

EUROPEAN PATENT OFFICE
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 959

DATE: JANUARY 1, 2021

PROJECT RP0698

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

<u>Action</u>	<u>Subclass</u>	<u>Group(s)</u>
SCHEME:		
Titles Changed:	G01S	3/146
	G01S	7/003, 7/021, 7/036, 7/046, 7/06, 7/4004, 7/4052, 7/52001, 7/52003, 7/52047, 7/52057
	G01S	13/04, 13/10, 13/32, 13/34, 13/505, 13/52, 13/58, 13/587, 13/66, 13/78, 13/79, 13/86
	G01S	15/10, 15/32, 15/34, 15/8909, 15/8934, 15/897, 15/8977
	G01S	17/10, 17/32, 17/34
	G01S	19/05, 19/07, 19/21, 19/29
Warnings Deleted:	G01S	7/06
Notes Deleted:	G01S	19/00, 19/47, 19/49, 19/50
Notes Modified:	G01S	17/00
DEFINITIONS:		
Definitions New:	G01S	3/146, 3/68, 3/802
	G01S	5/28
	G01S	7/036, 7/046, 7/4861, 7/4863, 7/4865, 7/4911, 7/4912, 7/4913, 7/4914, 7/4915
	G01S	13/505, 13/52, 13/587, 13/767, 13/86
	G01S	15/86
	G01S	17/894
Definitions Modified:	G01S	7/003, 7/021, 7/06, 7/4052, 7/486, 7/491, 7/52001, 7/52003, 7/52047, 7/52057
	G01S	13/003, 13/0218, 13/04, 13/42, 13/4409, 13/46, 13/5244, 13/58, 13/75, 13/885
	G01S	15/00, 15/42, 15/46, 15/58, 15/8906, 15/8909, 15/8934, 15/895, 15/8965, 15/8968, 15/897, 15/8977, 15/8979, 15/899, 15/8993, 15/8995
	G01S	17/06, 17/08, 17/32, 17/42, 17/46, 17/48, 17/58, 17/89
	G01S	19/21

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

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

1. CLASSIFICATION SCHEME CHANGES

- A. New, Modified or Deleted Group(s)
- B. New, Modified or Deleted Warning(s)
- C. New, Modified or Deleted Note(s)
- D. New, Modified or Deleted Guidance Heading(s)

2. DEFINITIONS

- A. New or Modified Definitions (Full definition template)
- B. Modified or Deleted Definitions (Definitions Quick Fix)

- 3. REVISION CONCORDANCE LIST (RCL)
- 4. CHANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL)
- 5. CHANGES TO THE CROSS-REFERENCE LIST (CRL)

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1. CLASSIFICATION SCHEME CHANGES

A. New, Modified or Deleted Group(s)

SUBCLASS G01S - RADIO DIRECTION-FINDING; RADIO NAVIGATION; DETERMINING DISTANCE OR VELOCITY BY USE OF RADIO WAVES; LOCATING OR PRESENCE DETECTING BY USE OF THE REFLECTION OR RERADIATION OF RADIO WAVES; ANALOGOUS ARRANGEMENTS USING OTHER WAVES

<u>Type*</u>	<u>Symbol</u>	<u>Indent Level Number of dots (e.g. 0, 1, 2)</u>	<u>Title</u> <u>“CPC only” text should normally be enclosed in {curly brackets}**</u>	<u>Transferred to#</u>
M	G01S 3/146	3	{by comparing linear polarisation components}	
M	G01S 7/003	1	{Transmission of data between radar, sonar or lidar systems and remote stations}	
M	G01S 7/021	2	{Auxiliary means for detecting or identifying radar signals or the like, e.g. radar jamming signals}	
M	G01S 7/036	4	{involving a transfer mixer}	
M	G01S 7/046	3	{using an intermediate storage device, e.g. a recording/reproducing device}	
M	G01S 7/06	3	Cathode-ray tube displays {or other two dimensional or three-dimensional displays}	
M	G01S 7/4004	3	{of parts of a radar system}	
M	G01S 7/4052	3	{by simulation of echoes}	
M	G01S 7/52001	2	{Auxiliary means for detecting or identifying sonar signals or the like, e.g. sonar jamming signals}	
M	G01S 7/52003	2	{Techniques for enhancing spatial resolution of targets (G01S 7/52046 takes precedence)}	
M	G01S 7/52047	4	{for elimination of side lobes or of grating lobes; for increasing resolving power}	
M	G01S 7/52057	4	{Cathode ray tube displays}	
M	G01S 13/04	2	Systems determining presence of a target (based on relative movement of target G01S 13/56)	
M	G01S 13/10	4	using transmission of interrupted, pulse modulated waves (determination of distance by phase measurement G01S 13/32)	
M	G01S 13/32	4	using transmission of continuous waves, whether amplitude-, frequency-, or phase-modulated, or unmodulated	

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<u>Type*</u>	<u>Symbol</u>	<u>Indent Level Number of dots (e.g. 0, 1, 2)</u>	<u>Title</u> <u>“CPC only” text should normally be enclosed in {curly brackets}**</u>	<u>Transferred to#</u>
M	G01S 13/34	5	using transmission of continuous, frequency-modulated waves while heterodyning the received signal, or a signal derived therefrom, with a locally-generated signal related to the contemporaneously transmitted signal	
M	G01S 13/505	3	{using Doppler effect for determining closest range to a target or corresponding time, e.g. miss-distance indicator }	
M	G01S 13/52	3	Discriminating between fixed and moving objects or between objects moving at different speeds	
M	G01S 13/58	3	Velocity or trajectory determination systems; Sense-of-movement determination systems	
M	G01S 13/587	5	{using optical means}	
M	G01S 13/66	1	Radar-tracking systems; Analogous systems	
M	G01S 13/78	3	discriminating between different kinds of targets, e.g. IFF-radar, i.e. identification of friend or foe (G01S 13/75, G01S 13/79 take precedence)	
M	G01S 13/79	2	Systems using random coded signals or random pulse repetition frequencies {, e.g. "Separation and Control of Aircraft using Non synchronous Techniques" [SECANT]}	
M	G01S 13/86	1	Combinations of radar systems with non-radar systems, e.g. sonar, direction finder	
M	G01S 15/10	4	using transmission of interrupted, pulse-modulated waves (determination of distance by phase measurement G01S 15/32)	
M	G01S 15/32	4	using transmission of continuous waves, whether amplitude-, frequency-, or phase-modulated , or unmodulated	
M	G01S 15/34	5	using transmission of continuous, frequency-modulated waves while heterodyning the received signal, or a signal derived therefrom, with a locally-generated signal related to the contemporaneously transmitted signal	
M	G01S 15/8909	4	{using a static transducer configuration}	
M	G01S 15/8934	4	{using a dynamic transducer configuration}	

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<u>Type*</u>	<u>Symbol</u>	<u>Indent Level Number of dots (e.g. 0, 1, 2)</u>	<u>Title</u> <u>“CPC only” text should normally be enclosed in {curly brackets}**</u>	<u>Transferred to#</u>
M	G01S 15/897	5	{using application of holographic techniques}	
M	G01S 15/8977	4	{using special techniques for image reconstruction, e.g. FFT, geometrical transformations, spatial deconvolution, time deconvolution}	
M	G01S 17/10	4	using transmission of interrupted, pulse-modulated waves (determination of distance by phase measurements G01S 17/32)	
M	G01S 17/32	4	using transmission of continuous waves, whether amplitude-, frequency-, or phase-modulated , or unmodulated	
M	G01S 17/34	5	using transmission of continuous, frequency-modulated waves while heterodyning the received signal, or a signal derived therefrom, with a locally-generated signal related to the contemporaneously transmitted signal	
M	G01S 19/05	3	providing aiding data	
M	G01S 19/07	3	providing data for correcting measured positioning data, e.g. DGPS [differential GPS] or ionosphere corrections	
M	G01S 19/21	3	Interference related issues {; Issues related to cross-correlation, spoofing or other methods of denial of service}	
M	G01S 19/29	4	carrier {including Doppler,} related {(G01S 19/246 takes precedence)}	

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

NOTES:

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

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

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B. New, Modified or Deleted Warning(s)

SUBCLASS G01S - RADIO DIRECTION-FINDING; RADIO NAVIGATION; DETERMINING DISTANCE OR VELOCITY BY USE OF RADIO WAVES; LOCATING OR PRESENCE DETECTING BY USE OF THE REFLECTION OR RERADIATION OF RADIO WAVES; ANALOGOUS ARRANGEMENTS USING OTHER WAVES

<u>Type*</u>	<u>Location</u>	<u>Old Warning</u>	<u>New/Modified Warning</u>
D	G01S7/06	Groups G01S 7/062 - G01S 7/24 are not complete pending a reorganization. See provisionally G01S 7/06	<u>Delete</u> the entire warning.

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

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

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C. New, Modified or Deleted Note(s)

SUBCLASS G01S - RADIO DIRECTION-FINDING; RADIO NAVIGATION; DETERMINING DISTANCE OR VELOCITY BY USE OF RADIO WAVES; LOCATING OR PRESENCE DETECTING BY USE OF THE REFLECTION OR RERADIATION OF RADIO WAVES; ANALOGOUS ARRANGEMENTS USING OTHER WAVES

<u>Type*</u>	<u>Location</u>	<u>Old Note</u>	<u>New/Modified Note</u>
M	G01S 17/00	<p><u>NOTE</u> The note after group G01S 13/00 also applies to this group.</p>	<p><u>Replace</u> the existing note with following notes.</p> <p><u>NOTES</u></p> <p>1. This group covers:</p> <ul style="list-style-type: none"> • systems for detecting the presence of an object, e.g. by reflection or reradiation from the object itself, or from a transponder associated with the object, for determining the distance or relative velocity of an object, for providing a coordinated display of the distance and direction of an object or for obtaining an image thereof; • systems arranged for mounting on a moving craft or vehicle and using the reflection of waves from an extended surface external to the craft, e.g. the surface of the earth, to determine the velocity and direction of motion of the craft relative to the surface. <p>2. This group does not cover:</p> <ul style="list-style-type: none"> • systems for determining the direction of an object by means not employing reflection or reradiation which are covered by groups G01S 1/00 or G01S 3/00; • systems for determining distance or velocity of an object by means not employing reflection or reradiation, which are covered by group G01S 11/00.
D	G01S 19/00	<p>In this group, or in the patent documents classified in this group, the following abbreviations are often used:</p> <p>PDOP = Position Dilution of Precision RAIM = Receiver Autonomous Integrity Monitoring DGPS = Differential GPS Pseudolite = Pseudolite is a contraction of the term "pseudo-satellite," used to refer to the</p>	<p><u>Delete</u> the entire Note.</p>

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<u>Type*</u>	<u>Location</u>	<u>Old Note</u>	<u>New/Modified Note</u>
		mimicing of GPS satellites (or of other navigation satellites) by other transceivers. WAAS = Wide Area Augmentation System	
D	G01S 19/47	This group does not adequately <u>cover</u> combining inertial navigation measurements with a non-inertial navigation instrument; also see G01C 21/165.	<u>Delete</u> the entire Note.
D	G01S 19/49	This group does not adequately <u>cover</u> combining inertial navigation measurements with a non-inertial navigation instrument; also see G01C 21/165.	<u>Delete</u> the entire Note.
D	G01S 19/50	This group does not adequately <u>cover</u> regarding map or contour matching also; see G01C 21/005 and G01C 21/30.	<u>Delete</u> the entire Note.

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

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

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2. A. DEFINITIONS (new)

Insert the following new definitions.

G01S 3/146

References

Informative references

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

Polarisation details of antenna systems per se	H01Q 21/245
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G01S 3/68

References

Informative references

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

Radar cathode-ray tube indicators providing coordinated display of distance and direction	G01S 7/10
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G01S 3/802

References

Informative references

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

Sound-focusing or directing using electrical steering of transducer arrays, e.g. beam steering in general	G10K 11/34
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G01S 5/28**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Sonar indicators providing co-ordinated display of direction and distance	G01S 7/62
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G01S 7/036**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Transference of modulation from one carrier to another, e.g. frequency-changing	H03D 7/00
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G01S 7/046**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Pictorial communication, e.g. television	H04N
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G01S 7/4861**Definition statement***This place covers:*

Details of the hardware circuits in the signal path from the photodetector to the pulse detection circuit or processor. Details of components and their circuitry like photodetectors, amplifiers, filters or analogue to-digital converters.

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

Details of photo sensitive detectors	G01J 1/00
Imager structures	H01L 27/146
Amplifiers	H03F

G01S 7/4863**Definition statement***This place covers:*

Details of detector arrays and details associated with detector arrays, e.g. integrated detector arrays for flash ladar and ToF cameras.

Details of single elements which are adapted or intended for integration as an array.

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

Details of photo sensitive detectors	G01J 1/00
Solid state imaging devices, read-out	H04N 5/30
Imager structures	H01L 27/146

G01S 7/4865**Definition statement***This place covers:*

Time delay measurement, i.e. detecting time between a sent pulse and the reception of its echo, and finding the best point of a signal peak for time measurement, e.g. interpolation over range bins or when to trigger and stop measurement or time interpolation between clock pulses, measures to improve time measurement accuracy, dealing with time walk error, e.g. by knowledge of intensity dependence or an intensity dependent time correction.

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References**Limiting references***This group does not cover:*

Peak detection in noise, signal conditioning	G01S 7/487
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

Time delay measurement, e.g. operational details for pixel components	G01S 7/4915
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G01S 7/4911**Definition statement**

Transmitter details, e.g. relating to the modulation or circuitry of the transmitter.

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

Lasers	H01S
Driving circuits for electric light sources	H05B 33/00 , H05B 45/00 , H05B 47/00

G01S 7/4912**Definition statement***This place covers:*

Receiver details in general and receiver circuits of optical rangefinders (e.g. based on phase measurements or FMCW). Of time-of-flight cameras measuring distance using indirect time-of-flight.

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G01S 7/4913**Definition statement***This place covers:*

Details of the hardware circuits in the signal path from the photodetector to the detection circuit or processor, e.g. particular details of photodetectors, amplifiers, filters or analogue to-digital converters.

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

Details of photo sensitive detectors	G01J 1/00
Imager structures	H01L 27/146
Amplifiers	H03F

G01S 7/4914**Definition statement***This place covers:*

Details of detector arrays and details associated with detector arrays, e.g. integrated detector arrays for time-of-flight (ToF) cameras based on indirect time-of-flight, i.e. based on a phase measurement.

Details of single elements which are adapted or intended for integration as an array.

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

Details of photo sensitive detectors	G01J 1/00
Solid state imaging devices, read-out	H04N 5/30
Imager structures	H01L 27/146

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G01S 7/4915**Definition statement***This place covers:*

Details of time or phase measurement, i.e. details of how the delay or phase values are obtained. Details of FFT, waveform extraction, circuits for obtaining phase or delay information, comparison with reference signal, phase shifting of transmit signal until same phase as received signal, also phase delay of pulse signal train, indirect time-of-flight determination.

References**Limiting references***This group does not cover:*

Signal detection and conditioning	G01S 7/493
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G01S 13/505**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Miss-distance indicators in general	F41J 5/12
Proximity fuze	F42C 13/04

G01S 13/52**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Coherent receivers	G01S 7/288
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G01S 13/587**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Optical computing devices in general	G06E
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G01S 13/767**References****Limiting references***This group does not cover:*

Teaching or practice apparatus for gun-aiming or gun-laying	F41G 3/26
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

Combination of several spaced transponders or reflectors of known location for determining the position of a receiver	G01S 15/876
For anti-collision purposes cooperating with reflectors or transponders	G01S 2013/9329

G01S 13/86**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Combination of sonar systems with non-sonar or non-radar systems	G01S 15/86
Combination of lidar systems with systems other than lidar, radar or sonar	G01S 17/86

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G01S 15/86

Definition statement

This place covers:

Combination of sonar systems with systems according to G01S 17/00 and/or with passive systems, e.g. direction finders.

G01S 17/894

Definition statement

This place covers:

Systems for generating a 3D image without scanning a light beam, e.g. time-of-flight cameras or flash LADAR.

References

Informative references

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

Stereoscopic imaging in combination with an illumination source for illuminating objects	H04N 13/254
Stereoscopic imaging wherein the generated image signals comprise depth maps or disparity maps	H04N 13/271
Depth or shape recovery from laser ranging	G06T 7/521

2. A. DEFINITIONS (modified)

Modify the following definitions.

G01S 7/486

Relationships with other classification places

Delete: The entire “Relationships with other classification places” section.

References Informative references

Insert: The following new “References/Informative references” section.

References

Informative references

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

Details of photo sensitive detectors including semiconductor devices per se	G01J, H01L
Image intensifiers	G02B 23/12
Light transforming elements per se	H01J, H01L
Imaging devices, e.g. CCD's,	H01L 27/14, H04N 5/30
Phototransistors	H01L 31/101

G01S13/04

Special rules of classification

Delete: The existing “Special rules of classification” section.

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References

Insert: The following new “References/Limiting references and Informative references” sections.

References

Limiting references

This group does not cover:

Systems determining the presence of a target based on relative movement of target	G01S 13/56
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Informative references

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

Systems determining the presence of a target	G01S 15/04, G01S 17/04
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G01S13/4409

References

Insert: The following new “Limiting References” section.

Limiting references

This group does not cover:

Multilobing aerials or aerial systems	H01Q 25/00
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Informative references

Delete: The following existing row from the “Informative references” table.

Multilobing aerials or aerial systems	H01Q 25/00
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G01S13/58

References

Insert: The following new “References/Application-oriented references and Informative references” sections.

References

Application-oriented references

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

Systems applied to the controlling of traffic	G01S 13/92
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Informative references

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

Velocity or trajectory determination systems; Sense-of-movement determination systems	G01S 17/58
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G01S15/8906

Limiting references

Delete: The entire existing “Limiting references” section.

Informative references

Replace: The entire existing references in the “Informative references” table with the following updated references.

Medical diagnostic ultrasound applications	A61B 8/00
Image processing per se	G06T
Beamforming of ultrasound waves	G10K 11/34
Generating or transmitting mechanical vibrations of ultrasonic frequency	B06B
Thickness measurement by ultrasonic waves	G01B 17/02
Flow measurements by ultrasonic waves	G01F 1/66

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Measuring or indicating of ultrasonic, sonic or infrasonic waves in general	G01H
Analysing solids by imaging using ultrasonic waves	G01N 29/06
Seismic or acoustic prospecting or detecting	G01V 1/00
Obtaining records by techniques analogous to photography using ultrasonic waves	G03B 42/06
Models for scanning techniques in medical ultrasonics	G09B 23/286
Wiring or connecting of acoustic transducers per se	G10K 11/004
Sound-focusing or directing, e.g. scanning	G10K 11/26

G01S15/8909**Limiting references**

Delete: The entire existing “Limiting references” section.

Informative references

Replace: The entire existing references in the “Informative references” table with the following updated references.

Transducers per se	B06B 1/06
Sound-focusing or directing per se	G10K 11/26
Constructional aspects of transducers	B06B 1/0607, B06B 1/085
Piezoelectric probes for analysing materials	G01N 29/2437
Analysing materials using electronic focusing, e.g. phased arrays	G01N 29/262
Aspects related to the shape of the transducer	G10K 11/32
Phased arrays and beamforming per se	G10K 11/34

G01S15/8965**Limiting references**

Delete: The entire existing “Limiting references” section.

Insert: The following new “Informative references” section.

Informative references

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Optoacoustic imaging, i.e. imaging of tissue using ultrasound waves generated in the tissue by a laser pulse	A61B 5/0073
Investigating materials with probes using optoacoustic interaction with the material, e.g. laser radiation	G01N 29/2418
Devices for manipulating acoustic surface waves	G10K 11/36
Sound-production using optical excitation per se, e.g. laser bundle	G10K 15/046

G01S15/8977**Limiting references**

Delete: The entire existing “Limiting references” section.

Informative references

Insert: The following new “Informative references” section

Informative references

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

Analysing materials by processing the detected response signal using	G01N 29/44
Statistical methods	G01N 29/449
Spectral analysis (e.g. FFT)	G01N 29/46
Auto- or cross-correlation techniques	G01N 29/50
Digital image processing per se	G06T 1/00

G01S15/8979**Definition statement**

Replace: The entire existing “Definition statement” text with the following updated text.

- Acoustic short range imaging systems, in particular medical ultrasound imaging systems, using duplex imaging, i.e. colour coded flow velocity information extracted using Doppler signals overlaid as parametric information on B-mode images.
- General Doppler systems.

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Limiting references

Delete: The entire existing “Limiting references” section.

Informative references

Replace: The references in the existing “Informative references” table with the following updated references.

For the principle underlying wall filters (i.e. G01S15/8981)	G01S 13/5244
Determining the velocity vector	G01S 15/588
Systems relating to spectral Doppler only	G01S 7/52066
Measuring blood flow for medical diagnosis	A61B 8/06
Diagnostic techniques involving Doppler signals	A61B 8/488
Blood flow in combination with B-scan for diagnosis	A61B 8/5246
Measuring of volume flow using ultrasound	G01F 1/663
Measuring speed of fluids in general	G01P 5/00

G01S15/8993**Limiting references**

Delete: The entire existing “Limiting references” section.

Informative references

Replace: All references in the existing “Informative references” table with the following updated references.

Diagnosis using ultrasound 3D	A61B 8/466
Three-dimensional stereoscopic images	G01S 7/52068
3D image rendering	G06T 15/00
Ray tracing per se	G06T 15/06
Volume rendering per se	G06T 15/08
3D modelling, e.g. data description of 3D objects	G06T 17/00
Manipulating 3D images	G06T 19/00

G01S15/8995**Limiting references**

Delete: The entire existing “Limiting references” section.

Insert: The following new “Informative references” section.

References

Informative references

Image enhancement per se using more than one image, e.g. averaging, subtraction	G06T 5/50
Determination of transform parameters for the alignment of images, i.e. image registration	G06T 7/30

G01S17/06

Definition statement

Replace: The entire existing text in the “Definition statement” section with the following updated text.

Systems where the position of the emitting system is determined relative to a reference frame, using active optical range finding.
Systems where the position of a target is determined with respect to a measuring point, using signals reflected by the target, provided that these signals were not emitted by a single, well-defined source.

G01S17/08

References

Insert: The following new “References/Limiting references” section.

References

Limiting references

This place does not cover:

Indirect determination of position data	G01S 17/46
Active triangulation systems, i.e. using the transmission and reflection of electromagnetic waves other than radio waves	G01S 17/48

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Special rules of classification

Replace: The existing paragraph in the “Special rules of classification” section with the following updated paragraph.

Where a disclosure specifies alternative methods of measuring distance, for example, both time of flight of a transmitted and received optical pulse, as well as a time of flight measured with a transmitted and reflected continuous wave optical signal, and if these are described in detail, then the disclosure is classified in both [G01S17/10](#).

G01S17/48

Informative references

Delete: The entire existing “Informative references” section.

Glossary of terms

Insert: The following new “Glossary of terms” section.

In this group/subgroup/subclass, the following terms or expressions are used with the meaning indicated:

Active system	An active system uses a transmitter and a receiver.
Passive system	A passive system listens without transmitting.

Definition statement

G01S17/58

Replace: The entire text in the “Definition statement” section with the following updated text.

Measuring the properties of the reflected signal in order to calculate the velocity of a moving target. The moving target may be a solid object or particles suspended in a moving fluid.

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G01S17/89

Informative references

Insert: The following new “Informative references” section.

References

Informative references

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

Optically measuring length, width or thickness	G01B 11/02
Television/imaging systems not having range measurement per se	H04N
Surveying systems per se	G01C 15/00

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2. B. DEFINITIONS QUICK FIX

<u>Symbol</u>	<u>Location of change</u> (e.g., section title)	<u>Existing reference symbol or text</u>	<u>Action; New symbol; New text</u>
G01S 7/003	Limiting references	Data transfer between radars reradiating radio waves, e.g. secondary radar G01S 13/765, G01S 13/825 Data transfer inside the radar apparatus	<u>Delete the entire</u> “Limiting references” section.
G01S 7/003	Informative references	Systems using reradiation of radio waves G01S 13/74	<u>Insert</u> the following <u>new</u> references in the “Informative references” table. Data transfer between radars reradiating radio waves, e.g. secondary radar G01S 13/765, G01S 13/825 Transmission systems for measured values, control or similar signals G08C
G01S 7/021	Limiting references	Means for anti-jamming, e.g. ECCM, i.e. electronic counter-counter measures. G01S 7/36 Jamming means, e.g. producing false echoes G01S 7/38	<u>Delete the entire</u> “Limiting references” section.

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<u>Symbol</u>	<u>Location of change</u> (e.g., section title)	<u>Existing reference symbol or text</u>	<u>Action; New symbol; New text</u>
G01S 7/021	Informative references		<p><u>Insert</u> the following <u>new</u> “Informative references” section.</p> <p>Informative references</p> <p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <p>Multi-channel PRF-analysers, per se G01R 23/155</p> <p>Means for anti-jamming, e.g. ECCM, i.e. electronic counter-counter measures G01S 7/36</p> <p>Jamming means, e.g. producing false echoes G01S 7/38</p>
G01S 7/06	Informative references		<p><u>Insert</u> the following <u>new</u> “Informative references” section.</p> <p>Informative references</p> <p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <p>Cathode-ray oscilloscopes in general G01R 13/20</p>
G01S 7/4052	Limiting references	Systems in general using reradiation of radio waves G01S 13/74	<u>Delete</u> the <u>entire</u> “Limiting references” section,

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<u>Symbol</u>	<u>Location of change</u> (e.g., section title)	<u>Existing reference symbol or text</u>	<u>Action; New symbol; New text</u>
G01S 7/4052	Informative references		<p><u>Insert</u> the following <u>new</u> "Informative references" section.</p> <p>Informative references</p> <p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <p>Systems in general using reradiation of radio waves G01S 13/74</p> <p>Analogue computers for direction-finding, locating, distance or velocity measuring, or navigation systems G06G 7/78</p>
G01S 7/491	Informative references	Pulsed lidars (ladars) discriminating between fixed and moving objects, e.g. with moving target indication, adaptive clutter cancellation G01S 17/50	<p><u>Replace</u> the reference in the "Informative references" table with the following <u>new</u> reference.</p> <p>Pulsed lidars (ladars) discriminating between fixed and moving objects etc. G01S 17/50</p>
G01S 7/52001	Limiting references	<p>Means for anti-jamming, e.g. acoustic counter-counter measures. G01S 7/537</p> <p>Jamming means, e.g. producing false echoes G01S 7/537</p>	<p><u>Delete</u> the <u>entire</u> Limiting references section.</p>

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<u>Symbol</u>	<u>Location of change</u> (e.g., section title)	<u>Existing reference symbol or text</u>	<u>Action; New symbol; New text</u>
G01S 7/52001	Informative references		<p><u>Insert</u> the following <u>new</u> “Informative references” section.</p> <p>Informative references</p> <p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <p>Multi-channel PRF-analysers <div style="text-align: right;">G01R 23/155</div></p> <p>Means for anti-jamming, e.g. acoustic counter-countermeasures <div style="text-align: right;">G01S 7/537</div></p>
G01S 7/52003	Limiting references	Acoustic beam forming per se G10K 11/00	<p><u>Replace</u> the existing reference in the “Limiting references” table with the following new text.</p> <p>Techniques for image enhancement involving transmitter or receiver <div style="text-align: right;">G01S 7/52046</div></p>
G01S 7/52003	Informative references		<p><u>Insert</u> the following <u>new</u> “Informative references” section.</p> <p>Informative references</p> <p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <p>Acoustic beam forming per se <div style="text-align: right;">G10K 11/00</div></p>

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G01S 7/52047	Limiting references	Enhancing the spatial resolution in sonar systems G01S 7/52003 Beam formers in general G10K 11/34 Apodisation per se G10K 11/348	<u>Delete</u> the <u>entire</u> “Limiting references” section.
G01S 7/52047	Informative references		<u>Insert</u> the following <u>new</u> “Informative references” section. Informative references <i>Attention is drawn to the following places, which may be of interest for search:</i> Enhancing the spatial resolution in sonar systems G01S 7/52003 Sound-focusing or directing using electrical steering of transducer arrays, e.g. beam steering G10K 11/34 Apodisation per se G10K 11/348
G01S 7/52057	Limiting references	Display representation in the analysis of materials (A-, B- or C-Scan) G01N 29/0645 Cathode ray oscilloscopes in general G01R 13/20	<u>Delete</u> the <u>entire</u> Limiting references section.

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<u>Symbol</u>	<u>Location of change</u> (e.g., section title)	<u>Existing reference symbol or text</u>	<u>Action; New symbol; New text</u>
G01S 7/52057	Informative references		<p><u>Insert</u> the following <u>new</u> “Informative references” section.</p> <p>Informative references</p> <p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <p>Display representation in the analysis of materials (A-, B- or C-Scan) G01N 29/0645</p> <p>Cathode ray oscilloscopes in general G01R 13/20</p>
G01S 13/003	Limiting references	Monostatic radar systems having a separate transmit and receive antenna, as typically used in FMCW radar G01S 13/34	<p><u>Delete</u> the <u>entire</u> “Limiting references” section.</p>
G01S 13/003	Informative references	Combination of radar systems G01S 13/87	<p><u>Insert</u> in the “Informative references” table the following reference.</p> <p>Monostatic radar systems having a separate transmit and receive antenna, as typically used in FMCW radar G01S 13/34</p>
G01S 13/0218	Limiting references		<p><u>Insert</u> the following <u>new</u> “Limiting references” section.</p> <p>Limiting references</p> <p><i>This place does not cover.</i></p> <p>Radar or analogous systems for meteorological use G01S 13/95</p>

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G01S 13/42	Limiting references	Bearing and direction finders per se G01S 3/02	<u>Delete</u> from the “Limiting references” table the reference shown below. Bearing and direction finders per se G01S 3/02
G01S 13/42	Informative references		<u>Insert</u> the following <u>new</u> “Informative references” section. Informative references <i>Attention is drawn to the following places, which may be of interest for search:</i> Bearing and direction finders per se G01S 3/02
G01S 13/46	Definition statement	Techniques not involving the measurement of the time of flight of the measurement signal between transmitter and receiver.	<u>Replace</u> in the “Definition statement” section the existing text with the following updated text. Techniques for determining position involving the use of indirect waves, e.g. waves travelling along multiple paths.
G01S 13/5244	Limiting references	Discriminating targets with respect to background clutter G01S 7/414	<u>Delete</u> from the “Limiting reference” table the reference shown below. Discriminating targets with respect to background clutter G01S 7/414

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G01S 13/5244	Informative references		<p><u>Insert</u> the following <u>new</u> “Informative references” section.</p> <p>Informative references</p> <p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <p>Discriminating targets with respect to background clutter G01S 7/414</p>
G01S 13/75	Limiting references	Transponders that are used for the mere exchange of data. G06K 7/00	<u>Delete</u> the <u>entire</u> “Limiting references” section.
G01S 13/75	Informative references		<p><u>Insert</u> the following <u>new</u> “Informative references” section.</p> <p>Informative references</p> <p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <p>Transponders that are used for the mere exchange of data. G06K 7/00</p>
G01S 13/885	Limiting references		<p><u>Insert</u> the following <u>new</u> “Limiting references” section.</p> <p>Limiting references</p> <p><i>This place does not cover:</i></p> <p>Prospecting or detecting using electromagnetic waves G01V 3/12</p>

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<u>Symbol</u>	<u>Location of change</u> (e.g., section title)	<u>Existing reference symbol or text</u>	<u>Action; New symbol; New text</u>
G01S 15/00	Synonyms and Keywords	In patent documents the word "sonar" is often used with the meaning "passive acoustic receiving/listening system". Therefore the keyword "sonar" should be used with caution.	<u>Replace</u> the existing text in the "Synonyms and Keywords" section with the following updated text. <i>In patent documents, the following words/expressions are often used with the meaning indicated:</i> Sonar passive acoustic receiving/listening system
G01S 15/42	Limiting references	Bearing and direction finders per se G01S 3/80	<u>Replace</u> in the "Limiting references" table the existing reference with the following. Indirect measurement G01S 15/46
G01S 15/42	Informative references		<u>Insert</u> the following <u>new</u> "Informative references" section. Informative references <i>Attention is drawn to the following places, which may be of interest for search:</i> Bearing and direction finders per se G01S 3/80
G01S 15/46	Definition statement	Techniques not involving the measurement of the time of flight of the measurement signal between transmitter and receiver.	<u>Replace</u> all of the text in the "Definition statement" section with the updated text below. Techniques for determining position involving the use of indirect waves, e.g. waves travelling along multiple paths.

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G01S 15/58	Limiting references		<p><u>Insert</u> the following <u>new</u> “Limiting references” section.</p> <p>Limiting references <i>This place does not cover.</i></p> <p>Velocity measurement in imaging systems G01S 15/8979</p>
G01S 15/8934	Limiting references	<p>Analysing materials using a sensor moving relative to a stationary material G01N 29/265 Mounting transducers per se, e.g. provided with mechanical moving or orienting device G10K 11/004 and subgroups Sound directing per se using mechanical steering by moving the transducer G10K 11/352 Sound directing per se by moving a reflector G10K 11/357</p>	<p><u>Delete</u> the <u>entire</u> “Limiting references” section.</p>
G01S 15/8934	Informative references		<p><u>Insert</u> the following <u>new</u> “Informative references” section.</p> <p>Informative references</p> <p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <p>Analysing materials using a sensor moving relative to a stationary material G01N 29/265</p>

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<u>Symbol</u>	<u>Location of change</u> (e.g., section title)	<u>Existing reference symbol or text</u>	<u>Action; New symbol; New text</u>
			<p>Mounting transducers per se, e.g. provided with mechanical moving or orienting device G10K 11/004</p> <p>Sound directing per se using mechanical steering by moving the transducer G10K 11/352</p> <p>Sound directing per se by moving a reflector G10K 11/357</p>
G01S 15/895	Limiting references	<p>Different forms of pulses G01S 15/10 and subgroups</p> <p>Investigating or analysing materials enerating the ultrasonic waves with frequency characteristics, e.g. single frequency, chirps G01N 29/348</p>	<p><u>Delete</u> the <u>entire</u> “Limiting references” section.</p>
G01S 15/895	Informative references		<p><u>Insert</u> the following <u>new</u> “Informative references” section.</p> <p>Informative references</p> <p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <p>Different forms of pulses G01S 15/10</p> <p>Investigating or analysing materials generating the ultrasonic waves with frequency characteristics, e.g. single frequency, chirps G01N 29/348</p>

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<u>Symbol</u>	<u>Location of change</u> (e.g., section title)	<u>Existing reference symbol or text</u>	<u>Action; New symbol; New text</u>
G01S 15/8968	Limiting references	Measuring ultrasonic waves using mechanical fibre optic sensors G01H 9/004 Investigating materials whereby incident light is modified using opto-acoustic detection G01N 21/1702	<u>Delete</u> from the “Limiting References” table the following references. Measuring ultrasonic waves using mechanical fibre optic sensors G01H 9/004 Investigating materials whereby incident light is modified using opto-acoustic detection G01N 21/1702
G01S 15/8968	Informative references		<u>Insert</u> the following <u>new</u> “Informative references” section. Informative references <i>Attention is drawn to the following places, which may be of interest for search:</i> Measuring ultrasonic waves using mechanical fibre optic sensors G01H 9/004 Investigating materials whereby incident light is modified using opto-acoustic detection G01N 21/1702
G01S 15/897	Limiting references	Analysing solids using the imaging of the interior by acoustic holography G01N 29/0663 Holography per se G03H Acoustic holography per se G03H 3/00 and subgroups	<u>Delete</u> the <u>entire</u> Limiting references section.

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<u>Symbol</u>	<u>Location of change</u> (e.g., section title)	<u>Existing reference symbol or text</u>	<u>Action; New symbol; New text</u>
G01S 15/897	Informative references		<p><u>Insert</u> the following <u>new</u> “Informative references” section.</p> <p>Informative references</p> <p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <p>Analysing solids using the imaging of the interior by acoustic holography G01N 29/0663</p> <p>Holography per se G03H</p> <p>Acoustic holography per se G03H 3/00</p>
G01S 15/899	Limiting references	Measuring for diagnostic purposes A61B 5/00 Ultrasound lithotripsy A61B 17/22004, A61B 17/225	<u>Delete</u> the <u>entire</u> “Limiting references” section.
G01S 15/899	Informative references	ICT specially adapted for handling or processing of medical images G16H 30/00	<p><u>Insert</u> in the “Informative references” table the following <u>new</u> references.</p> <p>Measuring for diagnostic purposes A61B 5/00</p> <p>Ultrasound lithotripsy A61B 17/22004, A61B 17/225</p>

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<u>Symbol</u>	<u>Location of change</u> (e.g., section title)	<u>Existing reference symbol or text</u>	<u>Action; New symbol; New text</u>
G01S 17/32	Informative references		<p><u>Insert</u> the following <u>new</u> “Informative references” section.</p> <p>Informative references</p> <p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <p>Interferometers per se G01B 9/00</p> <p>Optically measuring length, width or thickness G01B 11/02</p>
G01S 17/42	Limiting references	Bearing and direction finders per se G01S 3/78	<p><u>Replace</u> the existing reference in the “Limiting references” table with the following updated reference.</p> <p>Indirect determination of position data G01S 17/46</p>
G01S 17/42	Informative references		<p><u>Insert</u> the following <u>new</u> “Informative references” section.</p> <p>Informative references</p> <p><i>Attention is drawn to the following places, which may be of interest for search:</i></p> <p>Bearing and direction finders per se G01S 3/78</p>

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<u>Symbol</u>	<u>Location of change</u> (e.g., section title)	<u>Existing reference symbol or text</u>	<u>Action; New symbol; New text</u>
G01S 17/46	Definition statement	Techniques not involving the measurement of the time of flight of the measurement signal between transmitter and receiver.	<u>Replace</u> the text in the “Definition statement” section with the following updated text. Techniques for determining position involving the use of indirect waves, e.g. waves travelling along multiple paths.
G01S 19/21	Limiting references	Spoofers, jammers etc. G01S 19/015 Interference related aspects in spread spectrum receivers H04B 1/7097	<u>Delete</u> the <u>entire</u> “Limiting references” section.
G01S 19/21	Informative references		<u>Insert</u> the following <u>new</u> “Informative references” section. Informative references <i>Attention is drawn to the following places, which may be of interest for search:</i> Spoofers, jammers etc. G01S 19/015 Interference related aspects in spread spectrum receivers H04B 1/7097

NOTES:

- The table above is used for corrections or modifications to existing definitions, e.g. delete an entire definition or part thereof; propose new wording or modify wording of a section, change the symbol the definition is associated with, change or delete a reference symbol, etc.
- Do not delete (F) symbol definitions.