

CPC COOPERATIVE PATENT CLASSIFICATION

B64G COSMONAUTICS; VEHICLES OR EQUIPMENT THEREFOR (apparatus for, or methods of, winning materials from extraterrestrial sources [E21C 51/00](#))

NOTES

1. This subclass covers only vehicles, equipment or the like, which are specially adapted for cosmonautics.
2. This subclass does not cover vehicles and equipment applicable to both cosmonautics and aeronautics, which are covered by the appropriate aeronautical subclasses of class [B64](#).
3. In this subclass, the following term is used with the meaning indicated:
 - "cosmonautics" includes all transport outside the earth's atmosphere, and thus includes artificial earth satellites, and interplanetary and interstellar travel.

1/00	Cosmonautic vehicles	2001/247	. . . {Advanced control concepts for autonomous, robotic spacecraft, e.g. by using artificial intelligence, neural networks or autonomous agents}
1/002	. {Launch systems}	1/26	. . . using jets
1/005	. . {Air launch}	1/28	. . . using inertia or gyro effect
1/007	. . {Orbit transfer}	1/281	. . . . {Spin-stabilised spacecraft}
1/10	. Artificial satellites; Systems of such satellites; Interplanetary vehicles (space shuttles B64G 1/14 ; radio transmission systems using satellites H04B 7/185)	1/283	. . . . {using reaction wheels}
1/1007	. . {Communications satellites (communications aspects H04B 7/185)}	1/285	. . . . {using momentum wheels}
1/1014	. . {Navigation satellites (navigation systems G01S 5/145)}	1/286	. . . . {using control momentum gyroscopes (CMGs)}
1/1021	. . {Earth observation satellites}	1/288	. . . . {using gyroscopes as attitude sensors}
2001/1028	. . . {using optical means for mapping, surveying or detection, e.g. of intelligence}	1/32	. . . using earth's magnetic field
2001/1035	. . . {using radar for mapping, surveying or detection, e.g. of intelligence}	1/34	. . . using gravity gradient
2001/1042	. . . {specifically adapted for meteorology}	1/36	. . . using sensors, e.g. sun-sensors, horizon sensors
1/105	. . {Space science}	1/361	. . . . {using star sensors}
2001/1057	. . . {specifically adapted for astronomy}	1/363	. . . . {using sun sensors}
2001/1064	. . . {specifically adapted for interplanetary, solar or interstellar exploration}	1/365	. . . . {using horizon or Earth sensors}
2001/1071	. . . . {Planetary landers intended for the exploration of the surface of planets, moons or comets}	1/366	. . . . {using magnetometers}
1/1078	. . {Maintenance satellites}	1/368	. . . . {using gravimeters}
1/1085	. . {Swarms and constellations}	1/38	. . . damping of oscillations, e.g. nutation dampers
2001/1092	. . {Special features of modular spacecraft systems}	1/40	. . Arrangements or adaptations of propulsion systems (B64G 1/26 takes precedence ; propulsion plants per se , see the relevant subclasses , e.g. F02K , F03H)
1/12	. . manned	1/401	. . . {Liquid propellant rocket engines (per se F02K 9/42)}
1/14	. Space shuttles	1/402	. . . {Propellant tanks; Feeding propellants (in general F02K 9/44)}
1/16	. Extraterrestrial cars (land vehicle aspects B60 - B62)	1/403	. . . {Solid propellant rocket engines (per se F02K 9/08)}
1/22	. Parts of, or equipment specially adapted for fitting in or to, cosmonautic vehicles	1/404	. . . . {Hybrid rocket engines (per se F02K 9/72)}
1/222	. . {Appendage deployment mechanisms}	1/405	. . . {Ion or plasma engines (per se F03H 1/00)}
2001/224	. . {Inflatable space structures}	1/406	. . . {Arcjets and other resistojets}
1/226	. . {Special coatings for spacecraft}	1/407	. . . {Solar sailing (includes also attitude control using solar sailing)}
2001/228	. . {Damping of high-frequency vibration effects on spacecraft elements, e.g. by using acoustic vibration dampers}	1/408	. . . {Nuclear spacecraft propulsion}
1/24	. . Guiding or controlling apparatus, e.g. for attitude control (jet-propulsion plants F02K ; navigation or navigational instruments , see the relevant subclass , e.g. G01C ; automatic pilots G05D 1/00)	1/409	. . . {Unconventional spacecraft propulsion systems}
1/242	. . . {Orbits and trajectories}	1/42	. . Arrangements or adaptations of power supply systems (power supply systems per se , see the relevant subclasses)
2001/245	. . . {Spacecraft attitude control, e.g. attitude control algorithms}	1/421	. . . . {Non-solar power generation}
		1/422	. . . . {Nuclear power generation}
		1/423	. . . . {Fuel cells}
		1/425	. . . {Power storage}
		1/426	. . . . {Flywheels}
		1/427	. . . . {Thermal power storage}

1/428	. . . {Power distribution and management}	9/00	{Cosmonautics not otherwise provided for}
1/44	. . . using radiation, e.g. deployable solar arrays (solar cells <i>per se</i> H01L 31/00)	2700/00	Space travel; artificial satellites; space exploration
1/443	. . . . {Photovoltaic cell arrays}	2700/24	. Stabilisation, orientation and oscillation damping of spacecraft
1/446	. . . . {Thermal solar power generation}	2700/66	. Aerials and collapsible aerials of spacecraft
1/46	. . Arrangements or adaptations of devices for control of environment or living conditions (space suits B64G 6/00)		
1/48	. . . for treatment of the atmosphere (B64G 1/50 takes precedence; air conditioning in general F24F)		
1/50	. . . for temperature control (temperature control in general G05D 23/00)		
1/503	. . . . {Radiator panels}		
1/506	. . . . {Heat pipes}		
1/52	. . Protection, safety or emergency devices; Survival aids (life-saving in general A62)		
2001/525	. . . {Survival aids}		
1/54	. . . Protection against radiation (against radiation in general G21F)		
1/543	. . . . {protecting the crew in manned spacecraft}		
1/546	. . . . {shielding electronic equipment}		
1/56	. . . Protection against meteorites (meteorite detectors B64G 1/68)		
1/58	. . . Thermal protection, e.g. heat shields (thermal insulation in general F16L 59/00 ; chemical aspects, <i>see</i> the relevant classes)		
1/60	. . Crew or passenger accommodations		
1/62	. . Systems for re-entry into the earth's atmosphere; Retarding or landing devices		
1/64	. . Systems for coupling or separating cosmonautic vehicles or parts thereof, e.g. docking arrangements		
1/641	. . . {Interstage or payload connectors}		
2001/643	. . . . {Dispensers for arranging multiple satellites in a single launcher}		
1/645	. . . {Separators}		
1/646	. . . {Docking or rendez-vous systems}		
1/648	. . . {Tethers}		
1/66	. . Arrangements or adaptations of apparatus or instruments, not otherwise provided for (instruments per se, see the relevant classes, e.g. aerials for use in satellites H01Q 1/28)		
1/68	. . . of meteorite detectors		
3/00	Observing or tracking cosmonautic vehicles (radio or other waves systems for navigating or tracking G01S)		
4/00	Tools specially adapted for use in space		
2004/005	. {Robotic manipulator systems for use in space}		
5/00	Ground equipment for vehicles, e.g. starting towers, fuelling arrangements (B64G 3/00 takes precedence)		
2005/005	. {Systems for launching spacecraft from a platform at sea}		
6/00	Space suits		
7/00	Simulating cosmonautic conditions, e.g. for conditioning crews (simulators for teaching or training purposes G09B 9/00)		
2007/005	. {Space simulation vacuum chambers}		