

A61N

ELECTROTHERAPY; MAGNETOTHERAPY; RADIATION THERAPY; ULTRASOUND THERAPY (measurement of bioelectric currents A61B; surgical instruments, devices or methods for transferring non-mechanical forms of energy to or from the body A61B18/00; anaesthetic apparatus in general A61M; incandescent lamps H01K; infra-red radiators for heating H05B)

Definition statement

This subclass/group covers:

Specially adapted apparatus, instruments, devices, or processes for the following types of therapy:

- electrotherapy, e.g. iontophoresis;
- magnetotherapy;
- radiation therapy;
- ultrasound therapy.

Components having specialized structural features that limit their use to the apparatus, instruments, or devices for the types of therapy appropriate for this subclass.

Relationship between large subject matter areas

Several subclasses provide for subject matter that is used for therapy. The relationship between these subclasses in regard to the type of therapy covered by each is as follows:

Subclass [A61N](#) provides for medical treatment-type therapy by apparatus or methods utilizing forms of energy other than direct mechanical energy when they are not used for surgical purposes and they are intended to either

- destroy, control, or advance the recovery of sick or abnormal cells within body tissue while minimizing undesirable destruction of adjoining healthy cells, or
- treat other types of abnormal conditions of the body (e.g., disease, impaired organ, injured limb).

In particular, subclass [A61N](#) covers implanted devices, when the implanted device is not a replacement or supplementation of an actual portion of the organ or part, utilizing forms of energy other than direct mechanical energy to stimulate organs or body parts in a manner that facilitates, regulates, or improves their normal functioning.

Subclass [A61H](#) provides for massage and physical-type therapy apparatus or methods for the treatment of disease or disability (i.e., an abnormal condition of the body) by utilization of direct mechanical energy. The apparatus or methods appropriate for this subclass do not surgically alter any portion of the bodies during treatment. Usually, the massage and therapy apparatus and methods of this subclass are intended to facilitate the healing of diseases, reduce the impact of injuries, or beneficially influence the condition of disabled body parts by physically moving a part of a body (e.g., devices for exercising a passive body member) solely by direct physical contact with, or stimulation of, external surfaces of the body or naturally occurring cavities in the body. However, stimulation of internal organs or body parts, such as artificial respiration and stimulation of the heart, when it is done by direct mechanical energy is also considered proper for this subclass.

Subclass [A61K](#) and Subclass [A61P](#) provide for drug-type therapy using chemical compounds or medicinal preparations specially adapted for use in healing, benefiting, or destroying abnormal conditions of the body (e.g., diseases, birth defects) and the specific therapeutic activities that the chemical compounds and medicinal preparations are used for.

Subclass [A61B](#) provides for surgery and surgical-type therapy that alters or repairs organs and body parts. It also provides for any surgical or diagnostic apparatus or methods that would otherwise be proper for subclass [A61H](#) or [A61N](#) when the apparatus or methods are used for both purposes or combined together. In particular, subclass [A61B](#) provides for surgical instruments, devices, or methods for transferring non-mechanical forms of energy to or from the body (e.g., electromagnetic radiation surgery) to alter or repair it.

References relevant to classification in this subclass

This subclass/group does not cover:

Apparatus for diagnosis or surgery combined with, or applicable also as, therapy apparatus	A61B
Apparatus for radiation diagnosis	A61B 6/00
Surgical instruments, devices or methods for transferring non-mechanical forms of energy to or from the body (e.g., radiation surgery, electro-surgery)	A61B 18/00
Instruments, implements, tools, or methods specially adapted so as to limit their use to only animals	A61D
Apparatus or methods utilizing direct	A61H

mechanical energy in therapy intended to treat disease or disability	
Percussion or vibration massage apparatus (e.g. using supersonic vibration)	A61H 23/00
Apparatus or methods for stimulating specific reflex points by heating or cooling within the cell-life limits	A61H 39/06
Devices for applying radioactive material to the body	A61M 37/0069 , A61N 5/10

Informative references

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

Measuring bioelectrical signals of the body or body parts	A61B 5/04
Surgical accessories	A61B 19/00
Artificial substitutes or replacements for parts of the body	A61F 2/00
Heating or cooling appliances for medical or therapeutic treatment	A61F 7/00
Saunas	A61H 33/06
Radiopharmaceuticals	A61K 51/12
Anaesthetic apparatus in general	A61M
Artificial hearts and circulatory assistance means intended for implantation	A61M 1/12
Pressure infusion pumps	A61M 5/142
Devices or methods to cause a change in the state of consciousness by mechanical, optical or acoustical means, e.g. audiovisual stimuli	A61M 21/00

Therapeutic chemical compounds or medicinal preparation used to treat sicknesses or abnormal conditions of the body	A61P
Measurement of nuclear X-radiation	G01T
Techniques for handling of particles or electromagnetic radiation	G21K
Incandescent lamps having general utility	H01K
Infrared radiators for heating	H05B

A61N 1/00

Electrotherapy; Circuits therefor (A61N2/00 takes precedence; irradiation apparatus A61N5/00)

Definition statement

This subclass/group covers:

Details about electric fields which directly provide a therapeutic effect or which render the delivery of therapeutic substances possible; details about (components of) apparatuses which generate these electric fields.

References relevant to classification in this group

This subclass/group does not cover:

High frequency currents for surgery instead of therapy (i.e. higher temperatures so as to destroy tissue instead of healing tissue)	A61B 18/12
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Informative references

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

Measuring blood pressure / blood flow	A61B 5/02
Measuring blood output from heart	A61B 5/029

Detecting muscle signals	A61B 5/0488
Detecting gastrointestinal signals	A61B 5/04884
Detecting urogenital signals	A61B 5/04882
Measuring electrical impedance of a portion of the human body	A61B 5/053
Measuring movement of the entire body or parts thereof	A61B 5/11
Diagnosis using ultrasound in general	A61B 8/00
Measuring blood pressure by ultrasound	A61B 8/04
Measuring blood flow by ultrasound	A61B 8/06
Mechanical stimulation of ear nerves	A61F 11/04
Gastric anti-eating devices using electrical stimulation	A61F 5/0026
Devices for eye surgery	A61F 9/007
Devices implantable in the eye e.g. ocular inserts	A61F 9/0017
Heart stimulation by mechanical means	A61H 31/004
Stimulating specific reflex points using electric currents	A61H 39/002
Acoustically, mechanically or optically inducing sleep or relaxation	A61M 21/02
Irradiation apparatus	A61N 5/00
Electrically conditioning the air e.g. by ionising	B60H 3/0071
Applying static electricity for purifying the air	F24F 3/166

Computer-assisted medical diagnosis or treatment	G06F 19/34
Detecting specific parameters of the ECG cycle	A61B 5/0452
Recognising signal patterns per se	G06K 9/00496
Deaf aid sets	H04R 25/00
Percussion or vibration massage with electrotherapy	A61H 2201/10

Special rules of classification within this group

Additional information could be either

- specific details about components, signals or algorithms which are not related to the invention as such; or
- less preferred embodiments which are shortly mentioned (e.g. inventive specification of cochlear implants which can be used for retinal implants as well).

Documents with such information should be given an Indexing Code.

Synonyms and Keywords

In patent documents the following abbreviations are often used:

AAI	single chamber atrial pacemaker with inhibited mode
AED	automatic external defibrillator
AEI	atrial escape interval
AV	atrioventricular
AVD	atrioventricular delay
AVI	atrioventricular interval
BPM	beats per minute

CHD	coronary heart disease
CHF	chronic heart failure
CO	cardiac output
CRT	cardiac resynchronisation therapy
DBS	deep brain stimulation
DDD	biventricular pacemaker e stimulation rate with dual mode
DDDR	DDD pacemaker with pacing rate dependent on sensor output
DDI	biventricular pacemaker with inhibited mode
ECG	electrocardiogram
EKG	electrocardiogram
HR	heart rate
ICD	implantable cardioverter defibrillator
IMD	implantable medical device
IPG	implantable pulse generator
NS	neural stimulation
PAVB	post-atrial ventricular blanking
PESP	postextrasystolic potentiation
PMT	pacemaker mediated tachycardia
SV	stroke volume
SVT	supraventricular tachycardia
VDD	pacemaker that senses the atrium and ventricle and paces the ventricle

	with dual mode
VF	ventricular fibrillation
VT	ventricular tachycardia
VVI	single chamber ventricular pacemaker with inhibited mode

A61N 1/04

Electrodes [N: (electrosurgical electrodes A61B18/14)]

Definition statement

This subclass/group covers:

Details about the electrodes and their associated leads specially adapted for delivering electrical therapeutic stimulation.

Informative references

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

Patient's garment with incorporated electrodes for medical monitoring	A41D 13/1281
Electrodes specially adapted for ECG	A61B 5/0408
Electrodes specially adapted for EEG	A61B 5/0478
Electrodes specially adapted for EMG	A61B 5/0492
Electrodes for electrosurgery	A61B 18/14
Stents and instruments for their placement	A61F 2/82
Stimulating specific reflex points using electric currents	A61H 39/002
Anchoring by balloon expansion	A61M 25/10
Form details about flexible conductors per se	H01B 7/04

Form details about conductors for implantation in a human body	H01B 7/048
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Special rules of classification within this group

Details about the stimulating device as such, about the therapeutic signal and/or about the stimulating algorithm should be classified in [A61N 1/36-A61N 1/3712](#).

A61N 1/08

Arrangements or circuits for monitoring, protecting, controlling or indicating [N: (for heart stimulators A61N1/37; for defibrillators A61N1/3925; measuring electric variables G01R; control of generator output in general H02P, H03L)]

Definition statement

This subclass/group covers:

Protecting the functioning of electrical therapeutic stimulation devices, especially against MRI.

This group only relates to protection (especially against MRI) for electrical therapeutic stimulation devices and not for other types of medical devices such as drug pumps. The purpose of this protection is to protect the functioning of the medical device.

References relevant to classification in this group

This subclass/group does not cover:

Monitoring or protecting for heart stimulators	A61N 1/37
Monitoring or protecting for defibrillators	A61N 1/3925

Informative references

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

Mattresses for protecting against e.g. static electricity or radiation	A47C 31/004
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Dynamisation and other esoteric therapies using medicinal preparations obtained by wave energy	A61K 41/0004
Instruments for measuring magnetic variables involving magnetic resonance	G01R 33/20
NMR gyrometers	G01C 19/60
Provisions within MR facilities for enhancing safety during MR	G01R 33/288
Measuring electric variables	G01R
Control of generator output per se	H02P , H03L
Screening of apparatus or components against electric or magnetic fields	H05K 9/00
Neutralising atmospheric radiation	A61N 1/16

Special rules of classification within this group

Protecting the functioning of the medical device constitutes the difference with [A61N 1/16](#), which relates to protecting the human body. E.g. pacemaker circuitry protecting the pacemaker from the field of a TV antenna should go to [A61N 1/08](#) whereas as special building arrangement for protecting a person from the same field to [A61N 1/16](#).

Synonyms and Keywords

In patent documents the following abbreviations are often used:

MR	magnetic resonance
MRI	magnetic resonance imaging
NMR	nuclear magnetic resonance

A61N 1/16

Screening or neutralising undesirable influences from [N: or using,] atmospheric or terrestrial radiation or fields [N: (using atmospheric electricity or earth currents H05F3/00)]

Definition statement

This subclass/group covers:

Screening or neutralising atmospheric or terrestrial radiation or fields with the purpose of protecting the human body. The purpose of this protection is to protect the human body.

References relevant to classification in this group

This subclass/group does not cover:

Electrostimulators protected for electromagnetic interference	A61N 1/08
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Informative references

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

Measuring magnetic field characteristics of the earth	G01V 3/00
Carrying-off electrical charges using atmospheric electricity or earth currents	H05F 3/00

Special rules of classification within this group

Protecting the human body constitutes the difference with [A61N 1/08](#), which relates to protecting the functioning of the medical device. E.g. pacemaker circuitry protecting the pacemaker from the field of a TV antenna should go to [A61N 1/08](#) whereas as special building arrangement for protecting a person from the same field to [A61N 1/16](#). [A61N 1/08](#) takes precedence over [A61N 1/16](#).

A61N 1/36

foor stimulation, e.g. heart pace-makers

Definition statement

This subclass/group covers:

Details about the therapeutic signal and/or about the stimulation algorithm, constructional and/or circuitry details, telemetry details.

References relevant to classification in this group

This subclass/group does not cover:

Details about the electrodes or the leads	A61N 1/04 - A61N 1/06
Applying constant continuous current	A61N 1/20 - A61N 1/306
Electromedical belts	A61N 1/321
Electromedical brushes, combs, massage devices	A61N 1/322
Inteference currents	A61N 1/323
Iontophoresis	A61N 1/325
Promoting growth of cells	A61N 1/326
Electroporation	A61N 1/327
Improving skin appearance	A61N 1/328

A61N 1/372

Arrangements in connection with the implantation of stimulators

Definition statement

This subclass/group covers:

Specifications going beyond the implantable medical device in isolation, such as communicating with, delivering power to, or testing of the implantable medical device.

Structural details of (parts of) the implantable medical device, e.g. casing or feedthrough.

References relevant to classification in this group

This subclass/group does not cover:

Details about leads and electrodes	A61N 1/04 - A61N 1/06
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Informative references

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

Transmitting measured data to processing apparatus	A61B 5/0002
Transferring electromagnetic energy to implanted prostheses	A61F 2/025
Transferring data to implanted prostheses	A61F 2/027
Materials for catheters	A61L 29/00
Materials for coating of implanted articles	A61L 31/08
Testing electrical condition of batteries per se	G01R 31/36
Computer assisted treatment	G06F 19/34
Telemedicine: remote diagnosis, remote control of instruments	G06F 19/3418
GUI for local control of medical devices	G06F 19/3406
Transmitting signals with a radio link per se	G08C 17/02
Sealing of leads to lead-through insulators per se	H01B 17/303
Feedthrough capacitors per se	H01G 4/35
Batteries per se	H01M
Manufacture of small size batteries per se	H01M 10/0436

Electrical connections per se	H01R
Electrical connections for medical use	H01R 13/5224
Adapters for connecting two parts per se	H01R 31/06
Charging batteries per se	H02J 7/00
Charging batteries by inductive or capacitive coupling	H02J 7/025
Near-field (inductive) transmission systems per se	H04B 5/00
Radio transmission systems per se	H04B 7/00
Transmission of digital information per se	H04L
Transmitting circuits using pulse with modulation or pulse position modulation	H04L 25/4902
Electrical connectors for medicine and surgery	H01R 2201/12

A61N 1/38

for producing shock effects (in general H05C1/00)

Informative references

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

For producing shock effects per se	H05C 1/00
Electrolytic capacitors per se	H01G 9/10

Synonyms and Keywords

In patent documents the following abbreviations are often used:

AF	atrial fibrillation
VF	ventricular fibrillation

A61N 1/44

Applying ionised fluids [N: (ion generators H01J37/00)]

Informative references

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

Baths for special therapeutic purposes	A61H 33/00
Baths for specific parts of the body	A61H 35/00
Ion generators	H01J 37/00
Generating ions into the atmosphere	H01T 23/00
Ionised inhalator	A61M 15/02

A61N 2/00

Magnetotherapy

Definition statement

This subclass/group covers:

Use of static or dynamic magnetic fields for treating humans or animals, where the magnetic field itself provides the therapeutic effect.

References relevant to classification in this group

This subclass/group does not cover:

Releasing a medicament through the use of a magnetic field	B03C 1/00
Medicinal preparations obtained with a magnetic field	A61K 41/00
Using a magnetic field for diagnosis	A61B 5/05 , G01R 33/00

A61N 5/00

Radiation therapy (ultrasound therapy A61N7/00; devices or apparatus applicable to both therapy and diagnosis A61B6/00)

Definition statement

This subclass/group covers:

Therapeutic treatment of the human or animal body with electromagnetic or particle radiation.

Therapy implies the curing of a disease or malfunction of the body and includes prophylactic treatment like killing of germs, bacteria in or on the body by means of radiation as well as treatment of symptoms like pain (anaesthesia) by means of radiation.

References relevant to classification in this group

This subclass/group does not cover:

Ultrasound therapy	A61N 7/00
Surgery with radiation (cf. special rules below)	A61B 18/18 , A61F 9/008 , A61C 1/0046
Magnetotherapy	A61N 2/00
Radiation imaging or diagnosis	A61B 6/00
Sterilization or disinfection of articles or products by radiation	A61L 2/08
Lithography with a particle beam	H01J 37/30
Ion implantation in semiconductors	H01L 21/26
Irradiation devices for articles or products	G21K 5/00
Lighting	F21
Treatment by heat, sauna	A61F 7/00 , A61H 33/00

Examples of places where the subject matter of this subclass/group is

covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Devices or apparatus applicable to both therapy and diagnosis	A61B 6/00
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Informative references

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

Radiation measurement devices, dosimeters, beam monitors	G01T , e.g. G01T 1/02 , G01T 1/161 , G01T 1/2914
Accelerator Technology	H05H , e.g. H05H 13/00 , H05H 7/10
X-ray tubes	H01J 35/00 , H01J 35/32
Beam transport, forming, focussing, filtering	G21K , e.g. G21K 1/00 , G21K 1/10 , G21K 5/04 , G21K 5/10
Radiation Shielding	G21F 1/00 , G21F 3/00 ; G21F 5/00
Protection of tissue around treatment site	A61B 19/40
Site contact feedback, abutting means	A61B 2019/465 , A61B 19/30
Patient positioning	A61B 6/04 , A61B 19/20
Patient movement or breathing monitoring	A61B 5/11 , A61B 5/113
Markers	A61B 19/54
Navigation, image assistance	A61B 19/52 , A61B 6/12 , A61B 8/12
Sensing at the treatment site	A61B 2017/00022 , A61B 2018/00636 , A61B 5/0048 , A61B 5/053 , A61B 5/0059
Photosensitizers, radiosensitisers	A61K 41/00
Radionuclides, radiopharmaceuticals	A61K 51/00

Radiation sources	G21G 1/00 , G21G 4/00
Vapour or discharge lamps, tubes	H01J 61/00
Light guides	G02B 6/00 , A61B 18/22
Filters	G02B 5/20
LEDs	H01L 33/00
Lasers	H01S 3/00 , A61B 18/20 , A61C 1/0046 , A61F 9/008
Psychological treatments	A61M 21/00 , A61M 2021/0044 , A61M 2021/0055
Acupuncture	A61H 39/00
Teeth whitening by light	A61C 19/066
Curing resins within the teeth	A61C 19/003
Medical informatics, patient data management	G06F 19/30 , A61B 19/44
Devices for implanting pellets or seeds	A61M 25/10
(Balloon) catheters	A61M 25/10
Balloons for catheter applicators	A61B 2017/22051
Irradiation of blood outside the patient (ex-vivo)	A61M 1/3681

Special rules of classification within this group

The IPC group [A61M 36/00](#) is not used: these devices are instead classified in [A61N 5/10](#), since their purpose is therapeutic.

Surgery vs. Therapy

In contrast to the therapeutic applications covered by this group, surgery is characterized by the immediate and direct destruction or transformation of the

tissue (ablation, vaporization, coagulation...). For therapy, the effect in the tissue is induced with rather lower intensity and power levels and/or longer pulse durations (photothermal, photochemical reactions, biostimulation...). Thus, for instance, cell destruction by photoactivation of an agent is to be classified in [A61N 5/062](#). Some devices may be used for both applications depending on the operation mode.

Note that [A61N 5/1084](#) covers focussed radiotherapy applications like "gamma knife" and stereotactic radiotherapy which are sometimes also called "radiosurgery", which is not to be confused with surgery in the sense of [A61B 18/00](#).

Light therapy ([A61N 5/06](#))

The scheme in [A61N 5/06](#) contains several independent classification trees covering different aspects of a light therapy apparatus.

The therapeutic application is meant to be classified in [A61N 5/0613](#) and lower hierarchical groups thereof for external treatments or [A61N 5/0601](#) and lower hierarchical groups thereof for internal treatments.

Further aspects are then classified in codes according to the area of treatment (subgroups of [A61N 2005/0635](#)), the type of light source used (subgroups of [A61N 2005/065](#)), and the wavelength of therapeutic light (subgroups of [A61N 2005/0658](#)).

Aspects like coherence of the therapeutic light ([A61N 2005/067](#)) and polarisation ([A61N 2005/073](#)) are also to be coded.

For some aspects, no suitable code is available and in such cases, sometimes the scheme of a neighbouring field is used: subgroups of [A61B 2018/00773](#) or [A61B 2017/00022](#) (feedback at the treatment site), [A61B 2018/2255](#) (features at the distal end of a light guide, e.g. diffusers).

Note: devices of [A61N 5/0614](#) (tanning) do not need to be classified in [A61N 2005/0661](#) since the ultraviolet light is there by necessity.

Particle and X-ray therapy ([A61N 5/10](#))

In the [A61N 5/10](#) part, there is a similar aspect coded in [A61N 2005/1085](#) (type of particles, e.g. ions, electrons, neutrons, low energy photons etc.). This code is obligatory for the particles specified in the subgroups of [A61N 2005/1085](#). Only normal energy (MeV) photons are not coded in this tree, since it concerns the default situation.

The group [A61N 5/01](#) should not be used for radiotherapy gantries, since a rotating gantry is common and not worth to classify.

Synonyms and Keywords

In patent documents the following abbreviations are often used:

IMRT	Intensity Modulated Radiation Therapy
IMAT	Intensity Modulated Arc Therapy
IGRT	Image Guided Radiation Therapy
MLC	Multileaf Collimator
SAS	Step And Shot
(O)LED	(Organic) Light Emitting Diode
DRR	Digitally Reconstructed Radiograph
SOBP	Spread-Out Bragg Peak
DVH	Dose Volume Histogram
EPI	Electronic Portal Imaging
OAR	Organ At Risk

A61N 7/00

Ultrasound therapy (lithotripsy A61B17/22, A61B17/225; massage using supersonic vibration A61H23/00; [N: using ultrasound for introducing media into the body A61M37/0092])

Definition statement

This subclass/group covers:

Ultrasound therapy of the human or animal body. Also included is the thermal destruction of tissue in the focal point of a high intensity ultrasound beam.

References relevant to classification in this group

This subclass/group does not cover:

Removal of calculi, thromboses etc. by ultrasound	A61B 17/22004
Extracorporeal shock waves (with mainly mechanical effect, e.g. lithotripters)	A61B 17/225

Cutting using ultrasonic vibrations, e.g. with vibrating knife	A61B 17/320068
Apparatus for introducing media into the body using ultrasonic waves, phonophoresis	A61M 37/0092
Devices creating a mechanical shock wave by laser light	A61B 18/26

Informative references

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

Ultrasound diagnosis	A61B 8/00
Ultrasound imaging during surgical procedures	A61B 2019/5276
Accessories for surgery or diagnosis	A61B 19/00
Percussion or vibration massage	A61H 23/00
Generating mechanical vibrations	B06B 1/00
Transmitting, conducting and directing sound in general	G10K 11/00

Special rules of classification within this group

[A61N 7/00](#)

Ultrasound therapy with negligible thermal effect. Treatment area not reduced to a focal point. E.g. devices for bone fracture healing.

[A61N 2007/0004](#)

The subgroups define various application areas on the body to be treated or therapeutic applications. Headgroup [A61N 2007/0004](#) not to be used for classification.

[A61N 7/02](#)

Localized ultrasound hyperthermia, high intensity focused ultrasound (HIFU).

The effect is primarily a thermal one of substantially heating tissue above the normal temperature or even above the point of tissue destruction. Mechanical percussion to destroy calculi is to be classified in [A61B 17/22004](#) or [A61B 17/225](#) in case of external shockwaves.

[A61N 7/022](#)

Intracavitary localized hyperthermia. The probe or transducer is located within a body cavity.

Glossary of terms

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

HIFU	high intensity focused ultrasound
Phased array transducer	transducer consisting of an array of small transducers individually addressable with a time delay to steer the focal point of the beam