 7/46 takes precedence) [1, 2006.01]                                                                                                                                                                     |
| G06F 7/42  | 3-Punkt Untergruppe | ... Adding; Subtracting [1, 2006.01]                                                                                                                                                                                                                                      |
| G06F 7/44  | 3-Punkt Untergruppe | ... Multiplying; Dividing [1, 2006.01]                                                                                                                                                                                                                                    |
| G06F 7/46  | 2-Punkt Untergruppe | .. using electromechanical counter-type accumulators [1, 2006.01]                                                                                                                                                                                                         |
| G06F 7/48  | 2-Punkt Untergruppe | .. using non-contact-making devices, e.g. tube, solid state device; using unspecified devices [1, 3, 2006.01]                                                                                                                                                             |
| G06F 7/483 | 3-Punkt Untergruppe | ... Computations with numbers represented by a non-linear combination of denominational numbers, e.g. rational numbers, logarithmic number system or floating-point numbers [2006.01]                                                                                     |
| G06F 7/485 | 4-Punkt Untergruppe | .... Adding; Subtracting [2006.01]                                                                                                                                                                                                                                        |
| G06F 7/487 | 4-Punkt Untergruppe | .... Multiplying; Dividing [2006.01]                                                                                                                                                                                                                                      |
| G06F 7/49  | 3-Punkt Untergruppe | ... Computations with a radix, other than binary, 8, 16 or decimal, e.g. ternary, negative or imaginary radices, mixed radix [3, 2006.01]                                                                                                                                 |
| G06F 7/491 | 3-Punkt Untergruppe | ... Computations with decimal numbers [2006.01]                                                                                                                                                                                                                           |
| G06F 7/492 | 4-Punkt Untergruppe | .... using a binary weighted representation within each denomination [2006.01]                                                                                                                                                                                            |
| G06F 7/493 | 5-Punkt Untergruppe | ..... the representation being the natural binary coded representation, i.e. 8421-code [2006.01]                                                                                                                                                                          |
| G06F 7/494 | 6-Punkt Untergruppe | ..... Adding; Subtracting [2006.01]                                                                                                                                                                                                                                       |
| G06F 7/495 | 7-Punkt Untergruppe | ..... in digit-serial fashion, i.e. having a single digit-handling circuit treating all denominations after each other [2006.01]                                                                                                                                          |
| G06F 7/496 | 6-Punkt Untergruppe | ..... Multiplying; Dividing [2006.01]                                                                                                                                                                                                                                     |
| G06F 7/498 | 4-Punkt Untergruppe | .... using counter-type accumulators [2006.01]                                                                                                                                                                                                                            |
| G06F 7/499 | 3-Punkt Untergruppe | ... Denomination or exception handling, e.g. rounding, overflow [2006.01]                                                                                                                                                                                                 |
| G06F 7/50  | 3-Punkt Untergruppe | ... Adding; Subtracting (G06F 7/483-G06F 7/491, G06F 7/544-G06F 7/556 take precedence) [1, 3, 2006.01]                                                                                                                                                                    |
| G06F 7/501 | 4-Punkt Untergruppe | .... Half or full adders, i.e. basic adder cells for one denomination [2006.01]                                                                                                                                                                                           |

| Symbol     | Typ                 | Titel                                                                                                                                                                                                                                                                         |
|------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G06F 7/502 | 5-Punkt Untergruppe | ..... Half adders; Full adders consisting of two cascaded half adders [2006.01]                                                                                                                                                                                               |
| G06F 7/503 | 5-Punkt Untergruppe | ..... using carry switching, i.e. the incoming carry being connected directly, or only via an inverter, to the carry output under control of a carry propagate signal [2006.01]                                                                                               |
| G06F 7/504 | 4-Punkt Untergruppe | ..... in bit-serial fashion, i.e. having a single digit-handling circuit treating all denominations after each other [2006.01]                                                                                                                                                |
| G06F 7/505 | 4-Punkt Untergruppe | ..... in bit-parallel fashion, i.e. having a different digit-handling circuit for each denomination [2006.01]                                                                                                                                                                 |
| G06F 7/506 | 5-Punkt Untergruppe | ..... with simultaneous carry generation for, or propagation over, two or more stages [2006.01]                                                                                                                                                                               |
| G06F 7/507 | 6-Punkt Untergruppe | ..... using selection between two conditionally calculated carry or sum values [2006.01]                                                                                                                                                                                      |
| G06F 7/508 | 6-Punkt Untergruppe | ..... using carry look-ahead circuits [2006.01]                                                                                                                                                                                                                               |
| G06F 7/509 | 5-Punkt Untergruppe | ..... for multiple operands, e.g. digital integrators [2006.01]                                                                                                                                                                                                               |
| G06F 7/52  | 3-Punkt Untergruppe | ... Multiplying; Dividing (G06F 7/483-G06F 7/491, G06F 7/544-G06F 7/556 take precedence) [1, 3, 2006.01]                                                                                                                                                                      |
| G06F 7/523 | 4-Punkt Untergruppe | .... Multiplying only [2006.01]                                                                                                                                                                                                                                               |
| G06F 7/525 | 5-Punkt Untergruppe | .... in serial-serial fashion, i.e. both operands being entered serially (G06F 7/533 takes precedence) [2006.01]                                                                                                                                                              |
| G06F 7/527 | 5-Punkt Untergruppe | .... in serial-parallel fashion, i.e. one operand being entered serially and the other in parallel (G06F 7/533 takes precedence) [2006.01]                                                                                                                                    |
| G06F 7/53  | 5-Punkt Untergruppe | .... in parallel-parallel fashion, i.e. both operands being entered in parallel (G06F 7/533 takes precedence) [2006.01]                                                                                                                                                       |
| G06F 7/533 | 5-Punkt Untergruppe | .... Reduction of the number of iteration steps or stages, e.g. using the Booth algorithm, log-sum, odd-even [2006.01]                                                                                                                                                        |
| G06F 7/535 | 4-Punkt Untergruppe | .... Dividing only [2006.01]                                                                                                                                                                                                                                                  |
| G06F 7/537 | 5-Punkt Untergruppe | .... Reduction of the number of iteration steps or stages, e.g. using the Sweeny-Robertson-Tocher [SRT] algorithm [2006.01]                                                                                                                                                   |
| G06F 7/544 | 3-Punkt Untergruppe | ... for evaluating functions by calculation [3, 2006.01]                                                                                                                                                                                                                      |
| G06F 7/548 | 4-Punkt Untergruppe | .... Trigonometric functions; Co-ordinate transformations [3, 2006.01]                                                                                                                                                                                                        |
| G06F 7/552 | 4-Punkt Untergruppe | .... Powers or roots [3, 2006.01]                                                                                                                                                                                                                                             |
| G06F 7/556 | 4-Punkt Untergruppe | .... Logarithmic or exponential functions [3, 2006.01]                                                                                                                                                                                                                        |
| G06F 7/57  | 3-Punkt Untergruppe | ... Arithmetic logic units [ALU], i.e. arrangements or devices for performing two or more of the operations covered by groups G06F 7/483-G06F 7/556 or for performing logical operations [2006.01]                                                                            |
| G06F 7/575 | 4-Punkt Untergruppe | .... Basic arithmetic logic units, i.e. devices selectable to perform either addition, subtraction or one of several logical operations, using, at least partially, the same circuitry [2006.01]                                                                              |
| G06F 7/58  | 1-Punkt Untergruppe | . Random or pseudo-random number generators [3, 2006.01]                                                                                                                                                                                                                      |
| G06F 7/60  | 1-Punkt Untergruppe | . Methods or arrangements for performing computations using a digital non-denominational number representation, i.e. number representation without radix; Computing devices using combinations of denominational and non-denominational quantity representations [3, 2006.01] |
| G06F 7/62  | 2-Punkt Untergruppe | .. Performing operations exclusively by counting total number of pulses [3, 2006.01]                                                                                                                                                                                          |

| Symbol           | Typ                 | Titel                                                                                                                                                                                                                                                                                                                                                               |
|------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G06F 7/64        | 2-Punkt Untergruppe | ... Digital differential analysers, i.e. computing devices for differentiation, integration or solving differential or integral equations, using pulses representing increments; Other incremental computing devices for solving difference equations (G06F 7/70 takes precedence; differential analysers using hybrid computing techniques G06J 1/02) [3, 2006.01] |
| G06F 7/66        | 3-Punkt Untergruppe | ... wherein pulses represent unitary increments only [3, 2006.01]                                                                                                                                                                                                                                                                                                   |
| G06F 7/68        | 2-Punkt Untergruppe | ... using pulse rate multipliers or dividers (G06F 7/70 takes precedence) [3, 2006.01]                                                                                                                                                                                                                                                                              |
| G06F 7/70        | 2-Punkt Untergruppe | ... using stochastic pulse trains, i.e. randomly occurring pulses the average pulse rates of which represent numbers [3, 2006.01]                                                                                                                                                                                                                                   |
| G06F 7/72        | 2-Punkt Untergruppe | ... using residue arithmetic [3, 2006.01]                                                                                                                                                                                                                                                                                                                           |
| G06F 7/74        | 1-Punkt Untergruppe | . Selecting or encoding within a word the position of one or more bits having a specified value, e.g. most or least significant one or zero detection, priority encoders [2006.01]                                                                                                                                                                                  |
| G06F 7/76        | 1-Punkt Untergruppe | . Arrangements for rearranging, permuting or selecting data according to predetermined rules, independently of the content of the data [2006.01]                                                                                                                                                                                                                    |
| G06F 7/78        | 2-Punkt Untergruppe | ... for changing the order of data flow, e.g. matrix transposition, LIFO buffers; Overflow or underflow handling therefor [2006.01]                                                                                                                                                                                                                                 |
| <b>G06F 9/00</b> | <b>Hauptgruppe</b>  | <b>Arrangements for programme control, e.g. control unit (programme control for peripheral devices G06F 13/10) [1, 4, 2006.01]</b>                                                                                                                                                                                                                                  |
| G06F 9/02        | 1-Punkt Untergruppe | . using wired connections, e.g. plugboard [1, 2006.01]                                                                                                                                                                                                                                                                                                              |
| G06F 9/04        | 1-Punkt Untergruppe | . using record carriers containing only programme instructions (G06F 9/06 takes precedence) [1, 2006.01]                                                                                                                                                                                                                                                            |
| G06F 9/06        | 1-Punkt Untergruppe | . using stored programme, i.e. using internal store of processing equipment to receive and retain programme [1, 2006.01]                                                                                                                                                                                                                                            |
| G06F 9/22        | 2-Punkt Untergruppe | ... Microcontrol or microprogramme arrangements [3, 2006.01]                                                                                                                                                                                                                                                                                                        |
| G06F 9/24        | 3-Punkt Untergruppe | ... Loading of the microprogramme [3, 2006.01]                                                                                                                                                                                                                                                                                                                      |
| G06F 9/26        | 3-Punkt Untergruppe | ... Address formation of the next microinstruction (G06F 9/28 takes precedence) [3, 2006.01]                                                                                                                                                                                                                                                                        |
| G06F 9/28        | 3-Punkt Untergruppe | ... Enhancement of operational speed, e.g. by using several microcontrol devices operating in parallel [3, 2006.01]                                                                                                                                                                                                                                                 |
| G06F 9/30        | 2-Punkt Untergruppe | ... Arrangements for executing machine- instructions, e.g. instruction decode (for executing microinstructions G06F 9/22; for executing subprogrammes G06F 9/40) [3, 2006.01]                                                                                                                                                                                       |
| G06F 9/302       | 3-Punkt Untergruppe | ... Controlling the executing of arithmetic operations [5, 2006.01]                                                                                                                                                                                                                                                                                                 |
| G06F 9/305       | 3-Punkt Untergruppe | ... Controlling the executing of logical operations [5, 2006.01]                                                                                                                                                                                                                                                                                                    |
| G06F 9/308       | 3-Punkt Untergruppe | ... Controlling single bit operations (G06F 9/305 takes precedence) [5, 2006.01]                                                                                                                                                                                                                                                                                    |
| G06F 9/312       | 3-Punkt Untergruppe | ... Controlling loading, storing or clearing operations [5, 2006.01]                                                                                                                                                                                                                                                                                                |
| G06F 9/315       | 3-Punkt Untergruppe | ... Controlling moving, shifting or rotation operations [5, 2006.01]                                                                                                                                                                                                                                                                                                |
| G06F 9/318       | 3-Punkt Untergruppe | ... with operation extension or modification [5, 2006.01]                                                                                                                                                                                                                                                                                                           |
| G06F 9/32        | 3-Punkt Untergruppe | ... Address formation of the next instruction, e.g. incrementing the instruction counter, jump (G06F 9/38 takes precedence; subprogramme jump G06F 9/42) [3, 2006.01]                                                                                                                                                                                               |
| G06F 9/34        | 3-Punkt Untergruppe | ... Addressing or accessing the instruction operand or the result [3, 5, 2006.01]                                                                                                                                                                                                                                                                                   |
| G06F 9/345       | 4-Punkt Untergruppe | .... of multiple operands or results [5, 2006.01]                                                                                                                                                                                                                                                                                                                   |

| Symbol            | Typ                 | Titel                                                                                                                                                                                                                                                                                                                              |
|-------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G06F 9/35         | 4-Punkt Untergruppe | .... Indirect addressing [5, 2006.01]                                                                                                                                                                                                                                                                                              |
| G06F 9/355        | 4-Punkt Untergruppe | .... Indexed addressing [5, 2006.01]                                                                                                                                                                                                                                                                                               |
| G06F 9/38         | 3-Punkt Untergruppe | ... Concurrent instruction execution, e.g. pipeline, look ahead [3, 2006.01]                                                                                                                                                                                                                                                       |
| G06F 9/40         | 2-Punkt Untergruppe | ... Arrangements for executing subprogrammes, i.e. combinations of several instructions [3, 2006.01]                                                                                                                                                                                                                               |
| G06F 9/42         | 3-Punkt Untergruppe | ... Formation of subprogramme-jump address or of return address [3, 2006.01]                                                                                                                                                                                                                                                       |
| G06F 9/44         | 2-Punkt Untergruppe | ... Arrangements for executing specific programmes [3, 2006.01]                                                                                                                                                                                                                                                                    |
| G06F 9/445        | 3-Punkt Untergruppe | ... Programme loading or initiating (certifying or maintaining trusted computer platforms, e.g. secure boots or power-downs, version controls, system software checks, secure updates or assessing vulnerabilities, G06F 21/57) [5, 2006.01]                                                                                       |
| G06F 9/45         | 3-Punkt Untergruppe | ... Compilation or interpretation of high level programme languages [5, 2006.01]                                                                                                                                                                                                                                                   |
| G06F 9/455        | 3-Punkt Untergruppe | ... Emulation; Software simulation [5, 2006.01]                                                                                                                                                                                                                                                                                    |
| G06F 9/46         | 2-Punkt Untergruppe | ... Multiprogramming arrangements [3, 2006.01]                                                                                                                                                                                                                                                                                     |
| G06F 9/48         | 3-Punkt Untergruppe | ... Programme initiating; Programme switching, e.g. by interrupt [7, 2006.01]                                                                                                                                                                                                                                                      |
| G06F 9/50         | 3-Punkt Untergruppe | ... Allocation of resources, e.g. of the central processing unit (CPU) [7, 2006.01]                                                                                                                                                                                                                                                |
| G06F 9/52         | 3-Punkt Untergruppe | ... Programme synchronisation; Mutual exclusion, e.g. by means of semaphores [7, 2006.01]                                                                                                                                                                                                                                          |
| G06F 9/54         | 3-Punkt Untergruppe | ... Interprogramme communication [7, 2006.01]                                                                                                                                                                                                                                                                                      |
| <b>G06F 11/00</b> | <b>Hauptgruppe</b>  | <b>Error detection; Error correction; Monitoring (error detection, correction or monitoring in information storage based on relative movement between record carrier and transducer G11B 20/18; monitoring, i.e. supervising the progress of recording or reproducing G11B 27/36; in static stores G11C 29/00) [1, 4, 2006.01]</b> |
| G06F 11/07        | 1-Punkt Untergruppe | . Responding to the occurrence of a fault, e.g. fault tolerance [7, 2006.01]                                                                                                                                                                                                                                                       |
| G06F 11/08        | 2-Punkt Untergruppe | .. Error detection or correction by redundancy in data representation, e.g. by using checking codes [1, 2006.01]                                                                                                                                                                                                                   |
| G06F 11/10        | 3-Punkt Untergruppe | ... Adding special bits or symbols to the coded information, e.g. parity check, casting out nines or elevens [1, 2006.01]                                                                                                                                                                                                          |
| G06F 11/14        | 2-Punkt Untergruppe | .. Error detection or correction of the data by redundancy in operation, e.g. by using different operation sequences leading to the same result (G06F 11/16 takes precedence) [3, 2006.01]                                                                                                                                         |
| G06F 11/16        | 2-Punkt Untergruppe | .. Error detection or correction of the data by redundancy in hardware [3, 2006.01]                                                                                                                                                                                                                                                |
| G06F 11/18        | 3-Punkt Untergruppe | ... using passive fault-masking of the redundant circuits, e.g. by quadding or by majority decision circuits [3, 2006.01]                                                                                                                                                                                                          |
| G06F 11/20        | 3-Punkt Untergruppe | ... using active fault-masking, e.g. by switching out faulty elements or by switching in spare elements [3, 2006.01]                                                                                                                                                                                                               |
| G06F 11/22        | 1-Punkt Untergruppe | . Detection or location of defective computer hardware by testing during standby operation or during idle time, e.g. start-up testing [3, 2006.01]                                                                                                                                                                                 |
| G06F 11/24        | 2-Punkt Untergruppe | .. Marginal testing [3, 2006.01]                                                                                                                                                                                                                                                                                                   |
| G06F 11/25        | 2-Punkt Untergruppe | .. Testing of logic operation, e.g. by logic analysers [6, 2006.01]                                                                                                                                                                                                                                                                |
| G06F 11/26        | 2-Punkt Untergruppe | .. Functional testing [3, 2006.01]                                                                                                                                                                                                                                                                                                 |
| G06F 11/263       | 3-Punkt Untergruppe | ... Generation of test inputs, e.g. test vectors, patterns or sequences [6, 2006.01]                                                                                                                                                                                                                                               |

| Symbol            | Typ                 | Titel                                                                                                                                                                                               |
|-------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G06F 11/267       | 3-Punkt Untergruppe | ... Reconfiguring circuits for testing, e.g. LSSD, partitioning [6, 2006.01]                                                                                                                        |
| G06F 11/27        | 3-Punkt Untergruppe | ... Built-in tests [6, 2006.01]                                                                                                                                                                     |
| G06F 11/273       | 3-Punkt Untergruppe | ... Tester hardware, i.e. output processing circuits [6, 2006.01]                                                                                                                                   |
| G06F 11/277       | 4-Punkt Untergruppe | .... with comparison between actual response and known fault-free response [6, 2006.01]                                                                                                             |
| G06F 11/28        | 1-Punkt Untergruppe | . by checking the correct order of processing (G06F 11/07, G06F 11/22 take precedence) [3, 2006.01]                                                                                                 |
| G06F 11/30        | 1-Punkt Untergruppe | . Monitoring [3, 2006.01]                                                                                                                                                                           |
| G06F 11/32        | 2-Punkt Untergruppe | ... with visual indication of the functioning of the machine [3, 2006.01]                                                                                                                           |
| G06F 11/34        | 2-Punkt Untergruppe | .. Recording or statistical evaluation of computer activity, e.g. of down time, of input/output operation [3, 2006.01]                                                                              |
| G06F 11/36        | 1-Punkt Untergruppe | . Preventing errors by testing or debugging of software [7, 2006.01]                                                                                                                                |
| <b>G06F 12/00</b> | <b>Hauptgruppe</b>  | <b>Accessing, addressing or allocating within memory systems or architectures (digital input from, or digital output to record carriers, e.g. to disk storage units, G06F 3/06) [4, 5, 2006.01]</b> |
| G06F 12/02        | 1-Punkt Untergruppe | . Addressing or allocation; Relocation (programme address sequencing G06F 9/00; arrangements for selecting an address in a digital store G11C 8/00) [4, 2006.01]                                    |
| G06F 12/04        | 2-Punkt Untergruppe | .. Addressing variable-length words or parts of words [4, 2006.01]                                                                                                                                  |
| G06F 12/06        | 2-Punkt Untergruppe | .. Addressing a physical block of locations, e.g. base addressing, module addressing, address space extension, memory dedication (G06F 12/08 takes precedence) [4, 2006.01]                         |
| G06F 12/08        | 2-Punkt Untergruppe | .. in hierarchically structured memory systems, e.g. virtual memory systems [4, 2006.01, 2016.01]                                                                                                   |
| G06F 12/0802      | 3-Punkt Untergruppe | ... Addressing of a memory level in which the access to the desired data or data block requires associative addressing means, e.g. caches [2016.01]                                                 |
| G06F 12/0804      | 4-Punkt Untergruppe | .... with main memory updating (G06F 12/0806 takes precedence) [2016.01]                                                                                                                            |
| G06F 12/0806      | 4-Punkt Untergruppe | .... Multiuser, multiprocessor or multiprocessing cache systems [2016.01]                                                                                                                           |
| G06F 12/0808      | 5-Punkt Untergruppe | ..... with cache invalidating means (G06F 12/0815 takes precedence) [2016.01]                                                                                                                       |
| G06F 12/0811      | 5-Punkt Untergruppe | ..... with multilevel cache hierarchies [2016.01]                                                                                                                                                   |
| G06F 12/0813      | 5-Punkt Untergruppe | ..... with a network or matrix configuration [2016.01]                                                                                                                                              |
| G06F 12/0815      | 5-Punkt Untergruppe | ..... Cache consistency protocols [2016.01]                                                                                                                                                         |
| G06F 12/0817      | 6-Punkt Untergruppe | ..... using directory methods [2016.01]                                                                                                                                                             |
| G06F 12/0831      | 6-Punkt Untergruppe | ..... using a bus scheme, e.g. with bus monitoring or watching means [2016.01]                                                                                                                      |
| G06F 12/0837      | 6-Punkt Untergruppe | ..... with software control, e.g. non-cacheable data [2016.01]                                                                                                                                      |
| G06F 12/084       | 5-Punkt Untergruppe | ..... with a shared cache [2016.01]                                                                                                                                                                 |
| G06F 12/0842      | 5-Punkt Untergruppe | ..... for multiprocessing or multitasking [2016.01]                                                                                                                                                 |
| G06F 12/0844      | 4-Punkt Untergruppe | .... Multiple simultaneous or quasi-simultaneous cache accessing [2016.01]                                                                                                                          |
| G06F 12/0846      | 5-Punkt Untergruppe | .... Cache with multiple tag or data arrays being simultaneously accessible [2016.01]                                                                                                               |
| G06F 12/0853      | 5-Punkt Untergruppe | .... Cache with multiport tag or data arrays [2016.01]                                                                                                                                              |
| G06F 12/0855      | 5-Punkt Untergruppe | .... Overlapped cache accessing, e.g. pipeline (G06F 12/0846 takes precedence) [2016.01]                                                                                                            |

| Symbol       | Typ                 | Titel                                                                                                                      |
|--------------|---------------------|----------------------------------------------------------------------------------------------------------------------------|
| G06F 12/0862 | 4-Punkt Untergruppe | .... with prefetch [2016.01]                                                                                               |
| G06F 12/0864 | 4-Punkt Untergruppe | .... using pseudo-associative means, e.g. set-associative or hashing [2016.01]                                             |
| G06F 12/0866 | 4-Punkt Untergruppe | .... for peripheral storage systems, e.g. disk cache [2016.01]                                                             |
| G06F 12/0868 | 5-Punkt Untergruppe | .... Data transfer between cache memory and other subsystems, e.g. storage devices or host systems [2016.01]               |
| G06F 12/0871 | 5-Punkt Untergruppe | .... Allocation or management of cache space [2016.01]                                                                     |
| G06F 12/0873 | 5-Punkt Untergruppe | .... Mapping of cache memory to specific storage devices or parts thereof [2016.01]                                        |
| G06F 12/0875 | 4-Punkt Untergruppe | .... with dedicated cache, e.g. instruction or stack [2016.01]                                                             |
| G06F 12/0877 | 4-Punkt Untergruppe | .... Cache access modes [2016.01]                                                                                          |
| G06F 12/0879 | 5-Punkt Untergruppe | .... Burst mode [2016.01]                                                                                                  |
| G06F 12/0882 | 5-Punkt Untergruppe | .... Page mode [2016.01]                                                                                                   |
| G06F 12/0884 | 5-Punkt Untergruppe | .... Parallel mode, e.g. in parallel with main memory or CPU [2016.01]                                                     |
| G06F 12/0886 | 5-Punkt Untergruppe | .... Variable-length word access [2016.01]                                                                                 |
| G06F 12/0888 | 4-Punkt Untergruppe | .... using selective caching, e.g. bypass [2016.01]                                                                        |
| G06F 12/0891 | 4-Punkt Untergruppe | .... using clearing, invalidating or resetting means [2016.01]                                                             |
| G06F 12/0893 | 4-Punkt Untergruppe | .... Caches characterised by their organisation or structure [2016.01]                                                     |
| G06F 12/0895 | 5-Punkt Untergruppe | .... of parts of caches, e.g. directory or tag array [2016.01]                                                             |
| G06F 12/0897 | 5-Punkt Untergruppe | .... with two or more cache hierarchy levels (with multilevel cache hierarchies G06F 12/0811) [2016.01]                    |
| G06F 12/10   | 3-Punkt Untergruppe | ... Address translation [4, 2006.01, 2016.01]                                                                              |
| G06F 12/1009 | 4-Punkt Untergruppe | .... using page tables, e.g. page table structures [2016.01]                                                               |
| G06F 12/1018 | 5-Punkt Untergruppe | .... involving hashing techniques, e.g. inverted page tables [2016.01]                                                     |
| G06F 12/1027 | 4-Punkt Untergruppe | .... using associative or pseudo-associative address translation means, e.g. translation look-aside buffer [TLB] [2016.01] |
| G06F 12/1036 | 5-Punkt Untergruppe | .... for multiple virtual address spaces, e.g. segmentation (G06F 12/1045 takes precedence) [2016.01]                      |
| G06F 12/1045 | 5-Punkt Untergruppe | .... associated with a data cache [2016.01]                                                                                |
| G06F 12/1072 | 4-Punkt Untergruppe | ... Decentralised address translation, e.g. in distributed shared memory systems [2016.01]                                 |
| G06F 12/1081 | 4-Punkt Untergruppe | ... for peripheral access to main memory, e.g. direct memory access [DMA] [2016.01]                                        |
| G06F 12/109  | 4-Punkt Untergruppe | ... for multiple virtual address spaces, e.g. segmentation (G06F 12/1036 takes precedence) [2016.01]                       |
| G06F 12/12   | 3-Punkt Untergruppe | ... Replacement control [4, 2006.01, 2016.01]                                                                              |
| G06F 12/121  | 4-Punkt Untergruppe | ... using replacement algorithms [2016.01]                                                                                 |
| G06F 12/122  | 5-Punkt Untergruppe | .... of the least frequently used [LFU] type, e.g. with individual count value [2016.01]                                   |
| G06F 12/123  | 5-Punkt Untergruppe | .... with age lists, e.g. queue, most recently used [MRU] list or least recently used [LRU] list [2016.01]                 |
| G06F 12/126  | 5-Punkt Untergruppe | .... with special data handling, e.g. priority of data or instructions, handling errors or pinning [2016.01]               |

| Symbol            | Typ                 | Titel                                                                                                                                                                                                                                                           |
|-------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G06F 12/127       | 6-Punkt Untergruppe | ..... using additional replacement algorithms [2016.01]                                                                                                                                                                                                         |
| G06F 12/128       | 5-Punkt Untergruppe | ..... adapted to multidimensional cache systems, e.g. set-associative, multicache, multiset or multilevel [2016.01]                                                                                                                                             |
| G06F 12/14        | 1-Punkt Untergruppe | . Protection against unauthorised use of memory [4, 2006.01]                                                                                                                                                                                                    |
| G06F 12/16        | 1-Punkt Untergruppe | . Protection against loss of memory contents [4, 2006.01]                                                                                                                                                                                                       |
| <b>G06F 13/00</b> | <b>Hauptgruppe</b>  | <b>Interconnection of, or transfer of information or other signals between, memories, input/output devices or central processing units (interface circuits for specific input/output devices G06F 3/00; multi-processor systems G06F 15/16) [1, 4, 2006.01]</b> |
| G06F 13/10        | 1-Punkt Untergruppe | . Programme control for peripheral devices (G06F 13/14-G06F 13/42 take precedence) [4, 2006.01]                                                                                                                                                                 |
| G06F 13/12        | 2-Punkt Untergruppe | .. using hardware independent of the central processor, e.g. channel or peripheral processor [4, 2006.01]                                                                                                                                                       |
| G06F 13/14        | 1-Punkt Untergruppe | . Handling requests for interconnection or transfer [4, 2006.01]                                                                                                                                                                                                |
| G06F 13/16        | 2-Punkt Untergruppe | .. for access to memory bus (G06F 13/28 takes precedence) [4, 2006.01]                                                                                                                                                                                          |
| G06F 13/18        | 3-Punkt Untergruppe | ... with priority control [4, 2006.01]                                                                                                                                                                                                                          |
| G06F 13/20        | 2-Punkt Untergruppe | .. for access to input/output bus [4, 2006.01]                                                                                                                                                                                                                  |
| G06F 13/22        | 3-Punkt Untergruppe | ... using successive scanning, e.g. polling (G06F 13/24 takes precedence) [4, 2006.01]                                                                                                                                                                          |
| G06F 13/24        | 3-Punkt Untergruppe | ... using interrupt (G06F 13/32 takes precedence) [4, 2006.01]                                                                                                                                                                                                  |
| G06F 13/26        | 4-Punkt Untergruppe | .... with priority control [4, 2006.01]                                                                                                                                                                                                                         |
| G06F 13/28        | 3-Punkt Untergruppe | ... using burst mode transfer, e.g. direct memory access, cycle steal (G06F 13/32 takes precedence) [4, 2006.01]                                                                                                                                                |
| G06F 13/30        | 4-Punkt Untergruppe | .... with priority control [4, 2006.01]                                                                                                                                                                                                                         |
| G06F 13/32        | 3-Punkt Untergruppe | ... using combination of interrupt and burst mode transfer [4, 2006.01]                                                                                                                                                                                         |
| G06F 13/34        | 4-Punkt Untergruppe | .... with priority control [4, 2006.01]                                                                                                                                                                                                                         |
| G06F 13/36        | 2-Punkt Untergruppe | .. for access to common bus or bus system [4, 2006.01]                                                                                                                                                                                                          |
| G06F 13/362       | 3-Punkt Untergruppe | ... with centralised access control [5, 2006.01]                                                                                                                                                                                                                |
| G06F 13/364       | 4-Punkt Untergruppe | .... using independent requests or grants, e.g. using separated request and grant lines [5, 2006.01]                                                                                                                                                            |
| G06F 13/366       | 4-Punkt Untergruppe | .... using a centralised polling arbiter [5, 2006.01]                                                                                                                                                                                                           |
| G06F 13/368       | 3-Punkt Untergruppe | ... with decentralised access control [5, 2006.01]                                                                                                                                                                                                              |
| G06F 13/37        | 4-Punkt Untergruppe | .... using a physical-position-dependent priority, e.g. daisy chain, round robin or token passing [5, 2006.01]                                                                                                                                                  |
| G06F 13/372       | 4-Punkt Untergruppe | .... using a time-dependent priority, e.g. individually loaded time counters or time slot [5, 2006.01]                                                                                                                                                          |
| G06F 13/374       | 4-Punkt Untergruppe | .... using a self-select method with individual priority code comparator [5, 2006.01]                                                                                                                                                                           |
| G06F 13/376       | 4-Punkt Untergruppe | .... using a contention resolving method, e.g. collision detection, collision avoidance [5, 2006.01]                                                                                                                                                            |
| G06F 13/378       | 4-Punkt Untergruppe | .... using a parallel poll method [5, 2006.01]                                                                                                                                                                                                                  |
| G06F 13/38        | 1-Punkt Untergruppe | . Information transfer, e.g. on bus (G06F 13/14 takes precedence) [4, 2006.01]                                                                                                                                                                                  |
| G06F 13/40        | 2-Punkt Untergruppe | .. Bus structure [4, 2006.01]                                                                                                                                                                                                                                   |

| Symbol            | Typ                 | Titel                                                                                                                                                                                                             |
|-------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G06F 13/42        | 2-Punkt Untergruppe | ... Bus transfer protocol, e.g. handshake; Synchronisation [4, 2006.01]                                                                                                                                           |
| <b>G06F 15/00</b> | <b>Hauptgruppe</b>  | <b>Digital computers in general (details G06F 1/00-G06F 13/00); Data processing equipment in general [1, 2006.01]</b>                                                                                             |
| G06F 15/02        | 1-Punkt Untergruppe | . manually operated with input through keyboard and computation using a built-in programme, e.g. pocket calculators [1, 2006.01]                                                                                  |
| G06F 15/04        | 1-Punkt Untergruppe | . programmed simultaneously with the introduction of data to be processed, e.g. on the same record carrier [1, 2006.01]                                                                                           |
| G06F 15/08        | 1-Punkt Untergruppe | . using a plugboard for programming [1, 5, 2006.01]                                                                                                                                                               |
| G06F 15/10        | 2-Punkt Untergruppe | ... Tabulators [1, 5, 2006.01]                                                                                                                                                                                    |
| G06F 15/12        | 3-Punkt Untergruppe | ... having provision for both printed and punched output [1, 5, 2006.01]                                                                                                                                          |
| G06F 15/14        | 2-Punkt Untergruppe | ... Calculating-punches [1, 5, 2006.01]                                                                                                                                                                           |
| G06F 15/16        | 1-Punkt Untergruppe | . Combinations of two or more digital computers each having at least an arithmetic unit, a programme unit and a register, e.g. for a simultaneous processing of several programmes [1, 2006.01]                   |
| G06F 15/163       | 2-Punkt Untergruppe | ... Interprocessor communication [6, 2006.01]                                                                                                                                                                     |
| G06F 15/167       | 3-Punkt Untergruppe | ... using a common memory, e.g. mailbox [6, 2006.01]                                                                                                                                                              |
| G06F 15/17        | 3-Punkt Untergruppe | ... using an input/output type connection, e.g. channel, I/O port [6, 2006.01]                                                                                                                                    |
| G06F 15/173       | 3-Punkt Untergruppe | ... using an interconnection network, e.g. matrix, shuffle, pyramid, star or snowflake [6, 2006.01]                                                                                                               |
| G06F 15/177       | 2-Punkt Untergruppe | ... Initialisation or configuration control (configuration control for monitoring, testing or in case of failure G06F 11/00) [6, 2006.01]                                                                         |
| G06F 15/18        | 1-Punkt Untergruppe | . in which a programme is changed according to experience gained by the computer itself during a complete run; Learning machines (adaptive control systems G05B 13/00; artificial intelligence G06N) [1, 2006.01] |
| G06F 15/76        | 1-Punkt Untergruppe | . Architectures of general purpose stored programme computers (with programme plugboard G06F 15/08; multicomputers G06F 15/16) [5, 6, 2006.01]                                                                    |
| G06F 15/78        | 2-Punkt Untergruppe | ... comprising a single central processing unit [5, 2006.01]                                                                                                                                                      |
| G06F 15/80        | 2-Punkt Untergruppe | ... comprising an array of processing units with common control, e.g. single instruction multiple data processors (G06F 15/82 takes precedence) [5, 2006.01]                                                      |
| G06F 15/82        | 2-Punkt Untergruppe | ... data or demand driven [5, 2006.01]                                                                                                                                                                            |
| <b>G06F 17/00</b> | <b>Hauptgruppe</b>  | <b>Digital computing or data processing equipment or methods, specially adapted for specific functions [6, 2006.01]</b>                                                                                           |
| G06F 17/10        | 1-Punkt Untergruppe | . Complex mathematical operations [6, 2006.01]                                                                                                                                                                    |
| G06F 17/11        | 2-Punkt Untergruppe | ... for solving equations [6, 2006.01]                                                                                                                                                                            |
| G06F 17/12        | 3-Punkt Untergruppe | ... Simultaneous equations [6, 2006.01]                                                                                                                                                                           |
| G06F 17/13        | 3-Punkt Untergruppe | ... Differential equations (using digital differential analysers G06F 7/64) [6, 2006.01]                                                                                                                          |
| G06F 17/14        | 2-Punkt Untergruppe | ... Fourier, Walsh or analogous domain transformations [6, 2006.01]                                                                                                                                               |
| G06F 17/15        | 2-Punkt Untergruppe | ... Correlation function computation [6, 2006.01]                                                                                                                                                                 |
| G06F 17/16        | 2-Punkt Untergruppe | ... Matrix or vector computation [6, 2006.01]                                                                                                                                                                     |
| G06F 17/17        | 2-Punkt Untergruppe | ... Function evaluation by approximation methods, e.g. interpolation or extrapolation, smoothing or least mean square method [6, 2006.01]                                                                         |

| Symbol            | Typ                 | Titel                                                                                                                                                                                                                                                                                                                   |
|-------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G06F 17/18        | 2-Punkt Untergruppe | ... for evaluating statistical data [6, 2006.01]                                                                                                                                                                                                                                                                        |
| G06F 17/20        | 1-Punkt Untergruppe | . Handling natural language data (speech analysis or synthesis G10L) [6, 2006.01]                                                                                                                                                                                                                                       |
| G06F 17/21        | 2-Punkt Untergruppe | ... Text processing (G06F 17/27, G06F 17/28 take precedence) [6, 2006.01]                                                                                                                                                                                                                                               |
| G06F 17/22        | 3-Punkt Untergruppe | ... Manipulating or registering by use of codes, e.g. in sequence of text characters [6, 2006.01]                                                                                                                                                                                                                       |
| G06F 17/24        | 3-Punkt Untergruppe | ... Editing, e.g. insert/delete [6, 2006.01]                                                                                                                                                                                                                                                                            |
| G06F 17/25        | 3-Punkt Untergruppe | ... Automatic justification [6, 2006.01]                                                                                                                                                                                                                                                                                |
| G06F 17/26        | 3-Punkt Untergruppe | ... Automatic hyphenation [6, 2006.01]                                                                                                                                                                                                                                                                                  |
| G06F 17/27        | 2-Punkt Untergruppe | ... Automatic analysis, e.g. parsing, orthograph correction [6, 2006.01]                                                                                                                                                                                                                                                |
| G06F 17/28        | 2-Punkt Untergruppe | ... Processing or translating of natural language (G06F 17/27 takes precedence) [6, 2006.01]                                                                                                                                                                                                                            |
| G06F 17/30        | 1-Punkt Untergruppe | . Information retrieval; Database structures therefor [6, 2006.01]                                                                                                                                                                                                                                                      |
| G06F 17/40        | 1-Punkt Untergruppe | . Data acquisition and logging (for input to computer G06F 3/00) [6, 2006.01]                                                                                                                                                                                                                                           |
| G06F 17/50        | 1-Punkt Untergruppe | . Computer-aided design (for the design of test circuits for static stores G11C 29/54) [6, 2006.01]                                                                                                                                                                                                                     |
| <b>G06F 19/00</b> | <b>Hauptgruppe</b>  | <b>Digital computing or data processing equipment or methods, specially adapted for specific applications (G06F 17/00 takes precedence; data processing systems or methods specially adapted for administrative, commercial, financial, managerial, supervisory or forecasting purposes G06Q) [6, 2006.01, 2011.01]</b> |
| G06F 19/10        | 1-Punkt Untergruppe | . Bioinformatics, i.e. methods or systems for genetic or protein-related data processing in computational molecular biology ( <u>in silico</u> methods of screening virtual chemical libraries C40B 30/02; <u>in silico</u> or mathematical methods of creating virtual chemical libraries C40B 50/02) [2011.01]        |
| G06F 19/12        | 2-Punkt Untergruppe | ... for modelling or simulation in systems biology, e.g. probabilistic or dynamic models, gene-regulatory networks, protein interaction networks or metabolic networks [2011.01]                                                                                                                                        |
| G06F 19/14        | 2-Punkt Untergruppe | ... for phylogeny or evolution, e.g. evolutionarily conserved regions determination or phylogenetic tree construction [2011.01]                                                                                                                                                                                         |
| G06F 19/16        | 2-Punkt Untergruppe | ... for molecular structure, e.g. structure alignment, structural or functional relations, protein folding, domain topologies, drug targeting using structure data, involving two-dimensional or three-dimensional structures [2011.01]                                                                                 |
| G06F 19/18        | 2-Punkt Untergruppe | ... for functional genomics or proteomics, e.g. genotype-phenotype associations, linkage disequilibrium, population genetics, binding site identification, mutagenesis, genotyping or genome annotation, protein-protein interactions or protein-nucleic acid interactions [2011.01]                                    |
| G06F 19/20        | 2-Punkt Untergruppe | ... for hybridisation or gene expression, e.g. microarrays, sequencing by hybridisation, normalisation, profiling, noise correction models, expression ratio estimation, probe design or probe optimisation [2011.01]                                                                                                   |
| G06F 19/22        | 2-Punkt Untergruppe | ... for sequence comparison involving nucleotides or amino acids, e.g. homology search, motif or Single-Nucleotide Polymorphism [SNP] discovery or sequence alignment [2011.01]                                                                                                                                         |
| G06F 19/24        | 2-Punkt Untergruppe | ... for machine learning, data mining or biostatistics, e.g. pattern finding, knowledge discovery, rule extraction, correlation, clustering or classification [2011.01]                                                                                                                                                 |
| G06F 19/26        | 2-Punkt Untergruppe | ... for data visualisation, e.g. graphics generation, display of maps or networks or other visual representations [2011.01]                                                                                                                                                                                             |
| G06F 19/28        | 2-Punkt Untergruppe | ... for programming tools or database systems, e.g. ontologies, heterogeneous data integration, data warehousing or computing architectures [2011.01]                                                                                                                                                                   |
| <b>G06F 21/00</b> | <b>Hauptgruppe</b>  | <b>Security arrangements for protecting computers, components thereof, programs or data against</b>                                                                                                                                                                                                                     |

| Symbol                                          | Typ                 | Titel                                                                                                                                                                                      |
|-------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>unauthorised activity [2006.01, 2013.01]</b> |                     |                                                                                                                                                                                            |
| G06F 21/10                                      | 1-Punkt Untergruppe | . Protecting distributed programs or content, e.g. vending or licensing of copyrighted material (protection in video systems or pay television H04N 7/16) [2013.01]                        |
| G06F 21/12                                      | 2-Punkt Untergruppe | .. Protecting executable software [2013.01]                                                                                                                                                |
| G06F 21/14                                      | 3-Punkt Untergruppe | ... against software analysis or reverse engineering, e.g. by obfuscation [2013.01]                                                                                                        |
| G06F 21/16                                      | 2-Punkt Untergruppe | .. Program or content traceability, e.g. by watermarking (digital watermarking on images H04N 1/32) [2013.01]                                                                              |
| G06F 21/30                                      | 1-Punkt Untergruppe | . Authentication, i.e. establishing the identity or authorisation of security principals [2013.01]                                                                                         |
| G06F 21/31                                      | 2-Punkt Untergruppe | .. User authentication [2013.01]                                                                                                                                                           |
| G06F 21/32                                      | 3-Punkt Untergruppe | ... using biometric data, e.g. fingerprints, iris scans or voiceprints [2013.01]                                                                                                           |
| G06F 21/33                                      | 3-Punkt Untergruppe | ... using certificates [2013.01]                                                                                                                                                           |
| G06F 21/34                                      | 3-Punkt Untergruppe | ... involving the use of external additional devices, e.g. dongles or smart cards [2013.01]                                                                                                |
| G06F 21/35                                      | 4-Punkt Untergruppe | .... communicating wirelessly [2013.01]                                                                                                                                                    |
| G06F 21/36                                      | 3-Punkt Untergruppe | ... by graphic or iconic representation [2013.01]                                                                                                                                          |
| G06F 21/40                                      | 3-Punkt Untergruppe | ... by quorum, i.e. whereby two or more security principals are required [2013.01]                                                                                                         |
| G06F 21/41                                      | 3-Punkt Untergruppe | ... where a single sign-on provides access to a plurality of computers [2013.01]                                                                                                           |
| G06F 21/42                                      | 3-Punkt Untergruppe | ... using separate channels for security data [2013.01]                                                                                                                                    |
| G06F 21/43                                      | 4-Punkt Untergruppe | .... wireless channels [2013.01]                                                                                                                                                           |
| G06F 21/44                                      | 2-Punkt Untergruppe | .. Program or device authentication [2013.01]                                                                                                                                              |
| G06F 21/45                                      | 2-Punkt Untergruppe | .. Structures or tools for the administration of authentication [2013.01]                                                                                                                  |
| G06F 21/46                                      | 3-Punkt Untergruppe | ... by designing passwords or checking the strength of passwords [2013.01]                                                                                                                 |
| G06F 21/50                                      | 1-Punkt Untergruppe | . Monitoring users, programs or devices to maintain the integrity of platforms, e.g. of processors, firmware or operating systems [2013.01]                                                |
| G06F 21/51                                      | 2-Punkt Untergruppe | .. at application loading time, e.g. accepting, rejecting, starting or inhibiting executable software based on integrity or source reliability [2013.01]                                   |
| G06F 21/52                                      | 2-Punkt Untergruppe | .. during program execution, e.g. stack integrity, buffer overflow or preventing unwanted data erasure [2013.01]                                                                           |
| G06F 21/53                                      | 3-Punkt Untergruppe | ... by executing in a restricted environment, e.g. sandbox or secure virtual machine [2013.01]                                                                                             |
| G06F 21/54                                      | 3-Punkt Untergruppe | ... by adding security routines or objects to programs [2013.01]                                                                                                                           |
| G06F 21/55                                      | 2-Punkt Untergruppe | .. Detecting local intrusion or implementing counter-measures [2013.01]                                                                                                                    |
| G06F 21/56                                      | 3-Punkt Untergruppe | ... Computer malware detection or handling, e.g. anti-virus arrangements [2013.01]                                                                                                         |
| G06F 21/57                                      | 2-Punkt Untergruppe | .. Certifying or maintaining trusted computer platforms, e.g. secure boots or power-downs, version controls, system software checks, secure updates or assessing vulnerabilities [2013.01] |
| G06F 21/60                                      | 1-Punkt Untergruppe | . Protecting data [2013.01]                                                                                                                                                                |
| G06F 21/62                                      | 2-Punkt Untergruppe | .. Protecting access to data via a platform, e.g. using keys or access control rules [2013.01]                                                                                             |

| Symbol     | Typ                 | Titel                                                                                                                                                                                                                                 |
|------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G06F 21/64 | 2-Punkt Untergruppe | ... Protecting data integrity, e.g. using checksums, certificates or signatures [2013.01]                                                                                                                                             |
| G06F 21/70 | 1-Punkt Untergruppe | . Protecting specific internal or peripheral components, in which the protection of a component leads to protection of the entire computer [2013.01]                                                                                  |
| G06F 21/71 | 2-Punkt Untergruppe | ... to assure secure computing or processing of information [2013.01]                                                                                                                                                                 |
| G06F 21/72 | 3-Punkt Untergruppe | ... in cryptographic circuits [2013.01]                                                                                                                                                                                               |
| G06F 21/73 | 3-Punkt Untergruppe | ... by creating or determining hardware identification, e.g. serial numbers [2013.01]                                                                                                                                                 |
| G06F 21/74 | 3-Punkt Untergruppe | ... operating in dual or compartmented mode, i.e. at least one secure mode [2013.01]                                                                                                                                                  |
| G06F 21/75 | 3-Punkt Untergruppe | ... by inhibiting the analysis of circuitry or operation, e.g. to counteract reverse engineering [2013.01]                                                                                                                            |
| G06F 21/76 | 3-Punkt Untergruppe | ... in application-specific integrated circuits [ASICs] or field-programmable devices, e.g. field-programmable gate arrays [FPGAs] or programmable logic devices [PLDs] [2013.01]                                                     |
| G06F 21/77 | 3-Punkt Untergruppe | ... in smart cards [2013.01]                                                                                                                                                                                                          |
| G06F 21/78 | 2-Punkt Untergruppe | ... to assure secure storage of data (address-based protection against unauthorised use of memory G06F 12/14; record carriers for use with machines and with at least a part designed to carry digital markings G06K 19/00) [2013.01] |
| G06F 21/79 | 3-Punkt Untergruppe | ... in semiconductor storage media, e.g. directly-addressable memories [2013.01]                                                                                                                                                      |
| G06F 21/80 | 3-Punkt Untergruppe | ... in storage media based on magnetic or optical technology, e.g. disks with sectors (preventing unauthorised reproduction or copying of disc-type recordable media G11B 20/00) [2013.01]                                            |
| G06F 21/81 | 2-Punkt Untergruppe | ... by operating on the power supply, e.g. enabling or disabling power-on, sleep or resume operations [2013.01]                                                                                                                       |
| G06F 21/82 | 2-Punkt Untergruppe | ... Protecting input, output or interconnection devices [2013.01]                                                                                                                                                                     |
| G06F 21/83 | 3-Punkt Untergruppe | ... input devices, e.g. keyboards, mice or controllers thereof [2013.01]                                                                                                                                                              |
| G06F 21/84 | 3-Punkt Untergruppe | ... output devices, e.g. displays or monitors [2013.01]                                                                                                                                                                               |
| G06F 21/85 | 3-Punkt Untergruppe | ... interconnection devices, e.g. bus-connected or in-line devices [2013.01]                                                                                                                                                          |
| G06F 21/86 | 2-Punkt Untergruppe | ... Secure or tamper-resistant housings [2013.01]                                                                                                                                                                                     |
| G06F 21/87 | 3-Punkt Untergruppe | ... by means of encapsulation, e.g. for integrated circuits [2013.01]                                                                                                                                                                 |
| G06F 21/88 | 2-Punkt Untergruppe | ... Detecting or preventing theft or loss [2013.01]                                                                                                                                                                                   |