

# CPC COOPERATIVE PATENT CLASSIFICATION

## Y GENERAL TAGGING OF NEW TECHNOLOGICAL DEVELOPMENTS; GENERAL TAGGING OF CROSS-SECTIONAL TECHNOLOGIES SPANNING OVER SEVERAL SECTIONS OF THE IPC; TECHNICAL SUBJECTS COVERED BY FORMER USPC CROSS-REFERENCE ART COLLECTIONS [XRACs] AND DIGESTS

(NOTES omitted)

## Y02 TECHNOLOGIES OR APPLICATIONS FOR MITIGATION OR ADAPTATION AGAINST CLIMATE CHANGE

(NOTES omitted)

## Y02D CLIMATE CHANGE MITIGATION TECHNOLOGIES IN INFORMATION AND COMMUNICATION TECHNOLOGIES [ICT], I.E. INFORMATION AND COMMUNICATION TECHNOLOGIES AIMING AT THE REDUCTION OF THEIR OWN ENERGY USE

### NOTES

1. This subclass covers information and communication technologies [ICT] whose purpose is to minimize the use of energy during the operation of the involved ICT equipment.
2. This subclass does not cover the use of an ICT technology supporting energy efficient operation of a further piece of equipment, nor the reuse or recycling of ICT equipment.

<b>10/00</b>	<b>Energy efficient computing</b>	10/173	. . . Monitoring user presence
10/10	. Reducing energy consumption at the single machine level, e.g. processors, personal computers, peripherals or power supply	10/174	. . . Battery monitoring
		10/175	. . . Power strips aiming to energy efficient operation
10/11	. . involving a plurality of components	10/20	. Reducing energy consumption by means of multiprocessor or multiprocessing based techniques, other than acting upon the power supply
10/12	. . acting upon the main processing unit	10/22	. . Resource allocation
10/122	. . . Low-power processors	10/24	. . Scheduling
10/124	. . . Performance modes	10/26	. . Increasing resource utilisation, e.g. virtualisation, consolidation
10/126	. . . Frequency modification	10/28	. . Load distribution
10/128	. . . Clock disabling	10/30	. Reducing energy consumption in distributed systems
10/13	. . Access, addressing or allocation within memory systems or architectures, e.g. to reduce power consumption or heat production or to increase battery life	10/32	. . Delegation or migration
10/14	. . Interconnection, or transfer of information or other signals between, memories, peripherals or central processing units	10/34	. . Monitoring
		10/36	. . Resource sharing
10/15	. . acting upon peripherals	10/40	. Reducing energy consumption at software or application level
10/151	. . . the peripheral being a bus	10/41	. . Compilation
10/152	. . . the peripheral being a memory control unit [MCU]	10/42	. . Installation
10/153	. . . the peripheral being a display	10/43	. . At application level, i.e. feedback, prediction or usage patterns
10/154	. . . the peripheral being disc or storage devices	10/44	. . Suspending or hibernating, performance or eco-modes, operating system support, e.g. advanced configuration and power interface [ACPI]
10/1542	. . . . the peripheral being a CD-ROM unit	10/45	. . Information retrieval in databases
10/155	. . . the peripheral being a cursor control device		
10/156	. . . the peripheral being a keyboard	<b>30/00</b>	<b>High level techniques for reducing energy consumption in communication networks</b>
10/157	. . . the peripheral being a modem	30/10	. by proxying, i.e. delegating network functionalities while in low-power mode, e.g. ECMA 393 standard
10/158	. . . the peripheral being a PCMCIA card	30/20	. by energy-aware routing
10/159	. . . the peripheral being a printer	30/30	. by signaling and coordination, e.g. signaling reduction, link layer discovery protocol [LLDP], control policies, green TCP
10/1592	. . . . Data transfer to print units		
10/16	. . Cooling means for computing equipment provided with thermal management		
10/17	. . Power management		
10/171	. . . Selective power distribution		
10/172	. . . Controlling the supply voltage		

- 30/32 . . specifically suitable for Ethernet, e.g. IEEE802.3az
- 30/34 . . specifically suitable for DSL
- 30/40 . Application modification for reducing energy consumption, e.g. green peer-to-peer,
- 50/00 Techniques for reducing energy consumption in wire-line communication networks**
- 50/10 . using reduced link rate, e.g. adaptive link rate, not involving auto-negotiation
- 50/20 . using subset functionality
- 50/30 . by selective link activation in bundled links
- 50/40 . by operating in low-power or sleep mode
- 50/42 . . specifically suitable for Ethernet, e.g. IEEE802.3az
- 50/44 . . specifically suitable for DSL
- 70/00 Techniques for reducing energy consumption in wireless communication networks**
- 70/10 . according to the Radio Access Technology [RAT]
- 70/12 . . in 3rd Generation Partnership Project [3GPP] networks
- 70/122 . . . in 2nd generation [2G] networks
- 70/1222 . . . . in Global System for Mobile Communications [GSM] networks
- 70/1224 . . . . in General Packet Radio Service [GPRS] networks
- 70/1226 . . . . in Enhanced Data rates for GSM Evolution [EDGE] networks
- 70/124 . . . in 3rd generation [3G] networks
- 70/1242 . . . . in Universal Mobile Telecommunications Systems [UMTS] networks
- 70/1244 . . . . in High-Speed Downlink Packet Access [HSDPA] networks
- 70/1246 . . . . in High-Speed Uplink Packet Access [HSUPA] networks
- 70/126 . . . in 4th generation [4G] networks
- 70/1262 . . . . in Long-Term Evolution [LTE] networks
- 70/1264 . . . . in Long-Term Evolution Advanced [LTE-A] networks
- 70/14 . . in Institute of Electrical and Electronics Engineers [IEEE] networks
- 70/142 . . . in Wireless Local Area Networks [WLAN]
- 70/144 . . . in Bluetooth and Wireless Personal Area Networks [WPAN]
- 70/146 . . . in Worldwide Interoperability for Microwave Access [WiMAX] networks
- 70/16 . . in other wireless communication networks
- 70/162 . . . in Zigbee networks
- 70/164 . . . in Satellite Navigation receivers
- 70/166 . . . in Radio Frequency Identification [RF-ID] transceivers
- 70/168 . . . in Digital Video Broadcasting [DVB] networks
- 70/20 . independent of Radio Access Technologies
- 70/21 . . in machine-to-machine [M2M] and device-to-device [D2D] communications
- 70/22 . . in peer-to-peer [P2P], ad hoc and mesh networks
- 70/23 . . in Voice over IP [VoIP] networks
- 70/24 . . in Discontinuous Reception [DRX] networks
- 70/25 . . in Discontinuous Transmission [DTX] networks
- 70/26 . . in wearable devices, e.g. watches, glasses
- 70/30 . Power-based selection of communication route or path
- 70/32 . . based on wireless node resources
- 70/322 . . . based on characteristics of available antennas
- 70/324 . . . based on transmission power
- 70/326 . . . based on available power or energy
- 70/34 . . based on transmission quality or channel quality
- 70/38 . . based on geographic position or location
- 70/39 . . using selective relaying for reaching a BTS [Base Transceiver Station] or an access point
- 70/40 . According to the transmission technology
- 70/42 . . Near-field transmission systems, e.g. inductive or capacitive coupling
- 70/44 . . Radio transmission systems, i.e. using radiation field
- 70/442 . . . Diversity systems; Multi-antenna systems, i.e. transmission or reception using multiple antennas
- 70/444 . . . . using two or more spaced independent antennas
- 70/446 . . . Relay systems
- 70/448 . . . for communication between two or more posts
- 70/449 . . . . at least one of which is mobile
- 70/46 . . Transmission systems employing electromagnetic waves other than radio-waves, e.g. infrared, visible or ultraviolet light, or employing corpuscular radiation, e.g. quantum communication
- 70/48 . . Transmission systems employing sonic, ultrasonic or infrasonic waves