H04N  PICTORIAL COMMUNICATION, e.g. TELEVISION

NOTES

1. This subclass covers:
   • transmission of pictures or their transient or permanent reproduction either locally or remotely [and the corresponding electronic image capture and reproduction process employing image representative electric signals], by methods involving both of {or at least one of} the following steps:
     a. the [electronic acquisition or] scanning of a picture [or scene], i.e. resolving the whole picture-containing area into individual picture-elements and the derivation of picture-representative electric signals related thereto, simultaneously or in sequence [and the electronic solid-state image sensor [SSIS] pickup device, e.g. CCD or CMOS image sensor, as electronic image sensor converting optical image information into said electrical signals];
     b. the reproduction of the whole picture-containing area [or scene] by the reproduction of individual picture-elements into which the picture is resolved by means of picture-representative electric signals derived therefrom, simultaneously or in sequence;
   • in group H04N 1/00, systems for the transmission or the reproduction of arbitrarily composed pictures or patterns in which the local light variations composing a picture are not subject to variation with time, e.g. documents, maps, charts, photographs other than cinematograph films;
   • circuits specially designed for dealing with pictorial communication signals, e.g. television signals, as distinct from merely signals of a particular frequency range.

2. This subclass does not cover:
   • circuits or other parts of systems which form the subject of other subclasses, which are covered by the corresponding subclasses, e.g. H03C, H03F, H03J, H04B, H04H;
   • systems in which legible alphanumeric or like character forms are analysed according to step (a) of Note (1) to derive an electric signal from which the character is recognised by comparison with stored information, which are covered by subclass G06K;
   • systems for the direct photographic copying of an original picture in which an electric signal representative of the picture is derived according to the said step (a) and employed to modify the operation of the system, e.g. to control exposure, which are covered by class G03;
   • systems for the reproduction according to step (b) of Note (1) of pictures comprising alphanumeric or like character forms but involving the production of the equivalent of a signal which would be derived according to the above-mentioned step (a), e.g. by cams, punched card or tape, coded control signal, or other means, which are covered by the subclass for the application, e.g. G01D, G06T, H04L;
   • systems for the reproduction according to the above-mentioned step (b) of pictures comprising alphanumeric or like character forms and involving the generation according to the above-mentioned step (a) of picture-representative electric signals from a pre-arranged assembly of such characters, or records thereof, forming an integral part of the systems, which are covered by the subclass for the application, e.g. B41B, G06K, subject to those applications which are covered by this subclass;
   • printing, duplication or marking processes, or materials or processes therefor, which are covered by the relevant subclasses, e.g. B41C, B41J, B41M, G03C, G03F, G03G;
   • apparatus or methods for taking photographs using light sensitive film for image capture, apparatus/methods for printing, for projecting or viewing images using film stock, photographic film or slides by optical means, e.g. mounting of optical elements, flashes, and their related controls, e.g. exposure, focus, (opto-)mechanical motion blur (anti-shake), cooling, beam shaping;
   • aspects of apparatus or methods for taking photographs using an electronic image sensor [EIS] for image capture, insofar as they correspond to those of said apparatus methods for taking photographs using light sensitive film, i.e. insofar as not peculiar to the presence of the EIS, e.g. mounting of optical elements or flashes not peculiar to the presence of the EIS, and their related controls insofar as they are not peculiar to the presence or use of the EIS, e.g. exposure, focus, (opto-)mechanical motion blur (anti-shake);
   • aspects of apparatus or methods for projecting or viewing images using an electronic spatial light modulator [ESLM], insofar as they correspond to those of said apparatus methods for projecting or viewing images using film stock, photographic film or slides, i.e. insofar as not peculiar to the presence of the ESLM, e.g. mounting of optical elements not peculiar to the presence of the ESLM, and their related controls not peculiar to the presence of the ESLM, e.g. cooling, beam shaping, optical keystone correction;
   • (opto-)mechanical image enhancement in printers or projectors, e.g. keystone correction;
   • optical viewfinders;
H04N 5/761 covered by H04N 5/782
H04N 5/7613 covered by H04N 5/782
H04N 5/7617 covered by H04N 5/782
H04N 5/922 covered by H04N 5/92
H04N 5/924 covered by H04N 5/92
H04N 9/815 covered by H04N 9/81

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00 Scanning, transmission or reproduction of documents or the like, e.g. facsimile transmission; Details thereof
1/0002 . . . [Diagnosis, testing or measuring; Detecting, analysing or monitoring not otherwise provided for
(error detection, error correction or monitoring in digital computers or digital computer components Go6F 1/0000)]
1/0005 . . . [relating to image data]
1/0007 . . . [relating to particular apparatus or devices]
1/0001 . . . [Transmission systems or arrangements]
1/0013 . . . [Reading apparatus]
1/0015 . . . [Reproducing apparatus]
1/0018 . . . [Scanning arrangements]
1/0021 . . . [Picture signal circuits]
1/0023 . . . [Colour systems]
1/0026 . . . [Methods therefor]
1/0029 . . . [Diagnosis, i.e. identifying a problem by comparison with a normal state]
1/0031 . . . [Testing, i.e. determining the result of a trial
(H04N 1/00029 takes precedence; using test signals for transmission mode changing
H04N 220/1/3371)]
1/0034 . . . [Measuring, i.e. determining a quantity by comparison with a standard (H04N 1/00031
takes precedence)]
1/0037 . . . [Detecting, i.e. determining the occurrence of a predetermined state (H04N 1/00031 takes precedence)]
processing or transmission of still picture signals or apparatus with another apparatus, e.g. for storage, connection or combination of a still picture apparatus with a group of selected individuals or correspondents, e.g. by e-mail or to a network terminal, e.g. a multifunctional peripheral from a computer H04N 1/00241

(2) [Image push arrangements, e.g. from an image reading device to a specific network destination (push based network services)]

H04N 1/00220

[Transmitting or receiving image data, e.g. facsimile data, via a computer, e.g. using e-mail, a computer network, the internet, I-fax]

H04N 1/00209

[Transmission or receiving computer data via an internet server (programmed control between transmitter and receiver or between image input and image output device)]

H04N 1/00206

[Transmitting or receiving computer data via an image communication device, e.g. a facsimile transceiver]

H04N 1/00236

[Details of transimission]

H04N 1/00214

[Transmission or editing of computer data, e.g. facsimile data, via a computer, e.g. using e-mail, a computer network, the internet, I-fax]

H04N 1/00204

[Transmission or editing of computer data, e.g. facsimile data, via a computer, e.g. using e-mail, a computer network, the internet, I-fax]

H04N 1/00217

[only involving computer data transmission protocols, e.g. SMTP, WAP or HTTP (communication protocol aspects and techniques in packet data networks H04L 69/00; network-specific arrangements or communication protocols supporting networked applications H04L 67/00)]

H04N 1/00222

[involving facsimile protocols or a combination of facsimile protocols and computer data transmission protocols]

H04N 1/00220

(details of image data generation or reproduction, e.g. scan-to-email or network printing)

H04N 1/00222

[details of image data generation, e.g. scan-to-email or network scanners (using an image reading device as a local input to a computer)]

H04N 1/00225

[Image push arrangements, e.g. from an image reading device to a specific network destination (push based network services)]

H04N 1/00228

[Image pull arrangements, e.g. to a multifunctional peripheral from a networked computer]

H04N 1/0023

[Connection or combination of a still picture apparatus with another apparatus, e.g. for storage, processing or transmission of still picture signals or of information associated with a still picture]

H04N 1/00129

[with a display device, e.g. CRT or LCD monitor (with a television apparatus H04N 1/00283; arrangements for control of display devices G09G)]

H04N 1/00132

[in a digital photofinishing system, i.e. a system where digital photographic images undergo typical photofinishing processing, e.g. printing ordering]

H04N 1/00135

[Scanning of a photographic original]

H04N 1/00137

[Transmission]

H04N 1/0014

[(via e-mail)]

H04N 1/00143

[Ordering]

H04N 1/00145

[(from a remote location)]

H04N 1/00148

[Storage (information retrieval G06F 16/00)]

H04N 1/00151

[with selective access]

H04N 1/00153

[(for sharing images with a selected individual or correspondent)]

H04N 1/00156

{with a group of selected individuals or correspondents}

H04N 1/00159

{for sharing images without access restriction, e.g. publishing images}

H04N 1/00161

[Viewing or previewing]

H04N 1/00164

[(at a remote location)]

H04N 1/00167

[Processing or editing (H04N 1/00196 - H04N 1/00201 take precedence)]

H04N 1/00169

[Digital image input]

H04N 1/00172

{directly from a still digital camera or from a storage medium mounted in a still digital camera (H04N 1/0018 takes precedence)}

H04N 1/00175

{from a still image storage medium (H04N 1/00172, H04N 1/0018 take precedence)}

H04N 1/00177

{from a user terminal, e.g. personal computer}

H04N 1/0018

[(of images captured using a loaned, rented or limited-use still digital camera, e.g. recyclable or disposable camera)]

H04N 1/00183

[Photography assistance, e.g. displaying suggestions to the user]

H04N 1/00185

[Image output (for details of particular output arrangements see the relevant sub-class, e.g. B41J, G03B, G05G, G11B)]

H04N 1/00188

[Printing, e.g. prints or reprints (H04N 1/0019, H04N 1/00196 take precedence)]

H04N 1/0019

[(on souvenir-type products or the like, e.g. T-shirts or mugs)]

H04N 1/00193

[to a portable storage medium, e.g. a read-writable compact disk]

H04N 1/00196

[Creation of a photo-montage, e.g. photoalbunm (H04N 1/0019 takes precedence)]

H04N 1/00198

[Creation of a soft photo presentation, e.g. digital slide-show]

H04N 1/00201

[Creation of a lenticular or stereo hardcopy image]

H04N 1/00204

[(with a digital computer or a digital computer system, e.g. an internet server (programmed control between transmitter and receiver or between image input and image output device)]

H04N 1/00206

[Transmitting or receiving computer data via an image communication device, e.g. a facsimile transceiver (H04N 1/00236 takes precedence)]

H04N 1/00209

[Transmitting or receiving image data, e.g. facsimile data, via a computer, e.g. using e-mail, a computer network, the internet, I-fax]

H04N 1/00212

[Attaching image data to computer messages, e.g. to e-mails]

H04N 1/00214

[details of transmission]

H04N 1/00217

[only involving computer data transmission protocols, e.g. SMTP, WAP or HTTP (communication protocol aspects and techniques in packet data networks H04L 69/00; network-specific arrangements or communication protocols supporting networked applications H04L 67/00)]

H04N 1/00222

[involving facsimile protocols or a combination of facsimile protocols and computer data transmission protocols]

H04N 1/00220

(details of image data generation or reproduction, e.g. scan-to-email or network printing)

H04N 1/00222

[details of image data generation, e.g. scan-to-email or network scanners (using an image reading device as a local input to a computer)]

H04N 1/00225

[Image push arrangements, e.g. from an image reading device to a specific network destination (push based network services)]

H04N 1/00228

[Image pull arrangements, e.g. to a multifunctional peripheral from a networked computer]

H04N 1/0023

[(of images captured using a loaned, rented or limited-use still digital camera, e.g. recyclable or disposable camera)]

H04N 1/0018
H04N

1/00233 . . . . . . [details of image data reproduction, e.g. network printing or remote image display (using an image reproducing device as a local output from a computer H04N 1/00238; digital output from computer to printer unit G06F 3/12)]

1/00236 . . . . . . [using an image reading or reproducing device, e.g. a facsimile reader or printer, as a local input to or local output from a computer (image input to or image output from a computer via a network H04N 1/00299)]

1/00238 . . . . . . [using an image reproducing device as a local output from a computer (output via network, e.g. network printing H04N 1/00233)]

1/00241 . . . . . . [using an image reading device as a local input to a computer (input via network, e.g. network scanners H04N 1/00225)]

1/00244 . . . . . . [with a server, e.g. an internet server (fax-servers or the like for store and forward H04N 1/324)]

1/00246 . . . . . . [with an optical device, e.g. an optical viewing aid]

1/00249 . . . . . . [with a photographic apparatus, e.g. a photographic printer or a projector (photographic apparatus per se G03B, G03D)]

1/00251 . . . . . . [with an apparatus for taking photographic images, e.g. a camera]

1/00254 . . . . . . [with an electrophotographic copying machine, i.e. a photocopier]

1/00257 . . . . . . [with an electro-developing recording medium, e.g. generating image signals by reading such a medium in a still camera]

1/00259 . . . . . . [with an apparatus for processing exposed photographic materials]

1/00262 . . . . . . [Reading a film during its processing, e.g. generating image signals from a film while the photographic image on the film is in the process of being developed]

1/00265 . . . . . . [with a photographic printing apparatus]

1/00267 . . . . . . [with a viewing or projecting apparatus, e.g. for reading image information from a film (H04N 1/00262 takes precedence)]

1/0027 . . . . . . [Reading or writing of non-image information from or to a photographic material, e.g. processing data stored in a magnetic track]

1/00273 . . . . . . [with apparatus for handling photographic material]

1/00275 . . . . . . [Recording image information on a photographic material]

1/00278 . . . . . . [with a printing apparatus, e.g. a laser beam printer]

1/00281 . . . . . . [with a telecommunication apparatus, e.g. a switched network of teleprinters for the distribution of text-based information, a selective call terminal (details of transmission H04N 1/00095; establishing a communication with one of a facsimile machine or another apparatus sharing a single line H04N 1/32704; interfacing cordless telephone terminals with an accessory to increase the functionality of user interface H04M 1/72522)]

1/00283 . . . . . . [with a television apparatus]

1/00286 . . . . . . [with studio circuitry, devices or equipment, e.g. television cameras (television studio circuitry, devices or equipment per se H04N 5/222)]

1/00289 . . . . . . [in a video photo booth or the like]

1/00291 . . . . . . [with receiver circuitry (television receiver circuitry per se H04N 5/44)]

1/00294 . . . . . . [for printing images at a television receiver]

1/00297 . . . . . . [with a television signal recorder, e.g. for recording facsimile images on a VCR (motion video recording combined with still video recording in a still video camera H04N 1/212)]

1/00299 . . . . . . [with a television transmission apparatus, e.g. a videophone, a teletext system or a digital television system]

1/00302 . . . . . . [with a telephonic apparatus, e.g. telephone answering machine or videotex terminal (H04N 1/00307 takes precedence; telephonic communication H04M)]

1/00305 . . . . . . [with a cordless telephone apparatus]

1/00307 . . . . . . [with a mobile telephone apparatus (constructional features of portable telephone sets H04M 1/07202; mobile radio systems H04W 84/00)]

1/0031 . . . . . . [with a selective call apparatus, e.g. a paging device (selective call receivers H04W 88/022; selective call encoders H04W 88/185)]

1/00312 . . . . . . [with a digital transmission apparatus, e.g. a switched network of teleprinters for the distribution of text-based information, SMS or ISDN device (transmitting or receiving via a computer, e.g. using e-mail, a computer network or the internet H04N 1/00214; transmission of digital information H04L)]

1/00315 . . . . . . [with a radio transmission apparatus (with a cordless telephone H04N 1/00305; systems or arrangements for the transmission of a picture signal specially adapted for transmission via radio H04N 1/00103; H04N 1/00307 takes precedence; radio transmission systems H04B 7/00; wireless communication networks H04W)]

1/00318 . . . . . . [with a multi-media apparatus]

1/0032 . . . . . . [with a medium handling apparatus, e.g. a sheet sorter (handling thin or filamentary material, e.g. sheets B65H)]

1/00323 . . . . . . [with a measuring, monitoring or signaling apparatus, e.g. for transmitting measured information to a central location]

1/00326 . . . . . . [with a data reading, recognizing or recording apparatus, e.g. with a bar-code apparatus (arrangements for the associated working of recording or reproducing apparatus with related apparatus G11B 31/00)]

1/00328 . . . . . . [with an apparatus processing optically-read information]

1/00331 . . . . . . [with an apparatus performing optical character recognition (arrangements for recognising printed or written characters G06K 9/00)]

1/00334 . . . . . . [with an apparatus processing barcodes or the like (arrangements for sensing record carriers G06K 7/00)]
H04N

[with an apparatus performing pattern recognition, e.g. of a face or a geographic feature (arrangements for recognising patterns G06K 9/00)]

[with an electronic or magnetic storage medium I/O device (RFID or the like H04N 1/0042)]

[with a radio frequency tag transmitter or receiver (storage of additional information in an RFID tag attached to an image bearing paper sheet H04N 1/32138)]

[with a management, maintenance, service or repair apparatus (monitoring H04N 1/00002)]

[with another still picture apparatus, e.g. hybrid still picture apparatus (circuits or arrangements for control or supervision between image input and image output device H04N 1/22)]

[User-machine interface; Control console (input or output arrangements for computers G06F 3/00)]

[Input means (H04N 1/00411 takes precedence; input arrangements for computers G06F 3/00)]

[Mark-sheet input (sensing record carriers G06K 7/00; recognising printed or written characters G06K 9/00)]

[Type of the scanned marks]

[Alphanumeric symbols]

[Bar codes or the like]

[Marks in boxes or the like, e.g. crosses or blacking out (H04N 1/0036 takes precedence)]

[Location of the scanned marks]

[on a separate sheet]

[on the same page as at least a part of the image]

[Means for identifying a mark sheet or area]

[Means for enabling correct scanning of a mark sheet or area, e.g. registration or timing marks]

[Input by recognition or interpretation of visible user gestures (manual input means, e.g. digitisers, writing tablets H04N 1/00392; recognition algorithms G06K 9/00335; gesture input to computers G06F 3/017)]

[Key input means, e.g. buttons or keypads (electromechanical details of key input means in general H01H 13/00)]

[Multiple functions per key]

[Programmable function keys, e.g. for one-touch operation (H04N 1/00387 takes precedence; for automation of transmitter jobs H04N 1/32058)]

[Other manual input means, e.g. digitisers or writing tablets]

[Arrangements for reducing operator input (input arrangements for job or mode instructions or parameters H04N 1/00962; intelligent menu interfaces H04N 1/00437)]

[Switches, knobs or the like]

[Rocker or tumbler switches]

[Voice input means, e.g. voice commands]

[Output means (output arrangements for computers G06F 3/00)]

[Display of information to the user, e.g. menus]

[the display also being used for user input, e.g. touch screen]

[using menus, i.e. presenting the user with a plurality of selectable options (H04N 1/00464 takes precedence)]

[Multi-level menus]

[Arrangements for navigating between pages or parts of the menu]

[using drop-down menus]

[using a list of graphical elements, e.g. icons or icon bar]

[using a menu list (H04N 1/0042, H04N 1/00424, H04N 1/00429 take precedence)]

[using a navigation tree]

[using tabs]

[arranged in a predetermined sequence, e.g. using next and previous buttons]

[Intelligent menus, e.g. anticipating user selections]

[for image preview or review, e.g. to help the user position a sheet]

[Simultaneous viewing of a plurality of images, e.g. using a mosaic display arrangement of thumbnails]

[arranged in a one dimensional array]

[horizontally]

[vertically]

[arranged in a two dimensional array]

[for layout preview, e.g. page layout]

[Sequential viewing of a plurality of images, e.g. browsing or scrolling]

[marking or otherwise tagging one or more displayed image, e.g. for selective reproduction]

[using browsers, i.e. interfaces based on mark-up languages]

[displaying finishing information, e.g. position of punch holes or staple or orientation references]

[with enlargement of a selected area of the displayed information]

[using a pop-up window]

[outputting a plurality of functional options, e.g. scan, copy or print]

[Indicating status, e.g. of a job (for control or supervision between transmitter and receiver or between image input and image output device H04N 2201/3219)]

[Indicating an illegal or impossible operation or selection to the user]

[outputting a plurality of job set-up options, e.g. number of copies, paper size or resolution]

[providing a hardcopy output to the user, e.g. print out]

[providing an audible output to the user]

[providing a visual indication to the user, e.g. using a lamp (H04N 1/00408 takes precedence)]

[Particular location of the interface or console]

[Constructional details of the interface or console not otherwise provided for, e.g. rotating or tilting means]

[Multilingual facilities]
Handling of original or reproduction media, e.g. housings, covers

Constructional details not otherwise provided for, e.g. wall-mounted or vertically arranged apparatus

Providing a more compact apparatus, e.g. sheet discharge tray in cover

Discharge tray at least partially sandwiched between image generating and reproducing components

Discharge tray in cover

using slidably mounted components, e.g. reader in drawer

using rotatably mounted or foldable components

Modular devices, i.e. allowing combinations of separate components, removal or replacement of components

with detachable image reading apparatus

Allowing easy access, e.g. for maintenance or in case of paper jam

using a side opening

Counter-measures for mechanical vibration not otherwise provided for

Top covers or the like

Latches or hinges therefor

Connection or assembly of components or elements

Mounting or support of components or elements

Supporting the apparatus as a whole, e.g. stands

Constructional details relating to ergonomic aspects

Handling of original or reproduction media, e.g. cutting, separating, stacking

Conveying sheets before or after scanning (arrangements for conveying sheets as part of the scanning operation H04N 1/04 and subgroups)

with refeeding for double-sided scanning, e.g. using one scanning head for both sides of a sheet

Inverting the sheet prior to refeeding

{ Using at least part of a loop, e.g. using a return loop

Using at least one dead-end path, e.g. using a sheet ejection path

by rotating the sheet about an axis lying in its plane

Inverting the scanning elements with respect to the scanning plane prior to refeeding

{ to the scanning position (H04N 1/00572, H04N 1/00594 take precedence)

{ from the scanning position (H04N 1/00572 takes precedence)

{ along at least a part of the same path as transport to the scanning position (H04N 1/00575 takes precedence)

{ using at least a part of the apparatus in common for transporting to or from a plurality of scanning positions, e.g. for reading and printing

{ Using specific components (details of components related to handling thin or filamentary material B65H)

Feed rollers

Transport trays

Grippers or the like, e.g. suction grippers

Feed belts

Path switches

Guiding elements, e.g. plates

Transporting curved sheets or curving sheets during transportation, e.g. for feeding to a drum-type scanner

Removing sheets from a stack or inputting media

Selectively inputting media from one of a plurality of input trays

Removing sheets selectively from the top or bottom of a single stack or tray

Separating, e.g. preventing feeding of two sheets at a time

Ejecting or stacking (H04N 1/00641 takes precedence)

selectively to one of a plurality of output trays (H04N 1/00641 takes precedence)

Ejecting sheets selectively to the top or bottom of a single stack or tray

Binding, stapling, folding or perforating, e.g. punching

Sorting, reordering or inverting (postal sorting or sorting individual articles B07C)

Counting or calculating, e.g. a number of remaining sheets

Decurling

Control or synchronising different handling operations (H04N 1/00652 takes precedence)

Control of feeding speed, e.g. fast feeding to scanning position (H04N 1/00673 takes precedence)

Apparatus in common for different handling operations (H04N 1/00575, H04N 1/00594, H04N 1/00596, H04N 1/00618 take precedence)

Compensating for different handling speeds of different apparatus or arrangements for handling a plurality of sheets simultaneously, e.g. mechanical buffering

Aligning or positioning related to handling

Indicating relating to handling of media

Details specific to handling of web-shaped media, e.g. paper or film rolls

Removing the medium from a cassette, spindle or the like
H04N 1/00671  . . . [Winding or feeding the medium into a cassette or onto a spindle or the like]
H04N 1/00673  . . . [Controlling the amount of slack or tension control]
H04N 1/00676  . . . [Cutting]
H04N 1/00679  . . . [after scanning]
H04N 1/00681  . . . [Detecting the presence, position or size of a sheet or correcting its position before scanning (H04N 1/047 takes precedence; mode signalling H04N 1/333; skew detection or correction in image signals H04N 1/3878)]
H04N 1/00684  . . . [Object of the detection]
H04N 1/00687  . . . [Presence or absence]
H04N 1/00689  . . . [Presence]
H04N 1/00692  . . . [Absence]
H04N 1/00694  . . . [in an input tray]
H04N 1/00697  . . . [in an output tray]
H04N 1/007  . . . [of holder, e.g. film mount]
H04N 1/00702  . . . [Position]
H04N 1/00705  . . . [at a plurality of spaced apart locations, e.g. as a sheet is fed through the apparatus]
H04N 1/00708  . . . [Size or dimensions]
H04N 1/0071  . . . [Width]
H04N 1/00713  . . . [Length]
H04N 1/00716  . . . [Thickness]
H04N 1/00718  . . . [Skew]
H04N 1/00721  . . . [Orientation]
H04N 1/00724  . . . [Type of sheet, e.g. colour of paper or transparency]
H04N 1/00726  . . . [Other properties of the sheet, e.g. curvature or reflectivity]
H04N 1/00729  . . . [Detection means]
H04N 1/00732  . . . [Mechanical detectors]
H04N 1/00734  . . . [Optical detectors]
H04N 1/00737  . . . [using the scanning elements as detectors]
H04N 1/0074  . . . [using inactive scanning elements, e.g. elements outside the scanning area]
H04N 1/00742  . . . [Detection methods]
H04N 1/00745  . . . [Detecting the leading or trailing ends of a moving sheet]
H04N 1/00748  . . . [Detecting edges, e.g. of a stationary sheet]
H04N 1/0075  . . . [Detecting a change in reflectivity]
H04N 1/00753  . . . [of a sheet relative to a particular background]
H04N 1/00755  . . . [Detecting an interruption of light]
H04N 1/00758  . . . [using a prescan]
H04N 1/00761  . . . [using reference marks, e.g. on sheet, sheet holder or guide]
H04N 1/00763  . . . [Action taken as a result of detection]
H04N 1/00766  . . . [Storing data]
H04N 1/00769  . . . [Comparing, e.g. with threshold]
H04N 1/00771  . . . [Indicating or reporting, e.g. issuing an alarm]
H04N 1/00774  . . . [Adjusting or controlling]
H04N 1/00777  . . . [Inhibiting, e.g. an operation]
H04N 1/00779  . . . [Adjusting settings, e.g. mode, feeding rate or type of paper]
H04N 1/00782  . . . [Initiating operations]
H04N 1/00785  . . . [Correcting the position of a sheet before scanning]
H04N 1/00787  . . . [using mechanical means]
H04N 1/0079  . . . [using guide or holder]
H04N 1/00793  . . . [using paper feeding mechanism, e.g. operate drive rollers at different speeds]
H04N 1/00795  . . . [Reading arrangements (details of scanning heads H04N 1/023; scanning arrangements therefor H04N 1/041)]
H04N 1/00798  . . . [Circuits or arrangements for the control thereof, e.g. using a programmed control device or according to a measured quantity]
H04N 1/00801  . . . [according to characteristics of the original]
H04N 1/00803  . . . [Presence or absence of information]
H04N 1/00806  . . . [According to type of the original, e.g. colour paper or transparency, or reading a plurality of different types of original]
H04N 1/00809  . . . [Orientation]
H04N 1/00811  . . . [according to user specified instructions, e.g. user selection of reading mode]
H04N 1/00814  . . . [according to a detected condition or state of the reading apparatus, e.g. temperature]
H04N 1/00816  . . . [Determining the reading area, e.g. eliminating reading of margins]
H04N 1/00819  . . . [Self-calibrating reading means]
H04N 1/00822  . . . [Selecting or setting a particular reading mode, e.g. from amongst a plurality of modes, simplex or duplex, or high or low resolution]
H04N 1/00824  . . . [for displaying or indicating, e.g. a condition or state (details of displaying or indicating means H04N 1/00405)]
H04N 1/00827  . . . [Arrangements for reading an image from an unusual original, e.g. 3-dimensional objects]
H04N 1/0083  . . . [Arrangements for transferring signals between different components of the apparatus, e.g. arrangements of signal lines or cables (for control or supervision between image input and output device H04N 1/23)]
H04N 1/00832  . . . [Recording use, e.g. counting number of pages copied]
H04N 1/00835  . . . [Detecting external or ambient light]
H04N 1/00838  . . . [Preventing unauthorised reproduction]
H04N 1/0084  . . . [Determining the necessity for prevention]
H04N 1/00843  . . . [based on recognising a copy prohibited original, e.g. a banknote (recognising characters or patterns G06K 9/00; testing paper currency or similar valuable papers for genuineness G07D 7/00)]
H04N 1/00846  . . . [based on detection of a dedicated indication, e.g. marks or the like]
H04N 1/00848  . . . [by detecting a particular original]
H04N 1/00851  . . . [externally to or remotely from the reproduction apparatus, e.g. using a connected apparatus]
H04N 1/00854  . . . [Recognising an unauthorised user or user-associated action]
H04N 1/00856  . . . [Preventive measures]
H04N 1/00859  . . . [Issuing an alarm or the like]
H04N 1/00862  . . . [Retaining the original]
H04N 1/00864  . . . [Modifying the reproduction, e.g. outputting a modified copy of a scanned original (details of composing or otherwise geometrically modifying originals H04N 1/382)]
H04N 1/00867  . . . [with additional data, e.g. by adding a warning message (details of embedding additional information in an image H04N 1/3214)]
H04N 1/0087  . . . [with hidden additional data, e.g. data invisible to the human eye]
1/00872 . . . . [by image quality reduction, e.g. distortion or blacking out]
1/00875 . . . . [Inhibiting reproduction, e.g. by disabling reading or reproduction apparatus]
1/00877 . . . . [Recording information, e.g. details of the job]
1/0088 . . . . [Detecting or preventing tampering attacks on the reproduction system]
1/00883 . . . . [Auto-copy-preventive originals, i.e. originals that are designed not to allow faithful reproduction]
1/00885 . . . . [Power supply means, e.g. arrangements for the control of power supply to the apparatus or components thereof]
1/00888 . . . . [Control thereof]
1/00891 . . . . [Switching on or off, e.g. for saving power when not in use (H04N 1/00896 takes precedence)]
1/00893 . . . . [using a back-up supply, e.g. in case of mainsupply failure]
1/00896 . . . . [using a low-power mode, e.g. standby]
1/00899 . . . . [Detection of supply level or supply failure]
1/00901 . . . . [Using different supplies or connection to an external supply (H04N 1/00893, H04N 1/00896 take precedence)]
1/00904 . . . . [Arrangements for supplying power to different circuits or for supplying power at different levels (H04N 1/00896 takes precedence)]
1/00907 . . . . [Details of supply connection, e.g. arrangement of power cables (H04N 1/00901 and H04N 1/00904 take precedence)]
1/00909 . . . . [Cleaning arrangements or preventing or counteracting contamination from dust or the like (cleaning in general, prevention of fouling in general B08B)]
1/00912 . . . . [Arrangements for controlling a still picture apparatus or components thereof not otherwise provided for]
1/00915 . . . . [Assigning priority to, or interrupting, a particular operation]
1/00917 . . . . [Resuming after an intentional interruption, e.g. resetting parameters]
1/0092 . . . . [Assigning priority according to size job or task, e.g. small jobs first]
1/00923 . . . . [Variably assigning priority (H04N 1/0092 takes precedence)]
1/00925 . . . . [Inhibiting an operation]
1/00928 . . . . [Initialisation or control of normal start-up or shut-down, i.e. non failure or error related]
1/00931 . . . . [Synchronising different operations or sub-apparatus, e.g. controlling on-times taking into account different warm-up times]
1/00933 . . . . [Timing control or synchronising (H04N 1/00928, H04N 1/00931, H04N 1/00954 and H04N 1/0096 take precedence)]
1/00936 . . . . [Skipping a function or process step]
1/00938 . . . . [Software related arrangements, e.g. loading applications (program loading in general G06F 9/445)]
1/00941 . . . . [Interaction of different applications (H04N 1/00949 takes precedence; multiprogramming arrangements of computers G06F 9/46)]
1/00944 . . . . [using hot folders, i.e. folders or directories which trigger an action when written to or accessed]
H04N 1/028 . . . [for picture information pick-up]
H04N 1/02805 . . . [with photodetectors arranged in a two-dimensional array]
H04N 1/0281 . . . [with means for collecting light from a line or an area of the original and for guiding it to only one or a relatively low number of picture element detectors]
H04N 1/02815 . . . [Means for illuminating the original, not specific to a particular type of pick-up head]
H04N 1/0282 . . . [Using a single or a few point light sources, e.g. a laser diode]
H04N 1/02825 . . . {in combination with at least one reflector which is fixed in relation to the light source (H04N 1/02835 and H04N 1/0284 take precedence)}
H04N 1/0283 . . . {in combination with a light deflecting element, e.g. a rotating mirror}
H04N 1/02835 . . . {in combination with a light guide, e.g. optical fibre, glass plate (light-guides per se G02B 6/00)}
H04N 1/0284 . . . [in combination with a light integrating, concentrating or diffusing cavity]
H04N 1/02845 . . . [using an elongated light source, e.g. tubular lamp, LED array]
H04N 1/0285 . . . [in combination with at least one reflector which is in fixed relation to the light source]
H04N 1/02855 . . . [in combination with a light guide, e.g. optical fibre, glass plate (light-guides per se G02B 6/00)]
H04N 1/0286 . . . [in combination with a light integrating, concentrating or defusing cavity]
H04N 1/02865 . . . [using an array of light sources or a combination of such arrays, e.g. an LED bar]
H04N 1/0287 . . . [using a tubular lamp or a combination of such lamps]
H04N 1/02875 . . . {comprising a reflective coating}
H04N 1/0288 . . . [using a two-dimensional light source, e.g. two-dimensional LED array]
H04N 1/02885 . . . [Means for compensating spatially uneven illumination, e.g. an aperture arrangement]
H04N 1/0289 . . . {Light diffusing elements, e.g. plates or filters (optical diffusing elements per se G02B 5/02)}
H04N 1/02895 . . . [Additional elements in the illumination means or cooperating with the illumination means, e.g. filters (H04N 1/02885 takes precedence; optical elements other than lenses per se G02B 5/00)]
H04N 1/029 . . . Heads optically focused on only one picture element at a time (H04N 1/0281 takes precedence)
H04N 1/03 . . . with photodetectors arranged in a substantially linear array
H04N 1/0301 . . . [using a bent optical path between the scanned line and the photodetector array, e.g. a folded optical path]
H04N 1/0303 . . . [with the scanned line and the photodetector array lying in non-parallel planes]
H04N 1/0305 . . . [with multiple folds of the optical path]
H04N 1/0306 . . . [using a plurality of optical elements arrayed in the main scan direction, e.g. an array of lenses]
H04N 1/0308 . . . [characterised by the design of the photodetectors, e.g. shape]
H04N 1/031 . . . the photodetectors having a one-to-one and optically positive correspondence with the scanned picture elements, e.g. linear contact sensors
H04N 1/0311 . . . [using an array of elements to project the scanned image elements onto the photodetectors (H04N 1/0318 takes precedence)]
H04N 1/0312 . . . [using an array of optical fibres or rod-lenses]
H04N 1/0313 . . . [Direct contact pick-up heads, i.e. heads having no array of elements to project the scanned image elements onto the photodetectors]
H04N 1/0314 . . . [using photodetectors and illumination means mounted in the same plane on a common support or substrate]
H04N 1/0315 . . . [using photodetectors and illumination means mounted on separate supports or substrates or mounted in different planes]
H04N 1/0316 . . . [illuminating the scanned image elements through the plane of the photodetector, e.g. back-light illumination]
H04N 1/0317 . . . [detecting the scanned image elements through the plane of the illumination means]
H04N 1/0318 . . . [Integral pick-up heads, i.e. self-contained heads whose basic elements are a light-source, a lens array and a photodetector array which are supported by a single-piece frame]
H04N 1/032 . . . for picture information reproduction
H04N 1/0323 . . . [Heads moving to and away from the reproducing medium, e.g. for pressure sensitive reproducing]
H04N 1/0326 . . . [Magnetic heads]
H04N 1/034 . . . using ink, e.g. ink-jet heads (H04N 1/0323 takes precedence)]
H04N 1/036 . . . for optical reproduction
H04N 1/04 . . . Scanning arrangements, i.e. arrangements for the displacement of active reading or reproducing elements relative to the original or reproducing medium, or vice versa (H04N 1/387 takes precedence)
H04N 1/0402 . . . [Scanning different formats; Scanning with different densities of dots per unit length, e.g. different numbers of dots per inch (dpi); Conversion of scanning standards (H04N 1/0283 takes precedence; picture signal circuits for modification of image resolution H04N 1/3925, H04N 1/4008)]
H04N 1/0405 . . . [Different formats, e.g. A3 and A4]
H04N 1/0408 . . . [Different densities of dots per unit length]
H04N 1/0411 . . . [in the main scanning direction]
H04N 1/0414 . . . [in the sub scanning direction]
[Conversion of standards]
[Details of the method used]
[Switching between or selecting from a plurality of optical paths]
[using different sized scanning elements, e.g. reproducing different sized dots]
[Varying the size of apertures]
[Varying the magnification of a single lens group]
[Optical element switching, e.g. switching lenses into a single optical path]
[Tilting an array with respect to the main or sub scanning direction]
[Tilting an optical element, e.g. a refractive plate (H04N 1/0423 takes precedence)]
[Varying the scanning velocity or position]
[Varying the modulation time or intensity]
[using different sets of scanning elements, e.g. for different formats]
[mounted on the same support or substrate]
[using a single set of scanning elements, e.g. the whole of and a part of an array respectively for different formats]
[using different portions of the scanning elements for different formats or densities of dots]
[part of the apparatus being used in common for reading and reproducing (simultaneous scanning of the original picture and the reproduced picture with a common scanning device H04N 1/207)]
[capable of performing non-simultaneous scanning at more than one scanning station]
[the different stations being used for transmissive and reflective original]
[Detection, control or error compensation of scanning velocity or position (H04N 1/0402 and H04N 1/17 take precedence)]
[in subscanning direction, e.g. picture start or line-to-line synchronisation]
[Indicating the scanning velocity]
[in main scanning direction, e.g. synchronisation of line start or picture elements in a line]
[using cylindrical picture-bearing surfaces, i.e. scanning a main-scanning line substantially perpendicular to the axis and lying in a curved cylindrical surface]
[Scanning a concave surface, e.g. with internal drum type scanners (H04N 1/0657 takes precedence)]
[with main-scanning by rotation of the picture-bearing surface]
[using a picture-bearing surface stationary in the main-scanning direction]
[using several scanning heads circumferentially spaced from one another and circumferentially aligned, e.g. mounted on a rotating disk]
[using oscillating or rotating mirrors]
[Scanners capable of scanning the total circumference of a closed cylinder]
[using rotating prisms]
[Scanning a transparent surface, e.g. reading a transparency original]
[with sub-scanning by translational movement of the picture-bearing surface]
[with sub-scanning by translational movement of the main-scanning components]
[using a lead-screw or worm]
[using a belt or cable]
[Details of the cylindrical surface (for mounting or holding the sheet H04N 1/08)]
[means for holding the sheet against the drum by mechanical force]
[Pins or the like]
[Magnetic means]
[Adhesive means]
[Suction or vacuum means]
[using grooves]
[Single holding means holding both ends of a sheet]
[capable of holding different sized sheets]
[for holding the sheet on the internal surface of the drum]
[for holding a sheet adjacent an aperture on an opaque drum]
[Registering or guiding means other than the holding means]
[Mounting the sheet from a roll]
[Detecting failure of the holding, e.g. by detecting a loose sheet]
[Means other than holding means for removing the sheet from the drum]
[using flat picture-bearing surfaces (H04N 1/113, H04N 1/195 take precedence)]
[using two-dimensional electrical scanning, e.g. cathode-ray tubes (using two-dimensional arrays H04N 1/195)]
[with sub-scanning by translatory movement of the picture-bearing surface]
[with at least a part of the main-scanning components (H04N 1/107 takes precedence)]
[the main-scanning components remaining positionally invariant with respect to one another in the sub-scanning direction]
[using a lead screw or worm]
[using a belt or cable]
[by engaging a rail]
[by other means, e.g. linear motor or hydraulic system]
[Movement of the main scanning components]

(of a sensor array)

(of a lens or lens arrangement)

(of a mirror)

[of two or more separate mirror arrangements]

[Details relating to flat picture-bearing surfaces, e.g. transparent platen]

[Support or mounting of the flat picture-bearing surface]

[with manual scanning]

[using a folded light path]

[Means for guiding the scanning, e.g. rules (H04N 1/1077 takes precedence)]

(Apparatus incorporating a hardcopy reproducing device, e.g. a printer, not working directly by manual scanning)

[Arrangements for facilitating holding of the scanner, e.g. shapes, grips]

[Arrangements for facilitating movement over the scanned medium, e.g. disposition of rollers]

(by moving the scanned medium)

[using oscillating or rotating mirrors]

[for the main-scan only]

[using the sheet-feed movement (or the medium-advance or the drum-rotation movement) as the slow scanning component, e.g. arrangements for the main-scanning) {(sheet-feed movement by translatory movement of a flat picture-bearing surface H04N 1/1005; main-scanning using oscillating or rotating mirrors H04N 1/113; using multi-element arrays H04N 1/19}]

[using a device, e.g. an optical fibre bundle, converting rectilinear scanning into circular line scanning or vice versa]

[Feeding arrangements (transporting sheets to or from the scanning position H04N 1/0057; control or error compensation of sub-scanning velocity H04N 1/0057)]

[Feeding using one or more cylindrical platens or rollers in the immediate vicinity of the main scanning line]

[using a feed belt (feed belts for transporting to or from the scanning position H04N 1/0061)]

[Means for maintaining contact between the sheet and the image sensor, e.g. pressing means]

[Using a dedicated sheet guide element]

[Feeding a sheet past a transparent plate; Details thereof]

[Plate shape]

[Arrangements for mounting or holding the plate]

[the sheet feeding apparatus serving an auxiliary function, e.g. as a white reference]

[Electronic copy boards]

[Arrangements for the main scanning]

[using a holographic scanning element]

[using a cathode ray tube or the like]

[using a solid-state deflector, e.g. an acousto-optic deflector or a semiconductor waveguide device]

[using a scanning head arranged for linear reciprocating motion]

[using apertures arranged in a spiral]

[using an element rotating or oscillating about an axis not covered by any other group or code]

[using an optical guide, e.g. a fibre-optic bundle between the scanned line and the scanning elements]

[using a rotating endless belt carrying the scanning heads (or at least a part of the main scanning components)]

[using a rotating helical element]

[the scanning speed being dependent on content of picture]

[using multi-element arrays]

[Arrangements for enabling electronic abutment of lines or areas independently scanned by different elements of an array or by different arrays]

[Arrangements for performing substitution scanning for a defective element]

[the array comprising a one-dimensional array {}, or a combination of one-dimensional arrays, or a substantially one-dimensional array, e.g. an array of staggered elements]

[Simultaneously or substantially simultaneously scanning picture elements on more than one main scanning line, e.g. scanning in swathes]

[Scanning main scanning lines which are spaced apart from one another in the sub-scanning direction]

[Scanning adjacent picture elements in different scans of the array, e.g. in complementary checkerboard patterns]

[with subscan displacement of the array between successive scans]

[using an array of elements displaced from one another in the main scan direction, e.g. a diagonally arranged array]

[Staggered element array, e.g. arrays with elements arranged in a zigzag]

[Combination of arrays]

Simultaneously or substantially simultaneously scanning picture elements on one main scanning line

[using electrically scanned linear arrays {}, e.g. linear CCD arrays]

[with scanning elements electrically interconnected in groups]

[using an array of elements displaced from one another in the sub scan direction, e.g. a diagonally arranged array]

[Staggered element arrays, e.g. arrays with elements arranged in a zigzag]

[Combination of arrays]

[Optical means for mapping the whole or part of a scanned line onto the array]
reproduced picture with a common scanning
Simultaneous scanning of the original picture and
Simultaneous scanning of two or more separate
readbacks, e.g. from a continuous sequence
instantaneous, e.g. from a multi-frame buffer
of a sequence of images for selection
of a plurality of users
of a single frame before final recording, e.g. from a continuous sequence
captured before and after shutter-release
a sequence of still pictures, e.g. burst mode
the still video camera incorporating a
detachable storage unit
[using a non electronic storage unit, e.g. by
recording marks on a sheet]
{hybrid systems, i.e. systems
consisting of more than one arrangement
for moving the elements of the array
relative to the scanned image or
vice versa}
{a combination of arrays}
{optical means, e.g. an optical fibre bundle,
for mapping the whole or a part of a scanned
image onto the array}
{using a television camera or a still video
camera}
{simultaneous scanning of two or more separate
pictures, e.g. two sides of the same sheet
without time delay between the two image
signals}
{optical elements, e.g. using a reflecting element, e.g. a
mirror or a prism}
{reflecting elements}
{fibre bundles}
{apertures}
{rotation of optical elements}
{about an axis parallel to the optical
axis}
{about an axis perpendicular to the
optical axis}
{displacing the array}
{displacing the scanned image}
{hybrid systems, i.e. systems
consisting of more than one arrangement
for moving the elements of the array
relative to the scanned image or
vice versa}
{combination of arrays}
{optical means, e.g. an optical fibre bundle,
for mapping the whole or a part of a scanned
image onto the array}
{using a television camera or a still video
camera}
{simultaneous scanning of two or more separate
pictures, e.g. two sides of the same sheet
without time delay between the two image
signals}
{of a plurality of pictures corresponding to a
single side of a plurality of media}
{lying in the same plane}
{simultaneous scanning of the original picture and
the reproduced picture with a common scanning
device
Intermediate information storage (H04N 1/387,
H04N 1/41) take precedence [: for control between
transmitter and receiver or between image input
and image output device H04N 1/32359; indexing,
editing G11B 27/00)]
{for one or a few pictures}
{for one picture only}
{using still video cameras}
{picture signal recording combined with
imagewise recording, e.g. photographic
recording (photographic cameras
G03B 19/00))
{motion video recording combined with still
video recording (television signal recording
H04N 5/76)}
{display of information relating to the still
picture recording}
{recording in, or reproducing from, a
specific memory area or areas, or recording
or reproducing at a specific moment}
{recording or reproducing at a specific
moment, e.g. time interval or time-lapse}
{with temporary storage before final
recording, e.g. in a frame buffer}
{in a multi-frame buffer}
{of a sequence of images for selection
of a single frame before final recording, e.g. from a continuous sequence
captured before and after shutter-release}
{recording a sequence of still pictures, e.g. burst mode}
{the still video camera incorporating a
hardcopy reproducing device, e.g. a printer}
{using a detachable storage unit}
{using a non electronic storage unit, e.g. by
recording marks on a sheet}
{for mass storage, e.g. in document filing systems
information retrieval G06F 16/00)}
{interfaces allowing access to a single user}
{with local image input}
{interfaces allowing access to a plurality of
users, e.g. connection to electronic image
libraries}
{the stored images being distributed among a
plurality of different locations, e.g. among a
plurality of users}
{with image input from a plurality of
different locations or from a non-central
location, e.g. from one or more users}
{for simultaneous, independent access by a
plurality of different users}
{with temporary storage before final recording
or on play-back, e.g. in a frame buffer}
{reproducing arrangements
1/203 . . . {circuits or arrangements for the control
thereof, e.g. using a programmed control device,
according to a measured quantity (H04N 1/27,
H04N 1/29 take precedence)}
{according to characteristics of the reproducing
apparatus, e.g. capability}
{according to characteristics of the reproducing
medium, e.g. type, size or availability}
{according to characteristics of the data to be
reproduced, e.g. number of lines}
{according to user specified instructions, e.g.
user selection of reproduction mode}
{according to a detected condition or state of the
reproducing device, e.g. temperature or ink
quantity}
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1/2353 [Selecting a particular reproducing medium from amongst a plurality of media or from a particular tray, e.g. paper or transparency]

1/2361 [Selecting a particular reproducing device from amongst a plurality of devices, e.g. high or low resolution devices]

1/2369 [Selecting a particular reproducing mode from amongst a plurality of modes, e.g. paper saving or normal, or simplex or duplex]

1/2376 [Inhibiting or interrupting a particular operation or device (preventing unauthorised reproduction H04N 1/0038)]

1/2384 [for fitting data onto a particular reproducing medium without modifying the image data]

1/2392 [for displaying or indicating, e.g. a condition or state (details of displaying or indicating means H04N 1/00405)]

1/27 [involving production of a magnetic intermediate picture]

1/29 [involving production of an electrostatic intermediate picture]

1/295 [Circuits or arrangements for the control thereof, e.g. using a programmed control device, according to a measured quantity]

1/31 [Mechanical arrangements for picture transmission, e.g. adaptation of clutches, gearing, gear transmissions]

1/32 [Circuits or arrangements for control or supervision between transmitter and receiver (or between image input and image output device (H04N 1/38, H04N 1/387 take precedence))]

1/3205 [Automation of particular receiver jobs, e.g. rejecting unwanted calls (requesting a communication from a transmitter H04N 1/32771; with picture signal storage for forwarding messages H04N 1/32358)]

1/3201 [Rejecting unwanted calls]

1/32016 [according to the caller's identification, e.g. fax number (H04N 1/3201 takes precedence)]

1/32021 [according to the type of received information]

1/32026 [Changing the receiver mode of operation, e.g. paper reception to memory reception or vice versa (H04N 1/32673 takes precedence)]

1/32032 [Polling of transmitters]

1/32037 [Automation of particular transmitter jobs, e.g. multi-address calling, auto-dialing]

1/32042 [with reading of job-marks on a page]

1/32048 [Auto-dialling or Auto-calling (H04N 1/32053 - H04N 1/32074 take precedence)]

1/32053 [Delayed transmission, e.g. to make use of reduced connection rates (H04N 1/32074 takes precedence)]

1/32058 [Abbreviated dialing, e.g. one-touch dialing]

1/32064 [Multi-address calling]

1/32069 [simultaneously to a plurality of destinations, e.g. multi-casting]

1/32074 [Redialing, e.g. after failure to make a connection]

1/3208 [Transmitting a plurality of separate messages to a common destination in a single transmission]

1/32085 [Automation of other tasks, e.g. repetitive execution or sequencing]

1/3209 [according to the called number]

1/32096 [Checking the destination, e.g. correspondence of manual input with stored destination]

1/32101 [Display, printing, storage or transmission of additional information, e.g. ID code, date and time or title]

1/32106 [separate from the image data, e.g. in a different computer file]

1/32112 [in a separate computer file, document page or paper sheet, e.g. a fax cover sheet (H04N 1/32122 takes precedence)]

1/32117 [in a separate transmission or protocol signal prior to or subsequent to the image data transmission, e.g. in digital identification signal [DIS], in non standard setup [NSS] or in non standard field [NSF] (for mode signalling H04N 1/333)]

1/32122 [in a separate device, e.g. in a memory or on a display separate from image data]

1/32128 [attached to the image data, e.g. file header, transmitted message header, information on the same page or in the same computer file as the image (for information embedded in the image H04N 1/3244)]

1/32133 [on the same paper sheet, e.g. a facsimile page header]

1/32138 [in an electronic device attached to the sheet, e.g. in an RFID tag]

1/32144 [embedded in the image data, i.e. enclosed or integrated in the image, e.g. watermark, super-imposed logo or stamp]

1/32149 [Methods relating to embedding, encoding, decoding, detection or retrieval operations]

1/32154 [Transform domain methods (H04N 1/3209 takes precedence)]

1/3216 [using Fourier transforms]

1/32165 [using cosine transforms]

1/3217 [using wavelet transforms]

1/32176 [using Walsh, Hadamard or Walsh-Hadamard transforms]

1/32181 [using Karhunen-Loeve transforms]

1/32187 [with selective or adaptive application of the additional information, e.g. in selected frequency coefficients]

1/32192 [according to calculated or estimated visibility of the additional information in the image]

1/32197 [according to the spatial domain characteristics of the transform domain components]

1/32203 [Spatial or amplitude domain methods (H04N 1/32309 takes precedence)]

1/32208 [involving changing the magnitude of selected pixels, e.g. overlay of information or super-imposition (H04N 1/32219, H04N 1/32224 take precedence)]

1/32213 [Modulating the least significant bits of pixels]

1/32219 [involving changing the position of selected pixels, e.g. word shifting, or involving modulating the size of image components, e.g. of characters (H04N 1/32224 takes precedence)
H04N

1/3224 . . . . . . {Replacing pixels of an image with other pixels from the same image, e.g. texture block coding}
1/3229 . . . . . . {with selective or adaptive application of the additional information, e.g. in selected regions of the image (H04N 1/32213 takes precedence)}
1/3223 . . . . . . [in highly textured regions]
1/3224 . . . . . . [in edge regions]
1/32245 . . . . . . [Random or pseudorandom selection of pixels]
1/32251 . . . . . . [in multilevel data, e.g. greyscale or continuous tone data]
1/32256 . . . . . . [in halftone data]
1/32261 . . . . . . [in binary data (H04N 1/32256 takes precedence)]
1/32267 . . . . . . [combined with processing of the image]
1/32272 . . . . . . [Encryption or ciphering]
1/32277 . . . . . . [Compression]
1/32283 . . . . . . [Hashing]
1/32288 . . . . . . [Multiple embedding, e.g. cocktail embedding, or redundant embedding, e.g. repeating the additional information at a plurality of locations in the image]
1/32293 . . . . . . [Repeating the additional information in a regular pattern]
1/32299 . . . . . . [using more than one embedding method]
1/32304 . . . . . . [Embedding different sets of additional information]
1/32309 . . . . . . [in colour image data]
1/32315 . . . . . . [Selecting a particular method from amongst a plurality of methods]
1/3232 . . . . . . [Robust embedding or watermarking]
1/32325 . . . . . . [the embedded data being visible]
1/32331 . . . . . . [Fragile embedding or watermarking]
1/32336 . . . . . . [Informed embedding, i.e. the original image being known for the encoding or decoding method]
1/32341 . . . . . . [Blind embedding, i.e. the original image not being known beforehand]
1/32347 . . . . . . [Reversible embedding, i.e. lossless, invertible, erasable or distortion-free embedding]
1/32352 . . . . . . [Controlling detectability or arrangements to facilitate detection or retrieval of the embedded information, e.g. using markers (for decoding, detection or retrieval operations H04N 1/32149 and subgroups take precedence)]
1/32358 . . . . . . [using picture signal storage, e.g. at transmitter (H04N 1/17 takes precedence)]
1/32363 . . . . . . [at the transmitter or at the receiver]
1/32368 . . . . . . [Functions of a still picture terminal memory associated with transmission]
1/32374 . . . . . . [Storage subsequent to an attempted transmission]
1/32379 . . . . . . [Functions of a still picture terminal memory associated with reception]
1/32384 . . . . . . [Storage subsequent to an attempted output at the receiver, e.g. in case of printer malfunction]
1/3239 . . . . . . [Forwarding image data, e.g. to an absent recipient]
1/32395 . . . . . . [Informing an absent addressee of receipt]
1/324 . . . . . . [intermediate the transmitter and receiver terminals, e.g. at an exchange]
1/32406 . . . . . . [in connection with routing or relaying, e.g. using a fax-server or a store-and-forward facility (stored and forward data switching systems H04L 12/54)]
1/32411 . . . . . . [Handling instructions for routing or relaying]
1/32416 . . . . . . [Storage of instructions or retrieval of prestored instructions]
1/32422 . . . . . . [Reprocessing messages, e.g. in case the intended destination is busy]
1/32427 . . . . . . [Optimising routing, e.g. for minimum cost]
1/32432 . . . . . . [in a particular memory file for retrieval by the user, e.g. in a facsimile mailbox]
1/32438 . . . . . . [Informing the addressee of reception]
1/32443 . . . . . . [with asynchronous operation of the image input and output devices connected to the memory]
1/32448 . . . . . . [Controlling data flow to or from the memory in relation to the available memory capacity]
1/32454 . . . . . . [Controlling data flow to or from the memory in relation to the amount of data, e.g. file size]
1/32459 . . . . . . [for changing the arrangement of the stored data]
1/32464 . . . . . . [Changing the arrangement of pages or documents, e.g. for producing pages to be bound]
1/3247 . . . . . . [Changing the arrangement of data in a page, e.g. reversing the order to produce a mirror image]
1/32475 . . . . . . [Changing the format of the data, e.g. parallel to serial or vice versa]
1/3248 . . . . . . [Storage of at least a part of one of two image bearing sides of a single sheet, e.g. for two sided copying]
1/32486 . . . . . . [Storage for making a plurality of copies or reproductions]
1/32491 . . . . . . [alterate storage in and retrieval from two parallel memories, e.g. using ping-pong buffers]
1/32496 . . . . . . [Changing the task performed, e.g. reading and transmitting, receiving and reproducing, copying (facsimile mode changing H04N 1/333)]
1/32502 . . . . . . [in systems having a plurality of input or output devices]
1/32507 . . . . . . [a plurality of input devices]
1/32512 . . . . . . [of different type, e.g. internal and external devices]
1/32518 . . . . . . [details of interfacing]
1/32523 . . . . . . [a plurality of output devices]
1/32529 . . . . . . [of different type, e.g. internal and external devices]
1/32534 . . . . . . [details of interfacing]
1/32539 . . . . . . [Detecting or indicating the status of the output devices]
1/32545 . . . . . . [Distributing a job or task among a plurality of input devices or a plurality of output devices]
mode communication; Handshaking therefor (H04N 1/32614 takes precedence)
Composing, repositioning or otherwise eliminating unwanted parts of pictures (H04N 1/387 takes precedence)

1/387 . . . [Arrangements for reducing the handshaking procedure or protocol time]
1/3873 . . . [Controlling a receiver or transmitter non-communication function in response to a communication control signal]
1/3875 . . . [Arrangements for keeping the communication line open]
1/3877 . . . [Systems adapted to communicate over more than one channel, e.g. via ISDN (changing transmission mode according to type of channel H04N 2201/33364; multichannel or multilink communication protocols H04L 69/14/)]
1/387 . . . [Recombination of partial images to recreate the original image]
1/3877 . . . [Image rotation]
1/3878 . . . [Skew detection or correction]
1/393 . . . [Enlarging or reducing]
1/3935 . . . [with modification of image resolution, i.e. determining the values of picture elements at new relative positions]
1/40 . . . [Picture signal circuits (H04N 1/387 takes precedence]
1/40006 . . . [Compensating for the effects of ageing, i.e. changes over time]
1/40012 . . . [Conversion of colour to monochrome]
1/40025 . . . [Circuits exciting or modulating particular heads for reproducing continuous tone value scales (H04N 1/401, H04N 1/407 take precedence)]
1/40031 . . . [for a plurality of reproducing elements simultaneously]
1/40037 . . . [the reproducing element being a laser]
1/40043 . . . [using more than one type of modulation, e.g. pulse width modulation and amplitude modulation]
1/4005 . . . [with regulating circuits, e.g. dependent upon ambient temperature or feedback control]
1/40056 . . . [Circuits for driving or energising particular reading heads or original illumination means (H04N 1/401, H04N 1/407 take precedence)]
1/40062 . . . [Discrimination between different image types, e.g. two-tone, continuous tone]
1/40068 . . . [Modification of image resolution, i.e. determining the values of picture elements at new relative positions (H04N 1/3935 takes precedence)
1/40075 . . . [Descreening, i.e. converting a halftone signal into a corresponding continuous-tone signal; Rescreening, i.e. combined descreening and halftoning]
1/40081 . . . [Soft dot halftoning, i.e. producing halftone dots with gradual edges]
1/40087 . . . [Multi-toning, i.e. converting a continuous-tone signal for reproduction with more than two discrete brightnesses or optical densities, e.g. dots of grey and black inks on white paper]
1/40093 . . . [Modification of content of picture, e.g. retouching (geometric modifications H04N 1/387)]
1/401 . . . [Compensating positionally unequal response of the pick-up or reproducing head (H04N 1/403 takes precedence)]
1/4015 . . . [of the reproducing head]
1/403 . . . [Discrimination between the two tones in the picture signal of a two-tone original]
1/405 . . . [Halftoning, i.e. converting the picture signal of a continuous-tone original into a corresponding signal showing only two levels]
1/4051 . . . [producing a dispersed dots halftone pattern, the dots having substantially the same size (different sizes H04N 1/4057)]
1/4052 . . . [by error diffusion, i.e. transferring the binarising error to neighbouring dot decisions]
1/4053 . . . [with threshold modulated relative to input image data or vice versa]
Secrecy systems (H04N 1/32 takes precedence) }

Systems for two-way working, e.g. conference video signals (H04N 19/00)

Bandwidth or redundancy reduction (by scanning mechanisms actuated by cards, PIN or the like)

Correction of errors due to scanning a two-sided document, i.e. show-through correction

Removing errors due external factors, e.g. dust, scratches

Bandwidth or redundancy reduction (by scanning in which a baseband signal showing more than two values or a continuously varying baseband signal is transmitted or recorded)

in which the picture-elements are subdivided or grouped into fixed one-dimensional or two-dimensional blocks

using predictive or differential encoding

Progressive encoding, i.e. by decomposition into high and low resolution components

involving the encoding of tone transitions with respect to tone transitions in a reference line

encoding document change data, e.g. form drop out data

in which encoding of the length of a succession of picture-elements of the same value along a scanning line is the only encoding step

Systems for two-way working, e.g. conference systems

Secrecy systems

Restricting access, e.g. according to user identity (mechanisms actuated by cards, PIN or the like in apparatus for dispensing G07F 7/08)

[producing a clustered dots or a size modulated halftone pattern]

[the pattern varying in one dimension only, e.g. dash length, pulse width modulation [PWM]]

[the pattern being a mixture of differently sized sub-patterns, e.g. spots having only a few different diameters (multi-toning H04N 1/40087)]

[with details for producing a halftone screen at an oblique angle (H04N 1/4056 takes precedence)]

Control or modification of tonal gradation or of extreme levels, e.g. background level

[dependent on the contents of the original]

[using histograms]

[dependent on references outside the picture]

[using gradational references, e.g. grey-scale test pattern analysis]

Edge or detail enhancement; Noise or error suppression

[Edge or detail enhancement]

[Correction of errors due to scanning a two-sided document, i.e. show-through correction]

[Removing errors due external factors, e.g. dust, scratches]

Bandwidth or redundancy reduction (by scanning H04N 1/17); methods or arrangements for coding, decoding, compressing or decompressing digital video signals H04N 19/00)

for halftone screened pictures

for the transmission (or storage) or reproduction of two-tone pictures, e.g. black and white pictures

[involving the recognition of specific patterns, e.g. by symbol matching]

Systems or arrangements allowing the picture to be reproduced without loss or modification of picture-information

in which a baseband signal showing more than two values or a continuously varying baseband signal is transmitted or recorded

in which the picture-elements are subdivided or grouped into fixed one-dimensional or two-dimensional blocks

using predictive or differential encoding

Progressive encoding, i.e. by decomposition into high and low resolution components

[involving the encoding of tone transitions with respect to tone transitions in a reference line]

[encoding document change data, e.g. form drop out data]

in which encoding of the length of a succession of picture-elements of the same value along a scanning line is the only encoding step

Systems for two-way working, e.g. conference systems

Secrecy systems

[Restricting access, e.g. according to user identity (mechanisms actuated by cards, PIN or the like in apparatus for dispensing G07F 7/08)]

[producing a clustered dots or a size modulated halftone pattern]

[the pattern varying in one dimension only, e.g. dash length, pulse width modulation [PWM]]

[the pattern being a mixture of differently sized sub-patterns, e.g. spots having only a few different diameters (multi-toning H04N 1/40087)]

[with details for producing a halftone screen at an oblique angle (H04N 1/4056 takes precedence)]

Control or modification of tonal gradation or of extreme levels, e.g. background level

[dependent on the contents of the original]

[using histograms]

[dependent on references outside the picture]

[using gradational references, e.g. grey-scale test pattern analysis]

Edge or detail enhancement; Noise or error suppression

[Edge or detail enhancement]

[Correction of errors due to scanning a two-sided document, i.e. show-through correction]

[Removing errors due external factors, e.g. dust, scratches]
H04N

1/6011 . . . . . {with simulation on a subsidiary picture reproducer (H04N 1/622 takes precedence; matching two or more picture reproducers H04N 1/6052)}
1/6013 . . . . . {by simulating several colour corrected versions of the same image simultaneously on the same picture reproducer}
1/6016 . . . . . {Conversion to subtractive colour signals}
1/6019 . . . . . {using look-up tables (H04N 1/6025 takes precedence)}
1/6022 . . . . . {Generating a fourth subtractive colour signal, e.g. under colour removal, black masking}
1/6025 . . . . . {using look-up tables}
1/6027 . . . . . {Correction or control of colour gradation or colour contrast (H04N 1/6058 takes precedence)}
1/603 . . . . . {controlled by characteristics of the picture signal generator or the picture reproducer}
1/6033 . . . . . {using test pattern analysis (H04N 1/6055 takes precedence)}
1/6036 . . . . . {involving periodic tests or tests during use of the machine}
1/6038 . . . . . {for controlling interaction among colorants}
1/6041 . . . . . {for controlling uniformity of color across image area}
1/6044 . . . . . {involving a sensor integrated in the machine or otherwise specifically adapted to read the test pattern}
1/6047 . . . . . {wherein the test pattern is part of an arbitrary user image}
1/605 . . . . . . {for controlling ink amount, strike-through, bleeding soakage or the like}
1/6052 . . . . . {Matching two or more picture signal generators or two or more picture reproducers}
1/6055 . . . . . {using test pattern analysis}
1/6058 . . . . . {Reduction of colour to a range of reproducible colours, e.g. to ink-reproducible colour gamut}
1/6061 . . . . . {involving the consideration or construction of a gamut surface}
1/6063 . . . . . {dependent on the contents of the image to be reproduced}
1/6066 . . . . . {dependent on the gamut of the image to be reproduced}
1/6069 . . . . . {spatially varying within the image}
1/6072 . . . . . {adapting to different types of images, e.g. characters, graphs, black and white image portions}
1/6075 . . . . . {Corrections to the hue}
1/6077 . . . . . {Colour balance, e.g. colour cast correction}
1/608 . . . . . . {within the L, C1, C2 colour signals}
1/6083 . . . . . {controlled by factors external to the apparatus}
1/6086 . . . . . {by scene illuminant, i.e. conditions at the time of picture capture, e.g. flash, optical filter used, evening, cloud, daylight, artificial lighting, white point measurement, colour temperature}
1/6088 . . . . . {by viewing conditions, i.e. conditions at picture output}
1/6091 . . . . . {by environmental factors, e.g. temperature or humidity (H04N 1/6086, H04N 1/6088 take precedence)}
1/6094 . . . . . {depending on characteristics of the input medium, e.g. film type, newspaper}
1/6097 . . . . . {depending on the characteristics of the output medium, e.g. glossy paper, matt paper, transparency or fabrics}
1/62 . . . . . Retouching, i.e. modification of isolated colours only or in isolated picture areas only
1/622 . . . . . {with simulation on a subsidiary picture reproducer}
1/624 . . . . . (Red-eye correction (control of camera based on recognised facial parts H04N 5/23219))
1/626 . . . . . {Detection of non-electronic marks, e.g. fluorescent markers}
1/628 . . . . . {Memory colours, e.g. skin or sky}
1/64 . . . . . Systems for the transmission or the storage of the colour picture signal; Details therefor, e.g. coding or decoding means therefor ((H04N 19/00 takes precedence)}
1/642 . . . . . {Adapting to different types of images, e.g. characters, graphs, black and white image portions}
1/644 . . . . . [using a reduced set of representative colours, e.g. each representing a particular range in a colour space]
1/646 . . . . . {Transmitting or storing colour television type signals, e.g. PAL, Lab; Their conversion into additive or subtractive colour signals or vice versa therefor (H04N 1/642. H04N 1/644 take precedence)}
1/648 . . . . . {Transmitting or storing the primary (additive or subtractive) colour signals; Compression thereof (H04N 1/642. H04N 1/646 take precedence)}

3/00 Scanning details of television systems; Combination thereof with generation of supply voltages
3/02 . . . . . by optical-mechanical means only (H04N 3/36 takes precedence)
3/04 . . . . . having a moving aperture [also apertures covered by lenses]
3/06 . . . . . having a moving lens or other refractor
3/08 . . . . . having a moving reflector
3/09 . . . . . for electromagnetic radiation in the invisible region, e.g. infra-red
3/10 . . . . . by means not exclusively optical-mechanical (H04N 3/36 takes precedence)
3/12 . . . . . by switched stationary formation of lamps, photocells or light relays
3/122 . . . . . [using cathode rays, e.g. multivision]
3/125 . . . . . [using gas discharges, e.g. plasma]
3/127 . . . . . [using liquid crystals]
3/14 . . . . . by means of electrically scanned solid-state devices (for picture generation H04N 5/335)
3/15 . . . [for picture signal generation]

**WARNING**
This group is no longer used for classification of new documents as from December 1st, 2009. The backlog is continuously reclassified into group H04N 5/325 and subgroups

3/1506 . . . . . . ([with addressing of the image-sensor elements (H04N 3/1575 takes precedence))
3/1512 . . . . . . (for MOS image-sensors, e.g. MOS-CCD (H04N 3/1581 takes precedence))
3/1518 . . . . . . (using charge injection within the image-sensor)
3/1525 . . . . . . (with charge transfer within the image-sensor, e.g. time delay and integration (H04N 3/1575 takes precedence))
3/1531 . . . . . . (using frame-interline transfer)
3/1537 . . . . . . (using interline transfer)
3/1543 . . . . . . (using frame transfer)
3/155 . . . . . . (Control of the image-sensor operation, e.g. image processing within the image-sensor)
3/1556 . . . . . . (for variable integration time)
3/1562 . . . . . . (for selective scanning, e.g. windowing, zooming)
3/1568 . . . . . . (for disturbance correction or prevention within the image-sensor, e.g. biasing, blooming, smearing (correction circuits H04N 3/2175))
3/1575 . . . . . . (Picture signal readout register, e.g. shift registers, interline shift registers)
3/1581 . . . . . . (using linear image-sensor (time delay and integration H04N 3/1525))
3/1587 . . . . . . (the image being sequentially picked-up by one device at different imaging positions, e.g. by shifting the image-sensor)
3/1593 . . . . . . (the image being simultaneously picked-up by more than one device, e.g. the scene being partitioned into subimages)
3/16 . . . by deflecting electron beam in cathode-ray tube (e.g. scanning corrections)
3/18 . . . Generation of supply voltages, in combination with electron beam deflecting
3/185 . . . Maintaining dc voltage constant
3/1853 . . . (using regulation in parallel)
3/1856 . . . (using regulation in series)
3/19 . . . Arrangements or assemblies in supply circuits for the purpose of withstanding high voltages
3/20 . . . Prevention of damage to cathode-ray tubes in the event of failure of scanning
3/22 . . . Circuits for controlling dimensions, shape or centering of picture on screen
3/223 . . . Controlling dimensions (by maintaining the cathode-ray tube high voltage constant H04N 3/185)
3/227 . . . Centering
3/23 . . . Distortion correction, e.g. for pincushion distortion correction, S-correction
3/233 . . . . using active elements
3/2335 . . . . {with calculating means}
3/237 . . . using passive elements, e.g. diodes
3/24 . . . Blanking circuits
3/26 . . . . Modifications of scanning arrangements to improve focusing
3/27 . . . . Circuits special to multi-standard receivers
3/28 . . . . producing multiple scanning, i.e. using more than one spot at the same time
3/30 . . . . otherwise than with constant velocity or otherwise than in pattern formed by unidirectional, straight, substantially horizontal or vertical lines
3/32 . . . . Velocity varied in dependence upon picture information
3/34 . . . . Elemental scanning area oscillated rapidly in direction transverse to main scanning direction
3/36 . . . Scanning of motion picture films, e.g. for telecine
3/38 . . . with continuously moving film
3/40 . . . with intermittently moving film
3/405 . . . (with film moving only during the field blanking interval)

5/00 Details of television systems (scanning details or combination thereof with generation of supply voltages H04N 3/00)
5/04 Synchronising (for television systems using pulse code modulation H04N 7/56)
5/05 Synchronising circuits with arrangements for extending range of synchronisation, e.g. by using switching between several time constants
5/06 Generation of synchronising signals
5/067 . . . . Arrangements or circuits at the transmitter end
5/0675 . . . . (for mixing the synchronising signals with the picture signal or mutually (electrical gates H03K 17/00))
5/073 . . . . for mutually locking plural sources of synchronising signals, e.g. studios or relay stations
5/0733 . . . . (for distributing synchronisation pulses to different TV cameras)
5/0736 . . . . . . (using digital storage buffer techniques)
5/08 Separation of synchronising signals from picture signals
5/10 . . . Separation of line synchronising signal from frame synchronising signal (or vice versa)
5/12 . . . Devices in which the synchronising signals are only operative if a phase difference occurs between synchronising and synchronised scanning devices, e.g. flywheel synchronising
5/123 . . . . [whereby the synchronisation signal directly commands a frequency generator]
5/126 . . . . [whereby the synchronisation signal indirectly commands a frequency generator]
5/14 . . . Picture signal circuitry for video frequency region (H04N 5/222 takes precedence)
5/141 . . . . [Beam current control means]
5/142 . . . . [Edging; Contouring]
5/144 . . . . [Movement detection (for video coding H04N 19/503; analysis of motion in general G06T 7/20)]
5/145 . . . . [Movement estimation (for video coding H04N 19/51)]
5/147 . . . . [Scene change detection]
5/148 . . . . [Video amplifiers (amplifiers in general H03F)]
5/16 . . . . Circuitry for reinsertion of dc and slowly varying components of signal; Circuitry for preservation of black or white level
5/165 . . . . [to maintain the black level constant]
5/18 . . . . . by means of "clamp" circuit operated by switching circuit
5/185 . . . . . . [for the black level]
5/20 . . . Circuitry for controlling amplitude response
5/202 . . . . . . . Gamma control
5/205 . . . . . . . for correcting amplitude versus frequency characteristic
5/208 . . . . . . . for compensating for attenuation of high frequency components, e.g. crispening, aperture distortion correction
5/21 . . . . . . . Circuitry for suppressing or minimising disturbance, e.g. moiré or halo
5/211 . . . . . . . [Ghost signal cancellation (H04N 5/217 takes precedence)]
5/213 . . . . . . . Circuitry for suppressing or minimising impulsive noise (H04N 5/217 takes precedence)
5/217 . . . . in picture signal generation [in cameras comprising an electronic image sensor, e.g. in digital cameras, TV cameras, video cameras, camcorders, webcams, or to be embedded in other devices, e.g. in mobile phones, computers or vehicles]
5/2171 . . . . [Dust removal, e.g. from surfaces of image sensor or processing of the image signal output by the electronic image sensor]
5/2173 . . . . . . . [in solid-state picture signal generation]
5/2175 . . . . . . . . [Suppression of excedentary charges, e.g. blooming, smearing (within the image sensor H04N 3/1556, H04N 3/1568)]
5/2176 . . . . . . . . . [Correction or equalization of amplitude response, e.g. dark current, blemishes, non-uniformity]
5/2178 . . . . . . . . . [by initial calibration, e.g. with memory means]
5/222 . . . Studio circuitry; Studio devices; Studio equipment [.; Cameras comprising an electronic image sensor, e.g. digital cameras, video cameras, TV cameras, video cameras, camcorders, webcams, camera modules for embedding in other devices, e.g. mobile phones, computers or vehicles]
5/2222 . . . . [Prompting]
5/2224 . . . . . [related to virtual studio applications]
5/2226 . . . . . [Determination of depth image, e.g. for foreground/background separation (determining depth by image analysis in general G06T 7/50; segmentation by image analysis in general G06T 7/10)]
5/2228 . . . . . . [Video assist systems used in motion picture production, e.g. video cameras connected to viewfinders of motion picture cameras or related video signal processing]
5/225 . . . Television cameras [.; Cameras comprising an electronic image sensor, e.g. digital cameras, video cameras, camcorders, webcams, camera modules specially adapted for being embedded in other devices, e.g. mobile phones, computers or vehicles (constructional details of electronic still picture cameras or digital still picture cameras not peculiar to the presence or use of the electronic image sensor G03B)]
5/2251 . . . . [Constructional details]

WARNING

Group H04N 5/2251 is impacted by reclassification into groups H04N 5/22521, H04N 5/22525, and H04N 5/225251.

All groups listed in this Warning should be considered in order to perform a complete search.

5/2252 . . . . . . [Housings]
5/22521 . . . . . . . [Elements optimizing image sensor operations, e.g. EMF protection, heat transfer, moisture or dust]

WARNING

Group H04N 5/22521 is incomplete pending reclassification of documents from group H04N 5/2251.

Groups H04N 5/2251 and H04N 5/22521 should be considered in order to perform a complete search.

5/22525 . . . . . . [Electronic viewfinders]

WARNING

Groups H04N 5/22525 and H04N 5/225251 are incomplete pending reclassification of documents from group H04N 5/2251.

Groups H04N 5/2251, H04N 5/22525 and H04N 5/225251 should be considered in order to perform a complete search.

5/225251 . . . . . . [rotatable or detachable]
5/2253 . . . . . . . [Mounting of pick-up device, electronic image sensor, deviation or focusing coils]
5/2254 . . . . . . . [Mounting of optical parts, e.g. lenses, shutters, filters or optical parts peculiar to the presence or use of an electronic image sensor]

WARNING

Group H04N 5/2254 is impacted by reclassification into group H04N 5/22541.

Groups H04N 5/2254 and H04N 5/22541 should be considered in order to perform a complete search.

5/22541 . . . . . . [Optical arrangements for light-field or plenoptic cameras]

WARNING

Group H04N 5/22541 is incomplete pending reclassification of documents from group H04N 5/2254.

Groups H04N 5/2254 and H04N 5/22541 should be considered in order to perform a complete search.

2005/2255 . . . . [for picking-up images in sites, inaccessible due to their dimensions or hazardous conditions, e.g. endoscope, borescope]
5/2256 . . . . [provided with illuminating means]
5/2257 . . . [Mechanical and electrical details of cameras or camera modules for embedding in other devices (mounting structure in mobile phone see H04M 1/0264; optical details G03B)]

5/2258 . . . [Cameras using two or more image sensors, e.g. a CMOS sensor for video and a CCD for still image (cameras having one image sensor for each colour H04N 9/045, H04N 9/09)]

5/2259 . . . [Means for changing the camera field of view without moving the camera body, e.g. nutating or panning optics or image-sensors (picture signal generation using shifting image-sensors H04N 5/349; varying magnification, e.g. angle of view for cameras using only optical means G03B)]

5/228 . . . Circuit details for pick-up tubes

5/2283 . . . {Beam current control}

5/2286 . . . . . . . . [during retrace periods, e.g. circuits for ACT tubes, leg suppression]

5/232 . . . Devices for controlling television cameras, e.g. remote control {; Control of cameras comprising an electronic image sensor (H04N 5/235 takes precedence {; Mountings, adjusting means, or light-tight connections, for optical elements G02B 7/00})}

WARNING

Group H04N 5/232 is impacted by reclassification into groups H04N 5/23218, H04N 5/23227, and H04N 5/23299.

All groups listed in this Warning should be considered in order to perform a complete search.

5/23209 . . . . . . [for interchangeable parts of camera involving control signals based on electric image signals provided by an electronic image sensor (interchangeably mounting lenses on cameras not involving a control signal based on electric image signals provided by a main electronic image sensor G03B 17/14)]

5/23212 . . . . . [Focusing based on image signals provided by the electronic image sensor]

WARNING


All groups listed in this Warning should be considered in order to perform a complete search.

5/232121 . . . . . . [and on active ranging signals, e.g. using light or sound signals emitted toward objects]

WARNING

Group H04N 5/232121 is incomplete pending reclassification of documents from group H04N 5/23212.

Groups H04N 5/23212 and H04N 5/232121 should be considered in order to perform a complete search.

5/232122 . . . . . . [based on the difference in phase of signals]

WARNING

Group H04N 5/232122 is incomplete pending reclassification of documents from group H04N 5/23212.

Groups H04N 5/23212 and H04N 5/232122 should be considered in order to perform a complete search.

5/232123 . . . . . . [based on contrast or high frequency components of image signals, e.g. hill climbing method]

WARNING

Group H04N 5/232123 is incomplete pending reclassification of documents from group H04N 5/23212.

Groups H04N 5/23212 and H04N 5/232123 should be considered in order to perform a complete search.

5/23206 . . . [Transmission of camera control signals via a network, e.g. Internet]

WARNING

Group H04N 5/23206 is impacted by reclassification into group H04N 5/232061.

Groups H04N 5/23206 and H04N 5/232061 should be considered in order to perform a complete search.

5/232061 . . . . . . [using Master/Slave camera arrangements for affecting the control of camera image capture, e.g. placing the camera in a desirable condition to capture a desired image]

WARNING

Group H04N 5/232061 is incomplete pending reclassification of documents from group H04N 5/23206.

Groups H04N 5/23206 and H04N 5/232061 should be considered in order to perform a complete search.
5/232125 . . . . { adjusting depth of field during image capture, e.g. maximizing or setting range based on scene characteristics }

**WARNING**
Group H04N 5/232125 is incomplete pending reclassification of documents from group H04N 5/23212.
Groups H04N 5/23212 and H04N 5/232125 should be considered in order to perform a complete search.

5/232127 . . . . { setting of focusing region }

**WARNING**
Group H04N 5/232127 is incomplete pending reclassification of documents from group H04N 5/23212.
Groups H04N 5/23212 and H04N 5/232127 should be considered in order to perform a complete search.

5/232133 . . . . { Bracking relating to the capture of varying focusing conditions }

**WARNING**
Group H04N 5/232133 is incomplete pending reclassification of documents from group H04N 5/23212.
Groups H04N 5/23212 and H04N 5/232133 should be considered in order to perform a complete search.

5/23216 . . . . { Control of parameters, e.g. field or angle of view of camera via graphical user interface, e.g. touchscreen }

5/23218 . . . . { Control of camera operation based on recognized objects }

**WARNING**
Group H04N 5/23218 is incomplete pending reclassification of documents from group H04N 5/232.
Groups H04N 5/232 and H04N 5/23218 should be considered in order to perform a complete search.

5/23219 . . . . { where the recognized objects include parts of the human body, e.g. human faces, facial parts or facial expressions }

5/23222 . . . . { Computer-aided capture of images, e.g. transfer from script file into camera, check of taken image quality, advice or proposal for image composition or decision on when to take image }

5/23225 . . . . { Input of new or changed control program into camera control means }

5/23227 . . . . { involving internal camera communication with the image sensor, e.g. synchronizing or multiplexing SSIS control signals }

**WARNING**
Group H04N 5/23227 is incomplete pending reclassification of documents from group H04N 5/232.
Groups H04N 5/232 and H04N 5/23227 should be considered in order to perform a complete search.

5/23229 . . . . { comprising further processing of the captured image without influencing the image pickup process (image processing in general G06T) }

5/23232 . . . . { by using more than one image in order to influence resolution, frame rate or aspect ratio (providing high dynamic range image H04N 5/2355) }

5/23235 . . . . { by using a single image in order to influence the resolution }

5/23238 . . . . { Control of image capture or reproduction to achieve a very large field of view, e.g. panorama (panoramic or widescreen photography G03B 27/00) }

5/23241 . . . . { Control of camera operation in relation to power supply }

**WARNING**
Group H04N 5/23241 is impacted by reclassification into group H04N 5/232411.
Groups H04N 5/23241 and H04N 5/232411 should be considered in order to perform a complete search.

5/232411 . . . . { where power supply is reduced or conserved by affecting camera operations, e.g. sleep mode, hibernation mode, power off or turning off selective parts of the camera }

**WARNING**
Group H04N 5/232411 is incomplete pending reclassification of documents from group H04N 5/23241.
Groups H04N 5/23241 and H04N 5/232411 should be considered in order to perform a complete search.

5/23245 . . . . { Operation mode switching of cameras, e.g. between still/video, sport/normal or high/low resolution mode }

5/23248 . . . . { for stable pick-up of the scene in spite of camera body vibration (image-sensor selective scanning per se H04N 3/1562) }

5/23251 . . . . { Motion detection }

5/23254 . . . . { based on the image signal (analysis of motion by image processing in general G06T 7/20) }

5/23258 . . . . { based on additional sensors (cameras when not peculiar to the use or presence of the EIS G03B 2217/005) }

5/23261 . . . . { by distinguishing pan/tilt from motion }

5/23264 . . . . { Vibration or motion blur correction }
5/23267 . . . . . . . . . . . . . . . . . . { performed by a processor, e.g. controlling the readout of an image memory }

5/2327 . . . . . . . . . . . . . . . . . . { performed by controlling the image sensor readout, e.g. by controlling the integration time (controlling the image sensor readout in general H04N 5/345, H04N 5/353) }

5/23274 . . . . . . . . . . . . . . . . . { by controlling the scanning position, e.g. windowing (windowed readout of image sensor in general H04N 5/3454) }

5/23277 . . . . . . . . . . . . . . . . . . { by combination of a plurality of images sequentially taken }

5/2328 . . . . . . . . . . . . . . . . . . { performed by mechanical compensation (stabilization for imaging systems using optical elements in general G02B 27/646; cameras when not peculiar to the use or presence of the EIS G03B 22/05(0007)) }

5/23283 . . . . . . . . . . . . . . . . . { with a variable apex prism }

5/23287 . . . . . . . . . . . . . . . . . . { by shifting the lens/sensor position }

5/2329 . . . . . . . . . . . . . . . . . . { Motion occurring during a rolling shutter mode }

5/23293 . . . . . . . . . . . . . . . . . [Electronic viewfinders]

**WARNING**

Group H04N 5/23293 is impacted by reclassification into groups H04N 5/232933, H04N 5/232935, H04N 5/232939, H04N 5/232941, and H04N 5/232945. All groups listed in this Warning should be considered in order to perform a complete search.

5/232933 . . . . . . . . . . . . . . . . . . { Graphical User Interface [GUI] specifically adapted for controlling image capture or setting capture parameters, e.g. using a touchscreen }

**WARNING**

Groups H04N 5/23293 and H04N 5/232935 are incomplete pending reclassification of documents from group H04N 5/23293. Groups H04N 5/23293, H04N 5/232933 and H04N 5/232935 should be considered in order to perform a complete search.

5/232941 . . . . . . . . . . . . . . . . . . { Warning indications }

5/232945 . . . . . . . . . . . . . . . . . . { Region indicators or field of view }

5/23296 . . . . . . . . . . . . . . . . . . { Control of means for changing the field of view, e.g. optical zoom objective, electronic zooming or combined use of optical and electronic zooming (optical details of zoom lenses G02B 15/14; optical zooming only for cameras G03B 5/00) }

5/23299 . . . . . . . . . . . . . . . . . . { Controlling the position of the camera for changing the field of view, e.g. panning, tilting or tracking of objects (TV type tracking systems G01S 3/786; tracking movement of a target in burglar, theft or intruder alarms, using TV cameras G08B 13/19608) }

**WARNING**

Group H04N 5/23299 is incomplete pending reclassification of documents from group H04N 5/232. Groups H04N 5/232 and H04N 5/23299 should be considered in order to perform a complete search.

5/235 . . . . . . . . . . . . . . . . . . { Circuitry [or methods] for compensating for variation in the brightness of the object [, e.g. based on electric image signals provided by an electronic image sensor] }

5/2351 . . . . . . . . . . . . . . . . . . { Circuitry for evaluating the brightness variations of the object (within the image sensor H04N 5/351; photometry in general G01J 1/00) }

5/2352 . . . . . . . . . . . . . . . . . . { Combination of two or more compensation controls }

5/2353 . . . . . . . . . . . . . . . . . . { by influencing the exposure time, e.g. shutter (H04N 5/2352 takes precedence; within the image sensor H04N 5/353) }

5/2354 . . . . . . . . . . . . . . . . . . { by influencing the scene brightness using illuminating means (H04N 5/2352 takes precedence) }

5/2355 . . . . . . . . . . . . . . . . . . { by increasing the dynamic range of the final image compared to the dynamic range of the electronic image sensor, e.g. by adding correct exposed portions of short and long exposed images (image enhancement in general using more than one image G06T 5/50) }

5/2356 . . . . . . . . . . . . . . . . . . { Bracketing, i.e. taking a series of images with varying exposure conditions }
NOTE

In this group, the first place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place.

5/3355 . . . [with digital output of the sensor cell, e.g. dynamic RAM image sensors]

5/341 . . . Extracting pixel data from an image sensor by controlling scanning circuits, e.g. by modifying the number of pixels having been sampled or to be sampled

5/345 . . . by partially reading an SSIS array, i.e. by outputting a number of pixels less than the number of pixels present on the image sensor

5/3452 . . . [by reading contiguous pixels in one direction within a read portion of the array, e.g. without loss of resolution within the read portion, or every other field is skipped]

5/3454 . . . [by reading contiguous pixels in two directions within a read portion of the array, e.g. without loss of resolution in two directions, windowing or electronic zooming]

5/3456 . . . [by skipping some contiguous pixels within the read portion of the array, e.g. with loss of resolution, e.g. skipping or discarding pixels]

5/347 . . . by combining or binning pixels in SSIS

5/349 . . . for increasing resolution by shifting the sensor relative to the scene, e.g. microscanning

5/351 . . . Control of the SSIS depending on the scene, e.g. brightness or motion in the scene

WARNING

Not complete, for documents published prior to June 1996 see also H04N 5/32

5/325 . . . Image enhancement, e.g. by subtraction techniques using polyenergetic X-rays

WARNING

Not complete, for documents published prior to June 1996 see also H04N 5/32

5/33 . . . Transforming infra-red radiation

5/332 . . . [Multipoint imaging comprising at least a part of the infrared region]

5/335 . . . using solid-state image sensors [SSIS] (H04N 5/32, H04N 5/33 take precedence)
Control of the integration time \{(circuitry for compensating for variation in the brightness of the object by influencing the exposure time H04N 5/2353)\}

(by controlling rolling shutters)

(with different integration times within the sensor)

(depending on the spectral component)

Control of the dynamic range

(involving a non-linear response)

{being of the logarithmic type}

{with a response composed of multiple slopes}

(involving multiple exposures (combination of exposures for increasing the dynamic range H04N 5/2353))

{being simultaneously taken}

(with different integration times)

{with pixels having different sensibilities within the sensor, e.g. fast/slow pixels, pixels having different sizes}

{sequentially taken, e.g. using the combination of odd and even image fields}

{with different integration times, e.g. short and long exposures}

{by controlling the amount of charge storable in the pixel, e.g. modification of the charge conversion ratio of the floating node capacitance}

Noise processing, e.g. detecting, correcting, reducing or removing noise

{the noise originating only from the lens unit, e.g. flare, shading, vignetting or “cos4” (suppressing or minimizing noise in picture signal generation H04N 5/217; correction of colour aberration from a lens H04N 9/04517)}

\*[WARNING]

Group H04N 5/3572 is impacted by reclassification into groups H04N 5/35721, H04N 9/04517, and H04N 9/04519.

All groups listed in this Warning should be considered in order to perform a complete search.

(involving a transfer function modeling the optical system, e.g. Optical Transfer Function [OTF], Phase Transfer Function [PhTF] or Modulation Transfer Function [MTF])

\*[WARNING]

Group H04N 5/35721 is incomplete pending reclassification of documents from group H04N 5/3572.

Groups H04N 5/3572 and H04N 5/35721 should be considered in order to perform a complete search.

(involving a correlated sampling function, e.g. correlated double or triple sampling)
5/3696 . . . . [SSIS architecture characterized by non-identical, non-equidistant or non-planar pixel layout, sensor embedding other types of pixels not meant for producing an image signal, e.g. fovea sensors or display pixels (Imager structures H01L 27/146)]

**WARNING**

Group H04N 5/3696 is impacted by reclassification into groups H01L 27/146


All groups listed in this Warning should be considered in order to perform a complete search.

5/36961 . . . . {the other type of pixels are pixels specially adapted for focusing, e.g. phase difference pixel sets}

**WARNING**

Group H04N 5/36961 is incomplete pending reclassification of documents from group H04N 5/3696.

Groups H04N 5/3696 and H04N 5/36961 should be considered in order to perform a complete search.

5/36963 . . . . [Details of pixels used only for dark current, e.g. dummy pixels or optical black pixels]

**WARNING**

Group H04N 5/36963 is incomplete pending reclassification of documents from group H04N 5/3696.

Groups H04N 5/3696 and H04N 5/36963 should be considered in order to perform a complete search.

5/36965 . . . . {the other type of pixels are pixels for depth measurement, e.g. RGBZ where Z is the depth pixel or embedded time-of-flight pixels (depth pixels used only for focusing H04N 5/36961)}

**WARNING**

Group H04N 5/36965 is incomplete pending reclassification of documents from group H04N 5/3696.

Groups H04N 5/3696 and H04N 5/36965 should be considered in order to perform a complete search.

5/3698 . . . . [Circuitry for controlling the generation or the management of the power supply]

5/372 . . . . Charge-coupled device [CCD] sensors; Time delay and integration [TDI] registers or shift registers specially adapted for SSIS (charge coupled imager structure H01L 27/148)

5/37206 . . . . [TDI registers or shift registers specially adapted for SSIS]

5/37213 . . . . [Details of transfer/readout registers; Split readout registers and multiple readout registers]

5/3722 . . . . using frame interline transfer [FIT]

5/3725 . . . . using frame transfer [FT]

5/3728 . . . . using interline transfer [IT]

5/374 . . . . Addressed sensors, e.g. MOS or CMOS sensors

5/3741 . . . . [comprising control or output lines sharing a plurality of functions, e.g. output or driving or reset or power lines]

5/3742 . . . . [Details of transfer or readout registers; split readout registers and multiple readout registers]

5/3743 . . . . {using TDI registers}

5/3745 . . . . having additional components embedded within a pixel or connected to a group of pixels within a sensor matrix, e.g. memories, A/D converters, pixel amplifiers, shared circuits or shared components

5/37452 . . . . {comprising additional storage means (by controlling the amount of charges storable in the pixel H04N 5/3559)]

5/37455 . . . . {comprising A/D, V/T, V/F, I/T or I/F converters}

5/37457 . . . . {comprising amplifiers shared between a plurality of pixels, e.g. at least one part of the amplifier has to be on the sensor array itself}

5/376 . . . . Addressing circuits

5/3765 . . . . [Timing or clock signal generating circuits]

5/378 . . . . Readout circuits, e.g. correlated double sampling [CDS] circuits, output amplifiers or A/D converters

5/379 . . . . [Details of the architecture or circuitry being divided to different or multiple substrates, chips or circuit boards, e.g. stacked image sensors (line sensors H04N 5/3694)]

**WARNING**

Group H04N 5/379 is incomplete pending reclassification of documents from group H04N 5/369.

Groups H04N 5/369 and H04N 5/379 should be considered in order to perform a complete search.

5/38 . . . . Transmitter circuitry {for the transmission of television signals according to analogue transmission standards} (H04N 5/14 takes precedence)

5/40 . . . . Modulation circuits

5/42 . . . . for transmitting at will black-and-white or colour signals

5/44 . . . . Receiver circuitry {for the reception of television signals according to analogue transmission standards} (H04N 5/14 takes precedence)

5/4446 . . . . {IF amplifier circuits specially adapted for B&W TV (RF amplifiers in general H03F 3/180)}

5/4448 . . . . {for frame-grabbing}

5/445 . . . . for displaying additional information (H04N 5/50 takes precedence)

5/44504 . . . . [Circuit details of the additional information generator, e.g. details of the character or graphics signal generator, overlay mixing circuits]
WARNING

H04N 5/74 and subgroups are no longer used for the classification of new documents as from October 1, 2008. The backlog is being continuously reclassified to subgroups of H04N 9/31.
Television signal processing therefor takes precedence (H04N 5/91)

Using variable electrical capacitive recording (H04N 5/91 takes precedence)

Using static stores, e.g. storage tubes or semiconductor memories (H04N 5/91 takes precedence)

Television signal processing therefor (H04N 5/91)

The suppression of noise (H04N 5/932 takes precedence)

Scrambling (for copy protection)

By adding a copy protection signal to the video signal

The copy protection signal being a pulse signal inserted in blanking intervals of the video signal, e.g. pseudo-AGC pulses, pseudo-sync pulses

The copy protection signal being a copy protection control signal, e.g. a record inhibit signal

The copy protection signal being a copy management signal, e.g. a copy generation management signal (CGMS)

The copy protection signal being a watermark

The copy protection signal being an authentication signal

By superimposing the spectrally spread copy protection signal onto the video signal

By modifying the video signal

The video signal being scrambled

The video color burst signal being modified

The video line number being modulated

The video frame number being modulated

Using means for preventing making copies of projected video images

For field- or frame-skip recording or reproducing

With sound multiplexing

For bandwidth reduction

By dividing samples or signal segments, e.g. television lines, among a plurality of recording channels

Transformation of the television signal for recording, e.g. modulation, frequency changing; Inverse transformation for playback

Involving the multiplexing of an additional signal and the video signal

The additional signal being a sound signal (H04N 5/9155, H04N 5/92 take precedence)

Using time division multiplex

Using frequency division multiplex

The additional signal being at least another television signal

The additional signal being a character code signal

For teletext

Involving the use of subcodes

By recording or reproducing the baseband signal

Using preemphasis of the signal before modulation and deemphasis of the signal after demodulation (volume compression or expansion in amplifiers in general H03G 7/00)

By pulse code modulation (H04N 5/919 takes precedence)

Involving data reduction

Using predictive coding

Using transform coding

With processing of the sound signal

Using time division multiplex of the PCM audio and PCM video signals

With insertion of the PCM audio signals in the vertical blanking interval of the PCM video signal

The sound signal being pulse code modulated and recorded in time division multiplex with the modulated video signal

Regeneration of the television signal or of selected parts thereof

Including the mixing of the reproduced video signal with a non-recorded signal, e.g. a text signal

For restoring the level of the reproduced signal

The level control being frequency dependent (H04N 5/923 takes precedence)

Regeneration of analogue synchronisation signals

Regeneration of digital synchronisation signals

By assembling picture element blocks in an intermediate store

Signal drop-out compensation

For signals recorded by pulse code modulation

Time-base error compensation (H04N 5/932 takes precedence)

By using an analogue memory, e.g. a CCD shift register, the delay of which is controlled by a voltage controlled oscillator

By using a digital memory with independent write-in and read-out clock generators

Television systems (details H04N 3/00, H04N 5/00: methods or arrangements, for coding, decoding, compressing or decompressing digital video signals H04N 19/00; selective content distribution H04N 21/00)

Special television systems not provided for by H04N 7/007 - H04N 7/18 (still pictures via a television channel H04N 1/00098)

Using at least one opto-electrical conversion device
High-definition television systems

7/01 . Conversion of standards (e.g. involving analogue television standards or digital television standards processed at pixel level)

7/0102 . (involving the resampling of the incoming video signal)

7/0105 . (using a storage device with different write and read speed)

7/0107 . (using beam gun storage)

7/011 . (using magnetic recording)

7/0112 . (one of the standards corresponding to a cinematograph film standard)

7/0115 . (with details on the detection of a particular field or frame pattern in the incoming video signal, e.g. 3:2 pull-down pattern)

7/0117 . (involving conversion of the spatial resolution of the incoming video signal (for graphics images G09G 2340/0407))

7/012 . (Conversion between an interlaced and a progressive signal (for graphics images G09G 2310/0229))

7/0122 . (the input and the output signals having different aspect ratios)

7/0125 . (one of the standards being a high definition standard)

7/0127 . (by changing the field or frame frequency of the incoming video signal, e.g. frame rate converter)

7/013 . (the incoming video signal comprising different parts having originally different frame rate, e.g. video and graphics)

7/0132 . (the field or frame frequency of the incoming video signal being multiplied by a positive integer, e.g. for flicker reduction)

7/0135 . (involving interpolation processes (interpolation-based image scaling G06T 3/4007; interpolation for video coding H04N 19/587, H04N 19/59))

7/0137 . (dependent on presence/absence of motion, e.g. of motion zones (H04N 7/014 takes precedence; movement detection in television signals H04N 5/144))

7/014 . (involving the use of motion vectors (motion estimation and compensation in video coding H04N 19/51))

7/0142 . (the interpolation being edge adaptive (edge detection in television signals H04N 5/142; edge-driven scaling G06T 3/403))

7/0145 . (the interpolation being class adaptive, i.e. it uses the information of class which is determined for a pixel based upon certain characteristics of the neighbouring pixels)

7/0147 . (the interpolation using an indication of film mode or an indication of a specific pattern, e.g. 3:2 pull-down pattern)

7/015 . High-definition television systems

7/0152 . (using spatial or temporal subsampling)

7/0155 . (using pixel blocks)

7/0157 . (with motion estimation, e.g. involving the use of motion vectors)

7/025 . Systems for the transmission of digital non-picture data, e.g. of text during the active part of a television frame (transmission of digital non-picture data during the vertical blanking interval only H04N 7/088)

7/0255 . (Display systems therefor)

7/03 . Subscription systems therefor

7/035 . Circuits for the digital non-picture data signal, e.g. for slicing of the data signal, for regeneration of the data-clock signal, for error detection or correction of the data signal

7/0352 . (for regeneration of the clock signal)

7/0355 . (for discrimination of the binary level of the digital data, e.g. amplitude slicers)

7/0357 . (for error detection or correction)

7/04 . Systems for the transmission of one television signal, i.e. both picture and sound, by a single carrier (H04N 7/084, H04N 7/087 take precedence)

7/045 . the carrier being frequency modulated

7/06 . Systems for the simultaneous transmission of one television signal, i.e. both picture and sound, by more than one carrier (H04N 7/084, H04N 7/087 take precedence)

7/063 . (Simultaneous transmission of separate parts of one picture)

7/066 . (the carriers being allocated to more than one television channel)

7/08 . Systems for the simultaneous or sequential transmission of more than one television signal, e.g. additional information signals, the signals occupying wholly or partially the same frequency band (e.g. by time division (H04N 7/007 takes precedence))

7/0803 . (using frequency interleaving, e.g. with precision offset)

7/0806 . (the signals being two or more video signals (H04N 7/083, H04N 7/081 take precedence))

7/081 . the additional information signals being transmitted by means of a subcarrier

7/083 . with signal insertion during the vertical and the horizontal blanking interval (e.g. MAC data signals)

7/084 . with signal insertion during the horizontal blanking interval (only)

7/085 . the inserted signal being digital

7/0855 . (the signal being time-compressed before its insertion and subsequently decompressed at reception)

7/087 . with signal insertion during the vertical blanking interval (only)

7/088 . the inserted signal being digital

7/0881 . (the signal being time-compressed before its insertion and subsequently decompressed at reception)

7/0882 . (for the transmission of character code signals, e.g. for teletext (circuits for the digital non-picture data signal H04N 7/035))

7/0884 . (for the transmission of additional display-information, e.g. menu for programme or channel selection)

7/0885 . (for the transmission of subtitles)

7/0887 . (for the transmission of programme or channel identifying signals)
7/166 . . . {Passage/non-passage of the television signal, e.g. jamming, band suppression (scrambling and descrambling H04N 7/167)}
7/167 . . . Systems rendering the television signal unintelligible and subsequently intelligible
7/1675 . . . {Providing digital key or authorisation information for generation or regeneration of the scrambling sequence (pseudo-random number generators in general G06F 7/58)}
7/169 . . . Systems operating in the time domain of the television signal
7/1693 . . . {by displacing synchronisation signals relative to active picture signals or vice versa}
7/1696 . . . {by changing or reversing the order of active picture signal portions}
7/171 . . . Systems operating in the amplitude domain of the television signal
7/1713 . . . {by modifying synchronisation signals}
7/1716 . . . {by inverting the polarity of active picture signal portions}
7/173 . . . {with two-way working, e.g. subscriber sending a programme selection signal}
7/17309 . . . [Transmission or handling of upstream communications]
7/17318 . . . {Direct or substantially direct transmission and handling of requests}
7/17327 . . . {with deferred transmission or handling of upstream communications}
7/17336 . . . {Handling of requests in head-ends}
7/17345 . . . {Control of the passage of the selected programme}
7/17354 . . . {in an intermediate station common to a plurality of user terminals}
7/17363 . . . {at or near the user terminal}
2007/17372 . . . {the upstream transmission being initiated or timed by a signal from upstream of the user terminal}
2007/17381 . . . {the upstream transmission being initiated by the user terminal}
2007/1739 . . . {the upstream communication being transmitted via a separate link, e.g. telephone line}
7/18 . Closed circuit television systems, i.e. systems in which the signal is not broadcast (television transmission of measured quantities G01D 5/39; intruder alarm or detection by television surveillance G08B 13/196)
7/181 . . . {for receiving images from a plurality of remote sources}
7/183 . . . {for receiving images from a single remote source}
7/185 . . . {from a mobile camera, e.g. for remote control}
7/186 . . . {Video door telephones}
7/188 . . . {Capturing isolated or intermittent images triggered by the occurrence of a predetermined event, e.g. an object reaching a predetermined position (signal generation from motion picture films H04N 5/253)}
7/20 . . . Adaptations for transmission via a GHz frequency band, e.g. via satellite
7/22 . . . Adaptations for optical transmission
7/24 . Systems for the transmission of television signals using pulse code modulation (H04N 21/00 takes precedence)

2007/243 . . {Bitstream control arrangements}

2007/246 . . {Bitstream transport arrangements}

7/52 . . Systems for transmission of a pulse code modulated video signal with one or more other pulse code modulated signals, e.g. an audio signal or a synchronizing signal (assembling of a multiplex stream by combining a video stream with other content or additional data, remultiplexing of multiplex streams, insertion of stuffing bits into the multiplex stream, assembling of a packetised elementary stream at server side H04N 21/236; disassembling of a multiplex stream, remultiplexing of multiplex streams, extraction or processing of Service Information, disassembling of packetised elementary stream at client side H04N 21/434)

7/54 . . . the signals being synchronous (H04N 21/23602, H04N 21/23614, H04N 21/2365, H04N 21/2368, H04N 21/4341, H04N 21/4342, H04N 21/4347, H04N 21/4348 take precedence)

7/56 . . . Synchronising systems therefore

9/00 Details of colour television systems

9/04 . Picture signal generators

9/045 . . {using solid-state devices (scanning of colour motion picture films H04N 9/11; Imager structures H01L 27/146)}

WARNING

All groups listed in this Warning should be considered in order to perform a complete search.

9/0451 . . . [characterized by colour imaging operations]

WARNING
Group H04N 9/0451 is incomplete pending reclassification of documents from group H04N 9/045.

Groups H04N 9/045 and H04N 9/0451 should be considered in order to perform a complete search.

9/04511 . . . . [by partially reading a SSIS to preserve the colour pattern with or without loss of information]

WARNING
Group H04N 9/04511 is incomplete pending reclassification of documents from group H04N 9/045.

Groups H04N 9/045 and H04N 9/04511 should be considered in order to perform a complete search.

9/04513 . . . . [to modify Gamut]

WARNING
Group H04N 9/04513 is incomplete pending reclassification of documents from group H04N 9/045.

Groups H04N 9/045 and H04N 9/04513 should be considered in order to perform a complete search.

9/04515 . . . . [Demosaicing, e.g. interpolating colour pixel values (Computational demosaicing G06T 3/4015)]

WARNING
Group H04N 9/04515 is incomplete pending reclassification of documents from group H04N 9/045.

Groups H04N 9/045 and H04N 9/04515 should be considered in order to perform a complete search.

9/04517 . . . . [Correcting colour aberration of lenses]

WARNING
Groups H04N 9/04517 and H04N 9/04519 are incomplete pending reclassification of documents from groups H04N 9/3572 and H04N 9/045.

Groups H04N 9/3572, H04N 9/045, H04N 9/04517, and H04N 9/04519 should be considered in order to perform a complete search.

9/04519 . . . . [using transfer functions modeling the optical system, e.g. Optical Transfer Function [OTF], Phase Transfer Function [PhTF] or Modulation Transfer Function [MTF]]

9/04521 . . . . [Colour sequential image capture, e.g. using a colour wheel]

WARNING
Group H04N 9/04521 is incomplete pending reclassification of documents from group H04N 9/045.

Groups H04N 9/045 and H04N 9/04521 should be considered in order to perform a complete search.
9/0455 . . . {Colour filter architecture (colour filters structurally associated with image sensors H01L 27/146)}

**WARNING**

Group H04N 9/0455 is incomplete pending reclassification of documents from group H04N 9/045.
Groups H04N 9/045 and H04N 9/0455 should be considered in order to perform a complete search.

9/04551 . . . {Mosaic colour filter}

**WARNING**

Group H04N 9/04551 is incomplete pending reclassification of documents from group H04N 9/045.
Groups H04N 9/045 and H04N 9/04551 should be considered in order to perform a complete search.

9/04553 . . . {including elements transmitting or passing infrared wavelengths}

**WARNING**

Group H04N 9/04553 is incomplete pending reclassification of documents from group H04N 9/045.
Groups H04N 9/045 and H04N 9/04553 should be considered in order to perform a complete search.

9/04555 . . . {including elements transmitting or passing panchromatic light, e.g. white light}

**WARNING**

Group H04N 9/04555 is incomplete pending reclassification of documents from group H04N 9/045.
Groups H04N 9/045 and H04N 9/04555 should be considered in order to perform a complete search.

9/04557 . . . {based on three different wavelength filter elements}

**WARNING**

Group H04N 9/04557 is incomplete pending reclassification of documents from group H04N 9/045.
Groups H04N 9/045 and H04N 9/04557 should be considered in order to perform a complete search.

9/04559 . . . {based on four or more different wavelength filter elements}

**WARNING**

Group H04N 9/04559 is incomplete pending reclassification of documents from group H04N 9/045.
Groups H04N 9/045 and H04N 9/04559 should be considered in order to perform a complete search.

9/04561 . . . . {using complementary colours}

**WARNING**

Group H04N 9/04561 is incomplete pending reclassification of documents from group H04N 9/045.
Groups H04N 9/045 and H04N 9/04561 should be considered in order to perform a complete search.

9/04563 . . . {colour separation based on photon absorption depth, e.g. full colour resolution obtained simultaneously at each pixel location}

**WARNING**

Group H04N 9/04563 is incomplete pending reclassification of documents from group H04N 9/045.
Groups H04N 9/045 and H04N 9/04563 should be considered in order to perform a complete search.

9/07 . . . with one pick-up device only
9/077 . . . whereby the colour signals are characterised by their phase
9/083 . . . whereby the colour signals are characterised by their frequency
9/09 . . . with more than one pick-up device
9/093 . . . Systems for avoiding or correcting misregistration of video signals
9/097 . . . Optical arrangements associated therewith, e.g. for beam-splitting, for colour correction
9/10 . . . using optical-mechanical scanning means only (H04N 9/11 takes precedence)
9/11 . . . Scanning of colour motion picture films, e.g. for telecine
9/12 . . . Picture reproducers (H04N 9/11 takes precedence)
9/14 . . . using optical-mechanical scanning means only
9/16 . . . using cathode ray tubes (H04N 9/11 takes precedence)
9/18 . . . using separate electron beams for the primary colour signals (H04N 9/27 takes precedence)

**WARNING**

This subgroup is no longer used for the classification of new documents as from 01.02.2012 and the backlog of this subgroup is being continuously reclassified to H04L 9/065 and subgroups

9/20 . . . . with more than one beam in a tube
9/22 . . . . using the same beam for more than one primary colour information (H04N 9/27 takes precedence)
9/24 . . . . using means, integral with, or external to, the tube, for producing signal indicating instantaneous beam position
9/26 . . . . using electron-optical colour selection means, e.g. line grid, deflection means in or near the gun or near the phosphor screen
9/27 . . . . with variable depth of penetration of electron beam into the luminescent layer, e.g. penetrons
9/28 . . . . Arrangements for convergence or focusing
9/285 . . . . using quadrupole lenses
9/29 . . . . using demagnetisation or compensation of external magnetic fields
9/30 . . . . using solid-state colour display devices
9/31 . . . . Projection devices for colour picture display [. . . . e.g. using electronic spatial light modulators [ESLM]]
9/3102 . . . . [using two-dimensional electronic spatial light modulators (micromechanical modulators as such G02B 26/0833; liquid crystal modulators as such G02F 1/133)]
9/3105 . . . . [for displaying all colours simultaneously, e.g. by using two or more electronic spatial light modulators (simultaneous projection in colour photography G03B 33/10; beam splitting or combining systems per se G02B 27/10)]
9/3108 . . . . [by using a single electronic spatial light modulator]
9/3111 . . . . [for displaying the colours sequentially, e.g. by using sequentially activated light sources (sequential projection in colour photography G03B 33/08)]
9/3114 . . . . [by using a sequential colour filter producing one colour at a time]
9/3117 . . . . [by using a sequential colour filter producing two or more colours simultaneously, e.g. by creating scrolling colour bands]
9/312 . . . . [Driving therefor (driving of electronic spatial light modulators in displays other than projection devices G09G 3/34; G09G 3/36; control of liquid crystal elements G02F 1/133; control of micromechanical modulators G02B 26/08)]
9/3123 . . . . {using pulse width modulation]
9/3126 . . . . {for spatial light modulators in series]
9/3129 . . . . {scanning a light beam on the display screen (scanning a light beam on a screen in displays other than projection devices G09G 3/02; scanning systems in general G02B 26/10; projectors using laser light sources in general H04N 9/3161)}
9/3132 . . . . {using one-dimensional electronic spatial light modulators]
9/3135 . . . . {Driving therefor]
9/3138 . . . . {using arrays of modulated light sources (electroluminescent display devices G09G 3/30)]
9/3141 . . . . {Constructional details thereof (details not peculiar to the presence of an electronic spatial light modulator G03B 21/14)]
9/3144 . . . . {Cooling systems (cooling of liquid crystal cells in general G02F 1/133382; cooling of projectors not peculiar to the presence of an electronic spatial light modulator G03B 21/161)}
9/3147 . . . . {Multi-projection systems (displays in general H04N 9/12; video walls G06F 3/1446; G09G 2/3000266)]
9/315 . . . . {Modulator illumination systems (general applications of lighting devices E21V; general optical systems G02B; lamp houses for projectors not peculiar to the presence of an electronic spatial light modulator G03B 21/20)]
9/3152 . . . . {for shaping the light beam (beam shaping per se G02B 27/09)]
9/3155 . . . . {for controlling the light source (light source control per se H05B 35/00 – H05B 47/00; control of an illumination source for displays in general G09G 3/3406)]
9/3158 . . . . {for controlling the spectrum]
9/3161 . . . . {using laser light sources (using laser beams scanning the display screen H04N 9/3129)]
9/3164 . . . . {using multiple light sources]
9/3167 . . . . {for polarization the light beam (polarizing optical systems per se G02B 27/28)]
9/317 . . . . {Convergence or focusing systems (electronic adjustment of convergence H04N 9/315); convergence or focusing arrangements for cathode ray tubes H04N 9/28; means for automatic focusing of projectors not peculiar to the presence of an electronic spatial light modulator G03B 21/53)]
9/3173 . . . . {wherein the projection device is specially adapted for enhanced portability]
9/3176 . . . . {wherein the projection device is incorporated in a camera (details of cameras adapted for combination with a projector not peculiar to the presence of an electronic spatial light modulator G03B 17/54)]
9/3179 . . . . {Video signal processing therefor]
9/3182 . . . . {Colour adjustment, e.g. white balance, shading or gamut (white balance per se H04N 9/73; control of amplitude of colour signals H04N 9/68; colour control circuits for displays in general G09G 5/02; G09G 3/3607)}
9/3185 . . . . {Geometric adjustment, e.g. keystone or convergence (optical or mechanical adjustment of convergence H04N 9/317; using scanning means H04N 3/22; optical or mechanical adjustments of projectors not peculiar to the presence of an electronic spatial light modulator G03B 21/141)}
9/3188 . . . . {Scale or resolution adjustment (scaling in general G06T 3/40; resolution modifying circuits for displays in general G09G 5/3913)}
9/3191 . . . . {Testing thereof (testing of displays in general G09G 3/006)}
9/3194 . . . . {including sensor feedback]
9/3197 . . . . {using light modulating optical valves]
9/43 . . . . Conversion of monochrome picture signals to colour picture signals for colour picture display
9/44 . . . . Colour synchronisation
9/45 . . . . Generation or recovery of colour sub-carriers
9/455 . . . . Generation of colour burst signals; Insertion of colour burst signals in colour picture signals or separation of colour burst signals from colour picture signals (H04N 9/45 takes precedence)
9/465 . . . . Synchronisation of the PAL-switch
9/47 . . . . for sequential signals
9/475 . . . . for mutually locking different synchronisation sources
9/64 . . . . Circuits for processing colour signals (H04N 9/77 takes precedence)
H04N 9/641 . . (Multi-purpose receivers, e.g. for auxiliary information (H04N 9/642 takes precedence))
H04N 9/642 . . (Multi-standard receivers)
H04N 9/643 . . (Hue control means, e.g. flesh tone control)
H04N 9/645 . . (Beam current control means)
H04N 9/646 . . (for image enhancement, e.g. vertical detail restoration, cross-colour elimination, contour correction, chrominance trapping filters)
H04N 9/647 . . (LF amplifiers, (amplifiers in general H03F))
H04N 9/648 . . (Video amplifiers)
H04N 9/65 . . for synchronous modulators
H04N 9/66 . . for synchronous demodulators
H04N 9/67 . . for matrixing
H04N 9/68 . . for controlling the amplitude of colour signals, e.g. automatic chroma control circuits (H04N 9/71, H04N 9/73 take precedence)
H04N 9/69 . . for modifying the colour signals by gamma correction
H04N 9/70 . . for colour killing
H04N 9/71 . . combined with colour gain control
H04N 9/72 . . for reinsertion of dc and slowly varying components of colour signals
H04N 9/73 . . colour balance circuits, e.g. white balance circuits, colour temperature control
H04N 9/735 . . . (for picture signal generators)
H04N 9/74 . . for obtaining special effects (H04N 9/65 - H04N 9/73 take precedence)
H04N 9/75 . . . Chroma key
H04N 9/76 . . . for mixing of colour signals (H04N 9/75 takes precedence)
H04N 9/77 . . . Circuits for processing the brightness signal and the chrominance signal relative to each other, e.g. adjusting the phase of the brightness signal relative to the colour signal, correcting differential gain or differential phase (circuits for matrixing H04N 9/67)
H04N 9/78 . . . for separating the brightness signal or the chrominance signal from the colour television signal, e.g. using comb filter
H04N 9/79 . . . Processing of colour television signals in connection with recording
H04N 9/7904 . . . (using intermediate digital signal processing)
H04N 9/7908 . . . (Suppression of interfering signals at the reproducing side, e.g. noise)
H04N 9/7912 . . . (the interfering signals being intermodulation signals)
H04N 9/7917 . . . (the interfering signals being cross-talk signals)
H04N 9/7921 . . . (for more than one processing mode)
H04N 9/7925 . . . (for more than one standard)
H04N 9/793 . . . for controlling the level of the chrominance signal, e.g. by means of automatic chroma control circuits
H04N 9/7933 . . . (the level control being frequency-dependent)
H04N 9/7936 . . . . (. by using a preemphasis network at the recording side and a deemphasis network at the reproducing side)
H04N 9/797 . . . . for recording the signal in a plurality of channels, the bandwidth of each channel being less than the bandwidth of the signal (H04N 9/804, H04N 9/81, H04N 9/82 take precedence)
H04N 9/7973 . . . (by dividing the luminance or colour component signal samples or frequency bands among a plurality of recording channels (H04N 9/804, H04N 9/825 take precedence))
H04N 9/7976 . . . (by spectrum folding of the high frequency components of the luminance signal)
H04N 9/80 . . . Transformation of the television signal for recording, e.g. modulation, frequency changing; Inverse transformation for playback
H04N 9/802 . . . involving processing of the sound signal (H04N 9/806, H04N 9/835 take precedence)
H04N 9/804 . . . involving pulse code modulation of the colour picture signal components
H04N 9/8042 . . . (involving data reduction)
H04N 9/8045 . . . (using predictive coding)
H04N 9/8047 . . . (using transform coding)
H04N 9/806 . . . with processing of the sound signal
H04N 9/8063 . . . (using time division multiplex of the PCM audio and PCM video signals)
H04N 9/8066 . . . . (with insertion of the PCM audio signals in the vertical blanking interval of the PCM video signal)
H04N 9/808 . . . involving pulse code modulation of the composite colour video-signal
H04N 9/8081 . . . (involving data reduction)
H04N 9/8082 . . . (using predictive coding)
H04N 2009/8084 . . . (using transform coding)
H04N 9/8085 . . . . (with processing of the sound signal)
H04N 9/8087 . . . (using time division multiplex of the PCM audio and PCM video signals)
H04N 9/8088 . . . . (with insertion of the PCM audio signals in the vertical blanking interval of the PCM video signal)
H04N 9/81 . . . the individual colour picture signal components being recorded sequentially only
H04N 9/82 . . . the individual colour picture signal components being recorded simultaneously only
H04N 9/8205 . . . . (involving the multiplexing of an additional signal and the colour video signal)
H04N 9/8211 . . . . (the additional signal being a sound signal (H04N 9/835 takes precedence))
H04N 9/8216 . . . . (using time division multiplex)
H04N 9/8222 . . . . (using frequency division multiplex)
H04N 9/8227 . . . . (the additional signal being at least another television signal)
H04N 9/8233 . . . . (the additional signal being a character code signal)
H04N 9/8238 . . . . . (for teletext)
H04N 9/8244 . . . . . (involving the use of subcodes)
H04N 9/825 . . . the luminance and chrominance signals being recorded in separate channels
H04N 9/8255 . . . . . (with sound processing)
H04N 9/83 . . . the recorded chrominance signal occupying a frequency band under the frequency band of the recorded brightness signal
H04N 9/831 . . . . . (using intermediate digital signal processing)
H04N 9/832 . . . . . (using an increased bandwidth for the luminance or the chrominance signal)
H04N 9/833 . . . . . . (with selection of the conventional or the increased bandwidth signal, e.g. VHS or SVHS signal selection)
H04N 9/835 . . . . . involving processing of the sound signal
Colour television systems; Multi-view video systems; Details thereof

NOTE

This group covers systems providing a three-dimensional [3D] effect, or different views to one or more viewers by means of electronic signals representing images, which could be taken from different viewpoints, or by means of signals including depth information, e.g. taken from different viewpoint locations representing the interocular distance.

11/00 Colour television systems (details H04N 9/00)

11/02 with bandwidth reduction (H04N 11/04 [. H04N 11/24 takes precedence])

11/04 using pulse code modulation ([(H04N 11/24 takes precedence)])

11/02 [Codec means]

11/04 [involving transform coding]

11/04 [DPCM]

11/04 [Sub-Nyquist sampling]

11/06 Transmission systems characterised by the manner in which the individual colour picture signal components are combined

11/08 using sequential signals only (dot sequential systems H04N 11/12)

11/10 in which colour signals are inserted in the blanking interval of brightness signal

11/12 using simultaneous signals only

11/14 in which one signal, modulated in phase and amplitude, conveys colour information and a second signal conveys brightness information, e.g. NTSC-system

11/143 [Encoding means therefor (H04N 11/16 takes precedence)]

11/146 [Decoding means therefor (H04N 11/16 takes precedence)]

11/16 the chrominance signal alternating in phase, e.g. PAL-system

11/162 [Encoding means therefor (H04N 11/167 takes precedence)]

11/165 [Decoding means therefor (H04N 11/167 takes precedence)]

11/167 [a resolution-increasing signal being multiplexed to the PAL-system signal, e.g. PAL-PLUS-system]

11/18 using simultaneous and sequential signals, e.g. SECAM-system

11/183 [Encoding means therefor]

11/186 [Decoding means therefor]

11/20 Conversion of the manner in which the individual colour picture signal components are combined, e.g. conversion of colour television standards

11/22 in which simultaneous signals are converted into sequential signals or vice versa

11/24 High-definition television systems

11/26 [involving two-channel transmission]

11/28 [involving bandwidth reduction, e.g. subsampling]

11/30 [with transmission of the extra information by means of quadrature modulation]

13/00 Stereoscopic video systems; Multi-view video systems; Details thereof

2013/0074 [Stereoscopic image analysis]

2013/0077 [Colour aspects]

2013/0081 [Depth or disparity estimation from stereoscopic image signals]

2013/0085 [Motion estimation from stereoscopic image signals]

2013/0088 [Synthesising a monoscopic image signal from stereoscopic images, e.g. synthesising a panoramic or high resolution monoscopic image]

2013/0092 [Image segmentation from stereoscopic image signals]

2013/0096 [Synchronisation or controlling aspects]

13/10 Processing, recording or transmission of stereoscopic or multi-view image signals

13/106 Processing image signals (for multi-view video sequence encoding H04N 19/597)

13/111 Transformation of image signals corresponding to virtual viewpoints, e.g. spatial image interpolation
the virtual viewpoint locations being selected by the viewers or determined by viewer tracking.

Improving the 3D impression of stereoscopic images by modifying image signal contents, e.g. by filtering or adding monoscopic depth cues (H04N 13/128 takes precedence)

WARNING

Group H04N 13/122 is impacted by reclassification into groups H04N 13/125 and H04N 13/128.

Groups H04N 13/122, H04N 13/125, and H04N 13/128 should be considered in order to perform a complete search.

for crosstalk reduction

WARNING

Group H04N 13/125 is incomplete pending reclassification of documents from group H04N 13/122.

Groups H04N 13/122 and H04N 13/125 should be considered in order to perform a complete search.

Adjusting depth or disparity

WARNING

Group H04N 13/128 is incomplete pending reclassification of documents from group H04N 13/122.

Groups H04N 13/122 and H04N 13/128 should be considered in order to perform a complete search.

Equalising the characteristics of different image components, e.g. their average brightness or colour balance

Format conversion, e.g. of frame-rate or size

for flicker reduction

for colour aspects of image signals

Mixing image signals

[Switching image signals]

Encoding, multiplexing or demultiplexing different image signal components (for multi-view video sequence encoding H04N 19/597)

Synchronising or controlling image signals

image signals comprising non-image signal components, e.g. headers or format information

Metadata, e.g. disparity information

On-screen display (OSD) information, e.g. subtitles or menus

Recording image signals; Reproducing recorded image signals

Transmission of image signals

Image signal generators

WARNING

Group H04N 13/20 is impacted by reclassification into group H04N 13/268.

Groups H04N 13/20 and H04N 13/268 should be considered in order to perform a complete search.

using stereoscopic image cameras (stereoscopic photography G03B 35/00)

using a single 2D image sensor

using temporal multiplexing

using stereoscopic image cameras (stereoscopic photography G03B 35/00)

using a single 2D image sensor

using temporal multiplexing

using crosstalk reduction

WARNING

Group H04N 13/122 is impacted by reclassification into groups H04N 13/125 and H04N 13/128.

Groups H04N 13/122, H04N 13/125, and H04N 13/128 should be considered in order to perform a complete search.

using parallax barriers

using lenticular lenses, e.g. arrangements of cylindrical lenses

using fly-eye lenses, e.g. arrangements of circular lenses

using varifocal lenses or mirrors

using two 2D image sensors having a relative position equal to or related to the interocular distance (H04N 13/243 takes precedence)

WARNING

Group H04N 13/239 is impacted by reclassification into group H04N 13/243.

Groups H04N 13/239 and H04N 13/243 should be considered in order to perform a complete search.

using a single 2D image sensor

using temporal multiplexing

using crosstalk reduction

WARNING

Group H04N 13/122 is impacted by reclassification into groups H04N 13/125 and H04N 13/128.

Groups H04N 13/122, H04N 13/125, and H04N 13/128 should be considered in order to perform a complete search.

using parallax barriers

using lenticular lenses, e.g. arrangements of cylindrical lenses

using fly-eye lenses, e.g. arrangements of circular lenses

using varifocal lenses or mirrors

using two 2D image sensors having a relative position equal to or related to the interocular distance (H04N 13/243 takes precedence)
13/243 . . . using three or more 2D image sensors

**WARNING**

Group H04N 13/243 is incomplete pending reclassification of documents from group H04N 13/239.

Groups H04N 13/239 and H04N 13/243 should be considered in order to perform a complete search.

13/246 . . . Calibration of cameras

13/25 . . . using two or more image sensors with different characteristics other than in their location or field of view, e.g. having different resolutions or colour pickup characteristics; using image signals from one sensor to control the characteristics of another sensor

13/254 . . . in combination with electromagnetic radiation sources for illuminating objects

13/257 . . . Colour aspects

13/261 . . . with monoscopic-to-stereoscopic image conversion

13/264 . . . using the relative movement of objects in two video frames or fields

13/266 . . . [by scanning a film]

13/268 . . . based on depth image-based rendering [DIBR]

**WARNING**

Group H04N 13/268 is incomplete pending reclassification of documents from group H04N 13/20.

Groups H04N 13/20 and H04N 13/268 should be considered in order to perform a complete search.

13/271 . . . wherein the generated image signals comprise depth maps or disparity maps

13/275 . . . from 3D object models, e.g. computer-generated stereoscopic image signals

13/279 . . . the virtual viewpoint locations being selected by the viewers or determined by tracking

13/282 . . . for generating image signals corresponding to three or more geometrical viewpoints, e.g. multi-view systems

13/286 . . . having separate monoscopic and stereoscopic modes

13/289 . . . Switching between monoscopic and stereoscopic modes

13/293 . . . Generating mixed stereoscopic images; Generating mixed monoscopic and stereoscopic images, e.g. a stereoscopic image overlay window on a monoscopic image background

13/296 . . . Synchronisation thereof; Control thereof

13/30 . . . Image reproducers (optical systems for producing stereoscopic or other three-dimensional effects G02B 30/00)

**WARNING**

Group H04N 13/30 is impacted by reclassification into groups H04N 13/365 and H04N 13/385.

All Groups listed in this Warning should be considered in order to perform a complete search.

13/302 . . . for viewing without the aid of special glasses, i.e. using autostereoscopic displays

13/305 . . . using lenticular lenses, e.g. arrangements of cylindrical lenses

**WARNING**

Group H04N 13/305 is incomplete pending reclassification of documents from group H04N 13/307.

Groups H04N 13/307 and H04N 13/305 should be considered in order to perform a complete search.

13/307 . . . using fly-eye lenses, e.g. arrangements of circular lenses

**WARNING**

Group H04N 13/307 is incomplete pending reclassification of documents from group H04N 13/349.

Group H04N 13/307 is also impacted by reclassification into group H04N 13/305.

Groups H04N 13/349, H04N 13/307 and H04N 13/305 should be considered in order to perform a complete search.

13/31 . . . using parallax barriers

13/312 . . . the parallax barriers being placed behind the display panel, e.g. between backlight and spatial light modulator [SLM]

13/315 . . . the parallax barriers being time-variant

13/317 . . . using slanted parallax optics

13/32 . . . using arrays of controllable light sources; using moving apertures or moving light sources

13/322 . . . using varifocal lenses or mirrors

13/324 . . . Colour aspects

13/327 . . . Calibration thereof

13/332 . . . Displays for viewing with the aid of special glasses or head-mounted displays [HMD]

13/334 . . . using spectral multiplexing

13/337 . . . using polarisation multiplexing

13/339 . . . using spatial multiplexing (H04N 13/337 takes precedence)

13/341 . . . using temporal multiplexing

13/344 . . . with head-mounted left-right displays

13/346 . . . using prisms or semi-transparent mirrors

13/349 . . . Multi-view displays for displaying three or more geometrical viewpoints without viewer tracking (for viewing without the aid of special glasses using fly-eye lenses H04N 13/307)

**WARNING**

Group H04N 13/349 is impacted by reclassification into group H04N 13/307.

Groups H04N 13/349 and H04N 13/307 should be considered in order to perform a complete search.

13/351 . . . for displaying simultaneously

13/354 . . . for displaying sequentially

13/356 . . . having separate monoscopic and stereoscopic modes

13/359 . . . Switching between monoscopic and stereoscopic modes
13/361 . . Reproducing mixed stereoscopic images; Reproducing mixed monoscopic and stereoscopic images, e.g. a stereoscopic image overlay window on a monoscopic image background

13/363 . . using image projection screens (volumetric display H04N 13/388)

**WARNING**

Group H04N 13/363 is incomplete pending reclassification of documents from group H04N 13/393 and H04N 13/395.

Group H04N 13/363 is also impacted by reclassification into groups H04N 13/388 and H04N 13/39.

All groups listed in this Warning should be considered in order to perform a complete search.

13/365 . . using digital micromirror devices [DMD]

**WARNING**

Group H04N 13/365 is incomplete pending reclassification of documents from group H04N 13/30.

Groups H04N 13/30 and H04N 13/365 should be considered in order to perform a complete search.

13/366 . . using viewer tracking

13/368 . . . for two or more viewers

13/371 . . . for tracking viewers with different interocular distances; for tracking rotational head movements around the vertical axis

13/373 . . . for tracking forward-backward translational head movements, i.e. longitudinal movements

13/376 . . . for tracking left-right translational head movements, i.e. lateral movements

13/378 . . . for tracking rotational head movements around an axis perpendicular to the screen

13/38 . . . for tracking vertical translational head movements

13/383 . . . for tracking with gaze detection, i.e. detecting the lines of sight of the viewer's eyes

13/385 . . alternating rapidly the location of the left-right image components on the display screens (for viewing without the aid of special glasses using time variant parallax barriers H04N 13/315; displays for viewing with the aid of special glasses or head-mounted displays using temporal multiplexing H04N 13/341)

**WARNING**

Group H04N 13/385 is incomplete pending reclassification of documents from group H04N 13/30.

Groups H04N 13/30 and H04N 13/385 should be considered in order to perform a complete search.

13/388 . . Volumetric displays, i.e. systems where the image is built up from picture elements distributed through a volume

**WARNING**

Group H04N 13/388 is incomplete pending reclassification of documents from groups H04N 13/363, H04N 13/393, and H04N 13/395.

All groups listed in this Warning should be considered in order to perform a complete search.

13/39 . . . the picture elements emitting light at places where a pair of light beams intersect in a transparent material

**WARNING**

Group H04N 13/39 is incomplete pending reclassification of documents from groups H04N 13/363, H04N 13/393, and H04N 13/395.

All groups listed in this Warning should be considered in order to perform a complete search.

13/393 . . . the volume being generated by a moving, e.g. vibrating or rotating, surface

**WARNING**

Group H04N 13/393 is impacted by reclassification into groups H04N 13/363, H04N 13/388 and H04N 13/39.

All groups listed in this warning should be considered in order to perform a complete search.

13/395 . . . with depth sampling, i.e. the volume being constructed from a stack or sequence of 2D image planes

**WARNING**

Group H04N 13/395 is impacted by reclassification into groups H04N 13/363, H04N 13/388 and H04N 13/39.

All groups listed in this warning should be considered in order to perform a complete search.

13/398 . . Synchronisation thereof; Control thereof

2013/40 . . . [Privacy aspects, i.e. devices showing different images to different viewers, the images not being viewpoints of the same scene]

2013/403 . . . [the images being monoscopic]

2013/405 . . . [the images being stereoscopic or three dimensional]

17/00 Diagnosis, testing or measuring for television systems or their details

17/002 . . . [for television cameras]

17/004 . . . [for digital television systems]

2017/006 . . . [for television sound]

2017/008 . . . [for television teletext]

17/02 . . for colour television signals

17/04 . . for receivers

17/045 . . . [Self-contained testing apparatus]
Methods or arrangements for coding, decoding, compressing or decompressing digital video signals

NOTE
When classifying in this group, each aspect relating to adaptive coding should, insomuch as possible, be classified in each one of subgroups H04N 19/102, H04N 19/134, H04N 19/169 and H04N 19/189.

characterised by the element, parameter or selection affected or controlled by the adaptive coding
Selection of coding mode or of prediction mode
Selection of the reference unit for prediction within a chosen coding or prediction mode, e.g. adaptive choice of position and number of pixels used for prediction
between spatial and temporal predictive coding, e.g. picture refresh
among a plurality of temporal predictive coding modes
among a plurality of spatial predictive coding modes
according to a given display mode, e.g. for interlaced or progressive display mode
Adapting the group of pictures [GOP] structure, e.g. number of B-frames between two anchor frames (H04N 19/107 takes precedence)
Selection of the code volume for a coding unit prior to coding
Filters, e.g. for pre-processing or post-processing (sub-band filter banks)
Adaptive subdivision aspects, e.g. subdivision of a picture into rectangular or non-rectangular coding blocks
Selection from among a plurality of transforms or standards, e.g. selection between discrete cosine transform [DCT] and sub-band transform or selection between H.263 and H.264
NOTE
When classifying in this group, each compression algorithm is further classified in the relevant subgroups of groups H04N 19/60 or H04N 19/990.
Selection of transform size, e.g. 8x8 or 2x4x8 DCT; Selection of sub-band transforms of varying structure or type
Quantisation
Details of normalisation or weighting functions, e.g. normalisation matrices or variable uniform quantisers
Prioritisation of hardware or computational resources
Scanning of coding units, e.g. zig-zag scan of transform coefficients or flexible macroblock ordering [FMO]
19/177 . . . the unit being a group of pictures [GOP]
19/179 . . . the unit being a scene or a shot
19/18 . . . the unit being a set of transform coefficients
19/182 . . . the unit being a pixel
19/184 . . . the unit being bits, e.g. of the compressed video stream
19/186 . . . the unit being a colour or a chrominance component
19/187 . . . the unit being a scalable video layer
19/188 . . . [the unit being a video data packet, e.g. a network abstraction layer [NAL] unit]
19/1883 . . . [the unit relating to sub-band structure, e.g. hierarchical level, directional tree, e.g. low-high [LH], high-low [HL], high-high [HH]]
19/1887 . . . [the unit being a variable length codeword]
19/189 . . . characterised by the adaptation method, adaptation tool or adaptation type used for the adaptive coding
19/19 . . . using optimisation based on Lagrange multipliers
19/192 . . . the adaptation method, adaptation tool or adaptation type being iterative or recursive
19/194 . . . involving only two passes
19/196 . . . being specially adapted for the computation of encoding parameters, e.g. by averaging previously computed encoding parameters (processing of motion vectors H04N 19/513)
19/197 . . . . . . [including determination of the initial value of an encoding parameter (H04N 19/56 takes precedence)]
19/198 . . . . . . [including smoothing of a sequence of encoding parameters, e.g. by averaging, by choice of the maximum, minimum or median value]
19/20 . . . using video object coding
19/21 . . . with binary alpha-plane coding for video objects, e.g. context-based arithmetic encoding [CAE]
19/23 . . . with coding of regions that are present throughout a whole video segment, e.g. sprites, background or mosaic
19/25 . . . with scene description coding, e.g. binary format for scenes [BIFS] compression
19/27 . . . involving both synthetic and natural picture components, e.g. synthetic natural hybrid coding [SNHC]
19/29 . . . involving scalability at the object level, e.g. video object layer [VOL]
19/30 . . . using hierarchical techniques, e.g. scalability (H04N 19/63 takes precedence)
19/31 . . . in the temporal domain
19/33 . . . in the spatial domain
19/34 . . . Scalability techniques involving progressive bit-plane based encoding of the enhancement layer, e.g. fine granular scalability [FGS]
19/36 . . . Scalability techniques involving formatting the layers as a function of picture distortion after decoding, e.g. signal-to-noise (SNR) scalability
19/37 . . . with arrangements for assigning different transmission priorities to video input data or to video coded data
19/39 . . . involving multiple description coding [MDC], i.e. with separate layers being structured as independently decodable descriptions of input picture data
19/395 . . . (involving distributed video coding [DVC], e.g. Wyner-Ziv video coding or Slepian-Wolf video coding)
19/40 . . . using video transcoding, i.e. partial or full decoding of a coded input stream followed by re-encoding of the decoded output stream
19/42 . . . characterised by implementation details or hardware specially adapted for video compression or decompression, e.g. dedicated software implementation (H04N 19/635 takes precedence)
19/423 . . . characterised by memory arrangements (H04N 19/433 takes precedence)
19/426 . . . using memory downsizing methods
19/427 . . . . . . [Display on the fly, e.g. simultaneous writing to and reading from decoding memory]
19/428 . . . . . . . [Recompression, e.g. by spatial or temporal decimation]
19/43 . . . Hardware specially adapted for motion estimation or compensation
19/433 . . . . . . characterised by techniques for memory access
19/436 . . . . . . using parallelised computational arrangements
19/439 . . . . . . . {using cascaded computational arrangements for performing a single operation, e.g. filtering}
19/44 . . . Decoders specially adapted therefor, e.g. video decoders which are asymmetric with respect to the encoder
19/45 . . . . . . . {performing compensation of the inverse transform mismatch, e.g. Inverse Discrete Cosine Transform [IDCT] mismatch}
19/46 . . . Embedding additional information in the video signal during the compression process (H04N 19/517, H04N 19/68, H04N 19/70 take precedence)
19/465 . . . . . . by compressing encoding parameters before transmission
19/467 . . . . . . characterised by the embedded information being invisible, e.g. watermarking
19/48 . . . using compressed domain processing techniques other than decoding, e.g. modification of transform coefficients, variable length coding [VLC] data or run-length data (motion estimation in a transform domain H04N 19/547; processing of decoded motion vectors H04N 19/513)
19/50 . . . using predictive coding (H04N 19/61 takes precedence)
19/503 . . . . . . involving temporal prediction (adaptive coding with adaptive selection between spatial and temporal predictive coding H04N 19/107; adaptive coding with adaptive selection among a plurality of temporal predictive coding modes H04N 19/109)
19/507 . . . . . . . using conditional replenishment
19/51 . . . . Motion estimation or motion compensation
19/513 . . . . . . Processing of motion vectors
19/517 . . . . . . . by encoding
19/52 . . . . . . . . . . by predictive encoding
19/521 . . . . . . . . {for estimating the reliability of the determined motion vectors or motion vector field, e.g. for smoothing the motion vector field or for correcting motion vectors}
19/523 . . . . . . with sub-pixel accuracy
19/527 . . . . . . Global motion vector estimation
19/53 . . . . Multi-resolution motion estimation; Hierarchical motion estimation
19/533 . . . . Motion estimation using multistep search, e.g. 2D-log search or one-at-a-time search [OTS]
19/537 . . . . Motion estimation other than block-based
19/54 . . . . . using feature points or meshes
19/543 . . . . . using regions
19/547 . . . . Motion estimation performed in a transform domain
19/55 . . . . Motion estimation with spatial constraints, e.g. at image or region borders
19/553 . . . . Motion estimation dealing with occlusions
19/557 . . . . Motion estimation characterised by stopping computation or iteration based on certain criteria, e.g. error magnitude being too large or early exit
19/56 . . . . Motion estimation with initialisation of the vector search, e.g. estimating a good candidate to initiate a search
19/563 . . . . Motion estimation with padding, i.e. with filling of non-object values in an arbitrarily shaped picture block or region for estimation purposes
19/567 . . . . Motion estimation based on rate distortion criteria
19/57 . . . . Motion estimation characterised by a search window with variable size or shape
19/573 . . . . Motion compensation with multiple frame prediction using two or more reference frames in a given prediction direction
19/577 . . . . Motion compensation with bidirectional frame interpolation, i.e. using B-pictures
19/58 . . . . Motion compensation with long-term prediction, i.e. the reference frame for a current frame not being the temporally closest one [H04N 19/23 takes precedence]
19/583 . . . . Motion compensation with overlapping blocks
19/587 . . . . involving temporal sub-sampling or interpolation, e.g. decimation or subsequent interpolation of pictures in a video sequence
19/59 . . . . involving spatial sub-sampling or interpolation, e.g. alteration of picture size or resolution
19/593 . . . . involving spatial prediction techniques
19/597 . . . . specially adapted for multi-view video sequence encoding
19/60 . . . using transform coding
19/61 . . . . in combination with predictive coding
19/615 . . . . using motion compensated temporal filtering [MCTF]
19/619 . . . . [the transform being operated outside the prediction loop]
19/62 . . . . by frequency transforming in three dimensions [H04N 19/63 takes precedence]
19/625 . . . . using discrete cosine transform [DCT]
19/63 . . . . using sub-band based transform, e.g. wavelets
19/635 . . . . characterised by filter definition or implementation details
19/64 . . . . characterised by ordering of coefficients or of bits for transmission
19/645 . . . . by grouping of coefficients into blocks after the transform
19/647 . . . . [using significance based coding, e.g. Embedded Zerotrees of Wavelets [EZW] or Set Partitioning in Hierarchical Trees [SPIHT]]
19/649 . . . . [the transform being applied to non rectangular image segments]
19/65 . . . . using error resilience
19/66 . . . . involving data partitioning, i.e. separation of data into packets or partitions according to importance
19/67 . . . . involving unequal error protection [UEP], i.e. providing protection according to the importance of the data
19/68 . . . . involving the insertion of resynchronisation markers into the bitstream
19/69 . . . . involving reversible variable length codes [RVLC]
19/70 . . . . characterised by syntax aspects related to video coding, e.g. related to compression standards
19/80 . . . . Details of filtering operations specially adapted for video compression, e.g. for pixel interpolation [H04N 19/635, H04N 19/86 take precedence]
19/82 . . . . involving filtering within a prediction loop
19/85 . . . . using pre-processing or post-processing specially adapted for video compression
19/86 . . . . involving reduction of coding artifacts, e.g. of blockiness
19/865 . . . . [with detection of the former encoding block subdivision in decompressed video]
19/87 . . . . involving scene cut or scene change detection in combination with video compression
19/88 . . . . involving rearrangement of data among different coding units, e.g. shuffling, interleaving, scrambling or permutation of pixel data or permutation of transform coefficient data among different blocks
19/89 . . . . involving methods or arrangements for detection of transmission errors at the decoder
19/895 . . . . in combination with error concealment
19/90 . . . . using coding techniques not provided for in groups H04N 19/10-H04N 19/85, e.g. fractals
19/91 . . . . Entropy coding, e.g. variable length coding [VLC] or arithmetic coding
19/93 . . . . Run-length coding
19/94 . . . . Vector quantisation
19/96 . . . . Tree coding, e.g. quad-tree coding
19/97 . . . . Matching pursuit coding
19/98 . . . . Adaptive-dynamic-range coding [ADRC]
19/99 . . . . [involving fractal coding]
21/00 Selective content distribution, e.g. interactive television or video on demand [VOD] (real-time bi-directional transmission of motion video data H04N 7/14; broadcast or conference over packet switching networks H04L 12/18)

NOTES

1. This group covers:
   - interactive video distribution processes, systems, or elements thereof, which are characterised by point-to-multipoint system configurations, and which are mainly used for motion video data unidirectional distribution or delivery resulting from interactions between systems operators, e.g. access or service
providers, or users e.g. subscribers, and system elements.

• such systems include dedicated communication systems, such as television distribution systems, which primarily distribute or deliver motion video data in the manner indicated, which may, in addition, provide a framework for further, diverse data communications or services in either unidirectional or bi-directional form. However, video will occupy most of the downlink bandwidth in the distribution process.

• typically, system operators interface with transmitter-side elements or users' interface with receiver-side elements in order to facilitate, through interaction with such elements, the dynamic control of data processing or data flow at various points in the system. This interaction is typically occasional or intermittent in nature.

• processes, systems or elements thereof specially adapted to the generation, distribution and processing of data, which is either associated with video content, e.g. metadata, ratings, or related to the user or his environment and which has been actively or passively gathered. This data is either used to facilitate interaction or to alter or target the content.

2. In this main group, the first place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place.

3. In this main group, the following terms and expressions are used with the meaning indicated:

  • additional data - designates still pictures, textual, graphical or executable data such as software. It is used to convey supplemental information and can be generated prior to or during the distribution process itself, e.g. metadata, keys.

  • content designates video or audio streams, which may be combined with additional data. Video data will always be present and occupy most of the downlink bandwidth in the distribution process.

  • server - designates an apparatus designed for adapting the content received from the content provider to the distribution network. It also manages the distribution to client devices or intermediate components over a network. Further servers may also be present for gathering or generating additional data, e.g. rights management servers.

  • additional data server - designates a server, which sole purpose is the distribution or management of additional data. It is not in charge of the distribution of video or audio data

  • client - designates an apparatus such as a TV receiver, a set-top-box, a PC-TV, a mobile appliance (e.g. mobile phone or receiver in a vehicle), for receiving video, audio and possibly additional data from one or several servers or intermediate components via a network for further processing, storing or displaying. It can also transmit this data on a home-based local network to further devices, e.g. a home server transmitting video to PCs and set-top-boxes within a home.

  • end-user - designates a physical person, e.g. a TV viewer, who consumes the content using the client device. He is the final recipient of the content distributed by the server.

  • interaction - covers actions occurring between or among two or more objects that have an effect upon one another, wherein objects comprise users, system operators, system elements, or content. The user may interact with content locally at the client device, e.g. for requesting additional data stored within the client device. The user may interact with content remotely through a server e.g. for VOD playback control or for uploading video to a server. The client device may interact with the content e.g. selecting content based upon the user profile. The client device may interact with a server using a return channel, e.g. for authenticating client or uploading client hardware capabilities. The server may interact with a client device, e.g. to force a client to tune to an advertisement channel upstream - designates the direction of data flow towards the source, e.g. a server receiving a request via a mobile phone network.

  • downstream - designates the direction of data flow towards a client, e.g. a client receiving data originating from a server elementary stream. An elementary stream (ES) as defined by the MPEG system layer designates the output of an audio or video encoder.

21/20 . Servers specifically adapted for the distribution of content, e.g. VOD servers; Operations thereof

21/21 . Server components or server architectures

21/214 . Specialised server platform, e.g. server located in an airplane, hotel, hospital (arrangements specially adapted for local area broadcast systems H04H 20/6(1))
Source of audio or video content, e.g. local disk arrays (details of retrieval in video databases G06F 16/739)

[enabling multiple viewpoints, e.g. using a plurality of cameras]

[comprising remotely distributed storage units, e.g. when movies are replicated over a plurality of video servers (distributed storage of data in a network H04L 29/08549)]

[comprising local storage units]

[involving memory arrays, e.g. RAID disk arrays (RAID arrays per se G06F 3/0689; use of parity to protect data in RAID systems G06F 11/1008)]

[involving removable storage units, e.g. tertiary storage such as magnetic tapes or optical disks]

[Cache memory (caches in web servers or browsers G06F 16/9574; intermediate storage and caching in data networks H04L 29/08801)]

[Live feed]

[Secondary servers, e.g. proxy server, cable television Head-end (intermediate processing or storage in data networks H04L 29/08702)]

[being a cable television head-end (CATV in broadcast systems H04H 20/78)]

[being a public access point, e.g. for downloading to or uploading from clients (arrangements specially adapted to plural spots in a confined site in broadcast systems H04H 20/63)]

[Local VOD servers]

[Characteristics of the server or Internal components of the server]

[Server identification by a unique number or address, e.g. serial number (addressing and naming in data networks H04L 29/12009)]

[Processing of content or additional data; Elementary server operations; Server middleware]

[Content storage operation, e.g. caching movies for short term storage, replicating data over plural servers, prioritizing data for deletion]

[using load balancing strategies, e.g. by placing or distributing content on different disks, different memories or different servers (storage management G06F 3/0604; allocation of resources considering the load in multiprogramming arrangements G06F 9/505; techniques for rebalancing the load in a distributed system G06F 9/5083; access to distributed or replicated servers, e.g. load balancing, in data networks H04L 29/08144)]

[involving caching operations (prefetching while addressing of a memory level in which the access to the desired data or data block requires associative addressing means within memory systems or architectures G06F 12/0862; caching at an intermediate stage in a data network H04L 29/08801)]

[by placing content in organized collections, e.g. EPG data repository (details of retrieval of video data and associated meta data in video databases G06F 16/739)]

[involving housekeeping operations for stored content, e.g. prioritizing content for deletion because of storage space restrictions (storage management, e.g. defragmentation G06F 3/0604; snloading stored programs G06F 9/445; housekeeping operations in file systems, e.g. deletion policies G06F 16/10; buffering arrangements in a network node or in an end terminal in packet networks H04L 49/950)]

[involving data replication, e.g. over plural servers (synchronization of replicated data G06F 11/1658; error detection or correction by means of data replication G06F 11/2053; replication in distributed file systems G06F 16/10; replication in distributed file systems G06F 16/27; replication or mirroring of data in data networks H04L 29/0854)]

[Data placement on disk arrays (data placement in general G06F 3/0604)]

[using interleaving]

[using striping]

[Content retrieval operation (locally) within server, e.g. reading video streams from disk arrays (storage management G06F 3/0604; details of querying and searching of video data from a database G06F 16/739)]

[using file mapping]

[Scheduling disk or memory reading operations]

[Processing of audio elementary streams (monitoring, identification or recognition of audio in broadcast systems H04H 60/58)]

[involving reformatting operations of audio signals, e.g. by converting from one coding standard to another (details of audio signal transcoding G10L 19/173)]

[Processing of video elementary streams, e.g. splicing of video streams, manipulating MPEG-4 scene graphs]

[involving management of server-side video buffer]

MPEG-4 scene graphs e.g. splicing of video streams, manipulating
21/23412 . . . . [for generating or manipulating the scene composition of objects, e.g. MPEG-4 objects]

21/23418 . . . . [involving operations for analysing video streams, e.g. detecting features or characteristics (filtering for image enhancement G06T 5/00); methods or arrangements for recognising scenes G06K 9/00624; arrangements characterised by components specially adapted for monitoring, identification or recognition of video in broadcast systems H04H 60/59; television picture signal circuitry for scene change detection H04N 5/147(1)]

21/23424 . . . . [involving splicing one content stream with another content stream, e.g. for inserting or substituting an advertisement]

21/2343 . . . . [involving reformatting operations of video signals for distribution or compliance with end-user requests or end-user device requirements (media manipulation, adaptation or conversion at the source in one way streaming for real-time multimedia communications H04L 29/06489; video transcoding H04N 19/40)]

21/234309 . . . . [by transcoding between formats or standards, e.g. from MPEG-2 to MPEG-4 or from Quicktime to Realvideo (conversion of standards in analog television systems H04N 7/01)]

21/234318 . . . . [by decomposing into objects, e.g. MPEG-4 objects]

21/234327 . . . . [by decomposing into layers, e.g. base layer and one or more enhancement layers]

21/234336 . . . . [by media transcoding, e.g. video is transformed into a slideshow of still pictures or audio is converted into text]

21/234345 . . . . [the reformatting operation being performed only on part of the stream, e.g. a region of the image or a time segment]

21/234354 . . . . [by altering signal-to-noise ratio parameters, e.g. requantization]

21/234363 . . . . [by altering the spatial resolution, e.g. for clients with a lower screen resolution]

21/234372 . . . . [for performing aspect ratio conversion]

21/234381 . . . . [by altering the temporal resolution, e.g. decreasing the frame rate by frame skipping]

21/23439 . . . . [for generating different versions]

21/2347 . . . . [involving video stream encryption]

21/23473 . . . . [by pre-encrypting]

21/23476 . . . . [by partially encrypting, e.g. encrypting the ending portion of a movie]

21/235 . . . . [Processing of additional data, e.g. scrambling of additional data or processing content descriptors]

21/2351 . . . . [involving encryption of additional data (arrangements using cryptography for the use of broadcast information or broadcast-related information H04H 60/23)]

21/2353 . . . . [specifically adapted to content descriptors, e.g. coding, compressing or processing of metadata]

21/2355 . . . . [involving reformatting operations of additional data, e.g. HTML pages (optimising the visualization of content for information retrieval from the Internet G06F 16/9577; media manipulation, adaptation or conversion at the source in one way streaming for real-time multimedia communications H04L 29/06489; message adaptation based on network or terminal capabilities in stored and forward packet switching H04L 51/34)]

21/2356 . . . . [by altering the spatial resolution]

21/2358 . . . . [for generating different versions, e.g. for different recipient-devices]

21/236 . . . . [Assembling of a multiplex stream, e.g. transport stream, by combining a video stream with other content or additional data, e.g. inserting a URL [Uniform Resource Locator] into a video stream, multiplexing software data into a video stream; Remultiplexing of multiplex streams; Insertion of stuffing bits into the multiplex stream, e.g. to obtain a constant bit-rate; Assembling of a packetised elementary stream (multiplexing of data packets for data networks, e.g. RTP/UDP H04L 65/00)]

21/23602 . . . . [Multiplexing isochronously with the video sync, e.g. according to bit-parallel or bit-serial interface formats, as SDI]

21/23605 . . . . [Creation or processing of packetized elementary streams [PES]]

21/23608 . . . . [Remultiplexing multiplex streams, e.g. involving modifying time stamps or remapping the packet identifiers]

21/23611 . . . . [Insertion of stuffing data into a multiplex stream, e.g. to obtain a constant bitrate (synchronisation arrangements in time-division multiplex systems using bit stuffing for systems with different or fluctuating information rates H04J 3/073)]

21/23614 . . . . [Multiplexing of additional data and video streams (arrangements for simultaneous broadcast of plural pieces of information H04H 20/28)]

21/23617 . . . . [by inserting additional data into a data carousel, e.g. inserting software modules into a DVB carousel (arrangements for broadcast or for distribution of identical information repeatedly in broadcast distribution systems H04H 20/16)]

21/2362 . . . . [Generation or processing of Service Information [SI]]

21/2365 . . . . [Multiplexing of several video streams]

21/23655 . . . . [Statistical multiplexing, e.g. by controlling the encoder to alter its bitrate to optimize the bandwidth utilization]

21/2368 . . . . [Multiplexing of audio and video streams]

21/237 . . . . [Communication with additional data server]
21/238 . . . Interfacing the downstream path of the transmission network, e.g. adapting the transmission rate of a video stream to network bandwidth; Processing of multiplex streams (hybrid Fiber Coaxial HFC networks for downstream channel allocation for video distribution H04L 12/2801; formation of RTP packets H04L 29/06716; application layer Quality of Service and content dependent routing H04L 29/08945; flow control in packet networks H04L 47/10)

21/23805 . . . (Controlling the feeding rate to the network, e.g. by controlling the video pump)

21/2381 . . . Adapting the multiplex stream to a specific network, e.g. an Internet Protocol [IP] network [(transmission of MPEG streams over ATM H04L 12/5601)]

21/2383 . . . Channel coding (or modulation) of digital bit-stream, e.g. QPSK modulation (arrangements for detecting or preventing errors in the information received by adapting the channel coding H04L 1/0009; analogue front ends or means for connecting modulators, demodulators or transceivers to a transmission line H04L 27/0002)

21/2385 . . . Channel allocation (H04N 21/266 takes precedence); Bandwidth allocation (H04N 21/24 takes precedence); allocation of channels according to the instantaneous demands of the users in time-division multiplex systems H04J 3/1682; admission control, resource allocation in open networks H04L 12/5692; arrangements for maintenance or administration in data switching networks involving bandwidth and capacity management H04L 41/0896; negotiating bandwidth in wireless networks H04W 28/16)

21/2387 . . . Stream processing in response to a playback request from an end-user, e.g. for trick-play

21/2389 . . . Multiplex stream processing, e.g. multiplex stream encrypting

21/23892 . . . (involving embedding information at multiplex stream level, e.g. embedding a watermark at packet level)

21/23895 . . . (involving multiplex stream encryption)

21/23897 . . . (by partially encrypting, e.g. encrypting only the ending portion of a movie)

21/239 . . . Interfacing the upstream path of the transmission network, e.g. prioritizing client (content) requests (hybrid Fiber Coaxial [HFC] networks for upstream channel allocation for video distribution H04L 12/2801; formation of RTP packets H04L 29/06716; application layer Quality of Service and content dependent routing of client requests H04L 29/08945; flow control in data networks H04L 47/10)

21/2393 . . . (involving handling client requests (scheduling and organising the servicing of requests in data switching networks H04L 29/08945))

21/2396 . . . (characterized by admission policies (admission control, resource allocation in open networks H04L 12/5692; arrangements for network security using user profiles for access control H04L 29/06836; access security in wireless networks H04W 12/08))

21/24 . . . Monitoring of processes or resources, e.g. monitoring of server load, available bandwidth, upstream requests (monitoring of server performance or load G06F 11/34; arrangements for observation, testing or troubleshooting for broadcast or for distribution combined with broadcast H04H 20/12)

21/2401 . . . (Monitoring of the client buffer)

21/2402 . . . (Monitoring of the downstream path of the transmission network, e.g. bandwidth available (traffic monitoring in data switching networks H04L 43/00; monitoring data switching networks utilization H04L 43/0876))

21/2404 . . . (Monitoring of server processing errors or hardware failure (error or fault detection G06F 11/07; monitoring in general G06F 11/30))

21/2405 . . . (Monitoring of the internal components or processes of the server, e.g. server load (allocation of resources in multiprogramming arrangements G06F 9/50; performance measurement of computer activity G06F 11/34))

21/2407 . . . (Monitoring of transmitted content, e.g. distribution time, number of downloads (arrangements for monitoring programmes for broadcast or for distribution combined with broadcast H04H 20/14))

21/2408 . . . (Monitoring of the upstream path of the transmission network, e.g. client requests (protocols for scheduling and organising the servicing of requests in network applications in communication control or processing H04L 29/08945; monitoring data switching networks utilization H04L 43/0876))

21/241 . . . Operating system [OS] processes, e.g. server setup

21/242 . . . Synchronization processes, e.g. processing of PCR [Program Clock References] (arrangements for synchronising broadcast or distribution via plural systems in broadcast distribution systems H04H 20/18))

21/25 . . . Management operations performed by the server for facilitating the content distribution or administrating data related to end-users or client devices, e.g. end-user or client device authentication, learning user preferences for recommending movies (maintenance or administration in data networks H04L 41/00)

21/251 . . . (Learning process for intelligent management, e.g. learning user preferences for recommending movies (details of learning user preferences for the retrieval of video data in a video database G06F 16/739; computer systems using learning methods G06N 3/08))

21/252 . . . (Processing of multiple end-users' preferences to derive collaborative data)
Management at additional data server, e.g. shopping server, rights management server (protocols involving third party service providers for network applications in communication control or processing H04L 29/08665; arrangements for maintenance or administration in data networks H04L 41/00)

Rights Management (protecting software against unauthorised usage in a vending or licensing environment G06F 21/10; security management or policies for network security H04L 29/06986; security in data switching network management H04L 41/28; access security in wireless networks H04W 12/08)

Applications involving user or terminal profiles systems H04H 60/66.

Result on the distributing side of broadcast users preferences to derive collaborative or demographics, processing of multiple end-managing client capabilities, user preferences; data switching network (H04L 41/02)

Client or end-user data management, e.g. TV shopping (payment schemes, payment architectures or payment protocols for electronic shopping systems G06Q 20/12)

Billing (e.g. for subscription services (payment schemes, architectures or protocols G06Q 20/00); e-commerce G06Q 30/00; arrangements for billing for the use of broadcast information or broadcast-related information H04H 60/21)

Invoking characteristics of content or additional data, e.g. video resolution or the amount of advertising

Third Party Billing, e.g. billing of advertiser

Client or end-user data management, e.g. managing client capabilities, user preferences or demographics, processing of multiple end-users preferences to derive collaborative data (arrangements for services using the result on the distributing side of broadcast systems H04H 60/6; data switching network applications involving user or terminal profiles H04L 29/08915)

Management of client data (protocols involving terminal profiles for network applications in communication control or processing H04L 29/08927)

Involving client authentication (restricting access to computer systems by authenticating users using a predetermined code G06F 21/33; authentication mechanisms for network security in communication control or processing H04L 29/06755; authentication in wireless network security H04W 12/06)

Involving client display capabilities, e.g. screen resolution of a mobile phone (optimising the visualisation of content during browsing in the Internet G06F 16/9577; processing of terminal status or physical abilities in wireless networks H04W 8/22; authentication in wireless network security H04W 12/06)

Involving client hardware characteristics, e.g. manufacturer, processing or storage capabilities (allocation of resources considering hardware capabilities in multiprogramming arrangements G06F 9/5044; allocation of resources considering software capabilities in multiprogramming arrangements G06F 9/5055)

Involving the geographical location of the client (retrieval from the Internet by querying based on geographical locations G06F 16/9557; arrangements for identifying locations of receiving stations in broadcast systems H04H 60/51; protocols in which the network application is adapted for the location of the user terminal in communication control or processing H04L 29/08657; services making use of the location of users or terminals in wireless networks H04W 4/02; locating users or terminals in wireless networks H04W 64/00)

Generation of a revocation list, e.g. of client devices involved in piracy acts

Involving client software characteristics, e.g. OS identifier

Management of end-user data (customer care in data networks H04L 41/5077)

Involving end-user authentication (restricting access to computer systems by authenticating users using a predetermined code G06F 21/33; arrangements for secret or secure communication including means for verifying the identity or authority of a user of the system H04L 9/32; authentication mechanisms for network security in communication control or processing H04L 29/06755; authentication in wireless network security H04W 12/06)

Management of client data (protocols involving terminal profiles for network applications in communication control or processing H04L 29/08927)

Involving client authentication (restricting access to computer systems by authenticating users using a predetermined code G06F 21/33; authentication mechanisms for network security in communication control or processing H04L 29/06755; authentication in wireless network security H04W 12/06)

Involving end-user preferences (retrieval of video data in a video database based on user preferences G06F 16/739; arrangements for recognizing users preferences H04H 60/46; protocols involving user profiles for network applications in communication control or processing H04L 29/08936; processing of user preferences or user profiles in wireless networks H04W 8/18)

Management of client data (protocols involving terminal profiles for network applications in communication control or processing H04L 29/08927)

Involving client authentication (restricting access to computer systems by authenticating users using a predetermined code G06F 21/33; authentication mechanisms for network security in communication control or processing H04L 29/06755; authentication in wireless network security H04W 12/06)

Involving end-user preferences (retrieval of video data in a video database based on user preferences G06F 16/739; arrangements for recognizing users preferences H04H 60/46; protocols involving user profiles for network applications in communication control or processing H04L 29/08936; processing of user preferences or user profiles in wireless networks H04W 8/18)
21/262 . . . Content or additional data distribution scheduling, e.g. sending additional data at off-peak times, updating software modules, calculating the carousel transmission frequency, delaying a video stream transmission, generating play-lists {scheduling strategies for dispatcher in multiprogramming arrangements G06F 9/4881; arrangements for scheduling broadcast services or broadcast-related services H04H 60/06}; protocols for scheduling and organising the servicing of requests, whereby a time schedule is established for servicing the requests in network applications in communication control or processing H04L 29/08963; flow control in packet networks H04L 47/10}

21/26208 . . . [the scheduling operation being performed under constraints]

21/26216 . . . {involving the channel capacity, e.g. network bandwidth (admission control, resource allocation in open networks H04L 12/5692; protocols for scheduling and organising the servicing of requests, whereby quality of service and priority requirements are taken into account in network applications in communication control or processing H04L 29/08954; flow control in packet networks H04L 47/10)}

21/26225 . . . {involving billing parameters, e.g. priority for subscribers of premium services}

21/26233 . . . {involving content or additional data duration or size, e.g. length of a movie, size of an executable file}

21/26241 . . . {involving the time of distribution, e.g. the best time of the day for inserting an advertisement or airing a children program}

21/2625 . . . {for delaying content or additional data distribution, e.g. because of an extended sport event}

21/26258 . . . {for generating a list of items to be played back in a given order, e.g. playlist, or scheduling item distribution according to such list (retrieval of multimedia data based on playlists G06F 16/40)}

21/26266 . . . {for determining content or additional data repetition rate, e.g. of a file in a DVB carousel according to its importance (arrangements for broadcast or distribution of identical information repeatedly in broadcast distribution systems H04H 20/16)}

21/26275 . . . {for distributing content or additional data in a staggered manner, e.g. repeating movies on different channels in a time-staggered manner in a near video on demand system}

21/26283 . . . {for associating distribution time parameters to content, e.g. to generate electronic program guide data}

21/26291 . . . {for providing content or additional data updates, e.g. updating software modules, stored at the client (deployment, distribution, installation, update of software G06F 8/65; error detection or correction during software upgrading G06F 11/433; arrangements for updating broadcast information or broadcast-related information H04H 60/25)}

21/266 . . . Channel or content management, e.g. generation and management of keys and entitlement messages in a conditional access system, merging a VOD unicast channel into a multicast channel

21/26603 . . . {for automatically generating descriptors from content, e.g. when it is not made available by its provider, using content analysis techniques}

21/26606 . . . {for generating or managing entitlement messages, e.g. Entitlement Control Message [ECM] or Entitlement Management Message [EMM] (arrangements for conditional access to broadcast information or to broadcast-related services H04H 60/14)}

21/26609 . . . {using retrofitting techniques, e.g. by re-encrypting the control words used for pre-encryption}

21/26613 . . . {for generating or managing keys in general (key distribution for secret or secure communication involving central third party, e.g. key distribution center [KDC] or trusted third party [TTP] H04L 9/083; key management for security in wireless networks H04L 29/0670; key management for network security in communication control or processing H04W 12/04)}

21/26616 . . . {for merging a unicast channel into a multicast channel, e.g. in a VOD application, when a client served by unicast channel catches up a multicast channel to save bandwidth (data multicast over packet-switching network H04L 12/18)}

21/2662 . . . Controlling the complexity of the video stream, e.g. by scaling the resolution or bitrate of the video stream based on the client capabilities

21/2665 . . . Gathering content from different sources, e.g. Internet and satellite

21/2668 . . . Creating a channel for a dedicated end-user group, e.g. insertion of targeted commercials based on end-user profiles (information retrieval from the Internet by querying with filtering and personalisation G06F 16/9533; arrangements for replacing or switching information during the broadcast H04H 20/10; push services over packet-switching network H04L 12/1859; adaptation of message content in packet-switching networks H04L 51/063)}

21/27 . . . Server based end-user applications

21/274 . . . Storing end-user multimedia data in response to end-user request (e.g. network recorder)

21/2743 . . . Video hosting of uploaded data from client

21/2747 . . . Remote storage of video programs received via the downstream path, e.g. from the server
21/278 . . . Content descriptor database or directory service for end-user access ([details of content or metadata based information retrieval of video data in video databases G06F 16/739])

21/40 . . . Client devices specifically adapted for the reception of or interaction with content, e.g. set-top-box [STB]; Operations thereof

21/41 . . . Structure of client; Structure of client peripherals

21/4104 . . . [Peripherals receiving signals from specially adapted client devices]

WARNING

Group H04N 21/4104 is impacted by reclassification into groups H04N 21/411 and H04N 21/4112.

All groups listed in this Warning should be considered in order to perform a complete search.

21/4108 . . . [characterised by an identification number or address, e.g. local network address (protecting specific internal or external computer components using identification number G06F 21/73; addressing and naming in data networks H04L 29/12009)]

21/411 . . . [having similar hardware or software capabilities as the client device itself, e.g. a first STB connected to a second STB]

WARNING

Group H04N 21/411 is incomplete pending reclassification of documents from group H04N 21/4104.

Groups H04N 21/4104 and H04N 21/411 should be considered in order to perform a complete search.

21/4112 . . . [having fewer capabilities than the client, e.g. thin client having less processing power or no tuning capabilities]

WARNING

Group H04N 21/4112 is incomplete pending reclassification of documents from group H04N 21/4104.

Groups H04N 21/4104 and H04N 21/4112 should be considered in order to perform a complete search.

21/413 . . . [PC]

21/417 . . . [for generating hard copies of the content, e.g. printer, electronic paper (interfaces to printers G06F 3/12; printing data G06K 15/02)]

21/4122 . . . [additional display device, e.g. video projector (digital output for controlling a plurality of local displays G06F 3/1423)]

21/4126 . . . [The peripheral being portable, e.g. PDAs or mobile phones]

WARNING

Group H04N 21/4126 is impacted by reclassification into group H04N 21/41265.

Groups H04N 21/4126 and H04N 21/41265 should be considered in order to perform a complete search.

21/41265 . . . [having a remote control device for bidirectional communication between the remote control device and client device (unidirectional remote control device H04N 21/4204)]

WARNING

Group H04N 21/41265 is incomplete pending reclassification of documents from group H04N 21/4126.

Groups H04N 21/4126 and H04N 21/41265 should be considered in order to perform a complete search.

21/4131 . . . [home appliance, e.g. lighting, air conditioning system, metering devices (home automation data switching networks exchanging configuration information on appliance services H04L 12/2807)]

21/4135 . . . [external recorder (interface circuits between a apparatus for recording television signals and a television receiver H04N 5/775)]

21/414 . . . Specialised client platforms, e.g. receiver in car or embedded in a mobile appliance

21/41407 . . . [embedded in a portable device, e.g. video client on a mobile phone, PDA, laptop (constructional details of equipment or arrangements specially adapted for portable computer application G06F 1/1626; arrangements specially adapted for mobile receivers in broadcast systems H04H 20/57)]

21/41415 . . . [involving a public display, viewable by several users in a public space outside their home, e.g. movie theatre, information kiosk]

21/41422 . . . [located in transportation means, e.g. personal vehicle (arrangements specially adapted for transportation systems in broadcast systems H04H 20/62)]

21/4143 . . . [embedded in a] Personal Computer [PC]

21/4147 . . . PVR [Personal Video Recorder] [H04N 5/76 takes precedence {; arrangements for broadcast with accumulation-type receivers H04H 20/40}]

21/418 . . . External card to be used in combination with the client device, e.g. for conditional access

21/4181 . . . [for conditional access]

21/4182 . . . [for identification purposes, e.g. storing user identification data, preferences, personal settings or data (restricting access to computer systems by authenticating users using a predetermined code in combination with an additional device, e.g. dongle or smart card G06F 21/123)]

21/4183 . . . [providing its own processing capabilities, e.g. external module for video decoding]
adapted client devices H04N 21/4104
e.g. global positioning system (GPS) 
({input devices also receiving signals from specially adapted client devices H04N 21/4104})

biosensors, e.g. heat sensor for presence
detection, EEG sensors or any limb activity
sensors worn by the user (input arrangements
for interaction with the human body based
on nervous system activity detection
G06F 3/015)

(environmental sensors, e.g. for detecting
temperature, luminosity, pressure, 
earthquakes)

(sound input device, e.g. microphone)

(User interfaces specially adapted for
controlling a client device through a remote
control device: Remote control devices
therefor (constructive details of casings for
the remote control device H01H 9/00235; user
interfaces for controlling a tuning device of a
television receiver through a remote control
H03J 9/00; remote control of peripheral
devices connected to a television receiver
through the remote control device of the
television receiver H04B 1/205)

(characterized by hardware details)

{Display device provided on the remote
control}

{for displaying non-command
information, e.g. electronic program
guide [EPG], e-mail, messages or a
second television channel}

{Dedicated function buttons, e.g. for
the control of an EPG, subtitles, aspect
ratio, picture-in-picture or teletext}

{Specific keyboard arrangements}

{for facilitating data entry}

{using alphanumerical characters}

(by measuring the time interval
during which a key is pressed,
e.g. for inputting sequences of
digits when selecting a television
channel)

{for quick navigation, e.g. through
an EPG}

{for mapping a matrix of displayed
objects on the screen to the numerical
key-matrix of the remote control}

{Remote control device emulator
integrated into a non-television
apparatus, e.g. a PDA, media center or
smart toy (remote control device for
a television receiver integrated into a
mobile phone H04M 1/72533))

{Transmission circuitry, e.g. infrared
[IR] or radio frequency [RF]}

{Additional components integrated in
the remote control device, e.g. timer,
speaker, sensors for detecting position,
dIRECTION OR MOVEMENT OF THE
remote control, microphone or battery charging
device}

{Touch pad or touch panel provided on
the remote control}

{characterized by types of remote
control, e.g. universal remote control}

{Reprogrammable remote control devices}

{the keys being reprogrammable, e.g.
soft keys}

{the reprogrammable keys being
displayed on a display screen in order
to reduce the number of keys on the
remote control device itself}

Cameras (H04N 5/225 takes precedence)

{Providing} Remote input by a user located
remotely from the client device, e.g. at work

Internal components of the client

{Characteristics thereof} (H04N 5/44 takes
precedence)

{for processing the incoming bitstream}

{including specific demultiplexing
arrangements}

{including specific decryption
arrangements}

{including specific tuning arrangements,
e.g. two tuners}

{including a hybrid front-end, e.g.
analog and digital tuners}

{for reading from or writing on a non-
volatile solid state storage medium, e.g.
DVD, CD-ROM}

{for processing graphics}

{for reading from or writing on a magnetic
storage medium, e.g. hard disk drive}

{the medium being removable}

{for modulating an analogue carrier signal to
encode digital information or demodulating it
to decode digital information, e.g. ADSL or
cable modem}

{Client identification by a unique number or
address, e.g. serial number, MAC address,
socket ID (addressing and naming in data
networks H04L 29/12009)

{for reading from or writing on a volatile
storage medium, e.g. Random Access
Memory [RAM]}

Processing of content or additional data,
e.g. demultiplexing additional data from
a digital video stream: Elementary client
operations, e.g. monitoring of home network or
synchronising decoder's clock; Client middleware
({demultiplexing of data packets for data
networks, e.g. RTP/UDP H04L 29/06170})

{Content synchronisation processes, e.g.
decoder synchronisation}
21/4305 . . . . [Synchronising client clock from received content stream, e.g. locking decoder clock with encoder clock, extraction of the PCR packets (arrangements for synchronising receiver with transmitter by comparing receiver clock with transmitter clock H04L 7/0012; arrangements for synchronising receiver with transmitter wherein the receiver takes measures against momentary loss of synchronisation H04L 7/0083)]

21/4307 . . . . [Synchronising the rendering of multiple content streams or additional data on devices, e.g. synchronisation of audio on a mobile phone with the video output on the TV screen]

**WARNING**

Group H04N 21/4307 is impacted by reclassification into groups H04N 21/43072, H04N 21/43074, H04N 21/43076, H04N 21/43078 and H04N 21/43079. All groups listed in this Warning should be considered in order to perform a complete search.

21/43072 . . . . . [of multiple content streams on the same device]

**WARNING**

Group H04N 21/43072 is incomplete pending reclassification of documents from group H04N 21/4307. Groups H04N 21/4307 and H04N 21/43072 should be considered in order to perform a complete search.

21/43074 . . . . . [of additional data with content streams on the same device, e.g. of EPG data or interactive icon with a TV program]

**WARNING**

Group H04N 21/43074 is incomplete pending reclassification of documents from group H04N 21/4307. Groups H04N 21/4307 and H04N 21/43074 should be considered in order to perform a complete search.

21/43076 . . . . . [of the same content streams on multiple devices, e.g. when family members are watching the same movie on different devices]

**WARNING**

Group H04N 21/43076 is incomplete pending reclassification of documents from group H04N 21/4307. Groups H04N 21/4307 and H04N 21/43076 should be considered in order to perform a complete search.

21/43078 . . . . . [for seamlessly watching content streams when changing device, e.g. when watching the same program sequentially on a TV and then on a tablet]

**WARNING**

Group H04N 21/43078 is incomplete pending reclassification of documents from group H04N 21/4307. Groups H04N 21/4307 and H04N 21/43078 should be considered in order to perform a complete search.

21/43079 . . . . . [of additional data with content streams on multiple devices]

**WARNING**

Group H04N 21/43079 is incomplete pending reclassification of documents from group H04N 21/4307. Groups H04N 21/4307 and H04N 21/43079 should be considered in order to perform a complete search.

21/431 . . . . . Generation of visual interfaces [for content selection or interaction]; Content or additional data rendering

21/4312 . . . . . [involving specific graphical features, e.g. screen layout, special fonts or colors, blinking icons, highlights or animations]

21/4314 . . . . . . [for fitting data in a restricted space on the screen, e.g. EPG data in a rectangular grid]

21/4316 . . . . . . [for displaying supplemental content in a region of the screen, e.g. an advertisement in a separate window]

21/4318 . . . . . . [by altering the content in the rendering process, e.g. blanking, blurring or masking an image region (image enhancement or restoration in general G06T 5/00)]

21/432 . . . . . Content retrieval operation from a local storage medium, e.g. hard-disk { (details of retrieval of video data and associated meta data in video databases G06F 16/739)}

21/4325 . . . . . . [by playing back content from the storage medium (reproduction of recorded television signals H04N 5/76; reproduction of recorded television signals H04N 9/79)]

21/433 . . . . . Content storage operation, e.g. storage operation in response to a pause request, caching operations

21/4331 . . . . . . [Caching operations, e.g. of an advertisement for later insertion during playback]

21/4332 . . . . . . [by placing content in organized collections, e.g. local EPG data repository (interfaces, Database management systems or updating for information retrieval G06F 16/23; details of retrieval of video data and associated meta data in video database G06F 16/739)]

21/4333 . . . . . . [Processing operations in response to a pause request]
21/4334 . . . . [Recording operations (recording of a television signal H04N 5/76; arrangements for recording or accumulating broadcast information or broadcast-related information H04H 60/27)]

21/4335 . . . . Housekeeping operations, e.g. prioritizing content for deletion because of storage space restrictions { (storage management, e.g. defragmentation G06F 3/0064; unloading stored programs G06F 9/445; storage management in file systems G06F 16/10; buffering arrangements in a network node or in an end terminal in packet networks H04L 49/00)}

21/434 . . Disassembling of a multiplex stream, e.g. demultiplexing audio and video streams, extraction of additional data from a video stream; Remultiplexing of multiplex streams; Extraction or processing of SI; Disassembling of packetised elementary stream { (demultiplexing of data packets for data networks, e.g. RTP/UDP H04L 65/00)}

21/4341 . . . Demultiplexing of audio and video streams

21/4342 . . . Demultiplexing isochronously with video sync, e.g. according to bit-parallel or bit-serial interface formats, as SDI

21/4343 . . . Extraction or processing of packetized elementary streams [PES]

21/4344 . . . Remultiplexing of multiplex streams, e.g. by modifying time stamps or remapping the packet identifiers

21/4345 . . . Extraction or processing of SI, e.g. extracting service information from an MPEG stream

21/4346 . . . [involving stuffing data, e.g. packets or bytes (synchronisation arrangements in time-division multiplex systems with different or fluctuating information rates H04J 3/073)]

21/4347 . . . Demultiplexing of several video streams

21/4348 . . . Demultiplexing of additional data and video streams

21/4349 . . . [by extracting from data carousels, e.g. extraction of software modules from a DVB carousel]

21/435 . . . Processing of additional data, e.g. decrypting additional data, reconstructing software from modules extracted from the transport stream

21/4351 . . . [involving reassembling additional data, e.g. rebuilding an executable program from recovered modules]

21/4353 . . . [involving decryption of additional data (arrangements using cryptography for the use of broadcast information or broadcast-related information H04H 60/23)]

21/4355 . . . [involving reformatting operations of additional data, e.g. HTML pages on a television screen (optimising the visualisation of content for information retrieval from the Internet G06F 16/9577; media manipulation, adaptation or conversion at the destination in one way streaming for real-time multimedia communications H04L 29/06496; adaptation of message content in packet-switching networks H04L 51/066)]

21/4356 . . . . [by altering the spatial resolution, e.g. to reformat additional data on a handheld device, attached to the STB]

21/4358 . . . . [for generating different versions, e.g. for different peripheral devices]

21/436 . . . Interfacing a local distribution network, e.g. communicating with another STB {or one or more peripheral devices} inside the home

21/43607 . . . [Interfacing a plurality of external cards, e.g. through a DVB Common Interface [DVB-CI]]

21/43615 . . . . [Interfacing a Home Network, e.g. for connecting the client to a plurality of peripherals (home Audio Video Interoperability [HAVI] data switching networks H04L 12/2805)]

21/43622 . . . [Interfacing an external recording device]

21/4363 . . . Adapting the video (or multiplex) stream to a specific local network, e.g. a IEEE 1394 or Bluetooth® network

21/43632 . . . . [involving a wired protocol, e.g. IEEE 1394 (high-speed IEEE 1394 serial bus H04L 12/40052)]

21/43635 . . . . [HDMI]

21/43637 . . . . [involving a wireless protocol, e.g. Bluetooth, RF or wireless LAN [IEEE 802.11] (arrangements for wireless networking or broadcasting of information in indoor or near-field type systems H04B 10/114)]

21/4367 . . . . Establishing a secure communication between the client and a peripheral device or smart card

21/437 . . . Interfacing the upstream path of the transmission network, e.g. for transmitting client requests to a VOD server { (formation of RTP packets H04L 29/06176; application layer Quality of Service and content dependent routing of client requests H04L 29/08945; flow control in data networks H04L 47/10)]

21/438 . . . Interfacing the downstream path of the transmission network originating from a server, e.g. retrieving MPEG packets from an IP network { (transmission of MPEG streams over ATM H04L 12/5601; processing of real-time packets H04L 29/06176; flow control in data networks H04L 47/10)]

21/4381 . . . . [Recuperating the multiplex stream from a specific network, e.g. recovering MPEG packets from ATM cells (transmission of MPEG streams over ATM H04L 12/5601)]

21/4382 . . . . [Demodulation or channel decoding, e.g. QPSK demodulation (analog front ends or means for connecting modulators, demodulators or transceivers to a transmission line H04L 27/0002)]

21/4383 . . . . [Accessing a communication channel]

21/4384 . . . . [involving operations to reduce the access time, e.g. fast-tuning for reducing channel switching latency]

21/4385 . . . . Multiplex stream processing, e.g. multiplex stream decrypting
Processing of audio elementary streams

Processing of video elementary streams, e.g. splicing a video clip retrieved from local storage with an incoming video stream, rendering scenes according to MPEG-4 scene graphs

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Processing of video elementary streams, e.g. splicing a video clip retrieved from local storage with an incoming video stream, rendering scenes according to MPEG-4 scene graphs

Monitoring of processes or resources, e.g. detecting the failure of a recording device, monitoring the downstream bandwidth, the number of times a movie has been viewed, the storage space available from the internal hard disk

Monitoring of processes or resources, e.g. detecting the failure of a recording device, monitoring the downstream bandwidth, the number of times a movie has been viewed, the storage space available from the internal hard disk

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Monitoring of processes or resources, e.g. detecting the failure of a recording device, monitoring the downstream bandwidth, the number of times a movie has been viewed, the storage space available from the internal hard disk

Monitoring of processes or resources, e.g. detecting the failure of a recording device, monitoring the downstream bandwidth, the number of times a movie has been viewed, the storage space available from the internal hard disk
Detecting physical presence or behaviour of the user, e.g. using sensors to detect if the user is leaving the room or changes his face expression during a TV program (methods or arrangements for acquiring or recognising human faces, facial parts, facial sketches, facial expressions G06K 9/00221; methods or arrangements for recognising movements or behaviour G06K 9/00335; methods or arrangements for recognising human body or animal bodies or body parts G06K 9/00362; arrangements for identifying users in broadcast systems H04H 60/45)

WARNING

Group H04N 21/44222 is impacted by reclassification into groups H04N 21/44224 and H04N 21/44226.

Groups H04N 21/44222, H04N 21/44224 and H04N 21/44226 should be considered in order to perform a complete search.

Monitoring of user activity on external systems, e.g. Internet browsing

WARNING

Group H04N 21/44224 is incomplete pending reclassification of documents from group H04N 21/44222.

Groups H04N 21/44222 and H04N 21/44224 should be considered in order to perform a complete search.

Monitoring of local network, e.g. connection or bandwidth variations; Detecting new devices in the local network (configuring of peripheral devices in general G06F 9/4411; monitoring connectivity in data switched networks H04L 43/0811))

Monitoring of peripheral device or external card, e.g. to detect processing problems in a handheld device or the failure of an external recording device (configuring of peripheral devices in general G06F 9/4411; reporting information sensed by appliance or service execution status of appliance services in a home automation network H04L 12/2833; monitoring the status of connected device in data switched networks H04L 43/0817))

Monitoring of piracy processes or activities (protecting computer platforms against harmful, malicious or unexpected behaviour or activities using intrusion detection and counter measures G06F 21/566; computer virus detection and handling G06F 21/56)

Monitoring of the internal components or processes of the client device, e.g. CPU or memory load, processing speed, timer, counter or percentage of the hard disk space used (error monitoring in general G06F 11/30; arrangements for monitoring conditions of receiving stations in broadcast systems H04H 60/32; diagnosis, testing or measuring for television receivers H04N 17/04)

Monitoring of the upstream path of the transmission network, e.g. its availability, bandwidth

Monitoring of client processing errors or hardware failure

OS processes, e.g. booting an STB, implementing a Java virtual machine in an STB or power management in an STB

[characterized by the use of Application Program Interface [API] libraries]

Powering on the client, e.g. bootstrap loading using set parameters being stored locally or received from the server (resetting in general G06F 1/14; program loading or initiating in general G06F 9/445; bootstrapping in general G06F 9/4401; secure boots of computer platforms G06F 21/57)

[Implementing client middleware, e.g. Multimedia Home Platform [MHP]]

[Memory management (allocation of memory to service a request G06F 9/5016; addressing or allocating within memory systems or architectures G06F 12/02)]

[Power management, e.g. shutting down unused components of the receiver (power management in computer systems G06F 1/3203; hibernate or awake process in computer systems G06F 9/4418)]

Implementing a Virtual Machine [VM] (virtual machines in general G06F 9/4533)

Window management, e.g. event handling following interaction with the user interface

Management operations performed by the client for facilitating the reception of or the interaction with the content or administrating data related to the end-user or to the client device itself, e.g. learning user preferences for recommending movies, resolving scheduling conflicts
WARNING

Group H04N 21/4508 is impacted by reclassification into group H04N 21/4518.
Groups H04N 21/4508 and H04N 21/4518 should be considered in order to perform a complete search.

WARNING

Group H04N 21/4518 is incomplete pending reclassification of documents from group H04N 21/4508.
Groups H04N 21/4508 and H04N 21/4518 should be considered in order to perform a complete search.

21/4508 . . . [Management of client data or end-user data]

21/4503 . . . . [Automatically resolving scheduling conflicts, e.g. when a recording by reservation has been programmed for two programs in the same time slot]

21/4506 . . . . [Content update operation triggered locally, e.g. by comparing the version of software modules in a DVB carousel to the version stored locally (deployment, distribution, installation, update of software G06F 8/65); error detection or correction of the data by redundancy during software upgrading G06F 11/433; arrangements for updating broadcast information or broadcast-related information H04H 60/25)]

21/462 . . . . Content or additional data management, e.g. creating a master electronic program guide from data received from the Internet and a Head-end, controlling the complexity of a video stream by scaling the resolution or bit-rate based on the client capabilities

21/4621 . . . . [Controlling the complexity of the content stream or additional data, e.g. lowering the resolution or bit-rate of the video stream for a mobile client with a small screen (arrangements for using the results of monitoring on user's side in broadcast systems H04H 60/65; Flow control in packet networks H04L 47/10)]

21/4622 . . . . [Retrieving content or additional data from different sources, e.g. from a broadcast channel and the Internet (web site content organization and management for information retrieval from the Internet G06F 16/958; transmission by internet of broadcast information H04H 60/82; stock exchange data over packet-switching network H04L 12/1804; push services including data channel over packet-switching network H04L 12/1859)]

21/4623 . . . . Processing of entitlement messages, e.g. ECM [Entitlement Control Message] or EMM [Entitlement Management Message] (arrangements for conditional access to broadcast information or to broadcast-related services H04H 60/14)]

21/4627 . . . . Rights management [associated to the content (security management or policies for network security H04L 29/0686; security in data switching network management H04L 41/28; access security in wireless networks H04W 12/08)]

21/466 . . . . Learning process for intelligent management, e.g. learning user preferences for recommending movies (services using the results of monitoring in broadcast systems H04H 60/61)]

21/4661 . . . . [Deriving a combined profile for a plurality of end-users of the same client, e.g. for family members within a home (data switching network applications using user profiles H04L 29/0893)]

21/4662 . . . . [characterized by learning algorithms]

21/4663 . . . . [involving probabilistic networks, e.g. Bayesian networks]

21/4665 . . . . [involving classification methods, e.g. Decision trees]
End-user applications

End-user interface for inputting end-user data, e.g. personal identification number [PIN], preference data

End-user interface for recommending content, e.g. movies

End-user interface for requesting content, additional data or services; End-user interface for interacting with content, e.g. for content reservation or setting reminders, for requesting event notification, for manipulating displayed content (end-user interfaces for retrieving video data from a database G06F 16/739; content on demand in one way streaming for real-time multimedia communications H04L 29/06462)

End-user interface for requesting near-video-on-demand content

End-user interface for pay-per-view content (payment schemes payment architectures or payment protocols G06Q 20/00, G07F)

End-user interface for requesting content on demand, e.g. video on demand

End-user interface for manipulating displayed content, e.g. interacting with MPEG-4 objects, editing locally

End-user interface for program selection (using a list of items to be played back in a given order, e.g. playlists)

End-user interface for client configuration for modifying screen layout parameters, e.g. fonts, size of the windows

End-user interface for receiving rewards

End-user interface for requesting event notification, for manipulating displayed content (end-user interfaces for retrieving video data from a database G06F 16/739; content on demand in one way streaming for real-time multimedia communications H04L 29/06462)

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End-user interface for requesting pay-per-view content (payment schemes payment architectures or payment protocols G06Q 20/00, G07F)

End-user interface for requesting content on demand, e.g. video on demand

End-user interface for manipulating displayed content, e.g. interacting with MPEG-4 objects, editing locally
21/60 . . . Network structure or processes for video distribution between server and client or between remote clients; Control signalling between clients, server and network components; Transmission of management data between server and client (e.g. sending from server to client commands for recording incoming content stream); Communication details between server and client

21/61 . . . Network physical structure; Signal processing (H04B takes precedence)

21/6106 . . . [specially adapted to the downstream path of the transmission network]

21/6112 . . . [involving terrestrial transmission, e.g. DVB-T]

21/6118 . . . [involving cable transmission, e.g. using a cable modem]

21/6125 . . . [involving transmission via Internet (transmission by internet of broadcast information H04H 60/82)]

21/6131 . . . [involving transmission via a mobile phone network (wireless downlink channel access H04W 74/006)]

21/6137 . . . [involving transmission via a telephone network, e.g. POTS]

21/6143 . . . [involving transmission via a satellite]

21/615 . . . [Signal processing at physical level (signal processing in analog two-way television systems H04N 7/173)]

21/6156 . . . [specially adapted to the upstream path of the transmission network]

21/6162 . . . [involving terrestrial transmission, e.g. DVB-T]

21/6168 . . . [involving cable transmission, e.g. using a cable modem]

21/6175 . . . [involving transmission via Internet (broadcast-related systems characterised by the transmission system being the Internet H04H 60/82)]

21/6181 . . . [involving transmission via a mobile phone network (arrangements for providing broadcast or conference services to subscription in data switching networks in combination with wireless systems H04L 12/18; wireless uplink channel access H04W 74/004)]

21/6187 . . . [involving transmission via a telephone network, e.g. POTS]

21/6193 . . . [involving transmission via a satellite (arrangements for data linking, networking or transporting, or for controlling an end to end session in a satellite broadcast system H04B 7/18526)]

21/63 . . . Control signalling (related to video distribution) between client, server and network components; Network processes for video distribution between server and clients (or between remote clients), e.g. transmitting basic layer and enhancement layers over different transmission paths, setting up a peer-to-peer communication via Internet between remote STB's; Communication protocols; Addressing (signalling, control or architecture for real-time multimedia communications H04L 29/06183; arrangements for peer-to-peer communications H04L 29/08306)

21/631 . . . [Multimode Transmission, e.g. transmitting basic layers and enhancement layers of the content over different transmission paths or transmitting with different error corrections, different keys or with different transmission protocols]

21/632 . . . [using a connection between clients on a wide area network, e.g. setting up a peer-to-peer communication via Internet for retrieving video segments from the hard-disk of other client devices (broadcast-related systems characterised by transmission among terminal devices H04H 60/80: protocols for peer-to-peer networking in communication control or processing H04L 29/08306)]

21/633 . . . Control signals issued by server directed to the network components or client {management of faults, events, alarms in data networks H04L 41/06}

21/6332 . . . directed to client

21/6334 . . . for authorisation, e.g. by transmitting a key (wireless communications network key management H04L 12/04; wireless communications network access security H04W 12/08)

21/63345 . . . {by transmitting keys (key distribution for secret or secure communication H04L 9/08; arrangements for network security key management H04L 29/0707)}

21/6336 . . . directed to decoder

21/6338 . . . directed to network

21/637 . . . Control signals issued by the client directed to the server or network components

21/6371 . . . directed to network

21/6373 . . . for rate control (e.g. request to the server to modify its transmission rate (flow control in packet networks H04L 47/10)]

21/6375 . . . for requesting retransmission (e.g. of data packets lost or corrupted during transmission from server) {ARQ protocols H04L 1/18; Transmission Control Protocol / Internet Protocol [TCP/IP] H04L 29/06095}

21/6377 . . . directed to server {control of source by destination in one way streaming for real-time multimedia communications H04L 29/06469}

21/63775 . . . {for uploading keys, e.g. for a client to communicate its public key to the server (arrangements for network security key management H04L 29/0707)]}

21/6379 . . . directed to encoder (e.g. for requesting a lower encoding rate)

21/64 . . . Addressing (multicast or broadcast in one way streaming for real-time multimedia communications H04L 29/06555; arrangements for addressing and naming in data networks H04L 29/1209)]

21/6402 . . . Address allocation for clients (address allocation in data networks H04L 29/12207)

21/6405 . . . Multicasting (data broadcast and multicast in packet switching networks H04L 12/18)

21/6408 . . . Unicasting
for real-time multimedia communications

wireless { (signalling, control or architecture for two different networks, e.g. between IP and }

unauthorised alteration within the network, monitoring of network load, bridging between two different networks, e.g. between IP and wireless {(signalling, control or architecture for real-time multimedia communications H04L 29/06183)}

{Controlling the complexity of the content stream, e.g. by dropping packets (media manipulation, adaptation or conversion at an intermediate station in one way streaming for real-time multimedia communications H04L 29/06503; arrangements for reducing the amount or size of exchanged application data in the network H04L 29/08783; negotiation of resources in wireless networks H04W 28/16)}

Transmission of management data between client and server

Transmission by server directed to the client

for forcing some client operations, e.g. recording {(remote booting in general G06F 9/4416)}

comprising parameters, e.g. for client setup

Transmission by the client directed to the server

{Reference data, e.g. a movie identifier for ordering a movie or a product identifier in a home shopping application}

{Data stored in the client, e.g. viewing habits, hardware capabilities, credit card number (arrangements where receivers interact with the broadcast H04H 20/38)}

Acknowledgement

Control parameters, e.g. trick play commands, viewpoint selection

Generation or processing of content or additional data by content creator independently of the distribution process; Content per se {(arrangements for generating broadcast information H04H 60/02)}

Monomedia components thereof

{involving special video data, e.g. 3D video graphics}

{involving additional data, e.g. news, sports, stocks, weather forecasts}

{specifically related to the content, e.g. biography of the actors in a movie, detailed information about an article seen in a video program}

{comprising emergency warnings (arrangements specially adapted for emergency or urgency in broadcast systems H04H 20/59; arrangements for providing alarms, notifications, alerts to substation in data switching networks H04L 12/895)}

{involving graphical data, e.g. 3D object, 2D graphics}

{comprising still images, e.g. texture, background image}

{involving special video data, e.g. 3D video}

{involving executable data, e.g. software (arrangements for executing specific programs G06F 9/44; broadcasting computer programmes in broadcast systems H04H 20/91; movement of software or configuration parameters, in data networks H04L 29/08981)}
21/8173 . . . . [End-user applications, e.g. Web browser, game]
21/818 . . . . [OS software]
21/8186 . . . . [specially adapted to be executed by a peripheral of the client device, e.g. by a reprogrammable remote control]
21/8193 . . . . [dedicated tools, e.g. video decoder software or IPMP tool]
21/83 . . . Generation or processing of protective or descriptive data associated with content; Content structuring
21/835 . . . . Generation of protective data, e.g. certificates {(protecting software against unauthorised usage in a vending or licensing environment G06F 21/10)}
21/8352 . . . . involving content or source identification data, e.g. Unique Material Identifier [UMID]
21/8355 . . . . involving usage data, e.g. number of copies or viewings allowed
21/83555 . . . . {using a structured language for describing usage rules of the content, e.g. REL}
21/8358 . . . . involving watermark {(protecting executable software by watermarking G06F 21/16; image watermarking in general G06T 1/002); watermarks inserted in still images for transmission purposes H04N 1/32144; inserting watermarks during video coding H04N 19/467)
21/84 . . . . Generation or processing of descriptive data, e.g. content descriptors {systems specially adapted for using meta-information in broadcast systems H04H 60/73}
21/8402 . . . . {involving a version number, e.g. version number of EPG data (arrangements for version control in computers G06F 8/71)}
21/8405 . . . . represented by keywords
21/845 . . . . Structuring of content, e.g. decomposing content into time segments
21/8451 . . . . {using Advanced Video Coding [AVC]}
21/8453 . . . . {by locking or enabling a set of features, e.g. optional functionalities in an executable program}
21/8455 . . . . {involving pointers to the content, e.g. pointers to the I-frames of the video stream}
21/8456 . . . . {by decomposing the content in the time domain, e.g. in time segments}
21/8458 . . . . {involving uncompressed content}
21/85 . . . . Assembly of content; Generation of multimedia applications
21/854 . . . . Content authoring
21/85403 . . . . {by describing the content as an MPEG-21 Digital Item}
21/85406 . . . . {involving a specific file format, e.g. MP4 format}
21/8541 . . . . involving branching, e.g. to different story endings
21/8543 . . . . using a description language, e.g. Multimedia and Hypermedia information coding Expert Group [MHEG], eXtensible Markup Language [XML] {(information retrieval of semistructured data, the underlying structure being taken into account, e.g. mark-up language structure data G06F 16/80)}
21/8545 . . . . for generating interactive applications
21/8547 . . . . involving timestamps for synchronizing content
21/8549 . . . . Creating video summaries, e.g. movie trailer {(retrieval in video databases by using presentations in form of a video summary G06F 16/7391)}
21/858 . . . . Linking data to content, e.g. by linking an URL to a video object, by creating a hotspots
21/8583 . . . . {by creating hot-spots}
21/8586 . . . . {by using a URL (processing chained hypermedia data for information retrieval G06F 16/94); information retrieval from the Internet by using URLs G06F 16/955; URL in broadcast information H04H 20/93; protocols for network applications involving the use of web-based technology H04L 29/0809)

2101/00 Still video cameras
2201/00 Indexing scheme relating to scanning, transmission or reproduction of documents or the like, and to details thereof

2201/0001 . . . . Diagnosis, testing or measuring; Detecting, analysis or monitoring not otherwise provided for
2201/0003 . . . . Method used
2201/0005 . . . . using a reference pattern designed for the purpose, e.g. a test chart
2201/0006 . . . . . . details of the reference pattern (DM 1105)
2201/0008 . . . . Connection or combination of a still picture apparatus with another apparatus
2201/001 . . . . Sharing resources, e.g. processing power or memory, with a connected apparatus or enhancing the capability of the still picture apparatus

NOTE

Subgroups H04N 2201/001 - H04N 2201/0075 are for use with subgroups H04N 1/00127 - H04N 1/00347

2201/0012 . . . . Use of shared folders, i.e. folders or directories accessible by all connected apparatus
2201/0013 . . . . Arrangements for the control of the connected apparatus by the still picture apparatus (arrangements for the control of a still picture apparatus by the connected apparatus H04N 2201/0074; control of image communication with the connected apparatus H04N 2201/0015)
2201/0015 . . . . Control of image communication with the connected apparatus, e.g. signalling capability
2201/0017 . . . . Notifying a communication result
2201/0018 . . . . via a non-image communication channel, e.g. via a computer network
2201/002 . . . . Selecting or switching between an image communication channel and a non-image communication channel
2201/0022 . . . . Selecting or switching between an image communication mode and a non-image communication mode (H04N 2201/002 takes precedence)
2201/0024 . . . . Converting image communication control signals, e.g. group 3 facsimile protocol signals, to non-image communication control signals or vice versa
H04N

2201/0025 . . . Adapting an image communication to a non-image communication or vice versa, e.g. data-rate conversion
2201/0027 . . . Adapting to communicate with plural different types of apparatus
2201/0029 . . . Avoiding duplicate transfer of image data
2201/0031 . . . where the still picture apparatus acts as the master
2201/0032 . . . where the still picture apparatus acts as the slave
2201/0034 . . . Details of the connection, e.g. connector, interface
2201/0036 . . . Detecting or checking connection
2201/0037 . . . Topological details of the connection
2201/0039 . . . Connection via a network
2201/0041 . . . Point to point (H04N 2201/0039 takes precedence)
2201/0043 . . . Point to multipoint (H04N 2201/0039 takes precedence)
2201/0044 . . . Connecting to a plurality of different apparatus; Using a plurality of different connectors (connection via a network H04N 2201/0039)
2201/0046 . . . Software interface details, e.g. interaction of operating systems
2201/0048 . . . Type of connection
2201/0049 . . . By wire, cable or the like
2201/0051 . . . Card-type connector, e.g. PCMCIA card interface
2201/0053 . . . Optical, e.g. using an infra-red link
2201/0055 . . . By radio
2201/0056 . . . Using mechanical couplings, e.g. mating elements (H04N 2201/0049, H04N 2201/0051, H04N 2201/0058 take precedence)
2201/0058 . . . Docking-station, cradle or the like
2201/0059 . . . Using near field communication, e.g. an inductive loop
2201/0062 . . . Stand-alone interface device
2201/0063 . . . Constructional details
2201/0065 . . . Converting image data to a format usable by the connected apparatus or vice versa
2201/0067 . . . Converting to still picture data
2201/0068 . . . Converting from still picture data
2201/007 . . . Selecting or switching between a still picture apparatus or function and another apparatus or function (H04N 2201/0022 takes precedence)
2201/0072 . . . Detecting the status of a connected apparatus
2201/0074 . . . Arrangements for the control of a still picture apparatus by the connected apparatus (arrangements for the control of the connected apparatus by the still picture apparatus H04N 2201/0013; control of image communication with the connected apparatus H04N 2201/0015)
2201/0075 . . . by a user operated remote control device, e.g. receiving instructions from a user via a computer terminal or mobile telephone handset
2201/0077 . . . Types of the still picture apparatus

**NOTE**

Subgroups H04N 2201/0077 - H04N 2201/0094 are for use with H04N 1/00 and subgroups

2201/0079 . . . Medical imaging device

2201/0081 . . . Image reader (H04N 2201/0091 - H04N 2201/0094 take precedence)
2201/0082 . . . Image hardcopy reproducer (H04N 2201/0091 - H04N 2201/0094 take precedence)
2201/0084 . . . Digital still camera
2201/0086 . . . Image transceiver (H04N 2201/0093 and H04N 2201/0094 take precedence)
2201/0087 . . . Image storage device
2201/0089 . . . Image display device
2201/0091 . . . Digital copier; digital 'photocopyer' (H04N 2201/0093 and H04N 2201/0094 take precedence)
2201/0093 . . . Facsimile machine (H04N 2201/0094 takes precedence)
2201/0094 . . . Multifunctional device, i.e. a device capable of all of reading, reproducing, copying, facsimile transmission, file transcription
2201/0096 . . . Portable devices
2201/0098 . . . User intervention not otherwise provided for, e.g. placing documents, responding to an alarm
2201/024 . . . deleted
2201/02402 . . . Arrangements for positioning heads, e.g. with respect to other elements of the apparatus

**NOTE**

Subgroups H04N 2201/02402 - H04N 2201/02404 and H04N 2201/02487 - H04N 2201/02497 are for use with subgroups H04N 1/024 - H04N 1/0318

2201/02404 . . . Arrangements for mounting or supporting heads (H04N 2201/0242 takes precedence)

**NOTE**

Indexing codes of group H04N 2201/02406 can be used in combination, i.e. a code followed by additional codes preceded by a ‘+’ sign, or in isolation

2201/02406 . . . Arrangements for positioning elements within a head (H04N 1/02409 takes precedence; arrangements for positioning heads H04N 2201/02402)
2201/02408 . . . Translational positioning
2201/0241 . . . in a direction parallel to the main-scanning direction
2201/02412 . . . in a direction parallel to the sub-scanning direction
2201/02414 . . . in a direction perpendicular to the plane of the photodetector elements, e.g. in the direction of the optical axis (H04N 1/02409 takes precedence)
2201/02416 . . . Rotational positioning, i.e. with respect to an axis
2201/02418 . . . Rotation about the optical axis
2201/0242 . . . Rotation about an axis in the plane of the scanning elements orthogonal to the optical axis, the axis of rotation extending in the main-scanning direction, e.g. the longitudinal axis of a linear array
H04N

2201/02422 . . . Rotation about an axis in the plane of the scanning elements orthogonal to the optical axis, the axis of rotation extending in the sub-scanning direction, e.g. the transverse axis of a linear array

2201/02425 . . . Self-adjusting arrangements, e.g. compensating for temperature fluctuations

2201/02427 . . . Element positioned

2201/02429 . . . Photodetector element, e.g. CCD array

2201/02431 . . . Lens or optical system

2201/02433 . . . Reflective element, e.g. mirror

2201/02435 . . . Illuminating means

2201/02437 . . . Transparent cover

2201/02439 . . . Positioning method

2201/02441 . . . using screws

2201/02443 . . . using adhesive

2201/02445 . . . using clips or the like

2201/02447 . . . using elastic means, e.g. springs

2201/02449 . . . using a reference element, e.g. a stop

NOTE

Indexing codes of group H04N 2201/02452 can be used in combination, i.e. a code followed by additional codes preceded by a "+" sign, or in isolation

2201/02452 . . . Arrangements for mounting or supporting elements within a scanning head H04N 2201/02406, H04N 2201/03154 take precedence

2201/02454 . . . Element mounted or supported

2201/02456 . . . Scanning element, e.g. CCD array, photodetector

2201/02458 . . . Lens or optical system

2201/0246 . . . Mirror, reflecting element or beam splitter

2201/02462 . . . Illuminating means

2201/02464 . . . Transparent cover or window

2201/02466 . . . Mounting or supporting method

2201/02468 . . . using screws

2201/0247 . . . using adhesive

2201/02472 . . . using clips

2201/02474 . . . Clasping; Clamping H04N 2201/02472 takes precedence

2201/02477 . . . using elastic means, e.g. springs H04N 2201/02472 takes precedence

2201/02479 . . . Mounting or supporting means

2201/02481 . . . Single piece support, e.g. molded plastic support

2201/02483 . . . Housing or part of the housing, e.g. bottom plate H04N 2201/02481 takes precedence

2201/02485 . . . Dedicated element, e.g. bracket or arm

2201/02487 . . . Manufacturing details H04N 2201/02406, H04N 2201/02452 take precedence

2201/02489 . . . Arrangements for allowing access to the scanning head, e.g. for service or repair

2201/02491 . . . Arrangements for reducing the effects of vibrations

2201/02493 . . . Additional optical elements not otherwise provided for, e.g. filters, polarising plates, masks or apertures

2201/02495 . . . Constructional details not otherwise provided for, e.g. for ease of assembly, allowing access to the scanning elements, integrated reinforcing members

2201/02497 . . . Additional elements, e.g. sheet guide plates, light shields H04N 2201/02489 - H04N 2201/02495 take precedence

2201/02498 . . . for picture information pick-up

2201/03 . . . deleted

2201/031 . . . deleted

2201/03104 . . . Integral pick-up heads, i.e. self-contained heads whose basic elements are a light source, a lens and a photodetector supported by a single-piece frame

2201/03108 . . . Components of integral heads

2201/03112 . . . Light source

2201/03116 . . . Light source lens

2201/0312 . . . Reflecting element upstream of the scanned picture elements

2201/03125 . . . Light guide upstream of the scanned picture elements

2201/03129 . . . Transparent cover or transparent document support mounted on the head

2201/03133 . . . Window, i.e. a transparent member mounted in the frame

2201/03137 . . . Reflecting element downstream of the scanned picture elements

2201/03141 . . . Photodetector lens

2201/03145 . . . Photodetector

2201/0315 . . . Details of integral heads not otherwise provided for

2201/03154 . . . Additional internal supporting or reinforcing member

2201/03158 . . . Heat radiator

2201/03162 . . . Original guide plate

2201/03166 . . . Additional light shielding member

2201/0317 . . . Shape

2201/03175 . . . Position

2201/03179 . . . Frame

2201/03183 . . . Material

2201/03187 . . . Additional optical element

2201/03191 . . . Adhesive element

2201/03195 . . . Coating, e.g. light adsorbing layer

2201/04 . . . Scanning arrangements

2201/0402 . . . Arrangements not specific to a particular one of the scanning methods covered by groups H04N 1/04 - H04N 1/207

2201/0404 . . . Scanning transparent media, e.g. photographic film

NOTE

Subgroups H04N 2201/0404 - H04N 2201/0468 are for use with subgroups H04N 1/04 - H04N 1/207

2201/0406 . . . Scanning slides

2201/0408 . . . Scanning film strips or rolls

2201/041 . . . Scanning microfilms or microfiches

2201/0412 . . . Scanning X-ray films

2201/0414 . . . Scanning an image in a series of overlapping zones

2201/0416 . . . Performing a pre-scan
2201/0418 . . . capable of scanning transmissive and reflective originals at a single scanning station
2201/042 . . . capable of using different scanning methods at a single scanning station
2201/0422 . . . Media holders, covers, supports, backgrounds; Arrangements to facilitate placing of the medium (H04N 2201/0406 - H04N 2201/0412, H04N 2201/0434 take precedence)
2201/0424 . . . Scanning non-straight lines
2201/0426 . . . Scanning an image in a series of contiguous zones
2201/0428 . . . Stabilising the scanning parts; Preventing vibrations
2201/043 . . . Viewing the scanned area
2201/0432 . . . Adjusting the orientation of the scanning elements relative to the scanned sheet, e.g. changing from longitudinal to lateral scanning
2201/0434 . . . specially adapted for scanning pages of a book
2201/0436 . . . Scanning a picture-bearing surface lying face up on a support (H04N 2201/0434 takes precedence; using cylindrical picture bearing surfaces H04N 1/06; with manual scanning H04N 1/107)
2201/0438 . . . Scanning displays; Scanning large surfaces, e.g. projection screens, writing boards
2201/044 . . . Moving a scanning element into cooperation with a calibration element, e.g. a grey-wedge mounted on the document support, or vice versa
2201/0442 . . . Details of scanning carriage or moving picture-bearing surface support, e.g. bearing contact with guide rails
2201/0444 . . . for securing moveable scanning components, e.g. for transportation
2201/0446 . . . Constructional details not otherwise provided for, e.g. mounting of scanning components (H04N 2201/0448 takes precedence)
2201/0448 . . . for positioning scanning elements not otherwise provided for; Aligning, e.g. using an alignment calibration pattern (arrangements for positioning elements within a scanning head H04N 2201/0406)
2201/045 . . . Mounting the scanning elements in a collapsible or foldable structure, e.g. for ease of transportation
2201/0452 . . . Indicating the scanned area, e.g. by projecting light marks onto the medium
2201/0454 . . . for increasing the scanning speed
2201/0456 . . . for maintaining a predetermined distance between the scanning elements and the picture-bearing surface
2201/0458 . . . Additional arrangements for improving or optimising scanning resolution or quality
2201/046 . . . Actively compensating for disturbances, e.g. vibrations
2201/0462 . . . for reducing inactive scanning periods, e.g. increasing speed of carriage during return movement
2201/0464 . . . Self-propelled scanners, e.g. robotic scanners, means for propulsion integrated in the scanner carriage
2201/0466 . . . Selectively scanning in one or the other of two opposite directions, e.g. in the forward or the reverse direction

2201/0468 . . . Scanning in both of the two directions, e.g. during the forward and return movements
2201/047 . . . Detection, control or error compensation of scanning velocity or position
2201/04701 . . . Detection of scanning velocity or position
2201/04703 . . . using the scanning elements as detectors, e.g. by performing a prescan
2201/04705 . . . using inactive scanning elements, e.g. elements outside the scanning area
2201/04706 . . . which undergo the same scanning as the active elements in at least one direction
2201/04708 . . . which remain outside the scanned image area
2201/0471 . . . using dedicated detectors
2201/04712 . . . using unbroken arrays of detectors, i.e. detectors mounted on the same substrate
2201/04713 . . . Details of the detector arrangement, e.g. non-standard position, optical details (H04N 2201/04712 takes precedence)
2201/04715 . . . by detecting marks or the like, e.g. slits
2201/04717 . . . on the scanned sheet, e.g. a reference sheet
2201/04718 . . . outside the image area
2201/0472 . . . on or adjacent the sheet support
2201/04722 . . . on a photoconductive drum or belt
2201/04724 . . . on a separate encoder wheel
2201/04725 . . . connected to the sub-scanning drive means
2201/04727 . . . on a linear encoder
2201/04729 . . . in the main-scan direction
2201/04731 . . . in the sub-scan direction
2201/04732 . . . Detecting at infrequent intervals, e.g. once or twice per line for main-scan control
2201/04734 . . . Detecting at frequent intervals, e.g. once per line for sub-scan control
2201/04736 . . . with varying intervals between consecutive detections
2201/04737 . . . by detecting the scanned medium directly, e.g. a leading edge
2201/04739 . . . by detecting the scanning head or scanning carriage
2201/04741 . . . by detecting the sheet support or the photoconductive surface directly
2201/04743 . . . by detecting the image directly (detecting reference images H04N 2201/04717)
2201/04744 . . . by detecting the scanned beam or a reference beam
2201/04746 . . . after modulation by a grating, mask or the like
2201/04748 . . . by detecting synchronisation signals or driving signals, e.g. page sync
2201/04749 . . . Detecting position relative to a gradient, e.g. using triangular-shaped masks, marks or gratings
2201/04751 . . . Detecting position relative to a step, e.g. using L-shaped masks, marks or gratings
2201/04753 . . . Control or error compensation of scanning position or velocity
2201/04755 . . . by controlling the position or movement of a scanning element or carriage, e.g. of a polygonal mirror, of a drive motor
2201/04756 . . . by controlling the position or movement of the sheet, the sheet support or the photoconductive surface
CIRCUITS OR ARRANGEMENTS FOR RECORDING ON DIFFERENT TYPES OF DOCUMENT

NOTE

Subgroups H04N 2201/3202 - H04N 2201/3284 are for use with subgroups H04N 1/32101 - H04N 1/32352
Details of colour television systems

NOTE

Subgroups
H04N 2201/33307 - H04N 2201/33392 are for use with subgroups H04N 1/333 - H04N 1/33392

H04N 2209/00
Details of colour television systems

- using solid-state devices
- having a single pick-up sensor

- Picture signal generators
- using solid-state devices

- Transmission
- Encryption: Ciphersing
- Compression
- for error correction
- using picture signal storage, e.g. at transmitter
- Storage of at least one complete document page or image frame

NOTE

Subgroups
H04N 2201/3287 - H04N 2201/3298 are for use with subgroups H04N 1/32358 - H04N 1/32491

- Storage of two or more complete document pages or image frames
- Storage of less than a complete document page or image frame
- of less than a complete line of data
- of one or two complete lines
- of several complete lines, e.g. a band of data
- Deletion of stored data; Preventing such deletion
- Simultaneous use of a single memory for different image storage purposes
- Checking or indicating the storage space
- Mode signalling or mode changing; Handshaking therefor
- of a particular mode

NOTE

Subgroups
H04N 2201/33307 - H04N 2201/33392 are for use with subgroups H04N 1/333 - H04N 1/33392

- of reading or reproducing mode
- Image or page size, e.g. A3, A4
- Resolution
- Presentation, e.g. orientation, simplex, duplex
- of transmission mode
- Speed or rate
- Compression mode
- Type of modulation; Type of channel, e.g. digital or analog; Type of communication, e.g. half-duplex or full-duplex
- using test signals, e.g. checking error occurrences
- Type or format of data, e.g. colour or B/W, halftone or binary, computer image file or facsimile data
- Line- or page- scan or transmission time, e.g. minimum line-scan time
- Non-standard capability, e.g. relay, mail-box

- of a customised additional information profile, e.g. a profile specific to a user ID
- The additional information being stored in the same storage device as the image data
- Transmission
- Processing of the additional information
- Encryption: Ciphersing
- Compression
- for error correction
- using picture signal storage, e.g. at transmitter
- Storage of at least one complete document page or image frame

using an alternating colour separation filter, e.g. colour wheel or colour LCD
using sequential colour illumination
using mosaic colour filter
Colour interpolation to calculate the missing colour values
using multispectral pick-up elements
having several pick-up sensors
having three pick-up sensors

Details of stereoscopic systems
Constructional or mechanical details
Eyestrain reduction by processing stereoscopic signals or controlling stereoscopic devices
Aspects relating to the “2D+depth” image format
Aspects relating to the “3D+depth” image format
Pseudo-stereoscopic systems, i.e. systems wherein a stereoscopic effect is obtained without sending different images to the viewer's eyes
Aspects relating to detection of stereoscopic image format, e.g. for adaptation to the display format
Aspects relating to glasses for viewing stereoscopic images