

G01V

GEOPHYSICS; GRAVITATIONAL MEASUREMENTS; DETECTING MASSES OR OBJECTS (detecting or locating foreign bodies for diagnostic, surgical or person-identification purposes A61B; means for indicating the location of accidentally buried, e.g. snow-buried persons A63B29/02; investigating or analysing earth materials by determining their chemical or physical properties G01N; measuring electric or magnetic variables in general, other than direction or magnitude of the earth's field G01R; electronic or nuclear magnetic resonance arrangements G01R33/20 ; radar, sonar or analogous methods in general, detecting masses or objects involving these methods G01S)

Definition statement

This subclass/group covers:

Methods and apparatus for geophysical purposes such as

Seismic measurements, including the generation of seismic energy, the detection of seismic signals and their processing,

Measuring the magnetic or electric field of the earth or its modification by geological structures,

Measuring the gravitational field of the earth or its modification by geological structures;

Prospecting or detecting of masses or objects in general, e.g. by seismic, electric, magnetic, gravimetric, or optical means, or by the use of nuclear radiation.

Measuring gravitational fields or waves in general, e.g. gravitational forces between two bodies, or gravitational waves of cosmic origin.

Manufacturing, calibrating, cleaning, or repairing such apparatus.

Tags attached to, or associated with, an object, in order to enable detection of the object.

Geophysical modelling, whether or not related to the measurement of a physical parameter

In this subclass, the geophysical methods apply both to the earth and to other celestial objects, e.g. planets.

Relationship between large subject matter areas

The general subject matter for locating or detecting of masses or objects are

covered by several subclasses besides [G01V](#): [G01S](#), [G01C](#).

[G01V](#) covers radar, sonar, lidar or analogous systems specifically designed for geophysical use. Radar, sonar, lidar or analogous systems, or details of such systems, if of general interest, are covered by subclass [G01S](#).

[G01V](#) also covers geophysical modelling, whether or not related to the measurement of a physical parameter. Other fields, involving geophysical modelling are [E21B](#) and [G06F](#)

In general, documents relating to the functional aspects of the modelling per se, e.g. finite difference modelling, should be classified in the [G06F 17/00](#). Fluid flow simulation and modelling which is not application specific, e.g. using specialized computer or software, is covered by [G06F 17/5018](#).

Documents relating to the application aspects of the modelling of physical system or processes should be classified in their application field, that is [G01V](#) for geophysics and seismics and [E21B](#) for oil production.

More in particular, models relating to the state of the subsurface/formation, e.g. sedimentation models, should be classified in [G01V 99/005](#), as this is considered the application field of exploration.

Models used when processing seismic data in general should be classified in [G01V 1/28](#). Models used for velocity profiles should be classified in [G01V 1/303](#)

Modelling related to production of reservoir fluids, e.g. fluid flow models, should be with [E21B](#).

Equally, analysis of models for production or simulated production are classified in [E21B](#), like e.g. risk analysis, production forecast, net present value [NPV].

References relevant to classification in this subclass

This subclass/group does not cover:

Detecting or locating foreign bodies for diagnostic, surgical or person-identification purposes	A61B
Means for indicating the location of accidentally buried, e.g. snow-buried, person	A63B 29/02
Burglar, theft, or intruder alarms	G08B 13/00

Informative references

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

Survey of boreholes or wells	E21B 47/00
Investigating or analysing earth materials by determining their chemical or physical properties	G01N
Measuring electric or magnetic variables in general, other than direction or magnitude of the earth's field	G01R
Radar, sonar, lidar or analogous systems, or details of such systems in general	G01S

G01V 1/00

Seismology; Seismic or acoustic prospecting or detecting

Definition statement

This subclass/group covers:

Seismic measurements, including the generation of seismic energy, the detection of seismic signals and their processing.

Presence detection by acoustical means.

Earthquake detection or prediction.

References relevant to classification in this main group

This subclass/group does not cover:

Measuring vibrations as such	G01H
Sonar	G01S 15/00
Alarm systems	G08B
Production and propagation of sound	G10K
Microphones or like acoustic electromechanical transducers	H04R

Informative references

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

Survey of boreholes or wells	E21B 47/00
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Special rules of classification within this group

For details which are not covered by specific subgroups of [G01V 1/00](#), the Indexing Codes [G01V 2200/00](#) and subcodes should be applied.

G01V 1/001

[N: Acoustic presence detection (measurement of sonic vibrations G01H; alarm systems G08B)]

Definition statement

This subclass/group covers:

Acoustic presence detection for passive detection only, e.g. footsteps by walking person.

Relationship between large subject matter areas

[G01V 1/001](#) covers the passive detection of “presence”, i.e. availability/existence of an object or a person, e.g. in a room, by the sound produced.

This term “presence” is not to be confused with the term “event” as is used in other subgroups of [G01V 1/00](#). The term “event” refers to an occurrence of an acoustic effect, for example in earthquake detection ([G01V 1/008](#)) or in microseismics ([G01V 1/288](#)).

References relevant to classification in this group

This subclass/group does not cover:

Burglar, theft, or intruder alarms actuated by interference with mechanical vibrations using passive vibration detection system	G08B 13/1654
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Informative references

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

Measuring vibrations as such	G01H
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G01V 1/003

[N: Seismic data acquisition in general, e.g. survey design (G01V1/3808, G01V1/42 takes precedence)]

Definition statement

This subclass/group covers:

General design of seismic surveys

Use of special signals, e.g. for slip sweep arrangements, swept signals, pseudo-random codes.

Use of plurality of generators for generating single coherent signals.

References relevant to classification in this group

This subclass/group does not cover:

Marine seismic data acquisition	G01V 1/3808
Control of marine source arrays	G01V 1/3861
VSP acquisition	G01V 1/42

Informative references

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

Generating seismic energy per se	G01V 1/02
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G01V 1/008

[N: Earthquake measurement or prediction (event detection for microseismic events G01V1/288)]

Definition statement

This subclass/group covers:

Earthquake detection or prediction

Mudslides or avalanche detection

Relationship between large subject matter areas

[G01V 1/008](#) relates to direct detection or prediction of calamitous events whereas [G01V 1/288](#) relates to analysis per se of seismic events.

References relevant to classification in this group

This subclass/group does not cover:

Processing for the detection of seismic or microseismic events	G01V 1/288
Alarms responsive to calamitous events, e.g. Tsunami warning	G08B 21/10

G01V 1/02

Generating seismic energy ([N: G01V1/003 takes precedence]; blasting in general F42; nuclear explosives G21J)

Definition statement

This subclass/group covers:

Details of seismic sources, like ground coupling, ignition or the like.

Types of seismic sources:

using explosions

using fluidic driving means

using mechanical driving means

using spark discharges

using piezoelectric or magnetostrictive driving means

References relevant to classification in this group

This subclass/group does not cover:

Generating special signals	G01V 1/005
Generating single signals by using more than one generator, other than explosive charge	G01V 1/006

Details exclusively relevant in a marine environment	G01V 1/38
Control of marine source arrays	G01V 1/3861

Informative references

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

Generating mechanical vibrations by using piezoelectric or magnetostrictive effect, in general	B06B 1/06 , B06B 1/08
Blasting in general	F42D 3/06
Nuclear explosives	G21J
Spark gaps, discharge apparatus, not otherwise provided for	H01T

Special rules of classification within this group

If subject-matter classified here relates to application in a marine environment, Indexing Code [G01V 1/38](#) should be applied.

If subject-matter classified here relates to application in a borehole environment, Indexing Code [G01V 1/40](#) should be applied.

G01V 1/16

Receiving elements for seismic signals (electromechanical transducers H04R); Arrangements or adaptations of receiving elements

Definition statement

This subclass/group covers:

Details of receiving elements, like ground coupling, circuits or the like.

Deployment of receiving elements.

Types of receiving elements:

geophones

hydrophones

combinations thereof

Arrangements of receiving elements, e.g. geophone patterns or streamers

Relationship between large subject matter areas

Combinations of receiving elements are classified in [G01V 1/18](#) when they essentially do a measurement on a single location.

For example, a combination of a sound pressure transducer and a particle velocity measuring transducer should be classified in [G01V 1/18](#).

Arrangements of receiving elements for simultaneously measuring on a plurality of locations should be classified in [G01V 1/20](#)

References relevant to classification in this group

This subclass/group does not cover:

Fibre-optical receiving elements	G01H 9/004
Integrated optoseismic systems	G01V 1/226

Informative references

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

Electromechanical transducers	H04R
Transducer mountings in general	G10K 11/004
Accelerometers in general	G01P

Special rules of classification within this group

If subject-matter classified here relates to application in a marine environment, Indexing Code [G01V 1/38](#) should be applied.

If subject-matter classified here relates to application in a borehole environment, Indexing Code [G01V 1/40](#) should be applied.

Further details of streamers, not provided for in subgroups of [G01V 1/201](#), should be classified in the subgroups of index group [G01V 1/201](#).

G01V 1/22

Transmitting seismic signals to recording or processing apparatus (signal transmitting systems in general G08C; transmission systems in general H04B)

Definition statement

This subclass/group covers:

Transmission of seismic signals, e.g. by wire or radio signals.

Integrated combinations of receiving elements and transmission systems, e.g. optoseismic systems

Informative references

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

Signal transmitting systems in general	G08C
Transmission systems in general	H04B

Special rules of classification within this group

If subject-matter classified here relates to application in a marine environment, Indexing Code [G01V 1/38](#) should be applied.

If subject-matter classified here relates to application in a borehole environment, Indexing Code [G01V 1/40](#) should be applied.

G01V 1/24

Recording seismic data (transforming one recording into another G01V1/32; recording measured values in general G01D)

Definition statement

This subclass/group covers:

Recording systems for seismic data always containing a memory structure for intermediate or final storage. This also covers seismographs that use paper as storage.

Amplitude control. e.g. for dynamic compression (for analogue systems).

Storage in acquisition units.

Time reference systems for synchronisation of the seismic data.

Informative references

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

Transforming one recording into another	G01V 1/32
Recording measured values in general	G01D
Amplitude control in general	H03G
Clock synchronisation-related issues	G01V 2200/12

Special rules of classification within this group

If subject-matter classified here relates to application in a marine environment, Indexing Code [G01V 1/38](#) should be applied.

If subject-matter classified here relates to application in a borehole environment, Indexing Code [G01V 1/40](#) should be applied.

G01V 1/28

Processing seismic data, e.g. analysis, for interpretation, for correction (G01V1/48 takes precedence)

Definition statement

This subclass/group covers:

Processing seismic data:

application of seismic models

application of particular components of seismic signal, e.g. shear waves

event detection in seismic signals, e.g. microseismics

Analysis of seismic data:

determining seismic cross-section or geostructures

determining velocity profiles or traveltimes

determining physical properties of the subsurface

determining seismic attributes

time lapse or 4D effects

Transforming representations of seismic data

Displaying data

Correcting seismic data; eliminating unwanted energy:

static or dynamic corrections

seismic filtering

specially adapted for continuous agitation of the ground

Relationship between large subject matter areas

4D effects in [G01V 1/00](#) cover effects over time to the subsurface formation as a result of production from that formation.

[E21B 47/00](#) covers 4D effects related to the fluid flow per se.

4D effects in [G01V 99/00](#) cover long term geophysical effects, e.g. sedimentation processes, which do not relate to seismic measurements per se.

References relevant to classification in this group

This subclass/group does not cover:

Processing of acoustic logging data	G01V 1/48
4D effects related to the fluid flow per se	E21B 47/00

Informative references

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

Computing in general	G06
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Special rules of classification within this group

If subject-matter classified here relates to application in a marine environment, Indexing Code [G01V 1/38](#) should be applied.

If subject-matter classified here relates to application in a borehole environment, Indexing Code [G01V 1/40](#) should be applied.

For details which are not covered by specific subgroups of [G01V 1/28](#), the Indexing Codes [G01V 2210/00](#) and subcodes should be applied.

For further details, including details which may already be covered by specific subgroups of [G01V 1/28](#), the Indexing Codes [G01V 2210/00](#) and subcodes should be applied.

[G01V 2210/00](#) covers “Details of seismic processing or analysis”, e.g.:

Aspects of acoustic signal generation or detection

Trace signal pre-filtering to select, remove or transform specific events or signal components, i.e. trace in and trace out

Noise handling

Transforming data representation

Corrections and adjustments related to wave propagation

Analysis

Other details related to processing

G01V 1/38

especially adapted for water-covered areas (G01V1/28, [N:G01V1/42] take precedence)

Definition statement

This subclass/group covers:

Marine seismic data acquisition. This also covers survey design

Positioning of marine seismic devices, including determining the position

Deployment of marine seismic devices, e.g. of streamers, ocean bottom cables [OBC] or nodes

Control of source arrays, e.g. for far field control

References relevant to classification in this group

This subclass/group does not cover:

Constructional details of marine seismic streamers	G01V 1/201
Marine seismic processing and	G01V 1/28

analysis	
Marine VSP	G01V 1/42

Informative references

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

Seismic data acquisition in general	G01V 1/003
Control of attitude or depth of underwater vessels	B63G
Equipment for marine deployment in general	B63B

Special rules of classification within this group

Classification in [G01V 1/38](#) usually also requires classification in one of the subgroups [G01V 1/02](#) to [G01V 1/375](#)

Glossary of terms

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

OBC	Ocean Bottom Cable
ROV	Remotely Operated Vehicles

G01V 1/40

specially adapted for well-logging

Definition statement

This subclass/group covers:

Seismic or acoustic well-logging:

Seismic logging in this group concerns investigation of the formation as a whole extending far away from the borehole, e.g. VSP or inter-well seismic tomography

Acoustic logging in this group concerns close range investigations of the vicinity of the borehole

Structural details directly related to acoustic and seismic well-logging

Relationship between large subject matter areas

Acoustic logging in [G01V 1/00](#) concerns close range investigations of the vicinity of the borehole. Acoustic logging of the borehole itself is covered by [E21B 47/00](#)

References relevant to classification in this group

This subclass/group does not cover:

VSP seismic processing and analysis	G01V 1/28
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Informative references

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

Survey of boreholes or wells	E21B 47/00
Structural details for well-logging in general	G01V 11/002

Special rules of classification within this group

Further constructional details should be classified in the subgroups of index group [G01V 1/52](#)

G01V 3/00

Electric or magnetic prospecting or detecting (by optical means G01V8/00); Measuring magnetic field characteristics of the earth, e.g. declination, deviation (for navigation, for surveying G01C; [N: measuring direction or magnitude of magnetic fields or magnetic flux in general G01R33/02])

Definition statement

This subclass/group covers:

Detecting the presence of objects as well as Geophysical prospecting by magnetic or electric means, e.g.

with propagation of electric current;

with magnetic or electric fields produced or modified by objects, structures or detecting devices;

with electromagnetic waves

with electron or nuclear magnetic resonance

Measuring magnetic field characteristics and properties of the earth, both as local deviations and of the earth as a whole.

Special adaptations of the techniques above for well-logging or for use during transport

Relationship between large subject matter areas

[G01V 3/00](#) covers detecting and prospecting by electric or magnetic means, also if the prospecting is applied in boreholes. However, It does not cover the analysis of core samples, as taken from a borehole, which is covered by the appropriate classes in [G01N](#).

Investigating or analysing of materials by the use of electric, electro-chemical or magnetic means are classified in [G01N 27/00](#). Investigating or analysing of materials by NMR are classified in [G01N 24/00](#).

Magnetic resonance is classified in a number of technical fields. In particular [G01V 3/14](#) and [G01V 3/32](#) cover specific adaptations of magnetic resonance to geophysical measurements. As such, these classes strongly relate to [G01R 33/20](#) and subgroups and to [G01N 24/00](#) and subgroups. For a more complete explanation of the relationship, see [G01N 24/00](#).

Magnets and magnetic materials as such are classified in [H01F](#).

References relevant to classification in this main group

This subclass/group does not cover:

Investigating or analysing of materials by NMR	G01N 24/00
Investigating or analysing of materials by the use of electric, electro-chemical or magnetic means	G01N 27/00
Investigating or analysing of earth materials	G01N 33/24
Compasses, magnetic field measurements for navigation or surveying purposes	G01C 17/00

Seismo-electric effect	G01V 11/007
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Special rules of classification within this group

Further details of subgroups (“free format”):

[G01V 3/08](#):

The distinction between electric and magnetic (i.e. [G01V 3/08](#)) on the one hand, and electromagnetic (i.e. [G01V 3/12](#)) on the other is not directly based on the frequency. Instead, it is mostly based on whether the wave character is important. If the wavelength is much larger than the dimensions of the structures or objects under investigation, the field is considered to be static and the subject matter is covered by [G01V 3/08](#) and subgroups. If the dimensions are comparable to, or larger than a wavelength, the subject matter falls under [G01V 3/12](#).

[G01V 3/083](#):

Further details should be classified in the subgroups of index group [G01V 3/083](#).

[G01V 3/104](#):

[G01V 3/101](#) takes precedence.

[G01V 3/12](#):

Millimetre waves: [G01V 8/005](#).

[G01V 3/14](#):

Classification in this class may also require classification in [G01N 24/00](#).

[G01V 3/15](#) - [G01V 3/175](#):

Classification in one of these classes usually also requires classification in groups [G01V 3/02](#) - [G01V 3/14](#) if relevant.

[G01V 3/165](#) - [G01V 3/175](#):

These classes are only used when adapted for use on an aircraft.

[G01V 3/17](#):

Millimetre waves: [G01V 8/005](#).

[G01V 3/18](#) - [G01V 3/34](#):

These classes take precedence over groups [G01V 3/02](#) - [G01V 3/14](#).

[G01V 3/32](#):

Classification in this class may also require classification in [G01N 24/00](#).

[G01V 3/36](#):

[G01V 3/34](#) takes precedence.

[G01V 3/40](#):

This group does not cover earth magnetic field measurements for the purpose of navigation or surveying, which is covered by [G01C 17/00](#).

G01V 5/00

Prospecting or detecting by the use of nuclear radiation, e.g. of natural or induced radioactivity (determining the properties of materials G01N; measuring nuclear radiation G01T)

Definition statement

This subclass/group covers:

- Detecting hidden objects
- Specially adapted for surface logging (e.g. from aircraft)
- Specially adapted for well-logging

References relevant to classification in this group

This subclass/group does not cover:

Measurement of nuclear or X-radiation	G01T
Investigating or analysing materials	G01N 23/00
Survey of borehole or wells	E21B 47/00

Informative references

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

Scintillation detectors	G01T 1/20
Semiconductor detectors	G01T 1/24
Measuring neutron radiation	G01T 3/00

Detector interrogation using an external network	G01T 7/00
Radar or analogous systems specially adapted for specific applications (e.g. Terahertz scanners)	G01S 13/88

Glossary of terms

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

SNM	Special Nuclear Material
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G01V 5/0008

[N: Detecting hidden objects, e.g. weapons, explosives (sorting of materials or articles according to radioactive properties B07C5/342; investigating or analysing materials by the use of wave or particle radiation G01N23/00)]

References relevant to classification in this group

This subclass/group does not cover:

Tetahertz Scanners	G01S 13/88
Detecting or locating foreign bodies for diagnostic, surgical or person-identification purposes	A61B 6/00
Prospecting or detecting with millimeter waves	G01V 8/005

G01V 7/00

Measuring gravitational fields or waves; Gravimetric prospecting or detecting

Definition statement

This subclass/group covers:

Measuring the magnitude and orientation of a gravity field.

Prospecting or detecting through anomalies in the earth gravity field.

Relationship between large subject matter areas

The following place may also be relevant for classification:

The measurement of gravity is closely related to the measurement of acceleration as is generally covered by [G01P 15/00](#). As such, comparable methods and devices may be found and classified in both places whenever a change in speed or motion is concerned.

References relevant to classification in this group

This subclass/group does not cover:

Weighing	G01G
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Informative references

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

Measuring slope or direction of boreholes	E21B 47/02
Clinometers	G01C 9/00

Special rules of classification within this group

Further details of subgroups ("free format"):

[G01V 7/005](#):

[G01V 7/08](#) to [G01V 7/12](#) take precedence

Measuring resonant frequency of mechanical vibrations: [G01H 13/00](#)

Measuring frequency per sé: [G01R 23/00](#)

[G01V 7/04](#):

Indicating or recording measured values in general: [G01D](#)

[G01V 7/16](#):

Documents, classified in this subgroup, may also require classification in one

of the subgroups [G01V 7/02](#) to [G01V 7/14](#)

G01V 8/00

Prospecting or detecting by optical means (measurement of characteristics of light G01J; optical scanning systems G02B26/10; discharge tubes detecting the presence of radiation H01J40/00, H01J47/00; semiconductor devices sensitive to light H01L31/00)

Definition statement

This subclass/group covers:

Prospecting by optical means, e.g. by spectroscopic means, but also by optical inspection.

Detection of objects by optical means, usually through interruption of a beam of light.

In this main group, the term “optical” includes ultra-violet, infrared, visible light and millimetre waves.

Relationship between large subject matter areas

The main group [G01S 17/00](#) concerns location or presence detection by means of reflection or reradiation of electromagnetic waves from the object. In [G01V 8/00](#), the detection normally occurs through interruption of a beam or set of beams. In the context of [G01V 8/00](#), the term “reflectors” only refers to means for deflecting the optical beam. It does not refer to the object to be detected.

Infrared radiation is considered to be light when used in e.g. light curtains. Documents, using infrared radiation as a measure of local temperature (e.g. thermal imaging), should be classified in [G01V 9/005](#).

References relevant to classification in this group

This subclass/group does not cover:

Photogrammetry; Photographic surveying	G01C 11/00
Investigating or analysing materials by optical means	G01N 21/00
Measurement of the characteristics of light	G01J
Optical components or systems	G02B

Semiconductor devices sensitive to light	H01L 31/00
Counting of objects, carried by a conveyer	G06M 7/00
Detecting movement of traffic	G08G 1/01

Informative references

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

Burglar, theft or intruder alarms, activated by interference with heat, light or radiation	G08B 13/18
Switches using optical detectors	H03K 17/941
Safety devices acting in conjunction with the control or operation of a machine	F16P 3/14
Safety devices for doors and the like, operated by disruption of energy beams	E05F 15/0026
Safety devices in passenger lifts	B66B 13/24

Special rules of classification within this group

Further details of subgroups ("free format")

[G01V 8/10](#) to [G01V 8/26](#)

Documents should be classified in the lowest possible subgroup. If e.g. the document discloses both a system with a single beam and with multiple beams, but the latter is merely a juxtaposition of several single beam arrangements, it should be classified in the appropriate class for single beams. Details of single elements (transmitters or receivers), even if used in single beam or multiple beam systems, should be classified in [G01V 8/10](#).

[G01V 8/14](#) and [G01V 8/22](#)

Detection by reflection from the object itself is covered by [G01S 17/00](#)

[G01V 8/18](#) and [G01V 8/26](#)

Optical scanning system per sé: [G02B 26/10](#)

G01V 9/00

Prospecting or detecting by methods not provided for in groups G01V1/00 to G01V8/00

Definition statement

This subclass/group covers:

Prospecting or detecting by a specific measuring method, other than those, provided for in groups [G01V 1/00](#) to [G01V 8/00](#),

like:

by parascientific methods

by thermal methods

by detection of gasses representative of underground layers, e.g. for seep detection or the determination of underground water existence or flow

References relevant to classification in this group

This subclass/group does not cover:

Prospecting or detecting when the measuring method is irrelevant.	G01V 11/00
Prospecting or detecting, where no measuring method is involved (e.g. model building)	G01V 99/00

Seismic or acoustic prospecting or detecting	G01V 1/00
Electric or magnetic prospecting or detecting	G01V 3/00
Prospecting or detecting by the use of nuclear radiation	G01V 5/00
Gravimetric prospecting or detecting	G01V 7/00
Prospecting or detecting by optical	G01V 8/00

means	
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Special rules of classification within this group

Further details of subgroups (“free format”)

[G01V 9/002](#)

This subgroup covers prospecting and detecting by parascientific methods, or by methods that are not based on formal science.

Parascientific features take precedence over features from other groups in [G01V](#), e.g. if a dowsing tool makes use of magnets, it would be classified in [G01V 9/002](#).

[G01V 9/005](#)

In this subgroup, infrared radiation is used as an indicator of local temperature, e.g. for thermal imaging. If it is used as the optical beam of a light curtain, the document should be classified in [G01V 8/00](#).

[G01V 9/007](#)

inf: Analysing earth materials: [G01N 33/24](#)

inf: Analysing gases per sé: [G01N](#)

G01V 11/00

Prospecting or detecting by methods combining techniques covered by two or more of main groups G01V1/00 to G01V9/00

Definition statement

This subclass/group covers:

Prospecting or detecting using a combination of methods.

Prospecting or detecting where the method is irrelevant.

References relevant to classification in this group

This subclass/group does not cover:

Geomodels or geomodelling, not related to particular measurements	G01V 99/00
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Further details of subgroups (“free format”)

[G01V 11/002:](#)

Transmission systems, specifically adapted for use in a borehole.

Components of downhole systems.

Transmission systems, suitable for both logging signals (i.e. [G01V](#)) and well survey signals (i.e. [E21B](#)) are classified in this group.

Transmission of seismic signals as such is classified in [G01V 1/22](#).

Signal transmission in general: [H04B](#).

[G01V 11/005:](#)

This subgroup contains means for locking sondes against the borehole wall, means for centralising sondes in the borehole and means for determining the position and orientation of logging tools.

Combinations of measurement tools with locking mechanisms, e.g. in order to provide a better acoustical or electrical contact with the borehole wall, are classified in the appropriate class for the measurement method.

[G01V 11/007:](#)

When the seismo-electric effect is used for the purpose of earthquake prediction, the document should only be classified in [G01V 1/008](#).

G01V 13/00

Manufacturing, calibrating, cleaning, or repairing instruments or devices covered by the preceding groups

Informative references

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

Testing or calibrating of vibration detectors as such	G01H 3/005
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G01V 15/00

Tags attached to, or associated with, an object, in order to enable detection of the object (record carriers for use with machines G06K19/00 ; signs, labels G09F)

Definition statement

This subclass/group covers:

Tags for objects that, due to their nature or to special circumstances, are not readily detectable in themselves by any of the methods in [G01V 1/00](#) to [G01V 9/00](#), e.g. buried PVC pipes but also e.g. merchandise that is in risk of theft.

It is not intended for identification of a particular object (e.g. among a group of similar objects) or for carrying information about the object.

References relevant to classification in this group

This subclass/group does not cover:

Theft detection systems using tags	G08B 13/2402
Record carriers for use with machines and with at least a part designed to carry digital markings (e.g. RFID)	G06K 19/00
Methods or arrangements for sensing record carriers	G06K 7/00
Identification tags	G07C 9/00
Means for indicating the location of accidentally buried persons	A63B 29/00
Signs, labels	G09F

Informative references

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

Aerials, structurally associated with other equipment or articles	H01Q 1/22
Installation of electric cables underground	H02G 9/00

Glossary of terms

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

In this main group, the following terms (or expressions) are used with the meaning indicated:

Tag	active or passive means, designed to facilitate the detection of hidden or buried objects, that would not otherwise be readily detectable.
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G01V 99/00

Subject matter not provided for in other groups of this subclass

Definition statement

This subclass/group covers:

Geomodels or geomodelling, not related to particular measurements

References relevant to classification in this main group

This subclass/group does not cover:

Modelling algorithms per sé	G06F 17/00
Modelling, related to reservoir fluids, e.g. fluid flow models	E21B
Models for seismic processing	G01V 1/282
Velocity profiles	G01V 1/303