

**CPC****COOPERATIVE PATENT CLASSIFICATION****G06T**

**IMAGE DATA PROCESSING OR GENERATION, IN GENERAL** (specially adapted for particular applications, see the relevant subclasses, e.g. [G06K](#), [G09G](#), [H04N](#))

**NOTE**

This subclass covers:

- arrangements for geometrically modelling objects, whether the final model is used for display of an image of the object or for some other purpose, such as manufacture of a corresponding object;
- arrangements for analysing the geometric attributes of an image of an object.

This subclass does not cover:

- reading or recognising printed or written characters or recognising patterns, e.g. fingerprints, which is covered by subclass [G06K](#);
- modification of image data to allow display using multiple viewports, which is covered by subclass [G09G](#);
- circuits for generating functions for visual indicators, which are covered by subclass [G09G](#);
- scanning of documents or the like in pictorial communication, which is covered by subclass [H04N](#).

**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](#)

**G06T 1/00****General purpose image data processing****G06T 1/0007**

- . {Image acquisition}

**G06T 1/0014**

- . {Image feed-back for automatic industrial control, e.g. robot with camera( [robots B25J 19/023](#))}

**G06T 1/0021**

- . {Image watermarking}

**G06T 1/0028**

- .. {Adaptive watermarking, e.g. Human Visual System (HVS)-based watermarking}

**G06T 1/0035**

- ... {Output size adaptive watermarking}

**G06T 1/0042**

- .. {Fragile watermarking, e.g. so as to detect tampering}

**G06T 1/005**

- .. {Robust watermarking, e.g. average attack or collusion attack resistant}

**G06T 1/0057**

- ... {Compression invariant watermarking}

**G06T 1/0064**

- ... {Geometric transform invariant watermarking, e.g. affine transform invariant}

**G06T 1/0071**

- ... {using multiple or alternating watermarks}

**G06T 1/0078**

- ... {using multiple thresholds}

**G06T 1/0085**

- .. {Time domain based watermarking, e.g. watermarks spread over several images}

**G06T 1/0092**

- .. {Payload characteristic determination in a watermarking scheme, e.g. number of bits to be embedded}

- G06T 1/20 . Processor architectures; Processor configuration, e.g. pipelining( [architectures of general purpose stored programme computers G06F 15/76](#))
- G06T 1/60 . Memory management
- G06T 3/00** **Geometric image transformation in the plane of the image, e.g. from bit-mapped to bit-mapped creating a different image**
- G06T 3/0006 . {Affine transformations([G06T 3/4038](#) , [G06T 3/0068](#) take precedence )}
- G06T 3/0012 . {Context preserving transformation, e.g. by using an importance map([G06T 3/0062](#) takes precedence )}
- G06T 3/0018 . . {Fisheye, wide-angle transformation}
- G06T 3/0025 . . {Detail-in-context presentation([G06T 3/0018](#) takes precedence )}
- G06T 3/0031 . {for topological mapping of a higher dimensional structure on a lower dimensional surface}
- G06T 3/0037 . . {Reshaping or unfolding a 3D tree structure onto a 2D plane}
- G06T 3/0043 . . {Surface of revolution to planar image transformation}
- G06T 3/005 . {for projecting an image on a non-planar surface, e.g. a geodetic screen}
- G06T 3/0056 . {the transformation method being selected according to the characteristics of the input image}
- G06T 3/0062 . {Panospheric to cylindrical image transformation}
- G06T 3/0068 . {for image registration, e.g. elastic snapping}
- G06T 3/0075 . . {using affine transformations}
- G06T 3/0081 . . {by elastic snapping}
- G06T 3/0087 . {Spatio-temporal transformations, e.g. video cubism}
- G06T 3/0093 . {for image warping, i.e. transforming by individually repositioning each pixel}
- G06T 3/20 . Linear translation of a whole image or part thereof, e.g. panning
- G06T 3/40 . Scaling the whole image or part thereof
- G06T 3/4007 . . {Interpolation-based scaling, e.g. bilinear interpolation([G06T 3/4015](#) , [G06T 3/403](#) take precedence )}
- G06T 3/4015 . . {Demosaiicing, e.g. colour filter array [CFA], Bayer pattern}
- G06T 3/4023 . . {Decimation- or insertion-based scaling, e.g. pixel or line decimation}
- G06T 3/403 . . {Edge-driven scaling}
- G06T 3/4038 . . {for image mosaicing, i.e. plane images composed of plane sub-images}
- G06T 3/4046 . . {using neural networks}
- G06T 3/4053 . . {Super resolution, i.e. output image resolution higher than sensor resolution}

- G06T 3/4061 . . . {by injecting details from a different spectral band}
- G06T 3/4069 . . . {by subpixel displacement}
- G06T 3/4076 . . . {by iteratively correcting the provisional high resolution image using the original low-resolution image}
- G06T 3/4084 . . {Transform-based scaling, e.g. FFT domain scaling}
- G06T 3/4092 . . {Image resolution transcoding, e.g. client/server architecture}
- G06T 3/60 . Rotation of a whole image or part thereof
- G06T 3/602 . . {Block rotation, e.g. by recursive reversing or rotating}
- G06T 3/604 . . {using a CORDIC [COordinate Rotation DIgital Compute]device}
- G06T 3/606 . . {Rotation by memory addressing or mapping}
- G06T 3/608 . . {Skewing or deskewing, e.g. by two-pass or three-pass rotation}

**G06T 5/00** Image enhancement or restoration, e.g. from bit-mapped to bit-mapped creating a similar image

- G06T 5/001 . {Image restoration}
- G06T 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](#) to [H04N 5/365](#))}

**WARNING**

Not complete pending reclassification; see also group **G06T 5/00D**

- G06T 5/003 . . {Deblurring; Sharpening( vibration or motion blur correction for cameras comprising an electronic image sensor [H04N 5/23264](#))}

**WARNING**

Not complete pending reclassification; see also group **G06T 5/00D**

- G06T 5/004 . . . {Unsharp masking}

**WARNING**

Not complete pending reclassification; see also group **G06T 5/00D**

- G06T 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](#))}

**WARNING**

Not complete pending reclassification; see also group **G06T 5/00D**

- G06T 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](#))}

- G06T 5/007 . {Dynamic range modification( applied in cameras using an electronic image sensor [H04N 5/2355](#) , [H04N 5/2356](#))}

**WARNING**

Not complete pending reclassification; see also groups [G06T 5/001](#) and [G06T 5/40](#)

- G06T 5/008 . . {Local, e.g. shadow enhancement}

**WARNING**

Not complete pending reclassification; see also group **[G06T 5/00D](#)**

- G06T 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](#))}

**WARNING**

Not complete pending reclassification; see also group [G06T 5/40](#)

- G06T 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](#))}

**WARNING**

Not complete pending reclassification; see also group [G06T 5/001](#)

- G06T 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](#))}

- G06T 5/30 . . Erosion or dilatation, e.g. thinning

- G06T 5/40 . by the use of histogram techniques{( applied in cameras using an electronic image sensor [H04N 5/23229](#) , [H04N 5/235](#))}

- G06T 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](#))}

**G06T 7/00 Image analysis, e.g. from bit-mapped to non bit-mapped**

- G06T 7/0002 . {Inspection of images, e.g. flaw detection([G06T 7/004](#) takes precedence )}

**WARNING**

This group is being reorganised in the 5 following sub-groups

- G06T 7/0004 .. {Industrial image inspection}
- G06T 7/0006 ... {using a design-rule based approach}
- G06T 7/0008 ... {checking presence/absence}
- G06T 7/001 ... {using an image reference approach( image matching for pattern recognition or image matching in general [G06K 9/6203](#))}
- G06T 7/0012 .. {Biomedical image inspection}

### **WARNING**

Groups **~~G06T /00B2R~~** and [G06T 7/0016](#) are not complete pending reclassification. See also this group

- G06T 7/0014 ... {using an image reference approach( image matching for pattern recognition or image matching in general [G06K 9/6203](#))}
- G06T 7/0016 .... {involving temporal comparison( change detection in general [G06T 7/20](#))}
- G06T 7/0018 . {Camera calibration, e.g. determining intrinsic or extrinsic parameters}
- G06T 7/002 .. {Stereo camera calibration, e.g. determination of the transformation between left camera coordinate system and right camera coordinate system}
- G06T 7/0022 . {Determining parameters from multiple pictures( depth or shape from stereo images [G06T 7/0075](#) ; depth or shape from multiple images [G06T 7/0065](#) ; stereo camera calibration [G06T 7/002](#))}
- G06T 7/0024 .. {Registration of images, e.g. alignment of images( image matching for pattern recognition or image matching in general [G06K 9/6203](#))}
- G06T 7/0026 ... {using correlation-based methods}
- G06T 7/0028 ... {using feature-based methods}
- G06T 7/003 .... {involving reference images or patches( image matching for pattern recognition or image matching in general [G06K 9/6203](#))}
- G06T 7/0032 .... {involving models( model matching for pattern recognition [G06K 9/6204](#) , [G06K 9/6878](#))}
- G06T 7/0034 ... {using statistical methods( image matching by comparing statistics of regions for pattern recognition [G06K 9/6212](#))}
- G06T 7/0036 ... {using transform-domain based approaches}
- G06T 7/0038 ... {Registration of image sequences}
- G06T 7/004 . {Determining position or orientation of objects}
- G06T 7/0042 .. {using feature-based methods}
- G06T 7/0044 ... {involving reference images or patches( image matching for pattern recognition or image matching in general [G06K 9/6203](#))}
- G06T 7/0046 ... {involving models( model matching for pattern recognition [G06K 9/6204](#) , [G06K 9/6878](#))}
- G06T 7/0048 .. {using statistical methods( image matching by comparing statistics of regions for pattern recognition [G06K 9/6212](#))}

- G06T 7/0051 . {Depth or shape recovery}
- G06T 7/0053 .. {from shading}
- G06T 7/0055 .. {from specularities}
- G06T 7/0057 .. {from laser ranging and structured images, e.g. interferometry( image acquisition and arrangements for measuring contours or curvatures of an object by projecting a pattern, thereupon [G01B 11/25](#))}
- G06T 7/0059 .. {from texture}
- G06T 7/0061 .. {from perspective effects, e.g. using vanishing points}
- G06T 7/0063 .. {from line drawings}
- G06T 7/0065 .. {from multiple images}
- G06T 7/0067 ... {from contours}
- G06T 7/0069 ... {from focus}
- G06T 7/0071 ... {from motion}

### **WARNING**

Not complete pending reclassification; see also group [G06T 7/20](#)

- G06T 7/0073 ... {from multiple light sources, e.g. photometric stereo}
- G06T 7/0075 ... {from stereo images}
- G06T 7/0077 .... {from three or more stereo images}
- G06T 7/0079 . {Segmentation or edge detection( image analysis based on texture or colour features [G06T 7/40](#) ; motion-based segmentation [G06T 7/2006](#) ; separation of touching or overlapping patterns for pattern recognition [G06K 9/34](#) ; extraction of features or characteristics of the image for pattern recognition [G06K 9/46](#))}
- G06T 7/0081 .. {Region-based segmentation}( image analysis based on texture or colour features [G06T 7/40](#) ; separation of touching or overlapping patterns by cutting or merging for pattern recognition [G06K 9/342](#) ; quantising the analogue image signal for pattern recognition [G06K 9/38](#) ; extraction of features or characteristics of the image related to colour for pattern recognition [G06K 9/4652](#))}
- G06T 7/0083 .. {Edge-based segmentation( detecting partial patterns or configurations [G06K 9/4604](#))}
- G06T 7/0085 .. {Edge detection( detecting partial patterns or configurations [G06K 9/4604](#))}
- G06T 7/0087 .. {involving probabilistic approaches, e.g. Markov Random Field [MRF] modeling( Markov models or related models or networks embedding Markov models for pattern recognition [G06K 9/6297](#) ; classification techniques based on a parametric, e.g. probabilistic, model [G06K 9/6277](#) ; detecting partial patterns or configurations by analysing connectivity relationship of elements of the pattern [G06K 9/4638](#))}
- G06T 7/0089 .. {involving deformable models, e.g. active contour( pattern recognition techniques involving a deformation of the sample or reference pattern or elastic matching [G06K 9/6206](#))}
- G06T 7/0091 .. {involving morphological operators( combinations of preprocessing functions using a local operator for pattern recognition [G06K 9/56](#))}
- G06T 7/0093 .. {involving graph-based approaches( non-hierarchical partitioning techniques based on graph theory for pattern recognition [G06K 9/6224](#))}

- G06T 7/0095 .. {involving transform domain approaches( detecting partial patterns, e.g. edges or contours, using the Hough transform for pattern recognition [G06K 9/4633](#))}
- G06T 7/0097 .. {involving the use of two or more images}
- G06T 7/20 . Analysis of motion{( movement detection in television systems [H04N 5/144](#) ; motion estimation for digital video signal compression [H04N 7/2676](#) ; recognizing scenes under surveillance and traffic patterns [G06K 9/00771](#) , [G06K 9/00785](#))}

**WARNING**

This group is being reorganised. Documents dealing with shape from motion are reclassified to [G06T 7/0071](#) and a sub-group [G06T 7/2006](#) is created

- G06T 7/2006 .. {Motion-based segmentation}

**WARNING**

Not complete pending reclassification; see also group [G06T 7/20](#)

- G06T 7/2013 .. {using block-matching}
- G06T 7/202 ... {using full search}
- G06T 7/2026 ... {using non-full search, e.g. three step search}
- G06T 7/2033 .. {using feature-based methods, e.g. corners, segments}
- G06T 7/204 ... {involving reference images or patches( image matching for pattern recognition or image matching in general [G06K 9/6203](#))}

**WARNING**

Not complete pending reclassification; see also group [G06T 7/20](#)

- G06T 7/2046 ... {involving models( model matching for pattern recognition [G06K 9/6204](#) , [G06K 9/6878](#))}

**WARNING**

Not complete pending reclassification; see also group [G06T 7/20](#)

- G06T 7/2053 .. {involving subtraction of pictures}
- G06T 7/206 .. {using transform domain based approaches, e.g. Fourier}
- G06T 7/2066 .. {using gradient-based methods}
- G06T 7/2073 .. {Motion estimation over a hierarchy of resolutions}
- G06T 7/208 .. {involving a stochastic approach, e.g. Kalman filter}
- G06T 7/2086 .. {Computing motion from a sequence of stereo images}
- G06T 7/2093 .. [Multi-camera tracking]

**WARNING**

Not complete pending reclassification; see also group [G06T 7/20](#)

- G06T 7/40 . Analysis of texture{( depth or shape from texture [G06T 7/0059](#))}
- G06T 7/401 .. {based on statistical texture description}
- G06T 7/402 ... {using transform-domain based approaches}
- G06T 7/403 ... {using image operators, e.g. filter, edge density, local histograms}
- G06T 7/404 ... {using co-occurrence matrix computation}
- G06T 7/405 ... {using random Fields}
- G06T 7/406 ... {using fractals}
- G06T 7/407 .. {based on structural texture description, i.e. primitives and placement rules}
- G06T 7/408 .. {Color analysis}
  
- G06T 7/60 . Analysis of geometric attributes, e.g. area, center of gravity or perimeter, from an image
- G06T 7/602 .. {Area, perimeter, diameter or volume}
- G06T 7/604 .. {Convexity or concavity}
- G06T 7/606 .. {Center of gravity or moments( moments specific for pattern recognition, e.g. Zernike moments [G06K 9/525](#))}
- G06T 7/608 .. {Symmetry}
  
- G06T 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](#))
  
- G06T 9/001 . {Model-based coding, e.g. wire frame( see provisionally also [G06T 9/00](#))}
- G06T 9/002 . {using neural networks}
- G06T 9/004 . {Predictors, e.g. intraframe, interframe coding( see provisionally also [G06T 9/00](#))}
- G06T 9/005 . {Statistical coding, e.g. Huffman, run length coding( see provisionally also [G06T 9/00](#))}
- G06T 9/007 . {Transform coding, e.g. discrete cosine transform( see provisionally also [G06T 9/00](#))}
- G06T 9/008 . {Vector quantisation( see provisionally also [G06T 9/00](#))}
- G06T 9/20 . Contour coding, e.g. using detection of edges
- G06T 9/40 . Tree coding, e.g. quadtree, octree( see provisionally also [G06T 9/00](#))
  
- G06T 11/00** **2D [Two Dimensional] image generation**
  
- G06T 11/001 . {Texturing; Colouring; Generation of texture or colour}
- G06T 11/003 . {Reconstruction from projections, e.g. tomography}

**WARNING**



As from 06.2011 documents of this group are being continuously reclassified to its subgroups

- G06T 11/005 .. {Specific pre-processing for tomographic reconstruction, e.g. calibration, source positioning, rebinning, scatter correction, retrospective gating}
- WARNING**
- Not complete pending the completion of a reclassification; see also **G11/ 00T**
- G06T 11/006 .. {Inverse problem, transformation from projection-space into object-space, e.g. transform methods, back-projection, algebraic methods}
- WARNING**
- Not complete pending the completion of a reclassification; see also **G06T 11/00T**
- G06T 11/008 .. {Specific post-processing after tomographic reconstruction, e.g. voxelisation, metal artifact correction}
- WARNING**
- Not complete pending the completion of a reclassification; see also **G06T 11/00T**
- G06T 11/20 . Drawing from basic elements, e.g. lines or circles
- G06T 11/203 .. {Drawing of straight lines or curves}
- G06T 11/206 .. {Drawing of charts or graphs}
- G06T 11/40 . Filling a planar surface by adding surface attributes, e.g. colour or texture
- G06T 11/60 . Editing figures and text; Combining figures or text
- G06T 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
- G06T 13/00      Animation**
- G06T 13/20 . 3D [Three Dimensional] animation
- G06T 13/205 .. {driven by audio data}
- G06T 13/40 .. of characters, e.g. humans, animals or virtual beings
- G06T 13/60 .. of natural phenomena, e.g. rain, snow, water or plants
- G06T 13/80 . 2D [Two Dimensional] animation, e.g. using sprites
- G06T 15/00      3D [Three Dimensional] image rendering**
- G06T 15/005 . {General purpose rendering architectures}

- G06T 15/02 . Non-photorealistic rendering
- G06T 15/04 . Texture mapping
- G06T 15/06 . Ray-tracing
- G06T 15/08 . Volume rendering
- G06T 15/10 . Geometric effects
- G06T 15/20 .. Perspective computation
- G06T 15/205 ... {Image-based rendering}

### **WARNING**

This group is not complete pending a reorganisation. See also [G06T 15/00](#)

- G06T 15/30 .. Clipping
- G06T 15/40 .. Hidden part removal
- G06T 15/405 ... {using Z-buffer}
- G06T 15/50 . Lighting effects
- G06T 15/503 .. {Blending, e.g. for anti-aliasing}
- G06T 15/506 .. {Illumination models}
- G06T 15/55 .. Radiosity
- G06T 15/60 .. Shadow generation
- G06T 15/80 .. Shading
- G06T 15/83 ... Phong shading
- G06T 15/87 ... Gouraud shading

## **G06T 17/00 Three dimensional [3D] modelling, e.g. data description of 3D objects**

- G06T 17/005 . {Tree description, e.g. octree, quadtree}
- G06T 17/05 . Geographic models
- G06T 17/10 . Constructive solid geometry (CSG) using solid primitives, e.g. cylinders, cubes
- G06T 17/20 . Finite element generation, e.g. wire-frame surface description, {tessellation}
- G06T 17/205 .. {Re-meshing}
- G06T 17/30 . Polynomial surface description

## **G06T 19/00 Manipulating 3D models or images for computer graphics**

### **WARNING**

As from August 1, 2011, documents relating to subject matter covered by subgroups **G06T 19/00N**, [G06T 19/006](#) are continuously reclassified to said subgroups

- [G06T 19/003](#) . {Navigation within 3D models or images}

**WARNING**

This group is not complete pending reclassification; see also group [G06T 19/00](#)

- [G06T 19/006](#) . {Mixed reality( object pose determination, tracking or camera calibration for mixed reality [G06T 7/00](#))}

**WARNING**

This group is not complete pending reclassification; see also group [G06T 19/00](#)

- [G06T 19/20](#) . Editing of 3D images, e.g. changing shapes or colours, aligning objects or positioning parts

**[G06T 2200/00](#) Indexing scheme for image data processing or generation, in general**

- [G06T 2200/04](#) . involving 3D image data
- [G06T 2200/08](#) . involving all processing steps from image acquisition to 3D model generation
- [G06T 2200/12](#) . involving antialiasing
- [G06T 2200/16](#) . involving adaptation to the client's capabilities
- [G06T 2200/21](#) . involving computational photography
- [G06T 2200/24](#) . involving graphical user interfaces [GUIs]
- [G06T 2200/28](#) . involving image processing hardware
- [G06T 2200/32](#) . involving image mosaicing
- [G06T 2200/36](#) . Review paper; Tutorial; Survey

**[G06T 2201/00](#) General purpose image data processing**

- [G06T 2201/005](#) . Image watermarking
- [G06T 2201/0051](#) . . Embedding of the watermark in the spatial domain
- [G06T 2201/0052](#) . . Embedding of the watermark in the frequency domain
- [G06T 2201/0053](#) . . Embedding of the watermark in the coding stream, possibly without decoding;  
Embedding of the watermark in the compressed domain

- G06T 2201/0061 .. Embedding of the watermark in each block of the image, e.g. segmented watermarking
- G06T 2201/0062 .. Embedding of the watermark in text images, e.g. watermarking text documents using letter skew, letter distance or row distance
- G06T 2201/0063 .. in relation to collusion attacks, e.g. collusion attack resistant
- G06T 2201/0064 .. for copy protection or copy management, e.g. CGMS, copy only once, one-time copy
- G06T 2201/0065 .. Extraction of an embedded watermark; Reliable detection
- G06T 2201/0081 .. whereby both original and watermarked images are required at decoder, e.g. destination-based, non-blind, non-oblivious
- G06T 2201/0083 .. whereby only watermarked image required at decoder, e.g. source-based, blind, oblivious
- G06T 2201/0201 .. whereby only tamper or origin are detected and no embedding takes place
- G06T 2201/0202 .. whereby the quality of watermarked images is measured; Measuring quality or performance of watermarking methods; Balancing between quality and robustness
- G06T 2201/0203 .. whereby the image with embedded watermark is reverted to the original condition before embedding, e.g. lossless, distortion-free or invertible watermarking
- G06T 2201/0601 .. whereby calibration information is embedded in the watermark, e.g. a grid, a scale, a list of transformations

#### **G06T 2207/00      Indexing scheme for image analysis or image enhancement**

- G06T 2207/10 . Image acquisition modality
- G06T 2207/10004 .. Still image; Photographic image
- G06T 2207/10008 ... from scanner, fax or copier
- G06T 2207/10012 ... Stereo images
- G06T 2207/10016 .. Video; Image sequence
- G06T 2207/10021 ... Stereoscopic video; Stereoscopic image sequence
- G06T 2207/10024 .. Color image
- G06T 2207/10028 .. Range image; Depth image; 3D point clouds
- G06T 2207/10032 .. Satellite or aerial image; Remote sensing
- G06T 2207/10036 ... Multispectral image; Hyperspectral image
- G06T 2207/10041 ... Panchromatic image
- G06T 2207/10044 ... Radar image
- G06T 2207/10048 .. Infrared image
- G06T 2207/10052 .. Images from lightfield camera
- G06T 2207/10056 .. Microscopic image
- G06T 2207/10061 ... from scanning electron microscope
- G06T 2207/10064 .. Fluorescence image
- G06T 2207/10068 .. Endoscopic image
- G06T 2207/10072 .. Tomographic images
- G06T 2207/10076 ... 4D tomography; Time-sequential 3D tomography

G06T 2207/10081	...	Computed x-ray tomography [CT]
G06T 2207/10084	...	Hybrid tomography; Concurrent acquisition with multiple different tomographic modalities
G06T 2207/10088	...	Magnetic resonance imaging [MRI]
G06T 2207/10092	....	Diffusion tensor magnetic resonance imaging [DTI]
G06T 2207/10096	....	Dynamic contrast-enhanced magnetic resonance imaging [DCE-MRI]
G06T 2207/10101	...	Optical tomography; Optical coherence tomography [OCT]
G06T 2207/10104	...	Positron emission tomography [PET]
G06T 2207/10108	...	Single photon emission computed tomography [SPECT]
G06T 2207/10112	...	Digital tomosynthesis [DTS]
G06T 2207/10116	..	X-ray image
G06T 2207/10121	...	Fluoroscopy
G06T 2207/10124	...	Digitally reconstructed radiograph [DRR]
G06T 2207/10128	...	Scintigraphy
G06T 2207/10132	..	Ultrasound image
G06T 2207/10136	...	3D ultrasound image
G06T 2207/10141	..	Special mode during image acquisition
G06T 2207/10144	...	Varying exposure
G06T 2207/10148	...	Varying focus
G06T 2207/10152	...	Varying illumination
G06T 2207/20	.	Special algorithmic details
G06T 2207/20004	..	Adaptive image processing
G06T 2207/20008	...	Globally adaptive
G06T 2207/20012	...	Locally adaptive
G06T 2207/20016	..	Hierarchical, coarse-to-fine, multiscale or multiresolution image processing; Pyramid transform
G06T 2207/20021	..	Dividing image into blocks, subimages or windows
G06T 2207/20024	..	Filtering details
G06T 2207/20028	...	Bilateral filtering
G06T 2207/20032	...	Median filtering
G06T 2207/20036	..	Morphological image processing
G06T 2207/20041	...	Distance transform
G06T 2207/20044	...	Skeletonization; Medial axis transform
G06T 2207/20048	..	Transform domain processing
G06T 2207/20052	...	Discrete cosine transform [DCT]
G06T 2207/20056	...	Discrete and fast Fourier transform, [DFT, FFT]
G06T 2207/20061	...	Hough transform
G06T 2207/20064	...	Wavelet transform [DWT]
G06T 2207/20068	..	Projection on vertical or horizontal image axis
G06T 2207/20072	..	Graph-based image processing

G06T 2207/20076	..	Probabilistic image processing
G06T 2207/20081	..	Training; Learning
G06T 2207/20084	..	Artificial neural networks [ANN]
G06T 2207/20088	..	Trinocular vision calculations; trifocal tensor
G06T 2207/20092	..	Interactive image processing based on input by user
G06T 2207/20096	...	Interactive definition of curve of interest
G06T 2207/20101	...	Interactive definition of point of interest, landmark or seed
G06T 2207/20104	...	Interactive definition of region of interest [ROI]
G06T 2207/20108	...	Interactive selection of 2D slice in a 3D data set
G06T 2207/20112	..	Image segmentation details
G06T 2207/20116	...	Active contour; Active surface; Snakes
G06T 2207/20121	...	Active appearance model [AAM]
G06T 2207/20124	...	Active shape model [ASM]
G06T 2207/20128	...	Atlas-based segmentation
G06T 2207/20132	...	Image cropping
G06T 2207/20136	...	Edge growing; Edge linking
G06T 2207/20141	...	Region-growing; Region merging; Connected component labeling
G06T 2207/20144	...	Foreground-background segmentation
G06T 2207/20148	...	Thresholding
G06T 2207/20152	...	Watershed segmentation
G06T 2207/20156	...	Automatic seed setting
G06T 2207/20161	...	Level set
G06T 2207/20164	...	Salient point detection; Corner detection
G06T 2207/20168	...	Radial search
G06T 2207/20172	..	Image enhancement details
G06T 2207/20182	...	Noise reduction or smoothing in the temporal domain; Spatio-temporal filtering
G06T 2207/20192	...	Edge enhancement; Edge preservation
G06T 2207/20201	...	Motion blur correction
G06T 2207/20204	...	Removing film grain; Adding simulated film grain
G06T 2207/20208	...	High dynamic range [HDR] image processing
G06T 2207/20212	..	Image combination
G06T 2207/20216	...	Image averaging
G06T 2207/20221	...	Image fusion; Image merging
G06T 2207/20224	...	Image subtraction
G06T 2207/20228	..	Disparity calculation for image-based rendering
G06T 2207/30	.	Subject of image; Context of image processing
G06T 2207/30004	..	Biomedical image processing
G06T 2207/30008	...	Bone
G06T 2207/30012	....	Spine; Backbone

G06T 2207/30016	...	Brain
G06T 2207/30021	...	Catheter; Guide wire
G06T 2207/30024	...	Cell structures in vitro; Tissue sections in vitro
G06T 2207/30028	...	Colon; Small intestine
G06T 2207/30032	....	Colon polyp
G06T 2207/30036	...	Dental; Teeth
G06T 2207/30041	...	Eye; Retina; Ophthalmic
G06T 2207/30044	...	Fetus; Embryo
G06T 2207/30048	...	Heart; Cardiac
G06T 2207/30052	...	Implant; Prosthesis
G06T 2207/30056	...	Liver; Hepatic
G06T 2207/30061	...	Lung
G06T 2207/30064	....	Lung nodule
G06T 2207/30068	...	Mammography; Breast
G06T 2207/30072	...	Microarray; Biochip, DNA array; Well plate
G06T 2207/30076	...	Plethysmography
G06T 2207/30081	...	Prostate
G06T 2207/30084	...	Kidney; Renal
G06T 2207/30088	...	Skin; Dermal
G06T 2207/30092	...	Stomach; Gastric
G06T 2207/30096	...	Tumor; Lesion
G06T 2207/30101	...	Blood vessel; Artery; Vein; Vascular
G06T 2207/30104	....	Vascular flow; Blood flow; Perfusion
G06T 2207/30108	..	Industrial image inspection
G06T 2207/30112	...	Baggage; Luggage; Suitcase
G06T 2207/30116	...	Casting
G06T 2207/30121	...	CRT, LCD or plasma display
G06T 2207/30124	...	Fabrics; Textile; Paper
G06T 2207/30128	...	Food products
G06T 2207/30132	...	Masonry; Concrete
G06T 2207/30136	...	Metal
G06T 2207/30141	...	Printed circuit board [PCB]
G06T 2207/30144	...	Printing quality
G06T 2207/30148	...	Semiconductor; IC; Wafer
G06T 2207/30152	...	Solder
G06T 2207/30156	...	Vehicle coating
G06T 2207/30161	...	Wood; Lumber
G06T 2207/30164	...	Workpiece; Machine component
G06T 2207/30168	..	Image quality inspection
G06T 2207/30172	..	Centreline of tubular or elongated structure

G06T 2207/30176	..	Document
G06T 2207/30181	..	Earth observation
G06T 2207/30184	...	Infrastructure
G06T 2207/30188	...	Vegetation; Agriculture
G06T 2207/30192	...	Weather; Meteorology
G06T 2207/30196	..	Human being; Person
G06T 2207/30201	...	Face
G06T 2207/30204	..	Marker
G06T 2207/30208	...	Marker matrix
G06T 2207/30212	..	Military
G06T 2207/30216	..	Redeye defect
G06T 2207/30221	..	Sports video; Sports image
G06T 2207/30224	...	Ball; Puck
G06T 2207/30228	...	Playing field
G06T 2207/30232	..	Surveillance
G06T 2207/30236	..	Traffic on road, railway or crossing
G06T 2207/30241	..	Trajectory
G06T 2207/30242	..	Counting objects in image
G06T 2207/30244	..	Camera pose
G06T 2207/30248	..	Vehicle exterior or interior
G06T 2207/30252	...	Vehicle exterior; Vicinity of vehicle
G06T 2207/30256	....	Lane; Road marking
G06T 2207/30261	....	Obstacle
G06T 2207/30264	....	Parking
G06T 2207/30268	...	Vehicle interior

#### **G06T 2210/00      Indexing scheme for image generation or computer graphics**

G06T 2210/04	.	Architectural design, interior design
G06T 2210/08	.	Bandwidth reduction
G06T 2210/12	.	Bounding box
G06T 2210/16	.	Cloth
G06T 2210/21	.	Collision detection, intersection
G06T 2210/22	.	Cropping
G06T 2210/24	.	Fluid dynamics
G06T 2210/28	.	Force feedback



- G06T 2210/32 . Image data format
- G06T 2210/36 . Level of detail
- G06T 2210/41 . Medical
- G06T 2210/44 . Morphing
- G06T 2210/52 . Parallel processing
- G06T 2210/56 . Particle system, point based geometry or rendering
- G06T 2210/61 . Scene description
- G06T 2210/62 . Semi-transparency
- G06T 2210/64 . Weathering

#### **G06T 2211/00      Image generation**

- G06T 2211/40 . Computed tomography
- G06T 2211/404 . . Angiography
- G06T 2211/408 . . Dual energy
- G06T 2211/412 . . Dynamic
- G06T 2211/416 . . Exact reconstruction
- G06T 2211/421 . . Filtered back projection [FBP]
- G06T 2211/424 . . Iterative
- G06T 2211/428 . . Real-time
- G06T 2211/432 . . Truncation
- G06T 2211/436 . . Limited angle

#### **G06T 2213/00      Indexing scheme for animation**

- G06T 2213/04 . Animation description language
- G06T 2213/08 . Animation software package
- G06T 2213/12 . Rule based animation

#### **G06T 2215/00      Indexing scheme for image rendering**

- G06T 2215/06 . Curved planar reformation of 3D line structures
- G06T 2215/08 . Gnomonic or central projection

G06T 2215/12	. Shadow map, environment map
G06T 2215/16	. Using real world measurements to influence rendering
<b>G06T 2219/00</b>	<b>Indexing scheme for manipulating 3D models or images for computer graphics</b>
G06T 2219/004	. Annotating, labelling
G06T 2219/008	. Cut plane or projection plane definition
G06T 2219/012	. Dimensioning, tolerancing
G06T 2219/016	. Exploded view
G06T 2219/021	. Flattening
G06T 2219/024	. Multi-user, collaborative environment
G06T 2219/028	. Multiple view windows (top-side-front-sagittal-orthogonal)
G06T 2219/20	. Indexing scheme for editing of 3D models
G06T 2219/2004	.. Aligning objects, relative positioning of parts
G06T 2219/2008	.. Assembling, disassembling
G06T 2219/2012	.. Colour editing, changing, or manipulating; Use of colour codes
G06T 2219/2016	.. Rotation, translation, scaling
G06T 2219/2021	.. Shape modification
G06T 2219/2024	.. Style variation