EUROPEAN PATENT OFFICE
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 1505

DATE: AUGUST 1, 2023

PROJECT RP11977

The following classification changes will be effected by this Notice of Changes:

Action	Subclass	Group(s)
SCHEME:		
Symbols New:	G06T	2211/441, 2211/444, 2211/448, 2211/452, 2211/456, 2211/461, 2211/464
Titles Changed:	G06T	11/001
Warnings New:	G06T	2211/40, 2211/441, 2211/444, 2211/448, 2211/452, 2211/456, 2211/461, 2211/464
DEFINITIONS:		
Definitions Deleted: (no frozen (F) symbol definitions should be deleted)	G06T	11/20
Definitions New:	G06T	11/005, 11/006, 11/008
Definitions Modified:	G06T	11/00, 11/001, 11/003, 11/203, 11/206, 11/40, 11/60

No other subclasses/groups are impacted by this Notice of Changes.

This Notice of Changes includes the following *[Check the ones included]:*

1. CLASSIFICATION SCHEME CHANGES

     ☒ A. New, Modified or Deleted Group(s)

     ☒ B. New, Modified or Deleted Warning(s)

     ☐ C. New, Modified or Deleted Note(s)

     ☐ D. New, Modified or Deleted Guidance Heading(s)

2. DEFINITIONS

     ☒ A. New or Modified Definitions (Full definition template)

     ☒ B. Modified or Deleted Definitions (Definitions Quick Fix)

3. ☒ REVISION CONCORDANCE LIST (RCL)

4. ☒ CHANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL)

5. ☐ CHANGES TO THE CROSS-REFERENCE LIST (CRL)

DATE: AUGUST 1, 2023

PROJECT RP11977

1. CLASSIFICATION SCHEME CHANGES

    A. New, Modified or Deleted Group(s)

SUBCLASS G06T - IMAGE DATA PROCESSING OR GENERATION, IN GENERAL

Type*	Symbol	Indent Level Number of dots (e.g. 0, 1, 2)	Title (new or modified) "CPC only" text should normally be enclosed in {curly brackets}**	Transferred to#
M	G06T 11/001	1	{Texturing; Colouring; Generation of texture or colour (inpainting G06T 5/005)}	
C	G06T 2211/40	1	Computed tomography	G06T 2211/40, G06T 2211/441, G06T 2211/444, G06T 2211/448, G06T 2211/452, G06T 2211/456, G06T 2211/461, G06T 2211/464
U	G06T 2211/436	2	Limited angle	
N	G06T 2211/441	2	AI-based methods, deep learning or artificial neural networks	
N	G06T 2211/444	2	Low dose acquisition or reduction of radiation dose	
N	G06T 2211/448	2	involving metal artefacts, streaking artefacts, beam hardening or photon starvation	
N	G06T 2211/452	2	involving suppression of scattered radiation or scatter correction	
N	G06T 2211/456	2	Optical coherence tomography [OCT]	
N	G06T 2211/461	2	Phase contrast imaging or dark field imaging	
N	G06T 2211/464	2	Dual or multimodal imaging, i.e. combining two or more imaging modalities	

*N = new entries where reclassification into entries is involved; C = entries with modified file scope where reclassification of documents from the entries is involved; Q = new entries which are firstly populated with documents via administrative transfers from deleted (D) entries. Afterwards, the transferred documents into the Q entry will either stay or be moved to more appropriate entries, as determined by intellectual reclassification; T = existing entries with enlarged file scope, which receive documents from C or D entries, e.g. when a limiting reference is removed from the entry title; M = entries with no change to the file scope (no reclassification); D = deleted entries; F = frozen entries will be deleted once reclassification of documents from the entries is completed; U = entries that are unchanged.

NOTES:
- **No {curly brackets} are used for titles in CPC only subclasses, e.g. C12Y, A23Y; 2000 series symbol titles of groups found at the end of schemes (orthogonal codes); or the Y section titles. The {curly brackets} are used for 2000 series symbol titles found interspersed throughout the main trunk schemes (breakdown codes).
- U groups: it is obligatory to display the required "anchor" symbol (U group), i.e. the entry immediately preceding a new group or an array of new groups to be created (in case new groups are not clearly subgroups of C-type groups). Always include the symbol, indent level and title of the U group in the table above.
- All entry types should be included in the scheme changes table above for better understanding of the overall scheme change picture. Symbol, indent level, and title are required for all types.
- "Transferred to" column must be completed for all C, D, F, and Q type entries. F groups will be deleted once reclassification is completed.

- When multiple symbols are included in the "Transferred to" column, avoid using ranges of symbols in order to be as precise as possible.
- For administrative transfer of documents, the following text should be used: "< administrative transfer to XX>", "<administrative transfer to XX and YY simultaneously>", or "<administrative transfer to XX, YY, ...and ZZ simultaneously>" when administrative transfer of the same documents is to more than one place.
- Administrative transfer to main trunk groups is assumed to be the source allocation type, unless otherwise indicated.
- Administrative transfer to 2000/Y series groups is assumed to be "additional information".
- If needed, instructions for allocation type should be indicated within the angle brackets using the abbreviations "ADD" or "INV": <administrative transfer to XX ADD> , <administrative transfer to XX INV>, or < administrative transfer to XX ADD, YY INV, ... and ZZ ADD simultaneously>.
- In certain situations, the "D" entries of 2000-series or Y-series groups may not require a destination ("Transferred to") symbol, however it is required to specify "<no transfer>" in the "Transferred to" column for such cases.
- For finalisation projects, the deleted "F" symbols should have <no transfer> in the "Transferred to" column.
- For more details about the types of scheme change, see CPC Guide.

B. New, Modified or Deleted Warning(s)

SUBCLASS G06T - IMAGE DATA PROCESSING OR GENERATION, IN GENERAL

Type*	Location	Old Warning	New/Modified Warning
N	G06T 2211/40		Group G06T 2211/40 is impacted by reclassification into groups G06T 2211/441, G06T 2211/444, G06T 2211/448, G06T 2211/452, G06T 2211/456, G06T 2211/461 and G06T 2211/464. All groups listed in this Warning should be considered in order to perform a complete search.
N	G06T 2211/441		Group G06T 2211/441 is incomplete pending reclassification of documents from group G06T 2211/40. Groups G06T 2211/40 and G06T 2211/441 should be considered in order to perform a complete search.
N	G06T 2211/444		Group G06T 2211/444 is incomplete pending reclassification of documents from group G06T 2211/40. Groups G06T 2211/40 and G06T 2211/444 should be considered in order to perform a complete search.
N	G06T 2211/448		Group G06T 2211/448 is incomplete pending reclassification of documents from group G06T 2211/40. Groups G06T 2211/40 and G06T 2211/448 should be considered in order to perform a complete search.
N	G06T 2211/452		Group G06T 2211/452 is incomplete pending reclassification of documents from group G06T 2211/40. Groups G06T 2211/40 and G06T 2211/452 should be considered in order to perform a complete search.
N	G06T 2211/456		Group G06T 2211/456 is incomplete pending reclassification of documents from group G06T 2211/40. Groups G06T 2211/40 and G06T 2211/456 should be considered in order to perform a complete search.
N	G06T 2211/461		Group G06T 2211/461 is incomplete pending reclassification of documents from group G06T 2211/40. Groups G06T 2211/40 and G06T 2211/461 should be considered in order to perform a complete search.
N	G06T 2211/464		Group G06T 2211/464 is incomplete pending reclassification of documents from group G06T 2211/40. Groups G06T 2211/40 and G06T 2211/464 should be considered in order to perform a complete search.

*N = new warning, M = modified warning, D = deleted warning

NOTE: The "Location" column only requires the symbol PRIOR to the location of the warning. No further directions such as "before" or "after" are required.

2. A. DEFINITIONS (new)

G06T11/005

Definition statement

This place covers:

Specific pre-processing for tomographic reconstruction

- Calibration
- Source positioning
- Synchronisation
- Scouts
- Rebinning
- Scatter correction
- Attenuation correction
- Metal artefact reduction (MAR)

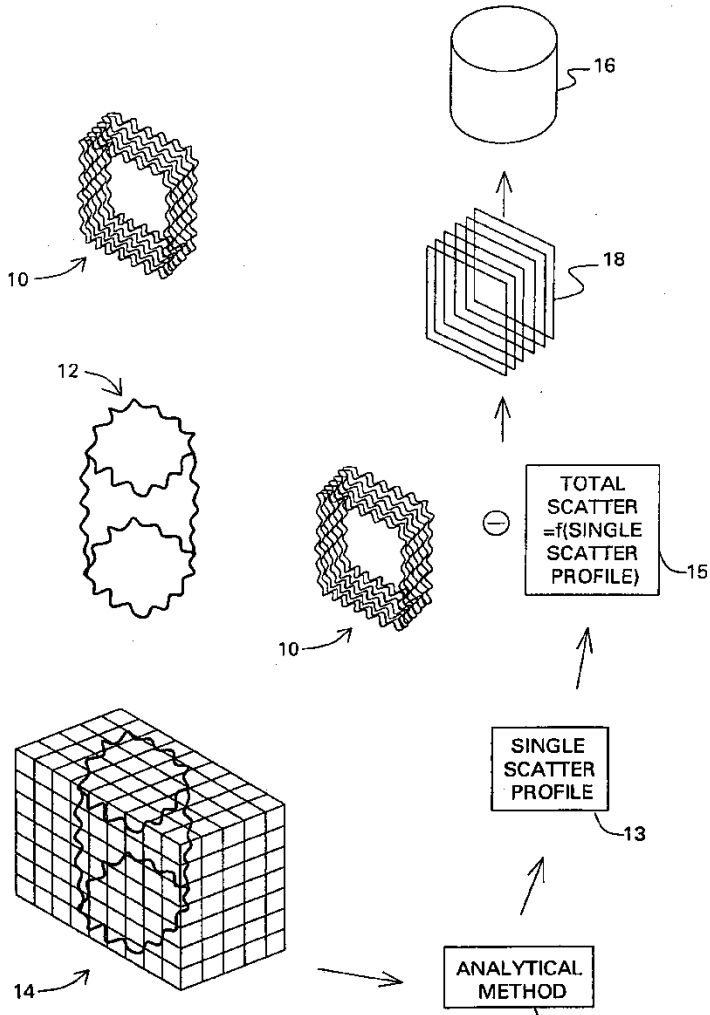Example: Scatter and beam hardening correction in CT applications

FIG.2

G06T11/006

Definition statement

This place covers:

- Inverse problem, transformation from projection-space into object-space
- Fourier methods
- Algebraic methods
- Back-projection
- Statistical Methods, e.g. maximum likelihood
- Compressed sensing, sparsity
- AI-based methods, e. g. neural networks
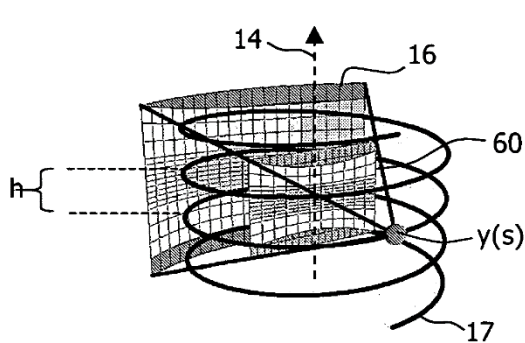
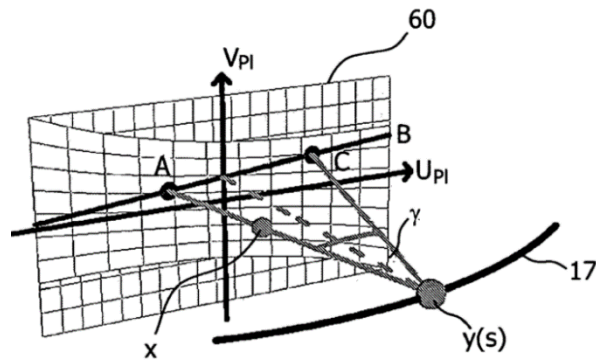Example: Reconstruction method for cone-beam CT
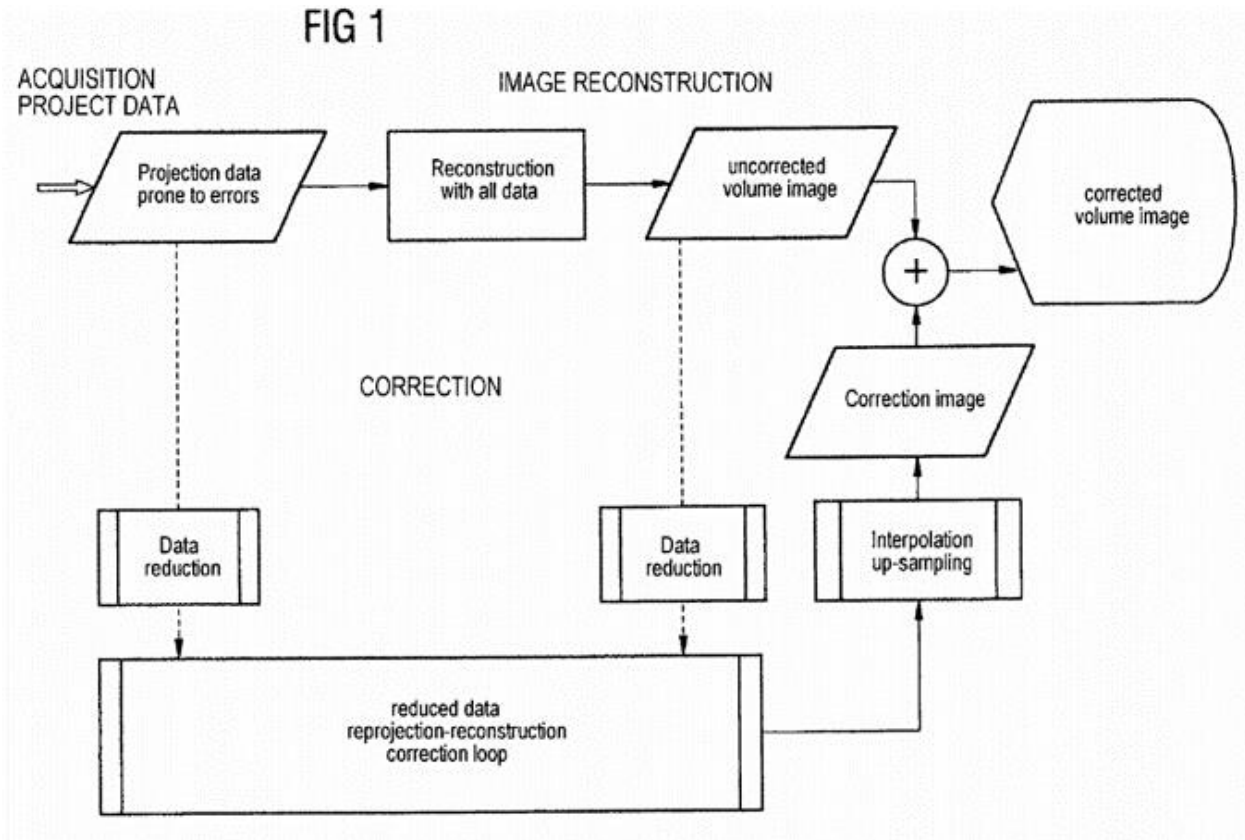

FIG. 4

FIG. 5

G06T11/008

Definition statement

This place covers:

- Specific post-processing after tomographic reconstruction
- Processing which relies essentially on unique properties of tomographic images, e.g. projection geometry or interactions of radiation with matter
- Voxelisation
- Artefact correction (e.g. scatter, metal, cone-beam)

Example: Method for post- reconstructive correction of images of a computer tomograph

FIG 1

2. A. DEFINITIONS (modified)

G06T 11/00

Definition statement

Replace: The existing Definition statement with the modified one below.

- Documents dealing with generating a 2D image or texture in general. To a large extend, but not exclusively, G06T 11/00 covers image generation "from a description to a bit-mapped image" in general.

- Software packages, systems
- Caricaturing, Identikit
- Fusion of images with different objects, e.g. fusion of real and virtual images, labelling of 2D images
- Clipping of 2D images
- 2D and 3D reconstruction from projections, e.g. for computed tomography.
- Device independent techniques, i.e. it is not for documents which are specially adapted for I/O devices such as printers, scanners or displays.
- Note:
  General idea for G06T 11/00:
- For generating an image,

- first select a colour (G06T 11/001),
- then draw a line (G06T 11/203),
- fill a rectangle, circle or any other closed shape (G06T 11/40),
- edit your work (G06T 11/60).

References:

Delete: The Limiting references section and table.

Insert: The new Application-oriented references section and table.

Replace: The Informative references table with the updated table below.

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Image processing specially adapted for radiation diagnosis	A61B 6/52

Map generation for navigation systems	G01C 21/00
Producing output data for printers	G06K 15/02
Controller for display circuits, e.g. for LCDs, Plasma, OLEDs	G09G 5/00
Image generation for scanner, fax-machines, copy machines	H04N 1/00
Studio circuits for video generation, mixing, special effects, blue/green screens	H04N 5/262

Informative references:

Attention is drawn to the following places, which may be of interest for search:

Input arrangements or combined input and output interaction between user and computer (user interfaces)	G06F 3/01
Generating of panoramic or mosaic images	G06T 3/4038
Generating high dynamic range images (HDR)	G06T 5/009
Non-photorealistic rendering in 3D	G06T 15/02
Video editing	G11B 27/00

G06T 11/001

Definition statement

<u>Replace</u>:   The existing Definition statement with the modified one below.

Texture generation

- Textures; endless, periodic pattern
- Texture synthesis, procedural textures
- Neural style transfers
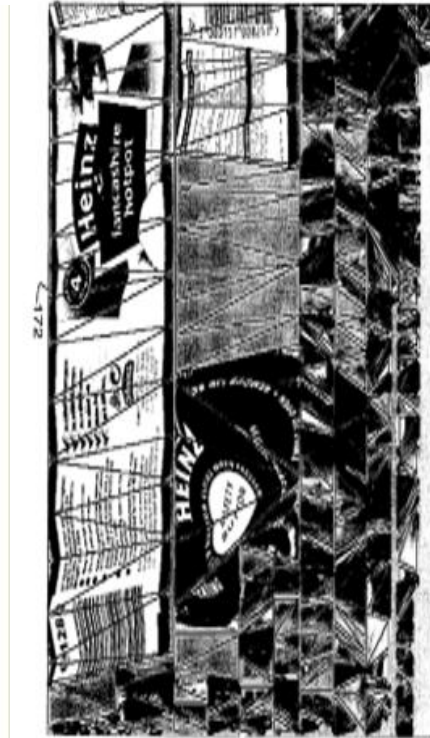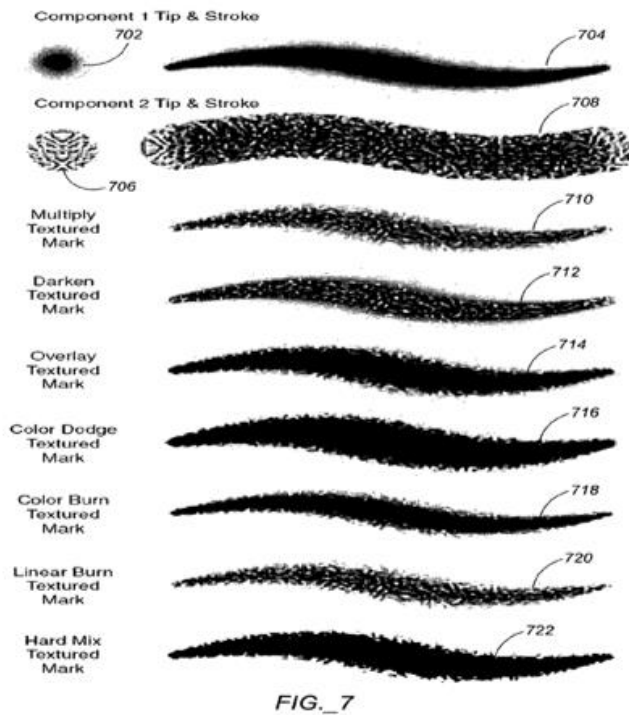- Brush strokes
- Fractals; Julia sets; Koch curves

Colour generation, changing of selected colours

- Colour palettes, schemes; colour LUT; CLUT
- False colours
- Simulation of watercolour, oil paint, airbrush

Illustrative examples:

FIG._7

References:

Limiting references:

Replace: The Limiting references table with the updated table below.

Inpainting	G06T 5/005

Informative references:

Replace: The Informative references table with the updated table below.

Texture mapping	G06T 15/04

Colour palettes, CLUTs for displays	G09G 5/00
Colour space manipulation	H04N 1/60

Delete: The Glossary of terms section.

Insert: The new Synonyms and Keywords section and table.

Synonyms and Keywords
In patent documents, the following abbreviations are often used:

LUT	look-up table
CLUT	colour look-up table

G06T 11/003

Definition statement
Replace: The existing Definition statement with the updated one below.

- Reconstruction from tomographic projections, i.e. measurements of an unknown object function (e.g. density of matter, activity distribution) using penetrating radiation or electromagnetic waves, described by radiation transport equations, e. g. integration along lines (= Radon transform), for e. g. refraction tomography, CT, SPECT, PET, Tomosynthesis, Optical Tomography.

References

Delete: The Limiting references section and table.

Insert: The Informative references table with the updated table below.

Replace: The Application-oriented references table with the updated table below.

Informative references
Attention is drawn to the following places, which may be of interest for search:

Image enhancement in general	G06T 5/00

Image analysis, incl. biomedical image inspection, image registration, segmentation, analysis of motion, analysis of geometric attributes	G06T 7/00
Depth or Shape recovery, from multiple images	G06T 7/55
Analysis of materials using tomography, e.g. CT	G01N 23/046
NMR	G01R 33/4824
Measuring and detection of X-radiation	G01T 1/00
ICT specially adapted for processing medical images, e.g. editing	G16H 30/40

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Radiation diagnosis devices using data or image processing specially adapted for radiation diagnosis	A61B 6/52
Impedance measuring for diagnostic purposes	A61B 5/053
Apparatus for radiation diagnosis	A61B 6/00
Diagnostic device using ultrasound	A61B 8/00

Special rules of classification

Replace: The Special rules of classification section, text, and images, with the updated data below.

In this group, it is desirable to add the indexing codes of groups G06T 2211/404 - G06T 2211/464.
The following list of symbols from the series G06T 2211/404 - G06T 2211/464 should be allocated to documents in G06T 11/003 whenever relevant:
- G06T 2211/404 Angiography - Angiographic reconstruction includes all the reconstruction methods concerning vessels, tree structures etc.
- G06T 2211/408 Dual energy - Reconstruction from dual or multi energy acquisition, polychromatic X-rays, photon-counting CT
- G06T 2211/412 Dynamic - Dynamic reconstruction, i.e. moving objects are involved or motion compensation is required (e. g.: heart, lung movement, etc...)

- G06T 2211/416 Exact reconstruction - Exact or quasi-exact reconstruction algorithms (in contrast to approximate algorithms)
- G06T 2211/421 Filtered Back Projection based methods (the projection data can be handled sequentially, view-by-view)
- G06T 2211/424 Iterative - Iterative methods including all the methods using iterations independent of the reconstruction method per-se (e.g. maximum likelihood (ML) or maximum a posteriori (MAP) estimation, regularisation, compressed sensing)
- G06T 2211/428 Real-time - Real time reconstruction, e.g. fluoroscopy, intra-operative CT
- G06T 2211/432 Truncation - All or part of the data from the detectors are spatially truncated, or incomplete projection data is used.
- G06T 2211/436 Limited angle - limited-angle or few view acquisition, tomosynthesis
- G06T 2211/441 AI-based methods, e.g. deep learning or convolutional artificial neural networks
- G06T 2211/444 Low dose acquisition, reduction of radiation dose
- G06T 2211/448 Involving metal artefacts, streaking artefacts, beam hardening, photon starvation
- G06T 2211/452 Involving suppression of scattered radiation or scatter correction
- G06T 2211/456 Optical coherence tomography [OCT]
- G06T 2211/461 Phase contrast imaging or dark field imaging
- G06T 2211/464 Dual or multimodal imaging, i.e. combining two or more imaging modalities, e.g. PET-CT, PET-MRI

Delete: The Glossary of terms and table.

Insert: The new Synonyms and Keywords section and table below.

Synonyms and Keywords
In patent documents, the following abbreviations are often used:

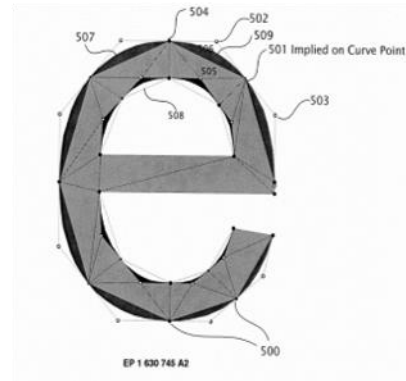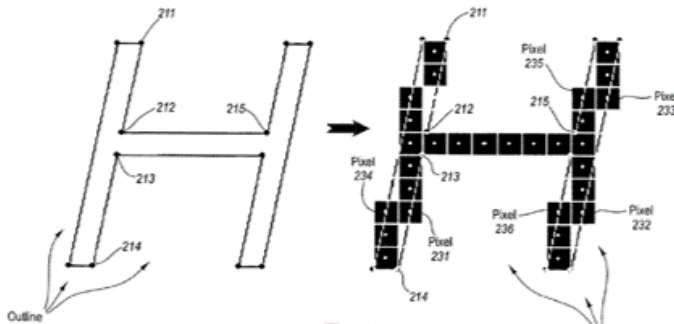| CT	Computed Tomography
NMR	Nuclear Magnetic Resonance
MRI	Magnetic Resonance Imaging
SPECT	Single-Photon-Emission Computed Tomography
PET	Positron Emission Tomography

G06T11/203

Definition statement

<u>Replace</u>:   The existing Definition statement with the updated one below.

- Rendering, scan conversion of vectors, lines, ellipses, circles
- Offset curves, contour curves
- Wide, thick lines or strokes
- Splines, B-splines, NURBS; Bézier, algebraic, parametric, polynomial, cubic curves
- Approximation of curves or polygons
- Antialiasing of lines and curves; e. g. using supersampling; subpixel or area weighting
- Font rendering, e.g. scalable, outline, contour, edge fonts
- Sketching; freehand curve drawing

References:

<u>Delete</u>:   The Limiting references section and table.

<u>Insert</u>:   The new Application-oriented references section and table.

<u>Replace</u>:   The Informative references table with the updated table below.

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Printer fonts	G06K 15/02
Vehicle instruments	B60K 35/00

Informative references:

Attention is drawn to the following places, which may be of interest for search:

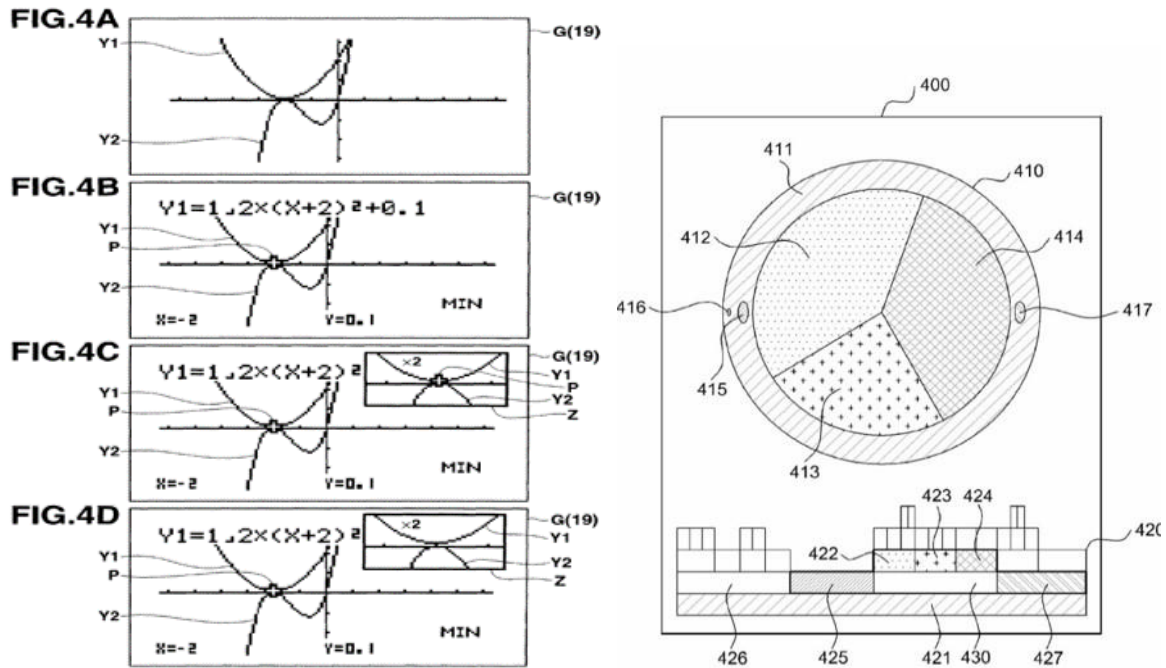|	
Entering handwritten data	G06F 3/04883
Font handling; Temporal or kinetic typography	G06F 40/109
Feature extraction by contour coding	G06V 10/469
Vector coding	G06T 9/20
Filling a planar surface by adding surface attributes	G06T 11/40
Display character generators	G09G 5/24

G06T11/206

Definition statement

Insert: Insert the following new image and reference text:

Illustrative examples:

References:

Delete: The Limiting references section and table.

Replace: The Informative references table with the updated table below.

Replace: The Application-oriented references table with the updated table below.

Application-oriented references:

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Navigational instruments, e.g. for aircrafts	G01C 21/00, G01C 23/00
ICT specially adapted for bioinformatics-related data visualisation, e.g. displaying of maps or networks	G16B 45/00
ICT specially adapted for medical reports, e.g. generation or transmission thereof	G16H 15/00

Informative references:

Attention is drawn to the following places, which may be of interest for search:

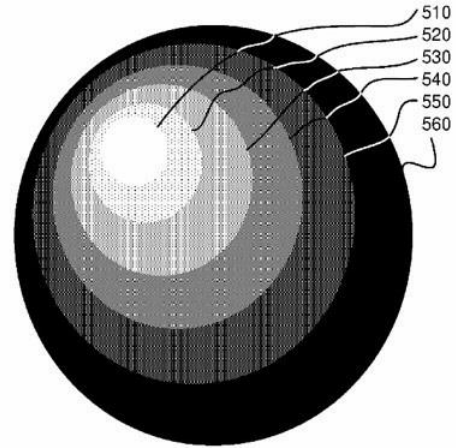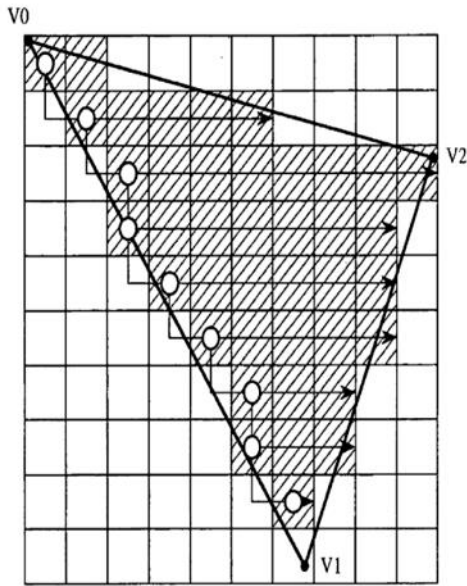|	
Input devices, GUIs	G06F 3/048
GUI programs, e.g. file browsers	G06F 9/451
Menu systems, graphical querying	G06F 16/54, G06F 16/532
Animation of fluid flows, 2D character animation	G06T 13/60, G06T 13/80
Administration, e.g. office automation or reservations; resource or project management	G06Q 10/00
Finance, e.g. banking, investment or tax processing; Insurance, e.g. risk analysis or pensions	G06Q 40/00
Network visualisation or monitoring	H04L 41/06

G06T11/40

Definition statement

Replace: The existing Definition statement with the updated one, including the new image, below.

- Polygon scan conversion; rasterisation
- Scan-line algorithms, fragment processing
- Antialiasing, supersampling, subpixel or coverage masks
- Tile-based rendering
- Filling of a 2D shape, e.g. polygon, circle, ellipse, region, area
- Interior/exterior determination; edge lists or edge flags
- Colour blends, gradient fills, seed filling, e.g. for vector graphics

Illustrative example:

(gradient) fills for vector graphics

References:

<u>Delete</u>:   The Limiting references section and table.

Informative references:

<u>Insert</u>: The following New row to the Informative references table.

Control of the frame buffer(s)	G09G 5/39

G06T11/60

Definition statement

Replace: The existing Definition statement text with the updated text below (do not delete image).

- Editing of bitmaps or vector graphics
- Page layout, page composition, e.g. photo-album, collages, business or greeting cards
- Combining small images by editing in order to generate a new (big) one
- Graphical simulations, e. g. for 2D cosmetic or hairstyle
- Electronic or desktop publishing (DTP), Page Description Language (PDL), PostScript, TeX

References:

Delete: The Limiting references section and table.

Replace: The Informative references table with the updated table below.

Replace: The Application-oriented references table with the updated table below.

Application-oriented references:

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Face sketching with eye witnesses	A61B 5/117
PDL specifically for printers	G06K 15/02
ICT specially adapted for processing medical images, e.g. editing	G16H 30/40

Informative references:

Attention is drawn to the following places, which may be of interest for search:

Input devices, GUIs	G06F 3/048
Formatting, i.e. changing of presentation of documents	G06F 40/103
Form filling or merging of text	G06F 40/174

Document analysis	G06V 30/41
Mosaic or panoramic images	G06T 3/40
Image registration	G06T 7/30
Annotating 3D objects with text	G06T 19/00
Composing, repositioning or geometrically modifying originals, from scanning	H04N 1/387

Delete: The Glossary of terms and table.

Insert: The new Synonyms and Keywords section and table below.

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

DTP	Desktop Publishing
PDL	Page Description Language

DATE: AUGUST 1, 2023

PROJECT RP11977

2. B. DEFINITIONS QUICK FIX

Symbol	Location of change (e.g., section title)	Existing reference symbol or text	Action; New symbol; New text
G06T 11/20	Entire definition	Entire definition	Delete entire definition

Notes:

Use this Definitions Quick Fix (DQF) table to:
- Delete an entire definition
- Delete an entire section
- Change a reference symbol
- Delete a reference symbol
- Delete text in a References section
- Correct one error in spelling, article use, or verb tense

Otherwise, use the standard template.

Reminder: Never delete F symbol definitions.

DATE: AUGUST 1, 2023

PROJECT RP11977

3.   REVISION CONCORDANCE LIST (RCL)

Type*	From CPC Symbol (existing)	To CPC Symbol(s)
C	G06T 2211/40	G06T 2211/40, G06T 2211/441, G06T 2211/444, G06T 2211/448, G06T 2211/452, G06T 2211/456, G06T 2211/461, G06T 2211/464

* C = entries with modified file scope where reclassification of documents from the entries is involved; Q = new entries which are firstly populated with documents via administrative transfers from deleted (D) entries. Afterwards, the transferred documents into the Q entry will either stay or be moved to more appropriate entries, as determined by intellectual reclassification; D = deleted entries; F = frozen entries will be deleted once reclassification of documents from the entries is completed.

NOTES:
- Only C, D, F, and Q type entries are included in the table above.
- When multiple symbols are included in the "To" column, do not use ranges of symbols.
- For administrative transfer of documents, the following text should be used: "< administrative transfer to XX>", "<administrative transfer to XX and YY simultaneously>", or "<administrative transfer to XX, YY, ...and ZZ simultaneously>" when administrative transfer of the same documents is to more than one place.
- Administrative transfer to main trunk groups is assumed to be the source allocation type, unless otherwise indicated.
- Administrative transfer to 2000/Y series groups is assumed to be "additional information".
- If needed, instructions for allocation type should be indicated within the angle brackets using the abbreviations "ADD" or "INV": <administrative transfer to XX ADD>, <administrative transfer to XX INV>, or < administrative transfer to XX ADD, YY INV, ... and ZZ ADD simultaneously>.
- In certain situations, the "D" entries of 2000-series or Y-series groups may not require a destination ("To") symbol, however it is required to specify "<no transfer>" in the "To" column for such cases.
- RCL is not needed for finalisation projects.

CPC NOTICE OF CHANGES 1505

DATE: AUGUST 1, 2023

PROJECT RP11977

4. CHANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL)

CPC	IPC	Action*
G06T 2211/441	CPCONLY	NEW
G06T 2211/444	CPCONLY	NEW
G06T 2211/448	CPCONLY	NEW
G06T 2211/452	CPCONLY	NEW
G06T 2211/456	CPCONLY	NEW
G06T 2211/461	CPCONLY	NEW
G06T 2211/464	CPCONLY	NEW

*Action column:
- For an (N) or (Q) entry, provide an IPC symbol and complete the Action column with "NEW."
- For an existing CPC main trunk entry or indexing entry where the existing IPC symbol needs to be changed, provide an updated IPC symbol and complete the Action column with "UPDATED."
- For a (D) CPC entry or indexing entry complete the Action column with "DELETE." IPC symbol does not need to be included in the IPC column.
- For an (N) 2000 series CPC entry which is positioned within the main trunk scheme (breakdown code) provide an IPC symbol and complete the action column with "NEW".
- For an (N) 2000 series CPC entry positioned at the end of the CPC scheme (orthogonal code), with no IPC equivalent, complete the IPC column with "CPCONLY" and complete the action column with "NEW".

NOTES:
- F symbols are not included in the CICL table above.
- T and M symbols are not included in the CICL table above unless a change to the existing IPC is desired.