

## SECTION G — PHYSICS

### G06 COMPUTING; CALCULATING; COUNTING

**G06T IMAGE DATA PROCESSING OR GENERATION, IN GENERAL** (specially adapted for particular applications, see the relevant subclasses, e.g. G01C, G06K, G09G, H04N) [6, 2006.01]

#### Note(s)

1. 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.
2. This subclass does not cover:
  - photogrammetry or videogrammetry, which are covered by subclass G01C;
  - 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.

#### Subclass index

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#### **1/00 General purpose image data processing [6]**

- 1/20 • Processor architectures; Processor configuration, e.g. pipelining (architectures of general purpose stored programme computers G06F 15/76) [6]
- 1/40 • • Neural networks [6]
- 1/60 • Memory management [6]

#### **3/00 Geometric image transformation in the plane of the image, e.g. from bit-mapped to bit-mapped creating a different image [6]**

- 3/20 • Linear translation of a whole image or part thereof, e.g. panning [6]
- 3/40 • Scaling of a whole image or part thereof [6]
- 3/60 • Rotation of a whole image or part thereof [6]

#### **5/00 Image enhancement or restoration, e.g. from bit-mapped to bit-mapped creating a similar image [6]**

- 5/10 • by non-spatial domain filtering [6]
- 5/20 • by the use of local operators [6]
- 5/30 • • Erosion or dilatation, e.g. thinning [6]
- 5/40 • by the use of histogram techniques [6]
- 5/50 • by the use of more than one image, e.g. averaging, subtraction [6]

#### **7/00 Image analysis, e.g. from bit-mapped to non bit-mapped [6]**

- 7/20 • Analysis of motion [6]

- 7/40 • Analysis of texture [6]

- 7/60 • Analysis of geometric attributes, e.g. area, centre of gravity, perimeter, from an image [6]

#### **9/00 Image coding, e.g. from bit-mapped to non bit-mapped (compression in general H03M; compression for image communication H04N) [6]**

- 9/20 • Contour coding, e.g. using detection of edges [6]

- 9/40 • Tree coding, e.g. quadtree, octree [6]

#### **11/00 2D [Two Dimensional] image generation [6]**

- 11/20 • Drawing from basic elements, e.g. lines or circles [6]
- 11/40 • Filling a planar surface by adding surface attributes, e.g. colour or texture [6]

- 11/60 • Editing figures and text; Combining figures or text [6]

- 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 [6]

#### **13/00 Animation [6, 2011.01]**

- 13/20 • 3D [Three Dimensional] animation [2011.01]

- 13/40 • • of characters, e.g. humans, animals or virtual beings [2011.01]

- 13/60 • • of natural phenomena, e.g. rain, snow, water or plants [2011.01]

- 13/80 • 2D animation, e.g. using sprites [2011.01]

#### **15/00 3D [Three Dimensional] image rendering [6, 2011.01]**

- 15/02 • Non-photorealistic rendering [2011.01]
- 15/04 • Texture mapping [2011.01]
- 15/06 • Ray-tracing [2011.01]
- 15/08 • Volume rendering [2011.01]
- 15/10 • Geometric effects [6, 2011.01]
- 15/20 • • Perspective computation [6, 2011.01]
- 15/30 • • Clipping [6, 2011.01]
- 15/40 • • Hidden part removal [6, 2011.01]
- 15/50 • Lighting effects [6, 2011.01]
- 15/55 • • Radiosity [2011.01]
- 15/60 • • Shadow generation [6]
- 15/80 • • Shading [2011.01]

- 15/83 • • • Phong shading [2011.01]

- 15/87 • • • Gouraud shading [2011.01]

#### **17/00 3D modelling for computer graphics [6]**

- 17/05 • Geographic models [2011.01]
- 17/10 • Volume description, e.g. cylinders, cubes or using CSG [Constructive Solid Geometry] [6]
- 17/20 • Wire-frame description, e.g. polygonalisation or tessellation [6]
- 17/30 • Surface description, e.g. polynomial surface description [6]

#### **19/00 Manipulating 3D models or images for computer graphics [2011.01]**

- 19/20 • Editing of 3D images, e.g. changing shapes or colours, aligning objects or positioning parts [2011.01]