

Derwent World Patents Index®

# MCR 2025 CPI, GMPI and EPI Changes

December 2024



**DWPI Manual Code Revision 2025 - CPI Codes**

New / Changed / Retired	Code	Date Range	Title	Scope Notes	Search Terms
<b>SECTION A</b>					
Changed Scope Notes	A03-A03	( - )	Other cellulose esters	Inc : cellulose nitrate (nitrocellulose), cellulose acetate butyrate.	
Changed Scope Notes	A03-C	( - )	Others	E.g. terpene resins, polymerised drying oils, frankincense resin - Myrrh resin.	
Changed Scope Notes	A04-A	( - )	Others	Others e.g. unsaturated monomers containing elements other than C, H, O, N and halogen (excluding metal salts of unsaturated carboxylic acids (e.g. sodium acrylate) for which see the corresponding acid).	
Changed Title + Scope Notes	A04-B12	(2021- )	Diallyl dimethylammonium chloride (co)polymers	(Co)polymers formed from diallyl dimethylammonium chloride, e.g. Polydiallyl dimethylammonium chloride, PDADMAC (co)polymers.	
Changed Scope Notes	A05-J	( - )	Others Polymers	Excluding A05-A01 to A05-J13; e.g.furan resins (from furfuryl alcohol), Friedel-Crafts resins and phenol-terpene resins.	
Changed Scope Notes	A05-J02	( - )	Heterocyclic polymers produced by cyclisation during polycondensation	Including: e.g. polyhydantoins, polyparabanic acid, polybenzimidazoles, polyisocyanurates, polycyanurates, polyoxazoli(di)nes, polydopamine, polyuretidione. Excluding: polyimides, for which code from A05-J01+.	
Changed Scope Notes	A08-M06	( - )	Viscosity modifiers	Excluding A08-A; including thixotropic agents, thickener.	
Changed Scope Notes	A08-M10	(1977- )	Other specifically functional agents	Including nucleating agents, corrosion stabilizer. Prior to 1977, see A08-M.	
Changed Scope Notes	A11-A	( - )	Others	Including methods of feeding raw materials, degassing, purging, vacuum hoppers.	

SECTION A (continued)					
Changed Scope Notes	A11-B16	1994-	Stereographic moulding	Used for processes that produce a three-dimensional polymer form by sequential polymerising or curing, usually by computer control, onto a previously polymerised or cured surface, thus “building up” a three-dimensional moulding. Also used for 3D/4D-printing, additive manufacturing, rapid prototyping, e.g. FDM, LOM, SFF. See also A10-B+, A10-C+, A10-D+. Previous code(s): A11-B, A11-C02B and/or A11-C02D if appropriate.	
Changed Scope Notes	A12-V03C1	(1986- )	Dental; sterilisation and hygiene	E.g. surgical gowns, masks and sanitisers. Prior to 1986 see A12-V03C.	
Changed Scope Notes	A12-W09	(1970- )	Food	Food packaging is also coded under A12-P+ from 2025. Prior to 1970, see A12-W.	
SECTION B					
Changed Scope Notes	B04-Q04	(2017- )	Nucleic acid-drug conjugates	Applied when both subcodes would be used or when the nucleic acid portion is ambiguously defined. The nucleic acid is additionally coded in section B04-B03 and/or B04-E.	
New	B04-Q04A	(2025- )	Oligonucleotide-drug conjugates	The oligonucleotide is additionally coded in section B04-B03.	
New	B04-Q04B	(2025- )	Polynucleotide-drug conjugates	The polynucleotide is additionally coded in section B04-E.	
New	B04-Q05	(2025- )	Proteolysis targeting chimera	PROTAC (RTM). To be searched alongside the relevant Section B chemical structural codes.	<i>PROTAC (RTM), proteolysis targeting chimera</i>
Changed Scope Notes	B12-M11Q	(2008- )	Nanoformulations		
New	B14-D01E3	(2025- )	Glucagon-like peptide-1 (GLP-1) agonist		<i>GLP-1</i>
SECTION C					
Changed Scope Notes	C04-Q04	(2017- )	Nucleic acid-drug conjugates	Applied when both subcodes would be used or when the nucleic acid portion is ambiguously defined. The nucleic acid is additionally coded in section C04-B03 and/or C04-E.	
New	C04-Q04A	(2025- )	Oligonucleotide-drug conjugates	The oligonucleotide is additionally coded in section C04-B03.	
New	C04-Q04B	(2025- )	Polynucleotide-drug conjugates	The polynucleotide is additionally coded in section C04-E.	

SECTION C (continued)					
New	C04-Q05	(2025- )	Proteolysis targeting chimera	PROTAC (RTM). To be searched alongside the relevant Section C chemical structural codes.	<i>PROTAC (RTM), proteolysis targeting chimera</i>
Changed Scope Notes	C12-M11Q	(2008- )	Nanoformulations		
New	C14-D01E3	(2025- )	Glucagon-like peptide-1 (GLP-1) agonist		<i>GLP-1</i>
SECTION D					
New	D08-B01D2	(2025- )	Skin darkening, fake tan	Topically applied only. Ingested melanogenesis stimulants code in section B.	<i>Fake tan</i>
New	D08-B01E	(2025- )	Make-up removing	Includes removal of fake tan. Nail polish removers code D08-B02B.	
SECTION H					
Changed Scope Notes	H05-J	( - )	Automatic control equipment	This code is only for automatic control equipment used at the refinery. If the control system is electrical, T06 and/or T01 codes might be required.	
SECTION J					
Changed Scope Notes	J03-B09	(2005- )	General electrolytic processes	Includes control and testing methods and apparatus of electrolytic cell and processes.	
Changed Scope Notes	J04-C03	( - )	Investigation by method	E.g. monitoring of reactions. Includes testing devices and apparatus.	
SECTION L					
New	L02-K03	(2025- )	Industrial applications		
New	L02-K09	(2025- )	Other applications of ceramics		
Changed Search Terms	L03-E03	( - )	Secondary cells		Accumulator, storage battery, storage cell, charge-discharge cycles

DWPI Manual Code Revision 2025 - GMPI & EPI Codes						
New / Changed / Retired	Class	Code	Date Range	Title	Scope Notes	Search Terms
SECTION P						
Changed Title	P11	P11-E08	(2015- )	Flowers and trees		
Changed Title	P12	P12-E08	(2015- )	Flowers and trees		
Changed Title	P13	P13-E08	(2015- )	Flowers and trees		
Changed Search Terms	P22	P22-A	(2015- )	Shoes and sandals	Includes slippers and trainers. Sport shoes are also coded under P22-F03. Also includes over-shoes.	<i>Brogues, court shoes, flats, loafers, pumps, wedges, clogs, mules, ballerina, slip-on, dockside, flip flops, shoe cover, overshoes</i>
Changed Search Terms	P24	P24-B	(2015- )	Purses, luggage, handheld bags and cases	Includes shopping bags, handbags, beach bags, bags for shoes, rigid and semi-rigid luggage, such as suitcases, trunks, travelling baskets, sleeves or socks for mobile phones, etc. Also includes sacks that can be transformed into a different article, such as a rucksack turning into a tent, a mattress, a coat, a sleeping bag, etc. This type of bag is also coded under P24-D (camping equipment). Also includes boxes or cases for specific items, such as hat boxes, cases for telescopes, pocket holders for stamps or coins, jewel boxes, water-tight boxes used during swimming, key wallet, camera cases, etc. Make-up boxes and lipstick cases are coded under P24-C04.	<i>Backpack, money-bag, wallet, guitar case, spectacle case, watch case, picnic box, protective shell, storage box, nursing bag, trauma bag</i>
Changed Scope Notes	P32	P32-A40	(2015- )	Prostheses	Includes dental prostheses. Also includes instruments used for placement or removal of prosthesis. Electrical details of prostheses are coded under S05-F codes.	
Changed Scope Notes	P32	P32-A40A	(2015- )	Implantable	Including stents for insertion in blood vessels and joint replacement implants, spine stabilisation implants, etc.	
Changed Search Terms	P32	P32-A50	(2015- )	Eye and ear protection and/or treatment		<i>Eye mask, eye washing</i>
Changed Scope Notes + Search Terms	P32	P32-A60	(2015- )	Bandages, dressings and first aid kits	Includes dispensers and auxiliary items. Also includes absorbent/antiseptic pads and swabs such as nappies, sanitary towels, diapers and tampons. Disposal of used dressings and bandages is coded by a combination of P34-W (medical waste disposal) and P32-A60.	<i>Arm sling</i>

SECTION P (continued)						
Changed Scope Notes + Search Terms	P32	P32-A99	(2015- )	Other apparatus and methods for dentistry, veterinary, prostheses	Includes dental auxiliary appliances (for dental chairs and work-stands see P33-A10), therapeutic heating devices, orthopaedic devices, contraceptive devices, devices for preventing snoring, finger-sucking, for correcting stammering or stuttering or for preventing bed-wetting.	<i>Hot-water bottle, colostomy bag, condom, corset, traction splint, neck brace</i>
Changed Scope Notes + Search Terms	P33	P33-B	(2015- )	Storage and transport	Includes containers for storing and transporting medical aids. See also Q31-Q34 codes. Also includes nurse medical bags (see also P24-B).	<i>Nursing bag, trauma bag</i>
SECTION Q						
Changed Scope Notes	Q15	Q15-B12	(2006- )	For carrying long loads	Includes transportation of wind turbine blades (see also X15-B09).	
Changed Scope Notes	Q17	Q17-A10	(2006 - )	Body finishing arrangements	Includes decorative trim elements such as external rubbing strips, all interior trim, and liners and covers for load compartments such as pick-up truck load beds. Also includes covers/flaps for vehicle charging sockets (see X21-B01A1C for electric vehicle charging per se) or fuel filler flaps (see Q17-E04 for fuel supply per se). For car weatherproof covers used when vehicle is parked see Q14-K instead.	
Changed Scope Notes	Q19	Q19-F	( - )	Recreational vehicles	Includes MPVs (multipurpose vehicles), SUVs (sports utility vehicles) and people carriers. See X22-P08 for electrical aspects of recreational vehicles.	<i>RV</i>
Changed Title + Scope Notes	Q19	Q19-F03	(2006 - )	Racing/sports cars; go-karts	Includes cars used in competition such as racing and rally cars. Q22-C instead for children's push-along go-karts.	
New	Q19	Q19-F05	(2025- )	All-terrain vehicles	Includes all-terrain vehicles, off-road buggies, quad-bikes etc. See Q13-A11 for novel AWD/4WD systems per se.	
Changed Search Terms	Q34	Q34-H99	(2012- )	Other hazardous materials		<i>Asbestos, explosive materials, ammunitions, refrigerant, paint, poison, dead organisms/creatures, sewage effluents</i>
Changed Search Terms	Q34	Q34-J02	(2012- )	Medical	Includes packaging of medical instruments such as needles, dressings, etc. Special carriers for e.g. human organs with integrated cooling systems are also coded under Q32-D01. Packaging of tablets and medicines are coded under Q34-J01 only.	<i>LifePort®, sterile bandages, blood, medical packs/kits, biological cell culture samples</i>
Changed Search Terms	Q47	Q47-B01	(2015- )	Hinges, brakes		<i>Sliding rail</i>

SECTION Q (continued)						
Changed Scope Notes	Q48	Q48	(2015- )	Blinds, shutters, doors and windows	From 2015 manual codes have been assigned for all mechanical details of blinds, shutters, doors and windows. Details of vehicle doors and windows are only coded under Q17-A07, and vehicle blinds, such as sun shades, are only coded under Q14-D.	
Changed Scope Notes + Search Terms	Q48	Q48-J	(2015- )	Ventilation and sealing	Includes arrangements for draining-off condensed water, draught excluders, rain deflectors, thermal insulation, soundproofing, etc.	<i>Grille, ventilation rose</i>
Changed Scope Notes	Q48	Q48-L	(2015- )	Screens, blinds, shutters and other protective devices	Electrical details of blinds and shutters are coded under X27-L, and electrical details of doors and windows are coded under X25-U01.	
Changed Search Terms	Q49	Q49-A01	(2015- )	Extraction equipment	Includes details of conveyors for extracting mined materials, e.g. coal, from the mines. Non-electrical details of conveyors are coded under Q35-B, and electrical details of conveyors are covered by X25-F01 codes.	<i>Hydraulic mining</i>
Changed Scope Notes + Search Terms	Q49	Q49-B01	(2015- )	Extraction methods	Includes method for removing the mined materials out of the mines or quarries.	<i>Hydraulic mining</i>
Changed Search Terms	Q49	Q49-C	(2015- )	Mining and quarrying structures		<i>Tunnel, gallery, lining</i>
Changed Scope Notes	Q49	Q49-E	(2015- )	Mining and quarrying locations	Can be from either terrestrial or extraterrestrial sources.	
Changed Search Terms	Q76	Q76-U40	(2015-)	Industrial		<i>Combine harvester, paint pigments, ceramic materials, catalyst supports, microalgae, paper pulp, sewage treatment, waste management</i>
SECTION S						
Changed Title + Scope Notes + Search Terms	S01	S01-D05B1	(1992- )	Resistance & conductivity measurements	Includes details of both resistivity and conductivity measurements.	<i>Electrical resistivity, volume resistivity, specific electrical resistance</i>
Changed Search Terms	S02	S02-G03	( - )	Acceleration or shock		<i>Inertia, force, accelerometer, impact, collision</i>
Changed Search Terms	S03	S03-C	( - )	Geophysics	Includes non-geophysical applications such as detecting presence of objects, e.g. using light barrier (S03-C08). (See also S03-C06). Well logging apparatus with electrical content is also coded in X25-E02.	<i>Geomodeling, geological modeling</i>
Changed Search Terms	S03	S03-F09C	(2006- )	General contamination detection	Prior to 2007, covered by S03-F09B.	<i>Turbidity</i>

SECTION S (continued)						
Changed Scope Notes	S05	S05-E01	(1992- )	Dental surgery and treatment apparatus	Includes apparatus for dental surgery and general dental treatment, such as tooth cleaning device, root canal treatment, etc.	
Changed Scope Notes	S05	S05-F	(1983- )	Prostheses	Constructional details of prostheses are coded under P32-A40 codes.	<i>Implant, artificial, larynx, nerve, stimulating, tactile</i>
Changed Scope Notes	S05	S05-F09	(1992- )	Other (prostheses)	Includes medical splints.	
Changed Scope Notes	S05	S05-G02X	(2012- )	Other hospital equipment	Includes special equipment used in hospital bathrooms, such as baths for patients with lower body bone fractures or whole body bone fractures. Includes equipment used outside hospitals e.g. at doctor surgeries etc. (equipment used in dental surgeries is coded under S05-E02 only) and electrical aspects of wearable devices, hospital clothing and household medical equipment. Includes electrical details of diagnosis boxes/bags and boxes for storing medical instruments.	<i>Gynaecological lamp, RFID belts</i>
Changed Search Terms	S06	S06-K03C	(2010- )	Cooling, ventilation & humidifying mechanisms	Previously coded as S06-A19B.	<i>Air filter, fan</i>
SECTION T						
Changed Scope Notes	T01	T01-J05A4	(2024- )	Information processing for Agriculture, Fishing, Forestry and Mining	Includes information analysis or data storage related aspects of analysis on agriculture, fishing, forestry, mining, animal husbandry. See also X25-N codes for agriculture (including livestock) and X25-D02 for mining.	
New	T01	T01-J15K	(2025- )	Digital twinning	Includes a computer model that simulates the behaviour of a physical system, replicating it to predict opportunities for change, advise real-time actions for optimization, and alleviate unexpected events by observing, evaluating and verifying the model. Also includes the predictive analysis of the model by using software platform.	
Changed Scope Notes + Search Terms	T01	T01-J16	(1992- )	Artificial intelligence (AI)	Covers knowledge processing, inexact reasoning e.g. fuzzy logic. Also see T01-N01G for Artificial Intelligence using internet/network.	
Changed Title	T01	T01-J16C2	(1992- )	Machine learning/ Learning	Includes use of a specific method or system to adjust the rules, i.e. connection weights, e.g. concept learning algorithm.	



SECTION T (continued)						
Changed Search Terms	T01	T01-J16C3	(1992- )	Natural and pictorial language processing	Includes where presentation of data to the user includes non-verbal representations or symbol, or statements in standard English language syntax. Non intelligent language translation is covered by T01-J14.	<i>Semantics, abstracting concepts, phrases, natural language generation, named entity recognition, text structure</i>
New	T01	T01-J16C3A	(2025- )	Speech processing	This code covers the presentation of data, which is majorly sound/audio/speech. Includes applications text-to-speech, speech-to-text, comparing speech, question/answer using speech, etc. See W03-A02C5L for voice recognition-based remote control, W04-V04A5 for voice-actuated control of equipment or machines and T01-C08A for speech recognition.	<i>Native language, sound processing, voice processing, speech to text, speech recognition</i>
New	T01	T01-J16C3B	(2025- )	Computer vision	This code covers the presentation of data, which is majorly image/video/vision. Includes applications like trained image encoder, image tokenization, image-text dataset, image-to-text models, etc. See W04-P01A for video encoder, T01-J11 code normal presentation (PDF) to word conversion.	<i>Image analysis, image processing, image conversion</i>
New	T01	T01-J16C3C	(2025- )	Large language models (LLM)	This code covers model processing tasks based on large data sets. The model works on the principle of processing large-scale text data or data sets. Includes learning models of statistical/ mathematical/ functional relationships from large data/ text sets. This code can be applied in conjunction with other T01-J16 codes based on the type/application mentioned.	<i>Large set of datasets, generation of text, ontology, texts analytics</i>
New	T01	T01-J16C5	(2025- )	Predictive analytics/ Probabilistic reasoning	This code covers AI model based on data sets by probabilistic functions/ predictive analysing methods to obtain a solution to the problem. Data is analysed for various purposes through probabilistic models/ method. See T01-J04D for function evaluation by approximation.	<i>Naive Bayes algorithm, uncertainty, probabilistic or predictive analysis, least squares regression, Bayes theorem</i>

SECTION T (continued)						
New	T01	T01-J16D	(2025- )	Distributed artificial intelligence	This code is applied when sharing resources like computation, storage, network, communication, power, and application functions to data sources at the point of AI action or result. It is also used for data security/ data control and data privacy regulations of AI. See T01-J05B4A for distributed databases, blockchains.	<i>Complex learning, planning, and decision-making problems. AI/ spatial distribution</i>
New	T01	T01-J16E	(2025- )	AI human-computer interface	This code covers user interaction by designing interactive models/ interfaces. It includes personal devices, computing devices, and covers all cognitive interactions (sight, touch, hearing, voice, spatial). See T01-J12 for program management, GUI/WIMPS/HCI, T01-J21 section for GPS/ non-vehicle navigation details, and T01-J20B1 for software development kit/ application program interface (robotic process automation).	<i>Chatbot, intelligent bot, speech bot, ChatGPT, etc.</i>
New	T01	T01-J16E1	(2025- )	Virtual assistants	This code includes applications used for a question/answer, problem to a solution, giving nearby solutions or sending assistance to a higher level if a problem exists based on datasets available. It also includes scheduling appointments, sending notifications, alerting, emailing, and other administrative aspects. See T01-J12B1 for display interface aspect.	<i>AI Virtual assistants</i>
New	T01	T01-J16P	(2025- )	AI Applications	Virtual assistants are coded under T01-J16E1.	
New	T01	T01-J16P1	(2025- )	Agriculture, Fishing & Forestry	Includes precision agriculture to determine the best crops to grow based on weather patterns, soil deficiencies, etc. Also includes automated machinery. See also T01-J16P9 for transportation, and X25-N codes for agriculture.	<i>Agronomy, pesticide, agrochemical, fertilizer</i>
New	T01	T01-J16P2	(2025- )	Industrial & Manufacturing	Includes machine & tool management and inspection, industrial supply, chain manufacturing. See also X25 codes, such as X25-F07 for automated warehousing, etc.	<i>Automation, mining, robotics</i>

SECTION T (continued)						
New	T01	T01-J16P3	(2025- )	Education, Arts & Entertainment	Includes creative writing, photography, online gaming, digital education, personalised learning, interactive learning, e-learning, distance learning, automated administrative tasks such as grading papers or scheduling timetables for students. Also include the generation and detection of deep-fakes, including cloning human voices and images.	<i>Fine arts, performing arts, architecture, music, cinema, writing, painting, theatre, learning management system, collaborative learning</i>
New	T01	T01-J16P4	(2025- )	Business, Banking, Finance & Retail	Includes business intelligence (BI) tools to collect, analyse and visualise data to help businesses with decision-making. Also includes risk and fraud detection, personalised recommendations such as personalised shopping experience, inventory management in shops, electronic commerce (e-commerce), secure online transactions. Also includes social media to help generate targeted advertising, monitor trends, combat cyberbullying and harmful or illegal content (see also T01-J16P7).	<i>Marketing, forecasting, taxonomies, money laundering, customer service, digital cash, electronic data interchange, electronic funds transfer, online shopping, online banking, IT architectures, IT governance, enterprise information systems, enterprise resource planning, enterprise modeling, enterprise data management, enterprise computing infrastructures, enterprise interoperability, information integration, information interoperability</i>
New	T01	T01-J16P5	(2025- )	Domestic & Personal	Personal health monitoring is also coded under T01-J16P6A. See also X27 codes such as X27-V for home automation.	<i>Smart home, smart living</i>
New	T01	T01-J16P6	(2025- )	Healthcare, Scientific analysis/Research		
New	T01	T01-J16P6A	(2025- )	Healthcare	Includes medical applications, such as disease diagnosis, personalised care, medical dictations, machine-led surgeries, patient monitoring, etc. The use of AI for e.g. genotyping, bioinformatics, research, etc. is covered under T01-J16P6B. Medical equipment and information systems are also coded under T01-J06 codes. Patient monitoring is also coded by S05-G02B2 codes.	<i>Health, tailored treatment</i>

SECTION T (continued)						
New	T01	T01-J16P6B	(2025- )	Scientific analysis/research	Includes early warning systems of disasters and environmental issues, such as earthquakes, heavy rainfalls, droughts, landslides, etc. Also includes research such as computational biology, molecular sequence analysis, molecular evolution, transcriptomics, biological networks, sequencing, genotyping, proteomics, genomics, bioinformatics, metabolomics, metabonomics, genetics, transcriptomics, drug discovery, etc.	<i>Biology, life sciences, space exploration</i>
New	T01	T01-J16P7	(2025- )	Military & Security	Includes crime detection, warfare, cyber warfare, cyber security, target recognition, threat monitoring, casualty care and evacuation, strategic decision making, surveillance, drone swarms, investigation techniques, combat simulation and training, evidence collection, network and system forensics, data recovery, computer forensics. See also W07 codes for military equipment.	<i>Army, weapon, peacekeeping, biometrics, battlefield, public safety</i>
New	T01	T01-J16P8	(2025- )	Telecommunications	Includes telecom, telephone, communication, network, radio, smartphone, wireless, satellite, television.	
New	T01	T01-J16P9	(2025- )	Transportation (vehicles & traffic management)	Includes control but also design of all types of vehicles. Also includes traffic management such as smart traffic lights, autonomous driving, etc. See also T07 codes for traffic management, such as T07-M for traffic administration and traffic modelling/design.	<i>Aerospace, spacecraft, roads, automobile, trucks, trains, freight, boats, aeronautics, aircraft, drone, helicopter</i>
New	T01	T01-J16P10	(2025- )	Energy/power generation & transmission	Includes improvement of energy efficiency, prediction of energy demand, etc. See also X12-H05 for network simulators and X12-H08 for smart grids.	<i>Smart grid</i>
New	T01	T01-J16P99	(2025- )	Other AI applications		
Changed Search Terms	T01	T01-J20B1	(1997- )	Software Development Kit	Integrated Development Environment. Programming Tools. API for software development only. For use of API in program execution see T01-F05A. Program Compilers and Assemblers. Software source code libraries. For dynamic link libraries (DLLs) see T01-F05A.	<i>API, code libraries, code text editors, software robots (RPA)</i>

SECTION T (continued)						
New	T01	T01-N01G	(2025- )	Artificial intelligence using internet/ network	This code is applied when AI is used in conjunction with internet/ computer networks. It is applied for technical aspects of IoT, cloud computing, cybersecurity, etc with AI. See other T01-N codes for specific details of computer networks and their applications. Also see T01-J16 codes for artificial intelligence aspects.	<i>Peer-to-peer network, central network, cloud storage</i>
SECTION V						
Changed Title	V01	V01-A04G	(1992- )	Multistep manufacturing process, winding and novel manufacturing equipment		
SECTION W						
Changed Search Terms	W01	W01-A06A3	(2005- )	Network usage and operation monitoring	Includes measurement of network activity and quality of service, and detection of overload/blocking condition. See T01-N02B2 for computer network aspects of monitoring. Analogous arrangements in telephone switching are covered by W01-C02A1A. Prior to 2012 this code was assigned with W01-A06E to indicate resource allocation in data networks. From 2012 the topic of network resource allocation is covered by W01-A06E1L but W01-A06A3 will still be assigned also when measurement of network performance is a significant part of an invention. From 2010 resource allocation in radio communication has been covered by W02-C03G1 and cognitive radio systems are covered by W02-C03G5 with W01-A06A3, W01-A06E codes and wireless network codes assigned as appropriate.	<i>Inband/ outband control procedures, Load measuring, network forensics, QoS</i>

SECTION W (continued)						
Changed Search Terms	W01	W01-A06F1A	(2002- )	Contention protocols	Includes Carrier Sense Multiple Access/Collision Detect (CSMA/CD and CA) and Ethernet®. Request handling for interconnection or data transfer in computer systems is covered by T01-H05 codes, e.g. T01-H05B3 for contention avoidance for access to common bus. W01-A06F1A is also used for network access aspects of cognitive radio (with W01-A06C4 codes) based on channel state sensing in which case W02-C03G5 is also assigned from 2010. Resource allocation in data networks in general is covered by W01-A06E1L. (From 2005 to 2012 resource allocation was covered by W01-A06A3 and W01-A06E).	<i>Back-off, channel occupancy, collision avoidance, collision detection, contention, DC level shift, Ethernet®, heterodyne, random delay, timeout period, auto negotiation</i>
New	W01	W01-A06F4	(2025- )	Hybrid protocols	Includes the use of 2 or more different protocols. Example includes a combination of TCP and UDP protocol.	
Changed Search Terms	W01	W01-A06F5	(2002- )	Novel Protocol	This code is used with other W01-A06F codes as appropriate to denote that some aspect of the protocol itself is novel.	<i>XTP, Multichannel or Multilink protocol</i>
New	W01	W01-A06F6	(2025- )	Protocol timers	This code includes the use of timing (timers) mechanism in a protocol.	
Changed Search Terms	W01	W01-A06F9	(2002- )	Other network protocol aspects		<i>Multiprotocol handles, Protocol fault management, Protocol engines</i>
Title Only	W04	W04-Q01S	(2005- )	Stereoscopic, 3-dimensional projection & holographic displays		
Changed Scope Notes	W06	W06-B01C9	(1992 - )	Other aircraft electrical equipment	Includes emergency escape equipment, food preparation equipment, toilets, etc. Also includes aircraft-mounted weather influencing systems, (see also X25-X20), camera arrangements for aerial imaging/photography and passenger accommodations, such as seat or furniture.	<i>Oxygen mask, escape hatch</i>
Changed Scope Notes	W06	W06-C01C9	(1992 - )	Other electrical marine vessel equipment	Includes specific equipment such as electric fuel pump or ignition system, e.g. for outboard motor, and passenger accommodations, such as seat or furniture.	

SECTION W (continued)						
Changed Scope Notes + Search Terms	W07	W07-F01B	(2012- )	Military specific clothing	Includes clothing, shoes and helmets with electrical content specifically for use by military personnel. Includes IoT sensors inserted in soldier's uniform to monitor physical and mental well-being. Also see X27-A02B1 codes for clothing and S05-D01 codes for monitoring health parameters such as heartbeat, body temperature etc.	<i>Wearables, health, sensor, remote monitoring</i>
Changed Scope Notes + Search Terms	W07	W07-F03	(1992- )	Protection for weapons and equipment	Includes launching of countermeasures to protect aircraft from seeker missile or use of laser to confuse IR sensor on hostile missile. See also W06-A04E1 codes and W06-A06C8 respectively for radar and lidar jamming and countermeasures. Also includes measures to defend against military cyber attacks.	<i>Decoy, flare, anti-radar chaff, jamming, stealth, cyber warfare</i>
Changed Title + Scope Notes + Search Terms	W07	W07-X01	(2002- )	Military vehicles; Military vehicle systems	Includes electric equipment specifically for military vehicle. See also X22 if the electrical aspect relates to normal vehicle operation, e.g. ignition system, lighting, steering, braking. Also includes unmanned autonomous or remote-controlled land vehicles (see also X21-A01L and X22-P15) as well as unmanned drones, boats and aircraft (see also W06-B15U/W06-B15E and W06-C15U/W06-C15E) used in offensive or defensive military operations.	<i>Tank, personnel carrier, drone, UAV</i>
Changed Scope Notes + Search Terms	W07	W07-X05	(2012- )	Military equipment management/maintenance	Includes management and tracking of military assets. Also includes use of AI and predictive analytics to monitor military vehicles and equipment to reduce malfunctions during operations and allow pre-emptive maintenance.	<i>Inventory, tracking, record keeping, servicing, telematics</i>
New	W07	W07-X09	(2025- )	Military strategy and planning	Includes use of AI for planning optimal military operations and to allow military commanders to determine the optimal strategy to deal with different conflict situations. Also see T01-J16P7 for AI used in military applications.	<i>Plan, strategic, art of war, military decisions, command</i>
SECTION X						
Changed Scope Notes	X12	X12-C02B	(1987- )	Fault detection, monitoring, control	Constructional details of controllers are also included here. Includes for example moving a slider along a winding, etc to vary the output. Also include transformer oil level monitoring.	
Changed Scope Notes	X12	X12-C06	(1992- )	High power or large (electro) magnets	Includes magnets of the types typically used e.g. for lifting device (see X25-F05 also), accelerators (see X14-G also), magnetic levitation etc.	

SECTION X (continued)						
Changed Scope Notes	X12	X12-D04A	(2006 - )	High power	Includes cables carrying power beyond the level of 110/220V mains. Also includes high power DC cables and charging cables for electric vehicles (see also X21-B01A1C for off-board vehicle charging systems and X16-G01 for battery charging per se).	
Changed Title	X12	X12-E04	( - )	Manufacturing, testing and recycling of insulators	Also includes electrical and mechanical testing of insulators. See also S01-G codes for electrical tests.	
Changed Scope Notes	X12	X12-H04	(1992- )	Utility load measurements	Includes meters and metering/measuring arrangements relating only to electrical power systems covering generation, transmission and distribution. Also covers such measurements for domestic, commercial and industrial premises. See also S01 codes for all electrical measurements. Also includes prepaid energy meters (see also T05-H06 and S01-B codes).	
Changed Scope Notes	X12	X12-H05	(1992- )	Network simulators	Includes not only network simulation but also modelling of the system to manage load demand/generation, predicting power consumption and outcomes of operational parameter changes, etc. T01-J15 codes for computer-aided design and simulation are also assigned as appropriate. See also T01-J16P10 when AI techniques are used to predict energy demand, etc.	
Changed Scope Notes	X12	X12-H08	(2013- )	Smart grids	Includes smart grids used for power transmission and management. Use with other X12-H codes as appropriate, such as X12-H03 codes for remote control and monitoring, X12-H04 codes for smart metering of power usage, X12-H01B codes for distributed power supply/control and X15-A08 and X15-B05 for solar/wind power control/monitoring. Also see other codes such as X27-V for home automation e.g. where smart grid automatically turns off household equipment, or manages use of off-peak power for domestic equipment. See also T01-J16P10 when AI techniques are used to e.g. improve energy efficiency, etc.	<i>Intelligent</i>
Changed Scope Notes	X14	X14-C06	(2013- )	Maintenance, service, repair	Includes inventory of spare parts (see also X25-F09).	



SECTION X (continued)						
Changed Search Terms	X15	X15-A02	( - )	Direct conversion photovoltaic panel details; Solar/photovoltaic cells	X15-A01C codes can be used in conjunction with X15-A02 codes to highlight the concentrators, e.g. mirrors, tracking arrangements, etc. See also U12-A02A codes.	<i>Grid-connected photovoltaic system, grid-tied system, on-grid solar system</i>
Changed Scope Notes	X15	X15-A02C	(2002- )	Solar/photovoltaic panel details	Includes mechanical details of solar/photovoltaic panels, modules or tiles, including anti-reflective coating, glass cover to protect the cells from the elements, cleaning system for removing dust (sand) and dirt from the surface of the solar/photovoltaic panels. Also includes interconnections between panels and repair of panels. Mechanical details of roof structures are coded under X15-A02X only. Details of single cells and assemblies of cells (including interconnections between individual cells) are coded under X15-A02A and X15-A02B, respectively.	<i>Solar cell modules, panels, tiles, anti-reflective coating</i>
Changed Scope Notes + Search Terms	X15	X15-B09	( - )	Other wind power aspects	Includes details of lightning protection system, transportation of wind turbine blades (see also Q15-B12), etc.	<i>Bearing</i>
New	X15	X15-R	(2025- )	Recycling processes & systems	This code is used in conjunction with other X15-A to X15-X codes as appropriate. See also U11-H for end of life-cycle product recycling, X25-W04 for electrical details of recycling processes/systems or X12-D07 codes for salvaging of cables.	
Changed Search Terms	X16	X16-B01F1	(1992- )	Lithium Based	Includes secondary lithium cells when the state of the electrolyte is not known.	<i>Lithium iron phosphate battery, LFP, lithium sulphur battery</i>
Changed Scope Notes	X16	X16-G	( - )	Battery chargers	Includes constructional details of battery chargers.	
Changed Title + Scope Notes	X16	X16-G01	( - )	Using mains supply	Includes AC mains charging and DC mains charging, e.g. DC supercharger for electric vehicle (see also X21-B01A1C). See X12-J codes for power conversion per se.	

SECTION X (continued)						
Changed Title + Scope Notes + Search Terms	X16	X16-S	(2020- )	Manufacture, servicing & maintenance of batteries/cells	Includes all apparatus, mechanisms and method used during the manufacture, servicing and maintenance of battery parts. Includes injection of electrolytes. Details of battery materials recovery are coded under X16-M only. Manufacture of active materials is coded under X16-E01G only. See also other X16 codes as appropriate to highlight the type of batteries/cells manufactured. Prior to 2020, manufacturing details of batteries were coded in X16-X.	<i>Modelling, simulation, repair</i>
New	X21	X21-A05E99	(2025- )	Other instrumentation	Includes dashboard instrumentation and driver/occupant warnings not covered previously.	
Changed Scope Notes	X21	X21-A06D	(2021- )	Current and voltage sensors	Includes measurement of electrical parameters such as remaining battery capacity (see also X21-A05E for battery SOS and battery condition alerts). See also X16-H codes and S01-G06A.	
Changed Scope Notes	X21	X21-B01A1C	(1997- )	Off-board charging systems	Includes use of off-board mains supply. See X16-G01 for mains battery charging. Also see X16-G03 for wireless battery charging and X12-H01E codes for non-contact power distribution. Details of charging sockets are also coded under V04 and charging cables under X21-D and X12-D codes.	<i>Wireless, inductive</i>
Changed Title + Scope Notes	X22	X22-E06B	(1992- )	Using GNSS / GPS	Includes global GNSS systems such as GPS, GLONASS, Galileo and BeiDou and regional GNSS such as QZSS and IRNSS/NavIC.	
Changed Scope Notes	X26	X26-H03C	(2011- )	LED control	Includes voltage control, intensity control, remote switching, on/off control, hue/colour control of RGB LED lamps, etc. LED control is only coded here and does not need an X26-C03 code to be applied.	<i>Dimming</i>
Changed Search Terms	X26	X26-U05	(2005- )	General lighting system	Includes general lighting systems on building sites.	GLS, floodlights
Changed Scope Notes	X27	X27-A02B1	(1987- )	Clothing	Includes electrical aspects only. X27-A02B1 codes can be used alone or in conjunction with one another depending on claimed aspects. Also include electrical details of coat hangers.	<i>Backpack, rucksack</i>
Changed Scope Notes	X27	X27-C02	(1983- )	Electric ovens, hobs	Air fryers are coded under X27-C03.	<i>Ceramic, plate, glass, hotplate</i>

SECTION X (continued)						
Changed Scope Notes	X27	X27-D01A3E	(2007- )	Liquid management systems	Includes water supply/discharge pipes, valves, pumps, pump seals, water heaters, filters, water recirculation, spray systems and systems for removing or preventing scum formation. Details of steam generating arrangements are also included under X27-D07E.	
Changed Scope Notes + Search Terms	X27	X27-V	(2006- )	Home automation	Includes systems for automatically controlling/programming multiple pieces of domestic equipment, e.g. using internet, telephone communication or AI. The use of AI technology at home is also coded under T01-J16P5. For remote control of individual domestic devices, use the appropriate device code only (see also W05-D codes), and for individual robotic/automated equipment, such as a robotic vacuum cleaner, use the appropriate code (e.g. X27-D04R) only.	<i>Total home control, AI</i>

## About Clarivate

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