EUROPEAN PATENT OFFICE
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 1543

DATE: JANUARY 1, 2024

PROJECT MP12068

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

Action	**Subclass**	**Group(s)**
SCHEME:		
Titles Changed:	B61L	SUBCLASS
	B61L	1/00, 1/14
	B61L	3/00, 3/10, 3/18
	B61L	15/00, 15/0018
	B61L	23/00, 23/34
	B61L	25/00, 25/02, 25/023
	B61L	27/16, 27/20, 27/57
	B61L	29/18, 29/246
DEFINITIONS:		
Definitions Deleted: (no frozen (F) symbol definitions should be deleted)		
Definitions New:		
Definitions Modified:	B61L	SUBCLASS
	B61L	1/00
	B61L	23/00

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

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

1. CLASSIFICATION SCHEME CHANGES
   - ☒ A. New, Modified or Deleted Group(s)
   - ☐ B. New, Modified or Deleted Warning(s)
   - ☐ C. New, Modified or Deleted Note(s)
   - ☐ D. New, Modified or Deleted Guidance Heading(s)
2. DEFINITIONS
   - ☒ A. New or Modified Definitions (Full definition template)
   - ☐ B. Modified or Deleted Definitions (Definitions Quick Fix)
3. ☐ REVISION CONCORDANCE LIST (RCL)
4. ☐ CHANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL)
5. ☐ CHANGES TO THE CROSS-REFERENCE LIST (CRL)

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1. CLASSIFICATION SCHEME CHANGES

A. New, Modified or Deleted Group(s)

SUBCLASS B61L - GUIDING RAILWAY TRAFFICENSURING THE SAFETY OF RAILWAY TRAFFIC power supply lines for electrically-propelled vehicles B60M; vehicle signalling in general B60Q; brakes or auxiliary equipment B61H, B61K; point or crossing construction E01B; insulated rail joints E01B 11/54; optical devices in general G02; controlling in general G05; electric communication technique H04

Type*	Symbol	Indent Level Number of dots (e.g. 0, 1, 2)	Title "CPC only" text should normally be enclosed in {curly brackets}**	Transferred to#
M	B61L	subclass	GUIDING RAILWAY TRAFFIC; ENSURING THE SAFETY OF RAILWAY TRAFFIC (brakes or auxiliary equipment B61H, B61K; point or crossing construction E01B)	
M	B61L1/00	0	Devices along the route controlled by interaction with the vehicle or train (detonators B61L 5/20; operation of points or signals by passage of the vehicle B61L 11/00, B61L 13/00; operation of gates, or gates and signals, by approaching vehicle B61L 29/18)	
M	B61L 1/14	1	Devices for indicating the passing of the end of the vehicle or train	
M	B61L 3/00	0	Devices along the route for controlling devices on the vehicle or train, e.g. to release brake or to operate a warning signal	
M	B61L 3/10	3	using current passing between devices along the route and devices on the vehicle or train	
M	B61L 3/18	2	using electric current passing between devices along the route and devices on the vehicle or train	
M	B61L15/00	0	Indicators provided on the vehicle or train for signalling purposes	
M	B61L 15/0018	1	{Communication with or on the vehicle or train}	
M	B61L 23/00	0	Control, warning or like safety means along the route or between vehicles or trains	
M	B61L 23/34	1	for indicating the distance between vehicles or trains by the transmission of signals therebetween	

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Type*	**Symbol**	**Indent Level Number of dots (e.g. 0, 1, 2)**	**Title "CPC only" text should normally be enclosed in {curly brackets}****	**Transferred to#**
M	B61L 25/00	0	Recording or indicating positions or identities of vehicles or trains or setting of track apparatus	
M	B61L 25/02	1	Indicating or recording positions or identities of vehicles or trains	
M	B61L 25/023	2	{Determination of driving direction of vehicle or train}	
M	B61L 27/16	2	Trackside optimisation of vehicle or train operation	
M	B61L 27/20	1	Trackside control of safe travel of vehicle or train, e.g. braking curve calculation	
M	B61L 27/57	2	for vehicles or trains, e.g. trackside supervision of train conditions	
M	B61L 29/18	2	Operation by approaching rail vehicle or train	
M	B61L 29/246	2	{Signals or brake- or lighting devices mounted on the road vehicle and controlled from the vehicle or train}	

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

NOTES:

- **No {curly brackets} are used for titles in CPC only subclasses, e.g. C12Y, A23Y; 2000 series symbol titles of groups found at the end of schemes (orthogonal codes); or the Y section titles. The {curly brackets} are used for 2000 series symbol titles found interspersed throughout the main trunk schemes (breakdown codes).
- U groups: it is obligatory to display the required "anchor" symbol (U group), i.e. the entry immediately preceding a new group or an array of new groups to be created (in case new groups are not clearly subgroups of C-type groups).Always include the symbol, indent level and title of the U group in the table above.
- All entry types should be included in the scheme changes table above for better understanding of the overall scheme change picture. Symbol, indent level, and title are required for all types .
- "Transferred to" column must be completed for all C, D, F, and Q type entries. F groups will be deleted once reclassification is completed.
- When multiple symbols are included in the "Transferred to" column, avoid using ranges of symbols in order to be as precise as possible.
- For administrative transfer of documents, the following text should be used: "< administrative transfer to XX>", "<administrative transfer to XX and YY simultaneously>", or "<administrative transfer to XX, YY, ...and ZZ simultaneously>" when administrative transfer of the same documents is to more than one place.
- Administrative transfer to main trunk groups is assumed to be the source allocation type, unless otherwise indicated.
- Administrative transfer to 2000/Y series groups is assumed to be "additional information".
- If needed, instructions for allocation type should be indicated within the angle brackets using the abbreviations "ADD" or "INV": <administrative transfer to XX ADD> , <administrative transfer to XX INV>, or < administrative transfer to XX ADD, YY INV, ... and ZZ ADD simultaneously>.
- In certain situations, the "D" entries of 2000-series or Y-series groups may not require a destination ("Transferred to") symbol, however it is required to specify "<no transfer>" in the "Transferred to" column for such cases.

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- For finalisation projects, the deleted “F” symbols should have <no transfer> in the “Transferred to” column.
- For more details about the types of scheme change, see CPC Guide.

2. A. DEFINITIONS (modified)

B61L

Replace: The ENTIRE Definition for B61L with the updated Definition below.

Definition statement

This place covers:

Means for controlling and safeguarding railway vehicle traffic, including apparatus and processes that are specially adapted, or intended to be utilised, for the following categories related to railway vehicle traffic:

- devices along the railway route which are controlled by or from the moving vehicle or train, such as signals, switches and gates;

- devices along the railway route which control devices on the moving vehicle or train, such as speed control and braking;

- devices along the railway route for controlling the movement of the train, such as switches and switching systems, train stop and speed control mechanisms (the devices may include safety means and be automatically actuated);

- operating mechanisms for devices along the railway route, such as switches, signals and scotch-blocks (the operating mechanisms can be directly or remotely controlled);

- safety devices used to prevent train accidents caused by mechanical or operator error, such as derailing switches and blocks;

- safety means for controlling railroad crossing traffic;

- signals and indicators, both visual and audible, for communicating information about the train, railway, train operator or railway equipment;

- illumination means specially adapted to illuminate railway points, form signals or gates.

All means for guiding railway vehicles through the railway network in a safe and efficient manner.

In particular it relates to:

- railway signalling in general, which includes for example traditional light and form signals, cab signalling, communication based train control and special train control systems as, e.g. the European Train Control System [ETCS] or the German continuous inductive train control "Linienzugbeeinflussung [LZB]". This section includes intermitted or continuous control of vehicles and means on the trackside along the rails or in control location or onboard railway vehicles;
- means on vehicles or on the railway track to control the speed and braking according to the signalling rules or information, e.g. braking curve calculation or supervision;
- optimization of the train running on the vehicle or in track side control centers;
- Railway guidance in regard to safe setting and release of routes through the network, e.g. interlocking devices, switch drives and control and all related field elements, also including train stops and means to control the speed of the train. This includes not only electrical elements, but also all mechanical or hydraulic parts to control the switch movements, position or locking;
- railway form or light signals along the track, also, e.g. with details on optical systems or monitoring functions;
- communication means in the above mentioned context, when it relates to railway safety and guidance, like, e.g. radio transmission systems between track and train, structure of radio communication networks if used in the railway signalling and guidance, traditional voice train radio to operators, Wi-Fi® or Bluetooth® technologies;
- communication means onboard a train also for other purposes, like passenger information, e.g. train bus systems, radio, Wi-Fi®;
- train and track diagnostics, also including the supervision of the track from the train or trackside with sensors being placed onboard the train on along the track, when related to the safety of railway traffic, e.g. broken rail detection, vibration sensors, brake pipe pressure detection;
- train data handling onboard a railway vehicle or in track side control centers;
- Control and supervision of yards or maintenance areas including hump controls, switching system for wagon classification yards etc;
- warning devices for warnings about train approach, e.g. at platforms or crossings;
- Railway traffic separation, including all blocking means, including fixed block or moving block techniques. It also comprises non-safe procedures like token systems or voice radio control procedures of trains;
- train positioning systems, both on the track or on the train, e.g. GPS navigation used for this purpose, track circuits or axle counters;

- railway guidance in general, which includes disposition or regulation means, time tables and their generation, supervision or optimization together with all means on the trackside or onboard the vehicles to implement guidance information, also for train crews;
- driverless train or people mover control or safety, also for maglev and mono-rail vehicles;
- railway crossing safety means, like barriers, warning lights or bells and their control or supervision.

References:

Limiting references:

This place does not cover:

Railway vehicle brakes or other retarding apparatus	B61H
Derailing or re-railing blocks on the track, and for railway stops, scotch-blocks, track brakes or retarders fixed to the permanent way in general	B61K
Detectors indicating the overheating of railway vehicle axle bearings	B61K 9/04
Rail, switch, point or crossing construction	E01B
Railway switches construction	E01B7/00
Rail joints	E01B 11/00
Electrically insulated rail joints	E01B 11/54
Cattle guards fixed to the permanent way	E01B 17/00

Application-oriented references

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

Model railways	A63H 19/00

Informative references:

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

Control of drive units	B60L 15/20
Control of multiple-unit electrically-propelled vehicles	B60L 15/32

Power supply lines for electrically propelled vehicles	B60M
Arrangement, mounting or supporting of signalling devices for vehicles in general	B60Q
Railway vehicle brakes	B60T 17/00
Control or regulation of multiple propelled vehicles within a train	B61C 17/12
Arrangement of signalling or lighting devices, the mounting or supporting thereof for rail vehicles	B61D
Conveyors	B65G
Elevators, lifts	B66B
Mechanical securing means	F16B
Illumination in general; illumination for signalling, marking or indicating; details of lighting devices or systems	F21
Non-portable lighting in general	F21S
Lighting devices specially adapted for vehicles	F21S 41/00, F21S 43/00
Details of lighting devices or systems	F21V
Measuring mechanical vibrations	G01H
Mechanical force measurements	G01L 5/00
Testing in railway vehicles	G01M 17/08
Speed measurements	G01P
Radio navigation	G01S
Error detection or correction by redundancy in hardware	G06F 11/16
Digital computing or data processing	G06F 17/00
Visible signaling arrangements in general	G08B 5/00
An alarm responsive to an abnormal condition in general	G08B 21/00, G08B 23/00
Electric signal transmission systems in general	G08C 19/00
Indicating arrangements for variable information	G09F 9/00
Control of indicating devices	G09G

Semi-conductor light sources	H01L 33/00
Power supply	H02J
Data transmission	H04B
Digital data transmission	H04L
Telephone systems	H04M
Communication switching systems	H04Q
Electroluminescent light sources, e.g. LEDs	H05B 33/00
Combination of different illumination sources	H05B 35/00
Circuit arrangements for electric light sources in general	H05B 47/00

Special rules of classification

CLASSIFICATION OF ADDITIONAL INFORMATION.

In many cases, the classification of additional information is very useful for retrieving the document, and is therefore very desirable in this subclass.

For example:

If a document discloses an ETCS train control system (covered by B61L 27/20) as invention information, where trains may use GPS information for localization, in a way which is per se not inventive (but nevertheless interesting for a search) classify:

- the train control system with central control in general (i.e. B61L 27/20).
- the ETCS as special train control system with breakdown Indexing Code (i.e. B61L 2027/202).
- the localization of a train in absolute position (i.e. B61L 25/025).
- the GPS being a satellite navigation system as special localization means with orthogonal Indexing Code (i.e. B61L 2205/04).

SUBGROUPS AND HEAD GROUP.

If a document concerns embodiments, which are covered by several subgroups (e.g. B61L 23/044 - B61L 23/048) dependent on a higher hierarchy group (in this case B61L 23/042), the following rules apply:

- if the specific technical information relevant for some of the subgroups is disclosed explicitly, then classify in all said relevant subgroups;

- analogously, if generic technical information common to all of the subgroups is disclosed and only schematic embodiments of the specific subgroup embodiments are represented, then the document is classified in the head group.

RADIO COMMUNICATION IN RAILWAYS.

Radio communication is only classified in B61L, when related to the application for railway use.

Radio communication in B61L is classified in different subgroups as follows:

Short range radio transmissions used for train control is classified in B61L 3/125 for intermittent control, when RFID tags, balise transmissions or the like is used.

Long range radio transmission for train control using conductor cables on the track, like wave guides or leaky feeders, can be found under B61L 3/227.

Long range radio transmission between a train and control center, is classified only under B61L 15/0027 for both, speech and continuous train control transmissions, as for example using GSM-R cell communication, when related to onboard systems.

However, long range radio transmission systems between a train and control center, when related to details of the trackside implementation, are covered under B61L 27/70.

This selection of special Indexing Codes is used in the subclass B61L in order to specify special railway signalling equipment with high occurrence and incorporating intrinsic features as well as orthogonal used features, which can occur in many different subclasses within B61L.

The following special equipment is classified using the additional Indexing Code symbols ("Indexing Code subdivisions"):

The following features are classified using the "orthogonal" Indexing Code symbols:

B61L 2201/00	Control methods
B61L 2201/02	Fuzzy control
B61L 2205/00	Communication or navigation systems for railway traffic
B61L 2205/02	Global system for mobile communication - railways [GSM-R]
B61L 2205/04	Satellite navigation system e.g. GPS
B61L 2207/00	Communication or navigation systems for railway traffic
B61L 2207/02	Using light emission diodes [LEDs]

B61L 2210/00	Vehicle systems
B61L 2210/02	Single autonomous vehicles, e.g. SST
B61L 2210/04	Magnetic elevation vehicles

Glossary of terms

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

Axle counter	devices at single locations along the railway track which use the presence of vehicle wheels as detection means, e.g. by inductive influence
Balise	transponder
Cold movement detector	detectors for indicating that a movement of the vehicle occurred during shut-down mode
Hot box detector	detectors for indicating the overheating of axle bearings and the like
Railway switch, railway point	mechanical track construction allowing a change of track for running railway vehicles
Scotch-block	a wedge to prevent the movement of an opening switch rail of a set of points or of stationary vehicles
Track circuit	devices in the railway track with different types of electric current applied to the rails in defined sections of railway track which use the short-circuit by vehicle axles between both rails as detection means

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

CBTC	Communication based train control
ERTMS	European railway traffic management system
ESTW	"Elektronisches Stellwerk"; electronic interlocking
ETCS	European train control system
FFB	"Funkfahrbetrieb"; radio based operation, field elements are controlled directly by the train via radio

GPS	Global positioning system
GSM-R	Global system for mobile communication - Railway
INDUSI	"Induktive Zugsicherung"; inductive train protection, using permanent magnets with switchable electric coils connected to light signals
LED	Light emitting diode
LZB	"Linienzugbeeinflussung"; continuous inductive train control, applying double cable with cross-overs as track antenna
PTC	Positive train control
RFID	Radio-frequency identification
SST	"Selbsttätig signalgeführtes Triebfahrzeug"; driver-less signal controlled vehicle

B61L1/00

Insert: The following new Relationships with other classification places section and text.

Relationships with other classification places

When related to transmission of data to trains, track circuits for influencing devices on the train are classified in group B61L 3/24. Braking or train separation techniques for track blocks are classified in group B61L 23/16.

References:

Limiting references:

Delete: The following row from the Limiting references table.

Devices along the track which influence equipment on the rail vehicle	B61L 3/00

Informative references:

Insert: The following new rows into the Informative references table.

Devices along the track which influence equipment on the rail vehicle	B61L 3/00
Central traffic control systems controlled by train	B61L 27/04

Replace: The Special rules of classification text with the updated text below.

Special rules of classification

Track circuit details and underlying principles have to be classified in group B61L 1/18.

B61L 23/00

Replace: The ENTIRE Definition with the updated Definition below.

Definition statement

This place covers:

Warning devices of different kinds related to safety as well as track blocking or train separation.

In particular it covers:

monitoring of the track, including broken rail detection, track movements or the like;

detection of obstacles on or near the track, also on platforms or in tunnels;

warning systems of working men on the track;

track block techniques for separation train traffic, also with integration of track circuits;

token systems for controlling railway traffic;

systems for virtually coupled trains and train joining and splitting in relation to distance measurements between trains.

Relationships with other classification places

The monitoring of the track would preferably be classified in B61L 23/04, when it has a link to the railway signalling system or when mainly trackside elements are used. Otherwise, B61K 9/08 can also be given for mainly onboard systems without a link to the railway signalling system. In practice, both groups B61L 23/04 and B61K 9/08 are often given simultaneously to the same document.

Crossings with road traffic are to be classified in group B61L 29/00.

Track circuits for influencing devices on the train are classified in group B61L 3/24, when related to transmission of data to trains. If otherwise related to braking or train separation techniques for track blocks, then B61L 23/16 takes precedence. Track circuit details and underlying principles have to be classified in group B61L 1/18.

Moving block systems shall be classified in group B61L 21/10 and not in B61L 23/18 nor B61L 23/34. The latter subgroup shall only be used when a train is closely following the preceding train by direct distance measurement, e.g. like a joined, virtually coupled train. B61L 23/18 is used when fixed blocks are subdivided or shortened. Instead, when a control center is controlling the follower train even in relative braking distance, B61L 21/10 shall be used.

References:

Informative references:

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

Track circuits details	B61L 1/18
Track circuits with data transmission to trains in general	B61L 3/24
Arrangements for trains closely following each other	B61L 21/10
Crossings of railway tracks with road traffic	B61L 29/00
Equipment mounted on board of vehicles for surveying the track	B61K 9/08

Special rules of classification

B61L 23/007 relates only to crossings of two different railway tracks.

B61L 23/041 comprises also the monitoring of platforms to detect whether there is a person or obstacle too close to the track or even on the track.

B61L 23/24 comprises also systems with "electronic tokens".