

**IPC DEFINITION PROJECT FILES/  
DOSSIERS DE PROJET DE DÉFINITION DE LA CIB**

**ELECTRICAL FIELD/  
DOMAINE DE L'ÉLECTRICITÉ**





IPC/D 006  
ORIGINAL: English/French  
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**WORLD INTELLECTUAL PROPERTY ORGANIZATION**  
**ORGANISATION MONDIALE DE LA PROPRIÉTÉ INTELLECTUELLE**  
GENEVA/GENÈVE

**COMMITTEE OF EXPERTS OF THE IPC UNION**  
**COMITÉ D'EXPERTS DE L'UNION DE L'IPC**

**DEFINITION PROJECT FILE**  
**DOSSIER DE PROJET DÉFINITION**

<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>B81B</b>
<b>RAPPORTEUR :</b>	<b>US</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Proposal	Proposition	US	06.02.2001
2	Comments	Commentaire	CA	07.02.2001
3	Comments	Commentaire	RO	07.02.2001
4	Comments	Commentaire	NL	07.02.2001
5	Comments	Commentaire	EP	07.02.2001
6	Rapporteur proposal	Proposition du rapporteur	US	07.02.2001
7	Proposal	Proposition	US	28.08.2001
8	Comments	Commentaire	JP	01.10.2001
9	Comments	Commentaire	RO	03.10.2001
10	Comments	Commentaire	DE	04.10.2001
11	Comments	Commentaire	EP	19.10.2001
12	Comments	Commentaire	SE	23.10.2001
13	Rapporteur report	Rapport du rapporteur	US	08.11.2001
14	Comments	Commentaire	DE	25.02.2002
15	Rapporteur report	Rapport du rapporteur	US	25.04.2002
16	Rapporteur proposal	Proposition du rapporteur	US	25.04.2002
17	Comments	Commentaire	US	13.05.2002

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
18	Working Group decision	Decision du groupe de travail	IB	22.08.2002
19	Comments	Commentaire	SE	21.10.2002
20	Rapporteur report	Rapport du rapporteur	US	13.02.2003
21	Rapporteur proposal	Proposition du rapporteur	US	13.02.2003
22	Comments	Commentaire	EP	17.04.2003
23	Comments	Commentaire	GB	07.05.2003
24	Rapporteur report	Rapport du rapporteur	US	27.05.2003
25	Comments	Commentaire	SE	27.08.2003
26	Comments	Commentaire	CA	04.09.2003
27	Comments	Commentaire	GB	08.09.2003
28	Comments	Commentaire	DE	12.09.2003
29	Rapporteur report	Rapport du rapporteur	US	15.01.2004
30	Rapporteur proposal	Proposition du rapporteur	US	15.01.2004
31	Indication of approval		GB	16.02.2004
32	Comments	Commentaire	SE	04.03.2004
33	Comments	Commentaire	DE	12.03.2004

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# United States Patent and Trademark Office

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Project: D006

Subclass – B81B

Date: December `18, 2003

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## RAPPORTEUR REPORT

CA, DE, GB, and SE submitted comments on this project. The selection of limiting and informative references is the only remaining issue.

### Summary of Comments

CA states that G02B, G02F, Section H, and Section C are of “limiting kind” of references and so are Rapporteur’s proposed references A61K 9/50 to H01P 3/08.

DE states that Note (1) to the title of B81B defines the limiting references and Note (2) to the title of B81B defines informative references.

GB supports the current form of the references.

SE states that this subclass does not cover B32B, B82B, G02B, G02F, and H01L41/00. Also that there are several places where the subject matter of this subclass is covered when especially adapted, used for a particular purpose, or incorporated in a larger system. These include B25J7/00, G02B21/32, G11B5/127, A61K9/50, G01L9/00, G01H, G01P, G03F, and H01P3/08. SE thinks that the references to H01L23-39, 43-51 and C are informative.

### Rapporteur’s comments and suggestions

Rapporteur is extremely appreciative of the input from the commenting Offices. The majority of Offices still seem to support the limiting references that were found in the prior Rapporteur proposal. Unfortunately, there remains a diversity of opinion as to which of the previously proposed informative references are actually limiting references. Therefore, Rapporteur is forced to finalize this issue based on the comments and his interpretation of the standardized policy of the WG that is specified in the Guide (see paragraphs 39 and 69).

Based on the comments and the Guide, Rapporteur recommends the following division of references:

### Limiting references

- A61K9/50 – This reference must be made limiting since its subject matter would otherwise fit B81B as a microstructure.
- B25J7/00 - This reference must be made limiting since its subject matter would otherwise fit B81B as a micro-mechanical device.
- B32B - This reference should be limiting based on the general relationship statement and the fact that its subject matter would otherwise fit B81B as a microstructure.

- B82B - This reference must be made limiting since some of its subject matter could otherwise fit B81B (i.e., infinitesimally minute is not defined by a particular size in B82B but is defined based on what is being manipulated – atoms and molecules).
- G02B21/32 - This reference must be made limiting since its subject matter would otherwise fit B81B as a micro-mechanical device.
- G02F - This reference should be made a limiting reference because the structures per se would normally meet the requirements of the definition of B81B. This subject matter is also precluded from the subclass based on the 2<sup>nd</sup> paragraph of the “Relationship between large subject matter areas”.
- G11B5/127 - This reference must be made limiting since its subject matter would otherwise fit B81B as a micro-mechanical device.
- H - This reference should be made a limiting reference, even though the structures per se formed would normally not meet the requirements of the 3<sup>rd</sup> part of the definition of microstructures. This subject matter is also precluded from the subclass based on the 2<sup>nd</sup> paragraph of the “Relationship between large subject matter areas”. However, since the definition of micro-mechanical devices could cover electronic micro-sized structures per se that have a movable part, it is safest to make it a limiting reference.
- H01L – The combination of B81B devices and H01L devices are clearly proper for B81B. Novel electronic subcomponents of such combination devices would properly be obligatorily classified in H or G based on the “What to Classify rules”. Therefore, this reference could be made a limiting reference if it is further limited to the solid-state devices per se or in combination with other electronic devices, even though these structures per se would normally not meet the requirements of the 3<sup>rd</sup> part of the definition of microstructures. This subject matter is also precluded from the subclass based on the 2<sup>nd</sup> paragraph of the “Relationship between large subject matter areas”.
- H01P3/08 - This reference must be made limiting since its subject matter would otherwise fit B81B as a micro-mechanical device or microstructure.

### **Informative references**

- C – This reference should remain an informative reference since the structures formed would normally not meet the requirements of the 3<sup>rd</sup> part of the definition of microstructures. Moreover, when these chemically formed structures do meet the requirements of the definition; they are proper for B81B based on the 2<sup>nd</sup> sentence of the last paragraph of the “Relationship between large subject matter areas”.
- G01L9/00 – If this reference were made a limiting reference, then micro pressure sensors per se could only be obligatorily classified in G01L. If it is made informative, micro pressure sensors can be obligatorily classified in both G01L (for function) and B81B (for structure). During the creation of this subclass, it seemed that the intent of the WG was to classify this type structure in both subclasses and Rapporteur has therefore made it merely informative.
- G01H - If this reference were made a limiting reference, then micro-sized vibration measuring devices per se could only be obligatorily classified in G01H. If it is made informative, micro-sized measuring devices can be obligatorily classified in both G01H (for function) and B81B (for structure). During the creation of this subclass, it seemed that the intent of the WG was to classify this structure in both subclasses and Rapporteur has therefore made it merely informative.

- G01P - If this reference is made a limiting reference, then micro-sized speed measuring devices per se could only be obligatorily classified in G01P. If it is made informative, micro-sized speed measuring devices will be obligatorily classified in both G01P (for function) and B81B (for structure). During the creation of this subclass, it seemed that the intent of the WG was to classify this structure in both subclasses and Rapporteur has therefore made it merely informative.
- G03F - This reference should remain an informative reference since it covers apparatus for making structures and this apparatus would not meet the requirements of the B81B definition.

## Title - B81B

### Micro-structural devices or systems, e.g. micro-mechanical devices

#### Definition statement

*This subclass covers:*

Very small micro-mechanical devices which include at least one essential operational component that has **all** of the following attributes:

- the component is not visible (i.e., its significant features, in at least one dimension, cannot be discerned) without the use of an optical microscope (e.g., typically within the range of  $10^{-4}$  to  $10^{-7}$  meters) and
- the component is movable, flexible, or deformable when in use.

Very small three-dimensional structural formations (i.e., microstructures) that have **all** of the following attributes:

- they are not visible (i.e., their significant features, in at least one dimension, cannot be discerned) without the use of an optical microscope,
- all portions of their formation are immovable or unyielding (i.e., not movable, flexible, or deformable) with respect to the remainder thereof when in use, and
- they are designed to accomplish an essential and purely **structural function** and to interact with their local environment (e.g., a vane for changing surrounding fluid's flow path) in a manner that is mechanical in nature, as opposed to a chemical or electronic function, regardless of whether the formations are formed from a specific material or fabricated on a common supporting base (i.e., substrate) with separate micro-mechanical devices, **micro-electronic devices**, or **microoptical devices**.

Systems including a discrete micro-mechanical device or microstructure and at least one other discrete micro-mechanical device, **micro-electronic device**, or **microoptical device** (e.g., Micro-Mechanical Systems, Micro-Electronic-Mechanical Systems/MEMS, Microoptical-Mechanical Systems) that have **all** of the following attributes:

- they are fabricated on a common supporting base (i.e., substrate),
- they are interconnected to operate together as components of a system (e.g., pump and piping system, a micro-electronic device controlling, analyzing, or signaling the functioning of a micro-mechanical device), and
- they have separate functional utilities that are each intended to accomplish an independent aspect (i.e., neither type of **micro-sized** device is merely an essential operational component of the other type device) of at least one possible final end result of their system.

Components of micro-mechanical devices or microstructures having specialized structural features that limit them to use with their device or structure.

#### Relationships between large subject matter areas (e.g. special rules of classification between subclasses)



## General relationship of microstructures of B81B with micro-sized structures found in the subclasses of sections C and H

The microstructures covered by this subclass are expected to perform a **structural function** when interacting with their local environment and are intentionally designed to specifically perform this type of task. This requirement precludes the classification of **micro-sized** structures within this subclass that either

- are designed to accomplish, or naturally accomplish, an electrical function or optical function (e.g., microprocessors, light guides, conductors) or
- are structures formed as mere byproducts of chemical or biological processes (e.g., chemical compounds resulting from reactions).

**Micro-electronic devices** and **microoptical devices** per se are classified in the subclasses of section H, “Electricity” and G “Physics” even if they also inherently (e.g., a **micro-sized** wire between two substrates that supports the upper substrate), or intentionally (e.g., an aerodynamically shaped micro-processor on a wing), accomplish a secondary **structural function**. **Micro-electronic devices** and **microoptical devices** are found in particular in G02B, G11B, and H01P.

Chemically and biologically formed structures per se that are mere byproducts of processes are classified in the subclasses of section C, “Chemistry; Metallurgy”. However, chemically and biologically formed microstructures are classified in B81B when they are the primary intended product of their processes and the microstructures perform a **structural function** when interacting with their local environment.

## Relationship of microstructures of B81B and micro-sized structures in B32B

Microstructures that merely form part of layered products (e.g., bonded or encased **micro-sized** substrates) are classified in B32B when their intended use is not specified or they are of general utility. However, when at least one of the layers of the layered product is **micro-sized** and accomplishes a particular **structural function** (e.g., honeycomb layer forms **micro-sized** channels for directing fluid to **micro-sized** pump) they are classified in B81B.

## Special rules for classification between this subclass and other subclasses

If the operation or practical utility of **micro-sized** devices, structures, or systems covered by this subclass are not inherently limited to a microscopic environment, they are also obligatorily classified in the subclasses appropriately providing for their structural or functional features when produced on a larger scale.

## **References relevant to classification in this subclass**

*This subclass does not cover:*

Microcapsules for medicinal preparations	A61K9/50
Micromanipulators	B25J7/00
Products that are essentially two-dimensional layered structures	B32B
Atomic scale structures produced by manipulation of single atoms or molecules	B82B
Micromanipulators combined with microscopes	G02B21/32
Microoptical devices per se	G02F
Magnetic heads used with record carriers for information storage	G11B5/127
Micro-sized electronic devices per se	H
Semiconductors or other solid-state devices per se or combined with other devices formed on a common substrate	H01L
Waveguide microstrips	H01P3/08

## Informative references

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

Micro-sized chemical or biological structures per se	C
Pressure sensors	G01L9/00
Mechanical vibration measuring devices and ultrasonic, sonic, or infrasonic wave measuring devices	G01H
Devices for measuring linear or angular speed, acceleration, or deceleration	G01P
Photomechanical processing of semiconductor devices	G03F

## Special rules of classification within this subclass

Identical micro-mechanical devices, microstructures, or micro-structural systems that are not operationally interlinked to each other and are merely produced on a common substrate that is an interim product; are not classified as a system, but in the groups providing for the individual device, structure, or system.

## Glossary of terms

*In this subclass, the following terms or expressions are used with the meaning indicated:*

<b>Micro-electronic device</b>	any kind of electronic device that has at least one essential operational component not visible without the use of an optical microscope.
<b>Microoptical device</b>	any kind of optical device that has at least one essential operational component not visible without the use of an optical microscope.
<b>Micro-sized</b>	having a dimension not visible without the use of an optical microscope (e.g., typically within the range of $10^{-4}$ to $10^{-7}$ meters).
<b>Structural function</b>	effect of structural features of a microstructure on the mechanical properties of media in contact with the microstructure (e.g., directing of a sampled fluid's flow).

## Synonyms and Keywords

None

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# Swedish Patent and Registration Office

IPC Definition Project D006, subclass B81B

March 3, 2004

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## Comment (in response to Annex 30)

SE appreciates the efforts of the US office to finalise the project. However, SE does not agree with the proposal of annex 30. In the notes of B81B it is stated that:

“Attention is drawn to the following places:

<u>A61K9/50</u>	Microcapsules for medicinal preparations
<u>B25J7/00</u>	Micromanipulators
<u>G02B21/32</u>	Micromanipulators combined with microscopes
<u>G11B5/127</u>	Magnetic heads
<u>H01P3/08</u>	Waveguide microstrips”

If these references had been meant as limiting references they would have been put as part of the “This subclass does not cover...” section of the notes or as normal references after the subclass title.

These references seem to be cases of references from a general place to application-oriented places and should therefore not remove the content out of B81B, since the subject matter could be classified in both places.

Therefore, we would like to refer to our comment in annex 25 and suggest that the wording of the references is changed as suggested in that annex.

Nina Ödling

<b>DEUTSCHES PATENT- UND MARKENAMT</b> German Patent and Trade Mark Office	Class/Subcl.: <b>B81B</b>
	Date : 11.03.2004
<b>IPC Definition Project D 006</b> <b>DE Comment</b>	

Re.: US Rapporteur Proposal, Annex 30 to the project file

In chapter "Relationships between ..." and subchapter "General relationship of ..." the last sentence of the 3<sup>rd</sup> paragraph should read:

"... **Micro-electronic devices** and **microoptical devices** are found in particular in H01L, G02B, G11B, and H01P."

because of H01L (semiconductor devices) being the most important classification place for micro-electronic devices.

Rainer Anders



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**DEFINITION PROJECT FILE**  
**DOSSIER DE PROJET DÉFINITION**

<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>B81C</b>
<b>RAPPORTEUR :</b>	<b>US</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Proposal	Proposition	US	01.02.2001
2	Comments	Commentaire	CA	01.02.2001
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16	Comments	Commentaire	SE	21.10.2002
17	Rapporteur report	Rapport du rapporteur	US	24.02.2003

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
18	Rapporteur proposal	Proposition du rapporteur	US	24.02.2003
19	Comments	Commentaire	GB	07.05.2003
20	Rapporteur proposal	Proposition du rapporteur	US	20.06.2003
21	Rapporteur report	Rapport du rapporteur	US	20.06.2003
22	Comments	Commentaire	GB	05.03.2004
23	French version	Version francaise	FR	06.04.2004

<b>FR VERSION FRANCAISE</b>	
Révision de la CIB – Projet de définition-D007, Sous-classe B81C	Date: octobre 2003

## Titre - B81C

Procédés ou appareils spécialement adaptés à la fabrication ou au traitement de dispositifs ou de systèmes à microstructure

### Enoncé de la définition

*La présente sous-classe couvre:*

Les procédés comportant une ou plusieurs étapes, ou les appareils spécialement adaptés à l'exécution d'au moins une de ces étapes, ayant des caractéristiques particulières se rapportant directement à la fabrication ou au traitement de types spécifiques de produits **microminiaturisés** (p.ex. notamment de dimensions comprises entre  $10^{-4}$  et  $10^{-7}$  mètre).

La fabrication ou le traitement de ces produits **microminiaturisés** doivent engendrer une caractéristique de structure essentielle à leur utilisation, par opposition à une caractéristique purement chimique ou électronique.

Les types de produits **microminiaturisés** qui sont fabriqués ou traités dans la présente sous-classe sont les suivants:

Les dispositifs mécaniques (c. à d. les dispositifs micromécaniques) comportant au moins un composant opérationnel essentiel qui possède **tous** les attributs suivants:

- le composant n'est pas visible (c. à d. que ses caractéristiques déterminantes, au moins dans une dimension, ne peuvent être discernées) sans l'emploi d'un microscope optique (c. à d. qu'il est **microminiaturisé**) et
- le composant est mobile, flexible ou déformable lors de son utilisation.

Les ensembles de composants structuraux tridimensionnels (c. à d. les microstructures) qui possèdent **tous** les attributs suivants:

- ils ne sont pas visibles (c. à d. que leurs caractéristiques déterminantes, au moins dans une dimension, ne peuvent être discernées) sans l'emploi d'un microscope optique (c. à d. qu'ils sont **microminiaturisés**)
- toutes les parties de chaque ensemble sont fixes ou rigides (c. à d. non mobiles, non flexibles ou indéformables) par rapport aux autres parties de l'ensemble lors de son utilisation, et
- ils sont conçus pour remplir une fonction essentielle et purement structurale lorsqu'ils interagissent avec leur environnement proche (p.ex. une ailette pour modifier le trajet d'écoulement du fluide environnant) d'une manière mécanique par nature, par opposition à une fonction chimique ou électronique, que les ensembles de composants soient constitués d'un matériau spécifique ou fabriqués sur une base-support commune (c. à d. un substrat) avec des dispositifs micromécaniques, **des dispositifs microélectroniques**, ou **des dispositifs micro-optiques** séparés.

Les systèmes comportant un dispositif micromécanique discret ou une microstructure discrète et au moins un autre dispositif micromécanique, **microélectronique**, ou **micro-optique** discret (p.ex. les systèmes micromécaniques, les systèmes microélectromécaniques /MEMS, les systèmes micro-optomécaniques) qui possèdent **tous** les attributs suivants:

- ils sont fabriqués sur une base-support commune (c. à d. un substrat),
- ils sont interconnectés pour fonctionner ensemble en tant que composants d'un système (p.ex. un système de pompe et de canalisation, un dispositif microélectronique de commande, d'analyse ou d'indication du fonctionnement d'un dispositif micromécanique), et
- ils ont des fonctionnalités distinctes, chacun d'elles devant permettre d'exécuter un rôle différent (c. à d. qu'aucun type de dispositif à microstructure n'est un simple composant opérationnel essentiel de l'autre type de dispositif) - en vue d'aboutir à au moins un résultat final possible du système correspondant.

Les composants des dispositifs micromécaniques ou des microstructures ayant des caractéristiques de structure spécialisées qui les limitent à une utilisation avec le dispositif ou la structure correspondante.

## Liens entre secteurs d'une large portée (p. ex., règles particulières de classement entre sous-classes)

### Liens généraux du B81C avec les sous-classes des sections C et H

La présente sous-classe couvre les procédés ou les appareils pour la fabrication ou le traitement de microstructures qui remplissent une **fonction structurale** lorsqu'ils interagissent avec leur environnement proche et qui sont intentionnellement conçus pour remplir ce type de fonction. Ce principe exclut du classement dans la présente sous-classe la fabrication ou le traitement en soi des structures **microminiaturisées** qui

- sont conçues pour remplir initialement d'une manière naturelle ou non une fonction électrique ou une fonction optique (p.ex. les microprocesseurs, les guides de lumière, les conducteurs) ou
- sont des structures constituées comme simples produits dérivés de procédés chimiques ou biologiques (p.ex. les composés chimiques obtenus à partir de réactions).

Cependant, les procédés ou les appareils pour former chimiquement ou biologiquement des microstructures sont classés en B81C quand ces microstructures sont le produit initialement attendu des procédés correspondants, et qu'elles remplissent une **fonction structurale** appropriée lorsqu'elles interagissent avec leur environnement proche.

Les procédés ou les appareils pour la fabrication ou le traitement de structures **microminiaturisées** en soi formées chimiquement ou biologiquement sont classés dans les sous-classes de la section C, "Chimie; Métallurgie".

Les procédés ou les appareils pour la fabrication ou le traitement de **dispositifs microélectroniques** et des **dispositifs micro-optiques** en soi sont classés dans les sous-classes de la section H, "Electricité" même s'ils remplissent également une **fonction structurale** secondaire de manière inhérente (p.ex. un conducteur **microminiaturisé** placé entre deux substrats et qui soutient le substrat supérieur), ou intentionnelle (p.ex. un microprocesseur conformé aérodynamiquement pour des ailes). En particulier, la fabrication ou le traitement de **dispositifs microélectroniques** et de **dispositifs micro-optiques** se trouvent respectivement en H01L (p.ex. H01L 21/00) ou H01P (p.ex. H01P 11/00).



## **Renvois influençant le classement dans la sous-classe B81C**

*La présente sous-classe ne couvre pas:*

Les procédés chimiques ou physiques ou les appareils correspondants pour la fabrication de microcapsules ou de microbilles [B01J13/02](#)

Les procédés ou les appareils spécialement adaptés et limités à la fabrication ou au traitement de produits constitués essentiellement de structures stratifiées bidimensionnelles [B32B](#)

Les procédés ou les appareils spécialement adaptés à la fabrication de structures à l'échelle atomique produites par manipulation d'atomes ou de molécules [B82B](#)

## **Renvois indicatifs**

*Il est important de tenir compte des endroits suivants, qui peuvent présenter un intérêt pour la recherche:*

Procédés ou appareils spécialement adaptés à la fabrication ou au traitement de capteurs de pression [G01L9/00](#)

Procédés ou appareils spécialement adaptés à la fabrication ou au traitement de dispositifs de mesure de l'accélération [G01P15/00](#)

Procédés ou appareils spécialement adaptés à la fabrication ou au traitement de micromanipulateurs combinés par construction à des microscopes [G02B21/32](#)

Traitement photomécanique de dispositifs semi-conducteurs [G03F](#)

Procédés ou appareils spécialement adaptés à la fabrication ou au traitement de têtes magnétiques [G11B5/127](#)

Procédés ou appareils destinés à la fabrication ou au traitement de composants piézo-électriques, électrostrictifs ou magnétostrictifs en soi [H01L41/22](#)

Procédés ou appareils spécialement adaptés à la fabrication ou au traitement de microrubans pour guides d'onde [H01P3/08](#)

## **Règles particulières de classement dans la sous-classe B81C**

Aucune

## **Glossaire**

*Dans la présente sous-classe, les termes ou expressions suivantes sont utilisés avec la signification ci-dessous indiquée:*

<b>Fabrication</b>	exécution par un procédé ou un appareil chimique, électrique ou mécanique sur un dispositif micromécanique, une microstructure ou un microsystème propre à cette sous-classe, d'une ou de plusieurs des opérations suivantes: assemblage, groupement, soudage, coulage, revêtement, construction, création, coupe, déformation, photographie électrique, gravure, production, fixation, finition, raccordement, juxtaposition, usinage, moulage, positionnement, mise en forme, ou façonnage.
<b>Dispositif microélectronique</b>	tout type de dispositif électronique possédant au moins un composant opérationnel essentiel qui n'est pas visible sans l'emploi d'un microscope optique.
<b>Dispositif micro-optique</b>	tout type de dispositif optique possédant au moins un élément opérationnel essentiel qui n'est pas visible sans l'emploi d'un microscope optique.
<b>Microminiaturisé</b>	ayant une dimension qui n'est pas visible sans l'emploi d'un microscope optique (p.ex. se situant notamment entre $10^{-4}$ et $10^{-7}$ mètre)
<b>Fonction structurale</b>	effet des caractéristiques de structure d'une microstructure sur les propriétés mécaniques de milieux en contact avec cette microstructure (p.ex. commande de la direction d'un écoulement de fluide échantillonné)

## **Synonymes et mots-clés**

Aucun



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GENEVA/GENÈVE

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**DEFINITION PROJECT FILE**  
**DOSSIER DE PROJET DÉFINITION**

<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>B82B</b>
<b>RAPPORTEUR :</b>	<b>US</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Proposal	Proposition	US	06.02.2001
2	Comments	Commentaire	CA	06.02.2001
3	Comments	Commentaire	RO	06.02.2001
4	Comments	Commentaire	NL	06.02.2001
5	Rapporteur proposal	Proposition du rapporteur	US	06.02.2001
6	Proposal	Proposition	US	28.08.2001
7	Comments	Commentaire	EP	19.10.2001
8	Comments	Commentaire	SE	23.10.2001
9	Rapporteur report	Rapport du rapporteur	US	08.11.2001
10	Comments	Commentaire	RO	15.02.2002
11	Comments	Commentaire	DE	27.02.2002
12	Rapporteur report	Rapport du rapporteur	US	25.04.2002
13	Rapporteur proposal	Proposition du rapporteur	US	25.04.2002
14	Comments	Commentaire	US	13.05.2002
15	Comments	Commentaire	SE	21.10.2002
16	Rapporteur report	Rapport du rapporteur	US	24.02.2003
17	Rapporteur proposal	Proposition du rapporteur	US	24.02.2003

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
18	Comments	Commentaire	GB	07.05.2003
19	Rapporteur report	Rapport du rapporteur	US	20.06.2003
20	Comments	Commentaire	GB	05.03.2004
21	French version	Version francaise	FR	06.04.2004

<b>FR VERSION FRANCAISE</b>	
Révision de la CIB – Projet de définition- D008, Sous-classe B82B	Date: octobre 2003

## **Title - B82B**

### **Nanostructures;**

### **Leur fabrication ou leur traitement**

## **Enoncé de la définition**

*La présente sous-classe couvre:*

Les agencements de matière de taille infinitésimale qui présentent des configurations de formes particulières (c à d. des assemblages de nanostructures) réalisés au cours de la **fabrication** et qui sont distincts des agencements chimiques ou biologiques composés de matière similaire, qu'ils soient constitués naturellement ou produits chimiquement, chaque assemblage comprenant au moins un élément essentiel en un seul bloc :

- constitué d'un seul atome, d'une seule molécule, ou d'un très petit ensemble à l'échelle atomique d'atomes ou de molécules (c. à d. un ensemble qui n'est pas détectable dans sa totalité au moyen d'un microscope optique) et
- réalisé en manipulant ses atomes, ses molécules un par un comme des unités individuelles au cours de la **fabrication**.

Les éléments essentiels en un seul bloc des assemblages de nanostructures quand ils comportent des caractéristiques de structure limitant leur emploi à ces assemblages.

La **fabrication** ou le traitement des assemblages de nanostructures ci-dessus qui leur donnent une caractéristique essentielle de structure, et qui utilisent:

- des procédés ayant une ou plusieurs étapes avec des caractéristiques particulières directement liées à la taille infinitésimale de leur produits finaux, ou
- des appareils spécialement adaptés pour exécuter au moins un étape de tels procédés.

## **Liens entre secteurs d'une large portée (p.ex. règles particulières de classement entre sous-classes)**

### **Lien général du B82B avec la section C:**

La terminologie “--- configurations de **formes particulières** ----- et qui sont **distincts** des agencements chimiques ou biologiques composés de matière similaire, qu'ils soient **constitués naturellement ou produits chimiquement** ” dans l'énoncé de la définition est destinée à exclure de cette sous-classe, le classement des structures chimiques ou biologiques en soi qui sont de taille

similaire. En pratique, le terme “distinct” dans cette phrase indique que les seules structures nanométriques appropriées sont celles qui remplissent une fonction qui n’est pas inhérente à la composition chimique ou biologique dont elles sont constituées (p.ex. une structure nanométrique formée lors d’une étape d’un procédé chimique et conçue de façon à agir comme commutateur pour une commande électrique)

Les sous-classes de la section C, “Chimie; Métallurgie” couvrent de manière spécifique, la majorité de ces structures chimiques ou biologiques exclues en soi, ou les procédés ou les appareils spécialement adaptés à leur fabrication ou à leur traitement (p.ex. les classes C08, C12).

### **Règles particulières pour le classement additionnel dans d’autres sous-classes:**

Sauf si l’exploitation ou l’utilisation pratique de la nanostructure est de manière inhérente complètement limitée à un environnement microscopique, les nanostructures qui sont couvertes par la présente sous-classe doivent aussi être classées obligatoirement dans les sous-classes appropriées qui par ailleurs, couvrent leurs caractéristiques de structure ou leurs caractéristiques fonctionnelles.

## **Renvois influençant le classement dans la sous-classe B82B**

*La présente sous-classe ne couvre pas:*

Nanocapsules pour les préparations médicinales

[A61K9/51](#)

## **Renvois indicatifs**

*Il est important de tenir compte des endroits suivants, qui peuvent présenter un intérêt pour la recherche :*

Recherche ou analyse des structures de surface à l’échelle atomique utilisant des techniques de sonde à balayage [G01N13/10](#)

Détails d’appareils utilisant des techniques de sonde à balayage [G12B21/00](#)

Pellicule magnétique mince formée par des multicouches couplées par échange de spin [H01F10/32](#)

Appareils ou procédés spécialement adaptés à la fabrication ou l’assemblage de dispositifs par application de pellicules magnétiques à des substrats formés de nanostructures [H01F41/30](#)

## **Règles particulières de classement dans la sous-classe B82B**

Aucune

## **Glossaire**

*Dans la présente sous-classe, les termes or expressions suivantes sont utilisés avec la signification ci-dessous indiquée:*

### **Fabrication**

exécution par un procédé ou un appareil chimique, électrique ou mécanique sur un assemblage de nanostructures, ou un élément

essentiel d'un seul bloc de celui-ci, d'une ou de plusieurs des opérations suivantes: assemblage, groupement, soudage, construction, création, coupe, déformation, photographie électrique, gravure, production, fixation, finition, raccordement, juxtaposition, positionnement, mise en forme, ou façonnage.

## **Synonymes et mots-clés**

Aucun







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<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>G01N</b>
<b>RAPPORTEUR :</b>	<b>EP</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Proposal	Proposition	EP	27.08.2001
2	Comments	Commentaire	JP	01.10.2001
3	Comments	Commentaire	DE	10.10.2001
4	Comments	Commentaire	SE	23.10.2001
5	Rapporteur report	Rapport du rapporteur	EP	12.11.2001
6	Rapporteur proposal	Proposition du rapporteur	EP	12.11.2001
7	Comments	Commentaire	US	15.02.2002
8	Comments	Commentaire	DE	05.03.2002
9	Rapporteur report	Rapport du rapporteur	EP	22.03.2002
10	Rapporteur proposal	Proposition du rapporteur	EP	22.03.2002
11	Proposal	Proposition	EP	28.05.2002
12	Rapporteur report	Rapport du rapporteur	EP	10.09.2002
13	Rapporteur proposal	Proposition du rapporteur	EP	10.09.2002
14	Rapporteur report	Rapport du rapporteur	EP	27.03.2003
15	Rapporteur proposal	Proposition du rapporteur	EP	27.03.2003
16	Comments	Commentaire	IB	01.05.2003
17	Comments	Commentaire	GB	08.09.2003

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
18	Comments	Commentaire	CA	08.09.2003
19	Comments	Commentaire	DE	23.09.2003
20	Rapporteur report	Rapport du rapporteur	EP	01.03.2004
21	Rapporteur proposal	Proposition du rapporteur	EP	01.03.2004
22	Indication of Approval		GB	08.04.2004



**Definition Project: D009**  
**Subclass: G01N**

**Ref: Annexes 15-19 of Project File**

Comments were received on the last **R**'s proposal (annex 15) from the IB (annex 16), GB (annex 17), CA (annex 18) and DE (annex 19).

**R** thanks the contributing offices for the very substantial and helpful character of the remarks.

## **General considerations**

All offices found the IB-proposal of annex 16 very satisfactory, and DE agreed as well on the GB improvements (mainly of editorial type). **R** shares the opinion that a tailored merge of the annexes 16 and 17 could give the optimal result.

CA suggested incorporation of more Limiting and Informative References under several main-group definitions of G01N. DE found that these additional references are not really necessary.

**R** is of the opinion that some of the CA-suggestions could be taken into account into the new proposal. A more detailed analysis of some of the CA suggestions follow.

## **About CA suggestions (annex 18)**

### **G01N Definition**

CA suggested to add a Limiting Reference to G01M.

**R** reminds that "Limiting references are needed when subject matter otherwise covered by the place is (instead) collected elsewhere".

The CA suggestion would reproduce the situation as it was in Annex 13. Yet afterwards it was recognized that G01M is only a residual place for testing or determining properties structures, and that therefore a "Relationship" between the two places would do better than a limiting reference.

### **G01N 1/00 Definition**

CA suggested an Informative reference to C12M.

**R** finds that the reference can be useful, yet it has to be a Limiting one, as subject matter covered by C12M is already excluded as a whole from G01N (see G01N definition).

### **G01N 15/00 Definition**

CA suggested to place reference to G01N 5/00 back into the Informative ones.

Yet **R** shares IB-opinion that it deals here with a Limiting reference.

### **G01N 19/00 Definition**

CA suggested to add references to G01M 5/00 and G01M 7/00 as Limiting ones.

**R** finds that these references can only be Informative (see “G01N Definition” above, and consider the similar situation under G01N 3/00).

### **G01N 31/00 Definition**

CA suggested to change reference to G01N 33/50 from Informative into Limiting.

Once more, “Limiting references are needed when subject matter otherwise covered by the place is (instead) collected elsewhere”, and G01N 31/00 and G01N 33/50 are mutually exclusive already (non-biological vs. biological materials). Therefore a Limiting reference is not needed and would not be correct. The reference can stay and help as Informative.

## **About IB raised questions (annex 16)**

IB also raised some questions, to which GB and CA gave answers.

### **Q: Would be sufficient to have the definition of the term “sample” only once, namely in the subclass glossary?**

GB pointed out that the definition of “sample” is given only for groups 1/00 and 35/00, which does not seem like excessive repetition.

Yet **R** noticed that “sample” is used in the titles of subgroups of five (5) main groups other than those two. Therefore it seems appropriate to give the definition for “sample” at the subclass level.

- **R** supports the IB-proposal of moving the definition of the term “sample” into the subclass glossary only.

### **Q: Should the IPC symbols appearing in the left columns of the table listings be removed?**

No office reacted, and indeed **R** feels that this is really a cosmetic issue.

- **R** tried to eliminate all IPC symbols from the left columns of the table listings, at the price of some clarity.

### **Q: Should the reference to A61B 8/00 in G01N 29/00 rather be limiting?**

GB found that is the case.

**R** tends to agree. As a matter of facts all of measuring for medical or veterinary diagnosis on the human or animal body could be considered as a “special adaptation for particular purpose” of the subject matter of investigating or analyzing materials.

- **R** has classified all existing references to A01B as Limiting, and also added a general Limiting reference to A61B (A61D) under the G01N definition.

**Q: Should the references to G01N 30/00 and G01N 33/561 in G01N 27/00 (originating in 27/26) rather be limiting?**

GB found that is the case.

**R** notes that group 27/00 takes precedence over 30/00 (see references after 30/00), and hence a Limiting reference from 27/00 back to 30/00 would not be correct, or very confusing at least.

Likewise, 33/00 is residual in this subclass (“... not covered by the preceding groups”), so once more a Limiting reference from 27/00 back to 33/00 would not be correct, or very confusing at least.

- **R** finds that references to G01N 30/00 and G01N 33/561 in G01N 27/00 can only be Informative.

## **Final recommendations**

In conclusion, in the new proposal **R** tried to:

- follow the whole of IB proposal, and
- take into account all of GB editorial suggestions, and
- introduce several of the CA suggestions, excluding those that were found not entirely correct (see “About CA suggestions (annex 18)” above) or that appeared to be too vague.

**R** believes that the new proposal is definitely ready for approval (any orthography or grammatical corrections could be still signaled by “Remarks” in the IPC e-forum for this project).

Roberto Iasevoli

## Title – G01N

### Investigating or analysing materials by determining their chemical or physical properties

The scope of the subclass [G01N](#) is so broad that a detailed description of the subject matter appropriate for this place is correctly possible only at the main-group level, e.g. [G01N21/00](#).

Provisions that are valid at a general level (e.g. of a kind appropriate to more than one of the main groups) are provided in the sections that follow.

The user is otherwise referred to the IPC definitions for the individual main groups of [G01N](#), which follow hereinafter. The following list is intended to assist the user.

#### Investigating or analysing with emphasis to the properties investigated

Mechanical strength	see IPC definition for group <a href="#">G01N3/00</a>
Density, specific gravity	see IPC definition for group <a href="#">G01N9/00</a>
Flow, viscosity, plasticity	see IPC definition for group <a href="#">G01N11/00</a>
Surface, boundary or diffusion effects	see IPC definition for group <a href="#">G01N13/00</a>
Characteristics of particles and porous materials	see IPC definition for group <a href="#">G01N15/00</a>
Resistance to weather, to corrosion, or to light	see IPC definition for group <a href="#">G01N17/00</a>
Friction, adhesive force	see IPC definition for group <a href="#">G01N19/00</a>

#### Investigating or analysing with emphasis to the methods or means used

Mechanical stress	see IPC definition for group <a href="#">G01N3/00</a>
Weighing	see IPC definition for group <a href="#">G01N5/00</a>
Measuring pressure or volume of gas	see IPC definition for group <a href="#">G01N7/00</a>
Scanning-probe techniques	see IPC definition for group <a href="#">G01N13/00</a>
Mechanical	see IPC definition for group <a href="#">G01N19/00</a>
Optical	see IPC definition for group <a href="#">G01N21/00</a>
Magnetic resonance, spin effects	see IPC definition for group <a href="#">G01N24/00</a>
Microwaves	see IPC definition for group <a href="#">G01N22/00</a>
Other wave or particle radiation	see IPC definition for group <a href="#">G01N23/00</a>
Thermal	see IPC definition for group <a href="#">G01N25/00</a>
Electric, electrochemical, magnetic	see IPC definition for group <a href="#">G01N27/00</a>
Sonic	see IPC definition for group <a href="#">G01N29/00</a>
Separation into components	see IPC definition for group <a href="#">G01N30/00</a>
Chemical means for non-biological materials	see IPC definition for group <a href="#">G01N31/00</a>
Chemical means for biological materials	see IPC definition for group <a href="#">G01N33/50</a>
Immunological testing	see IPC definition for group <a href="#">G01N33/50</a>
Other specific methods	see IPC definition for group <a href="#">G01N33/00</a>

#### Others

Sampling, preparing	see IPC definition for group <a href="#">G01N1/00</a>
Specific materials	see IPC definition for group <a href="#">G01N33/00</a>
Automatic analysis	see IPC definition for group <a href="#">G01N35/00</a>
Details	see IPC definition for group <a href="#">G01N37/00</a>

### Relationships between large subject matter areas

Apparatus fully provided for in a single other subclass, see the relevant subclass, e.g. chemical or physical apparatus for general laboratory use, which is covered by [B01L](#).

Analysis as an integrated step of a process should be classified with the process, insofar as the process is fully provided for in another subclass. For example, analysis of water as integrated step of water treatment process is classified in subclass [C02F](#).

Sensing humidity changes for compensating measurements of other variables or for compensating readings of instruments for variations in humidity, see [G01D](#) or the relevant subclass for the variable measured.

Testing or determining the properties of structures, e.g. apparatus, machine parts etc, is classified in the relevant subclass for the structure being tested, as opposed to investigating, i.e. testing or determining (see Glossary), the properties of material samples, which is classified in this subclass. In this regard, [G01M](#) is the residual place for classifying testing of structures not covered elsewhere.

## References relevant to classification in this subclass

*This subclass does not cover:*

**Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system**

Measuring for medical or veterinary diagnosis on the human or animal body, e.g. measuring characteristics of blood <i>in vivo</i> , radiation diagnosis, or acoustic examination of body cavities or body tracts	<a href="#">A61B</a> <a href="#">A61D</a>
Apparatus for enzymology or microbiology	<a href="#">C12M</a>
Measuring or testing processes, other than immunoassay (which is covered by <a href="#">G01N33/53</a> ), involving enzymes or micro-organisms	<a href="#">C12Q</a>
Investigation, e.g. sampling, of foundation soil or ground water <i>in-situ</i>	<a href="#">E02D1/00</a>
Monitoring or diagnostic devices for exhaust-gas treatment apparatus	<a href="#">F01N11/00</a>
Measuring, investigating or testing electric or magnetic properties of materials (see also IPC definition for subgroup <a href="#">G01N33/50</a> )	<a href="#">G01R</a>
Determining sensitivity, graininess, or density of photographic materials	<a href="#">G03C5/02</a>
Testing component parts of nuclear reactors	<a href="#">G21C17/00</a>

## Informative references

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

Separating components of materials in general	<a href="#">B01D</a>
Chemical or physical processes, e.g. catalysis, colloid chemistry; their relevant apparatus	<a href="#">B01J</a>
Separation of solid materials from solid materials using wet methods, or using pneumatic tables or jigs	<a href="#">B03B</a> <a href="#">B03D</a>
Separation of solid materials from solid materials or fluids using magnetic or electrostatic methods, or using high-voltage electric fields	<a href="#">B03C</a>
Separation of solid materials from solid materials or fluids using sieving, screening, sifting, gas currents, or other dry methods	<a href="#">B07B</a>
Systems for direction-finding, navigation, locating, presence-detecting using the reflection or reradiation of radio waves, or analogous arrangements using other waves, e.g. radar, sonar, or lidar systems	<a href="#">G01S</a>

## Glossary

*In this subclass the following terms (expressions) are used with the meanings indicated:*

**investigating** means testing or determining

**materials** means either solid, or liquid, or gaseous media, e.g. the atmosphere

**sample** means material separated from a bulk material or an assembly of items for the purpose of investigating its properties

## **Title – G01N1/00**

### **Sampling; Preparing specimens for investigation**

#### **Definition statement**

*This group covers:*

Devices for withdrawing samples of material. Samples may be taken from e.g. bulk material, from flowing streams, or from collections of discrete items.

Devices for manipulating samples and transferring them to an analysis site.

Chemical or physical methods of preparing specimens for investigation, and apparatus for performing such methods.

#### **References relevant to classification in this group**

*This group does not cover:*

**Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system**

Automatic analysis; handling materials therefor G01N35/00

Sampling from the human or animal body for medical or veterinary diagnosis A61B  
A61D

Apparatus for enzymology or microbiology, e.g. inoculator or sampler C12M

Sampling of foundation soil or groundwater *in-situ* E02D1/00

Sampling of soil or well fluids, specially adapted to earth drilling or wells E21B49/00

Mounting specimens on microscope slides G02B21/00

#### **Informative references**

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

Containers or dishes for laboratory use, e.g. laboratory glassware B01L3/00

Details of nuclear or X-radiation measuring instruments, e.g. collecting or conveying of samples G01T7/00



## **Title – G01N3/00**

### **Investigating strength properties of solid materials by application of mechanical stress**

#### **Definition statement**

*This group covers:*

Stressing of materials not only below but also beyond the elastic limit, e.g. until breaking occurs.

Application of mechanical stress:

- globally, e.g. tensile testing
- locally, i.e. at particular points in the sample, e.g. hardness testing, investigating resistance to wear or abrasion
- of both static and dynamic mechanical stress
- by non-mechanical methods, e.g. by rapid temperature changes

Testing apparatus and sample holders used in such investigations.

#### **Relationships between large subject matter areas**

Testing or determining the elasticity, or vibration-testing, or shock-testing of structures, e.g. apparatus, machine parts etc, is classified in [G01M](#), as opposed to investigating, i.e. testing or determining, the strength properties of material samples, which is classified in this group.

#### **Informative references**

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

Sampling; preparing specimens for investigation	<a href="#">G01N1/00</a>
Investigating or analysing surface structures in atomic ranges using scanning-probe techniques, e.g. atomic force microscopy (ATM)	<a href="#">G01N13/10</a>
Investigating properties of materials by mechanical methods	<a href="#">G01N19/00</a>
Automatic analysis; handling materials therefor	<a href="#">G01N35/00</a>
Generating mechanical vibrations in solids	<a href="#">B06B</a>
Use of mechanical means for measuring roughness or irregularity of surfaces, or for measuring deformation in a solid, e.g. mechanical strain gauge	<a href="#">G01B3/00</a> <a href="#">G01B5/28</a> <a href="#">G01B5/30</a>
Use of electric or magnetic means for measuring roughness or irregularity of surfaces, or for measuring deformation in a solid, e.g. resistance strain gauge	<a href="#">G01B7/16</a> <a href="#">G01B7/34</a>
Use of optical means for measuring roughness or irregularity of surfaces, or for measuring deformation in a solid, e.g. optical strain gauge	<a href="#">G01B11/16</a> <a href="#">G01B11/30</a>
Measuring stress in general, e.g. by strain gauges	<a href="#">G01L1/00</a>
Investigating elasticity of structures, e.g. deflection of bridges, aircraft wings	<a href="#">G01M5/00</a>
Vibration-testing or shock-testing of structures	<a href="#">G01M7/00</a>
Generating mechanical vibrations in fluids	<a href="#">G10K</a>

## **Title – G01N5/00**

### **Analysing materials by weighing, e.g. weighing small particles separated from a gas or liquid**

#### **Definition statement**

*This group covers:*

Analysing materials by weighing.

Analysing materials by absorbing or adsorbing components of a material and determining change of weight of the adsorbent, e.g. for determining moisture content.

Analysing materials by removing a component, e.g. by evaporation, and weighing the remainder.

#### **References relevant to classification in this group**

*This group does not cover:*

##### **Places excluded by precedence rules**

Investigating density or specific gravity of materials; analysing materials by determining density or specific gravity G01N9/00

#### **Informative references**

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

Sampling; preparing specimens for investigation G01N1/00

Automatic analysis; handling materials therefor G01N35/00

Weighing G01G

## **Title – G01N7/00**

### **Analysing materials by measuring the pressure or volume of a gas or vapour**

#### **Definition statement**

*This group covers:*

Analysing materials by absorption, adsorption, or combustion of components and measurement of the change in pressure or volume of the remainder.

Analysing materials by allowing diffusion of components through a porous wall and measuring a pressure or volume difference.

Analysing materials by allowing the material to emit a gas or vapour, e.g. water vapour, and measuring a pressure or volume difference.

#### **Informative references**

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

Sampling; preparing specimens for investigation	G01N1/00
Automatic analysis; handling materials therefor	G01N35/00
Measuring volume	G01F17/00 G01F19/00 G01F22/00
Measuring fluid pressure	G01L7/00- G01L23/00

## **Title – G01N9/00**

### **Investigating density or specific gravity of materials; Analysing materials by determining density or specific gravity**

#### **Definition statement**

*This group covers:*

Measurement of density by direct methods, like:

- the weight of known volume of material
- application of Archimedes' principle
- measurement of hydrostatic pressure

Determination of density from a related property of the material, e.g. by observing the transmission of wave or particle radiation through the material.

Deducing other properties of the material from its density.

Determining the apparent density of granular solid materials.

Instruments for measuring density.

#### **Informative references**

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

Sampling; preparing specimens for investigation	G01N1/00
Automatic analysis; handling materials therefor	G01N35/00
Checking density of materials to be filled	B65B1/42
Indirect mass flowmeters, e.g. measuring volume flow and density	G01F1/86
Measuring volume	G01F17/00 G01F19/00 G01F22/00
Weighing	G01G
Measuring temperature by using measurements of density	G01K11/28
Ratio control by sensing density of mixture	G05D11/06

#### **Glossary**

*In this group the following terms (expressions) are used with the meanings indicated:*

**density** means mass per unit volume

## **Title – G01N11/00**

**Investigating flow properties of materials, e.g. viscosity, plasticity;  
Analysing materials by determining flow properties**

### **Definition statement**

*This group covers:*

Measurement of viscosity of Newtonian and non-Newtonian fluids.  
Measuring other rheological properties of fluids, e.g. plasticity, yield stress, melt flow index.  
Instruments for measuring these properties.

### **References relevant to classification in this group**

*This group does not cover:*

**Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system**

Measuring characteristics of blood *in vivo*, e.g. blood viscosity, for medical or veterinary diagnosis [A61B5/145](#)

### **Informative references**

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

Sampling; preparing specimens for investigation	<a href="#">G01N1/00</a>
Investigating permeability of porous materials	<a href="#">G01N15/08</a>
Specific methods of analysis of viscous liquids	<a href="#">G01N33/26</a>
Specific methods of analysis of biological materials	<a href="#">G01N33/48</a>
Automatic analysis; handling materials therefor	<a href="#">G01N35/00</a>
Measuring volume, volume flow, or liquid level	<a href="#">G01F</a>
Measuring fluid pressure	<a href="#">G01L7/00-</a> <a href="#">G01L23/00</a>
Control of flow	<a href="#">G05D7/00</a>
Control of viscosity	<a href="#">G05D24/00</a>

### **Glossary**

*In this group the following terms (expressions) are used with the meanings indicated:*

**fluid** includes flowable solids

## **Title – G01N13/00**

**Investigating surface or boundary effects, e.g. wetting power;  
Investigating diffusion effects;  
Analysing materials by determining surface, boundary, or diffusion effects;  
Investigating or analysing surface structures in atomic ranges**

### **Definition statement**

*This group covers:*

Investigating surface properties of solids, e.g. surface energy.

Investigating properties of interfaces between solids and fluids or between different fluids, especially:

- diffusion
- dissolution of solids in fluids, including dissolution testing of solid dosage forms of pharmaceuticals
- wetting power, contact angle, surface tension
- osmosis

Investigating surface structures in the atomic range by scanning-probe techniques, including:

- scanning tunnelling microscopy (STM)
- scanning near-field optical microscopy (SNOM)
- atomic force microscopy (AFM)
- scanning ion-conductance microscopy (SICM)
- scanning capacitance microscopy (SCM)
- magnetic force microscopy (MFM)
- scanning electrochemical microscopy

### **References relevant to classification in this group**

*This group does not cover:*

**Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system**

Investigating or analysing surface structures in atomic ranges using scanning-probe techniques and by measuring secondary emission [G01N23/22](#)

### **Informative references**

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

Sampling; preparing specimens for investigation	<a href="#">G01N1/00</a>
Investigating porosity or surface area of porous materials	<a href="#">G01N15/08</a>
Thermodynamic interactions between different phases of the same substance	<a href="#">G01N25/02</a>
Investigating medicinal preparations	<a href="#">G01N33/15</a>
Automatic analysis; handling materials therefor	<a href="#">G01N35/00</a>
Measuring roughness or irregularity of surfaces, or measuring deformation in a solid	<a href="#">G01B</a>
Details of scanning-probe apparatus, in general	<a href="#">G12B21/00</a>

Electron microscopy in general

H01J37/00

## **Title – G01N15/00**

**Investigating characteristics of particles;  
Investigating permeability, pore-volume or surface-area of porous  
materials**

### **Definition statement**

*This group covers:*

Determining characteristics of particles, particulate material, or particle suspensions, e.g. blood cells. Such characteristics include e.g. particle size distributions or sedimentation.  
Analysis of porous material, e.g. determining its permeability, pore volume, or surface area.

### **References relevant to classification in this group**

*This group does not cover:*

**Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system**

Investigating concentration of particle suspensions by weighing	G01N5/00
Investigating particle size or size distribution by measuring osmotic pressure	G01N7/10
Investigating particle size or size distribution by filtering	B01D
Investigating particle size or size distribution by sifting	B07B
Identification of micro-organisms	C12Q

### **Informative references**

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

Sampling; preparing specimens for investigation	G01N1/00
Automatic analysis; handling materials therefor	G01N35/00

## **Title – G01N17/00**

**Investigating resistance of materials to the weather, to corrosion, or to light**

### **Definition statement**

*This group covers:*

Investigating resistance of materials to atmospheric or chemical agents or their resistance to light.  
The detection of fouling.  
Specially adapted electrochemical means used in such investigations.

## Informative references

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

Sampling; preparing specimens for investigation	G01N1/00
Investigating resistance to wear or abrasion	G01N3/56
Investigating resistance to rapid heat changes	G01N3/60
Measuring wear by the use of optical means	G01N21/00
Detection of fouling by measuring thermal conductivity	G01N25/18
Investigating or analysing materials by the use of electrochemical means	G01N27/26
Automatic analysis; handling materials therefor	G01N35/00
Methods or apparatus for cathodic or anodic protection	C23F13/00
Measuring roughness or irregularity of surfaces, or measuring deformation in a solid	G01B
Investigating fluid tightness of structures	G01M3/00

## Title – G01N19/00

### Investigating materials by mechanical methods

#### Definition statement

*This group covers:*

Measuring:

- coefficient of friction
- adhesive force between materials
- moisture content by mechanical methods, e.g. from the change of length of a hygroscopic filament
- mechanical properties other than strength properties

Instruments, e.g. hygrometers, for measuring the properties listed above.

#### References relevant to classification in this group

*This group does not cover:*

##### Places excluded by precedence rules

Investigating strength properties of solid materials by application of mechanical stress	G01N3/00
Analysing materials by weighing, e.g. weighing small particles separated from a gas or liquid	G01N5/00
Analysing materials by measuring the pressure or volume of a gas or vapour	G01N7/00
Investigating density or specific gravity of materials; analysing materials by determining density or specific gravity	G01N9/00

Investigating flow properties of materials, e.g. viscosity, plasticity; analysing materials by determining flow properties	G01N11/00
Investigating surface or boundary effects, e.g. wetting power; investigating diffusion effects; analysing materials by determining surface, boundary, or diffusion effects	G01N13/00
Investigating characteristics of particles; investigating permeability, pore-volume, or surface-area of porous materials	G01N15/00
Investigating resistance of materials to the weather, to corrosion, or to light	G01N17/00
<b>Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system</b>	
Determination of friction coefficient between road and wheel without additional sensors; application of friction determinations to the control of vehicle braking	B60T

## **Informative references**

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

Sampling; preparing specimens for investigation	G01N1/00
Automatic analysis; handling materials therefor	G01N35/00
Use of mechanical means for measuring roughness or irregularity of surfaces, or for measuring deformation in a solid, e.g. mechanical strain gauge	G01B3/00 G01B5/28 G01B5/30
Investigating elasticity of structures, e.g. deflection of bridges, aircraft wings	G01M5/00
Vibration-testing or shock-testing of structures	G01M7/00

## **Title – G01N21/00**

**Investigating or analysing materials by the use of optical means, e.g. using infra-red, visible or ultra-violet light**

## **Definition statement**

*This group covers:*

Arrangements or apparatus for facilitating the optical investigation, e.g. cuvettes.

Systems in which incident light is modified in accordance with the properties of the material investigated, e.g. spectral properties of the material.

Systems in which the material investigated is excited whereby it emits light or causes a change in wavelength of the incident light, e.g. photo-luminescence, thermo-luminescence or electro-luminescence.

Systems in which material is subjected to a chemical reaction, the progress or the result of the reaction being optically investigated, e.g. chemo-luminescence.

Visual inspection, e.g. for investigating the presence of flaws, defects or contamination.



## Relationships between large subject matter areas

Investigation of spectral properties of light per se, or measurements of the properties of materials where spectral properties of light are sensed and primary emphasis is placed on creating, detecting or analysing the spectrum, is classified in [G01J3/00](#), as opposed to investigating, i.e. testing or determining, the properties of material samples by the use of optical means, where primary emphasis is given to the materials, which is classified in this group. Testing or determining the properties of structures, e.g. apparatus, machine parts etc, by the use of optical means is classified in the relevant subclass for the structure being tested, as opposed to investigating, i.e. testing or determining, the properties of material samples by the use of optical means, which is classified in this group. In this regard, [G01M11/00](#) is the residual place for classifying testing of optical apparatus, or testing of structures by optical methods not covered elsewhere.

## References relevant to classification in this group

*This group does not cover:*

### Places excluded by precedence rules

Investigating strength properties of solid materials by application of mechanical stress	<a href="#">G01N3/00</a>
Analysing materials by weighing, e.g. weighing small particles separated from a gas or liquid	<a href="#">G01N5/00</a>
Analysing materials by measuring the pressure or volume of a gas or vapour	<a href="#">G01N7/00</a>
Investigating density or specific gravity of materials; analysing materials by determining density or specific gravity	<a href="#">G01N9/00</a>
Investigating flow properties of materials, e.g. viscosity, plasticity; analysing materials by determining flow properties	<a href="#">G01N11/00</a>
Investigating surface or boundary effects, e.g. wetting power; investigating diffusion effects; analysing materials by determining surface, boundary, or diffusion effects	<a href="#">G01N13/00</a>
Investigating characteristics of particles; investigating permeability, pore-volume, or surface-area of porous materials	<a href="#">G01N15/00</a>
Investigating resistance of materials to the weather, to corrosion, or to light	<a href="#">G01N17/00</a>
Investigating materials by mechanical methods	<a href="#">G01N19/00</a>
<b>Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system</b>	
Investigation of spectral properties of light per se, or measurements of the properties of materials where spectral properties of light are sensed and primary emphasis is placed on creating, detecting or analysing the spectrum, providing that the properties of the materials to be investigated are of minor importance	<a href="#">G01J3/00</a>
Contactless testing of electronic circuits using optical radiation	<a href="#">G01R31/308</a>

## Informative references

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

Sampling; preparing specimens for investigation	<a href="#">G01N1/00</a>
Specific materials	<a href="#">G01N33/00</a>

Automatic analysis; handling materials therefor	G01N35/00
Chemical or physical apparatus for general laboratory use, e.g. glassware, including sample holders	B01L B01L3/00
Use of optical means for measuring roughness or irregularity of surfaces, or for measuring deformation in a solid	G01B9/00 G01B11/00
Photometry, i.e. measuring intensity of light regardless of its wavelength or polarization	G01J1/00
Measuring polarization of light	G01J4/00
Optical radiation pyrometry	G01J5/00
Measuring force or stress by measuring variations of optical properties of material when it is stressed, e.g. by photo-elastic stress analysis	G01L1/24
Testing of optical apparatus, elements and systems; testing structures by optical methods not otherwise provided for (see also Relationships between large subject matter areas, above)	G01M11/00
Systems for direction-finding, navigation, locating, presence-detecting using the reflection or reradiation of light waves, e.g. lidar systems	G01S17/00
Prospecting or detecting by the use of optical means	G01V8/00
Optical elements of measuring instruments, e.g. microscopes	G02B G02B21/00
Image analysis	G06T7/00

## **Title – G01N22/00**

### **Investigating or analysing materials by the use of microwaves**

#### **Definition statement**

*This group covers:*

Investigating or analysing materials by the use of microwave radiation, i.e. with a wavelength typically of a few micrometers or more.

#### **References relevant to classification in this group**

*This group does not cover:*

##### **Places excluded by precedence rules**

Investigating strength properties of solid materials by application of mechanical stress	G01N3/00
Analysing materials by weighing, e.g. weighing small particles separated from a gas or liquid	G01N5/00
Analysing materials by measuring the pressure or volume of a gas or vapour	G01N7/00
Investigating density or specific gravity of materials; analysing materials by	G01N9/00

determining density or specific gravity

Investigating flow properties of materials, e.g. viscosity, plasticity; analysing materials by determining flow properties G01N11/00

Investigating surface or boundary effects, e.g. wetting power; investigating diffusion effects; analysing materials by determining surface, boundary, or diffusion effects G01N13/00

Investigating characteristics of particles; investigating permeability, pore-volume, or surface-area of porous materials G01N15/00

Investigating resistance of materials to the weather, to corrosion, or to light G01N17/00

Investigating or analysing materials by the use of nuclear magnetic resonance, electron paramagnetic resonance or other spin effects G01N24/00

## **Informative references**

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

Sampling; preparing specimens for investigation G01N1/00

Automatic analysis; handling materials therefor G01N35/00

Use of wave or particle radiation for measuring roughness or irregularity of surfaces, or for measuring the deformation in a solid G01B15/00

Microwave transmitting aerials (radiators) or receiving aerials H01Q

## **Title – G01N23/00**

**Investigating or analysing materials by the use of wave or particle radiation not covered by group G01N21/00 or G01N22/00, e.g. X-rays, neutrons**

## **Definition statement**

*This group covers:*

Investigating or analysing materials by the use of wave radiation of very short wavelength (high energy), i.e. with a wavelength typically of a few nanometres or less, e.g. X-rays, including synchrotron radiation.  
Investigating or analysing materials by the use of particle radiation, e.g. neutrons, ions or electrons.

## **References relevant to classification in this group**

*This group does not cover:*

### **Places excluded by precedence rules**

Investigating strength properties of solid materials by application of mechanical stress G01N3/00

Analysing materials by weighing, e.g. weighing small particles separated from a gas or liquid G01N5/00

Analysing materials by measuring the pressure or volume of a gas or vapour	G01N7/00
Investigating density or specific gravity of materials; analysing materials by determining density or specific gravity	G01N9/00
Investigating flow properties of materials, e.g. viscosity, plasticity; analysing materials by determining flow properties	G01N11/00
Investigating surface or boundary effects, e.g. wetting power; investigating diffusion effects; analysing materials by determining surface, boundary, or diffusion effects	G01N13/00
Investigating characteristics of particles; investigating permeability, pore-volume, or surface-area of porous materials	G01N15/00
Investigating resistance of materials to the weather, to corrosion, or to light	G01N17/00
<b>Places in relation to which this group is residual</b>	
Investigating or analysing materials by the use of optical means, i.e. using infra-red, visible, or ultra-violet light	G01N21/00
Investigating or analysing materials by the use of microwaves	G01N22/00
<b>Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system</b>	
Apparatus for medical or veterinary radiation diagnosis on the human or animal body, e.g. combined with radiation therapy equipment	A61B6/00

## Informative references

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

Sampling; preparing specimens for investigation	G01N1/00
Automatic analysis; handling materials therefore	G01N35/00
Use of wave or particle radiation for measuring roughness or irregularity of surfaces, or for measuring the deformation in a solid	G01B15/00
Measuring force or stress by the use of wave or particle radiation	G01L1/25
Measurement of nuclear or X-radiation	G01T
Prospecting or detecting by the use of nuclear radiation, e.g. of natural or induced radioactivity	G01V5/00
Image analysis	G06T7/00
Nuclear reactors	G21C
Protection against X-radiation, gamma radiation, corpuscular radiation --- treating radioactively contaminated material	G21F
Techniques for handling particles or electromagnetic radiation not otherwise provided for --- gamma- or X-ray microscopes	G21K
Electric discharge tubes or discharge lamps, e.g. X-ray tubes, electron microscopy	H01J H01J35/00 H01J37/00

X-ray technique

H05G

## **Title – G01N24/00**

**Investigating or analysing materials by the use of nuclear magnetic resonance, electron paramagnetic resonance or other spin effects**

### **Definition statement**

*This group covers:*

Investigating or analysing materials by using:

- nuclear magnetic resonance (NMR)
- electron paramagnetic resonance (EPR), electron spin resonance (ESR), electron magnetic resonance (EMR)
- double resonance
- cyclotron resonance

### **References relevant to classification in this group**

*This group does not cover:*

**Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system**

Measuring for medical or veterinary diagnosis on the human or animal body involving electronic (EMR) or nuclear (NMR) magnetic resonance, e.g. magnetic resonance imaging A61B5/055

### **Informative references**

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

Sampling; preparing specimens for investigation	G01N1/00
Automatic analysis; handling materials therefor	G01N35/00
Arrangements or instruments for measuring magnetic resonance effects using NMR, EPR, or other spin-effect	G01R33/20
Prospecting or detecting by the use of EMR or NMR	G01V3/00
Image analysis	G06T7/00

## **Title – G01N25/00**

**Investigating or analysing materials by the use of thermal means**

### **Definition statement**

*This group covers:*

Thermal and calorimetric analysis of materials.

Thermography.

Investigating:

- changes of state or changes of phase
- sintering
- thermal coefficient of expansion
- thermal conductivity
- development of heat, i.e. calorimetry
- flash-point
- explosibility
- moisture content
- presence of flaws
- specific heat

## References relevant to classification in this group

*This group does not cover:*

### Places excluded by precedence rules

Investigating strength properties of solid materials by application of mechanical stress	G01N3/00
Analysing materials by weighing, e.g. weighing small particles separated from a gas or liquid	G01N5/00
Analysing materials by measuring the pressure or volume of a gas or vapour	G01N7/00
Investigating density or specific gravity of materials; analysing materials by determining density or specific gravity	G01N9/00
Investigating flow properties of materials, e.g. viscosity, plasticity; analysing materials by determining flow properties	G01N11/00
Investigating surface or boundary effects, e.g. wetting power; investigating diffusion effects; analysing materials by determining surface, boundary, or diffusion effects	G01N13/00
Investigating characteristics of particles; investigating permeability, pore-volume, or surface-area of porous materials	G01N15/00
Investigating resistance of materials to the weather, to corrosion, or to light	G01N17/00
Investigating materials by mechanical methods	G01N19/00
Investigating or analysing materials by the use of optical means, i.e. using infra-red, visible, or ultra-violet light	G01N21/00
Investigating or analysing materials by the use of microwaves	G01N22/00
Investigating or analysing materials by the use of other wave or particle radiation, e.g. X-rays or neutrons	G01N23/00

## Informative references

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

Sampling; preparing specimens for investigation	G01N1/00
Automatic analysis; handling materials therefor	G01N35/00

Optical radiation pyrometry	G01J5/00
Measuring temperature or quantity of heat; thermally-sensitive elements not otherwise provided for	G01K

## **Title – G01N27/00**

### **Investigating or analysing materials by the use of electric, electro-chemical, or magnetic means**

#### **Definition statement**

*This group covers:*

Investigating non-electric or non-magnetic properties of materials by using electric or magnetic methods.  
Investigating by electrochemical means, e.g.:

- investigating electrochemical variables, e.g. pH, ion concentration, potentiometry, amperometry, voltammetry
- the use of electrolysis or electrophoresis as an analytical means

Instruments, e.g. hygrometers, for measuring non-electric or non-magnetic properties.

#### **Relationships between large subject matter areas**

Measuring or investigating electric or magnetic properties of materials is classified in [G01R](#), as opposed to investigating materials by electric or magnetic means, which is classified in this group.

#### **References relevant to classification in this group**

*This group does not cover:*

##### **Places excluded by precedence rules**

Investigating strength properties of solid materials by application of mechanical stress	G01N3/00
Analysing materials by weighing, e.g. weighing small particles separated from a gas or liquid	G01N5/00
Analysing materials by measuring the pressure or volume of a gas or vapour	G01N7/00
Investigating density or specific gravity of materials; analysing materials by determining density or specific gravity	G01N9/00
Investigating flow properties of materials, e.g. viscosity, plasticity; analysing materials by determining flow properties	G01N11/00
Investigating surface or boundary effects, e.g. wetting power; investigating diffusion effects; analysing materials by determining surface, boundary, or diffusion effects	G01N13/00
Investigating characteristics of particles; investigating permeability, pore-volume, or surface-area of porous materials	G01N15/00
Investigating resistance of materials to the weather, to corrosion, or to light	G01N17/00
Investigating materials by mechanical methods	G01N19/00

Investigating or analysing materials by the use of optical means, i.e. using infra-red, visible, or ultra-violet light	G01N21/00
Investigating or analysing materials by the use of microwaves	G01N22/00
Investigating or analysing materials by the use of other wave or particle radiation, e.g. X-rays or neutrons	G01N23/00
Investigating or analysing materials by the use of nuclear magnetic resonance, electron paramagnetic resonance or other spin effects	G01N24/00
Investigating or analysing materials by the use of thermal means	G01N25/00
<b>Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system</b>	
Medical or veterinary diagnosis on the human or animal body using electric or magnetic means	A61B5/05
Measuring or investigating electric or magnetic properties of materials (see also Relationships between large subject matter areas, above)	G01R

## **Informative references**

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

Sampling; preparing specimens for investigation	G01N1/00
Investigating or analysing materials by separation into components using adsorption, absorption or similar phenomena or using ion-exchange, e.g. chromatography	G01N30/00
Immunoelectrophoresis	G01N33/561
Automatic analysis; handling materials therefor	G01N35/00
Chemical or physical processes, e.g. catalysis, colloid chemistry; their relevant apparatus, for electrochemical processes or apparatus in general	B01J19/00
Use of electric or magnetic means for measuring roughness or irregularity of surfaces, or for measuring deformation in a solid	G01B7/00
Electric or magnetic prospecting or detecting; measuring magnetic field characteristics of the earth, e.g. declination, deviation	G01V3/00
Particle spectrometers	H01J49/00
Processes or means (e.g. batteries) for the direct conversion of chemical into electrical energy, e.g. galvanic primary cells, or standard cells	H01M H01M6/00 H01M6/28

## **Title – G01N29/00**

**Investigating or analysing materials by the use of ultrasonic, sonic or infrasonic waves;  
Visualisation of the interior of objects by transmitting ultrasonic or sonic waves through the object**



## Definition statement

*This group covers:*

Using acoustic waves for determining properties of materials or objects.  
Visualisation of the interior of solid objects, e.g. acoustic microscopy.  
Devices and detectors specially adapted to the method of analysis.

## References relevant to classification in this group

*This group does not cover:*

### Places excluded by precedence rules

Investigating strength properties of solid materials by application of mechanical stress	G01N3/00
Analysing materials by weighing, e.g. weighing small particles separated from a gas or liquid	G01N5/00
Analysing materials by measuring the pressure or volume of a gas or vapour	G01N7/00
Investigating density or specific gravity of materials; analysing materials by determining density or specific gravity	G01N9/00
Investigating flow properties of materials, e.g. viscosity, plasticity; analysing materials by determining flow properties	G01N11/00
Investigating surface or boundary effects, e.g. wetting power; investigating diffusion effects; analysing materials by determining surface, boundary, or diffusion effects	G01N13/00
Investigating characteristics of particles; investigating permeability, pore-volume, or surface-area of porous materials	G01N15/00
Investigating resistance of materials to the weather, to corrosion, or to light	G01N17/00
Investigating materials by mechanical methods	G01N19/00
Investigating or analysing materials by the use of optical means, i.e. using infra-red, visible, or ultra-violet light	G01N21/00
Investigating or analysing materials by the use of microwaves	G01N22/00
Investigating or analysing materials by the use of other wave or particle radiation, e.g. X-rays or neutrons	G01N23/00
Investigating or analysing materials by the use of nuclear magnetic resonance, electron paramagnetic resonance or other spin effects	G01N24/00
Investigating or analysing materials by the use of thermal means	G01N25/00
Investigating or analysing materials by the use of electric, electro-chemical, or magnetic means	G01N27/00
<b>Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system</b>	
Medical or veterinary diagnosis on the human or animal body using ultrasonic, sonic or infrasonic waves, e.g. examination of body cavities or body tracts	A61B8/00

## Informative references

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

Sampling; preparing specimens for investigation	G01N1/00
Specific materials	G01N33/00
Automatic analysis; handling materials therefor	G01N35/00
Generating mechanical vibrations in solids	B06B
Use of ultrasonic, sonic or infrasonic vibrations for measuring roughness or irregularity of surfaces, or for measuring the deformation in a solid	G01B17/00
Measuring or indicating of mechanical vibrations or ultrasonic, sonic or infrasonic waves	G01H
Systems for direction-finding, navigation, locating, presence-detecting using the reflection or reradiation of acoustic waves, e.g. sonar systems	G01S15/00
Prospecting or detecting by the use of seismic or acoustic means	G01V5/00
Obtaining records by techniques analogous to photography using ultrasonic, sonic or infrasonic waves	G03B42/06
Control of mechanical oscillations	G05D19/00
Image analysis	G06T7/00
Generating mechanical vibrations in fluids	G10K

## Title – G01N30/00

**Investigating or analysing materials by separation into components using adsorption, absorption or similar phenomena or using ion-exchange, e.g. chromatography**

## Definition statement

*This group covers:*

Investigating or analysing materials by separation into components using adsorption, absorption or similar phenomena or using ion exchange, e.g. field-flow fractionation, chromatography and related techniques.

## References relevant to classification in this group

*This group does not cover:*

### Places excluded by precedence rules

Investigating strength properties of solid materials by application of mechanical stress	G01N3/00
Analysing materials by weighing, e.g. weighing small particles separated from a gas or liquid	G01N5/00

Analysing materials by measuring the pressure or volume of a gas or vapour	G01N7/00
Investigating density or specific gravity of materials; analysing materials by determining density or specific gravity	G01N9/00
Investigating flow properties of materials, e.g. viscosity, plasticity; analysing materials by determining flow properties	G01N11/00
Investigating surface or boundary effects, e.g. wetting power; investigating diffusion effects; analysing materials by determining surface, boundary, or diffusion effects	G01N13/00
Investigating characteristics of particles; investigating permeability, pore-volume, or surface-area of porous materials	G01N15/00
Investigating resistance of materials to the weather, to corrosion, or to light	G01N17/00
Investigating materials by mechanical methods	G01N19/00
Investigating or analysing materials by the use of optical means, i.e. using infra-red, visible, or ultra-violet light	G01N21/00
Investigating or analysing materials by the use of microwaves	G01N22/00
Investigating or analysing materials by the use of other wave or particle radiation, e.g. X-rays or neutrons	G01N23/00
Investigating or analysing materials by the use of nuclear magnetic resonance, electron paramagnetic resonance or other spin effects	G01N24/00
Investigating or analysing materials by the use of thermal means	G01N25/00
Investigating or analysing materials by the use of electric, electro-chemical, or magnetic means	G01N27/00
Investigating or analysing materials by the use of ultrasonic, sonic or infrasonic waves; visualisation of the interior of objects by transmitting ultrasonic or sonic waves through the object	G01N29/00

## **Informative references**

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

Sampling; preparing specimens for investigation	G01N1/00
Specific materials	G01N33/00
Automatic analysis; handling materials therefor	G01N35/00
Separating components of materials in general	B01D B01D15/00 B01D53/02 B01D53/04
Chemical or physical processes (e.g. catalysis, colloid chemistry) or their relevant apparatus, e.g. solid sorbent compositions in general, or ion-exchange in general	B01J B01J20/00 B01J39/00 B01J41/00

Separation of solid materials from solid materials or fluids using magnetic or electrostatic methods, or using high-voltage electric fields	B03C
Separation of solid materials from solid materials using wet methods, or using pneumatic tables or jigs	B03B B03D
Separation of solid materials from solid materials or fluids using magnetic or electrostatic methods, or using high-voltage electric fields	B03C
Separation of solid materials from solid materials or fluids using sieving, screening, sifting, gas currents, or other dry methods	B07B

## Glossary

*In this group the following terms or expressions are used with the meanings indicated:*

**Conditioning** means the adjustment or control of environmental parameters, e.g. temperature or pressure

## Title – G01N31/00

**Investigating or analysing non-biological materials by the use of the chemical method specified in the subgroups;  
Apparatus specially adapted for such methods**

## Definition statement

*This group covers:*

Investigating non-biological materials by the use of:

- precipitation
- catalysis
- combustion, including oxide-reduction reactions
- titration
- micro-analysis, e.g. drop reaction
- chemical indicators

Investigating the properties of materials specially adapted for use in processes covered by subclass B23K (namely: soldering or unsoldering; welding; cladding or plating by soldering or welding; cutting by applying heat locally, e.g. flame cutting; working by laser beam) which is classified in the group G01N31/12 (investigating using combustion). (See note (3) after the title of G01N.)

## References relevant to classification in this group

*This group does not cover:*

**Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system**

Testing the effectiveness or completeness of sterilisation procedures without using enzymes or micro-organisms (involving enzymes or micro-organisms  
C12M, C12Q) A61L2/28

Apparatus for enzymology or microbiology C12M

Measuring or testing processes, other than immunoassay (which is covered by [G01N33/53](#)), involving enzymes or micro-organisms C12Q

## Informative references

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

Sampling; preparing specimens for investigation	<a href="#">G01N1/00</a>
Systems in which material is subjected to a chemical reaction, the progress or the result of the reaction being optically investigated	<a href="#">G01N21/75-</a> <a href="#">G01N21/83</a>
Investigating or analysing biological material by chemical analysis	<a href="#">G01N33/50</a>
Automatic analysis; handling materials therefor	<a href="#">G01N35/00</a>

## Special rules of classification

The observation of the progress of the reactions as covered by groups [G01N31/02](#) to [G01N31/22](#) by any of the methods specified in groups [G01N3/00](#) to [G01N29/00](#), if this observation is of major importance, is classified in the relevant group covering the method.

## Title – [G01N33/00](#)

### Investigating or analysing materials by specific methods not covered by the preceding groups

## Definition statement

*This group covers:*

Investigating or analysing materials, i.e. either solid, liquid or gaseous media, insofar as the material object of the investigation or analysis is of major importance.

Investigating or analysing materials by methods specifically adapted to the object of the analysis.

Investigating or analysing materials by a combination of pre-treatment and analysis, specifically adapted to the object of analysis.

Investigating or analysing biological material (covered by group [G01N33/48](#)), e.g. blood (in vitro) or urine, including chemical analysis (see definition of subgroup [G01N33/50](#)).

## Relationships between large subject matter areas

Analysis as an integrated step of a process should be classified with the process, insofar as the process is fully provided for in another subclass. For example, analysis of water as integrated step of water treatment process is classified in subclass [C02F](#).

## References relevant to classification in this group

*This group does not cover:*

### Places in relation to which this group is residual

Sampling; preparing specimens for investigation	<a href="#">G01N1/00</a>
Investigating strength properties of solid materials by application of mechanical	<a href="#">G01N3/00</a>

stress

Analysing materials by weighing, e.g. weighing small particles separated from a gas or liquid	G01N5/00
Analysing materials by measuring the pressure or volume of a gas or vapour	G01N7/00
Investigating density or specific gravity of materials; analysing materials by determining density or specific gravity	G01N9/00
Investigating flow properties of materials, e.g. viscosity, plasticity; analysing materials by determining flow properties	G01N11/00
Investigating surface or boundary effects, e.g. wetting power; investigating diffusion effects; analysing materials by determining surface, boundary, or diffusion effects	G01N13/00
Investigating characteristics of particles; investigating permeability, pore-volume, or surface-area of porous materials	G01N15/00
Investigating resistance of materials to the weather, to corrosion, or to light	G01N17/00
Investigating materials by mechanical methods	G01N19/00
Investigating or analysing materials by the use of optical means, i.e. using infra-red, visible, or ultra-violet light	G01N21/00
Investigating or analysing materials by the use of microwaves	G01N22/00
Investigating or analysing materials by the use of other wave or particle radiation, e.g. X-rays or neutrons	G01N23/00
Investigating or analysing materials by the use of nuclear magnetic resonance, electron paramagnetic resonance or other spin effects	G01N24/00
Investigating or analysing materials by the use of thermal means	G01N25/00
Investigating or analysing materials by the use of electric, electro-chemical, or magnetic means	G01N27/00
Investigating or analysing materials by the use of ultrasonic, sonic or infrasonic waves; visualisation of the interior of objects by transmitting ultrasonic or sonic waves through the object	G01N29/00
<b>Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system</b>	
Measuring characteristics of blood <i>in vivo</i> , e.g. gas concentration within the blood, pH-value of blood, for medical or veterinary diagnosis	A61B5/145
Apparatus for enzymology or microbiology	C12M
Measuring or testing processes, other than immunoassay (which is covered by G01N33/53), involving enzymes or micro-organisms	C12Q
Investigation of foundation soil or ground water <i>in-situ</i>	E02D1/00

## **Title – G01N33/50**

### **Investigating or analysing biological material by chemical analysis**

## Definition statement

*This group covers:*

Chemical analysis of biological material, e.g. blood (in vitro), urine.

Testing involving biospecific ligand binding methods.

Use of compounds or compositions for colorimetric, spectrophotometric or fluorometric investigation, e.g. use of reagent paper.

Immunological testing, including immunoassay or materials therefor.

## Relationships between large subject matter areas

New peptides or new DNA or its corresponding mRNA, encoding for the peptides, and their use in measuring or testing processes should be classified in subclass [C07K](#) or in group [C12N9/00](#) according to the peptides, together with the appropriate classification relating to their use in diagnostics.

## References relevant to classification in this group

*This group does not cover:*

**Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system**

Measuring characteristics of blood *in vivo*, e.g. gas concentration within the blood, pH-value of blood, for medical or veterinary diagnosis [A61B5/145](#)

Apparatus for enzymology or microbiology [C12M](#)

Measuring or testing processes, other than immunoassay (which is covered by [G01N33/53](#)), involving enzymes or micro-organisms [C12Q](#)

## Informative references

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

Sampling; preparing specimens for investigation [G01N1/00](#)

Automatic analysis; handling materials therefor [G01N35/00](#)

Medicinal preparations containing antigens or antibodies for therapeutic purposes [A61K39/00](#)

Chemical or physical apparatus for general laboratory use [B01L](#)

Nano-structures, e.g. nano-chips [B82B](#)

Peptides [C07K](#)

Enzymes, pro-enzymes or compositions thereof per se [C12N9/00](#)

## Special rules of classification

In groups [G01N33/52](#) to [G01N33/96](#), in the absence of an indication to the contrary, classification is made in the last appropriate place.

## Glossary

*In this group the following terms (expressions) are used with the meanings indicated:*

**involving** when used in relation to a material includes the testing for the material as well as employing the material as a determinant or reactant in a test for a different material

## Title – G01N35/00

**Automatic analysis not limited to methods or materials provided for in a single one of the preceding groups;  
Handling materials therefor**

## Definition statement

*This group covers:*

Automated apparatus of general applicability in laboratory analytical methods.  
Automated clinical laboratory equipment not limited to specific methods.  
Methods of operating such apparatus in automatic analysis.  
Handling samples and reagents in automatic analysers. Fluid samples may flow along a tube system, or be carried in individual containers.

## References relevant to classification in this group

*This group does not cover:*

**Places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated into a larger system**

Analysis performed directly on the human or animal body for medical or veterinary diagnosis A61B  
A61D

## Informative references

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

Sampling; preparing specimens for investigation	G01N1/00
Specific methods of analysis of biological materials	G01N33/48
Chemical or physical processes, e.g. catalysis, colloid chemistry, or their relevant apparatus, for chemical processes in general, including automatic synthesis	B01J19/00
Chemical or physical apparatus for general laboratory use, e.g. glassware, heating apparatus	B01L B01L3/00 B01L7/00
Program-control systems for automatic apparatus	G05B19/00
Digital computing or data processing specially adapted for specific functions or	G06F17/00



for specific applications

G06F19/00

## **Title – G01N37/00**

**Details not covered by any preceding group**

### **Definition statement**

*This group covers:*

This group is meant as a residual place in the subclass G01N, i.e. for classifying details of methods or apparatus for analysing materials not fully covered by any of the other main groups.





IPC/D 010  
ORIGINAL: English/French  
DATE: 19.11.2003

**WORLD INTELLECTUAL PROPERTY ORGANIZATION**  
**ORGANISATION MONDIALE DE LA PROPRIÉTÉ INTELLECTUELLE**  
GENEVA/GENÈVE

**COMMITTEE OF EXPERTS OF THE IPC UNION**  
**COMITÉ D'EXPERTS DE L'UNION DE L'IPC**

**DEFINITION PROJECT FILE**  
**DOSSIER DE PROJET DÉFINITION**

<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>G01S</b>
<b>RAPPORTEUR :</b>	<b>DE</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Proposal	Proposition	DE	02.03.2001
2	Proposal	Proposition	DE	06.04.2001
3	Proposal	Proposition	DE	31.08.2001
4	Comments	Commentaire	RO	03.10.2001
5	Comments	Commentaire	JP	05.10.2001
6	Comments	Commentaire	EP	19.10.2001
7	Comments	Commentaire	SE	25.10.2001
8	Rapporteur report	Rapport du rapporteur	DE	15.01.2002
9	Comments	Commentaire	RU	15.02.2002
10	Comments	Commentaire	US	15.02.2002
11	Rapporteur report	Rapport du rapporteur	DE	25.04.2002
12	Rapporteur proposal	Proposition du rapporteur	DE	25.04.2002
13	Working Group decision	Decision du groupe de travail	IB	22.08.2002
14	Rapporteur report	Rapport du rapporteur	DE	19.09.2002
15	Rapporteur proposal	Proposition du rapporteur	DE	19.09.2002
16	Comments	Commentaire	FR	02.10.2002
17	Comments	Commentaire	SE	22.10.2002

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
18	Rapporteur report	Rapport du rapporteur	DE	20.11.2002
19	Rapporteur proposal	Proposition du rapporteur	DE	20.11.2002
20	Comments	Commentaire	SE	31.01.2003
21	Rapporteur report	Rapport du rapporteur	DE	23.09.2003
22	Comments	Commentaire	GB	13.10.2003

<b>DEUTSCHES PATENT- UND MARKENAMT</b> German Patent and Trade Mark Office	Class/Subcl.: <b>G01S</b>
	Date : 19.11.02
<b>DE - Proposal — D010</b>	

## Title - 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**

## Definition Statement

*This subclass covers:*

Methods or apparatus for determining positions, directions and distances by use of radio waves.

Methods or apparatus for determining velocities of solid objects/bodies by use of radio waves, unless the body is moving relative to some fluid and the influence of the streaming medium on the wave propagating therein is measured.

Methods or apparatus for locating solid objects/bodies, or detecting their presence by use of [reflection](#) or [reradiation](#) of radio waves.

Methods or apparatus for [navigation](#) by use of radio waves (attention is drawn to the limited scope of the term navigation, given below in the section Glossary of Terms)

Analogous methods or apparatus using other [waves](#) than radio waves, e.g. infrared, visible or ultraviolet light, or acoustic waves. Certain restrictions and priorities apply as regards other subclasses (see sections Relationships Between Larger Subject Matter Areas and Limiting References below)

Radar, Lidar, Sonar systems in general and specially adapted for specific applications if not specifically designed for geophysical use.

## Relationships Between Larger Subject Matter Areas

The general subject matters direction-finding, [navigation](#), determining distances, or velocities, locating, or presence-detecting are covered by several subclasses besides **G01S**: **G01B**, **G01C**, **G01P**, **G01V**.

**G01S** necessarily requires the use of [waves](#) (attention is drawn to the section Glossary of Terms).

Therefore, the use of static or time-varying fields that do not obey a [wave](#) equation is not sufficient for subject matter to be classified in **G01S**.

**G01S** specially emphasizes radio waves. Thus, this subclass is always the appropriate place when radio waves are used for determining directions, bearings, or distances. It is also always appropriate when radio waves are used for determining velocities of solid objects or bodies as well as for locating such bodies or detecting their presence. It is also always appropriate for [navigation](#) by using radio waves (attention is drawn to the limited scope of the term navigation, given below in the section Glossary of Terms)

As regards the use of other waves than radio waves, the part "analogous arrangements using other waves" of the title requires careful consideration of **G01B**, **G01C**, **G01P**, and **G01V** which all cover the use of such waves for the measuring of similar variables like distance, velocity, direction, or location.

When [propagation effects](#) of waves are relevant (see definition below in the section Glossary of Terms) **G01B**, **G01C**, and **G01P** all refer to **G01S** as being the appropriate place; however, there are some exceptions where

[propagation effects](#) are relevant but the subject matter is classified elsewhere (see section Limiting References below).

It is to be noted that this emphasis on [propagation effects](#) does not preclude subject matter from being classified in [G01S](#) when propagation effects are irrelevant to that subject matter.

Radar, Sonar, Lidar, or analogous systems specifically designed for geophysical use are classified in [G01V](#).

However, they are also classified in [G01S](#) if they are of general interest.

## Limiting References

*This subclass does not cover:*

Measuring a linear dimension of an object	<a href="#">G01B</a>
Measuring distances by optical means between spaced objects when <a href="#">propagation effects</a> are irrelevant	<a href="#">G01B11/14</a>
Passive optical systems for measuring distances in line of sight or transverse to line of sight, respectively	<a href="#">G01C3/00</a> <a href="#">G01C5/00</a>
Passive triangulation systems using a parallactic triangle	<a href="#">G01C3/10</a> <a href="#">G01C3/22</a> <a href="#">G01C2/24</a> <a href="#">G01C3/26</a>
Navigation not using radio waves when <a href="#">propagation effects</a> are not relevant; navigation beyond position fixing, determining velocity of a vehicle or craft or its direction of velocity	<a href="#">G01C21/00</a>
Navigation systems for traffic control purposes, i. e. systems in which the navigation is not performed autonomously by or in the vehicles, but where the vehicles are guided by instructions transmitted to them	<a href="#">G08G</a>
Measuring volume flow of fluids or fluid solids by <a href="#">propagation effects</a> of electromagnetic or other waves	<a href="#">G01F1/66</a>
Determining velocities by optical means when <a href="#">propagation effects</a> are not relevant	<a href="#">G01P3/36</a>
Measuring direction or velocity of flowing fluids or of solid bodies relative to fluids using <a href="#">propagation effects</a> of waves	<a href="#">G01P5/00</a>
Determining presence, absence, or direction of movement	<a href="#">G01P13/00</a>
Radar, Sonar, Lidar, or analogous systems specifically designed for geophysical use	<a href="#">G01V</a>
Prospecting by optical means; detecting the presence of objects or masses by optical means, e.g. by interruption of beams, i.e. light barriers	<a href="#">G01V8/00</a>
Active systems for generating focusing signals	<a href="#">G02B7/28</a>
Proximity switches	<a href="#">H03K17/945</a> <a href="#">H03K17/965</a>

## Informative references

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

Measuring linear dimensions, e.g. length, thickness, and distances between spaced objects	G01B
Measuring distances, levels, bearings; surveying; navigation	G01C
Measuring acoustic waves per se	G01H
Measuring light per se	G01J
Investigating materials by optical radiation, microwaves or acoustic waves	G01N
Measuring linear or angular speed, indicating presence, absence, or direction of movement	G01P
Detecting masses or objects by methods not involving reflection or reradiation of radio, acoustic, or other waves; prospecting	G01V
Optical systems	G02B
Control of position, course, altitude or attitude	G05D
Detecting the presence of objects for the purpose of counting them	G06M7/00 G06M11/00
Traffic control systems; anti-collision systems	G08G

## Glossary of Terms

*In this subclass, the following terms or expressions are used with the meaning indicated:*

**waves** or **wave motion** is the mechanism by which energy is transported without the transfer of matter. Waves may be either electromagnetic waves, which do not require a medium to propagate, or mechanical waves, which require a medium, e.g. acoustic waves. Waves are most easily defined in mathematical terms as obeying a so-called wave equation.

**propagation effects** are relevant if the outcome of a measurement depends on the actual value of a physical quantity characterising the propagation of the wave, i.e. its wavelength, frequency, velocity, or phase. The mere presence or direction of a wave are not considered a propagation effect or to contribute to a propagation effect. To put it in another way, propagation effects are irrelevant, if the radiation may be looked upon as a beam of radiation whose wave nature can be ignored. Examples of measurements where propagation effects are relevant include e.g. measurements of propagation time, phase difference, phase delay, measurements using the Doppler effect, or interference.

**distance** does not include any distance between points or interfaces defining an individual object, i.e. distances describing a linear dimension of an object, e.g. its thickness, width, or length are excluded.

**navigation** is in this subclass limited to position fixing, or determining the velocity or direction of velocity of vehicles or crafts or their distance from other objects.

**reflection** or **reradiation** means the general physical phenomenon that propagating waves are being scattered by any object, body or target in their path. Scattering can be elastic (i.e. the frequencies of the incoming and outgoing waves are the same)

or inelastic (i.e. the respective frequencies are different). Other properties of the wave may change as well. Reflection can be specular or diffuse depending on surface properties of the scattering object. Reradiation further includes the mechanism characteristic of a transponder, i.e. receiving a wave and then transmitting an answering wave.

**transponder** means an arrangement which reacts to an incoming interrogating or detecting wave by emitting a specific answering or identifying wave.

**active systems** means systems comprising an artificial source for emitting waves. The propagating waves interact with at least one object and are eventually detected by the system. The interaction may consist in e.g. a reflection.

**passive systems** means systems detecting waves that are not emitted by the measuring system itself (e.g. by the sun).

**object** means an entity that is not part of the measuring device.



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# Swedish Patent and Registration Office

IPC Definition Project D010, subclass G01S

January 31, 2003

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## Comments (in response to Annex 19)

The Swedish Patent Office would like to make the following comments:

### Limiting references

We still do not agree with mentioning several subclasses under both "Relationships" and different types of references. We are aware of the problem with the vague term "analogous arrangements using other waves". However, we would like solve this problem in the section "relationships between larger subject matter areas" and by giving a clearer definition in the definition statement and perhaps giving some examples. It seems the main groups 15/00 and 17/00 in G01S give some examples.

The limiting references should only be included when there is a chance of overlapping. Since we are not convinced that there really are any overlaps between G01S and for example G01B we would like to remove this subclass from the limiting references section. We question the usefulness of the references to G02B7/28, H03K17/945 and H03K17/965, and we also note that these references do not exist in IPC7.

Also, we find it unclear if the subclass G01V really is limiting, since it is stated in the section "relationships between larger subject matter areas" that some matter may be classified both in G01S and G01V.

We therefore propose to remove G01B and G01V from the limiting references section and to keep them in the relationships between larger subject matter areas and informative references section. Also, we propose to remove G02B7/28, H03K17/945 and H03K17/965 from the limiting references section.

### Glossary of Terms

We would like to add to the definition of **distance** a statement of what is included as well as what is not included.

Nina Ödling

<b>DEUTSCHES PATENT- UND MARKENAMT</b> German Patent and Trade Mark Office	Class/Subcl.: <b>G01S</b>
	Date : 18.09.03
<b>Rapporteur Report — D010</b>	

One comment has been received from SE.

SE has concerns towards the chosen types and arrangement of references in the last proposal.

Therefore SE proposes to remove G01B and G01V from the limiting references section and to keep them in the relationships between larger subject matter areas and informative references section. Furthermore SE wants G02B 7/28, H03K 17/945 and H03K 17/965 to be removed from the limiting references section.

We can not share this opinion, because the value of these references seems to us substantial for the classification and beyond. So the last proposal remains unchanged.

Klaus Wollny



IPC/D 027  
ORIGINAL: English/French  
DATE: 27.05.2004

**WORLD INTELLECTUAL PROPERTY ORGANIZATION**  
**ORGANISATION MONDIALE DE LA PROPRIÉTÉ INTELLECTUELLE**  
GENEVA/GENÈVE

**COMMITTEE OF EXPERTS OF THE IPC UNION**  
**COMITÉ D'EXPERTS DE L'UNION DE L'IPC**

**DEFINITION PROJECT FILE**  
**DOSSIER DE PROJET DÉFINITION**

<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>G01M</b>
<b>RAPPORTEUR :</b>	<b>RU</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Proposal	Proposition	RU	06.09.2001
2	Comments	Commentaire	DE	28.09.2001
3	Comments	Commentaire	EP	19.10.2001
4	Comments	Commentaire	SE	25.10.2001
5	Proposal	Proposition	RU	16.11.2001
6	Rapporteur report	Rapport du rapporteur	RU	16.11.2001
7	Comments	Commentaire	RO	15.02.2002
8	Comments	Commentaire	US	15.02.2002
9	Comments	Commentaire	DE	26.02.2002
10	Rapporteur report	Rapport du rapporteur	RU	18.03.2002
11	Rapporteur proposal	Proposition du rapporteur	RU	18.03.2002
12	Proposal	Proposition	RU	23.04.2002
13	Comments	Commentaire	EP	28.05.2002
14	Proposal	Proposition	US	03.06.2002
15	Rapporteur report	Rapport du rapporteur	RU	19.09.2002
16	Rapporteur proposal	Proposition du rapporteur	RU	19.09.2002
17	Comments	Commentaire	US	21.11.2002

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
18	Rapporteur proposal	Proposition du rapporteur	RU	19.02.2003
19	Rapporteur report	Rapport du rapporteur	RU	19.02.2003
20	Comments	Commentaire	GB	09.09.2003
21	Comments	Commentaire	DE	23.09.2003
22	Comments	Commentaire	CA	23.09.2003
23	Rapporteur report	Rapport du rapporteur	RU	20.10.2003
24	Rapporteur proposal	Proposition du rapporteur	RU	19.11.2003
25	Comments	Commentaire	SE	30.01.2004
26	Comments	Commentaire	GB	16.02.2004
27	Rapporteur report	Rapport du rapporteur	RU	19.03.2004
28	Rapporteur proposal	Proposition du rapporteur	RU	19.03.2004
29	Indication of approval		GB	14.04.2004

**FEDERAL INSTITUTE OF INDUSTRIAL PROPERTY**

<b>RU Rapporteur report</b>	
<b>Project : D027</b> <b>Class/Subclass : G01M</b>	<b>Date: 19.03.2004</b>

Comments on the last R's proposal (Annex 24) were received from SE, GB and DE. JP approve the R's proposal.

SE and GB make some remarks and R fully agrees with them. SE propose to add some references for group 3/00. GB think that some informative references proposed by SE are not necessary. DE approve Annex 24 with the changes suggested by SE and GB.

In view of RU examiners all references proposed by SE are useful for searching. R reconsidered the suggested proposals, corrected some inaccuracies of Annex 24 and tried to take into account the remarks made by the offices.

R thinks that the new R's proposal is ready for approval.

G. Nenakhov

## Title - G01M

### Testing static or dynamic balance of machines or structures; Testing structures or apparatus not otherwise provided for

#### Definition statement

*This subclass covers:*

The scope of the subclass G01M is so broad that a detailed description of the subject matter appropriate for this place is correctly possible only at the main group level.

The user is referred to the IPC definitions for the individual main groups of G01M which follow hereinafter. The following list is intended to assist the user.

#### Testing characterised by the objects investigated:

Machines or machine parts – see definitions for G01M1/00, 9/00, 10/00, 13/00, 15/00, 17/00

Structures – see definitions for G01M1/00, 3/00, 5/00, 7/00

Apparatus not provided elsewhere – see definitions for G01M11/00, 19/00

#### Testing characterised by the properties investigated:

Balance – see definition for G01M1/00

Fluid tightness – see definition for G01M3/00

Elasticity, deflection – see definition for G01M5/00

Vibration resistance – see definition for G01M7/00

Aerodynamic properties – see definition for G01M9/00

Hydrodynamic properties – see definition for G01M10/00

Optical properties – see definition for G01M11/00

## Glossary

*In this subclass, the following terms or expressions are used with the meanings indicated:*

<b>Calibrating</b>	means process or an apparatus for ascertaining the quality of a measuring or testing device, or checking, adjusting graduations of measuring or testing device.
<b>Monitoring</b>	means process or an apparatus for measuring or testing a condition or change of condition of object. The results of the measurement or test can be used in the control of the object.
<b>Investigating</b>	means testing or determining.
<b>Testing</b>	means process or an apparatus by which the presence, quality, or genuineness of object to be tested is determined.

## **Title - G01M1/00**

### **Testing static or dynamic balance of machines or structures**

#### **Definition statement**

*This group covers:*

Methods and apparatus for:

Determining and compensating static or dynamic unbalance of machine or structures.

Determining the moment of inertia.

Static balancing.

Determining position of center of gravity.

Combined machines or devices for both determining and correcting unbalance.

#### **Relationship between large subject matter areas**

**G01H** covers the combination of generation and measurement of mechanical and other vibrations while subclass **G01M** covers determining unbalance by oscillating or rotating the body to be tested.

**G01R** covers instruments for measuring electrical variables, which can be used for balancing machines or devices but not specially adapted for this purposes.

**H04R** covers electromechanical transducers producing acoustic waves or variations of electric variables (current or voltage) while **G01M** covers determining unbalance by converting vibrations due to unbalance into electric variables.

#### **References relevant to classification in this group**

*This group does not cover:*

Balancing rotary bowls of centrifuges	B04B9/14
Means for holding wheels or parts thereof	B60B30/00
Determining vessel properties with respect to stability or balance	B63B9/08
Equipment to decrease pitch, roll, or like unwanted vessel movements;	
Apparatus for indicating vessel attitude	B63B39/00
Aircraft stabilization not otherwise provided for	B64C17/00
Centering the rotor within the stator;	
Balancing the rotor	H02K15/16

#### **Informative references**

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

Counterweights; Attaching or mounting same	F16F15/28
Correcting- or balancing-weights or equivalents means for balancing	

rotating bodies, e.g. vehicle wheels

F16F15/32

Control of mechanical oscillations

G05D19/00

## **Title - G01M3/00**

### **Investigating fluid tightness of structures**

#### **Definition statement**

*This group covers:*

Investigating fluid-tightness of structures, e.g. cables, tubes, pipes, welds, pipe joints, seals, valves, containers, radiators, by using fluid or vacuum, infrasonic, sonic, or ultrasonic vibrations, light or by using electric means, e.g. by observing electric discharges.

#### **Relationship between large subject matter areas**

G01N covers investigating, i.e. testing or determining, the properties of materials, as opposed to testing or determining the properties of structures or apparatus, machine parts, which is covered by G01M.

#### **References relevant to classification in this group**

*This group does not cover:*

Leakage-indicating devices for large containers

B65D90/50

Preventing, monitoring or locating loss in the pipe-line

F17D5/02

Investigating the permeability, pore volume, or surface area of porous materials

G01N15/08

Investigating the presence of flaws or irregularities of material by mechanical methods

G01N19/08

Investigating the presence of flaws, defects or contamination by the use of optical means

G01N21/88

Investigating the presence of flaws by the use of microwaves

G01N22/02

Investigating the presence of flaws by wave or particle radiation, e.g. X-rays

G01N23/18

Investigating the presence of flaws by the use of thermal means

G01N25/72

Investigating the presence of flaws by the use of electric, electro-chemical or magnetic means

G01N27/00

Investigating the presence of flaws by the use of ultrasonic, sonic or infrasonic waves

G01N29/04



## **Informative references**

Detecting or repairing leaks in apparatus using semi-permeable membranes	B01D65/10
Testing for leaks in apparatus for blow-moulding	B29C49/80
Leakage detectors for rocket-engine plants	F02K9/54
Leakage detection for insulated conductors or cables characterised by their form	H01B7/32

## **Title - G01M5/00, 7/00, 9/00, 10/00**

**Investigating the elasticity of structures, e.g. deflection of bridges, aircraft wings;**

**Vibration testing of structures; Shock-testing of structures;**

**Aerodynamic testing; Arrangements in or on wind tunnels;**

**Hydrodynamic testing; Arrangements in or on ship-testing tanks or water tunnels**

## **Definition statement**

*These groups cover:*

Investigating the elasticity of structures, e.g. deflection of bridges, aircraft wings.

Testing elastic properties of bodies or chassis, e.g. torsion-testing.

Vibration testing or shock testing of structures.

Aerodynamic testing and arrangements therefor.

Hydrodynamic testing and arrangements therefor.

Means for studying the flow of fluid about the object to be tested.

## **Relationship between large subject matter areas**

**G01B** covers apparatus, which can be used for investigating the elasticity of structures but not specially adapted for this purposes, e.g. strain gauges.

**G01H** covers measurement of mechanical vibrations in general.

**G01N** covers investigating, i.e. testing or determining, the properties of materials, as opposed to testing or determining the properties of structures, apparatus or machine parts, which is covered by **G01M**.

## **References relevant to classification in these groups**

*NONE*

## **Informative references**

Investigating the ductility of materials	G01N3/28
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## **Title - G01M11/00**

**Testing of optical apparatus;**

**Testing structures by optical methods not otherwise provided for**

### **Definition statement**

*This group covers:*

Testing of optical properties of optical apparatus.

Testing of mechanical properties of optical apparatus.

Measuring refractive power, geometrical properties or aberrations, material or chromatic transmission properties, the optical modulation transfer function of optical apparatus if such methods are not otherwise provided for.

### **Relationship between large subject matter areas**

This group is residual place for classifying testing of optical apparatus not provided for in any other subclass of the IPC. Testing of particular optical devices or apparatus is often covered by the respective subclass provided for that optical devices or apparatus. Testing of optical devices or apparatus is classified in [G01M11/00](#) only if there is no appropriate place for that subject matter elsewhere.

Investigating or analysing materials by the use of optical means is covered by [G01N21/00](#).

Optical elements, systems or apparatus are covered by [G02B](#).

### **References relevant to classification in this group**

*This group does not cover:*

#### **Places in relation to which this group is residual**

Devices for testing or checking weapon sighting devices

[F41G1/54](#)

Devices for testing or checking aiming and laying means

[F41G3/32](#)

### **Informative references**

Measuring arrangements characterised by the use of optical means

[G01B11/00](#)

Investigating or analysing materials by the use of optical means

[G01N21/00](#)

## **Title - G01M13/00, 15/00, 17/00**

**Testing of machine parts;**

**Testing of engines;**

**Testing of vehicles**

## Definition statement

*These groups cover:*

Testing of machine parts, such as: sealing rings, gearings, power-transmitting couplings or clutches, power-transmitting endless, e.g. belts, chains, bearings.

Testing of engines by monitoring different engine parameters: pressure, temperature, velocity, vibration, power, detecting misfire, exhaust gases or combustion flame.

Testing of gas-turbine plants or jet-propulsion plants.

Testing of wheels, tyres, endless-tracks, suspension, or of damping as a part of wheeled or endless-traced vehicles or suspension, axles, wheels suspension, or of axles as a part of railway vehicles.

## Relationship between large subject matter areas

**G01L** covers instruments which can be used for testing of machine parts (gearing, transmission mechanisms), of steering or rolling behavior of vehicles, e.g. measuring efficiency, steering angles, steering forces, but not specially adapted for this purposes.

## References relevant to classification in these groups

*NONE*

## Informative references

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

Devices for measuring, signalling, controlling, or distributing tyre pressure or temperature, specially adapted for mounting on vehicles	<a href="#">B60C23/00</a>
Monitoring or diagnostic devices for exhaust-gas treatment apparatus	<a href="#">F01N11/00</a>
Indicating or supervising devices of internal-combustion engines	<a href="#">F02B77/08</a>
Running-in of internal-combustion engines	<a href="#">F02B79/00</a>
Controlling combustion engines	<a href="#">F02D</a>
Rocket-engine plants characterised by specially adapted arrangements for testing or measuring	<a href="#">F02K9/96</a>
Apparatus for testing, tuning or synchronising carburettors, e.g. carburettor flow stands	<a href="#">F02M19/01</a>
Testing fuel-injection apparatus	<a href="#">F02M65/00</a>
Testing of ignition installations peculiar to internal-combustion engines	<a href="#">F02P17/00</a>
Testing of ignition installations of combustion apparatus	<a href="#">F23Q23/00</a>
Devices for determining the value of power, e.g. by measuring and simultaneously multiplying the values of torque and revolutions per unit of time, by multiplying the values of tractive or propulsive force and velocity	<a href="#">G01L3/24</a>

Measuring wheel side-thrust	G01L5/20
Measuring the force applied to control members, e.g. control members of vehicles, triggers	G01L5/22
Determining the characteristic of torque in relation to revolutions per unit of time	G01L5/26
Testing brakes	G01L 5/28
Devices or apparatus for measuring tyre pressure or the pressure in other inflated bodies	G01L17/00
Devices for detecting or indicating knocks in internal-combustion engines	G01L23/22
Devices for measuring pressure in inlet or exhaust ducts of internal-combustion engines	G01L23/24
Means for indicating positions of pistons or cranks of internal-combustion engines by measuring pressure	G01L23/30
Testing or calibrating of apparatus for measuring force, torque, work, mechanical power, or mechanical efficiency	G01L25/00
Testing or calibrating of apparatus for measuring fluid pressure	G01L27/00
Pressure-testing	G01N3/12
Investigating machinability by cutting tools; Investigating the cutting ability of tools	G01N3/58

## **Title – G01M19/00**

### **Testing of structures or of apparatus, not provided for in the other groups of this subclass**

#### **Definition statement**

This group is residual place for classifying testing of structures or of apparatus, not provided for in the other groups of this subclass.

Testing of particular devices or apparatus is often covered by the respective subclass provided for that devices or apparatus. Testing of particular devices or apparatus is classified in [G01M19/00](#) only if there is no appropriate place for that subject matter elsewhere.

#### **Relationship between large subject matter areas**

*NONE*

## **Informative references**

Testing of membranes or membrane apparatus	B01D65/10
Testing of parachutes	B64D21/00
Testing characteristics of the spark in internal combustion engine ignition	F02P17/12
Testing, calibrating, or compensating of compasses	G01C17/38
Testing or calibrating of weighing apparatus	G01G23/01
Testing or calibrating of thermometers	G01K15/00
Testing or calibrating calorimeters	G01K19/00
Arrangements for testing electric properties;	
Arrangements for locating electric faults;	
Arrangements for electrical testing characterised by what is being tested	
not provided for elsewhere	G01R31/00
Testing of electrical properties of sparking plugs	G01R31/38
Testing or calibrating meteorological apparatus	G01W1/18
Testing correct operation of photographic apparatus or parts thereof	G03B43/00
Monitoring; Testing of fusion reactors	G21C17/00
Testing or measuring during manufacture or treatment of	
semiconductor devices	H01L21/66
Calibration or testing of analogue/digital or digital/analogue converters	H03M1/10
Monitoring; Testing of line transmission systems	H04B3/46
Monitoring; Testing of relay systems	H04B17/00
Diagnosis, testing or measuring for television systems or their details	H04N17/00
Monitoring arrangements; Testing arrangements of acoustic	
electromechanical transducers	H04R29/00





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**WORLD INTELLECTUAL PROPERTY ORGANIZATION**  
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**COMMITTEE OF EXPERTS OF THE IPC UNION**  
**COMITÉ D'EXPERTS DE L'UNION DE L'IPC**

**DEFINITION PROJECT FILE**  
**DOSSIER DE PROJET DÉFINITION**

<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>G01T</b>
<b>RAPPORTEUR :</b>	<b>SE</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Rapporteur proposal	Proposition du rapporteur	SE	06.09.2002
2	Comments	Commentaire	JP	10.10.2002
3	Comments	Commentaire	GB	24.02.2003
4	Comments	Commentaire	RO	03.03.2003
5	Rapporteur report	Rapport du rapporteur	SE	27.05.2003
6	Rapporteur proposal	Proposition du rapporteur	SE	27.05.2003
7	Comments	Commentaire	JP	28.05.2003
8	Comments	Commentaire	CA	08.09.2003
9	Comments	Commentaire	GB	12.09.2003
10	Rapporteur proposal	Proposition du rapporteur	SE	03.02.2004
11	Rapporteur report	Rapport du rapporteur	SE	03.02.2004
12	Indication of approval		GB	16.02.2004
13	Comments	Commentaire	JP	10.05.2004

## Title - G01T

### Measurement of nuclear or x-radiation

#### Definition statement

*This subclass covers:*

- Methods and instruments for measurement and detection of X-radiation, gamma radiation, corpuscular radiation, cosmic radiation, or neutron radiation.
- Recording of movements or tracks of particles.
- Details of instruments for measuring of X-radiation, gamma radiation, corpuscular radiation, cosmic radiation, or neutron radiation.

#### Relationship between large subject matter areas

Apparatus for radiation diagnosis or therapy in medical and veterinary science are classified in [A61B6/00](#) or [A61N5](#). The borderline between [G01T](#) and [A61B](#) should be determined based on whether the apparatus is purely medical or the feature is more of a general technical nature.

Instruments for measuring and detecting high energy UV-radiation should be classified in [G01T](#) when the radiation is ionising, otherwise they should be classified in [G01J](#).

Nuclear magnetic resonance is classified in [G01R33/20](#), [G01N24](#) or [A61B5/055](#).

#### Limiting references

*This subclass does not cover:*

Radiation analysis of materials, mass spectrometry	<a href="#">G01N</a>
Electric discharge tubes for analysing radiation or particles	<a href="#">H01J40/00</a> <a href="#">H01J47/00</a> <a href="#">H01J49/00</a>
Construction of ionisation chambers	<a href="#">H01J47/02</a>
Semiconductor detectors <u>per se</u>	<a href="#">H01L31/00</a>
Secondary-electron-emitting electrodes in general	<a href="#">H01J1/32</a>

#### Informative references

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

Measuring exposure time to X-rays	<a href="#">H05G1/28</a>
Photosensitive materials or processes for photographic purposes	<a href="#">G03C</a>



Pulse rate meters in general	G01R23/02
Applying radioactive material to the body	A61M36/00
Radio isotopes	G21G4/00
Tracers	G21H5/00
Spark chambers	H01J47/00
Counters per se	G06M H03K
Computerised tomographs	A61B6/03
Prospecting by the use of nuclear radiation, natural or induced	G01V5/00
Nuclear magnetic computer tomography	G01R33/20 G01N24 A61B5/055
Nuclear magnetic resonance.	G01R33/20 G01N24 A61B5/055
Radiation pyrometry using electric radiation detectors which use the ionisation of gases	G01J5/36
Investigating or analysing materials by the use of nuclear magnetic resonance, electron paramagnetic resonance or other spin effects	G01N24/00

## Special rules of classification

## Glossary

*In this subclass, the following terms or expressions are used with the meaning indicated:*

**measuring** Attention is drawn to the Notes following the title of class G 01.

**Corpuscular radiation** a stream of atomic or subatomic particles which may be charged positive, negative or not at all.

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# Swedish Patent and Registration Office

IPC Revision Project D 044, subclass G01T

January 27th, 2004

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## Rapporteur report

Comments on the Rapporteur's proposal (annex 6) have been submitted by **JP**, **CA** and **UK**:

### *Definition statement and glossary*

Both **JP** and **UK** are concerned that the proposed wording "methods and instruments for measurement and detection of ionising radiation" in the definition statement would change the scope of the subclass and propose that it is removed.

However, some detectors do not specify the type of radiation they are intended to measure. Some mention only "radiation" and some "ionising radiation". These detectors can be used both for measuring for instance x-radiation and for measuring high energy UV-radiation since the wavelength of these overlap. These detectors can be classified in G01T, but also in G01J1/42 and **R** believes this is important to clarify where they should be classified.

**R** welcomes a discussion as to where applications not specifying the type of radiation measured should be classified, in G01T or G01J1/42.

In order to clarify this **R** has removed the last part of the definition statement and added a clarification in the section "relationships between large subject matter areas" concerning this.

### *Informative references*

**CA** is concerned that the note "Attention is drawn to the fact that following references are informative in relation to the definition statement, but limiting in relation to the title" will confuse users. This note has been removed and the references remain as informative references.

A61B6/03 has been added as an informative reference as suggested by **CA**.

Both **JP** and **GB** proposed changing the reference to G01J5/36. **R** agrees and has changed it according to **GB**'s suggestion, this considered as the most complete.

The typing error of H01J47/00 has been corrected.

Nina Ödling

**JP Comments on Rapporteur Proposal (Annex 10)****Relationship between large subject matter areas**

Rapporteur proposes to add the following wording: “[Instruments for measuring and detecting high energy UV-radiation should be classified in G01T when the radiation is ionising, otherwise they should be classified in G01J.](#)”

However, JP proposes to delete this wording for the following reasons:

- i. “UV-radiation” is an electromagnetic wave that is not covered by the definition in “Definition statement” place of G01T and the insertion of this term would substantially change the definition of G01T;
- ii. The proposed wording can be read as “Instruments for measuring and detecting high energy, but non-ionizing UV-radiation should be classified in G01J,” and this might change the definition of G01J;
- iii. With respect to a term “high energy,” its criterion for comparison and its degree of energy are unclear, and we think this is too vague expression to know what radiation is covered here;
- iv. An expression “when the radiation is ionising” is not clear if “Instruments for measuring and detecting high energy UV-radiation” is a detector for ionising radiation or that merely using ionization by radiation or other means.

JP is concerned about an impact of the proposed wording on the definitions per se of G01T and G01J and a deviation from the purpose of this project that the contents and the scopes of the arts to be classified should not be changed.

Therefore, JP proposes to remove the proposed wording “Instruments for measuring and detecting high energy UV-radiation should be classified in G01T when the radiation is ionising, otherwise they should be classified in G01J” of “Relationship between large subject matter areas” part.

Furthermore, we understand the overlap between X-radiation and UV-radiation, but it is clear that X-radiation covered by the existing G01T definitely includes soft X-radiation. We believe this overlap is fully differentiable.





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**COMMITTEE OF EXPERTS OF THE IPC UNION**  
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**DEFINITION PROJECT FILE**  
**DOSSIER DE PROJET DÉFINITION**

<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>G01V</b>
<b>RAPPORTEUR :</b>	<b>DE</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Rapporteur proposal	Proposition du rapporteur	DE	20.09.2002
2	Comments	Commentaire	SE	23.10.2002
3	Comments	Commentaire	FR	24.10.2002
4	Rapporteur report	Rapport du rapporteur	DE	18.11.2002
5	Rapporteur proposal	Proposition du rapporteur	DE	18.11.2002
6	Comments	Commentaire	GB	24.02.2003
7	Rapporteur proposal	Proposition du rapporteur	DE	08.04.2003
8	Rapporteur proposal	Proposition du rapporteur	DE	23.09.2003
9	French version	Version française	CH	31.10.2003
10	Comments	Commentaire	GB	16.02.2004

<b>DEUTSCHES PATENT- UND MARKENAMT</b> German Patent and Trade Mark Office	Class/Subcl.: <b>G01V</b>
	Date : 8.4.02
<b>DE - Rapporteur Proposal — D045</b>	

One comment from GB has been received.

GB proposes references to F42, G21J and G01C to be added to the section References. R has not included these references; they apply to single main groups (1/00 respectively 3/00) only and should be included in the future definition of these groups.

Therefore we believe, that the proposal should be maintained without changes .

Christian Kallinger

<b>DEUTSCHES PATENT- UND MARKENAMT</b> German Patent and Trade Mark Office	Class/Subcl.: <b>G01V</b>
	Date : 18.09.03
<b>DE - Proposal — D045</b>	

## **Title – G01V**

**GEOPHYSICS;**

**GRAVITATIONAL MEASUREMENTS;**

**DETECTING MASSES OR OBJECTS;**

**TAGS**

## **Definition statement**

*This subclass 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.

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 matters locating or detecting of masses or objects are covered by several subclasses besides **G01V**: **G01S**, **G01C**.

This subclass 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 also classified in subclass **G01S**.

## Limiting references

*This subclass does not cover:*

Detecting or locating foreign bodies for diagnostic, surgical or person-identification purposes	<a href="#">A61B</a>
Means for indicating the location of accidentally buried, e.g. snow-buried, persons	<a href="#">A63B 29/02</a>
Locating or presence-detecting by the use of radio, acoustic or other waves involving reflection and reradiation of waves	<a href="#">G01S</a>
<u>Burglar, theft, or intruder alarms actuated by interference with electromagnetic radiation or fields.</u>	<a href="#">G08B 13/18</a>
	<a href="#">G08B 13/24</a>

## Informative references

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

Survey of boreholes or wells	<a href="#">E21B47/00</a>
Investigating or analysing earth materials by determining their chemical or physical properties	<a href="#">G01N</a>
Measuring electric or magnetic variables in general, other than direction or magnitude of the earth's field	<a href="#">G01R</a>
<u>Magnetic resonance arrangements in general</u>	<a href="#">G01R 33/20</a>

## Glossary

*In this subclass, the following terms or expressions are used with the meaning indicated:*

**tags** means arrangements cooperating with a detecting field, e.g. near field, and designed to produce a specific detectable effect; "tags" also means active markers or labels capable of generating a detectable field; tags are not to be confused with transponders (cf Glossary of G01S).

## Synonyms and Keywords

tags in the present context are also referred to as electronic labels or electronic markers



IPC Revision WG – Definition Project CH Traduction	Projet: D045
	Classe/sous-classe: G01V
	Date : 12/11/03

## **Titre - G01V**

# **Géophysique; Mesure de la gravitation; Détection des masses ou objets; Marques d'identification**

## **Énoncé de la définition**

*La présente sous-classe couvre:*

**Les méthodes et appareils spécifiquement prévus pour une utilisation géophysique tels que :**

**les mesures sismiques y compris la production d'énergie sismique, la détection ou le traitement des signaux sismiques,**

**la mesure du champ magnétique ou électrique terrestre et de ses modifications dues aux structures géologiques,**

**la mesure du champ gravitationnel terrestre et de ses modifications dues aux structures géologiques ;**

**La prospection ou la détection des masses ou des objets en général, p.ex. par des moyens sismiques, électriques, magnétiques, gravimétriques, optiques ou au moyen de radiations nucléaires ;**

**La mesure des champs ou des ondes de gravitation en général, p.ex. la mesure de la force de gravitation entre deux corps ou des ondes de gravitation d'origine cosmique;**

**La fabrication, l'étalonnage, le nettoyage ou la réparation de tels appareils ;**

**Les marques d'identification fixées sur ou associées à un objet dans le but de permettre sa détection.**

**Dans cette sous-classe les méthodes géophysiques s'appliquent à la fois aux objets terrestres et célestes, p.ex. aux planètes.**

## Liens entre secteurs d'une large portée

*La localisation ou la détection des masses ou des objets en général sont couvertes par d'autres sous-classes que G01V : G01S, G01C.*

*La présente sous-classe couvre les systèmes radar, sonar, lidar ou analogues spécifiquement prévus pour une utilisation géophysique. Les systèmes radar, sonar, lidar ou analogues, ainsi que leurs détails, qui présenteraient un intérêt général sont également classés dans la sous-classe G01S.*

## Renvois influençant le classement dans la présente sous-classe

*La présente sous-classe ne couvre pas:*

Détection ou localisation de corps étrangers à des fins de diagnostic de chirurgie ou d'identification des individus	<a href="#">A61B</a>
Moyens pour indiquer où se trouvent des personnes ensevelies accidentellement, p.ex. par de la neige	<a href="#">A63B 29/02</a>
Localisation ou détection des masses ou des objets par des procédés utilisant la réflexion ou la reradiation des ondes radio, acoustiques ou d'autres ondes	<a href="#">G01S</a>
Alarmes contre les cambrioleurs, les voleurs ou tous intrus déclenchées par l'interaction avec des champs ou des ondes électromagnétiques	<a href="#">G08B 13/18</a> <a href="#">G08B 13/24</a>

## Renvois indicatifs

*Il est important de tenir compte des endroits suivants, qui peuvent présenter un intérêt pour la recherche:*

relevés dans les trous de forage ou dans les puits	<a href="#">E21B 47/00</a>
recherche ou analyse des matériaux terrestres par détermination de leurs propriétés chimiques ou physiques	<a href="#">G01N</a>
mesure des variables électriques ou magnétiques en général, autres que la direction ou l'amplitude du champ terrestre	<a href="#">G01R</a>
dispositions pour la résonance magnétique en général	<a href="#">G01R 33/20</a>

## Règles particulières de classement dans la présente sous-classe

AUCUN(E).

### Glossaire

*Dans la présente sous-classe, les termes (ou expressions) suivant(e)s ont la signification ci-dessous indiquée:*

**marque d'identification** désigne des dispositions coopérant avec un champ de détection, p.ex. un champ proche, et conçues pour produire un effet spécifique détectable; "marque d'identification" désigne également des marques actives ou des étiquettes susceptibles de produire un champ détectable ; à ne pas confondre avec les « transpondeurs » (voir le glossaire de G01S)

### Synonymes et mots clés

· *Dans les documents de brevet, les synonymes suivants sont souvent utilisés :*

**étiquette électronique**

**marqueur**





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**COMMITTEE OF EXPERTS OF THE IPC UNION**  
**COMITÉ D'EXPERTS DE L'UNION DE L'IPC**

**DEFINITION PROJECT FILE**  
**DOSSIER DE PROJET DÉFINITION**

<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>H01P</b>
<b>RAPPORTEUR :</b>	<b>GB</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Rapporteur proposal	Proposition du rapporteur	GB	30.10.2002
2	Comments	Commentaire	JP	05.11.2002
3	Comments	Commentaire	DE	14.01.2003
4	Rapporteur proposal	Proposition du rapporteur	GB	22.05.2003
5	French version	Version française	CH	31.10.2003
6	Rapporteur proposal	Proposition du rapporteur	GB	21.11.2003

<b>IPC Revision WG – Definition Project</b>	Projet: D047
	Classe/sous-classe: H01P
	Date : 12/11/03
<b>CH</b>	
Traduction	

## **Titre - H01P**

### **GUIDES D'ONDES; RÉSONATEURS, LIGNES, OU AUTRES DISPOSITIFS DU TYPE GUIDE D'ONDES**

#### **Énoncé de la définition**

*La présente sous-classe couvre:*

**Les dispositifs passifs ayant des dimensions comparables à la longueur d'onde d'opération et fonctionnant à des fréquences en deçà des fréquences optiques, p.ex. micro-ondes et leur manufacture.**

**Dispositifs auxiliaires du type guides d'ondes tels que filtres, déphaseurs, dispositifs non réciproques, dispositifs pour faire tourner le plan de polarisation.**

**Guides d'ondes creux et lignes de transmission tels que triplaques, microrubans, lignes coaxiales, guides d'ondes diélectriques.**

**Dispositifs de couplage pour guides d'ondes, lignes de transmission ou dispositifs du type guide d'ondes.**

**Résonateurs du type guide d'ondes.**

**Lignes à retard du type guide d'ondes.**

**Appareils ou procédés spécialement adaptés à la fabrication de guides d'ondes, lignes de transmission ou autres dispositifs du type guide d'ondes.**

#### **Liens entre secteurs d'une large portée**

Les guides d'ondes et les dispositifs du type guide d'ondes sont habituellement associés aux antennes, classées en H01Q.

H01P couvre les composants de circuit individuels ou leurs combinaisons de base. Les réseaux plus complexes munis d'éléments à impédance localisée sont classés en H03H

#### **Renvois influençant le classement dans la présente sous-classe**

*La présente sous-classe ne couvre pas:*

Dispositifs opérant aux fréquences optiques

G02B

## Renvois indicatifs

*Il est important de tenir compte des endroits suivants, qui peuvent présenter un intérêt pour la recherche:*

Réseaux comportant des éléments à impédance localisée	H03H
Câbles coaxiaux	H01B11/18
Connecteurs de ligne	H01R
Accessoires de câbles	H02G15/00
Dispositifs quasi optiques	H01Q15/00
Antennes	H01Q
Détails des tubes à temps de transit	H01J23/00

## Règles particulières de classement dans la présente sous-classe

*AUCUN(E).*

## Glossaire

*Dans la présente sous-classe, les termes (ou expressions) suivant(e)s ont la signification ci-dessous indiquée:*

<b>Dispositifs auxiliaires</b>	Dispositifs qui ont une fonction autre que la pure transmission d'énergie
<b>du type guide d'ondes</b>	appliqué aux lignes de transmission, comprend exclusivement les câbles coaxiaux pour haute fréquence ou les lignes de Lecher, et, appliqué aux résonateurs, lignes à retard ou autres dispositifs, elle comprend tous les dispositifs à inductance et capacité réparties

## Synonymes et mots clés

*· Dans les documents de brevet, les expressions suivantes sont souvent utilisées :*

<b>Dispositifs de transmission non réciproque</b>	Eléments tels que les circulateurs ou les isolateurs, exploitant les propriétés de propagation des ferrites
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IPC/D 048  
ORIGINAL: English/French  
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**COMMITTEE OF EXPERTS OF THE IPC UNION**  
**COMITÉ D'EXPERTS DE L'UNION DE L'IPC**

**DEFINITION PROJECT FILE**  
**DOSSIER DE PROJET DÉFINITION**

<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>H04B</b>
<b>RAPPORTEUR :</b>	<b>RU</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Rapporteur proposal	Proposition du rapporteur	RU	14.05.2002
2	Rapporteur proposal	Proposition du rapporteur	RU	19.09.2002
3	Rapporteur report	Rapport du rapporteur	RU	19.09.2002
4	Comments	Commentaire	JP	15.10.2002
5	Proposal	Proposition	RU	16.10.2002
6	Comments	Commentaire	SE	23.10.2002
7	Comments	Commentaire	FR	29.10.2002
8	Comments	Commentaire	DE	07.11.2002
9	Rapporteur report	Rapport du rapporteur	RU	19.11.2002
10	Rapporteur proposal	Proposition du rapporteur	RU	19.11.2002
11	Comments	Commentaire	SE	14.02.2003
12	Comments	Commentaire	GB	24.02.2003
13	Rapporteur report	Rapport du rapporteur	RU	20.05.2003
14	Rapporteur proposal	Proposition du rapporteur	RU	20.05.2003
15	Comments	Commentaire	GB	12.09.2003
16	Comments	Commentaire	SE	14.10.2003
17	Rapporteur report	Rapport du rapporteur	RU	17.11.2003

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
18	Rapporteur proposal	Proposition du rapporteur	RU	17.11.2003
19	Indication of approval		GB	16.02.2004

**FEDERAL INSTITUTE OF INDUSTRIAL PROPERTY**

<b>RU Rapporteur report</b>	
<b>Project : D048</b> <b>Class/Subclass : H04B</b>	<b>Date:</b>

Comments were invited on modified proposal dated 19.05.03 (Annex 14 to the project file). Comments were received from UK and SE.

SE think that the definitions of some main groups seem too limited and suggest broadening of the definitions. UK and SE propose some modifications and additions to definitions of groups.

R tried to take into account all comments. As to the precedence reference in the wording of groups H 04B 7/00 to 10/00, R has some doubts because group 7/00 seems not related with 10/00.

R would like to express gratitude to UK and SE for their work on this project.

Rapporteur proposal is enclosed.

V.Nioukhovsky

## Title – H04B

### Transmission

#### Definition statement

*This subclass covers:*

The transmission of information carrying signals, the transmission being independent of the nature of the information, and includes monitoring and testing arrangements and the suppression and limitation of noise and interference.

The user is referred to the IPC definition of individual main groups of subclass [H04B](#):

#### **Transmission systems characterised by the waveband used for transmission:**

**Radio waves** – see definition for [H04B5/00,7/00](#)

**Corpuscular radiation, light or infrared waves** - see definition for [H04B10/00](#)

**Ultrasonic, sonic or infrasonic waves** – see definition for [H04B11/00](#)

#### **Transmission systems characterised by the medium used for transmission:**

**Conductors** – see definition for [H04B3/00](#)

**Free space-propagation** - see definition for [H04B5/00,7/00,10/00,11/00](#).

**Earth or water** – see definition for [H04B13/00](#).

#### **Transmission systems characterised by the carrier modulation used for transmission:**

**Pulse modulation** - see definition for [H04B14/00](#)

#### Relationship between large subject matter areas

If the transmission systems are specially adapted for particular applications classification is also made in subclasses listed in section "Informative references".

#### Informative references

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

Coding, decoding or code conversion	<a href="#">H03M</a>
Broadcast communication	<a href="#">H04H</a>
Multiplex communication	<a href="#">H04J</a>
Secret communication	<a href="#">H04K</a>
Transmission of digital information	<a href="#">H04L</a>
Telephonic communication	<a href="#">H04M</a>
Pictorial communication	<a href="#">H04N</a>
Paging systems using radio links (Selecting)	<a href="#">H04Q</a>
Transmission systems for measured values, control or similar signals	<a href="#">G08C</a>
Speech analysis or synthesis	<a href="#">G10L</a>

## Special rules of classification

Transmission systems characterised by the medium used for transmission or by band of employing waves should be classified in groups 3/00,5/00,7/00,10/00,11/00 or in residual group 13/00.

Transmission systems characterised by the use of carrier modulation or sub-carrier should be classified in group 14/00 and details thereof, in group 1/00.

### Title – H04B1/00

**Details of transmission systems not covered by a single one of groups 3/00 to 13/00;**

**Details of transmission systems not characterised by the medium used for transmission.**

### Definition statement

*This group covers:*

*Details of transmission systems that are general for transmission systems covered by two or more groups 3/00 to 13/00.*

*Details of transmission systems not characterized by the medium used for transmission.*

### References relevant to classification in this group

*This group does not cover:*

*Details of transmission systems explicitly covered by one of groups 3/00 to 13/00*

Demodulation or transference of modulation from one carrier to another [H03D](#)

### Informative references

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

Spatial arrangements of component circuits in radio pills for living beings [A61B5/07](#)  
Waveguides; Resonators, lines or other devices of the waveguide type [H01P](#)

### Glossary

*In this group, the following terms or expressions are used with the meaning indicated:*

**Homodyne receiver:** a receiver in which an oscillating valve adjusted to, or locked with, an incoming carrier to enhance its magnitude and improve demodulation.

**Superheterodyne receiver:** a receiver in which the frequency of the incoming signal is reduced in a mixer or frequency changer by heterodyning with another frequency at the local oscillator. (Heterodyning: combining two sinusoidal frequencies radio frequency waves in a non-linear device resulting in sum and difference frequencies).

**Synchrodyne receiver:** a receiver in which a mixing carrier signal is inserted in exact synchronism with the original carrier at the transmitter. Used for the selective detection of signals coded in a certain way.

### Title – H04B3/00

**Line transmission systems**

## Definition statement

*This group covers:*

Transmission systems characterised by the medium being conductors, e.g. wires, *metal cables, waveguides*.

## References relevant to classification in this group

*This group does not cover:*

Alarm systems using power transmission lines G08B25/06  
*Near-field transmission systems, e.g. inductive loop type* H04B5/00

## Informative references

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

*Communication cables or conductors* H01B11/00

Waveguides; Resonators, lines or other devices of the waveguide type H01P

Circuit arrangements for providing remote indication of network condition H02J13/00

## Title – H04B5/00

**Near-field transmission systems, e.g. inductive loop type**

## Definition statement

*This group covers:*

Near-field transmission systems, e.g. inductive loop type.

## References relevant to classification in this group

*This group does not cover:*

Paging systems in general G08B

## Title – H04B7/00

**Radio transmission systems, i.e. using radiation field**

## Definition statement

*This group covers:*

Radio transmission systems, i.e. systems using radiation field.

## References relevant to classification in this group

*This group does not cover:*

*Near-field transmission systems, e.g. inductive loop type*

[H04B5/00](#)

*Suppression or limitation of noise or interference*

[H04B15/00](#)

## Informative references

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

Diversity systems specially adapted for direction finding

[G01S3/72](#)

Systems using reradiation of radio waves, e.g. secondary radar systems; Analogous systems

[G01S13/74](#)

*Aerials*

[H01Q](#)

Selecting arrangements to which subscribers are connected via radio links

[H04Q7/00](#)

## Synonyms and Keywords

*In patent documents the following abbreviations are often used:*

**CDMA** - Code Division Multiple Access

**CDMA – TDMA** – Hybrid Code- Time Division Multiple Access

**FDMA** - Frequency Division Multiple Access

**FDMA - TDMA** - Hybrid Frequency Time Division Multiple Access

**SDMA**- Space Division Multiple Access

**SSMA** - Spread-Spectrum Multiple Access

**TDMA** - Time Division Multiple Access

## Title – [H04B10/00](#)

**Transmission systems employing beams of corpuscular radiation, or electromagnetic waves other than radio waves, e.g. light, infra-red**

## Definition statement

*This group covers:*

Transmission systems employing beams of corpuscular radiation, or electromagnetic waves other than radio waves, e.g. light, infra-red.

## Informative references

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

Optical elements, systems or apparatus G02B

Devices or arrangements, the optical operation of which is modified by changing the optical properties of the medium of the devices or arrangements for control of the intensity, color, phase, polarization or directing of light, e.g. switching, gating, modulating or demodulating; Frequency changing Non-linear optics; Optical analogue/digital converters G02F

Arrangements for handling beams of corpuscular radiation,

e.g. focusing, moderating  
Optical multiplex systems

G21K1/00  
H04J14/00

## Title – H04B11/00

**Transmission systems employing ultrasonic, sonic or infrasonic waves**

## Definition statement

*This group covers:*

Transmission systems employing ultrasonic, sonic or infrasonic waves.

## Informative references

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

Speech analysis or synthesis; Speech recognition G10L

Telephonic communication H04M

Loudspeakers, microphones or like acoustic electromechanical transducers H04R

Stereophonic systems H04S

## Title – H04B13/00

**Transmission systems characterised by the medium used for transmission, not provided for in groups 3/00 to 11/00.**

## Definition statement

*This group covers:*

Transmission systems characterised by the medium used for transmission, not provided for in groups 3/00 to 11/00, e.g. when the medium is the earth, large mass of water thereon, pipe lines, interior ship sections or other massive objects.



## **Title – H04B14/00**

### **Transmission systems not characterised by the medium used for transmission**

#### **Definition statement**

*This group covers:*

Transmission systems characterised by the use of a carrier modulation.

#### **References relevant to classification in this group**

*This group does not covers:*

*Details of transmission systems not characterized by the medium used for transmission*

*H04B1/00*

#### **Informative references**

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

Demodulation or transference of modulation from one carrier to another

*H03D*

Coding, decoding or code conversion, in general

*H03M*

## **Title – H04B15/00**

### **Suppression or limitation of noise or interference**

#### **Definition statement**

This group covers:

Suppression or limitation of noise or interference.

#### **References relevant to classification in this group**

*This group does not covers:*

*Suppression or limitation of noise or interference by means associated with receiver*

*H04B1/10*

## Informative references

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

Structural association with measuring or protective devices or electric components with suppressor for radio interference	<a href="#">H02K11/00</a>
Screening of apparatus or components against electric or magnetic fields	<a href="#">H05K9/00</a>

## Title – [H04B17/00](#)

**Monitoring;  
Testing**

## Definition statement

*This group covers:*

Methods and apparatus for determining the manner in which a transmission system is functioning or the existence, type and location of any trouble.

## References relevant to classification in this group

*This group does not covers:*

<i>Monitoring, testing line transmission systems</i>	<a href="#">H04B3/46</a>
<i>Equipment for monitoring, testing transmission systems employing beams of corpuscular radiation, or electromagnetic waves other than radio waves</i>	<a href="#">H04B10/08</a>

V. Nioukhovsky



IPC/D 049  
ORIGINAL: English/French  
DATE: 09.06.2004

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**COMITÉ D'EXPERTS DE L'UNION DE L'IPC**

**DEFINITION PROJECT FILE**  
**DOSSIER DE PROJET DÉFINITION**

<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>H04L</b>
<b>RAPPORTEUR :</b>	<b>SE</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Rapporteur proposal	Proposition du rapporteur	SE	06.09.2002
2	Comments	Commentaire	JP	11.10.2002
3	Comments	Commentaire	SE	23.10.2002
4	Comments	Commentaire	DE	02.12.2002
5	Comments	Commentaire	GB	24.02.2003
6	Comments	Commentaire	RO	03.03.2003
7	Comments	Commentaire	RO	31.03.2003
8	Rapporteur report	Rapport du rapporteur	SE	15.05.2003
9	Rapporteur proposal	Proposition du rapporteur	SE	15.05.2003
10	Comments	Commentaire	GB	12.09.2003
11	Comments	Commentaire	EP	01.06.2004
12	Rapporteur report	Rapport du rapporteur	SE	08.06.2004
13	Rapporteur proposal	Proposition du rapporteur	SE	08.06.2004
14	Comments	Commentaire	US	08.06.2004

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# Swedish Patent and Registration Office

IPC Definition Project D 049, subclass H04L

June 7th, 2004

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## Rapporteur Report

Comments have been received from **GB** and **EPO**.

**GB** suggested some spelling corrections, which have been changed.

**EPO** suggested changing H04B1/69 (Spread spectrum techniques in general) from an informative reference at main group level (H04L1/00) to a limiting reference at subclass level. However, according to our experts, there are cases when multiple classification could occur. **R** therefore proposes to keep H04B1/69 as an informative reference. Since H04B1/69 also is listed as an informative reference in H04I5/00 and H04L9/00, **R** has moved it to subclass level.

**EPO** has further suggested some changes in the wording of the limiting references, which have been changed accordingly.

### *H04L1/00*

**EPO** proposed some changes in the wording of the informative references, which have been changed accordingly.

### *H04L5/00*

**EPO** suggests moving H04J3/00 (Time-division multiplex systems) from informative to limiting references. However, since time-division multiplexing is part of the group, there is a possibility of double classification and **R** therefore suggests that H04J3/00 is kept as an informative reference. Otherwise, the title should be changed to "Time-division multiplex systems per se".

### *H04L7/00*

**EPO** suggests adding G04G7/00, H04L25 and H04L27 as limiting references. The Swedish experts are not quite sure this is necessary and would like some further reasoning about it. **R** therefore has not added the suggested references yet.

Also, **EPO** suggests adding H04B7/14, H04N7, H04J3, H04B7/26, G06F1, G06F13 and G11C as informative references and suggests changes in the wording of the informative references. **R** agrees and has made the proposed changes.

### *H04L12/00*

**EPO** has suggested changes to the definition statement. Also, **EPO** proposes adding G06F15/173 as a limiting reference. The Swedish experts agree to all changes.

### *H0427/00*

**EPO** proposes changing the definition statement and adding a few abbreviations to the Glossary. **R** agrees and the changes have been made.

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# Swedish Patent and Registration Office

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IPC Definition Project D049, subclass H04L

June 9th, 2004

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## Proposal

### **Title – H04L**

### **Transmission of digital information**

### **Definition statement**

*This subclass covers:*

Transmission of signals having been supplied in digital form, e.g. data transmission, telegraphic communication, or methods or arrangements for monitoring.

As the scope of H04L covers a diversity of subject matter, the user is referred to the IPC definitions for the main groups of H04L.

The following list is intended to assist the user.

#### **Systems:**

characterised by the code used, e.g. Morse or Baudot; details	see definition for groups 15/00, 17/00, 13/00
Step by step systems	see definition for group 19/00
Mosaic printer telegraph systems	see definition for group 21/00
Systems not covered by 15/00 - 21/00	see definition for group 23/00
Baseband systems	see definition for group 25/00
Modulated carrier systems	see definition for group 27/00
Data switching networks	see definition for group 12/00

#### **Arrangements of general application:**

Security: errors; secrecy	see definition for groups 1/00; 9/00
Multiple communications	see definition for groups 5/00; 7/00
Other arrangements, apparatus or systems	see definition for group 29/00

### **Relationship between large subject matter areas**

### **Limiting references**

*This subclass does not cover:*

Arrangements applicable to telegraphic or telephonic communication

H04M

### **Informative references**

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

typewriters	B41J
order telegraphs, fire or police telegraphs	G08B
visual telegraphy	G08B, C
teleautographic systems	G08C
ciphering or deciphering apparatus per se	G09C
coding, decoding or code conversion, in general	H03M
selecting	H04Q
Spread spectrum techniques in general	H04B1/69

## **Special rules of classification**

## **Glossary**

## **Synonyms and Keywords**

### **Title – H04L1/00**

#### **Arrangements for detecting or preventing errors in the information received**

#### **Definition statement**

*This group covers:*

- Arrangements for detecting or preventing errors in the information received

#### **Limiting references**

*This group does not cover:*

#### **Informative references**

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

Computer systems	G06F
Coin-feed or like apparatus with coded identity card or credit card	G07F7/08
Diversity Systems for radio transmission systems	H04B7/02
Error correction or detection in electrical digital data processing	G06F11/08-20

## Glossary

ARQ – Automatic Repeat Request  
FEC – Forward Error Correction

## Title – H04L5/00

### Arrangements affording multiple use of the transmission path

#### Definition statement

*This group covers:*

- Arrangements affording multiple use of the transmission path

#### Limiting references

*These groups do not cover:*

#### Informative references

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

Multiplex communication in general	H04J
Conditioning for two-way transmission in general	H04B3/20
Data switching networks	H04L12/00
Systems using multi-frequency codes	H04L27/26
Time-division multiplex systems	H04J3/00

## Title –H04L7/00

### Arrangements for synchronising receiver with transmitter

#### Limiting references

*These groups do not cover:*

#### Informative references

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

Synchronising in analog television systems	H04N5/04
Synchronising of generators of electronic oscillations or pulses	H03L

Synchronising in satellite networks, see H04B7/14	H04B7/14
Synchronising in digital television systems	H04N7
Synchronising in TDM networks	H04J3
Synchronising in radio or wireless networks	H04B7/26
Synchronising in computers	G06F1
Synchronising in computer bus systems	G06F13
Synchronising in computer memory, e.g RAM	G11C

## **Title – H04L9/00**

### **Arrangements for secret or secure communication**

#### **Definition statement**

*This group covers:*

- Arrangements for secret or secure communication

#### **Limiting references**

*This group does not cover:*

#### **Informative references**

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

Computer systems	G06F
Coin-feed or like apparatus with coded identity card or credit card	G07F7/08
Arrangements in the transmission path	H04B
Diversity reception in general	H04B7/02

#### **Special rules of classification**

In group H 04 L 9/00 to H 04 L 9/32, in the absence of an indication to the contrary, classification is made in the last appropriate place.

#### **Glossary**

RSA – Rivest Shamir Aldeman

## **Title – H04L12/00**

### **Data switching networks**



## Definition statement

*This group covers:*

Transfer of information having been supplied in digital form in data switching networks, e.g.

- Systems characterised by network topology
- Systems in which paths are physically permanent during the communication, e.g. connection oriented communication, virtual circuits.
- Systems in which the path identification data is included in each information unit, e.g. connectionless communication, datagram.
- Hybrid switching systems
- Arrangements for connecting networks having different types of switching systems.
- Topology management and discovery.
- Local area networks and interworking arrangements there between.
- Flow control and congestion control. Traffic scheduling and balancing.
- Routing, pathfinding.
- Access control and network resource allocation.
- Asynchronous transfer mode networks.

## Limiting references

*This group does not cover:*

Interconnection of, or transfer of information or other signals between, G06F13/00  
memories, input/output devices or central processing units

Interprocessor communication using networks G06F15/173

## Informative references

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

Communication control	H04L29/02
Data transfer characterised by protocol	H04L29/06
Multiplexing systems in general	H04J
Selecting equipment	H04Q
Conferences, e.g. video conferences	H04N7/15
Automatic or semi-automatic exchanges	H04M3/00
Manual exchanges	H04M5/00
Telephony conferences arrangements	H04M3/56
Computer aided management of electronic mail	G06F17/60

## Glossary

*In this group, the following terms or expressions are used with the meaning indicated:*

<b>Circuit switching</b>	A system in which a communication path is physically permanent during the communication
<b>Packet switching</b>	A system in which information is divided into discrete data units, characterised by a data payload and an address part known as a header part. The data units are able to travel over different communication paths to the destination.
<b>Message switching systems</b>	A system in which a message is sent into a network with the address of its destination added and it is routed to its destination through the network, e.g. electronic mail network systems
<b>Hybrid switching</b>	Combinations of different switching systems (e.g. packet switching systems and circuit switching systems)
<b>Gateway</b>	Arrangements for connecting between networks having different types of switching systems

## Synonyms and Keywords

Packet - cell, frame

## Title – H04L13/00; 15/00; 17/00

**Apparatus or local circuits for transmitting or receiving dot-and-dash codes;**

**Apparatus or local circuits for transmitting or receiving codes wherein each character is represented by the same number of equal-length code elements;**

**Details of the apparatus or circuits covered by groups H04L15/00 or H04L17/00**

## Definition statement

*These groups cover:*

- Apparatus or local circuits for transmitting or receiving dot-and-dash codes, e.g. Morse code
- Apparatus or local circuits for transmitting or receiving codes wherein each character is represented by the same number of equal-length code elements, e.g. Baudot code
- Details therefor

## Limiting references

*These groups do not cover:*

Teaching apparatus for dot-and-dash codes	G09B
Telegraph tapping keys	H01H21/86

## Informative references

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

Keyboard switches in general	H01H13/70 H03K17/94
------------------------------	------------------------

Electronic distributors in general	H03K17/00
Coding in connection with keyboards or like devices, in general	H03M11/00

## **Title – H04L19/00; 21/00; 23/00**

**Apparatus or local circuits for step-by-step systems;  
Apparatus or local circuits for mosaic printer telegraph systems;  
Apparatus or local circuits for systems other than those covered by groups  
H04L15/00 to H04L21/00**

### **Definition statement**

*These groups cover:*

- Apparatus or local circuits for step-by-step systems
- Apparatus or local circuits for mosaic printer telegraph systems
- Apparatus or local circuits for digital information transmission systems other than those covered by groups H04L15/00 to H04L21/00

### **Limiting references**

*These groups do not cover:*

### **Informative references**

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

## **Title – H04L25/00**

**Baseband systems**

### **Definition statement**

*This group covers:*

Baseband systems, e.g. baseband equalisers.

### **Limiting references**

*This group does not cover:*

### **Informative references**

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

Circuits in general for handling pulses	H03K
Details in line transmission systems in general	H04B3/02
Impedance networks per se	H03H
Induction coil interrupters	H01H51/34
Dynamo-electric generators	H02K
Repeaters in general	H04B
Electronic distributors in general	H03K17/00

## **Title – H04L27/00**

### **Modulated-carrier systems**

#### **Definition statement**

*This group covers:*

Modulated-carrier systems, i.e. modulating and demodulating of signals  
Arrangements for provision and recovery of carriers

#### **Limiting references**

*This group does not cover:*

#### **Informative references**

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

Modulator circuits in general	H03C
Demodulator circuits in general	H03D

#### **Glossary**

OFDM – Orthogonal Frequency Division Multiplex  
PSK – Phase Shift Keying  
QAM – Quadrature Amplitude Modulation  
ASK - Amplitude shift keying  
OOK - on-off keying  
FSK - frequency shift keying  
CPM - continuous phase modulation

## **Title – H04L29/00**

**Arrangements, apparatus, circuits or systems, not covered by a single one of groups H04L1/00 to H04L27/00**

## Definition statement

*This group covers:*

Arrangements, apparatus, circuits or systems, not covered by a single one of groups H04L1/00 to H04L27/00  
e.g.

- Communication characterised by a protocol
- Addressing aspects of data terminals or nodes in networks
- Communication between layers in the OSI model
- Counter-measures when communication fails

## Limiting references

*This group does not cover:*

## Informative references

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

Interconnection of, or transfer of information or other signals between, memories, input/output devices or central processing units	<a href="#">G06F13/00</a>
Control of transmission in radio transmission systems	<a href="#">H04B7/005</a>
Communication control in satellite networks	<a href="#">H04B7/185</a>
Arrangement for preventing error in the information received	<a href="#">H04L1/00</a>
Arrangement for secret or secure communication	<a href="#">H04L9/00</a>
Packet switching systems	<a href="#">H04L12/56</a>
Selecting arrangements to which subscribers are connected via radio links or inductive links	<a href="#">H04Q7/00</a>
Selecting arrangements for multiplex systems	<a href="#">H04Q11/00</a>

<b>United States Patent and Trademark Office</b>	
<b>Topic:</b> Project D049 Subclass H04L	<b>Date:</b> 8 June 2004

US Comments:

Re: SE proposal (Annex 13)

US apologizes for the lateness of these comments, which was caused in part by the difficulty of this particular area. We commend SE for the work done, and EP and the other Offices for their valuable additions.

The US suggestions are directed at improving the wording of the main group definitions.

We note that the subclass definition refers to the main group definitions, and hope that our efforts will help understanding of the particular subject matter included in each main group.

We note that main groups 13/00, 15/00 and 17/00 are grouped together, and also groups 19/00, 21/00 and 23/00, which seems justified by the closely related subject matter. However, we think that the understanding might be improved if the main group symbols were associated with the part of the definition which describes the particular main group. The order of presentation is logical, and the main group numbers should not change it.

#### H04L

1/00 This main group covers process or apparatus for sensing or avoiding errors in the reception of digital information.

5/00 This main group covers process or apparatus for permitting plural use of an information signal path.

7/00 This main group covers process or apparatus which permit a transmitter and receiver to operate in predetermined timed relationship.

9/00 This main group covers processes or apparatus which (a) conceal or obscure intelligible digital information by transforming such information so as to make the information unintelligible to a casual or unauthorized recipient, or (b) extract intelligible digital information from such a concealed or obscured representation.

It is noted that (b) above is based on 9/12 "... receiving encryption devices ..." normally called decryption. If 9/00 is meant to be limited to encryption, then (b) should be eliminated. Whichever is correct should be made clear by the definition. If necessary, a reference to the classification which covers decryption should be supplied.

13/00 This is the residual main group for specific features or subcombinations of the subject matter covered by 15/00 and 17/00.

15/00 This main group covers apparatus or local circuits for originating or receiving a coded set of discrete signals wherein each character is represented by differing length code elements.

17/00 This main group covers apparatus or local circuits for originating or receiving a coded set of discrete signals wherein each character is represented by the same number of equal-length code elements.

19/00 This main group covers apparatus or local circuits for a plurality of switching stages working sequentially and independently of the state of subsequent stages that are responsive to transmitted information pulse signals.

21/00 This main group covers apparatus or local circuits for devices which print composite information from transmitted pulse signals.

- 23/00 This is the main covers apparatus or local circuits for digital information transmission systems other than those covered by groups 15/00 to 21/00.
- 25/00 This main group covers systems where information pulses are transmitted using direct current (DC).
- 27/00 This main group covers systems where information pulses are transmitted using alternating current (AC).

It is noted that ECLA refers to 25/00 as “Direct-current systems” and 27/00 as “AC systems”.

29/00 ???

It is noted that the title of 29/00 suggests that it may be for combinations of systems covered by more than one of groups 1/00 – 27/00. However, the titles and notes of the ECLA subgroups suggest that it is primarily for communications protocols. The ECLA subgroups 29/02, 29/04, 29/10, 29/12 and 29/14 have “[N: contains provisionally no documents]”, which caused US difficulty with the rearrangement. Our efforts to find out what is actually covered by 29/00 were unsuccessful, and we hope that the such information can be produced for this definition project. Perhaps the title of 29/00 will need to be modified to reflect what is actually covered by 29/00.







IPC/D 050  
ORIGINAL: English/French  
DATE: 27.05.2004

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**COMMITTEE OF EXPERTS OF THE IPC UNION**  
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**DEFINITION PROJECT FILE**  
**DOSSIER DE PROJET DÉFINITION**

<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>G01B</b>
<b>RAPPORTEUR :</b>	<b>DE</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Rapporteur proposal	Proposition du rapporteur	DE	14.10.2002
2	Comments	Commentaire	SE	29.10.2002
3	Comments	Commentaire	JP	01.11.2002
4	Rapporteur report	Rapport du rapporteur	DE	18.11.2002
5	Rapporteur proposal	Proposition du rapporteur	DE	18.11.2002
6	Comments	Commentaire	SE	31.01.2003
7	Comments	Commentaire	GB	24.02.2003
8	Comments	Commentaire	RO	03.03.2003
9	Rapporteur report	Rapport du rapporteur	DE	23.09.2003
10	Rapporteur proposal	Proposition du rapporteur	DE	23.09.2003
11	Comments	Commentaire	GB	13.10.2003
12	Comments	Commentaire	SE	30.01.2004
13	Comments	Commentaire	RU	20.04.2004
14	Indication of approval		EP	28.04.2004

<b>DEUTSCHES PATENT- UND MARKENAMT</b> German Patent and Trade Mark Office	Class/Subcl.: <b>G01B</b>
	Date : 22.09.03
<b>Rapporteur Report — D050</b>	

Three comments have been received from SE, UK and RO.

### **Relationship between large subject matter areas**

According to UK's remark R has included the subclass titles of G01C and G01S

### **Limiting References**

G01C and G01S are mentioned both as relationships between large subject areas and limiting references. SE and UK propose to remove G01C and G01S from limiting references.

UK further proposes to insert text "Tool setting or drawing instruments not specially modified for measuring" to the left of B23B 49/00, B23Q 15/00-17/00.

R has included both changes in the proposal.

SE again questions as to whether such long lists of references to application places should really be presented under limiting references. As they mostly refer to places covering applications or adaptations of measuring linear dimensions, R proposes not to remove classes from limiting references.

### **Informative references**

SE and RO propose to add G01M (testing static or dynamic balance of machines or structures; testing structures or apparatus not otherwise provided for).

SE further proposes to add G01F17/00 (Methods or apparatus for determining the capacity of containers or cavities, or the volume of solid bodies) to the section informative references.

R has included both classes to informative references.

### **Glossary**

According to SE's and UK's remark, R has repeated the definition of "propagation effects" in full and not just by reference to some other subclass definition.

All changes have been underscored in order to highlight them.

Stephan Kruij

<b>DEUTSCHES PATENT- UND MARKENAMT</b> German Patent and Trade Mark Office	Subcl.: <b>G01B</b>
	Date : 22.09.03
<b>DE - Proposal — D050</b>	

## **Title – G 01 B**

**MEASURING LENGTH, THICKNESS, OR SIMILAR LINEAR DIMENSIONS;**

**MEASURING ANGLES;**

**MEASURING AREAS;**

**MEASURING IRREGULARITIES OF SURFACES OR CONTOURS**

## **Definition statement**

*This subclass covers:*

Instruments and methods for measuring

linear dimensions of objects such as length, thickness, width, height, depth, diameter, coordinates of points of objects, distance or clearance between spaced objects or spaced apertures,

angles or tapers,

alignment of axes,

areas,

contours, curvatures, or profiles,

roughness or irregularities of surfaces,

deformation in a solid.

## **Relationship between large subject matter areas**

The general subject matters of measuring linear dimensions, distances, or angles is covered by several subclasses besides [G01B](#):

[G01C](#) Measuring distances, levels, or bearings, surveying; navigation; gyroscopic instruments, photogrammetry

[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

When [propagation effects](#) of waves are relevant for such measurements [G01S](#) is in general the appropriate subclass.

For measuring ground distance between points in geodesy, surveying, and navigation [G01C](#) is the appropriate subclass when no radio waves are used or when [propagation effects](#) of waves other than radio waves are not relevant.

## Limiting references

*This subclass does not cover:*

Measuring human body, see the relevant places, where such exist, e.g.	<a href="#">A41H 1/00</a> <a href="#">A43D 1/02</a> <a href="#">A61B 5/103</a>
Measuring appliances combined with walking-sticks	<a href="#">A45B 3/08</a>
Measuring methods or devices specially adapted for metal-rolling mills	<a href="#">B21B 38/00</a>
Measuring, gauging or adjusting equipment for machines for working metal or other material	<a href="#">B23B 25/06</a>
<u>Tool setting or drawing instruments not specially modified for measuring</u>	<a href="#">B23B 49/00</a> <a href="#">B23Q 15/00</a> to 17/00
Measuring or gauging equipment specially adapted for grinding or polishing operations	<a href="#">B24B 33/06</a> <a href="#">B24B 49/00</a>
Combinations of measuring devices with writing-implements	<a href="#">B43K 29/08</a>
Devices for metering predetermined lengths of running material	<a href="#">B65H 61/00</a>
Measuring devices for spinning or twisting machines	<a href="#">D01H13/32</a>
Measuring devices for determining the length of threads in sewing machines	<a href="#">D05B 45/00</a>
Devices for checking, measuring, recording existing surfacing of roads or like structures, e.g. profilographs	<a href="#">E01C 23/01</a>
Measuring diameter of boreholes or wells	<a href="#">E21B47/08</a>
Photogrammetry	<a href="#">G01C 11/00</a>
Investigating or analysing particle size, investigating or analysing surface area of porous material	<a href="#">G01N 15/00</a>
Measuring length or roll diameter of film in cameras or projectors	<a href="#">G03B 1/60</a>
Methods or arrangements for converting the position of a manually-operated writing or tracing member into an electrical signal	<a href="#">G06K 11/00</a>
Measuring elapsed travel of recording medium in recording or playback equipment, sensing diameter of record in autochange gramophones	<a href="#">G11B</a>
Details of scanning-probe apparatus, in general	<a href="#">G12B 21/00</a>
Means structurally associated with electric rotary current collectors for indicating brush wear	<a href="#">H01R 39/58</a>
Indicating consumption of electrodes in arc lamps	<a href="#">H05B 31/34</a>

## Informative references

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

Sorting according to dimensions	<a href="#">B07</a>
Drawing instruments not specifically adapted for measuring	<a href="#">B43L</a>
Transducers not specially adapted for a specific variable	<a href="#">G01D 5/00</a>
<u>Methods or apparatus for determining the capacity of containers or cavities, or</u>	<a href="#">G01F 17/00</a>

the volume of solid bodies

Measuring force or stress, in general G01L 1/00

Investigating or analysing surface structures in atomic ranges using scanning-probe techniques G01N 13/00

testing static or dynamic balance of machines or structures; testing structures or apparatus not otherwise provided for G01M

Geophysical measuring G01V

Combinations of measuring devices with means for controlling or regulating G05

## Special rules of classification

In this subclass, the groups are distinguished by the means of measurement which is of major importance. Thus the mere application of other means for giving a final indication does not affect the classification.

Machines operated on similar principles to the hand-held devices specified in this subclass are classified with these devices.

## Glossary

*In this subclass, the following terms or expressions are used with the meaning indicated:*

**propagation effects** are relevant if the outcome of a measurement depends on the actual value of a physical quantity characterising the propagation of the wave, i.e. its wavelength, frequency, velocity, or phase. The mere presence or direction of a wave are not considered a propagation effect or to contribute to a propagation effect. To put it in another way, propagation effects are irrelevant, if the radiation may be looked upon as a beam of radiation whose wave nature can be ignored. Examples of measurements where propagation effects are relevant include e.g. measurements of propagation time, phase difference, phase delay, measurements using the Doppler effect, or interference.

## Synonyms and Keywords

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# Swedish Patent and Registration Office

IPC Definition Project D 050, subclass G01B

January 30th, 2004

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## COMMENTS relating to Annex 10

We propose that “limiting references” is changed to “Examples of places where the subject matter of this subclass is covered when specially adapted, used for a particular purpose, or incorporated in a larger system” as suggested by “Guidelines for drafting classification definitions”, since these references appear to be to application-oriented places.

Apart from that we agree to the proposal.

Nina Ödling

**FEDERAL INSTITUTE OF INDUSTRIAL PROPERTY**

<b>RU comments</b>	
<b>Project : D 050</b>	<b>Date: 15.04.2004</b>
<b>Class/Subclass : C01B</b>	

We approve Rapporteur proposal (An 10). We believe that the following informative reference would be useful for searching:

Marking textile materials; Marking in  
combination with metering or inspecting

D06H 1/00

Zoya Voytsekhovskaya







IPC/D 051  
ORIGINAL: English/French  
DATE: 27.05.2004

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**DEFINITION PROJECT FILE**  
**DOSSIER DE PROJET DÉFINITION**

<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>G01C</b>
<b>RAPPORTEUR :</b>	<b>DE</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Rapporteur proposal	Proposition du rapporteur	DE	11.10.2002
2	Comments	Commentaire	JP	01.11.2002
3	Rapporteur report	Rapport du rapporteur	DE	18.11.2002
4	Comments	Commentaire	SE	31.01.2003
5	Comments	Commentaire	GB	24.02.2003
6	Comments	Commentaire	RO	03.03.2003
7	Rapporteur report	Rapport du rapporteur	DE	17.10.2003
8	Rapporteur proposal	Proposition du rapporteur	DE	17.10.2003
9	Indication of approval		GB	16.02.2004
10	French version	Version française	CH	17.05.2004

<b>DEUTSCHES PATENT- UND MARKENAMT</b> German Patent and Trade Mark Office	Class/Subcl.: <b>G01C</b>
	Date : 15.10.03
<b>Rapporteur Report — D051</b>	

Three comments have been received from SE, UK and RO.

### **Definition Statement**

According to the comment of UK, R has added examples of "variables of movement".

### **Relationship between large subject matter areas**

According to UK's proposal R has included the subclass titles of G01B, G01P and G01S.

### **Limiting References**

R agrees with SE to remove E21B 47/00 from subclass level and to move F41G 3/00 and G07B 13/00 to informative references.

As the titles of G01B and G01S are inserted in the relationships between large subject areas, R has removed G01B and G01S from the limiting references, as proposed by UK.

### **Informative references**

As the title of G01P is inserted in the relationships between large subject areas, R has removed G01P from the informative references, as proposed by UK.

R agrees with UK to refer more specifically to G01R 33/00 instead of G01R.

UK proposes further to add the following references: G03B 13/20, G03B 37/00, B63B 49/00, and B63B 51/00. RO proposes to add G08G 1/0968. Except for B63B 49/00, which was already included, R has added these references.

### **Glossary**

According to SE's and UK's remark, R has repeated the definition of "propagation effects" in full and not just by reference to some other subclass definition.

All changes have been underscored in order to highlight them.

Stephan Kruij

<b>DEUTSCHES PATENT- UND MARKENAMT</b> German Patent and Trade Mark Office	Subcl.: <b>G01C</b>
	Date : 16.10.03
<b>DE - Proposal — D051</b>	

## **Title - G01C**

**MEASURING DISTANCES, LEVELS, OR BEARINGS;**

**SURVEYING;**

**NAVIGATION;**

**GYROSCOPIC INSTRUMENTS;**

**PHOTOGRAMMETRY**

## **Definition statement**

*This subclass covers:*

Compasses in general;

Gyroscopes and other turn-sensitive devices, e.g. optical gyrometers using the Sagnac effect;

Optical rangefinders;

Instruments and methods for

tracing profiles,

photogrammetry,

surveying,

nautical, aeronautical, cosmonautical, or geodetical measuring of distances, levels, heights, angles, inclinations, bearings,

navigation,

measuring two or more variables of movement, e.g. distance, speed, acceleration;

Manufacturing, calibrating, maintaining such instruments.

## **Relationship between large subject matter areas**

The general subject matters of determining length, distance, height, level, direction, movement or angle is covered by several subclasses besides **G01C**:

[G01B measuring length, thickness, or similar linear dimensions, measuring angles; measuring areas; measuring irregularities of surfaces or contours \(of individual objects\)](#)

[G01P measuring linear or angular speed, acceleration, deceleration, or shock; indicating presence, absence, or direction, of movement](#)

[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 \(by use of \[propagation effects\]\(#\) - e.g. Doppler effect, propagation time -\)](#)

When [propagation effects](#) of waves are relevant for such measurements [G01S](#) is in general the appropriate subclass.

For measuring ground distance between points in geodesy, surveying, and navigation or for measuring distance traversed on the ground by any moving objects including e. g. vehicles, or persons [G01C](#) is the appropriate subclass when no radio waves are used or when [propagation effects](#) of waves other than radio waves are not relevant.

## Limiting references

*This subclass does not cover:*

Measuring liquid level [G01F](#)

## Informative references

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

Arrangements of nautical instruments or navigational aids for ships	<a href="#">B63B 49/00</a>
<a href="#">Marking of navigation routes for ships other than with buoys</a>	<a href="#">B63B 51/00</a>
Arrangements or adaptations of instruments for aircrafts	<a href="#">B64D 43/00</a>
<a href="#">Aiming means with range finders</a>	<a href="#">F41G 3/00</a>
Measuring speed by using the gyroscopic effect	<a href="#">G01P 9/00</a>
Measuring acceleration, deceleration, shock by making use of gyroscopes	<a href="#">G01P 15/14</a>
<a href="#">Arrangements or instruments for measuring magnetic variables (Measuring intensity or direction of magnetic fields, other than the earth's field, in general)</a>	<a href="#">G01R 33/00</a>
Measuring magnetic field characteristics of the earth, e.g. declination, deviation for purposes other than navigation, surveying	<a href="#">G01V 3/00</a>
<a href="#">Rangefinders coupled with focussing arrangements of cameras</a>	<a href="#">G03B 13/20</a>
Stereoscopic photography	<a href="#">G03B 35/00</a>
<a href="#">Photographing extended surfaces, e.g. Surveying cameras</a>	<a href="#">G03B 37/00</a>
<a href="#">Taximeter</a>	<a href="#">G07B 13/00</a>
Registering or indicating the working of vehicles	<a href="#">G07C 5/00</a>
<a href="#">Traffic control systems for road vehicles involving transmission of navigation instructions to the vehicle</a>	<a href="#">G08G 1/0968</a>
Maps, globes	<a href="#">G09B</a>
Models or demonstration devices for surveying	<a href="#">G09B 25/06</a>

## Special rules of classification

### Glossary

*In this subclass, the following terms or expressions are used with the meaning indicated:*

- navigation** means determining the position and course of land vehicles, ships, aircraft, and space vehicles
- propagation effects** are relevant if the outcome of a measurement depends on the actual value of a physical quantity characterising the propagation of the wave, i.e. its wavelength, frequency, velocity, or phase. The mere presence or direction of a wave are not considered a propagation effect or to contribute to a propagation effect. To put it in another way, propagation effects are irrelevant, if the radiation may be looked upon as a beam of radiation whose wave nature can be ignored. Examples of measurements where propagation effects are relevant include e.g. measurements of propagation time, phase difference, phase delay, measurements using the Doppler effect, or interference.

### Synonyms and Keywords

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**UK Patent Office**

**Date: 13 February 2004**

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**Comments on Project D051 , Subclass G01C**

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**GB Comments on Rapporteur Proposal Dated 16th October 2003 (Annex 8)**

We approve the definition project proposal.

Emma Porter

IPC Revision WG – Definition Project CH Version française	Projet: D051
	Class/ <a href="#">subclass</a> : G01C
	Date : 27/05/04

**Titre - [G01C](#)****Mesure des distances, des niveaux ou des relèvements;  
Géodésie;  
Navigation;  
Instruments gyroscopiques;  
Photogrammétrie****Énoncé de la définition**

*La présente sous-classe couvre:*

**Les compas en général**

**Les gyroscopes ou autres dispositifs sensibles à la rotation, p. ex. gyromètres optiques utilisant l'effet Sagnac**

**Les télémètres optiques****Les instruments et procédés pour :**

**le tracé de profils**

**la photogrammétrie**

**les relèvements**

**les mesures nautiques, aéronautiques ou astronautiques**

**les mesures géodésiques des distances, des niveaux, des hauteurs, des angles, des inclinaisons ou des relevés**

**la navigation**

**la mesure de deux ou plusieurs variables du mouvement, p.ex. la distance, la vitesse, l'accélération**

**La fabrication, l'étalonnage, la maintenance de tels instruments**

## Liens entre secteurs d'une large portée

*La matière générale concernant la détermination d'une longueur, d'une distance, d'une hauteur, d'un niveau, d'une direction, d'un mouvement ou d'un l'angle est couverte par différentes sous-classes autres que [G01C](#) :*

*[G01B](#): mesure de la longueur, de l'épaisseur ou de dimensions linéaires analogues; mesure des angles; mesure des superficies; mesure des irrégularités des surfaces ou contours (d'objets individuels)*

*[G01P](#): mesure des vitesses linéaires ou angulaires, de l'accélération, de la décélération ou des chocs; indication de la présence, de l'absence ou de la direction d'un mouvement*

*[G01S](#): détermination de la direction par radio; radio-navigation; détermination de la distance ou de la vitesse en utilisant des ondes radio; localisation ou détection de la présence en utilisant la réflexion ou la reradiation d'ondes radio; dispositions analogues utilisant d'autres ondes (utilisant des effets de propagation, p.ex. l'effet Doppler, le temps de propagation)*

*Si les effets de propagation d'ondes sont déterminants pour ces mesures, [G01S](#) est en général la sous-classe appropriée.*

*Pour la mesure de la distance au sol, en géodésie, pour la topographie et pour la navigation, ou pour la mesure de la distance parcourue sur le sol par un mobile quelconque, y compris p.ex. par des véhicules ou des personnes, [G01C](#) est la sous-classe appropriée si aucune onde radio n'est utilisée ou si les effets de propagation d'ondes autres que les ondes radio ne sont pas déterminants.*

## Renvois influençant le classement dans la présente sous-classe

*La présente sous-classe ne couvre pas:*

mesure du niveau des liquides [G01F](#)

## Renvois indicatifs

*Il est important de tenir compte des endroits suivants, qui peuvent présenter un intérêt pour la recherche:*

Aménagements relatifs aux instruments nautiques ou d'aide à la navigation [B63B 49/00](#)

Marquage des routes de navigation autre que par bouées [B63B 51/00](#)

Aménagements ou adaptations des instruments pour l'aviation [B64D 43/00](#)

Dispositifs de pointage avec télémètre [F41G 3/00](#)

Mesure de la vitesse en utilisant l'effet gyroscopique [G01P 9/00](#)



Mesure de l'accélération, de la décélération, des chocs, en utilisant un gyroscope	<a href="#">G01P 15/14</a>
Dispositions ou appareils pour la mesure des grandeurs magnétiques (mesure de l'intensité ou de la direction des champs magnétiques, autres que le champ terrestre, en général)	<a href="#">G01R 33/00</a>
Mesure des caractéristiques du champ magnétique de la terre, p.ex. de la déclinaison, de la déviation à d'autres fins que la navigation ou la géodésie	<a href="#">G01V 3/00</a>
Télémetros couplés avec dispositifs de mise au point d'appareils photographiques	<a href="#">G03B 13/20</a>
Photographie stéréoscopique	<a href="#">G03B 35/00</a>
Photographie de surfaces étendues, p.ex. pour la géodésie	<a href="#">G03B 37/00</a>
Taximètres	<a href="#">G07B 13/00</a>
Enregistrement ou indication du fonctionnement de véhicules	<a href="#">G07C 5/00</a>
Systèmes de commande du trafic pour véhicules routiers impliquant la transmission d'indications de navigation au véhicule	<a href="#">G08G 1/0968</a>
Cartes, globes	<a href="#">G09B</a>
Modèles ou dispositifs pour la démonstration en géodésie	<a href="#">G09B 25/06</a>

## Règles particulières de classement dans la présente sous-classe

### Glossaire

*Dans la présente sous-classe les termes ou expressions suivants ont la signification ci-dessous indiquée:*

<b>Navigation</b>	détermination de la position et de la route des véhicules terrestres, des bateaux, des avions et des véhicules spatiaux
<b>Effets de propagation</b>	Ceux-ci sont déterminants si le résultat d'une mesure dépend de la valeur actuelle d'une grandeur physique caractérisant la propagation de l'onde, p.ex. sa longueur d'onde, sa fréquence, sa vitesse de propagation ou sa phase. La seule présence d'une onde ou sa direction de propagation ne sont pas considérés être un effet de propagation ni contribuer à un tel effet. En d'autres termes, les effets de propagation ne sont pas déterminants si la radiation peut être considérée comme un faisceau de radiation dont la nature ondulatoire peut être ignorée. Des exemples de mesures pour lesquelles les effets de propagation sont déterminants sont p.ex. les

mesures du temps de propagation, le déphasage, les mesures utilisant l'effet Doppler ou l'interférence.

### **Synonymes et mots clés**



IPC/D 052  
ORIGINAL: English/French  
DATE: 27.05.2004

**WORLD INTELLECTUAL PROPERTY ORGANIZATION**  
**ORGANISATION MONDIALE DE LA PROPRIÉTÉ INTELLECTUELLE**  
GENEVA/GENÈVE

**COMMITTEE OF EXPERTS OF THE IPC UNION**  
**COMITÉ D'EXPERTS DE L'UNION DE L'IPC**

**DEFINITION PROJECT FILE**  
**DOSSIER DE PROJET DÉFINITION**

<b>PROPOSAL BY :</b> <b>PROPOSITION DE :</b>	<b>WG</b>	<b>IPC AREA:</b> <b>DOMAINE DE LA CIB :</b>	<b>G11B</b>
<b>RAPPORTEUR :</b>	<b>JP</b>	<b>TECHNICAL FIELD :</b> <b>DOMAINE TECHNIQUE :</b>	<b>E</b>

<b>ANNEX/ ANNEXE</b>	<b>CONTENT/CONTENU</b>		<b>ORIGIN/ ORIGINE</b>	<b>DATE</b>
1	Rapporteur proposal	Proposition du rapporteur	JP	11.03.2003
2	Comments	Commentaire	SE	26.08.2003
3	Comments	Commentaire	CA	04.09.2003
4	Comments	Commentaire	GB	12.09.2003
5	Rapporteur proposal	Proposition du rapporteur	JP	17.11.2003
6	Rapporteur proposal	Proposition du rapporteur	JP	17.11.2003
7	Indication of approval		GB	16.02.2004

## **Rapporteur Report**

Comments on Annex 1 were received from CA, GB and SE.

### **1. CA comments of Annex 3 on “Limiting references”**

It is considered reasonable to add a main group G03B 31/00 into “Limiting reference” and R modified Annex 1 as such. However, R changed the proposed title of 31/00 into “Associated working of cameras or projectors with sound-recording or -reproducing means” based on the IPC 7.

### **2. GB comments of Annex 4 on “Relationship between large subject matter areas”**

#### **B32B, G01R and G09G**

It is preferable to include the subclasses B32B, G01R and G09G in “Informative references” rather than “Relationship between large subject matter areas” since any special classification rules are not provided between these subclasses and G11B, and R modified the Annex 1 as such.

#### **G01D**

There is no special classification rule between G01D and G11B, and R still believes G01D 9/00 should be placed in “Limiting references” as it was mentioned in the Annex 1.

#### **G03C, G03G, G03H, G06K and H03M**

Special classification rules are not provided between these subclasses and G11B, and “Informative references” would be preferable to these subclasses as R proposed in the Annex 1.

#### **H04R**

Subclass H04R would be preferred to be sustained in “Limiting references” as R proposed in Annex 1 since a special classification rule is not defined between this subclass and G11B.

### **3. GB comments of annex 4 on “Informative reference”**

#### **Additions of H01F 13/00, H01F 1/00 and H01F 41/14**

R prefers the subclass H01F in “Informative reference” as it was proposed in the Annex 1 to the groups H01F 13/00, H01F 1/00 and H01F 41/14, since R thinks other groups under H01F, such as H01F 10/00 “Thin magnetic films,” should be included in “informative reference”.

#### **G02F 1/29**

R thinks referring to the subclass G02F is preferable as proposed in the Annex 1 to referring to the subgroups. Because generic concept “Devices or arrangements for the control of the intensity, colour, phase, polarisation or direction of light” is more appropriate as the description in “Limiting references” .

#### **G65H 75/00 and B65D 85/00**

As pointed out by GB, main groups G65H 75/00 and B65D 85/00 are seemed to be necessary in this section, and R modified the Annex 1 as such.

### **4. GB Comments of annex 4 on “Repeated references”**

GB pointed out that the references to H04N 5/76 and H04N 9/79 were present in both “Informative references” and “References relevant to classification in the subclass” . Because the references from G11B to H04N 5/76 and H04N 9/79 are deemed to be those from a function-oriented place to application-oriented place, R prefers to place these references in “Limiting references” and deleted them from “Informative references” as GB pointed out.

### **5. SE Comments of annex 2**

**Examples of G11B 9, G11B 11 and G11B 13**

In the light of the respective titles: G11B 9 “Recording or reproducing using a method or means not covered by one of the main groups;” G11B 11 “Recording on, or reproducing from, the same record carrier wherein for these two operations the methods or means are covered by different main groups of groups;” and G11B 13 “Recording simultaneously or selectively by methods or means covered by different main groups; Record carriers therefor; Reproducing simultaneously or selectively therefrom,” it is possible that these main groups have any relations each other. For example, it is highly expected that classification places relating to the recording and/or reproducing using the cited “near-field interaction” might be subdivided under the respective main groups.

R is afraid that having a very clear definition with examples would require reviewing the definition of each main group and creating detailed subclass definitions considering the details of each main group, which all seems to be unnecessary at present.

On this matter, opinions of other offices or member states have not been submitted yet and further comments are invited. Additional considerations might be necessary if many offices or member states require clarifications of the relation between these main groups. Concrete proposals are also welcomed.

**G11B 23 and G11B 33**

Main groups G11B 23 and G11B 33 include some places relating to “containers” such as G11B 23/02 and G11B 33/04. R believes it is unnecessary to provide further clarifications of the subclass definitions because a reference to G11B 33/04 is indicated in the wording of G11B 23/02. Further comments on this matter are invited and concrete proposals are welcomed of course.

In addition, R has proposed B65D 85 as one of “Informative references” in the Annex 1.

## Title - G11B

### Information storage based on relative movement between record carrier and transducer

#### Definition statement

*This subclass covers:*

Recording or playback of information by relative movement between a record track and a transducer, the transducer directly producing, or being directly actuated by, modulation in the track being recorded or played-back, and the extent of modulation corresponding to the signal being recorded or played-back;

Apparatus and machines for recording or playback, and parts thereof, such as heads;  
Record carriers for use with such apparatus and machines;  
Associated working of other apparatus with such apparatus and machines.

#### Relationship between large subject matter areas

#### References relevant to classification in this subclass

*This subclass does not cover:*

Recording measured values in a way that does not require playback through a transducer	G01D 9/00
Transferring data from one type of record carrier to another type of record carrier	G06K 1/18
Printing of data from record carriers	G06K 3/00
Guiding cards or sheets	G06K13/00
Arrangements for producing a permanent visual presentation of the output data	G06K15/00
Record carriers for use with machines and with at least a part designed to carry digital markings	G06K19/00

Details of scanning-probe apparatus	G12B21/00
Thin magnetic films	H01F10/00
Circuits for coupling output of reproducer to radio receiver	H04B 1/20
Loudspeakers, microphones, gramophone pick-ups or like acoustic electromechanical transducers or circuits therefor	H04R

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

Associated working of cameras or projectors with sound-recording or -reproducing means	G03B31/00
Substation equipment for recording telephonic conversations or messages for absent subscribers	H04M 1/65
Television signal recording	H04N 5/76 , H04N 9/79

## Informative references

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

Working of plastics; working of substances in a plastic state in general	B29
Layered products in general	B32B
Thermography	B41M 5/26
Containers, packaging elements or packages, specially adapted for particular articles or materials	B65D85/00
Storing webs, tapes or filamentary material in general	B65H75/00
Coating metallic material; coating material with metallic material; coating by vacuum evaporation, by sputtering, by ion implantation or by chemical vapour deposition, in general	C23C

Measuring electric or magnetic properties	G01R
Devices or arrangements for the control of the intensity, colour, phase, polarization or direction of light	G02F
Photosensitive materials or processes for photographic purposes	G03C
Electrography; electrophotography; magnetography	G03G
Holographic processes or apparatus	G03H
Electric digital data processing	G06F
Recognition of data; presentation of data; record carriers; handling record carriers	G06K
Arrangements or circuits for control of indicating devices using static means to present variable information	G09G
Static stores	G11C
Selection of magnetic materials; thin magnetic films	H01F
Semiconductor lasers	H01S 5/00
Coding, decoding or code conversion, in general	H03M

## Special rules of classification within this subclass

### Glossary of terms

*In this subclass, the following terms or expressions are used with the meaning indicated:*

**"record carrier"** means a body, such as a cylinder, disc, card, tape, or wire, capable of permanently holding information, which can be read-off by a sensing element movable relatively to the record carrier.

**"head"** includes any means for converting sinusoidal or non-sinusoidal electric wave-forms into variations of the physical condition of at least the adjacent surface of the record carrier, or vice versa.



**"near-field interaction"** means a very short distance interaction using scanning-probe techniques, e.g. quasi- contact or evanescent contact between head and record carrier.

## **Synonyms and Keywords**

In patent documents the terms "head" and "pickup" are often used as synonyms.