

EUROPEAN PATENT OFFICE
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 1661

DATE: JANUARY 1, 2025

PROJECT MP12248

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

<u>Action</u>	<u>Subclass</u>	<u>Group(s)</u>
SCHEME:		
Titles Changed:	H04L	5/0001, 5/0003, 5/0007, 5/0012, 5/0014, 5/0026, 5/0028, 5/0042, 5/0044, 5/0046, 5/0048, 5/0053, 5/0069, 5/0073, 5/0091, 5/023, 5/026, 5/1407, 5/245
DEFINITIONS:		
Definitions New:	H04L	5/0003, 5/0012, 5/0014, 5/0025, 5/0069, 5/0073, 5/0091, 5/026, 5/1407, 5/245
Definitions Modified:	H04L	5/0001, 5/0007, 5/0028, 5/0048, 5/0053, 5/143

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 H04L - TRANSMISSION OF DIGITAL INFORMATION, e.g. TELEGRAPHIC COMMUNICATION

Type*	Symbol	Indent Level	Title	Transferred to#
		Number of dots (e.g. 0, 1, 2)	“CPC only” text should normally be enclosed in {curly brackets}**	
M	H04L5/0001	1	{Arrangements for dividing the transmission path (two-way operation using the same type of signal, i.e. duplex H04L 5/14)}	
M	H04L5/0003	2	{Two-dimensional division}	
M	H04L5/0007	4	{the frequencies being orthogonal, e.g. OFDM(A) or DMT}	
M	H04L5/0012	5	{Hopping in multicarrier systems}	
M	H04L5/0014	2	{Three-dimensional division}	
M	H04L5/0026	2	{Division using four or more dimensions, e.g. beam steering or quasi-co-location [QCL]}	
M	H04L5/0028	2	{Variable division (indication of the divided channel H04L 5/0092)}	
M	H04L5/0042	2	{Intra-user or intra-terminal allocation}	
M	H04L5/0044	2	{Allocation of payload; Allocation of data channels, e.g. PDSCH or PUSCH}	
M	H04L5/0046	3	{Determination of the number of bits transmitted on different sub-channels}	
M	H04L5/0048	2	{Allocation of pilot signals, i.e. of signals known to the receiver (allocation of control signalling H04L 5/0053; use of control signalling H04L 5/0091)}	
M	H04L5/0053	2	{Allocation of signalling, i.e. of overhead other than pilot signals}	
M	H04L5/0069	3	{Allocation based on distance or geographical location}	
M	H04L5/0073	3	{Allocation arrangements that take into account other cell interferences}	
M	H04L5/0091	1	{Signalling for the administration of the divided path, e.g. signalling of configuration information}	
M	H04L5/023	2	{Multiplexing of multicarrier modulation signals, e.g. multi-user orthogonal frequency division multiple access [OFDMA] (multicarrier modulation H04L 27/2601)}	
M	H04L5/026	3	{using code division (code allocation applied as frequency-domain sequences H04L 5/0021)}	
M	H04L5/1407	2	{Artificial lines or their setting}	

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M	H04L5/245	3	{with a number of discharge tubes or semiconductor elements which successively connect the different channels to the transmission channels (details not particular to receiver or transmitter H04L 13/00; apparatus or local circuits for transmitting or receiving dot-and-dash codes H04L 15/00; a pparatus or local circuits for transmitting or receiving codes wherein each character is represented by the same number of equal-length code elements H04L 17/00; a pparatus or local circuits for step-by-step systems H04L 19/00; a pparatus or local circuits for mosaic printer telegraph systems H04L 21/00; a pparatus or local circuits for systems adapted for orthogonal signalling H04L 23/02)}	
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*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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2. A. DEFINITIONS (new)**H04L 5/0003****References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

MIMO systems	H04B 7/0413
Multi-antenna systems using spatial multiplexing at the transmitting station	H04B 7/0697
Orthogonal multiplex systems	H04J 11/00
Code division multiplex systems	H04J 13/00

H04L 5/0012**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Spread spectrum techniques using frequency hopping	H04B 1/713
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H04L 5/0014**References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

MIMO systems	H04B 7/0413
Multi-antenna systems using spatial multiplexing at the transmitting station	H04B 7/0697

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H04L 5/0025

References

Informative references

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

Spatial transmit diversity using a single antenna at transmitter	H04B 7/028
Selection of precoding matrices or codebooks in MIMO systems	H04B 7/0456
Spaced antennas at the transmitting station using spatial multiplexing	H04B 7/0697

H04L 5/0069

References

Informative references

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

Allocation or scheduling criteria for wireless resources based on terminal or device properties	H04W 72/51
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H04L 5/0073

References

Informative references

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

Interference mitigation or co-ordination of intercell interference in orthogonal multiplex systems	H04J 11/005
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H04L 5/0091

Relationships with other classification places

This place is intended for use of control signalling, while H04L 5/0053 is intended for allocation of control signalling.

References

Informative references

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

Allocation of signalling	H04L 5/0053
Channels characterised by signals being represented by different amplitudes or polarities	H04L 5/04
Channels characterised by signals being represented by different frequencies	H04L 5/06
Channels characterised by signals being represented by different phase modulations of a single carrier	H04L 5/12

H04L 5/026

References

Limiting references

This place does not cover:

Code allocation applied as frequency-domain sequences	H04L 5/0021
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Informative references

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

Code allocation in code division multiplex systems	H04J 13/16
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H04L 5/1407**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Networks simulating a line of certain length	H04B 3/40
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H04L 5/245**References****Limiting references***This place does not cover:*

Details not particular to receiver or transmitter	H04L 13/00
Apparatus or local circuits for transmitting or receiving dot-and-dash codes	H04L 15/00
Apparatus or local circuits for transmitting or receiving codes wherein each character is represented by the same number of equal-length code elements	H04L 17/00
Apparatus or local circuits for step-by-step systems	H04L 19/00
Apparatus or local circuits for mosaic printer telegraph systems	H04L 21/00
Apparatus or local circuits for systems adapted for orthogonal signalling	H04L 23/02

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

Distributors combined with modulators or demodulators	H04J 3/04
Arrangements in which pulses are delivered at different times at several outputs, i.e. pulse distributors	H03K 5/15
Switching arrangements with several input- or output-terminals, e.g. multiplexers, distributors	H03K 17/62

2. A. DEFINITIONS (modified)

H04L 5/0001

Definition statement

Insert: A new first paragraph before the existing paragraph so that the entire text appears as follows:

Arrangements for dividing the transmission path.

This group answers the question "How is the transmission path split up?". Since the signals are digital, it is considered that there is always a time dimension, and thus, the minimum number of dimensions is two.

References

Limiting references

Delete: The following row from the Limiting references table:

Multiplex communication in general	H04J
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Insert: The following new Informative references section:

Informative references

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

Multiplexing communication	H04J
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H04L 5/0007

Definition statement

Replace: The Definition statement text with the following revised text:

Access methods allowing multiple users to share the same frequency band by subdividing the band into orthogonal frequency channels, frequency hopping for multicarrier signals, SC-FDMA or IFDMA.

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H04L 5/0028

Definition statement

Delete: The text “, for example” from the end of the Definition statement text so that it appears as follows:

Changes from time-frequency to time-frequency-space.

References

Limiting references

Replace: The text of the Limiting references table so that it appears as follows:

Signalling an indication of how the channel is divided	H04L 5/0092
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H04L 5/0048

Definition statement

Replace: The Definition statement text with the following revised text:

Allocation of pilots or sounding reference signal patterns and synchronisation signals.

Insert: The following new Relationships section:

Relationships with other classification places

CK/NACK signals, CQI signals not known to the receiver are classified under H04L 5/0053.

Insert: The following new References/Limiting references section:

References

Limiting references

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This place does not cover:

Allocation of control signalling	H04L 5/0053
Signalling for the administration of the divided path	H04L 5/0091

H04L 5/0053

Definition statement

Replace: The Definition statement text with the following revised text:

Sending ACK/Nack signals, channel quality indicator [CQI] signals and in general any control signalling which is not a known signal to the receiver. Physical resources used for signalling.

Insert: The following new Relationships section:

Relationships with other classification places

This place is intended for allocation of control signalling, while H04L 5/0091 is intended for use of control signalling.

Insert: The following new References/Limiting references section:

References

Informative references

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

Allocation of pilot signals, i.e. of signals known to the receiver	H04L 5/0048
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H04L 5/143

Definition statement

Replace: The Definition statement text with the following revised text:

Zipper (a time-synchronised frequency division duplex implementation of discrete multi-tone [DMT] modulation).

Insert: The following new References/Limiting references section:

References

Limiting references

This place does not cover:

Two-way operation using the same type of signal using time-sharing	H04L 5/1469
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