

CPC COOPERATIVE PATENT CLASSIFICATION

G06T IMAGE DATA PROCESSING OR GENERATION, IN GENERAL

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

[G06T 1/40](#)

covered by

[G06T 1/20](#)

1/00 General purpose image data processing

- 1/0007 . {Image acquisition}
- 1/0014 . {Image feed-back for automatic industrial control, e.g. robot with camera ([robots B25J 19/023](#))}
- 1/0021 . {Image watermarking}
- 1/0028 . . {Adaptive watermarking, e.g. Human Visual System [HVS]-based watermarking}
- 1/0035 . . . {Output size adaptive watermarking}
- 1/0042 . . {Fragile watermarking, e.g. so as to detect tampering}
- 1/005 . . {Robust watermarking, e.g. average attack or collusion attack resistant}
- 1/0057 . . . {Compression invariant watermarking}
- 1/0064 . . . {Geometric transform invariant watermarking, e.g. affine transform invariant}
- 1/0071 . . . {using multiple or alternating watermarks}
- 1/0078 . . . {using multiple thresholds}
- 1/0085 . . {Time domain based watermarking, e.g. watermarks spread over several images}
- 1/0092 . . {Payload characteristic determination in a watermarking scheme, e.g. number of bits to be embedded}
- 1/20 . Processor architectures; Processor configuration, e.g. pipelining ([architectures of general purpose stored programme computers G06F 15/76](#))
- 1/60 . Memory management

3/00 Geometric image transformation in the plane of the image, e.g. from bit-mapped to bit-mapped creating a different image

- 3/0006 . {Affine transformations ([G06T 3/4038](#), [G06T 3/0068](#) take precedence)}
- 3/0012 . {Context preserving transformation, e.g. by using an importance map ([G06T 3/0062](#) takes precedence)}
- 3/0018 . . {Fisheye, wide-angle transformation}
- 3/0025 . . {Detail-in-context presentation ([G06T 3/0018](#) takes precedence)}
- 3/0031 . {for topological mapping of a higher dimensional structure on a lower dimensional surface}
- 3/0037 . . {Reshaping or unfolding a 3D tree structure onto a 2D plane}
- 3/0043 . . {Surface of revolution to planar image transformation}
- 3/005 . {for projecting an image on a non-planar surface, e.g. a geodetic screen}
- 3/0056 . {the transformation method being selected according to the characteristics of the input image}
- 3/0062 . {Panospheric to cylindrical image transformation}
- 3/0068 . {for image registration, e.g. elastic snapping}
- 3/0075 . . {using affine transformations}
- 3/0081 . . {by elastic snapping}
- 3/0087 . {Spatio-temporal transformations, e.g. video cubism}

- 3/0093 . {for image warping, i.e. transforming by individually repositioning each pixel}
- 3/20 . Linear translation of a whole image or part thereof, e.g. panning
- 3/40 . Scaling the whole image or part thereof
- 3/4007 . . {Interpolation-based scaling, e.g. bilinear interpolation ([G06T 3/4015](#), [G06T 3/403](#) take precedence)}
- 3/4015 . . {Demosaicing, e.g. colour filter array [CFA], Bayer pattern}
- 3/4023 . . {Decimation- or insertion-based scaling, e.g. pixel or line decimation}
- 3/403 . . {Edge-driven scaling}
- 3/4038 . . {for image mosaicing, i.e. plane images composed of plane sub-images}
- 3/4046 . . {using neural networks}
- 3/4053 . . {Super resolution, i.e. output image resolution higher than sensor resolution}
- 3/4061 . . . {by injecting details from a different spectral band}
- 3/4069 . . . {by subpixel displacement}
- 3/4076 . . . {by iteratively correcting the provisional high resolution image using the original low-resolution image}
- 3/4084 . . {Transform-based scaling, e.g. FFT domain scaling}
- 3/4092 . . {Image resolution transcoding, e.g. client/server architecture}
- 3/60 . Rotation of a whole image or part thereof
- 3/602 . . {Block rotation, e.g. by recursive reversing or rotating}
- 3/604 . . {using a CORDIC [COordinate Rotation Digital Compute] device}
- 3/606 . . {Rotation by memory addressing or mapping}
- 3/608 . . {Skewing or deskewing, e.g. by two-pass or three-pass rotation}

5/00 Image enhancement or restoration, e.g. from bit-mapped to bit-mapped creating a similar image

- 5/001 . {Image restoration}
- 5/002 . . {Denoising; Smoothing ([noise processing or correction adapted to be used in an image pickup device containing and electronic image sensor H04N 5/217](#), [H04N 5/357](#) - [H04N 5/365](#))}
- 5/003 . . {Deblurring; Sharpening ([vibration or motion blur correction for cameras comprising an electronic image sensor H04N 5/23264](#))}
- 5/004 . . . {Unsharp masking}
- 5/005 . . {Retouching; Inpainting; Scratch removal ([detecting, correction, reducing or removing defects, e.g. non-responsive pixels of solid state image sensors H04N 5/367](#), [scratch removal for cinematographic films scanned by electronic image sensor H04N 5/253](#))}

- 5/006 . {Geometric correction (detecting, correcting, reducing or removing artefacts resulting only from the lens unit, e.g. flare, shading, vignetting or "cos4" [H04N 5/3572](#), correction of chromatic aberrations adapted to be used in an image pickup device containing and electronic image sensor [H04N 9/045](#))}
- 5/007 . {Dynamic range modification (applied in cameras using an electronic image sensor [H04N 5/2355](#), [H04N 5/2356](#))}
- 5/008 . . {Local, e.g. shadow enhancement}
- 5/009 . . {Global, i.e. based on properties of the image as a whole (applied in cameras using an electronic image sensor [H04N 5/23229](#), [H04N 5/235](#))}
- 5/10 . by non-spatial domain filtering {(applied in cameras using an electronic image sensor [H04N 5/23229](#), [H04N 5/235](#), [H04N 5/253](#), [H04N 5/367](#))}
- 5/20 . by the use of local operators {(applied in cameras using an electronic image sensor [H04N 5/23229](#), [H04N 5/235](#), [H04N 5/253](#), [H04N 5/367](#))}
- 5/30 . . Erosion or dilatation, e.g. thinning
- 5/40 . by the use of histogram techniques {(applied in cameras using an electronic image sensor [H04N 5/23229](#), [H04N 5/235](#))}
- 5/50 . by the use of more than one image, e.g. averaging, subtraction {(applied in cameras using an electronic image sensor [H04N 5/23229](#), [H04N 5/235](#))}
- 7/00 Image analysis**
- 7/0002 . {Inspection of images, e.g. flaw detection}
- 7/0004 . . {Industrial image inspection}
- 7/0006 . . . {using a design-rule based approach}
- 7/0008 . . . {checking presence/absence}
- 7/001 . . . {using an image reference approach}
- 7/0012 . . {Biomedical image inspection}
- 7/0014 . . . {using an image reference approach}
- 7/0016 {involving temporal comparison}
- 7/10 . Segmentation; Edge detection ([motion-based segmentation G06T 7/215](#))
- NOTE**
- In this group, multi-aspect classification is applied, so that subject matter characterised by aspects covered by groups [G06T 7/11](#), [G06T 7/12](#) or [G06T 7/13](#) should also be classified in any of the relevant groups [G06T 7/136](#) - [G06T 7/194](#).
- 7/11 . . Region-based segmentation
- 7/12 . . Edge-based segmentation
- 7/13 . . Edge detection
- 7/136 . . involving thresholding
- 7/143 . . involving probabilistic approaches, e.g. Markov random field [MRF] modelling
- 7/149 . . involving deformable models, e.g. active contour models
- 7/155 . . involving morphological operators
- 7/162 . . involving graph-based methods
- 7/168 . . involving transform domain methods
- 7/174 . . involving the use of two or more images
- 7/181 . . involving edge growing; involving edge linking
- 7/187 . . involving region growing; involving region merging; involving connected component labelling
- 7/194 . . involving foreground-background segmentation
- 7/20 . Analysis of motion ([motion estimation for coding, decoding, compressing or decompressing digital video signals H04N 19/43](#), [H04N 19/51](#))
- 7/207 . . for motion estimation over a hierarchy of resolutions ([multi-resolution motion estimation or hierarchical motion estimation for coding, decoding, compressing or decompressing digital video signals H04N 19/53](#))
- 7/215 . . Motion-based segmentation
- 7/223 . . using block-matching
- 7/231 . . . using full search
- 7/238 . . . using non-full search, e.g. three-step search
- 7/246 . . using feature-based methods, e.g. the tracking of corners or segments
- 7/248 . . . {involving reference images or patches}
- 7/251 . . . {involving models}
- 7/254 . . involving subtraction of images
- 7/262 . . using transform domain methods, e.g. Fourier domain methods
- 7/269 . . using gradient-based methods
- 7/277 . . involving stochastic approaches, e.g. using Kalman filters
- 7/285 . . using a sequence of stereo image pairs
- 7/292 . . Multi-camera tracking
- 7/30 . Determination of transform parameters for the alignment of images, i.e. image registration
- 7/32 . . using correlation-based methods
- 7/33 . . using feature-based methods
- 7/337 . . . {involving reference images or patches}
- 7/344 . . . {involving models}
- 7/35 . . using statistical methods
- 7/37 . . using transform domain methods
- 7/38 . . Registration of image sequences
- 7/40 . Analysis of texture ([depth or shape recovery from texture G06T 7/529](#))
- 7/41 . . based on statistical description of texture
- 7/42 . . . using transform domain methods
- 7/44 . . . using image operators, e.g. filters, edge density metrics or local histograms
- 7/45 . . . using co-occurrence matrix computation
- 7/46 . . . using random fields
- 7/48 . . . using fractals
- 7/49 . . based on structural texture description, e.g. using primitives or placement rules
- 7/50 . Depth or shape recovery
- 7/507 . . from shading ([G06T 7/586 takes precedence](#))
- 7/514 . . from specularities
- 7/521 . . from laser ranging, e.g. using interferometry; from the projection of structured light
- 7/529 . . from texture
- 7/536 . . from perspective effects, e.g. by using vanishing points
- 7/543 . . from line drawings
- 7/55 . . from multiple images
- 7/557 . . . from light fields, e.g. from plenoptic cameras
- 7/564 . . . from contours
- 7/571 . . . from focus
- 7/579 . . . from motion
- 7/586 . . . from multiple light sources, e.g. photometric stereo
- 7/593 . . . from stereo images
- 7/596 {from three or more stereo images}
- 7/60 . Analysis of geometric attributes

7/62	. . of area, perimeter, diameter or volume	13/40	. . of characters, e.g. humans, animals or virtual beings
7/64	. . of convexity or concavity	13/60	. . of natural phenomena, e.g. rain, snow, water or plants
7/66	. . of image moments or centre of gravity	13/80	. 2D [Two Dimensional] animation, e.g. using sprites
7/68	. . of symmetry	15/00	3D [Three Dimensional] image rendering
7/70	. Determining position or orientation of objects or cameras (camera calibration G06T 7/80)	15/005	. {General purpose rendering architectures}
7/73	. . using feature-based methods	15/02	. Non-photorealistic rendering
7/74	. . . {involving reference images or patches}	15/04	. Texture mapping
7/75	. . . {involving models}	15/06	. Ray-tracing
7/77	. . using statistical methods	15/08	. Volume rendering
7/80	. Analysis of captured images to determine intrinsic or extrinsic camera parameters, i.e. camera calibration	15/10	. Geometric effects
7/85	. . {Stereo camera calibration}	15/20	. . Perspective computation
7/90	. Determination of colour characteristics	15/205	. . . {Image-based rendering}
7/97	. {Determining parameters from multiple pictures (depth or shape recovery from multiple images G06T 7/55 ; stereo camera calibration G06T 7/85)}	15/30	. . Clipping
9/00	Image coding, e.g. from bit-mapped to non bit-mapped ({ H04N 1/00 , H04N 19/00 take precedence; } compression in general H03M ; compression for image communication H04N)	15/40	. . Hidden part removal
9/001	. {Model-based coding, e.g. wire frame (see provisionally also G06T 9/00)}	15/405	. . . {using Z-buffer}
9/002	. {using neural networks}	15/50	. Lighting effects
9/004	. {Predictors, e.g. intraframe, interframe coding (see provisionally also G06T 9/00)}	15/503	. . {Blending, e.g. for anti-aliasing}
9/005	. {Statistical coding, e.g. Huffman, run length coding (see provisionally also G06T 9/00)}	15/506	. . {Illumination models}
9/007	. {Transform coding, e.g. discrete cosine transform (see provisionally also G06T 9/00)}	15/55	. . Radiosity
9/008	. {Vector quantisation (see provisionally also G06T 9/00)}	15/60	. . Shadow generation
9/20	. Contour coding, e.g. using detection of edges	15/80	. . Shading
9/40	. Tree coding, e.g. quadtree, octree (see provisionally also G06T 9/00)	15/83	. . . Phong shading
11/00	2D [Two Dimensional] image generation	15/87	. . . Gouraud shading
11/001	. {Texturing; Colouring; Generation of texture or colour}	17/00	Three dimensional [3D] modelling, e.g. data description of 3D objects
11/003	. {Reconstruction from projections, e.g. tomography}	17/005	. {Tree description, e.g. octree, quadtree}
11/005	. . {Specific pre-processing for tomographic reconstruction, e.g. calibration, source positioning, rebinning, scatter correction, retrospective gating}	17/05	. Geographic models
11/006	. . {Inverse problem, transformation from projection-space into object-space, e.g. transform methods, back-projection, algebraic methods}	17/10	. Constructive solid geometry [CSG] using solid primitives, e.g. cylinders, cubes
11/008	. . {Specific post-processing after tomographic reconstruction, e.g. voxelisation, metal artifact correction}	17/20	. Finite element generation, e.g. wire-frame surface description, {tessellation}
11/20	. Drawing from basic elements, e.g. lines or circles	17/205	. . {Re-meshing}
11/203	. . {Drawing of straight lines or curves}	17/30	. Polynomial surface description
11/206	. . {Drawing of charts or graphs}	19/00	Manipulating 3D models or images for computer graphics
11/40	. Filling a planar surface by adding surface attributes, e.g. colour or texture	19/003	. {Navigation within 3D models or images}
11/60	. Editing figures and text; Combining figures or text	19/006	. {Mixed reality (object pose determination, tracking or camera calibration for mixed reality G06T 7/00)}
11/80	. Creating or modifying a manually drawn or painted image using a manual input device, e.g. mouse, light pen, direction keys on keyboard	19/20	. Editing of 3D images, e.g. changing shapes or colours, aligning objects or positioning parts
13/00	Animation	2200/00	Indexing scheme for image data processing or generation, in general
13/20	. 3D [Three Dimensional] animation	2200/04	. involving 3D image data
13/205	. . {driven by audio data}	2200/08	. involving all processing steps from image acquisition to 3D model generation
		2200/12	. involving antialiasing
		2200/16	. involving adaptation to the client's capabilities
		2200/21	. involving computational photography
		2200/24	. involving graphical user interfaces [GUIs]
		2200/28	. involving image processing hardware
		2200/32	. involving image mosaicing
		2200/36	. Review paper; Tutorial; Survey
		2201/00	General purpose image data processing
		2201/005	. Image watermarking
		2201/0051	. . Embedding of the watermark in the spatial domain

2201/0052	. . Embedding of the watermark in the frequency domain	2207/10092	. . . . Diffusion tensor magnetic resonance imaging [DTI]
2201/0053	. . Embedding of the watermark in the coding stream, possibly without decoding; Embedding of the watermark in the compressed domain	2207/10096	. . . . Dynamic contrast-enhanced magnetic resonance imaging [DCE-MRI]
2201/0061	. . Embedding of the watermark in each block of the image, e.g. segmented watermarking	2207/10101	. . . Optical tomography; Optical coherence tomography [OCT]
2201/0062	. . Embedding of the watermark in text images, e.g. watermarking text documents using letter skew, letter distance or row distance	2207/10104	. . . Positron emission tomography [PET]
2201/0063	. . in relation to collusion attacks, e.g. collusion attack resistant	2207/10108	. . . Single photon emission computed tomography [SPECT]
2201/0064	. . for copy protection or copy management, e.g. CGMS, copy only once, one-time copy	2207/10112	. . . Digital tomosynthesis [DTS]
2201/0065	. . Extraction of an embedded watermark; Reliable detection	2207/10116	. . X-ray image
2201/0081	. . whereby both original and watermarked images are required at decoder, e.g. destination-based, non-blind, non-oblivious	2207/10121	. . . Fluoroscopy
2201/0083	. . whereby only watermarked image required at decoder, e.g. source-based, blind, oblivious	2207/10124	. . . Digitally reconstructed radiograph [DRR]
2201/0201	. . whereby only tamper or origin are detected and no embedding takes place	2207/10128	. . . Scintigraphy
2201/0202	. . whereby the quality of watermarked images is measured; Measuring quality or performance of watermarking methods; Balancing between quality and robustness	2207/10132	. . Ultrasound image
2201/0203	. . whereby the image with embedded watermark is reverted to the original condition before embedding, e.g. lossless, distortion-free or invertible watermarking	2207/10136	. . . 3D ultrasound image
2201/0601	. . whereby calibration information is embedded in the watermark, e.g. a grid, a scale, a list of transformations	2207/10141	. . Special mode during image acquisition
2207/00	Indexing scheme for image analysis or image enhancement	2207/10144	. . . Varying exposure
2207/10	. Image acquisition modality	2207/10148	. . . Varying focus
2207/10004	. . Still image; Photographic image	2207/10152	. . . Varying illumination
2207/10008	. . . from scanner, fax or copier	2207/20	. Special algorithmic details
2207/10012	. . . Stereo images	2207/20004	. . Adaptive image processing
2207/10016	. . Video; Image sequence	2207/20008	. . . Globally adaptive
2207/10021	. . . Stereoscopic video; Stereoscopic image sequence	2207/20012	. . . Locally adaptive
2207/10024	. . Color image	2207/20016	. . Hierarchical, coarse-to-fine, multiscale or multiresolution image processing; Pyramid transform
2207/10028	. . Range image; Depth image; 3D point clouds	2207/20021	. . Dividing image into blocks, subimages or windows
2207/10032	. . Satellite or aerial image; Remote sensing	2207/20024	. . Filtering details
2207/10036	. . . Multispectral image; Hyperspectral image	2207/20028	. . . Bilateral filtering
2207/10041	. . . Panchromatic image	2207/20032	. . . Median filtering
2207/10044	. . . Radar image	2207/20036	. . Morphological image processing
2207/10048	. . Infrared image	2207/20041	. . . Distance transform
2207/10052	. . Images from lightfield camera	2207/20044	. . . Skeletonization; Medial axis transform
2207/10056	. . Microscopic image	2207/20048	. . Transform domain processing
2207/10061	. . . from scanning electron microscope	2207/20052	. . Discrete cosine transform [DCT]
2207/10064	. . Fluorescence image	2207/20056	. . Discrete and fast Fourier transform, [DFT, FFT]
2207/10068	. . Endoscopic image	2207/20061	. . . Hough transform
2207/10072	. . Tomographic images	2207/20064	. . . Wavelet transform [DWT]
2207/10076	. . . 4D tomography; Time-sequential 3D tomography	2207/20068	. . Projection on vertical or horizontal image axis
2207/10081	. . . Computed x-ray tomography [CT]	2207/20072	. . Graph-based image processing
2207/10084	. . . Hybrid tomography; Concurrent acquisition with multiple different tomographic modalities	2207/20076	. . Probabilistic image processing
2207/10088	. . . Magnetic resonance imaging [MRI]	2207/20081	. . Training; Learning
		2207/20084	. . Artificial neural networks [ANN]
		2207/20088	. . Trinocular vision calculations; trifocal tensor
		2207/20092	. . Interactive image processing based on input by user
		2207/20096	. . . Interactive definition of curve of interest
		2207/20101	. . . Interactive definition of point of interest, landmark or seed
		2207/20104	. . . Interactive definition of region of interest [ROI]
		2207/20108	. . . Interactive selection of 2D slice in a 3D data set
		2207/20112	. . Image segmentation details
		2207/20116	. . . Active contour; Active surface; Snakes
		2207/20121	. . . Active appearance model [AAM]
		2207/20124	. . . Active shape model [ASM]
		2207/20128	. . . Atlas-based segmentation
		2207/20132	. . . Image cropping
		2207/20152	. . . Watershed segmentation

2207/20156	. . .	Automatic seed setting	2207/30176	. .	Document
2207/20161	. . .	Level set	2207/30181	. .	Earth observation
2207/20164	. . .	Salient point detection; Corner detection	2207/30184	. . .	Infrastructure
2207/20168	. . .	Radial search	2207/30188	. . .	Vegetation; Agriculture
2207/20172	. .	Image enhancement details	2207/30192	. . .	Weather; Meteorology
2207/20182	. . .	Noise reduction or smoothing in the temporal domain; Spatio-temporal filtering	2207/30196	. .	Human being; Person
2207/20192	. . .	Edge enhancement; Edge preservation	2207/30201	. . .	Face
2207/20201	. . .	Motion blur correction	2207/30204	. .	Marker
2207/20204	. . .	Removing film grain; Adding simulated film grain	2207/30208	. . .	Marker matrix
2207/20208	. . .	High dynamic range [HDR] image processing	2207/30212	. .	Military
2207/20212	. .	Image combination	2207/30216	. .	Redeye defect
2207/20216	. . .	Image averaging	2207/30221	. .	Sports video; Sports image
2207/20221	. . .	Image fusion; Image merging	2207/30224	. . .	Ball; Puck
2207/20224	. . .	Image subtraction	2207/30228	. . .	Playing field
2207/20228	. .	Disparity calculation for image-based rendering	2207/30232	. .	Surveillance
2207/30	. .	Subject of image; Context of image processing	2207/30236	. .	Traffic on road, railway or crossing
2207/30004	. .	Biomedical image processing	2207/30241	. .	Trajectory
2207/30008	. . .	Bone	2207/30242	. .	Counting objects in image
2207/30012	. . . .	Spine; Backbone	2207/30244	. .	Camera pose
2207/30016	. . .	Brain	2207/30248	. .	Vehicle exterior or interior
2207/30021	. . .	Catheter; Guide wire	2207/30252	. . .	Vehicle exterior; Vicinity of vehicle
2207/30024	. . .	Cell structures <u>in vitro</u> ; Tissue sections <u>in vitro</u>	2207/30256	. . . .	Lane; Road marking
2207/30028	. . .	Colon; Small intestine	2207/30261	. . . .	Obstacle
2207/30032	. . . .	Colon polyp	2207/30264	. . . .	Parking
2207/30036	. . .	Dental; Teeth	2207/30268	. . .	Vehicle interior
2207/30041	. . .	Eye; Retina; Ophthalmic	2210/00		Indexing scheme for image generation or computer graphics
2207/30044	. . .	Fetus; Embryo	2210/04	. .	Architectural design, interior design
2207/30048	. . .	Heart; Cardiac	2210/08	. .	Bandwidth reduction
2207/30052	. . .	Implant; Prosthesis	2210/12	. .	Bounding box
2207/30056	. . .	Liver; Hepatic	2210/16	. .	Cloth
2207/30061	. . .	Lung	2210/21	. .	Collision detection, intersection
2207/30064	. . . .	Lung nodule	2210/22	. .	Cropping
2207/30068	. . .	Mammography; Breast	2210/24	. .	Fluid dynamics
2207/30072	. . .	Microarray; Biochip, DNA array; Well plate	2210/28	. .	Force feedback
2207/30076	. . .	Plethysmography	2210/32	. .	Image data format
2207/30081	. . .	Prostate	2210/36	. .	Level of detail
2207/30084	. . .	Kidney; Renal	2210/41	. .	Medical
2207/30088	. . .	Skin; Dermal	2210/44	. .	Morphing
2207/30092	. . .	Stomach; Gastric	2210/52	. .	Parallel processing
2207/30096	. . .	Tumor; Lesion	2210/56	. .	Particle system, point based geometry or rendering
2207/30101	. . .	Blood vessel; Artery; Vein; Vascular	2210/61	. .	Scene description
2207/30104	. . . .	Vascular flow; Blood flow; Perfusion	2210/62	. .	Semi-transparency
2207/30108	. .	Industrial image inspection	2210/64	. .	Weathering
2207/30112	. . .	Baggage; Luggage; Suitcase	2211/00		Image generation
2207/30116	. . .	Casting	2211/40	. .	Computed tomography
2207/30121	. . .	CRT, LCD or plasma display	2211/404	. .	Angiography
2207/30124	. . .	Fabrics; Textile; Paper	2211/408	. .	Dual energy
2207/30128	. . .	Food products	2211/412	. .	Dynamic
2207/30132	. . .	Masonry; Concrete	2211/416	. .	Exact reconstruction
2207/30136	. . .	Metal	2211/421	. .	Filtered back projection [FBP]
2207/30141	. . .	Printed circuit board [PCB]	2211/424	. .	Iterative
2207/30144	. . .	Printing quality	2211/428	. .	Real-time
2207/30148	. . .	Semiconductor; IC; Wafer	2211/432	. .	Truncation
2207/30152	. . .	Solder	2211/436	. .	Limited angle
2207/30156	. . .	Vehicle coating	2213/00		Indexing scheme for animation
2207/30161	. . .	Wood; Lumber	2213/04	. .	Animation description language
2207/30164	. . .	Workpiece; Machine component	2213/08	. .	Animation software package
2207/30168	. .	Image quality inspection	2213/12	. .	Rule based animation
2207/30172	. .	Centreline of tubular or elongated structure			

2215/00 Indexing scheme for image rendering

- 2215/06 . Curved planar reformation of 3D line structures
- 2215/08 . Gnomonic or central projection
- 2215/12 . Shadow map, environment map
- 2215/16 . Using real world measurements to influence rendering

2219/00 Indexing scheme for manipulating 3D models or images for computer graphics

- 2219/004 . Annotating, labelling
- 2219/008 . Cut plane or projection plane definition
- 2219/012 . Dimensioning, tolerancing
- 2219/016 . Exploded view
- 2219/021 . Flattening
- 2219/024 . Multi-user, collaborative environment
- 2219/028 . Multiple view windows (top-side-front-sagittal-orthogonal)
- 2219/20 . Indexing scheme for editing of 3D models
- 2219/2004 . . Aligning objects, relative positioning of parts
- 2219/2008 . . Assembling, disassembling
- 2219/2012 . . Colour editing, changing, or manipulating; Use of colour codes
- 2219/2016 . . Rotation, translation, scaling
- 2219/2021 . . Shape modification
- 2219/2024 . . Style variation