EUROPEAN PATENT OFFICE
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 647

DATE: FEBRUARY 1, 2019

PROJECT RP0573

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

Action	**Subclass**	**Group(s)**
SCHEME:		
Symbols Deleted:	C40B	30/02
	C40B	50/02
	G06F	19/10, 19/12, 19/14, 19/16, 19/18, 19/20, 19/22, 19/24, 19/26, 19/28, 19/70, 19/701, 19/702, 19/703, 19/704, 19/705, 19/706, 19/707, 19/708, 19/709
Symbols Deleted Pending Reclassification: (frozen (F))	G06F	19/00
Symbols New:	G16B	Subclass
	G16B	5/00, 5/10, 5/20, 5/30
	G16B	10/00
	G16B	15/00, 15/10, 15/20, 15/30
	G16B	20/00, 20/10, 20/20, 20/30, 20/40, 20/50
	G16B	25/00, 25/10, 25/20, 25/30
	G16B	30/00, 30/10, 30/20
	G16B	35/00, 35/10, 35/20
	G16B	40/00, 40/10, 40/20, 40/30
	G16B	45/00
	G16B	50/00, 50/10, 50/20, 50/30, 50/40, 50/50
	G16B	99/00
	G16C	Subclass
	G16C	10/00
	G16C	20/00, 20/10, 20/20, 20/30, 20/40, 20/50, 20/60, 20/62, 20/64, 20/70, 20/80, 20/90
	G16C	60/00
	G16C	99/00
	G16Z	Subclass
	G16Z	99/00
Warnings New:	G06F	19/00
	G16B	5/00
	G16B	10/00
	G16B	15/00
	G16B	20/00
	G16B	25/00
	G16B	30/00
	G16B	35/00
	G16B	40/00

CPC NOTICE OF CHANGES 647

DATE: FEBRUARY 1, 2019

PROJECT RP0573

Action	**Subclass**	**Group(s)**
	G16B	50/00
	G16B	99/00
	G16C	10/00
	G16C	20/00, 20/60
	G16C	60/00
	G16C	99/00
	G16Z	99/00
Notes Deleted:	G06F	19/00, 19/10
Notes Modified:	G16	Class
DEFINITIONS:		
Definitions Deleted:	C40B	30/02
	C40B	50/02
	G06F	19/10, 19/12, 19/14, 19/16, 19/18, 19/20, 19/22, 19/24, 19/26, 19/28, 19/70
Definitions New:	G16B	Subclass
	G16B	5/00
	G16B	10/00
	G16B	15/00
	G16B	20/00
	G16B	25/00
	G16B	30/00
	G16B	35/00
	G16B	40/00
	G16B	45/00
	G16B	50/00
	G16C	Subclass
	G16C	10/00
	G16C	20/00, 20/10, 20/20, 20/30, 20/40, 20/50, 20/60, 20/70, 20/80, 20/90
	G16C	60/00

The following subclasses/groups are also impacted by this Notice of Changes: A44C, A61B, A63B, A63F, B01J, B63J, C12N, C12P, C12Q, C40B, G01C, G01G, G01N, G03H, G06F, G06K, G06N, G06Q, G06T, G07F, G16, G16H, H01J, H04L

CPC NOTICE OF CHANGES 647

DATE: FEBRUARY 1, 2019

PROJECT RP0573

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)

CPC NOTICE OF CHANGES 647

DATE: FEBRUARY 1, 2019

PROJECT RP0573

1. CLASSIFICATION SCHEME CHANGES

A. New, Modified or Deleted Group(s)

SUBCLASS C40B - COMBINATORIAL CHEMISTRY; LIBRARIES, e.g. CHEMICAL LIBRARIES, IN SILICO LIBRARIES

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#**
D	C40B 30/02	1	In silico screening	<administrative transfer to G16B 35/00 and G16C 20/60 simultaneously>
D	C40B 50/02	1	In silico or mathematical conception of libraries	<administrative transfer to G16B 35/00 and G16C 20/60 simultaneously>

SUBCLASS G06F - ELECTRIC DIGITAL DATA PROCESSING (computer systems based on specific computational models G06N)

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#**
F	G06F 19/00	0	Digital computing or data processing equipment or methods, specially adapted for specific applications (specially adapted for specific functions G06F17/00; data processing systems or methods specially adapted for administrative, commercial, financial, managerial, supervisory or forecasting purposes G06Q; healthcare informatics G16H)	<administrative transfer to G16Z 99/00>
D	G06F 19/10	1	Bioinformatics, i.e. methods or systems for genetic or protein-related data processing in computational molecular biology (in silico methods of screening virtual chemical libraries C40B 30/02; in silico or mathematical methods of creating virtual chemical libraries C40B 50/02)	<administrative transfer to G16B 99/00>
D	G06F 19/12	2	for modelling or simulation in systems biology, e.g. probabilistic or dynamic models, gene-regulatory networks, protein interaction networks or metabolic networks	<administrative transfer to G16B 5/00>

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#**
D	G06F 19/14	2	for phylogeny or evolution, e.g. evolutionarily conserved regions determination or phylogenetic tree construction	<administrative transfer to G16B 10/00>
D	G06F 19/16	2	for molecular structure, e.g. structure alignment, structural or functional relations, protein folding, domain topologies, drug targeting using structure data, involving two-dimensional or three-dimensional structures	<administrative transfer to G16B 15/00>
D	G06F 19/18	2	for functional genomics or proteomics, e.g. genotype-phenotype associations, linkage disequilibrium, population genetics, binding site identification, mutagenesis, genotyping or genome annotation, protein-protein interactions or protein-nucleic acid interactions	<administrative transfer to G16B 20/00>
D	G06F 19/20	2	for hybridisation or gene expression, e.g. microarrays, sequencing by hybridisation, normalisation, profiling, noise correction models, expression ratio estimation, probe design or probe optimisation	<administrative transfer to G16B 25/00>
D	G06F 19/22	2	for sequence comparison involving nucleotides or amino acids, e.g. homology search, motif or Single-Nucleotide Polymorphism [SNP] discovery or sequence alignment	<administrative transfer to G16B 30/00>
D	G06F 19/24	2	for machine learning, data mining or biostatistics, e.g. pattern finding, knowledge discovery, rule extraction, correlation, clustering or classification	<administrative transfer to G16B 40/00>
D	G06F 19/26	2	for data visualisation, e.g. graphics generation, display of maps or networks or other visual representations	<administrative transfer to G16B 45/00>
D	G06F 19/28	2	for programming tools or database systems, e.g. ontologies, heterogeneous data integration, data warehousing or computing architectures	<administrative transfer to G16B 50/00>

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#**
D	G06F 19/70	1	{Chemoinformatics, i.e. data processing methods or systems for the retrieval, analysis, visualisation, or storage of physicochemical or structural data of chemical compounds (in silico methods of screening virtual chemical libraries C40B30/02; in silico or mathematical methods of creating virtual chemical libraries C40B50/02; computer-aided design per se G06F17/50; bioinformatics G06F19/10; processing of 2D or 3D images G06T)}	<administrative transfer to G16C 99/00>
D	G06F 19/701	2	{for molecular modelling, e.g. calculation and theoretical details of quantum mechanics, molecular mechanics, molecular dynamics, Monte Carlo methods, conformational analysis or the like (molecular modelling of nucleic acids or proteins G06F19/16)}	<administrative transfer to G16C 10/00>
D	G06F 19/702	2	{for analysis and planning of chemical reactions and syntheses, e.g. synthesis design, reaction prediction, mechanism elucidation}	<administrative transfer to G16C 20/10>
D	G06F 19/703	2	{for computer-assisted identification of chemical compounds or molecular structures, e.g. computer-assisted structure elucidation [CASE] systems}	<administrative transfer to G16C 20/20>
D	G06F 19/704	2	{for prediction of properties of compounds, e.g. calculating and selecting molecular descriptors, details related to the development of SAR/QSAR/QSPR models, ADME/Tox models or PK/PD models}	<administrative transfer to G16C 20/30>
D	G06F 19/705	2	{for database search of chemical structures, e.g. full structure search, substructure search, similarity search, pharmacophore search, 3D structure search (information retrieval in general G06F17/30)}	<administrative transfer to G16C 20/40>
D	G06F 19/706	2	{for drug design with the emphasis on a therapeutic agent, e.g. ligand-biological target interactions, pharmacophore generation (drug targeting using protein structure data G06F19/16; binding site identification G06F19/18)}	<administrative transfer to G16C 20/50>

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#
D	G06F 19/707	2	{using machine learning, data mining or chemometrics, e.g. pattern recognition, knowledge discovery, rule extraction, correlation, clustering or classification, chemical name to structure conversion (use of machine learning, data mining or biostatistics for processing genetic or protein-related data G06F19/24)}	<administrative transfer to G16C 20/70>
D	G06F 19/708	2	{for data visualisation, e.g. molecular structure representations, graphics generation, display of maps or networks or other visual representations (data visualisation specially adapted for processing genetic or protein-related data G06F19/26)}	<administrative transfer to G16C 20/80>
D	G06F 19/709	2	{for programming tools or database systems, e.g. ontologies, heterogeneous data integration, data warehousing or computing architectures (programming tools or database systems specially adapted for processing genetic or protein-related data G06F19/28)}	<administrative transfer to G16C 20/90>

G16B - BIOINFORMATICS, i.e. INFORMATION AND COMMUNICATION TECHNOLOGY [ICT] SPECIALLY ADAPTED FOR GENETIC OR PROTEIN-RELATED DATA PROCESSING IN COMPUTATIONAL MOLECULAR BIOLOGY

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#
N	G16B	subclass	BIOINFORMATICS, i.e. INFORMATION AND COMMUNICATION TECHNOLOGY [ICT] SPECIALLY ADAPTED FOR GENETIC OR PROTEIN-RELATED DATA PROCESSING IN COMPUTATIONAL MOLECULAR BIOLOGY	
Q	G16B 5/00	0	ICT specially adapted for modelling or simulations in systems biology, e.g. gene-regulatory networks, protein interaction networks or metabolic networks	G16B 5/00, G16B 5/10, G16B 5/20, G16B 5/30
N	G16B 5/10	1	Boolean models	
N	G16B 5/20	1	Probabilistic models	

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#**
N	G16B 5/30	1	Dynamic-time models	
N	G16B 10/00	0	ICT specially adapted for evolutionary bioinformatics, e.g. phylogenetic tree construction or analysis	
Q	G16B 15/00	0	ICT specially adapted for analysing two-dimensional or three-dimensional molecular structures, e.g. structural or functional relations or structure alignment	G16B 15/00, G16B 15/10, G16B 15/20, G16B 15/30
N	G16B 15/10	1	Nucleic acid folding	
N	G16B 15/20	1	Protein or domain folding	
N	G16B 15/30	1	Drug targeting using structural data; Docking or binding prediction	
Q	G16B 20/00	0	ICT specially adapted for functional genomics or proteomics, e.g. genotype-phenotype associations	G16B 20/00, G16B 20/10, G16B 20/20, G16B 20/30, G16B 20/40, G16B 20/50
N	G16B 20/10	1	Ploidy or copy number detection	
N	G16B 20/20	1	Allele or variant detection, e.g. single nucleotide polymorphism [SNP] detection	
N	G16B 20/30	1	Detection of binding sites or motifs	
N	G16B 20/40	1	Population genetics; Linkage disequilibrium	
N	G16B 20/50	1	Mutagenesis	
Q	G16B 25/00	0	ICT specially adapted for hybridisation; ICT specially adapted for gene or protein expression	G16B 25/00, G16B 25/10, G16B 25/20, G16B 25/30
N	G16B 25/10	1	Gene or protein expression profiling; Expression-ratio estimation or normalisation	
N	G16B 25/20	1	Polymerase chain reaction [PCR]; Primer or probe design; Probe optimisation	
N	G16B 25/30	1	Microarray design	
Q	G16B 30/00	0	ICT specially adapted for sequence analysis involving nucleotides or amino acids	G16B 30/00, G16B 30/10, G16B 30/20
N	G16B 30/10	1	Sequence alignment; Homology search	
N	G16B 30/20	1	Sequence assembly	
Q	G16B 35/00	0	ICT specially adapted for in silico combinatorial libraries of nucleic acids, proteins or peptides	G16B 35/00, G16B 35/10, G16B 35/20
N	G16B 35/10	1	Design of libraries	
N	G16B 35/20	1	Screening of libraries	
Q	G16B 40/00	0	ICT specially adapted for biostatistics; ICT specially adapted for bioinformatics-related machine learning or data mining, e.g. knowledge discovery or pattern finding	G16B 40/00, G16B 40/10, G16B 40/20, G16B 40/30
N	G16B 40/10	1	Signal processing, e.g. from mass spectrometry [MS] or from PCR	

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#**
N	G16B 40/20	1	Supervised data analysis	
N	G16B 40/30	1	Unsupervised data analysis	
N	G16B 45/00	0	ICT specially adapted for bioinformatics-related data visualisation, e.g. displaying of maps or networks	
Q	G16B 50/00	0	ICT programming tools or database systems specially adapted for bioinformatics	G16B 50/00, G16B 50/10, G16B 50/20, G16B 50/30, G16B 50/40, G16B 50/50
N	G16B 50/10	1	Ontologies; Annotations	
N	G16B 50/20	1	Heterogeneous data integration	
N	G16B 50/30	1	Data warehousing; Computing architectures	
N	G16B 50/40	1	Encryption of genetic data	
N	G16B 50/50	1	Compression of genetic data	
Q	G16B 99/00	0	Subject matter not provided for in other groups of this subclass	G16B 5/00, G16B 5/10, G16B 5/20, G16B 5/30, G16B 10/00, G16B 15/00, G16B 15/10, G16B 15/20, G16B 15/30, G16B 20/00, G16B 20/10, G16B 20/20, G16B 20/30, G16B 20/40, G16B 20/50, G16B 25/00, G16B 25/10, G16B 25/20, G16B 25/30, G16B 30/00, G16B 30/10, G16B 30/20, G16B 35/00, G16B 35/10, G16B 35/20, G16B 40/00, G16B 40/10, G16B 40/20, G16B 40/30, G16B 45/00, G16B 50/00, G16B 50/10, G16B 50/20, G16B 50/30, G16B 50/40, G16B 50/50, G16B 99/00

G16C - COMPUTATIONAL CHEMISTRY; CHEMOINFORMATICS; COMPUTATIONAL MATERIALS SCIENCE

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#**
N	G16C	subclass	COMPUTATIONAL CHEMISTRY; CHEMOINFORMATICS; COMPUTATIONAL MATERIALS SCIENCE	
N	G16C 10/00	0	Computational theoretical chemistry, i.e. ICT specially adapted for theoretical aspects of quantum chemistry, molecular mechanics, molecular dynamics or the like	
N	G16C 20/00	0	Chemoinformatics, i.e. ICT specially adapted for the handling of physicochemical or structural data of chemical particles, elements, compounds or mixtures	
N	G16C 20/10	1	Analysis or design of chemical reactions, syntheses or processes	
N	G16C 20/20	1	Identification of molecular entities, parts thereof or of chemical compositions	
N	G16C 20/30	1	Prediction of properties of chemical compounds, compositions or mixtures	
N	G16C 20/40	1	Searching chemical structures or physicochemical data	
N	G16C 20/50	1	Molecular design, e.g. of drugs	
Q	G16C 20/60	1	In silico combinatorial chemistry	G16C 20/60, G16C 20/62, G16C 20/64
N	G16C 20/62	2	Design of libraries	
N	G16C 20/64	2	Screening of libraries	
N	G16C 20/70	1	Machine learning, data mining or chemometrics	
N	G16C 20/80	1	Data visualisation	
N	G16C 20/90	1	Programming languages; Computing architectures; Database systems; Data warehousing	
N	G16C 60/00	0	Computational materials science, i.e. ICT specially adapted for investigating the physical or chemical properties of materials or phenomena associated with their design, synthesis, processing, characterisation or utilisation	

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#**
Q	G16C 99/00	0	Subject matter not provided for in other groups of this subclass	G16C 10/00, G16C 20/00, G16C 20/10, G16C 20/20, G16C 20/30, G16C 20/40, G16C 20/50, G16C 20/60, G16C 20/62, G16C 20/64, G16C 20/70, G16C 20/80, G16C 20/90, G16C 60/00, G16C 99/00

SUBCLASS G16Z - INFORMATION AND COMMUNICATION TECHNOLOGY [ICT] SPECIALLY ADAPTED FOR SPECIFIC APPLICATION FIELDS, NOT OTHERWISE PROVIDED FOR

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#**
N	G16Z	subclass	INFORMATION AND COMMUNICATION TECHNOLOGY [ICT] SPECIALLY ADAPTED FOR SPECIFIC APPLICATION FIELDS, NOT OTHERWISE PROVIDED FOR	
N	G16Z 99/00	0	Subject matter not provided for in other main groups of this subclass	

*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; E= 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.
- 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.

B. New, Modified or Deleted Warning(s)

G06F- ELECTRIC DIGITAL DATA PROCESSING (computer systems based on specific computational models G06N)

Type*	Location	Old Warning	New/Modified Warning
N	G06F 19/00		Group G06F 19/00 is no longer used for the classification of documents as of 02-01-2019. The content of this group is being reclassified into group G16Z 99/00. Groups G06F 19/00 and G16Z 99/00 should be considered in order to perform a complete search.

G16B - BIOINFORMATICS, i.e. ICT SPECIALLY ADAPTED FOR GENETIC OR PROTEIN-RELATED DATA PROCESSING IN COMPUTATIONAL MOLECULAR BIOLOGY

Type*	Location	Old Warning	New/Modified Warning
N	G16B 5/00		Groups G16B 5/00, G16B 5/10, G16B 5/20, G16B 5/30 are incomplete pending reclassification of documents from group G16B 99/00. Group G16B 5/00 is also impacted by reclassification into groups G16B 5/10, G16B 5/20, and G16B 5/30. All groups listed in this Warning should be considered in order to perform a complete search.
N	G16B 10/00		Group G16B 10/00 is incomplete pending reclassification of documents from group G16B 99/00. Groups G16B 99/00 and G16B 10/00 should be considered in order to perform a complete search.
N	G16B 15/00		Groups G16B 15/00, G16B 15/10, G16B 15/20, G16B 15/30 are incomplete pending reclassification of documents from group G16B 99/00. Group G16B 15/00 is also impacted by reclassification into groups G16B 15/10, G16B 15/20, and G16B 15/30. All groups listed in this Warning should be considered in order to perform a complete search.
N	G16B 20/00		Groups G16B 20/00, G16B 20/10, G16B 20/20, G16B 20/30, G16B 20/40, G16B 20/50 are incomplete pending reclassification of documents from group G16B 99/00. Group G16B 20/00 is also impacted by reclassification into groups G16B 20/10, G16B 20/20, G16B 20/30, G16B 20/40, and G16B 20/50. All groups listed in this Warning should be considered in order to perform a complete search.
N	G16B 25/00		Groups G16B 25/00, G16B 25/10, G16B 25/20, G16B 25/30 are incomplete pending reclassification of documents from group G16B 99/00. Group G16B 25/00 is also impacted by reclassification into groups G16B 25/10, G16B 25/20, and G16B 25/30. All groups listed in this Warning should be considered in order to perform a complete search.

N	G16B 30/00		Groups G16B 30/00, G16B 30/10, G16B 30/20 are incomplete pending reclassification of documents from group G16B 99/00. Group G16B 30/00 is also impacted by reclassification into groups G16B 30/10, and G16B 30/20. All groups listed in this Warning should be considered in order to perform a complete search.
N	G16B 35/00		Groups G16B 35/00, G16B 35/10, G16B 35/20 are incomplete pending reclassification of documents from group G16B 99/00. Group G16B 35/00 is also impacted by reclassification into groups G16B 35/10, and G16B 35/20. All groups listed in this Warning should be considered in order to perform a complete search.
N	G16B 40/00		Groups G16B 40/00, G16B 40/10, G16B 40/20, G16B 40/30 are incomplete pending reclassification of documents from group G16B 99/00. Group G16B 40/00 is also impacted by reclassification into groups G16B 40/10, G16B 40/20, and G16B 40/30. All groups listed in this Warning should be considered in order to perform a complete search.
N	G16B 50/00		Groups G16B 50/00, G16B 50/10, G16B 50/20, G16B 50/30, G16B 50/40, G16B 50/50 are incomplete pending reclassification of documents from group G16B 99/00. Group G16B 50/00 is also impacted by reclassification into groups G16B 50/10, G16B 50/20, G16B 50/30, G16B 50/40 and G16B 50/50. All groups listed in this Warning should be considered in order to perform a complete search.
N	G16B 99/00		Group G16B 99/00 is impacted by reclassification into groups G16B 5/00, G16B 5/10, G16B 5/20, G16B 5/30, G16B 10/00, G16B 15/00, G16B 15/10, G16B 15/20, G16B 15/30, G16B 20/00, G16B 20/10, G16B 20/20, G16B 20/30, G16B 20/40, G16B 20/50, G16B 25/00, G16B 25/10, G16B 25/20, G16B 25/30, G16B 30/00, G16B 30/10, G16B 30/20, G16B 35/00, G16B 35/10, G16B 35/20, G16B 40/00, G16B 40/10, G16B 40/20, G16B 40/30, G16B 45/00, G16B 50/00, G16B 50/10, G16B 50/20, G16B 50/30, G16B 50/40, and G16B 50/50. All groups listed in this Warning should be considered in order to perform a complete search.

G16C - COMPUTATIONAL CHEMISTRY; CHEMOINFORMATICS; COMPUTATIONAL MATERIALS SCIENCE

Type*	**Location**	**Old Warning**	**New/Modified Warning**
N	G16C 10/00		Group G16C 10/00 is incomplete pending reclassification of documents from group G16C 99/00. Groups G16C 99/00 and G16C 10/00 should be considered in order to perform a complete search.
N	G16C 20/00		Groups G16C 20/00 – G16C 20/50, G16C 20/70 – G16C 20/90 are incomplete pending reclassification of documents from group G16C 99/00. All groups listed in this Warning should be considered in order to perform a complete search.

N	G16C 20/60		Group G16C 20/60 is incomplete pending reclassification of documents from group G16C 99/00. Group G16C 20/60 is also impacted by reclassification into groups G16C 20/62 and G16C 20/64. All groups listed in this Warning should be considered in order to perform a complete search.
N	G16C 60/00		Group G16C 60/00 is incomplete pending reclassification of documents from group G16C 99/00. Groups G16C 99/00 and G16C 60/00 should be considered in order to perform a complete search.
N	G16C 99/00		Group G16C 99/00 is impacted by reclassification into groups G16C 10/00, G16C 20/00, G16C 20/10, G16C 20/20, G16C 20/30, G16C 20/40, G16C 20/50, G16C 20/60, G16C 20/62, G16C 20/64, G16C 20/70, G16C 20/80, G16C 20/90, and G16C 60/00. All groups listed in this Warning should be considered in order to perform a complete search.

G16Z - INFORMATION AND COMMUNICATION TECHNOLOGY [ICT] SPECIALLY ADAPTED FOR SPECIFIC APPLICATION FIELDS, NOT OTHERWISE PROVIDED FOR

Type*	**Location**	**Old Warning**	**New/Modified Warning**
N	G16Z 99/00		Group G16Z 99/00 is incomplete pending reclassification of documents from group G06F 19/00. Groups G06F 19/00 and G16Z 99/00 should be considered in order to perform a complete search.

*N = new warning, M = modified warning, D = deleted warning

NOTE: The "Location" column only requires the symbol PRIOR to the location of the warning. No further directions such as "before" or "after" are required.

C. New, Modified or Deleted Note(s)

CLASS G16 - INFORMATION AND COMMUNICATION TECHNOLOGY [ICT] SPECIALLY ADAPTED FOR SPECIFIC APPLICATION FIELDS

Type*	Location	Old Note	New/Modified Note
M	G16	2. In this class, the following terms or expressions are used with the meaning indicated: a. ICT [information and communication technology] also covers IT [information technology]; b. "ICT specially adapted for" also covers the expression "digital computing or data processing systems or methods specially adapted for", which is used in group G06F 19/00 and in subclass G06Q.	2. In this class, the following terms or expressions are used with the meaning indicated: a. ICT [information and communication technology] also covers IT [information technology]; b. "ICT specially adapted for" also covers the expression "digital computing or data processing systems or methods specially adapted for", which is used in group G06F 17/00 and in subclass G06Q.
D	G06F 19/00	This group only covers specific applications related to the fields of healthcare or life sciences, e.g. bioinformatics (G09F19/10), medical informatics (G06F19/30), or chemoinformatics (G06F19/70).	
D	G06F 19/10	1. This group also covers bioinformatics methods or systems where digital data processing is inherent or implicit, but not explicitly mentioned. 2. In this group, the following term is used with the meaning indicated: • "systems" include apparatus. 3. In this group, the first place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place.	

*N = new note, M = modified note, D = deleted note

NOTE: The "Location" column only requires the symbol PRIOR to the location of the note. No further directions such as "before" or "after" are required.

2. A. DEFINITIONS (New)

New Class G16B

Insert the following new definitions.

G16B

Definition statement

This place covers:

Methods or systems for genetic or protein-related data processing in computational molecular biology.

Computational processing of data related to nucleic acids, proteins, peptides, or amino acids.

Bioinformatics methods or systems where the digital data processing is inherent or implicit, although not explicitly mentioned.

Relationships with other classification places

This subclass covers bioinformatics, whereas subclass G16C covers computational theoretical chemistry, chemoinformatics and computational materials science.

In order to determine whether classification should be directed to this subclass or to subclass G16C, in particular regarding computational theoretical chemistry (G16C 10/00) and chemoinformatics (G16C 20/00), one has to take into account the type of molecule(s), whose characterising features are processed by a computational algorithm.

Following the definition statement, processing of data related to nucleic acids, proteins, peptides and/or amino acids should be classified under G16B.

Processing of data related to any other type of molecule should be classified under G16C.

References

Informative references

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

Medical diagnosis	A61B 5/00
Genetic engineering involving nucleic acids	C12N 15/00
Nucleic acid analysis, e.g. microarrays, sequencing or PCR	C12Q 1/68
Chromatographic signal analysis	G01N 30/86
Chemical analysis of biological material, e.g. blood or urine	G01N 33/50
Chemical analysis of biological material involving proteins, peptides or amino acids	G01N 33/68
Computer input/output arrangements	G06F 3/00
Computer architectures or program control	G06F 9/00
Information retrieval; Database structures thereof; File system structures therefor	G06F 16/00
Complex mathematical operations	G06F 17/10
Pattern recognition	G06K 9/00
Computer systems using neural network models per se	G06N 3/02
Computer systems using knowledge representation per se, e.g. expert systems	G06N 5/02
Computer systems using probabilistic models per se	G06N 7/00
Machine learning	G06N 20/00
3D image rendering	G06T 15/00
3D modelling for computer graphics	G06T 17/00
Manipulating 3D models or images for computer graphics	G06T 19/00
Computational chemistry; Chemoinformatics	G16C
Computational materials science	G16C 60/00
Healthcare Informatics	G16H
Mass spectrometry apparatus per se	H01J 49/00

Glossary of terms

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

systems biology	Simulation and mathematical modelling of relationships and interactions between molecular entities in sub-cellular systems integrating genetic and/or protein-related data to describe the dynamic behaviour of, for example, protein-protein/protein-ligand interactions, regulatory networks and metabolic networks

phylogeny	Reconstruction of an evolutionary development and history of a species or higher taxonomic grouping of organisms; typically represented as a phylogenetic tree; methods for creating phylogenetic trees
phylogenetic tree	Tree-like graphical representation of phylogenetic relationships
molecular structure	2-dimensional or 3-dimensional arrangement of atoms, groups of atoms or domains in nucleic acids, proteins, peptides and amino acids
structure alignment	Form of alignment to establish structural and functional equivalences between two or more proteins based on their secondary or tertiary structures
protein folding	Process by which a polypeptide chain folds into a specific 3-dimensional structure
domain	Domain of a protein is an element of the overall molecular structure that is self-stabilising and often folds independently of the rest of a polypeptide chain
drug targeting	Drug design strategy aiming at optimising the properties of a medicinal compound, based on the 3-dimensional structure of a target, for delivery to a particular tissue or organ in the body
functional genomics	Experimental analyses aiming at assessing the function of genes in determining traits, physiology and/or development of an organism, making use of computational and high-throughput technologies
proteomics	Large-scale study of the functions of proteins and their interactions with other molecular entities in a biological system
genotype	Genetic makeup or profile of an organism with respect to a trait
ploidy	Number of sets of chromosomes in a cell/cells of an organism
allele	Alternative form of a gene (one member of a pair) that is located at a specific position (locus) on a specific chromosome
snp	Single nucleotide polymorphism: a DNA sequence variation that involves a change in a single nucleotide and is commonly present in a part of a population
motif	Specific nucleotide or amino acid sequence pattern
population genetics	Study of genetic variation and genetic evolution of populations
linkage disequilibrium	Tendency of alleles located close to each other on the same chromosome to be inherited together

mutagenesis	Process by which the genetic information of an organism is changed, resulting in a mutation
gene expression	Process by which proteins are made or transcribed from the instructions encoded in DNA
gene expression profiling	Determination of the pattern of genes expressed, i.e. transcribed, under specific circumstances or in a specific cell line
probe design and optimisation for microarrays	Designing and selecting (i) optimal, highly specific probes, e.g. oligonucleotides, cDNA, fragments for hybridisation experiments with microarrays and (ii) optimal sets of probes, e.g. oligonucleotides, cDNA, to be chemically attached to a solid support to form an array
microarray	Plurality of nucleic acid probes attached to a substrate, which form an ordered pattern
sequence alignment	Process of comparing nucleic or amino acid sequences, generally by a linear alignment in such a way that equivalent positions in adjacent sequences are brought into the correct alignment with each other by introducing insertions in suitable positions, in order to identify similarities and/or differences amongst the compared sequences
sequence assembly	Method by which linear portions of sequence information are assembled to obtain full length gene sequence data
in silico	Performed on a computer or via computer simulations
ontology	Classification methodology for formalising a subject's knowledge in a structured and controlled vocabulary

Synonyms and Keywords

In patent documents, the following words/expressions are often used with the meaning indicated:

systems	includes apparatus

G16B 5/00

Definition statement

This place covers:

Simulation or mathematical modelling of relationships and interactions between molecular entities on a subcellular level, integrating data related to genetic and/or proteins to describe the dynamic behaviour of protein-protein/protein-ligand interactions, regulatory or metabolic networks.

Mere mention of modelling or simulation is not sufficient to justify classification in this place.

G16B 10/00

Definition statement

This place covers:

Analysis of orthologous, paralogous, syntenic, or taxonomic relationships.

Generation of pedigrees and phylogenetic trees.

Mere mention of evolutionary data is not sufficient to justify classification in this place.

G16B 15/00

Definition statement

This place covers:

Structural architecture of proteins, peptides, amino acids, and nucleic acids and the prediction thereof.

Processes including structural alignment, protein folding, domain topology, molecular modelling, receptor-ligand modelling, docking methods, structural-functional relationships and drug targeting using structure data, as well as two- and three-dimensional structure prediction and/or analysis.

The structure types include secondary, tertiary, and quaternary structures.

Mere mention of structural data is not sufficient to justify classification in this place.

G16B 20/00

Definition statement

This place covers:

Assessment of the function of genes and proteins in determining traits, physiology and/or development of an organism, making use of computational and large scale, high-throughput technologies.

Genotypic-phenotypic associations, including genotyping and genome annotation, linkage disequilibrium analysis and association studies, population genetics, alternative splicing, and small Interfering RNA design (siRNA, RNAi).

Binding site identification, mutagenesis analysis, protein-protein or protein-nucleic acid interactions.

Mere mention of gene or protein function is not sufficient to justify classification in this place.

G16B 25/00

Definition statement

This place covers:

Analysis of hybridization or gene/protein expression information. This includes microarray analysis, gel electrophoresis analysis and sequencing by hybridisation (SBH). Further covered technologies include modelling polymerase chain reaction (PCR) data, primer or probe design and probe optimisation, microarray design, normalisation, expression profiling, noise correction models, and expression-ratio estimation.

Mere mention of hybridisation or gene/protein expression is not sufficient to justify classification in this place.

G16B 30/00

Definition statement

This place covers:

Comparison of sequence information, wherein the sequences are nucleic acids, proteins, or peptides. The comparisons include methods of alignment, homology identification, motif identification, single-nucleotide polymorphism (SNP) discovery, haplotype identification, fragment assembly, and gene finding.

Mere mention of sequence data is not sufficient to justify classification in this place.

G16B 35/00

Definition statement

This place covers:

In silico (i.e. computer based) designing and screening of combinatorial nucleic acids, protein, or peptide libraries.

Mere mention of nucleic acid, protein, or peptide combinatorial libraries is not sufficient to justify classification in this place.

G16B 40/00

Definition statement

This place covers:

Discovery and/or analysis of patterns within a vast amount of genetic or protein-related data, wherein the emphasis is placed on the method of analysis and is largely independent of the particular type of bioinformatic data.

Covered methods based on machine learning and statistical models; supervised and unsupervised learning techniques include bioinformatic pattern finding, knowledge discovery, rule extraction, correlation, clustering, and classification.

Multivariate analysis of protein or gene-related data, e.g. analysis of variances (ANOVA), principal component analysis (PCA), and support vector machines (SVM).

G16B 45/00

Definition statement

This place covers:

Visual representations specifically adapted to bioinformatic data, wherein the emphasis is placed on the method of visualisation and is largely independent of the particular type of bioinformatic data.

For example: graphics generation, map display (e.g. haplotype maps, linkage maps), and network display (e.g. genetic networks, protein-protein interaction networks, metabolic networks).

G16B 50/00

Definition statement

This place covers:

Software specially adapted to assist in programming procedures within bioinformatics.

Database systems specially adapted for managing bioinformatic data. For example: ontologies, heterogeneous data integration, data warehousing, and computing architectures.

Encryption and compression algorithms for genetic data.

New Class G16C

Insert the following new definitions.

G16C

Definition statement

This place covers:

Data processing methods or systems for the storage, retrieval, analysis, distribution or visualisation of physicochemical or structural data of chemical particles, elements, compounds, or mixtures.

Computational theoretical chemistry and computational materials science.

Data processing methods or systems for investigating physics or chemistry of new or existing materials or phenomena associated with their design, synthesis, processing, characterization, or utilisation.

This group also covers computational chemistry and computational materials science methods or systems where the digital data processing is inherent or implicit, although not explicitly mentioned.

Relationships with other classification places

This subclass covers computational chemistry, which comprises computational theoretical chemistry, chemoinformatics, and computational materials science, whereas subclass G16B covers bioinformatics.

In order to determine whether classification should be directed to this subclass or to subclass G16B, one has to take into account the type of molecule(s), whose characterising features are processed by a computational algorithm.

Following the definition statements of computational chemistry, computational materials science and bioinformatics, processing of data related to chemical entities (i.e. chemical particles, elements, compounds, mixtures) and/or materials should be classified under G16C.

Processing of data related to nucleic acids, proteins, peptides and/or amino acids should be classified under G16B.

References

Informative references

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

Investigating or analysing materials by determining their chemical or physical properties	G01N
Chromatographic signal analysis	G01N 30/86
Systems controlled by a computer	G05B 15/00
Computer input/output arrangements	G06F 3/00
Computer architectures or program control	G06F 9/00
Information retrieval; Database structures therefor; File system structures therefor	G06F 16/00
Complex mathematical operations	G06F 17/10
Computer-aided design	G06F 17/50
Pattern recognition	G06K 9/00
Computer systems using neural network models	G06N 3/02
Computer systems using knowledge representation, e.g. expert systems	G06N 5/02
Computer systems using probabilistic models	G06N 7/00
Machine learning	G06N 20/00
3D image rendering	G06T 15/00
3D modelling for computer graphics	G06T 17/00
Manipulating 3D models or images for computer graphics	G06T 19/00
Bioinformatics	G16B
Healthcare Informatics	G16H
Mass spectrometry apparatus	H01J 49/00

Glossary of terms

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

design	Software-based creation or planning
handling	Covers retrieval, analysis, visualisation or storage
quantum chemistry	Branch of chemistry, in which quantum mechanics is applied to theoretical studies of chemical systems
molecular mechanics	Branch of chemistry, in which classical mechanics is applied to model molecular systems

molecular dynamics	Computer-based simulation method for studying movements of atoms and molecules in time by applying Newton's equations of motion and molecular mechanics force fields
in silico	Performed on a computer or via computer simulations

Synonyms and Keywords

In patent documents, the following words/expressions are often used with the meaning indicated:

systems	includes apparatus

G16C 10/00

Definition statement

This place covers:

Computer based calculations and theoretical details of quantum mechanics (QM), e.g. density functional theory (DFT), molecular mechanics (MM), e.g. details related to force fields, molecular dynamics (MD), e.g. details on setting up simulations, Monte Carlo (MC) methods, e.g. details on MC algorithms, conformational analysis or the like.

Mere mention of modelling or simulation using QM, MM, MD, etc. is not sufficient to justify classification in this place.

G16C 20/00

Definition statement

This place covers:

Subject matter related to cheminformatics as specified in the subgroups.

G16C 20/10

Definition statement

This place covers:

Analysis and design of chemical reactions, processes and syntheses, e.g. synthesis design, identifying a suitable pathway, reaction outcome prediction, crystallization/co-crystallization process prediction, and mechanism elucidation.

G16C 20/20

Definition statement

This place covers:

Computer-assisted and measurement-based — e.g. by any of mass spectrometry (MS), nuclear magnetic resonance (NMR), spectroscopy, chromatography, electrophoresis — identification of molecules, parts thereof, their molecular structures, e.g. computer-assisted structure elucidation (CASE), compositions of multi-component samples or mixtures.

Computer-assisted and measurement-based (for example: see above paragraph) qualitative and quantitative analyses of samples.

G16C 20/30

Definition statement

This place covers:

Prediction of physical, physicochemical and/or biological properties of chemical compounds, compositions or mixtures, e.g. calculating and selecting molecular descriptors, details related to the development of structure-activity relationship (SAR)/quantitative structure-activity relationship (QSAR)/ quantitative structure-property relationship (QSPR) models, absorption, distribution, metabolism, excretion and toxicity (ADME-Tox or ADMET) models, and pharmacokinetic/pharmacodynamic (PK/PD) models.

Prediction of a drug dosage or regimen, concentration of a pharmaceutical active agent based on molecular data, wherein the drug/active agent is any molecule excluding nucleic acids, proteins, peptides or their conjugates, e.g. oligonucleotide-peptides.

G16C 20/40

Definition statement

This place covers:

Database search of chemical structures or physicochemical data, e.g. full structure search, substructure search, similarity search, combinations of similarity coefficients, pharmacophore search, and 3D structure search.

G16C 20/50

Definition statement

This place covers:

Design and modelling of molecules to be used for any purpose, e.g. drug design with the emphasis on a therapeutic agent, e.g. ligand-biological target interactions, docking algorithms, and pharmacophore generation.

G16C 20/60

Definition statement

This place covers:

In silico (i.e. computer based) designing and screening of combinatorial chemical libraries of compounds other than nucleic acids, proteins, peptides, or amino acids.

Mere mention of combinatorial libraries of particular types of compounds is not sufficient to classify in this place.

G16C 20/70

Definition statement

This place covers:

Discovery and/or analysis of patterns within a vast amount of physicochemical data, wherein the emphasis is placed on the methods of analysis and is largely independent of the particular type of physicochemical data.

Analysis methods are based on machine learning, statistical models, supervised and unsupervised learning techniques including chemical pattern finding, knowledge discovery, rule extraction, correlation, clustering and classification.

G16C 20/80

Definition statement

This place covers:

Visual representations specifically adapted to structural and/or physicochemical data, wherein the emphasis is placed on the method of visualisation and is largely independent of the particular type of structural and/or physicochemical data.

For example: graphics generation, map display (e.g. physical and/or chemical properties maps), chemical structure representations (e.g. chemical name-to-structure conversion algorithms).

G16C 20/90

Definition statement

This place covers:

Software specially adapted to assist in programming procedures within computational chemistry.

Database systems specially adapted for managing chemical data. For example: ontologies, heterogeneous data integration, data warehousing, or computing architectures.

Encryption and compression algorithms specially adapted for chemical data, e.g. chemical fingerprints.

G16C 60/00

Definition statement

This place covers:

Computer-implemented mathematical modelling of the structures (including but not limited to structural defects and their resulting limitations), properties (including but not limited to electronic, thermal, chemical, magnetic, optical) and/or behaviours of materials (including but not limited to metals, polymers, ceramics, composites, biomaterials, nanomaterials) by applying the knowledge of physics, physical chemistry, and chemistry governing the said structures, properties and/or behaviours of the materials as well as the knowledge of the modelled materials.

Computational investigation of existing materials and design of new ones.

2. B. DEFINITIONS QUICK FIX

Symbol	**Location of change** (e.g., section title)	**Existing reference symbol or text**	**Action; New symbol; New text**
C40B 30/02			Delete entire definition.
C40B 50/02			Delete entire definition.
G06F 19/10			Delete entire definition.
G06F 19/12			Delete entire definition.
G06F 19/14			Delete entire definition.
G06F 19/16			Delete entire definition.
G06F 19/18			Delete entire definition.
G06F 19/20			Delete entire definition.
G06F 19/22			Delete entire definition.
G06F 19/24			Delete entire definition.
G06F 19/26			Delete entire definition.
G06F 19/28			Delete entire definition.
G06F 19/70			Delete entire definition.

NOTES:

- The table above is used for corrections or modifications to existing definitions, e.g. delete an entire definition or part thereof; propose new wording or modify wording of a section, change the symbol the definition is associated with, change or delete a reference symbol, etc.
- Do not delete (F) symbol definitions.

3. REVISION CONCORDANCE LIST (RCL)

Type*	**From CPC Symbol (existing)**	**To CPC Symbol(s)**
D	C40B 30/02	<administrative transfer to G16B 35/00 and G16C 20/60 simultaneously>
D	C40B 50/02	<administrative transfer to G16B 35/00 and G16C 20/60 simultaneously>
F	G06F 19/00	G06F 19/00,G16Z 99/00
D	G06F 19/10	<administrative transfer to G16B 99/00>
D	G06F 19/12	<administrative transfer to G16B 5/00>
D	G06F 19/14	<administrative transfer to G16B 10/00>
D	G06F 19/16	<administrative transfer to G16B 15/00>
D	G06F 19/18	<administrative transfer to G16B 20/00>
D	G06F 19/20	<administrative transfer to G16B 25/00>
D	G06F 19/22	<administrative transfer to G16B 30/00>
D	G06F 19/24	<administrative transfer to G16B 40/00>
D	G06F 19/26	<administrative transfer to G16B 45/00>
D	G06F 19/28	<administrative transfer to G16B 50/00>
D	G06F 19/70	<administrative transfer to G16C 99/00>
D	G06F 19/701	<administrative transfer to G16C 10/00>
D	G06F 19/702	<administrative transfer to G16C 20/10>
D	G06F 19/703	<administrative transfer to G16C 20/20>
D	G06F 19/704	<administrative transfer to G16C 20/30>
D	G06F 19/705	<administrative transfer to G16C 20/40>
D	G06F 19/706	<administrative transfer to G16C 20/50>
D	G06F 19/707	<administrative transfer to G16C 20/70>
D	G06F 19/708	<administrative transfer to G16C 20/80>
D	G06F 19/709	<administrative transfer to G16C 20/90>
Q	G16B 5/00	G16B 5/00, G16B 5/10, G16B 5/20, G16B 5/30
Q	G16B 15/00	G16B 15/00, G16B 15/10, G16B 15/20, G16B 15/30
Q	G16B 20/00	G16B 20/00, G16B 20/10, G16B 20/20, G16B 20/30, G16B 20/40, G16B 20/50
Q	G16B 25/00	G16B 25/00, G16B 25/10, G16B 25/20, G16B 25/30
Q	G16B 30/00	G16B 30/00, G16B 30/10, G16B 30/20
Q	G16B 35/00	G16B 35/00, G16B 35/10, G16B 35/20
Q	G16B 40/00	G16B 40/00, G16B 40/10, G16B 40/20, G16B 40/30
Q	G16B 50/00	G16B 50/00, G16B 50/10, G16B 50/20, G16B 50/30, G16B 50/40, G16B 50/50
Q	G16B 99/00	G16B 5/00, G16B 5/10, G16B 5/20, G16B 5/30, G16B 10/00, G16B 15/00, G16B 15/10, G16B 15/20, G16B 15/30, G16B 20/00, G16B 20/10, G16B 20/20, G16B 20/30, G16B 20/40, G16B 20/50, G16B 25/00, G16B 25/10, G16B 25/20, G16B 25/30, G16B 30/00, G16B 30/10, G16B 30/20, G16B 35/00, G16B 35/10, G16B 35/20, G16B 40/00, G16B 40/10, G16B 40/20, G16B 40/30, G16B 45/00, G16B 50/00, G16B 50/10, G16B 50/20, G16B 50/30, G16B 50/40, G16B 50/50, G16B 99/00
Q	G16C 20/60	G16C 20/60, G16C 20/62, G16C 20/64

CPC NOTICE OF CHANGES 647

DATE: FEBRUARY 1, 2019

PROJECT RP0573

Type*	**From CPC Symbol (existing)**	**To CPC Symbol(s)**
Q	G16C 99/00	G16C 10/00, G16C 20/00, G16C 20/10, G16C 20/20, G16C 20/30, G16C 20/40, G16C 20/50, G16C 20/60, G16C 20/62, G16C 20/64, G16C 20/70, G16C 20/80, G16C 20/90, G16C 60/00, G16C 99/00

* 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; D = deleted entries; F = frozen entries will be deleted once reclassification of documents from the entries is completed.

NOTES:

- Only C, D, F, and Q type entries are included in the table above.
- When multiple symbols are included in the "To" column, do not use ranges of symbols.
- 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 ("To") symbol, however it is required to specify "<no transfer>" in the "To" column for such cases.
- RCL is not needed for finalisation projects.

4. CHANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL)

CPC	**IPC**	**Action***
C40B 30/02		DELETE
C40B 50/02		DELETE
G06F 19/10		DELETE
G06F 19/12		DELETE
G06F 19/14		DELETE
G06F 19/16		DELETE
G06F 19/18		DELETE
G06F 19/20		DELETE
G06F 19/22		DELETE
G06F 19/24		DELETE
G06F 19/26		DELETE
G06F 19/28		DELETE
G06F 19/70		DELETE
G06F 19/701		DELETE
G06F 19/702		DELETE
G06F 19/703		DELETE
G06F 19/704		DELETE
G06F 19/705		DELETE
G06F 19/706		DELETE
G06F 19/707		DELETE
G06F 19/708		DELETE
G06F 19/709		DELETE
G16B 5/00	G16B 5/00	NEW
G16B 5/10	G16B 5/10	NEW
G16B 5/20	G16B 5/20	NEW
G16B 5/30	G16B 5/30	NEW
G16B 10/00	G16B 10/00	NEW
G16B 15/00	G16B 15/00	NEW
G16B 15/10	G16B 15/10	NEW
G16B 15/20	G16B 15/20	NEW
G16B 15/30	G16B 15/30	NEW
G16B 20/00	G16B 20/00	NEW
G16B 20/10	G16B 20/10	NEW
G16B 20/20	G16B 20/20	NEW
G16B 20/30	G16B 20/30	NEW
G16B 20/40	G16B 20/40	NEW
G16B 20/50	G16B 20/50	NEW
G16B 25/00	G16B 25/00	NEW
G16B 25/10	G16B 25/10	NEW
G16B 25/20	G16B 25/20	NEW
G16B 25/30	G16B 25/30	NEW
G16B 30/00	G16B 30/00	NEW

CPC	**IPC**	**Action***
G16B 30/10	G16B 30/10	NEW
G16B 30/20	G16B 30/20	NEW
G16B 35/00	G16B 35/00	NEW
G16B 35/10	G16B 35/10	NEW
G16B 35/20	G16B 35/20	NEW
G16B 40/00	G16B 40/00	NEW
G16B 40/10	G16B 40/10	NEW
G16B 40/20	G16B 40/20	NEW
G16B 40/30	G16B 40/30	NEW
G16B 45/00	G16B 45/00	NEW
G16B 50/00	G16B 50/00	NEW
G16B 50/10	G16B 50/10	NEW
G16B 50/20	G16B 50/20	NEW
G16B 50/30	G16B 50/30	NEW
G16B 50/40	G16B 50/40	NEW
G16B 50/50	G16B 50/50	NEW
G16B 99/00	G16B 99/00	NEW
G16C 10/00	G16C 10/00	NEW
G16C 20/00	G16C 20/00	NEW
G16C 20/10	G16C 20/10	NEW
G16C 20/20	G16C 20/20	NEW
G16C 20/30	G16C 20/30	NEW
G16C 20/40	G16C 20/40	NEW
G16C 20/50	G16C 20/50	NEW
G16C 20/60	G16C 20/60	NEW
G16C 20/62	G16C 20/62	NEW
G16C 20/64	G16C 20/64	NEW
G16C 20/70	G16C 20/70	NEW
G16C 20/80	G16C 20/80	NEW
G16C 20/90	G16C 20/90	NEW
G16C 60/00	G16C 60/00	NEW
G16C 99/00	G16C 99/00	NEW
G16Z 99/00	G16Z 99/00	NEW

*Action column:

- For an (N) or (Q) entry, provide an IPC symbol and complete the Action column with “NEW.”
- For an existing CPC main trunk entry or indexing entry where the existing IPC symbol needs to be changed, provide an updated IPC symbol and complete the Action column with “UPDATED.”
- For a (D) CPC entry or indexing entry complete the Action column with “DELETE.” IPC symbol does not need to be included in the IPC column.
- For an (N) 2000 series CPC entry which is positioned within the main trunk scheme (breakdown code) provide an IPC symbol and complete the action column with “NEW”.
- For an (N) 2000 series CPC entry positioned at the end of the CPC scheme (orthogonal code), with no IPC equivalent, complete the IPC column with “CPCONLY” and complete the action column with “NEW”.

NOTES:

- F symbols are not included in the CICL table above.
- E and M symbols are not included in the CICL table above unless a change to the existing IPC is desired.

5. CROSS-REFERENCE LIST (CRL)

Scheme references impacted by this revision project

Location of reference to be changed	**Referenced subclass or group to be changed**	**Action; New reference symbol; New text**
G01C 21/20	G06F 17/00, G06F 19/00	DELETE the following reference text from the title: ; adaptations of digital computers to a specific function or application G06F 17/00, G06F 19/00
G06F 19/30	G06F 19/10	DELETE the following reference text from the title: bioinformatics G06F 19/10;
G06K 9/00	G06F 19/70	DELETE the following reference text from the title: recognition of molecular sequences G06F 19/70;
G06Q 50/24	G06F 19/00	DELETE the following reference text from the title: (processing of medical or biological data for scientific purposes G06F 19/00)
G07F 17/0092	G06F 19/00	DELETE the following reference text from the title: ; data processing for medical purposes G06F 19/00
H01J 49/0036	G06F 19/10	DELETE the following reference text from the title: ; bioinformatics G06F 19/10
H04L 29/08558	G06F 19/00	DELETE the following reference text from the title: digital computing or data processing equipment or methods, specially adapted for specific applications G06F19/00;

Location of reference to be changed	**Referenced subclass or group to be changed**	**Action; New reference symbol; New text**
H04L 67/12	G06F 19/00	DELETE the following reference text from the title: digital computing or data processing equipment or methods, specially adapted for specific applications in healthcare or life sciences G06F 19/00;
H04L 69/329	G06F 19/00	DELETE the following reference text from the title: digital computing or data processing equipment or methods, specially adapted for specific applications G06F 19/00;

Definitions references impacted by this revision project

Location of reference to be changed	**Referenced subclass or group to be changed**	**Section of definition**	**Action; New reference symbol; New text**
A44C 15/003	G06F 19/00	Limiting references	DELETE the entire References/Limiting references section.
A61B 6/00	G06F 19/00	Informative references	REPLACE "G06F 19/00" with the following symbol: G16H
A61B 6/00	G06F 19/00	Relationships with other classification places	REPLACE "G06F 19/00" with the following symbol: G16H
A61B 8/00	G06F 19/00	Relationships with other classification places	REPLACE "G06F 19/00" with the following symbol: G16H

Location of reference to be changed	**Referenced subclass or group to be changed**	**Section of definition**	**Action; New reference symbol; New text**
A63B 24/00	G06F 19/00	Informative references	DELETE the following two rows: Digital computing or data processing in general G06F 19/00 Digital computing or data processing G06F 19/00
A63B 24/00		Informative references	INSERT the following new row: Digital data processing G06F
A63F	G06F 17/00, G06F 19/00	Informative references	REPLACE the existing row: "Data-processing…for game playing G06F 17/00, G06F 19/00" with the new row below: Digital data processing G06F
B01J 19/00	G06F 19/70	Special rules of classification	DELETE the last sentence in the second paragraph of the Special rules section: For chemo-informatic applications: G06F 19/70.
B01J 19/00			INSERT the following new Informative references section: **Informative references** *Attention is drawn to the following places, which may be of interest for search:* Computational chemistry; Chemoinformatics; Computational materials science G16C
B63J 99/00	G06F 17/00 - G06F 19/00	Informative references	REPLACE the existing row: "Digital computing or data…specific applications G06F 17/00 – G06F 19/00" with the new row below: Digital data processing G06F
C12N 15/1034	C40B 30/02	Informative references	DELETE the existing row shown below: In silico methods of screening virtual chemical libraries C40B 30/02

CPC NOTICE OF CHANGES 647

DATE: FEBRUARY 1, 2019

PROJECT RP0573

Location of reference to be changed	**Referenced subclass or group to be changed**	**Section of definition**	**Action; New reference symbol; New text**
C12N 15/1034		Informative references	INSERT the following new row: ICT specially adapted for in silico combinatorial libraries of nucleic acids, proteins or peptides G16B 35/00
C12N 15/1034	C40B 50/02	Informative references	REPLACE the existing row: "In silico or mathematical methods of creating virtual chemical libraries C40B 50/02" with the new row below: In silico combinatorial chemistry G16C 20/60
C12N 15/1034	G06F 19/10	Informative references	DELETE the existing row shown below: Bioinformatics, i.e. methods or systems for genetic or protein-related data processing in computational molecular biology; G06F 19/10
C12N 15/1089	C40B 30/02	Informative references	REPLACE the existing row with the new row below: ICT specially adapted for in silico combinatorial libraries of nucleic acids, proteins or peptides G16B 35/00
C12N 15/1089	C40B 50/02	Informative references	REPLACE the existing row with the new row below: In silico combinatorial chemistry G16C 20/60
C12N 15/1089	G06F 19/10 – G06F 19/24	Informative references	DELETE the existing row shown below: Bioinformatics, i.e. methods or systems for genetic or protein-related data processing in computational molecular biology G06F 19/10 – G06F 19/24
C12P	G06F 19/10	Informative references	REPLACE "G06F 19/10" with the following symbol: G16B

Location of reference to be changed	**Referenced subclass or group to be changed**	**Section of definition**	**Action; New reference symbol; New text**
C12Q 1/68	G06F 19/10 – G06F 19/24	Limiting references	DELETE the existing row shown below: Bioinformatics G06F 19/10 – G06F 19/24
C12Q 1/68			INSERT in the Informative references table the following new row: Bioinformatics G16B
C12Q 1/6811	G06F 19/20	Limiting references	DELETE the existing row shown below: Bioinformatics for probe design or probe optimization G06F 19/20
C12Q 1/6811			INSERT the following new Informative references section: **Informative references** *Attention is drawn to the following places, which may be of interest for search:* Bioinformatics for probe design or probe optimization G16B 25/20
C12Q 1/6811	G06F 19/20	Limiting references	DELETE the existing row shown below: Probe design or optimisation using bioinformatics G06F 19/20
C12Q 1/6851	G06F 19/20	Informative references	REPLACE this row: "Quantitation of nucleic acids …using mathematical models G06F 19/20" with the new row shown below: ICT specially adapted for hybridisation; ICT specially adapted for gene or protein expression G16B 25/00
C12Q 1/6851	G06F 19/20	Limiting references	DELETE the entire Limiting references section: heading, preamble, and row.

Location of reference to be changed	**Referenced subclass or group to be changed**	**Section of definition**	**Action; New reference symbol; New text**
C40B	C40B 30/02, C40B 50/02	Special rules of classification	DELETE from the Special rules section the following text: There is, however, an exception in the field of Bio/Chemoinformatics (G06F). Here, in order to avoid double classification, the subgroups C40B 30/02 and C40B 50/02 are used regularly.
G01C 21/20	G06F 17/00, G06F 19/00	Informative references	REPLACE this row: "Adaptations of digital…function or application G06F 17/00, G06F 19/00" with the new row below: Digital data processing G06F
G01G	G06F 19/00	Informative references	REPLACE this row: "Data processing equipments G06F 19/00" with the new row below: Digital data processing G06F
G01N 33/98	G06F 19/10	Informative references	REPLACE the symbol: "G06F 19/10" with the symbol shown below: G16B
G01N 33/98	G06F 19/00	Special rules of classification	REPLACE the last sentence in the last paragraph of the Special rules section: "If the inventive contribution resides … with G06F 19/00 which may be better suited to take such subject matter." with the sentence below: If the inventive contribution resides in the bioinformatic aspects, the case should be discussed with G16B which may be better suited to take such subject matter.
G01N 35/00	G06F 17/00, G06F 19/00	Informative references	REPLACE this row: "Digital computing or data…specific applications G06F 17/00, G06F 19/00" with the new row shown below: Digital data processing G06F

CPC NOTICE OF CHANGES 647

DATE: FEBRUARY 1, 2019

PROJECT RP0573

Location of reference to be changed	**Referenced subclass or group to be changed**	**Section of definition**	**Action; New reference symbol; New text**
G03H 1/08	G06F 17/00, G06F 19/00	Informative references	REPLACE this row: "Digital computing or data…specific functions or applications G06F 17/00, G06F 19/00" with the new row shown below: Digital data processing G06F
G06F 9/3877	G06F 19/00	Relationships with other classification places	REPLACE the last statement: "Specially adapted processors: G06F 17/00, G06F 19/00." with the following: Digital data processing G06F 17/00, G06F
G06F 17/18	G06F 19/10	Informative references	REPLACE symbol "G06F 19/10" with following new symbol: G16B
G06F 19/30	G06F 19/10, G06F 19/70	Limiting references	DELETE the Limiting references section: heading, preamble, and rows: **Limiting references** *This place does not cover*: Bioinformatics G06F 19/10 Chemoinformatics G06F 19/70
G06F 19/3456	G06F 19/70	Informative references	DELETE the following row in the Informative references table: Chemoinformatics G06F 19/70
G06N 3/00	G06F 19/10	Informative references	REPLACE the existing symbol with the new symbol below: G16B
G06N 7/005	G06F 19/00	Application-oriented references	REPLACE the existing row with the new row below: Digital data processing G06F

Location of reference to be changed	**Referenced subclass or group to be changed**	**Section of definition**	**Action; New reference symbol; New text**
G06N 7/06	G06F 19/70	Application-oriented references	REPLACE the symbol "G06F 19/70" with the following symbol: G16C
G06Q 30/018	G06F 19/00	Informative references	REPLACE the existing row with the new row below: Digital data processing G06F
G06Q 50/00	G06F 19/10	Relationships with other classification places	REPLACE "G06F 19/10" with the new symbol shown below: G16B
G06T 7/00	G06F 19/10	Informative references	REPLACE "G06F 19/10" with the new symbol below: G16B
G06T 7/0012	G06F 19/10	Informative references	REPLACE "G06F 19/10" with the new symbol below: G16B
G06T 11/206	G06F 19/26	Limiting references	DELETE the following row from the Informative references table: Visualization for Bioinformatics G06F 19/26
G06T 11/206		Application-oriented references	INSERT the following new row in the Application-oriented references table: ICT specially adapted for bioinformatics-related data visualisation, e.g. displaying of maps or networks G16B 45/00
G16H	G06F 19/10	Informative references	REPLACE "G06F 19/10" with the new symbol below: G16B

Location of reference to be changed	**Referenced subclass or group to be changed**	**Section of definition**	**Action; New reference symbol; New text**
G16H	G06F 19/70	Informative references	REPLACE this row: "Chemoinformatics G06F 19/70" with the new row/text shown below: Computational chemistry; Chemoinformatics; Computational materials science G16C
G16H 50/80	G06F 19/24	Informative references	REPLACE the row: "Data mining or … for bioinformatics G06F 19/24" with the new row below: ICT specially adapted for biostatistics; ICT specially adapted for bioinformatics-related machine learning or data mining, e.g. knowledge discovery or pattern finding G16B 40/00
H04L 67/12	G06F 19/00	Informative references	REPLACE this row: "Computers specially adapted…or game playing G06F 19/00" with the new row below: Digital data processing G06F
H04L 67/12	G06F 19/3418	Informative references	DELETE the entire row shown below: Telemedicine, e.g., remote dignostics, remote control or monitoring of patient carried devices G06F 19/3418
H04L 69/329	G06F 19/00	Limiting references	DELETE the entire row shown below: Digital computing or data processing equipment or methods, specially adapted for specific applications G06F 19/00
H04L 69/329	G06F 19/00	Relationships with other classification places	REPLACE the second statement: "Digital computing or data processing … specially adapted for specific applications: G06F 19/00" with the statement below: Digital data processing: G06F

NOTES:

- The CRL tables above are used for changes to locations **outside** of the project scope. Changes to references in scheme titles or definitions inside the project scope will be reflected in the "scheme change" template or one of the "definition" templates.
- In addition to other changes proposed in the tables above, in the column titled "Referenced subclass or group to be changed," **referenced** D symbols should indicate an action of "delete" or should indicate a replacement symbol and **referenced** F symbols should indicate a replacement symbol.
- When a reference is deleted, text related to that reference will also be deleted unless other references or a range of references associated with the same text remain.