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, e.g. by reading an 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;]
[remote control of cameras and projectors insofar not peculiar to the EIS or ESLM, e.g. not affecting their operation, or being based on a generated image signal;]

\{optical aspects of camera modules using electronic image sensors and related constructional details (optical elements or arrangements associated with solid state imager structures \textit{H01L 27/14625});\}

\{constructional aspects of projectors, e.g. cooling, beam shaping, light integrating means not peculiar to the ESLM;\}

3. In this subclass, the following expression is used with the meaning indicated:

\{"television systems" means those systems for the \{"electronic generation,"\} transmission and reproduction of arbitrarily composed pictures in which the local light variations composing a picture may change with time, e.g. natural "live" scenes, \{"electronic"\} recordings of such scenes such as cinematograph films.\}

4. \{In this subclass, as in subclass \textit{G03B}, the following terms are used with the meaning indicated:\}

\{"camera": a device capturing image information represented by light patterns reflected or emitted from objects, and exposing a light sensitive film or a main electronic image sensor during a timed exposure, usually through a photographic lens, and producing an image on a light sensitive film or an electrical image information signal respectively; \}

\{"projector": a device displaying image information by projection of light patterns, usually through an optical lens, wherein the light patterns are generated by illuminating an image, e.g. film or slide, or by converting an electric image signal into an optical signal using an electronic spatial light modulator; \}

\{"electronic image sensor [EIS]": optoelectronic transducer, converting optical image information into an electrical signal susceptible of being processed, stored, transmitted or displayed; \}

\{"additional sensor": a sensor, other than the main electronic image sensor, used for controlling a camera; \}

\{"electronic spatial light modulator [ESLM]": optoelectronic transducer converting electric signals representing image information into optical image information.\}

\textbf{WARNINGS}

1. The following IPC groups are not in the CPC scheme. Subject matter for these IPC groups is classified in the following CPC groups:

\begin{align*}
\text{H04N 5/761} & \quad \text{covered by} \quad \text{H04N 5/782} \\
\text{H04N 5/7613} & \quad \text{covered by} \quad \text{H04N 5/782} \\
\text{H04N 5/7617} & \quad \text{covered by} \quad \text{H04N 5/782} \\
\text{H04N 5/922} & \quad \text{covered by} \quad \text{H04N 5/92} \\
\text{H04N 5/924} & \quad \text{covered by} \quad \text{H04N 5/92} \\
\text{H04N 9/815} & \quad \text{covered by} \quad \text{H04N 9/81} \\
\end{align*}

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 \textbf{Scanning, transmission or reproduction of documents or the like, e.g. facsimile transmission; Details thereof}
apparatus with another apparatus, e.g. for storage,

{ Connection or combination of a still picture

the picture signal }

{ Systems or arrangements for the transmission of

H04N 1/00283

; with a television apparatus H04N 1/00681]

1/00084 . . . . . {Recovery or repair, e.g. self-repair}
1/00087 . . . . . {Setting or calibrating (picture signal circuits

H04N 1/40)}
1/0009 . . . . . {Storage}
1/00092 . . . . {relating to the original or to the reproducing

medium, e.g. imperfections or dirt (detecting

properties of a sheet H04N 1/00681)]
1/00095 . . . . . {Systems or arrangements for the transmission of

the picture signal}  
1/00098 . . . . . {via a television channel, e.g. for a series of still

pictures with or without sound}
1/00113 . . . . . {specially adapted for transmission via digital

dline wireline networks (H04N 1/00098 takes

precedence)}
1/00103 . . . . . {specially adapted for radio transmission, e.g. via

satellites (H04N 1/00098 takes precedence)}
1/00106 . . . . . {using land mobile radio networks, e.g. mobile

telephone}
1/00108 . . . . . {of digital signals}
1/00111 . . . . . {specially adapted for optical transmission}
1/00114 . . . . . {with transmission of additional information

signals (for control or supervision between

transmitter and receiver H04N 1/32101)}
1/00116 . . . . . {of multimedia information}
1/00119 . . . . . {of sound information only}
1/00122 . . . . . {of text or character information only}
1/00124 . . . . . {of video information only}
1/00127 . . . . . {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}
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)}
1/00132 . . . . . {in a digital photofinishing system, i.e. a system

where digital photographic images undergo

typical photofinishing processing, e.g. printing

ordering}
1/00135 . . . . . {Scanning of a photographic original}
1/00137 . . . . . {Transmission}
1/0014 . . . . . . {via e-mail}
1/00143 . . . . . . {Ordering}
1/00145 . . . . . . {from a remote location}
1/00148 . . . . . . {Storage (information retrieval G06F 16/00)}
1/00151 . . . . . . {with selective access}
1/00153 . . . . . . {for sharing images with a selected

individual or correspondent}
1/00156 . . . . . . {with a group of selected individuals or

correspondents}
1/00159 . . . . . . {for sharing images without access

restriction, e.g. publishing images}
1/00161 . . . . . . {Viewing or previewing}
1/00164 . . . . . . {at a remote location}
1/00167 . . . . . . {Processing or editing

(H04N 1/00196 - H04N 1/00201 take

precedence})
1/00169 . . . . . . {Digital image input}
1/00172 . . . . . . {directly from a still digital camera or from a

storage medium mounted in a still digital

camera (H04N 1/0018 takes precedence)}
1/00175 . . . . . . {from a still image storage medium

(H04N 1/00172, H04N 1/0018 take

precedence)}
H04N

1/00233 . . . . . . [details of image data reproduction, e.g. network printing or remote 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 1/00209)]

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]
H04N

1/00336 . . . . . . [with an apparatus performing pattern recognition, e.g. of a face or a geographic feature (arrangements for recognising patterns G06K 9/00)]

1/00339 . . . . . . [with an electronic or magnetic storage medium I/O device (RFID or the like H04N 1/00342)]

1/00342 . . . . . . [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)]

1/00344 . . . . . . [with a management, maintenance, service or repair apparatus (monitoring H04N 1/00002)]

1/00347 . . . . . . [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 1/32)]

1/0035 . . . . . . [User-machine interface; Control console (input or output arrangements for computers G06F 3/00)]

1/00352 . . . . . . [Input means (H04N 1/00411 takes precedence; input arrangements for computers G06F 3/00)]

1/00355 . . . . . . [Mark-sheet input (sensing record carriers contain written characters G06K 7/00; recognising printed or written characters G06K 9/00)]

1/00358 . . . . . . [Type of the scanned marks]

1/0036 . . . . . . [Alphanumeric symbols]

1/00363 . . . . . . [Bar codes or the like]

1/00366 . . . . . . [Marks in boxes or the like, e.g. crosses or blacking out (H04N 1/0036 takes precedence)]

1/00368 . . . . . . [Location of the scanned marks]

1/00371 . . . . . . [on a separate sheet]

1/00374 . . . . . . [on the same page as at least a part of the image]

1/00376 . . . . . . [Means for identifying a mark sheet or area]

1/00379 . . . . . . [Means for enabling correct scanning of a mark sheet or area, e.g. registration or timing marks]

1/00381 . . . . . . [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)]

1/00384 . . . . . . [Key input means, e.g. buttons or keypads (electromechanical details of key input means in general H01H 13/00)]

1/00387 . . . . . . [Multiple functions per key]

1/00389 . . . . . . [Programmable function keys, e.g. for one-touch operation (H04N 1/00387 takes precedence; for automation of transmitter jobs H04N 1/32058)]

1/00392 . . . . . . [Other manual input means, e.g. digitisers or writing tablets]

1/00395 . . . . . . [Arrangements for reducing operator input (input arrangements for job or mode instructions or parameters H04N 1/00962; intelligent menu interfaces H04N 1/00437)]

1/00397 . . . . . . [Switches, knobs or the like]

1/004 . . . . . . [Rocker or thumbler switches]

1/00403 . . . . . . [Voice input means, e.g. voice commands]

1/00405 . . . . . . [Output means (output arrangements for computers G06F 3/00)]

1/00408 . . . . . . [Display of information to the user, e.g. menus]

1/00411 . . . . . . [the display also being used for user input, e.g. touch screen]

1/00413 . . . . . . [using menus, i.e. presenting the user with a plurality of selectable options (H04N 1/00464 takes precedence)]

1/00416 . . . . . . {Multi-level menus}

1/00419 . . . . . . [Arrangements for navigating between pages or parts of the menu]

1/00421 . . . . . . [using drop-down menus]

1/00424 . . . . . . [using a list of graphical elements, e.g. icons or icon bar]

1/00427 . . . . . . [using a menu list (H04N 1/00421, H04N 1/00424, H04N 1/00429 take precedence)]

1/00429 . . . . . . [using a navigation tree]

1/00432 . . . . . . [using tabs]

1/00435 . . . . . . [arranged in a predetermined sequence, e.g. using next and previous buttons]

1/00437 . . . . . . [Intelligent menus, e.g. anticipating user selections]

1/0044 . . . . . . [for image preview or review, e.g. to help the user position a sheet]

1/00442 . . . . . . [Simultaneous viewing of a plurality of images, e.g. using a mosaic display arrangement of thumbnails]

1/00445 . . . . . . [arranged in a one dimensional array]

1/00448 . . . . . . [horizontally]

1/0045 . . . . . . [vertically]

1/00453 . . . . . . [arranged in a two dimensional array]

1/00456 . . . . . . [for layout preview, e.g. page layout]

1/00458 . . . . . . [Sequential viewing of a plurality of images, e.g. browsing or scrolling]

1/00461 . . . . . . [marking or otherwise tagging one or more displayed image, e.g. for selective reproduction]

1/00464 . . . . . . [using browsers, i.e. interfaces based on mark-up languages]

1/00466 . . . . . . [displaying finishing information, e.g. position of punch holes or staple or orientation references]

1/00469 . . . . . . [with enlargement of a selected area of the displayed information]

1/00472 . . . . . . [using a pop-up window]

1/00474 . . . . . . [outputting a plurality of functional options, e.g. scan, copy or print]

1/00477 . . . . . . [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)]

1/0048 . . . . . . [indicating an illegal or impossible operation or selection to the user]

1/00482 . . . . . . [outputting a plurality of job set-up options, e.g. number of copies, paper size or resolution]

1/00485 . . . . . . [providing a hardcopy output to the user, e.g. print out]

1/00488 . . . . . . [providing an audible output to the user]

1/0049 . . . . . . [providing a visual indication to the user, e.g. using a lamp (H04N 1/00408 takes precedence)]

1/00493 . . . . . . [particular location of the interface or console]

1/00496 . . . . . . [constructional details of the interface or console not otherwise provided for, e.g. rotating or tilting means]

1/00498 . . . . . . [multi-lingual facilities]
H04N

1/00501 . . . [Tailoring a user interface [UI] to specific requirements]
1/00503 . . . [Customising to a particular machine or model, machine function or application]
1/00506 . . . [Customising to the data to be displayed]
1/00509 . . . [Personalising for a particular user or group of users, e.g. a workgroup or company]
1/00511 . . . [for a group of users, e.g. a workgroup, company, or a service provider]
1/00514 . . . [for individual users]
1/00517 . . . [Involving favourite or frequently used settings]
1/00519 . . . [Constructional details not otherwise provided for, e.g. housings, covers]
1/00522 . . . [Reducing apparatus footprint, e.g. wall-mounted or vertically arranged apparatus]
1/00525 . . . [Providing a more compact apparatus, e.g. sheet discharge tray in cover]
1/00527 . . . [Discharge tray at least partially sandwiched between image generating and reproducing components]
1/0053 . . . [Discharge tray in cover]
1/00533 . . . [using slidably mounted components, e.g. reader in drawer]
1/00535 . . . [using rotatably mounted or foldable components]
1/00538 . . . [Modular devices, i.e. allowing combinations of separate components, removal or replacement of components]
1/00541 . . . [with detachable image reading apparatus]
1/00543 . . . [Allowing easy access, e.g. for maintenance or in case of paper jam (H04N 1/00538 takes precedence)]
1/00546 . . . [using a side opening]
1/00549 . . . [Counter-measures for mechanical vibration not otherwise provided for]
1/00551 . . . [Top covers or the like]
1/00554 . . . [Latches or hinges therefor]
1/00557 . . . [Connection or assembly of components or elements (H04N 1/00538 takes precedence)]
1/00559 . . . [Mounting or support of components or elements (H04N 1/00538 takes precedence)]
1/00562 . . . [Supporting the apparatus as a whole, e.g. stands]
1/00564 . . . [Constructional details relating to ergonomic aspects]
1/00567 . . . [Handling of original or reproduction media, e.g. cutting, separating, stacking]
1/0057 . . . [Conveying sheets before or after scanning (arrangements for conveying sheets as part of the scanning operation H04N 1/04 and subgroups)]
1/00572 . . . [with refeeding for double-sided scanning, e.g. using one scanning head for both sides of a sheet]
1/00575 . . . [Inverting the sheet prior to refeeding]
1/00578 . . . [using at least part of a loop, e.g. using a return loop]
1/0058 . . . [using at least one dead-end path, e.g. using a sheet ejection path]
1/00583 . . . [by rotating the sheet about an axis lying in its plane]
1/00586 . . . [Inverting the scanning elements with respect to the scanning plane prior to refeeding]
1/00588 . . . [to the scanning position (H04N 1/00572, H04N 1/00594 take precedence)]
1/00591 . . . [from the scanning position (H04N 1/00572 takes precedence)]
1/00594 . . . [along at least a part of the same path as transport to the scanning position (H04N 1/00575 takes precedence)]
1/00596 . . . [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]
1/00599 . . . [Using specific components (details of components related to handling thin or filamentary material B65H)]
1/00602 . . . [Feed rollers]
1/00604 . . . [Transport trays]
1/00607 . . . [Grippers or the like, e.g. suction grippers]
1/0061 . . . [Feed belts]
1/00612 . . . [Path switches (H04N 1/00575, H04N 1/00623, H04N 1/00633 take precedence)]
1/00615 . . . [Guiding elements, e.g. plates]
1/00618 . . . [Transporting curved sheets or curving sheets during transportation, e.g. for feeding to a drum-type scanner]
1/0062 . . . [Removing sheets from a stack or inputting media]
1/00623 . . . [Selectively inputting media from one of a plurality of input sources, e.g. input trays]
1/00625 . . . [Removing sheets selectively from the top or bottom of a single stack or tray]
1/00628 . . . [Separating, e.g. preventing feeding of two sheets at a time]
1/00631 . . . [Ejecting or stacking (H04N 1/00641 takes precedence)]
1/00633 . . . [selectively to one of a plurality of output trays (H04N 1/00641 takes precedence)]
1/00636 . . . [Ejecting sheets selectively to the top or bottom of a single stack or tray]
1/00639 . . . [Binding, stapling, folding or perforating, e.g. punching]
1/00641 . . . [Sorting, reordering or inverting (postal sorting or sorting individual articles B07C)]
1/00644 . . . [Counting or calculating, e.g. a number of remaining sheets]
1/00647 . . . [Decurling]
1/00649 . . . [Control or synchronising different handling operations (H04N 1/00657 takes precedence)]
1/00652 . . . [Control of feeding speed, e.g. fast feeding to scanning position (H04N 1/00673 takes precedence)]
1/00655 . . . [Apparatus in common for different handling operations (H04N 1/00575, H04N 1/00594, H04N 1/00596, H04N 1/00618 take precedence)]
1/00657 . . . [Compensating for different handling speeds of different apparatus or arrangements for handling a plurality of sheets simultaneously, e.g. mechanical buffering]
1/0066 . . . [Aligning or positioning related to handling]
1/00663 . . . [Indicating relating to handling of media]
1/00665 . . . [Details specific to handling of web-shaped media, e.g. paper or film rolls]
1/00668 . . . [Removing the medium from a cassette, spindle or the like]
[Winding or feeding the medium into a cassette or onto a spindle or the like]

[Controlling the amount of slack or tension control]

[Cutting]

[after scanning]

[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)]

[Object of the detection]

[Presence or absence]

[Presence]

[Absence]

[in an input tray]

[in an output tray]

[of holder, e.g. film mount]

[Position]

[at a plurality of spaced apart locations, e.g. as a sheet is fed through the apparatus]

[Size or dimensions]

[Width]

[Length]

[Thickness]

[Skew]

[Orientation]

[Type of sheet, e.g. colour of paper or transparency]

[Other properties of the sheet, e.g. curvature or reflectivity]

[Detection means]

[Mechanical detectors]

[Optical detectors]

[using the scanning elements as detectors]

[using inactive scanning elements, e.g. elements outside the scanning area]

[Detection methods]

[Detecting the leading or trailing ends of a moving sheet]

[Detecting edges, e.g. of a stationary sheet]

[Detecting a change in reflectivity]

[of a sheet relative to a particular background]

[Detecting an interruption of light]

[using a prescan]

[using reference marks, e.g. on sheet, sheet holder or guide]

[Action taken as a result of detection]

[Storing data]

[Comparing, e.g. with threshold]

[Indicating or reporting, e.g. issuing an alarm]

[Adjusting or controlling]

[Inhibiting, e.g. an operation]

[Adjusting settings, e.g. mode, feeding rate or type of paper]

[Initiating operations]

[Correcting the position of a sheet before scanning]

[using mechanical means]

[using guide or holder]

[using paper feeding mechanism, e.g. operate drive rollers at different speeds]

[Reading arrangements (details of scanning heads H04N 1/024; scanning arrangements therefor H04N 1/041)]

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

[according to characteristics of the original]

[Presence or absence of information]

[According to type of the original, e.g. colour paper or transparency, or reading a plurality of different types of original]

[Orientation]

[according to user specified instructions, e.g. user selection of reading mode]

[according to a detected condition or state of the reading apparatus, e.g. temperature]

[Determining the reading area, e.g. eliminating reading of margins]

[Self-calibrating reading means]

[Selecting or setting a particular reading mode, e.g. from amongst a plurality of modes, simplex or duplex, or high or low resolution]

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

[Arrangements for reading an image from an unusual original, e.g. 3-dimensional objects]

[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 1/32)]

[Recording use, e.g. counting number of pages copied]

[Detecting external or ambient light]

[Preventing unauthorised reproduction]

[Determining the necessity for prevention]

[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)]

[based on detection of a dedicated indication, e.g. marks or the like]

[by detecting a particular original]

[externally to or remotely from the reproduction apparatus, e.g. using a connected apparatus]

[Recognising an unauthorised user or user-associated action]

[Preventive measures]

[Issuing an alarm or the like]

[Retaining the original]

[Modifying the reproduction, e.g. outputting a modified copy of a scanned original (details of composing or otherwise geometrically modifying originals H04N 1/3872)]

[with additional data, e.g. by adding a warning message (details of embedding additional information in an image H04N 1/3214)]

[with hidden additional data, e.g. data invisible to the human eye]
provided for} arrangements for controlling a still picture 
contamination from dust or the like (cleaning 
arrangements or preventing or counter-
acting) 

Cleanings or arrangements to an external supply (H04N 1/00893, H04N 1/00896 
take precedence)

Arrangements for supplying power to different circuits or for supplying power at different levels (H04N 1/00904 
take precedence)

Details of supply connection, e.g. arrangement of power cables (H04N 1/00901 and 
H04N 1/00904 take precedence)

Arrangements for controlling a still picture apparatus or components thereof not otherwise provided for

Assigning priority to, or interrupting, a particular operation

Resuming after an intentional interruption, e.g. resetting parameters

Assigning priority according to size job or task, e.g. small jobs first

Variously assigning priority (H04N 1/0092 
takes precedence)

Inhibiting an operation

Initialisation or control of normal start-up or shut-down, i.e. non failure or error related

Synchronising different operations or sub-apparatus, e.g. controlling on-times taking into account different warm-up times

Timing control or synchronising (H04N 1/00928, H04N 1/00931, H04N 1/00954 and 
H04N 1/0096 take precedence)

Skipping a function or process step

Software related arrangements, e.g. loading applications (program loading in general 
G06F 9/445)

Interaction of different applications (H04N 1/00949 takes precedence; 
multiprogramming arrangements of computers G06F 9/46)

using hot folders, i.e. folders or directories which trigger an action when written to or accessed

Details of actions associated with a hot folder

Combining applications, e.g. to create workflows (allocation of computer machine resources considering the execution order of a plurality of tasks G06F 9/5038)

Using a plurality of control devices, e.g. for different functions

(Scheduling operations or managing resources (H04N 1/0096 takes precedence; program initiating or switching G06F 9/48; allocation of computer resources G06F 9/50))

Compiling jobs, e.g. for batch processing (H04N 1/3208 takes precedence; program code compilation G06F 8/41)

Simultaneous or quasi-simultaneous functioning of a plurality of operations (H04N 1/32545 takes precedence; multiprogramming arrangements of computers G06F 9/46)

Input arrangements for operating instructions or parameters, e.g. updating internal software (program loading in general G06F 9/445; network-specific protocols involving the movement of software or configuration parameters H04L 67/34)

using a plug-in memory module, e.g. memory card, memory stick

by scanning marks on a sheet (mark-sheet input means H04N 1/00355; sensing record carriers G06K 7/00)

Storage of instructions or parameters, e.g. customised instructions or different parameters for different user IDs

from a remote device, e.g. receiving via the internet instructions input to a computer terminal

Arrangements for regulating environment, e.g. removing static electricity

Temperature control

(by forced convection, e.g. using fans)

using fins or the like

Heating

by natural convection, e.g. using fins without a fan

Humidity control, e.g. removing condensation

Compensating for electromagnetic interference

Light control, e.g. shielding from ambient light or preventing light leakage

Details of scanning heads [: Means for illuminating the original]

Focusing, i.e. adjusting the focus of the scanning head

for picture information pick up and reproduction

in different planes

using a single head selectively and alternately arranged to scan in the different planes

in the same plane

using interchangeable heads

using heads mounted on the same support or substrate

using a single head, i.e. for pick up and reproduction (H04N 1/02436 takes precedence)
1/02481 . . . [Arrangements for positioning elements within a head (H04N 1/02409 takes precedence)]
1/0249 . . . [Arrangements for mounting or supporting elements within a scanning head (H04N 1/02481 takes precedence)]
1/028 . . . for picture information pick-up
1/02805 . . . [with photodetectors arranged in a two-dimensional array]
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]
1/02815 . . . [Means for illuminating the original, not specific to a particular type of pick-up head]
1/0282 . . . [Using a single or a few point light sources, e.g. a laser diode]
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)]
1/0283 . . . [in combination with a light deflecting element, e.g. a rotating mirror]
1/02835 . . . [in combination with a light guide, e.g. optical fibre, glass plate (light-guides per G02B 6/00)]
1/0284 . . . [in combination with a light integrating, concentrating or diffusing cavity]
1/02845 . . . [using an elongated light source, e.g. tubular lamp, LED array]
1/0285 . . . [in combination with at least one reflector which is in fixed relation to the light source]
1/02855 . . . [in combination with a light guide, e.g. optical fibre, glass plate (light-guides per G02B 6/00)]
1/0286 . . . [in combination with a light integrating, concentrating or diffusing cavity]
1/02865 . . . [using an array of light sources or a combination of such arrays, e.g. an LED bar]
1/0287 . . . [using a tubular lamp or a combination of such lamps]
1/02875 . . . [comprising a reflective coating]
1/0288 . . . [using a two-dimensional light source, e.g. two-dimensional LED array]
1/02885 . . . [Means for compensating spatially uneven illumination, e.g. an aperture arrangement]
1/0289 . . . [Light diffusing elements, e.g. plates or filters (optical diffusing elements per G02B 6/00)]
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 G02B 6/00)]
1/029 . . . Heads optically focused on only one picture element at a time ([H04N 1/0281 takes precedence])
1/03 . . . with photodetectors arranged in a substantially linear array
1/0301 . . . [using a bent optical path between the scanned line and the photodetector array, e.g. a folded optical path]
[Cylindrical surface] perpendicular to the axis and lying in a curved.

Scanning a main-scanning line substantially using cylindrical picture-bearing surfaces, e.g.,
scanning velocity or position, etc. (H04N 1/0423 takes precedence).

Detection, control or error compensation of taking precedence)

Scanning at more than one scanning station, capable of performing non-simultaneous with a common scanning device H04N 1/207)

Details of the method used

Conversion of standards

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)

Holding means

Flexible holding means, e.g., envelopes or sheaths

Mechanical clamps, i.e., 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 form 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 sub-scanning by translatory 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)

Mechanisms for mounting or holding the sheet around the drum

Holding corners of the sheet

Holding sides of the sheet which are substantially parallel to the drum axis

Holding sides of the sheet which are substantially perpendicular to the drum axis

Holding substantially the whole of the sheet, e.g., with a retaining sheet

Holding or supporting the sheet in the vicinity of the scanning element

Holding means

Flexible holding means, e.g., envelopes or sheaths

Mechanical clamps, i.e., 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

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 form 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 sub-scanning by translatory movement of 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
I/1039 . . . . [Movement of the main scanning components]
I/1043 . . . . {of a sensor array}
I/1048 . . . . {of a lens or lens arrangement}
I/1052 . . . . {of a mirror}
I/1056 . . . . {of two or more separate mirror arrangements}
I/1061 . . . . {Details relating to flat picture-bearing surfaces, e.g. transparent platen}
I/1065 . . . . {Support or mounting of the flat picture-bearing surface}
I/107 . . . . with manual scanning
I/1071 . . . . {using a folded light path}
I/1072 . . . . {Means for guiding the scanning, e.g. rules (H04N 1/1077 takes precedence)}
I/1074 . . . . {Apparatus incorporating a hardcopy reproducing device, e.g. a printer, not working directly by manual scanning}
I/1075 . . . . {Arrangements for facilitating holding of the scanner, e.g. shapes, grips}
I/1077 . . . . {Arrangements for facilitating movement over the scanned medium, e.g. disposition of rollers}
I/1078 . . . . {by moving the scanned medium}
I/113 . . . . using oscillating or rotating mirrors
I/1135 . . . . {for the main-scan only}
I/12 . . . . 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} {![image](image-url)}
I/1205 . . . . {using a device, e.g. an optical fibre bundle, converting rectilinear scanning into circular line scanning or vice versa}
I/121 . . . . {Feeding arrangements (transporting sheets to or from the scanning position H04N 1/10057; control or error compensation of sub-scanning velocity H04N 1/10073)}
I/1215 . . . . {Feeding using one or more cylindrical platens or rollers in the immediate vicinity of the main scanning line}
I/122 . . . . {using a feed belt (feed belts for transporting to or from the scanning position H04N 1/10061)}
I/1225 . . . . {Means for maintaining contact between the sheet and the image sensor, e.g. pressing means}
I/123 . . . . {Using a dedicated sheet guide element}
I/1235 . . . . {Feeding a sheet past a transparent plate; Details thereof}
I/124 . . . . {Plate shape}
I/1245 . . . . {Arrangements for mounting or holding the plate}
I/125 . . . . {the sheet feeding apparatus serving an auxiliary function, e.g. as a white reference}
I/1255 . . . . {Electronic copy boards}
I/126 . . . . {Arrangements for the main scanning}
I/1265 . . . . {using a holographic scanning element}
I/127 . . . . {using a cathode ray tube or the like}
I/1275 . . . . {using a solid-state deflector, e.g. an acousto-optic deflector or a semiconductor waveguide device}
I/128 . . . . {using a scanning head arranged for linear reciprocating motion}
I/1285 . . . . {using apertures arranged in a spiral}
I/129 . . . . {using an element rotating or oscillating about an axis not covered by any other group or code}
I/1295 . . . . {using an optical guide, e.g. a fibre-optic bundle between the scanned line and the scanning elements}
I/14 . . . . using a rotating endless belt carrying the scanning heads {or at least a part of the main scanning components}
I/16 . . . . using a rotating helical element
I/17 . . . . the scanning speed being dependent on content of picture
I/19 . . . . using multi-element arrays
I/1903 . . . . {Arrangements for enabling electronic abutment of lines or areas independently scanned by different elements of an array or by different arrays}
I/1906 . . . . {Arrangements for performing substitution scanning for a defective element}
I/191 . . . . 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}
I/1911 . . . . {Simultaneously or substantially simultaneously scanning picture elements on more than one main scanning line, e.g. scanning in swathes}
I/1912 . . . . {Scanning main scanning lines which are spaced apart from one another in the sub-scanning direction}
I/1913 . . . . {Scanning adjacent picture elements in different scans of the array, e.g. in complementary checkerboard patterns}
I/1915 . . . . {with subscan displacement of the array between successive scans}
I/1916 . . . . {using an array of elements displaced from one another in the main scan direction, e.g. a diagonally arranged array}
I/1917 . . . . {Staggered element array, e.g. arrays with elements arranged in a zigzag}
I/1918 . . . . {Combination of arrays}
I/192 . . . . Simultaneously {or substantially simultaneously} scanning picture elements on one main scanning line
I/193 . . . . using electrically scanned linear arrays {, e.g. linear CCD arrays}
I/1931 . . . . {with scanning elements electrically interconnected in groups}
I/1932 . . . . {using an array of elements displaced from one another in the sub scan direction, e.g. a diagonally arranged array}
I/1933 . . . . {Staggered element arrays, e.g. arrays with elements arranged in a zigzag}
I/1934 . . . . {Combination of arrays}
I/1935 . . . . {Optical means for mapping the whole or part of a scanned line onto the array}
Reproducing arrangements

1/2307 . . . [ 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)]

1/2315 . . . [ according to characteristics of the reproducing apparatus, e.g. capability]

1/2323 . . . [ according to characteristics of the reproducing medium, e.g. type, size or availability]

1/233 . . . [ according to characteristics of the data to be reproduced, e.g. number of lines]

1/2338 . . . [ according to user specified instructions, e.g. user selection of reproduction mode]

1/2346 . . . [ according to a detected condition or state of the reproducing device, e.g. temperature or ink quantity]
Image input and image output device (H04N 1/38 between transmitter and receiver {or between transmitter and receiver} takes precedence)

{Automation of particular transmitter jobs, e.g. rejecting unwanted calls (H04N 1/32358 H04N 1/32771; with picture signal storage for forwarding messages H04N 1/32358)}

{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)}

{Automating 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)}

{Rejecting unwanted calls}

{According to the caller's identification, e.g. fax number (H04N 1/3201 takes precedence)}

{According to the type of received information}

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

{Polling of transmitters}

{Automation of particular transmitter jobs, e.g. multi-address calling, auto-dialing}

{with reading of job-marks on a page}

{Auto-dialling or Auto-calling (H04N 1/32053 - H04N 1/32074 take precedence)}

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

{Abbreviated dialing, e.g. one-touch dialing}

{Multi-address calling}

{Simultaneously to a plurality of destinations, e.g. multi-casting}

{Redialing, e.g. after failure to make a connection}

{Transmitting a plurality of separate messages to a common destination in a single transmission}

{Automation of other tasks, e.g. repetitive execution or sequencing}
(H04N 1/17 takes precedence) }

{ using picture signal storage, e.g. at transmitter
{ at the transmitter or at the receiver }

{ Forwarding image data, e.g. to an absent

{ Replacing pixels of an image with
other pixels from the same image, e.g. texture block coding}

{ with selective or adaptive application
of the additional information, e.g. in
selected regions of the image

{ in highly textured regions

{ in edge regions

{ Random or pseudorandom selection
of pixels

{ in multilevel data, e.g. greyscale or
continuous tone data

{ in halftone data

{ in binary data (H04N 1/3256 takes
precedence) }

{ combined with processing of the image

{ Encryption or ciphering

{ Compression

{ Hashing

{ Multiple embedding, e.g. cocktail
embedding, or redundant embedding, e.g.
repeating the additional information at a
plurality of locations in the image

{ Repeating the additional information in
a regular pattern

{ using more than one embedding
method

{ Embedding different sets of additional
information

{ in colour image data

{ Selecting a particular method from
amongst a plurality of methods

{ Robust embedding or watermarking

{ the embedded data being visible

{ Fragile embedding or watermarking

{ Informed embedding, i.e. the original
image being known for the encoding or
decoding method

{ Blind embedding, i.e. the original image
not being known beforehand

{ Reversible embedding, i.e. lossless,
invertible, erasable or distortion-free
embedding

{ 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)) }

{ using picture signal storage, e.g. at transmitter
(H04N 1/17 takes precedence)

{ at the transmitter or at the receiver

{ Functions of a still picture terminal memory
associated with transmission

{ Storage subsequent to an attempted
transmission

{ Functions of a still picture terminal memory
associated with reception

{ Storage subsequent to an attempted
output at the receiver, e.g. in case of
printer malfunction

{ Forwarding image data, e.g. to an absent
recipient

{ Informing an absent addressee of receipt

{ [intermediate the transmitter and receiver
terinals, e.g. at an exchange] 

{ 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) }

{ Handling instructions for routing or
relaying

{ Storage of instructions or retrieval of
prestored instructions

{ Reprocessing messages, e.g. in case the
intended destination is busy

{ Optimising routing, e.g. for minimum
cost

{ in a particular memory file for retrieval by
the user, e.g. in a facsimile mailbox

{ Informing the addressee of reception

{ with asynchronous operation of the image
input and output devices connected to the
memory

{ Controlling data flow to or from the
memory in relation to the available memory
capacity

{ Controlling data flow to or from the
memory in relation to the amount of data,
e.g. file size

{ for changing the arrangement of the stored
data

{ Changing the arrangement of pages or
documents, e.g. for producing pages to be
bound

{ Changing the arrangement of data in a page,
e.g. reversing the order to produce a mirror
image

{ Changing the format of the data, e.g.
parallel to serial or vice versa

{ Storage of at least a part of one of two image
bearing sides of a single sheet, e.g. for two
sided copying

{ Storage for making a plurality of copies or
reproductions

{ alternate store in and retrieval from two
parallel memories, e.g. using ping-pong
buffers

{ Changing the task performed, e.g. reading and
transmitting, receiving and reproducing, copying
(facsimile mode changing (H04N 1/333))

{ in systems having a plurality of input or output
devices

{ a plurality of input devices

{ of different type, e.g. internal and external
device

{ details of interfacing

{ a plurality of output devices

{ of different type, e.g. internal and external
device

{ details of interfacing

{ Detecting or indicating the status of the
output devices

{ Distributing a job or task among a plurality of
input devices or a plurality of output devices}
{ Hybrid jobs, i.e. performing different parts of the same job on different devices, e.g. colour and B/W pages on different devices }

{ Large jobs, i.e. performing identical parts of the same job on different devices }

{ using a programmed control device, e.g. a microprocessor }

{ at the transmitter or at the receiver }

{ Details of system components }

{ Input interface }

{ Output interface }

{ Controller }

{ Using a plurality of controllers, e.g. for controlling different interfaces }

{ Bus based systems }

{ Multi-bus systems }

{ Fault detection or counter-measures, e.g. original mis-positioned, shortage of paper }

{ Fault detection or counter-measures, e.g. using a programmed control device, e.g. a microprocessor }

{ ending a single-

{ initiating, continuing or ending a single-

{ handshaking, therefore taking precedence }

{ Fault detection or counter-measures, e.g. original mis-positioned, shortage of paper }

{ Fault detection or counter-measures, e.g. using a programmed control device, e.g. a microprocessor }

{ using a protocol or handshaking signal, e.g. non-standard set-up [NSS] }

{ using a mark-sheet or machine-readable code request }

{ using a mark-sheet or machine-readable code request }

{ using a protocol or handshaking signal, e.g. non-standard set-up [NSS] }

{ using a tone- or pulse-coded request }

{ using a voice request }

{ Endi ng a communication (H04N 1/32614 takes precedence) }

{ Details of handshaking (H04N 1/32793, H04N 1/32795 and H04N 1/32797 take precedence) }
1/32791 . . . . [Arrangements for reducing the handshaking procedure or protocol time]
1/32793 . . . . [Controlling a receiver or transmitter non-communication function in response to a communication control signal]
1/32795 . . . . [Arrangements for keeping the communication line open]
1/32797 . . . . [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 multitlink communication protocols H04L 69/14)]
1/333 . . . Mode signalling or mode changing; Handshaking therefor
1/3307 . . . . [prior to start of transmission, input or output of the picture signal only]
1/3315 . . . . [reading or reproducing mode only, e.g. sheet size, resolution]
1/3323 . . . . [transmission mode only, e.g. speed]
1/3333 . . . . [during transmission, input or output of the picture signal; within a single document or page]
1/3338 . . . . [adapting to particular facsimile group, e.g. G3]
1/3346 . . . . [adapting to a particular standardised protocol]
1/3353 . . . . [according to the available bandwidth used for a single communication, e.g. the number of ISDN channels used]
1/3361 . . . . [according to characteristics or the state of the communication line (H04N 1/3353 and H04N 2201/33371 take precedence)]
1/3369 . . . . [Storage of mode or retrieval of prestored mode]
1/3376 . . . . [according to characteristics or state of one of the communicating parties, e.g. available memory capacity]
1/3384 . . . . [according to transient characteristics or state]
1/3392 . . . . [Details of handshaking]
1/34 . . . . . . for coin-free systems (; Pay systems)
1/342 . . . . [Accounting or charging based on content, e.g. charging for access to a particular document]
1/344 . . . . [Accounting or charging based on type of function or service used, e.g. copying, faxing]
1/346 . . . . [Accounting or charging based on a number representative of the service used, e.g. number of operations or copies produced]
1/348 . . . . [Accounting or charging based on time or day]
1/36 . . . . . . for synchronising or phasing transmitter and receiver
1/38 . . . . Circuits or arrangements for blanking or otherwise eliminating unwanted parts of pictures (H04N 1/387 takes precedence)
1/387 . . . . Composing, repositioning or otherwise (geometrically) modifying originals
1/3871 . . . . [the composed originals being of different kinds, e.g. low- and high-resolution originals]
1/3872 . . . . [Repositioning or masking]
1/3873 . . . . [defined only by a limited number of coordinate points or parameters, e.g. corners, centre; for trimming]
1/3875 . . . . [combined with enlarging or reducing (enlarging or reducing per se H04N 1/393)]
1/3876 . . . . [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 1/335 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]
H04N 1/4055 . . . [producing a clustered dots or a size modulated 
halftone pattern] 
1/4056 . . . . [the pattern varying in one dimension only, 
e.g. dash length, pulse width modulation 
[PWM]] 
1/4057 . . . . [the pattern being a mixture of differently 
sized sub-patterns, e.g. spots having only 
a few different diameters (multi-toning 
H04N 1/40087)] 
1/4058 . . . . [with details for producing a halftone screen 
at an oblique angle (H04N 1/4056 takes 
predominance)] 
1/407 . . Control or modification of tonal gradation or of 
extreme levels, e.g. background level 
1/4072 . . . . [dependent on the contents of the original] 
1/4074 . . . . [using histograms] 
1/4076 . . . . [dependent on references outside the picture] 
1/4078 . . . . [using gradational references, e.g. grey-scale 
test pattern analysis] 
1/409 . . Edge or detail enhancement; Noise or error 
suppression 
1/4092 . . . . [Edge or detail enhancement] 
1/4095 . . . . [Correction of errors due to scanning a two-
sided document, i.e. show-through correction] 
1/4097 . . . . [Removing errors due external factors, e.g. 
dust, scratches] 
1/41 . . Bandwidth or redundancy reduction (by scanning 
H04N 1/17 [. methods or arrangements for coding, 
decoding, compressing or decompressing digital 
video signals H04N 19/00)] 
1/4105 . . . . [for halftone screened pictures] 
1/411 . . . . [for the transmission (or storage) or reproduction 
of two-tone pictures, e.g. black and white pictures 
1/4115 . . . . [involving the recognition of specific patterns, 
e.g. by symbol matching] 
1/413 . . . . Systems or arrangements allowing the picture 
to be reproduced without loss or modification of 
picture-information 
1/4135 . . . . [in which a baseband signal showing more 
than two values or a continuously varying 
baseband signal is transmitted or recorded] 
1/415 . . . . [in which the picture-elements are subdivided 
or grouped into fixed one-dimensional or 
two-dimensional blocks 
1/417 . . . . using predictive or differential encoding 
1/4172 . . . . . [Progressive encoding, i.e. by decompression into high and low 
resolution components] 
1/4175 . . . . . [involving the encoding of tone transitions 
with respect to tone transitions in a 
reference line] 
1/4177 . . . . . [encoding document change data, e.g. 
drop out data] 
1/419 . . . . 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 (H04N 1/4135 - H04N 1/417 
take precedence)] 
1/42 . . Systems for two-way working, e.g. conference 
systems (H04N 1/32 takes precedence)] 
1/44 . . Secrecy systems 
1/4406 . . . [Restricting access, e.g. according to user identity 
(mechanisms actuated y cards, PIN or the like in 
apparatus for dispensing G07F 7/08)] 
1/4413 . . . . [involving the use of passwords, ID codes or 
the like, e.g. PIN] 
1/442 . . . . [using a biometric data reading device] 
1/4426 . . . . [involving separate means, e.g. a server, a 
magnetic card] 
1/4433 . . . . [to an apparatus, part of an apparatus or an 
apparatus function] 
1/444 . . . . [to a particular document or image or part thereof] 
1/4446 . . . . . [Hiding of documents or document information] 
1/4453 . . . . . [Covering, i.e. concealing from above, or 
folding] 
1/446 . . . . [Enclosing, i.e. retaining in an enclosure, or 
locking up] 
1/4466 . . . . . [Enveloping, wrapping, or sealing, i.e. keeping 
the document closed] 
1/4473 . . . . . [Destruction, e.g. shredding of documents] 
1/448 . . . . . [Rendering the image unintelligible, e.g. 
scrambling] 
1/4486 . . . . . [using digital data encryption] 
1/4493 . . . . . [Subsequently rendering the image intelligible 
using a co-operating image, mask or the like] 
1/46 . . Colour picture communication systems 
1/465 . . . . . [Conversion of monochrome to colour] 
1/48 . . . . . Picture signal generators (for halftone screening 
H04N 1/52) 
1/482 . . . . . [using the same detector device sequentially 
for different colour components] 
1/484 . . . . . . [with sequential colour illumination of the 
original] 
1/486 . . . . . [with separate detectors, each detector being 
used for one specific colour component] 
1/488 . . . . . . [using beam-splitters] 
1/50 . . . . . Picture reproducers (for halftone screening 
H04N 1/52) 
1/502 . . . . . [Reproducing the colour component signals 
dot-sequentially or simultaneously in a single 
or in adjacent picture-element positions] 
1/504 . . . . . [Reproducing the colour component signals 
line-sequentially] 
1/506 . . . . . [Reproducing the colour component signals 
picture-sequentially, e.g. with reproducing 
heads spaced apart from one another in the 
subscanning direction] 
1/508 . . . . . [using the same reproducing head for two or 
more colour components] 
1/52 . . . . . Circuits or arrangements for halftone screening 
1/54 . . . . Conversion of colour picture signals to a plurality 
of signals some of which represent particular 
mixed colours, e.g. for textile printing 
1/56 . . . . Processing of colour picture signals (H04N 1/52 
takes precedence) 
1/58 . . . . . Edge or detail enhancement; Noise or error 
suppression, e.g. colour misregistration 
correction (H04N 1/62 takes precedence) 
1/60 . . . . Colour correction or control (H04N 1/54 takes 
predominance) 
1/6002 . . . . . [Corrections within particular colour 
systems] 
1/6005 . . . . . [with luminance or chrominance signals, 
e.g. LC1C2, HSL or YUV] 
1/6008 . . . . . . [with primary colour signals, e.g. RGB or 
CMY(K)]
1/6011 . . . . [with simulation on a subsidiary picture reproducer (H04N 1/6022 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 1/6023 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 soaking 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 therefor (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)
**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 5/335 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 5/2175))

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 . . . Circuity for reinsertion of dc and slowly varying components of signal; Circuity for preservation of black or white level
modules for embedding in other devices, e.g. mobile video cameras, camcorders, webcams, camera e.g. digital cameras, video cameras, TV cameras, { ; Cameras comprising an electronic image sensor, Studio circuitry; Studio devices; Studio equipment image sensor G03B peculiar to the presence or use of the electronic picture cameras or digital still picture cameras not vehicles ( constructional details of electronic still other devices, e.g. mobile phones, computers or modules specially adapted for being embedded in video cameras, camcorders, webcams, or to be embedded 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 . . . . . [Correction 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 . . . [Promoting]

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)
5/2257 . . . [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.

5/2303 . . . [Remote-control signaling for television cameras, cameras comprising an electronic image sensor or for parts thereof, e.g. between main body and another part of camera (distributing sync-signals to television cameras H04N 5/0733)]

5/2306 . . . . . [Transmission of camera control signals via a network, e.g. Internet]

WARNING
Group H04N 5/2306 is impacted by reclassification into group H04N 5/23061.

Groups H04N 5/2306 and H04N 5/23061 should be considered in order to perform a complete search.

5/23061 . . . . . [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 5/23061 is incomplete pending reclassification of documents from group H04N 5/2306.

Groups H04N 5/2306 and H04N 5/23061 should be considered in order to perform a complete search.

5/2309 . . . . . [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)]

5/2312 . . . . . [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.

5/23121 . . . . . [and on active ranging signals, e.g. using light or sound signals emitted toward objects]

WARNING
Group H04N 5/23121 is incomplete pending reclassification of documents from group H04N 5/2312.

Groups H04N 5/2312 and H04N 5/23121 should be considered in order to perform a complete search.

5/23122 . . . . . [based on the difference in phase of signals]

WARNING
Group H04N 5/23122 is incomplete pending reclassification of documents from group H04N 5/2312.

Groups H04N 5/2312 and H04N 5/23122 should be considered in order to perform a complete search.

5/23123 . . . . . [based on contrast or high frequency components of image signals, e.g. hill climbing method]

WARNING
Group H04N 5/23123 is incomplete pending reclassification of documents from group H04N 5/2312.

Groups H04N 5/2312 and H04N 5/23123 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 . . . . (Bracketing 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)

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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 2205/0007)]
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**


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.

5/232935 . . . . [for displaying or modifying preview images prior to image capturing, e.g. variety of image resolutions or capturing parameters]

5/232939 . . . . [for displaying additional information relating to control or operation of the camera]

**WARNING**

Groups H04N 5/23293, H04N 5/232941 and H04N 5/232945 are incomplete pending reclassification of documents from group H04N 5/23293.

Groups H04N 5/23293, H04N 5/232939, H04N 5/232941 and H04N 5/232945 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 angle of 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 G011 L00)]

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]
H04N

5/2357 . . . . [Detection of flicker frequency or flicker suppression, e.g. due to fluorescent tube illumination]
5/2358 . . . . [by influencing at least one of the pick-up tube voltages (H04N 5/2352 takes precedence)]
5/238 . . . . by influencing the optical part of the camera, [e.g. diaphragm, intensifier, fibre bundle (H04N 5/2352 takes precedence)]
5/243 . . . . by influencing the picture signal [i.e. signal amplitude gain control (H04N 5/2352 takes precedence)]
5/247 . . . . Arrangements of television cameras
{[constructional details of cameras H04N 5/2251]}
5/253 . . . . Picture signal generating by scanning motion picture films or slide opaques, e.g. for telecin (scanning details therefor H04N 3/36 ; [standard conversion therefor H04N 7/0112])
5/257 . . . . Picture signal generators using flying-spot scanners (H04N 5/253 takes precedence)
5/262 . . . . Studio circuits, e.g. for mixing, switching-over, change of character of image, other special effects [Cameras specially adapted for the electronic generation of special effects]
5/261 . . . . [Cameras specially adapted for the electronic generation of special effects during image pickup, e.g. digital cameras, camcorders, video cameras having integrated special effects capability]
5/262 . . . . [Signal amplitude transition in the zone between image portions, e.g. soft edges]
5/264 . . . . [for obtaining an image which is composed of whole input images, e.g. splitscreen]
5/265 . . . . [for obtaining an image which is composed of images from a temporal image sequence, e.g. for a stroboscopic effect (sequence generated by event triggered capturing H04N 7/188)]
5/267 . . . . [for providing spin image effect, 3D stop motion effect or temporal freeze effect (2D image animation in general G06T 13/80)]
5/268 . . . . [Alteration of picture size, shape, position or orientation, e.g. zooming, rotation, rolling, perspective, translation]
5/265 . . . . [Mixing]
5/268 . . . . [Signal distribution or switching]
5/272 . . . . [Means for inserting a foreground image in a background image, i.e. inlay, outlay]
5/273 . . . . [Insertion of virtual advertisement; Replacing advertisements physical present in the scene by virtual advertisement (data processing systems or methods specially adapted for marketing G06Q 30/02)]
2005/2726 . . . . [for simulating a person's appearance, e.g. hair style, glasses, clothes]
5/275 . . . . Generation of keying signals
5/278 . . . . Subtitling
5/28 . . . . Mobile studios
5/30 . . . . Transforming light or analogous information into electric information (H04N 5/222 takes precedence; scanning details H04N 3/00)
5/32 . . . . Transforming X-rays [image transformers H01J 31/00]
5/3205 . . . . [using subtraction imaging techniques]

5/321 . . . . with video transmission of fluoroscopic images

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 . . . . [Multispectral 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)

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]
5/3415 . . . . [for increasing the field of view by combining the outputs of a plurality of sensors, e.g. panoramic imaging (linear arrays using abutted sensors H04N 5/3692)]
5/343 . . . . [by switching between different modes of operation using different resolutions or aspect ratios, e.g. between still and video mode or between interlaced and non-interlaced mode]
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
5/353 . . . . . Control of the integration time \{(circuity for compensating for variation in the brightness of the object by influencing the exposure time H04N 5/2353)\}

5/3532 . . . . . \{by controlling rolling shutters\}
5/3535 . . . . . \{with different integration times within the sensor\}
5/3537 . . . . . \{depending on the spectral component\}
5/355 . . . . . Control of the dynamic range
5/35509 . . . . . \{involving a non-linear response\}
5/35518 . . . . . \{being of the logarithmic type\}
5/35527 . . . . . \{with a response composed of multiple slopes\}
5/35536 . . . . . \{involving multiple exposures (combination of exposures for increasing the dynamic range H04N 5/2353)\}
5/35545 . . . . . \{being simultaneously taken\}
5/35554 . . . . . \{with different integration times\}
5/35563 . . . . . \{with pixels having different sensibilities within the sensor, e.g. fast/slow pixels, pixels having different sizes\}
5/35572 . . . . . \{sequentially taken, e.g. using the combination of odd and even image fields\}
5/35581 . . . . . \{with different integration times, e.g. short and long exposures\}
5/3559 . . . . . \{by controlling the amount of charge storable in the pixel, e.g. modification of the charge conversion ratio of the floating node capacitance\}
5/357 . . . . . Noise processing, e.g. detecting, correcting, reducing or removing noise
5/3572 . . . . . \{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.

5/35721 . . . . . \{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.

5/3575 . . . . . \{involving a correlated sampling function, e.g. correlated double or triple sampling\}

5/3577 . . . . . \{for reducing electromagnetic interferences, e.g. EMI reduction, clocking noise\}
5/359 . . . . . \{applied to excess charges produced by the exposure, e.g. smear, blooming, ghost image, crosstalk or leakage between pixels\}
5/3591 . . . . . \{for the control of blooming\}
5/3592 . . . . . \{by controlling anti-blooming drains\}
5/3594 . . . . . \{by evacuation via the output or reset lines\}
5/3595 . . . . . \{for the control of smearing, e.g. CCD being still exposed during the charge transfer\}
5/3597 . . . . . \{being the residual charges remaining after reading an image, e.g. ghost images or after images\}
5/3598 . . . . . \{applied when a phenomenon of inverted contrast occurs, e.g. eclipse phenomenon\}
5/361 . . . . . \{applied to dark current\}
5/363 . . . . . \{applied to reset noise, e.g. KTC noise related to CMOS structures\}
5/365 . . . . . \{applied to fixed-pattern noise, e.g. non-uniformity of response\}
5/3651 . . . . . \{for non-uniformity detection and correction\}
5/3653 . . . . . \{between adjacent sensors or output registers for reading a single image\}
5/3655 . . . . . \{by using a reference source\}
5/3656 . . . . . \{the reference source being based on the scene itself, e.g. defocusing\}
5/3658 . . . . . \{for reducing the column or line fixed pattern noise\}
5/367 . . . . . \{applied to defects, e.g. non-responsive pixels\}
5/3675 . . . . . \{by defect estimation performed on the scene signal, e.g. real time or on the fly detection\}
5/369 . . . . . SSIS architecture; Circuitry associated therewith

**WARNING**

Group H04N 5/369 is impacted by reclassification into group H04N 5/379.

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

5/3692 . . . . . \{Line sensors\}
5/3694 . . . . . \{using abutted sensors forming a long line, e.g. for flat bed scanners\}
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
- H01L 27/148 ; H01L 27/307,
H04N 5/36961, H04N 5/36963, and
H04N 5/36965.

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

5/3752 . . . . {comprising additional storage means
(by controlling the amount of charges
storable in the pixel H04N 5/3559)}

5/3755 . . . . [comprising A/D, V/T, V/F, I/T or I/F
converters]

5/3757 . . . . {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 (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 (H04N 5/14 takes precedence)
5/4401 . for the reception of a digital modulated video
signal
5/4403 . {User interfaces for controlling a television
receiver or set top box [STB] through a remote
control device, e.g. graphical user interfaces
[GUI]; Remote control devices therefor (user
interfaces for controlling a tuning device of a
television receiver through a remote control
H03J 9/00); constructive details of casings for
the remote control device H01H 9/02235; remote
control of peripheral devices connected to a
television receiver through the remote control
device of the television receiver H04B 1/205;
remote control devices in general G08C})

2005/4405 . . . . {Hardware details of remote control devices}
5/44513 . . . [for displaying or controlling a single function of one single apparatus, e.g. TV receiver or VCR]

5/44517 . . . [for displaying or controlling status parameters of the television receiver, e.g. brightness, contrast, sound volume, channel number, time, stereo or mono sound modes]

5/44521 . . . [for displaying information which has no relation with a video programme, e.g. subliminal info, commercial messages, notebook, calendar, cooking recipes]

5/44526 . . . [for displaying subtitles]

5/4453 . . . [for displaying teletext characters]

5/44534 . . . [for displaying information generated by a single external video device, e.g. VCR, set top converter]

5/44539 . . . [involving multilingual on screen display (OSD) options]

5/4454 . . . [Menu-type displays (H04N 5/4582, H04N 5/4591 take precedence)]

5/44547 . . . [for scheduling the TV programmes to be recorded by a video tape recorder or to be viewed on the TV receiver]

5/44552 . . . [involving the use of teletext programme scheduling codes, e.g. VPS codes, G-codes]

5/44556 . . . [for programme selection]

5/44556 . . . [as a user interface for communicating with the broadcast station via a return link, e.g. for subscription or transaction terminal, for teleshopping, or as an interactive entertainment terminal, e.g. for quiz, for interactive games]

5/44565 . . . [the menu or graphical user interface display parameters being downloaded by the service provider or by the broadcast station]

5/44569 . . . [whereby user selections, preferences, or profile have an impact on the menu content]

5/44573 . . . [for using the television receiver as a multimedia terminal]

5/44578 . . . [involving the communication via a network, e.g. local area network [LAN], wide area network [WAN], internet, intranet]

5/44582 . . . [the additional information being controlled by a remote control apparatus]

5/44586 . . . [whereby remote controller buttons have been transferred to the on screen display (OSD) menu]

5/44591 . . . [the additional information being displayed in a separate window, e.g. by using splitscreen display]

5/44595 . . . [the separate window being opened at the occurrence of a selection of a menu option or item]

5/45 . . . Picture in picture

5/455 . . . Demodulation-circuits

5/46 . . . for receiving on more than one standard at will (reflecting circuits of multi-standard receivers H04N 3/27)

5/50 . . . Tuning indicators; Automatic tuning control

5/505 . . . [Invisible or silent tuning]

5/52 . . . Automatic gain control
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 5/31.

5/7408 . . . (Direct viewing projectors, e.g. an image displayed on a video CRT or LCD display being projected on a screen)
5/7416 . . . (involving the use of a spatial light modulator, e.g. a light valve, controlled by a video signal)
5/7425 . . . (the modulator being a dielectrically deformable layer controlled by an electron beam, e.g. eidophor projector)
2005/7433 . . . [Control circuits therefor]
5/7441 . . . [the modulator being an array of liquid crystal cells]
2005/745 . . . [Control circuits therefor]
5/7458 . . . [the modulator being an array of deformable mirrors, e.g. digital micromirror device (DMD)]
2005/7466 . . . [Control circuits therefor]
5/7475 . . . [Constructional details of television projection apparatus]
H04N

5/907 . . . using static stores, e.g. storage tubes or semiconductor memories (H04N 5/91 takes precedence)
5/91 . . . Television signal processing therefor
5/911 . . . for the suppression of noise (H04N 5/932 takes precedence)
5/913 . . . for scrambling (for copy protection)
2005/91307 . . . [by adding a copy protection signal to the video signal]
2005/91314 . . . (the copy protection signal being a pulse signal inserted in blanking intervals of the video signal, e.g. pseudo-AGC pulses, pseudo-sync pulses)
2005/91321 . . . (the copy protection signal being a copy protection control signal, e.g. a record inhibit signal)
2005/91328 . . . (the copy protection signal being a copy management signal, e.g. a copy generation management signal [CGMS])
2005/91335 . . . (the copy protection signal being a watermark)
2005/91342 . . . (the copy protection signal being an authentication signal)
2005/9135 . . . (by superimposing the spectrally spread copy protection signal onto the video signal)
2005/91357 . . . [by modifying the video signal]
2005/91364 . . . [the video signal being scrambled]
2005/91371 . . . [the video color burst signal being modified]
2005/91378 . . . [the video line number being modulated]
2005/91385 . . . [the video frame number being modulated]
2005/91392 . . . [using means for preventing making copies of projected video images]
5/915 . . . for field- or frame-skip recording or reproducing
5/9155 . . . [with sound multiplexing]
5/917 . . . for bandwidth reduction
5/919 . . . by dividing samples or signal segments, e.g. television lines, among a plurality of recording channels
5/92 . . . Transformation of the television signal for recording, e.g. modulation, frequency changing; inverse transformation for playback
5/9201 . . . [involving the multiplexing of an additional signal and the video signal]
5/9202 . . . (the additional signal being a sound signal (H04N 5/9155, H04N 5/92 take precedence))
5/9203 . . . (using time division multiplex)
5/9204 . . . (using frequency division multiplex)
5/9205 . . . (the additional signal being at least another television signal)
5/9206 . . . (the additional signal being a character code signal)
5/9207 . . . [for teletext]
5/9208 . . . [involving the use of subcodes]
5/921 . . . by recording or reproducing the baseband signal
5/923 . . . 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)
5/926 . . . by pulse code modulation (H04N 5/919 takes precedence)
5/9261 . . . [involving data reduction]
5/9262 . . . [using predictive coding]
5/9264 . . . [using transform coding]
5/9265 . . . [with processing of the sound signal]
5/9267 . . . [using time division multiplex of the PCM audio and PCM video signals]
5/9268 . . . [with insertion of the PCM audio signals in the vertical blanking interval of the PCM video signal]
5/928 . . . the sound signal being pulse code modulated and recorded in time division multiplex with the modulated video signal
5/93 . . . Regeneration of the television signal or of selected parts thereof
5/9305 . . . [involving the mixing of the reproduced video signal with a non-recorded signal, e.g. a text signal]
5/931 . . . for restoring the level of the reproduced signal
5/9315 . . . [the level control being frequency dependent (H04N 5/923 takes precedence)]
5/932 . . . Regeneration of analogue synchronisation signals
5/935 . . . Regeneration of digital synchronisation signals
5/937 . . . by assembling picture element blocks in an intermediate store
5/94 . . . Signal drop-out compensation
5/945 . . . [for signals recorded by pulse code modulation]
5/95 . . . Time-base error compensation (H04N 5/932 takes precedence)
5/953 . . . by using an analogue memory, e.g. a CCD shift register, the delay of which is controlled by a voltage controlled oscillator
5/956 . . . by using a digital memory with independent write-in and read-out clock generators

7/00 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)
7/002 . [Special television systems not provided for by H04N 7/007 - H04N 7/18 (still pictures via a television channel H04N 1/00098)]
7/005 . [using at least one opto-electrical conversion device]
7/007 . [Systems with supplementary picture signal insertion during a portion of the active part of a television signal, e.g. during top and bottom lines in a HDTV letter-box system]
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 2310/0407)]
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 7/51)]
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 7/0803, 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]
7/0888 . . . [Subscription systems therefor]
7/10 . . . Adaptations for transmission by electrical cable (H04N 7/12 takes precedence)
7/102 . . . [Circuits therefor, e.g. noise reducers, equalisers, amplifiers (H04N 7/108 takes precedence)]
7/104 . . . [Switchers or splitters]
7/106 . . . [for domestic distribution]
Systems in which the television signal is transmitted via one channel or a plurality of parallel channels, the bandwidth of each channel being less than the bandwidth of the television signal (H04N 7/24 takes precedence)

Involving expansion and subsequent compression of a signal segment, e.g. a frame, a line

{the signal segment being a picture element}

{Systems in which different parts of the picture signal frequency band are individually processed, e.g. suppressed, transposed}

Systems for two-way working (H04N 7/12, H04N 7/173 take precedence)

{between two video terminals, e.g. videophone (telephonic communication systems combined with television receiver for reception of entertainment or information matter H04M 11/085)}

{Constructional details of the terminal equipment, e.g. arrangements of the camera and the display}

{camera and display on the same optical axis, e.g. optically multiplexing the camera and display for eye to eye contact}

Handheld terminals

Communication arrangements, e.g. identifying the communication as a video-communication, intermediate storage of the signals (selecting H04Q)

Interfacing a video terminal to a particular transmission medium, e.g. ISDN

Conference systems

{Multipoint control units therefor}

{involving storage of or access to video conference sessions (tracking arrangements for later retrieval of a computer conference content or participants activities H04L 12/1831)}

{defining a virtual conference space and using avatars or agents (computer conference optimisation or adaptation H04L 12/1827)}

Analogue secrecy systems; Analogue subscription systems

{Constructional details of the subscriber equipment (H04N 7/164 takes precedence)}

{Authorising the user terminal, e.g. by paying; Registering the use of a subscription channel, e.g. billing}

{by receiver means only}

{Coin-freed apparatus}

{Centralised control of user terminal (subsequent to an upstream request signal H04N 7/17345); Registering at central (by two-way working H04N 7/17309)}

{Passage/non-passage of the television signal, e.g. jamming, band suppression (scrambling and descrambling H04N 7/167)}

{Systems rendering the television signal unintelligible and subsequently intelligible}

{Providing digital key or authorisation information for generation or regeneration of the scrambling sequence (pseudo-random number generators in general G06F 7/58)}

Systems operating in the time domain of the television signal

{by displacing synchronisation signals relative to active picture signals or vice versa}

{by changing or reversing the order of active picture signal portions}

{Systems operating in the amplitude domain of the television signal}

{by modifying synchronisation signals}

{by inverting the polarity of active picture signal portions}

{with two-way working, e.g. subscriber sending a programme selection signal}

{Transmission or handling of upstream communications}

{Direct or substantially direct transmission and handling of requests}

{with deferred transmission or handling of upstream communications}

{Handling of requests in head-ends}

{Control of the passage of the selected programme}

{in an intermediate station common to a plurality of user terminals}

{at or near the user terminal}

{the upstream transmission being initiated or timed by a signal from upstream of the user terminal}

{the upstream transmission being initiated by the user terminal}

{the upstream communication being transmitted via a separate link, e.g. telephone line}

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)

{for receiving images from a plurality of remote sources}

{for receiving images from a single remote source}

{from a mobile camera, e.g. for remote control}

{Video door telephones}

{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)}

Adaptations for transmission via a GHz frequency band, e.g. via satellite

Adaptations for optical transmission

{Systems for the transmission of television signals using pulse code modulation (H04N 21/00 takes precedence)}

{Bitstream control arrangements}

{Bitstream transport arrangements}
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 21/23: disassembling of a multiplex stream, remultiplexing of multiplex streams, extraction or processing of Service Information, disassembling of packetised elementary stream at client side H04N 21/43)

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) }

Synchronising systems therefor

Details of colour television systems

Picture signal generators

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

WARNING

Group H04N 9/045 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.

{ 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.

{ 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.
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.

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.

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.

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.

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.

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.

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.

WARNING

This subgroup is no longer used for the classification of new documents as from 1.02.2012 and the backlog of this subgroup is being continuously reclassified to H04L 9/065 and subgroups.

WARNING

Group H04N 9/04565 is incomplete pending reclassification of documents from group H04N 9/045.
Groups H04N 9/045 and H04N 9/04565 should be considered in order to perform a complete search. 
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 21/16)] 9/3147 . . . . [Multi-projection systems (displays in general H04N 9/12; video walls G06F 3/1446; G09G 2300/026)] 9/315 . . . . [Modulator illumination systems (general applications of lighting devices F21V; 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 27/00)] 9/3155 . . . . [for controlling the light source (light source control per se H05B 37/00; H05B 41/00; 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 polarizing the light beam (polarizing optical systems per se G02B 27/28)] 9/317 . . . . [Convergence or focusing systems (electronic adjustment of convergence H04N 9/3185; 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 3/2003; G09G 3/2603)] 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 21/14)] 9/3188 . . . . [Scale or resolution adjustment (scaling in general G06T 3/40; resolution modifying circuits for displays in general G09G 5/391)] 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) 9/641 . . . . [Multi-purpose receivers, e.g. for auxiliary information (H04N 9/642 takes precedence)] 9/642 . . . . [Multi-standard receivers] 9/643 . . . . [Hue control means, e.g. flesh tone control] 9/645 . . . . [Beam current control means] 9/646 . . . . [for image enhancement, e.g. vertical detail restoration, cross-colour elimination, contour correction, chrominance trapping filters]
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9/647 . . . [LF amplifiers, (amplifiers in general H03F)]
9/648 . . . [Video amplifiers]
9/65 . . . for synchronous modulators
9/66 . . . for synchronous demodulators
9/67 . . . for matrixing
9/68 . . . for controlling the amplitude of colour signals, e.g. automatic chroma control circuits (H04N 9/71, H04N 9/72 take precedence)
9/69 . . . for modifying the colour signals by gamma correction
9/70 . . . for colour killing
9/71 . . . combined with colour gain control
9/72 . . . for reinsertion of dc and slowly varying components of colour signals
9/73 . . . colour balance circuits, e.g. white balance circuits, colour temperature control
9/735 . . . [for picture signal generators]
9/74 . . . for obtaining special effects (H04N 9/65 - H04N 9/73 take precedence)
9/75 . . . Chroma key
9/76 . . . for mixing of colour signals (H04N 9/75 takes precedence)
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)
9/78 . . . for separating the brightness signal or the chrominance signal from the colour television signal, e.g. using comb filter
9/79 . . . Processing of colour television signals in connection with recording
9/7904 . . . [using intermediate digital signal processing]
9/7908 . . . [Suppression of interfering signals at the reproducing side, e.g. noise]
9/7912 . . . [the interfering signals being intermodulation signals]
9/7917 . . . [the interfering signals being cross-talk signals]
9/7921 . . . [for more than one processing mode]
9/7925 . . . [for more than one standard]
9/793 . . . for controlling the level of the chrominance signal, e.g. by means of automatic chroma control circuits
9/7933 . . . [the level control being frequency-dependent]
9/7936 . . . [by using a preemphasis network at the recording side and a deemphasis network at the reproducing side]
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)
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)]
9/7976 . . . [by spectrum folding of the high frequency components of the luminance signal]
9/80 . . . Transformation of the television signal for recording, e.g. modulation, frequency changing; Inverse transformation for playback
9/802 . . . involving processing of the sound signal (H04N 9/806, H04N 9/835 take precedence)
9/804 . . . involving pulse code modulation of the colour picture signal components
9/8042 . . . [involving data reduction]
9/8045 . . . [using predictive coding]
9/8047 . . . [using transform coding]
9/806 . . . with processing of the sound signal
9/8063 . . . [using time division multiplex of the PCM audio and PCM video signals]
9/8066 . . . [with insertion of the PCM audio signals in the vertical blanking interval of the PCM video signal]
9/808 . . . involving pulse code modulation of the composite colour video-signal
9/8081 . . . [involving data reduction]
9/8082 . . . [using predictive coding]
9/8087 . . . [using time division multiplex of the PCM audio and PCM video signals]
9/8088 . . . . . . [with insertion of the PCM audio signals in the vertical blanking interval of the PCM video signal]
9/81 . . . the individual picture signal components being recorded sequentially only
9/82 . . . the individual picture signal components being recorded simultaneously only
9/8205 . . . [involving the multiplexing of an additional signal and the colour video signal]
9/8211 . . . . . . [the additional signal being a sound signal (H04N 9/835 takes precedence)]
9/8216 . . . . . . [using time division multiplex]
9/8222 . . . . . . [using frequency division multiplex]
9/8227 . . . . . . [the additional signal being at least another television signal]
9/8233 . . . . . . [the additional signal being a character code signal]
9/8238 . . . . . . [for teletext]
9/8244 . . . . . . [involving the use of subcodes]
9/825 . . . . . . the luminance and chrominance signals being recorded in separate channels
9/8255 . . . . . . [with sound processing]
9/83 . . . the recorded chrominance signal occupying a frequency band under the frequency band of the recorded brightness signal
9/831 . . . . . . [using intermediate digital signal processing]
9/832 . . . . . . [using an increased bandwidth for the luminance or the chrominance signal]
9/833 . . . . . . [with selection of the conventional or the increased bandwidth signal, e.g. VHS or SVHS signal selection]
9/835 . . . involving processing of the sound signal
9/8355 . . . . . . [the sound carriers being frequency multiplexed between the luminance carrier and the chrominance carrier]
9/84 . . . . . . the recorded signal showing a feature, which is different in adjacent track parts, e.g. different phase or frequency
9/85 . . . the recorded brightness signal occupying a frequency band totally overlapping the frequency band of the recorded chrominance signal, e.g. frequency interleaving
the individual colour picture signal components being recorded sequentially and simultaneously, e.g. corresponding to SECAM-system

Regeneration of colour television signals (H04N 9/80 takes precedence)

{ using a demodulator and a remodulator, e.g. for standard conversion }

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

{ Regeneration of a colour reference signal, e.g. the colour synchronisation burst signal, the chrominance signal carrier }

for restoring the colour component sequence of the reproduced [chrominance] signal

by assembling picture element blocks in an intermediate memory

Signal drop-out compensation

the signal being a composite colour television signal

using simultaneous signals only

the signal being a composite colour television signal

for signals recorded by pulse code modulation

Time-base error compensation

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

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

using frequency multiplication of the reproduced colour signal carrier with another auxiliary reproduced signal, e.g. a pilot signal carrier (H04N 9/83 takes precedence)

Colour television systems (details H04N 9/80)

with bandwidth reduction (H04N 11/04 , H04N 11/24 takes precedence)

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

{ Codec means }

{ involving transform coding }

{ DPCM }

{ Sub-Nyquist sampling }

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

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

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

using simultaneous signals only

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

{ Encoding means therefor (H04N 11/167 takes precedence) }

{ Decoding means therefor (H04N 11/16 takes precedence) }

{ Encoding means therefor (H04N 11/167 takes precedence) }

11/00 Stereoscopic video 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
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

**WARNING**

Group H04N 13/211 is incomplete pending reclassification of documents from group H04N 13/221. Groups H04N 13/221 and H04N 13/211 should be considered in order to perform a complete search.

using spectral multiplexing

using spatial multiplexing

using the relative movement between cameras and objects

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 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.

Calibration of cameras
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

in combination with electromagnetic radiation sources for illuminating objects

Colour aspects

with monoscopic-to-stereoscopic image conversion

using the relative movement of objects in two video frames or fields

[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.

wherein the generated image signals comprise depth maps or disparity maps

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

the virtual viewpoint locations being selected by the viewers or determined by tracking

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

having separate monoscopic and stereoscopic modes

Switching between monoscopic and stereoscopic modes

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

Synchronisation thereof; Control thereof

Image reproducers (optical systems for producing stereoscopic or other three-dimensional effects G02B 27/22)

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.

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

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.

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.

using parallax barriers

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

the parallax barriers being time-variant

using slanted parallax optics

using arrays of controllable light sources; using moving apertures or moving light sources

using varifocal lenses or mirrors

Colour aspects

Calibration thereof

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

using spectral multiplexing

using polarisation multiplexing

using spatial multiplexing (H04N 13/337 takes precedence)

using temporal multiplexing

with head-mounted left-right displays

using prisms or semi-transparent mirrors

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.

for displaying simultaneously

for displaying sequentially

having separate monoscopic and stereoscopic modes

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

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.

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.

using viewer tracking
for two or more viewers
for tracking viewers with different interocular distances; for tracking rotational head movements around the vertical axis
for tracking forward-backward translational head movements, i.e. longitudinal movements
for tracking left-right translational head movements, i.e. lateral movements
for tracking rotational head movements around an axis perpendicular to the screen
for tracking vertical translational head movements
for tracking with gaze detection, i.e. detecting the lines of sight of the viewer's eyes
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.

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.

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.

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.

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.

Synchronisation thereof; Control thereof
[Privacy aspects, i.e. devices showing different images to different viewers, the images not being viewpoints of the same scene]
[the images being monoscopic]
[the images being stereoscopic or three dimensional]

17/00 Diagnosis, testing or measuring for television systems or their details
[for television cameras]
[for digital television systems]
[for television sound]
[for television teletext]
for colour television signals
for receivers
(Self-contained testing apparatus)
19/00 Methods or arrangements for coding, decoding, compressing or decompressing digital video signals

19/10 . . . using adaptive coding

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

19/102 . . . characterised by the element, parameter or selection affected or controlled by the adaptive coding

19/103 . . . Selection of coding mode or of prediction mode

19/105 . . . . 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

19/107 . . . between spatial and temporal predictive coding, e.g. picture refresh

19/109 . . . among a plurality of temporal predictive coding modes

19/11 . . . among a plurality of spatial predictive coding modes

19/112 . . . according to a given display mode, e.g. for interlaced or progressive display mode

19/114 . . . Adapting the group of pictures [GOP] structure, e.g. number of B-frames between two anchor frames (H04N 19/107 takes precedence)

19/115 . . . Selection of the code volume for a coding unit prior to coding

19/117 . . . Filters, e.g. for pre-processing or post-processing (sub-band filter banks H04N 19/635)

19/119 . . . Adaptive subdivision aspects, e.g. subdivision of a picture into rectangular or non-rectangular coding blocks

19/12 . . . Selection from among a plurality of transforms or standards, e.g. selection between discrete cosine transform [DCT] and sub-band transforms 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 19/90.

19/122 . . . Selection of transform size, e.g. 8x8 or 2x4x8 DCT; Selection of sub-band transforms of varying structure or type

19/124 . . . Quantisation

19/126 . . . Details of normalisation or weighting functions, e.g. normalisation matrices or variable uniform quantisers

19/127 . . . Prioritisation of hardware or computational resources

19/129 . . . Scanning of coding units, e.g. zig-zag scan of transform coefficients or flexible macroblock ordering [FMO]

19/13 . . . Adaptive entropy coding, e.g. adaptive variable length coding [AVLC] or context adaptive binary arithmetic coding [CABAC]

19/132 . . . Sampling, masking or truncation of coding units, e.g. adaptive resampling, frame skipping, frame interpolation or high-frequency transform coefficient masking

19/134 . . . characterised by the element, parameter or criterion affecting or controlling the adaptive coding

19/136 . . . Incoming video signal characteristics or properties

19/137 . . . Motion inside a coding unit, e.g. average field, frame or block difference

19/139 . . . . Analysis of motion vectors, e.g. their magnitude, direction, variance or reliability

19/14 . . . Coding unit complexity, e.g. amount of activity or edge presence estimation (H04N 19/146 takes precedence)

19/142 . . . Detection of scene cut or scene change

19/146 . . . Data rate or code amount at the encoder output

19/147 . . . according to rate distortion criteria (rate-distortion as a criterion for motion estimation H04N 19/867)

19/149 . . . by estimating the code amount by means of a model, e.g. mathematical model or statistical model

19/15 . . . by monitoring actual compressed data size at the memory before deciding storage at the transmission buffer

19/152 . . . by measuring the fullness of the transmission buffer

19/154 . . . Measured or subjectively estimated visual quality after decoding, e.g. measurement of distortion (use of rate-distortion criteria H04N 19/147)

19/156 . . . Availability of hardware or computational resources, e.g. encoding based on power-saving criteria

19/157 . . . Assigned coding mode, i.e. the coding mode being predefined or preselected to be further used for selection of another element or parameter

19/159 . . . Prediction type, e.g. intra-frame, inter-frame or bidirectional frame prediction

19/16 . . . for a given display mode, e.g. for interlaced or progressive display mode

19/162 . . . User input

19/164 . . . Feedback from the receiver or from the transmission channel

19/166 . . . concerning the amount of transmission errors, e.g. bit error rate [BER]

19/167 . . . Position within a video image, e.g. region of interest [ROI]

19/169 . . . characterised by the coding unit, i.e. the structural portion or semantic portion of the video signal being the object or the subject of the adaptive coding

19/17 . . . the unit being an image region, e.g. an object

19/172 . . . the region being a picture, frame or field

19/174 . . . the region being a slice, e.g. a line of blocks or a group of blocks

19/176 . . . the region being a block, e.g. a macroblock
using video object coding

picture data

independently decodable descriptions of input

i.e. with separate layers being structured as

involving multiple description coding [MDC],

descriptions of input picture data
using transform coding

using sub-band based transform, e.g. wavelets (H04N 19/63)

takes precedence

in combination with predictive coding

specially adapted for multi-view video sequence

involving spatial prediction techniques

involving spatial sub-sampling or interpolation, e.g. decimation or subsequent interpolation of

temporal sub-sampling or interpolation, e.g. shuffling, interleaving, scrambling or permutation of pixel data or

permutation of transform coefficient data among different blocks

involving methods or arrangements for detection of transmission errors at the decoder

in combination with error concealment

using coding techniques not provided for in groups H04N 19/10-H04N 19/85, e.g. fractals

Entropy coding, e.g. variable length coding [VLC] or arithmetic coding

Run-length coding

Vector quantisation

tree coding, e.g. quad-tree coding

Matching pursuit coding

Adaptive-dynamic-range coding [ADRC]

(using significance based coding, e.g. Embedded Zerotrees of Wavelets [EZW] or Set Partitioning in Hierarchical Trees [SPIHT])

(transform the transform being applied to non rectangular image segments)

using error resilience

involving data partitioning, i.e. separation of data into packets or partitions according to importance

involving unequal error protection [UEP], i.e. providing protection according to the importance of the data

involving the insertion of resynchronisation markers into the bitstream

involving reversible variable length codes [RVLC]

characterised by syntax aspects related to video coding, e.g. related to compression standards

Details of filtering operations specially adapted for video compression, e.g. for pixel interpolation (H04N 19/635, H04N 19/86 take precedence)

involving filtering within a prediction loop

using pre-processing or post-processing specially adapted for video compression

involving reduction of coding artifacts, e.g. of blockiness

(with detection of the former encoding block subdivision in decompressed video)

involving scene cut or scene change detection in combination with video compression

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

involving methods or arrangements for detection of transmission errors at the decoder

in combination with error concealment

using coding techniques not provided for in groups H04N 19/10-H04N 19/85, e.g. fractals

Entropy coding, e.g. variable length coding [VLC] or arithmetic coding

Run-length coding

Vector quantisation

tree coding, e.g. quad-tree coding

Matching pursuit coding

Adaptive-dynamic-range coding [ADRC]

(involving fractal coding)

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
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.
- **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.

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

Server components or server architectures

Specialised server platform, e.g. server located in an airplane, hotel, hospital (arrangements specially adapted for local area broadcast systems H04H 20/61)
[located in a single building, e.g. hotel, hospital or museum (arrangements specially adapted for plural spots in a confined site in broadcast systems H04H 20/63; adaptations for transmission by electric cable for domestic distribution in television systems H04N 7/106)]

[located in mass transportation means, e.g. aircraft, train or bus (flight-deck installations for entertainment or communications B64D 11/0015; arrangements specially adapted for transportation systems in broadcast systems H04H 20/62; moving wireless networks H04W 84/005)]

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 associating 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; unloading 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 49/90)]

[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)]

[invoking/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]
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 5/10); 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)]
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 5/134)
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 SD1]
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 bit rate (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 bit rate to optimize the bandwidth utilization]
21/2368 . . . . [Multiplexing of audio and video streams]
21/237 . . . . [Communication with additional data server]
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 29/06176; application layer Quality of Service and content dependent routing H04L 29/08945; flow control in packet networks H04L 47/10)

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

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 1/0000; analogue front ends or means for connecting modulators, demodulators or transceivers to a transmission line H04L 27/0002)

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 H04L 3/1062; 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)

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

Multiplex stream processing, e.g. multiplex stream encrypting

Involving embedding information at multiplex stream level, e.g. embedding a watermark at packet level

Involving multiplex stream encrypting

By partially encrypting, e.g. encrypting only the ending portion of a movie

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 29/06176; application layer Quality of Service and content dependent routing of client requests H04L 29/08945; flow control in data networks H04L 47/10)

Involving handling client requests (scheduling and organising the servicing of requests in data switching networks H04L 29/08945)

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)

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)

Monitoring of the client buffer

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)

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

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)

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)

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)

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

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)

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)

[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)]

[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 29/08666; 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)

for selling goods, 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)]

{ involving 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 60/06; data switching network applications involving user or terminal profiles H04L 29/08918)

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 16/9537; 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)

{ being end-user demographical data, e.g. age, family status or address (arrangements for identifying locations of users in broadcast systems H04H 60/52)

{ being 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)}
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)

Server based end-user applications

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 29/06707; 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 16/953; arrangements for replacing or switching information during the broadcast H04H 20/10; push services over packet-switching network H04L 12/185; 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
21/422 . . . Input-only peripherals, i.e. input devices connected to specially adapted client devices, e.g. global positioning system [GPS] (input devices also receiving signals from specially adapted client devices H04N 21/4103)

21/4201 . . . {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)}

21/4202 . . . {environmental sensors, e.g. for detecting temperature, luminosity, pressure, earthquakes}

21/4203 . . . {sound input device, e.g. microphone}

21/4204 . . . {User interfaces specially adapted for controlling a client device through a remote control device; Remote control devices therefor (interaction techniques for graphical user interfaces in general, see G06F 3/048; computer pointing devices in general, see G06F 3/033; user interfaces for controlling a tuning device of a television receiver through a remote control H03J 9/00; constructive details of casings for the remote control device H01H 9/00235; remote control of peripheral devices connected to a television receiver through the remote control device of the television receiver H04B 1/205; remote control devices in general G08C)}

21/42206 . . . {characterized by hardware details}

21/42207 . . . {Interfaces providing bidirectional communication between remote control devices and client devices}

21/42208 . . . . . {Display device provided on the remote control}

21/42209 . . . . . {for displaying non-command information, e.g. electronic program guide [EPG], e-mail, messages or a second television channel}

21/4221 . . . . . {Dedicated function buttons, e.g. for the control of an EPG, subtitles, aspect ratio, picture-in-picture or teletext}

21/42212 . . . . . {Specific keyboard arrangements}

21/42213 . . . . . {for facilitating data entry}

21/42214 . . . . . {using alphanumerical characters}
21/42215 . . . . . . . . . . . [by measuring the time interval during which a key is pressed, e.g. for inputting sequences of digits when selecting a television channel]
21/42216 . . . . . . . . . . . [for quick navigation, e.g. through an EPG]
21/42218 . . . . . . . . . . . [for mapping a matrix of displayed objects on the screen to the numerical key-matrix of the remote control]
21/42219 . . . . . . . . . . . [Remote control device emulator integrated in a peripheral device]
21/4222 . . . . . . . . . . . [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)]
21/4221 . . . . . . . . . . . [Transmission circuitry, e.g. infrared [IR] or radio frequency [RF]]
21/42222 . . . . . . . . . . . [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]
21/42224 . . . . . . . . . . . [Touch pad or touch panel provided on the remote control (touch pads in general G06F 3/03547)]
21/42225 . . . . . . . . . . . [characterized by types of remote control, e.g. universal remote control]
21/4226 . . . . . . . . . . . [Reprogrammable remote control devices]
21/4227 . . . . . . . . . . . [the keys being reprogrammable, e.g. soft keys]
21/4228 . . . . . . . . . . . [the reprogrammable keys being displayed on a display screen in order to reduce the number of keys on the remote control device itself]
21/4223 . . . . . . . . . . . [Cameras (H04N 5/225 takes precedence)]
21/4227 . . . . . . . . . . . [Providing] Remote input by a user located remotely from the client device, e.g. at work
21/426 . . . . . . . . . . . [Characteristics of or] Internal components of the client (H04N 5/44 takes precedence)
21/42607 . . . . . . . . . . . [for processing the incoming bitstream]
21/42615 . . . . . . . . . . . [involving specific demultiplexing arrangements]
21/42623 . . . . . . . . . . . [involving specific decryption arrangements]
21/4263 . . . . . . . . . . . [involving specific tuning arrangements, e.g. two tuners]
21/42638 . . . . . . . . . . . [involving a hybrid front-end, e.g. analog and digital tuners]
21/42646 . . . . . . . . . . . [for reading from or writing on a non-volatile solid state storage medium, e.g. DVD, CD-ROM]
21/42653 . . . . . . . . . . . [for processing graphics]
21/42661 . . . . . . . . . . . [for reading from or writing on a magnetic storage medium, e.g. hard drive disk]
21/42669 . . . . . . . . . . . [the medium being removable]
21/42676 . . . . . . . . . . . [for modulating an analogue carrier signal to encode digital information or demodulating it to decode digital information, e.g. ADSL or cable modem]
modules extracted from the transport stream of additional data, reconstructing software from processing of additional data, e.g. decrypting networks, e.g. RTP/UDP H04L 65/00
Disassembling of packetised elementary streams; Extraction or processing of SI; remultiplexing of multiplex streams; Extraction or processing of SI; Disassembling of packetised elementary stream {demultiplexing of packets for data networks, e.g. RTP/UDP H04L 65/00}

Disassembling of a multiplex stream, e.g. demultiplexing of 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 packets for data networks, e.g. RTP/UDP H04L 65/00}

Demultiplexing of audio and video streams
Demultiplexing isochronously with video sync, e.g. according to bit-parallel or bit-serial interface formats, as SDI

Extraction or processing of packetized elementary streams [PES]
Remultiplex of multiple streams, e.g. by modifying time stamps or remapping the packet identifiers

Extraction or processing of SI, e.g. extracting service information from an MPEG stream

Demultiplexing of additional data from video streams

Demultiplexing of additional data and video streams

Demultiplexing of several video streams

Demultiplexing of additional data and video streams

[by extracting from data carousels, e.g. extraction of software modules from a DVB carousel]

Processing of additional data, e.g. decrypting of additional data, reconstructing software from modules extracted from the transport stream

[by extracting from data carousels, e.g. extraction of software modules from a DVB carousel]

[by extracting from data carousels, e.g. extraction of software modules from a DVB carousel]

[by extracting from data carousels, e.g. extraction of software modules from a DVB carousel]
21/4381 . . . . [Recovering 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, e.g. channel tuning (tuning indicators; automatic tuning control H04N 5/50)]

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

21/43853 . . . . [multiplex stream decryption (arrangements using cryptography for the use of broadcast information or broadcast-related information H04H 60/231)]

21/43856 . . . . [by partial decryption, e.g. decrypting a multiplex stream that has been partially encrypted]

21/439 . . . . Processing of audio elementary streams

21/4392 . . . . [involving audio buffer management]

21/4394 . . . . [involving operations for analysing the audio stream, e.g. detecting features or characteristics in audio streams (arrangements characterised by components specially adapted for monitoring, identification or recognition of audio in broadcast systems H04H 60/58)]

21/4396 . . . . [by muting the audio signal]

21/4398 . . . . [involving reformatting operations of audio signals (details of audio signal transcoding G10L 19/173)]

21/44 . . . . 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

21/44004 . . . . [involving video buffer management, e.g. video decoder buffer or video display buffer]

21/44008 . . . . [involving operations for analysing video streams, e.g. detecting features or characteristics in the video stream (arrangements characterised by components specially adapted for monitoring, identification or recognition of video in broadcast systems H04H 60/59)]

21/44012 . . . . [involving rendering scenes according to scene graphs, e.g. MPEG-4 scene graphs]

21/44016 . . . . [involving splicing one content stream with another content stream, e.g. for substituting a video clip]

21/4402 . . . . involving reformatting operations of video signals for household redistribution, storage or real-time display (adapting incoming signals to the display format of the display terminal G09G 5/005; media manipulation, adaptation or conversion at the destination in one way streaming for real-time multimedia communications H04L 29/06496; details of conversion of video standards at pixel level H04N 7/011; video transcoding H04N 19/40)]

21/440209 . . . . [for formatting on an optical medium, e.g. DVD]

21/440218 . . . . [by transcoding between formats or standards, e.g. from MPEG-2 to MPEG-4 (conversion of standards in analogue television systems H04N 7/01)]

21/440227 . . . . [by decomposing into layers, e.g. base layer and one or more enhancement layers]

21/440236 . . . . [by media transcoding, e.g. video is transformed into a slideshow of still pictures, audio is converted into text]

21/440245 . . . . [the reformatting operation being performed only on part of the stream, e.g. a region of the image or a time segment]

21/440254 . . . . [by altering signal-to-noise parameters, e.g. requantization]

21/440263 . . . . [by altering the spatial resolution, e.g. for displaying on a connected PDA]

21/440272 . . . . [for performing aspect ratio conversion]

21/440281 . . . . [by altering the temporal resolution, e.g. by frame skipping (television signal recording using magnetic recording on tape for reproducing at a rate different from the recording rate H04N 5/783)]

21/44029 . . . . [for generating different versions]

21/4405 . . . . involving video stream decryption

21/44055 . . . . [by partially decrypting, e.g. decrypting a video stream that has been partially encrypted]

21/4408 . . . . involving video stream encryption, e.g. re-encrypting a decrypted video stream for redistribution in a home network

21/441 . . . . Acquiring end-user identification, e.g. using personal code sent by the remote control or by inserting a card]

21/4415 . . . . [using biometric characteristics of the user, e.g. by voice recognition or fingerprint scanning ([authentication mechanisms using biometrical features for network security H04L 29/06809)]

21/442 . . . . 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 ([arrangements for monitoring broadcast services or broadcast-related services H04H 60/29; arrangements for identifying or recognising characteristics with a direct linkage to broadcast information H04H 60/35; monitoring of user activities for profile generation for accessing a video database G06F 16/739; monitoring in wireless networks H04W 24/00])
21/44204 . . . [Monitoring of content usage, e.g. the number of times a movie has been viewed, copied or the amount which has been watched (monitoring of user activities for profile generation for accessing a video database G06F 16/739; protecting generic digital content where the protection is independent of the precise nature of the content G06F 21/10; arrangements for monitoring the use made of the broadcast services in broadcast systems H04H 60/31)]

21/44209 . . . [Monitoring of downstream path of the transmission network originating from a server, e.g. bandwidth variations of a wireless network (arrangements for maintenance or administration in data switching networks involving bandwidth and capacity management H04L 41/0896)]

21/44213 . . . [Monitoring of end-user related data (arrangements for monitoring the users' behaviour or opinions in broadcast systems H04H 60/33)]

21/44218 . . . [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 9/00333; 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)]

21/44222 . . . [Monitoring of user selections, e.g. selection of programs, purchase activity (monitoring of user selections in data processing systems G06F 11/534; monitoring of user activities for profile generation for accessing a video database G06F 16/739; tracking the activity of the end-user H04L 29/08675; arrangements for monitoring the user's behaviour or opinions in broadcast systems H04H 60/33)]

21/44227 . . . [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)]

21/44231 . . . [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 12/2823; monitoring the status of connected device in data switched networks H04L 43/0817)]

21/44236 . . . [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)]

21/4424 . . . [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 11/33; arrangements for monitoring conditions of receiving stations in broadcast systems H04H 60/32; diagnosis, testing or measuring for television receivers H04N 17/04)]

21/44245 . . . [Monitoring the upstream path of the transmission network, e.g. its availability, bandwidth]

21/4425 . . . [Monitoring of client processing errors or hardware failure]

21/443 . . . [OS processes, e.g. booting an STB, implementing a Java virtual machine in an STB or power management in an STB]

21/4431 . . . [characterized by the use of Application Program Interface [API] libraries]

21/4432 . . . [Powering on the client, e.g. bootstrap loading using setup 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)]

21/4433 . . . [Implementing client middleware, e.g. Multimedia Home Platform [MHP]]

21/4435 . . . [Memory management (allocation of memory to service a request G06F 9/5016; addressing or allocating within memory systems or architectures G06F 12/02)]

21/4436 . . . [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)]

21/4437 . . . [Implementing a Virtual Machine [VM] (virtual machines in general G06F 9/4533)]

21/4438 . . . [Window management, e.g. event handling following interaction with the user interface]

21/45 . . . 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

21/4508 . . . [Management of client or end-user data]
H04N

21/4516 . . . [involving client characteristics, e.g. Set-Top-Box type, software version, amount of memory available (allocation of resources considering hardware capabilities G06F 9/5044; allocation of resources considering software capabilities G06F 9/5055; protocols involving terminal profiles for network applications in communication control or processing H04L 29/08927; message adaptation based on network or terminal capabilities in packet switching networks H04L 51/06; processing of terminal status or physical abilities in wireless networks H04W 8/22)]

21/4524 . . . [involving the geographical location of the client (retrieval from the Internet by querying based on geographical locations G06F 16/9537; systems specially adapted for using geographical information in broadcast systems H04H 60/70; 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)]

21/4532 . . . [involving end-user characteristics, e.g. viewer profile, preferences (monitoring of user activities for profile generation for accessing a video database G06F 16/739; 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)]

21/454 . . . Content [or additional data] filtering, e.g. blocking advertisements

21/4542 . . . [Blocking scenes or portions of the received content, e.g. censoring scenes]

21/4545 . . . [Input to filtering algorithms, e.g. filtering a region of the image]

21/4546 . . . [applied to an object-based stream, e.g. MPEG-4 streams]

21/4547 . . . [applied to a region of the image]

21/4548 . . . [applied to a time segment]

21/458 . . . Scheduling content for creating a personalised stream, e.g. by combining a locally stored advertisement with an incoming stream; Updating operations, e.g. for OS modules [; time-related management operations (arrangements for replacing or switching information during the broadcast or during the distribution H04H 20/10)]

21/4583 . . . [Automatically resolving scheduling conflicts, e.g. when a recording by reservation has been programmed for two programs in the same time slot]

21/4586 . . . [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; program updating while running in general G06F 8/656; error detection or correction of the data by redundancy during software upgrading G06F 11/1433; 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 29/06986; security in data switching network management H04L 41/28; access security in wireless networks H04W 12/081)]

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 29/08936)]

21/4662 . . . [characterized by learning algorithms]

21/4663 . . . [involving probabilistic networks, e.g. Bayesian networks]

21/4665 . . . [involving classification methods, e.g. Decision trees]

21/4666 . . . [using neural networks, e.g. processing the feedback provided by the user]
End-user applications (services or applications for real-time multimedia communications) H04L 29/06462

for real-time multimedia communications H04L 29/06462)

End-user interface for requesting content, additional data or services; End-user interface for interacting with context, 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 content on demand, e.g. video on demand)

for manipulating displayed content, e.g. interacting with MPEG-4 objects, editing locally)

for requesting near-video-on-demand content)

for requesting pay-per-view content (payment schemes payment architectures or payment protocols G06Q 20/00, G07F)

for content reservation or setting reminders; for requesting event notification, for manipulating displayed content, e.g. of sport results or stock market (stock exchange data over packet-switching network H04L 12/1804; push services over packet-switching network H04L 12/1859; notification of incoming messages in packet switching networks H04L 51/24)

for controlling playback functions for recorded or on-demand content, e.g. using progress bars, mode or play-point indicators or bookmarks (specific graphical features in visual interfaces H04N 21/4312)

for requesting additional data associated with the content)

using interactive regions of the image, e.g. hot spots (details of information retrieval from the Internet by using URLs G06F 16/955; processing chained hypermedia data for information retrieval G06F 16/954)

for selecting a Region Of Interest [ROI], e.g. for requesting a higher resolution version of a selected region

End-user interface for inputting end-user data, e.g. personal identification number [PIN], preference data

for defining user accounts, e.g. accounts for children)

for user identification, e.g. by entering a PIN or password (authentication mechanisms using passwords for network security H04L 29/06782)

for defining user preferences, e.g. favourite actors or genre (retrieval personalisation and generation of user profiles for the retrieval of video data G06F 16/739; data switching network applications using user profiles H04L 29/08936)

for rating content, e.g. scoring a recommended movie)

for providing answers, e.g. voting)

Supplemental services, e.g. displaying phone caller identification, shopping application

Electronic banking (banking in general G06Q 30/02)

Electronic shopping (payment schemes, payment architectures or payment protocols for electronic shopping systems G06Q 20/12)

Web browsing, e.g. WebTV)

receiving rewards

e-mailing (message switching systems, e.g. electronic mail systems H04L 51/00)

communicating with other users, e.g. chatting (arrangements for providing for computer conferences, e.g. chat rooms, to submission in data switching networks H04L 12/1813; protocols for peer-to-peer networking in communication control or processing H04L 29/08306)

End-user interface for program selection (broadcast systems using EPGs H04H 60/72)

using a grid, e.g. sorted out by channel and broadcast time)

using a channel name)

using a list of items to be played back in a given order, e.g. playlists)

using recommendation lists, e.g. of programs or channels sorted out according to their score)

for searching program descriptors (retrieval of video data G06F 16/739)

End-user interface for client configuration

for modifying audio parameters, e.g. switching between mono and stereo)

for modifying image parameters, e.g. image brightness, contrast)

for language selection, e.g. for the menu or subtitles)

for modifying screen layout parameters, e.g. fonts, size of the windows)

Data services, e.g. news ticker (systems specially adapted for using meteorological information in broadcast systems H04H 60/71)

for displaying messages, e.g. warnings, reminders (arrangements for providing short real-time information to substation in data switching networks H04L 12/1895)

for displaying subtitles

for displaying a ticker, e.g. scrolling banner for news, stock exchange, weather data)

for displaying teletext characters)
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

Network physical structure; Signal processing (H04B takes precedence)

[specially adapted to the downstream path of the transmission network]

[involving terrestrial transmission, e.g. DVB-T]

[involving cable transmission, e.g. using a cable modem]

[involving transmission via Internet (transmission by internet of broadcast information H04H 60/82)]

[involving transmission via a mobile phone network (wireless downlink channel access H04W 74/006)]

[involving transmission via a telephone network, e.g. POTS]

[involving transmission via a satellite]

[Signal processing at physical level (signal processing in analog two-way television systems H04N 7/173)]

[specially adapted to the upstream path of the transmission network]

[involving terrestrial transmission, e.g. DVB-T]

[involving cable transmission, e.g. using a cable modem]

[involving transmission via Internet (broadcast-related systems characterised by the transmission system being the Internet H04H 60/82)]

[involving transmission via a mobile phone network (arrangements for providing broadcast or conference services to substation in data switching networks in combination with wireless systems H04L 12/189; wireless uplink channel access H04W 74/004)]

[involving transmission via a telephone network, e.g. POTS]

[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)]

[involving transmission via a telecommunication network (arrangements for providing keys, e.g. for a client to communicate its public key to the server (arrangements for network security key management H04L 29/06707))]

[for rate control (e.g. request to the server to modify its transmission rate (flow control in packet networks H04L 47/10))]

[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 29/60605)]

[control of source by destination in one way streaming for real-time multimedia communications H04L 29/06469)]

[for uploading keys, e.g. for a client to communicate its public key to the server (arrangements for network security key management H04L 29/06707)]

[directed to encoder (e.g. for requesting a lower encoding rate)]

[Addressing (multicast or broadcast in one way streaming for real-time multimedia communications H04L 29/06455; arrangements for addressing and naming in data networks H04L 29/12009)]

[Address allocation for clients (address allocation in data networks H04L 29/12207)]

[unicasting (data broadcast and multicast in packet switching networks H04L 12/18)]

[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]

[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)]

Control signals issued by server directed to the network components or client (management of faults, events, alarms in data networks H04L 41/06)]

directed to decoder

Control signals issued by the client directed to the server or network components

for authorisation, e.g. by transmitting a key (wireless communications network key management H04W 12/04; wireless communications network access security H04W 12/08)]

[by transmitting keys (key distribution for secret or secure communication H04L 9/08; arrangements for network security key management H04L 29/06707)]

directed to network

Control signals issued by the client directed to the server or network components

for rate control (e.g. request to the server to modify its transmission rate (flow control in packet networks H04L 47/10))

directed to decoder (e.g. for requesting a lower encoding rate)

Addressing (multicast or broadcast in one way streaming for real-time multimedia communications H04L 29/06455; arrangements for addressing and naming in data networks H04L 29/12009)

Address allocation for clients (address allocation in data networks H04L 29/12207)

Multicasting (data broadcast and multicast in packet switching networks H04L 12/18)
H04L 29/06517 for real-time multimedia communications
monitoring of network load, bridging between unauthorised alteration within the network, by dropping packets, protecting content from e.g. controlling the quality of the video stream, video distribution between server and clients, and server or clients; Network processes for
) } } 
H04L 43/062 for transferring content from a first network to a second network, e.g. between IP and wireless
) } 
H04L 29/14 (signalling, control or architecture for real-time multimedia communications)

H04L 47/10 intermediate storage or scheduling

H04L 47/10 intermediate processing or storage in packet switching systems

H04L 47/10 monitoring of network processes or resources, e.g. monitoring of network load (traffic related reporting in data switching networks)

H04L 47/10 monitoring network processes errors (counter-measures to a fault in communication control or processing)

H04L 47/10 monitoring network characteristics, e.g. bandwidth, congestion level (data switched network analysis; monitoring functioning in data switched networks)

H04L 47/10 control signals issued by the network directed to the server or the client

H04L 47/10 for rate control (flow control in packet networks)

H04L 47/10 for requesting retransmission, e.g. of data packets lost or corrupted during transmission from server (ARQ protocols)

H04L 47/10 data processing by the network (data processing in packet switching systems; protocols involving intermediate processing or storage in communication networks)

H04L 29/08783 streaming for real-time multimedia communications at an intermediate station in one way stream, e.g. by dropping packets (media manipulation, adaptation or conversion at an intermediate station in one way stream for real-time multimedia communications; arrangements for reducing the amount or size of exchanged application data in the network)

H04L 28/16 negotiation of resources in wireless networks

H04L 20/38) 

H04L 60/02 Controlling the complexity of the content stream, e.g. by dropping packets (media manipulation, adaptation or conversion at an intermediate station in one way stream for real-time multimedia communications; arrangements for reducing the amount or size of exchanged application data in the network)

H04L 20/16) 

G06F 9/4416) 

H04H 20/38) 

H04H 60/02) 

H04L 29/06092) 

H04L 29/06503) 

H04L 29/06503

H04W 28/16) 

H04L 29/06095

H04L 29/0617)

H04L 29/06517

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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 IPM 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 1/02; 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 . . . . . . . . . . . . (invoking 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 16/739)
21/858 . . . . . . . . . . . . Linking data to content, e.g. by linking an URL to a video object, by creating a hotspot
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 29/0089)

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 (not used)
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
2201/006  . . . 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 ‘photocopier’ (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 transcepcion, 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

1724/02422 . . . 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

1724/02425 . . . Self-adjusting arrangements, e.g. compensating for temperature fluctuations

1724/02427 . . . Element positioned

1724/02429 . . . Photodetector element, e.g. CCD array

1724/02431 . . . Lens or optical system

1724/02433 . . . Reflective element, e.g. mirror

1724/02435 . . . Illuminating means

1724/02437 . . . Translucent cover

1724/02439 . . . Positioning method

1724/02441 . . . using screws

1724/02443 . . . using adhesive

1724/02445 . . . using clips or the like

1724/02447 . . . using elastic means, e.g. springs

1724/02449 . . . 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

1724/02452 . . . Arrangements for mounting or supporting elements within a scanning head (H04N 2201/0246, H04N 2201/03154 takes precedence)

1724/02454 . . . Element mounted or supported

1724/02456 . . . Scanning element, e.g. CCD array, photodetector

1724/02458 . . . Lens or optical system

1724/0246 . . . Mirror, reflecting element or beam splitter

1724/02462 . . . Illuminating means

1724/02464 . . . Translucent cover or window

1724/02466 . . . Mounting or supporting method

1724/02468 . . . using screws

1724/0247 . . . using adhesive

1724/02472 . . . using clips

1724/02474 . . . Clamping, Clamping (H04N 2201/02472 takes precedence)

1724/02477 . . . using elastic means, e.g. springs

1724/02479 . . . Mounting or supporting means

1724/02481 . . . Single piece support, e.g. molded plastic support

1724/02483 . . . Housing or part of the housing, e.g. bottom plate (H04N 2201/02481 takes precedence)

1724/02485 . . . Dedicated element, e.g. bracket or arm

1724/02487 . . . Manufacturing details (H04N 2201/0246, H04N 2201/02452 takes precedence)

1724/02489 . . . Arrangements for allowing access to the scanning head, e.g. for service or repair

1724/02491 . . . Arrangements for reducing the effects of vibrations

1724/02493 . . . Additional optical elements not otherwise provided for, e.g. filters, polarising plates, masks or apertures

1724/02495 . . . Constructional details not otherwise provided for, e.g. for ease of assembly, allowing access to the scanning elements, integrated reinforcing members

1724/02497 . . . Additional elements, e.g. sheet guide plates, light shields (H04N 2201/02489 - H04N 2201/02495 take precedence)

1724/02498 . . . for picture information pick-up (not used)

1724/03 . . . deleted

1724/031 . . . deleted

1724/03104 . . . 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

1724/03108 . . . Components of integral heads

1724/03112 . . . Light source

1724/03116 . . . Light source lens

1724/0312 . . . Reflecting element upstream of the scanned picture elements

1724/03125 . . . Light guide upstream of the scanned picture elements

1724/03129 . . . Transparent cover or transparent document support mounted on the head

1724/03133 . . . Window, i.e. a transparent member mounted in the frame

1724/03137 . . . Reflecting element downstream of the scanned picture elements

1724/03141 . . . Photodetector lens

1724/03145 . . . Photodetector

1724/0315 . . . Details of integral heads not otherwise provided for

1724/03154 . . . Additional internal supporting or reinforcing member

1724/03158 . . . Heat radiator

1724/03162 . . . Original guide plate

1724/03166 . . . Additional light shielding member

1724/0317 . . . Shape

1724/03175 . . . Position

1724/03179 . . . Frame

1724/03183 . . . Material

1724/03187 . . . Additional optical element

1724/03191 . . . Adhesive element

1724/03195 . . . Coating, e.g. light adsorbing layer

1724/04 . . . Scanning arrangements (not used)

1724/0402 . . . Arrangements not specific to a particular one of the scanning methods covered by groups H04N 1/04 - H04N 1/207 (not used)

1724/0404 . . . 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

1724/0406 . . . Scanning slides

1724/0408 . . . Scanning film strips or rolls

1724/041 . . . Scanning microfilms or microfiches

1724/0412 . . . Scanning X-ray films

1724/0414 . . . Scanning an image in a series of overlapping zones

1724/0416 . . . 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 1/07)
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
2201/0467 . . . Detection, control or error compensation of scanning velocity or position (not used)
2201/04701 . . . Detection of scanning velocity or position (not used)
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 2201/0472 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 (not used)
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
H04N

2201/04758 . . . . by controlling the position of the scanned image area (H04N 2201/04755, H04N 2201/04756 take precedence)
2201/0476 . . . . . . . . using an optical, electro-optical or acousto-optical element
2201/04762 . . . . . . . . using a reflecting element (H04N 2201/04765 takes precedence)
2201/04763 . . . . . . . . using a refracting element (H04N 2201/04765 takes precedence)
2201/04765 . . . . . . . . using a solid-state deflector, e.g. an acousto-optic deflector
2201/04767 . . . . . . . . by controlling the timing of the signals, e.g. by controlling the frequency or phase of the pixel clock
2201/04768 . . . . . . . . Controlling the frequency of the signals
2201/0477 . . . . . . . . using a clock signal composed from a number of clock signals of different frequencies
2201/04772 . . . . . . . . using a phase-locked loop
2201/04774 . . . . . . . . using a reference clock or oscillator (H04N 2201/04772 takes precedence)
2201/04775 . . . . . . . . using a counter (H04N 2201/04772 takes precedence)
2201/04777 . . . . . . . . using a voltage controlled oscillator (H04N 2201/04772 takes precedence)
2201/04779 . . . . . . . . using a clock signal composed from a number of clock signals of different phase
2201/04781 . . . . . . . . Controlling the phase of the signals
2201/04782 . . . . . . . . using a clock signal composed from a number of clock signals of different frequencies
2201/04784 . . . . . . . . using one or more clock signals selected from a number of clock signals of different phases
2201/04786 . . . . . . . . Controlling a start time, e.g. for output of a line of data (H04N 2201/04784 takes precedence)
2201/04787 . . . . . . . . by changing or controlling the addresses or values of pixels, e.g. in an array, in a memory, by interpolation
2201/04789 . . . . . . . . in the main-scan direction
2201/04791 . . . . . . . . in the sub-scan direction
2201/04793 . . . . . . . . using stored control or compensation data, e.g. previously measured data
2201/04794 . . . . . . . . Varying the control or compensation during the scan, e.g. using continuous feedback or from line to line
2201/04796 . . . . . . . . Varying the sub-scan control during the main-scan, e.g. for correcting skew, tilt or bow of a scanning beam
2201/04798 . . . . . . . . Varying the main-scan control during the main-scan, e.g. facet tracking
2201/21 . . . . Intermediate information storage (not used)
2201/212 . . . . Selecting different recording or reproducing modes, e.g. high or low resolution, field or frame

NOTE
Subgroups H04N 2201/212 - H04N 2201/218 are for use with subgroups H04N 1/21 - H04N 1/2195

2201/214 . . . . Checking or indicating the storage space
2201/216 . . . . Arrangements for recording on different types of storage medium, e.g. IC card or magnetic tape; Recording on a plurality of storage media

2201/218 . . . . Deletion of stored data; Preventing such deletion
2201/32 . . . . Circuits or arrangements for control or supervision between transmitter and receiver or between image input and image output device (not used)
2201/3201 . . . . Display, printing, storage or transmission of additional information, e.g. ID code, date and time or title
2201/3202 . . . . of communication or activity log or report

NOTE
Subgroups H04N 2201/3202 - H04N 2201/3284 are for use with subgroups H04N 1/32101 - H04N 1/32352

2201/3204 . . . . of data relating to a user, sender, addressee, machine or electronic recording medium (H04N 2201/3256 and subgroups take precedence)
2201/3205 . . . . of identification information, e.g. name or ID code (H04N 2201/3209 takes precedence)
2201/3207 . . . . of an address
2201/3208 . . . . of an e-mail or network address
2201/3209 . . . . of a telephone number
2201/3211 . . . . of a company logo or the like
2201/3212 . . . . of data relating to a job, e.g. communication, capture or filing of an image
2201/3214 . . . . of a date
2201/3215 . . . . of a time or duration
2201/3216 . . . . of a job size, e.g. a number of images, pages or copies, size of file, length of message
2201/3218 . . . . of a confirmation, acknowledgement or receipt
2201/3219 . . . . of a job status, e.g. successful execution
2201/3221 . . . . of a job number or identification, e.g. communication number
2201/3222 . . . . of processing required or performed, e.g. forwarding, urgent or confidential handling
2201/3223 . . . . of type information, e.g. reception or copy job
2201/3225 . . . . of data relating to an image, a page or a document
2201/3226 . . . . of identification information or the like, e.g. ID code, index, title, part of an image, reduced-size image
2201/3228 . . . . further additional information (metadata) being comprised in the identification information
2201/3229 . . . . further additional information (metadata) being comprised in the file name (including path, e.g. directory or folder names at one or more higher hierarchical levels)
2201/323 . . . . for tracing or tracking, e.g. forensic tracing of unauthorized copies
2201/3232 . . . . of a page, copy or picture number
2201/3233 . . . . of authentication information, e.g. digital signature, watermark
2201/3235 . . . . Checking or certification of the authentication information, e.g. by comparison with data stored independently
2201/3236 . . . . Details of authentication information generation
2201/3238 . . . . using a coded or compressed version of the image data itself
H04N

- Using a plurality of different authentication information
- Selecting a particular authentication information from amongst a plurality of different authentication information
- Of processing required or performed, e.g., for reproduction or before recording (H04N 2201/3256 and subgroups take precedence)
- Of type information, e.g., handwritten or text document
- Of image modifying data, e.g., handwritten addenda, highlights or augmented reality information
- Of data relating to permitted access or usage, e.g., level of access or usage parameters for digital rights management [DRM] related to still images
- Data linking a set of images to one another, e.g., sequence, burst or continuous capture mode
- Data relating to a linked page or object, e.g., hyperlink
- Modified version of the image, e.g., part of the image, image reduced in size or resolution, thumbnail or screenshot
- Image capture parameters, e.g., resolution, illumination conditions, orientation of the image capture device (H04N 2201/3256 and subgroups take precedence)
- Position information, e.g., geographical position at time of capture, GPS data
- Orientation, e.g., landscape or portrait; Location or order of the image data, e.g., in memory
- Colour related metadata, e.g., colour, ICC profiles (for use made of colour related metadata see the appropriate place, e.g., H04N 1/60, H04N 1/60 and subgroups)
- Relating to the original, the input device or the input process, e.g., scanner profile
- Relating to the image, page or document, e.g., intended colours
- Relating to the rendering or output medium, device or process, e.g., monitor, paper or printer profile
- Of multimedia information, e.g., a sound signal
- Of a graphical motif or symbol, e.g., Christmas symbol, logo (H04N 2201/3211 takes precedence)
- Of sound signals
- Of text or character information, e.g., text accompanying an image (H04N 2201/3226 takes precedence)
- Of motion picture signals, e.g., video clip
- Of machine readable codes or marks, e.g., bar codes or glyphs
- Which are undetectable to the naked eye, e.g., embedded codes
- Printing or stamping
- Display
- Storage or retrieval of prestored additional information

- 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; Ciphering
- Compression
- for error correction
- using picture signal storage, e.g., at transmitter (not used)
- 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 (not used)

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

2209/00 Details of colour television systems (not used)
2209/04 Picture signal generators (not used)
2209/041 using solid-state devices (not used)
having a single pick-up sensor
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 (not used, see subgroups)

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