

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

1/426	. . . . {Flywheels}	2007/005	. {Space simulation vacuum chambers}
1/427	. . . . {Thermal power storage}	9/00	{Cosmonautics not otherwise provided for}
1/428	. . . {Power distribution and management}	2700/00	Space travel; artificial satellites; space exploration
1/44	. . . using radiation, e.g. deployable solar arrays (solar cells per se H01L 31/00)	2700/24	. Stabilisation, orientation and oscillation damping of spacecraft
1/443	. . . . {Photovoltaic cell arrays}	2700/66	. Aerials and collapsible aerials of spacecraft
1/446	. . . . {Thermal solar power generation}		
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, see 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)		