

## c. COMMON CODE TABLES TO BINARY AND ALPHANUMERIC CODES

*(BUFR Tables Version October 2008)*

### - COMMON CODE TABLE C-1: Identification of Originating/Generating Centre

F<sub>1</sub>F<sub>2</sub> for alphanumeric codes

F<sub>3</sub>F<sub>3</sub>F<sub>3</sub> for alphanumeric codes

Code Table 0 in GRIB Edition 1/ Code Table 0 01 033 for BUFR Edition 3

Octet 5 in Section 1 of GRIB Edition 1 / Octet 6 in Section 1 of BUFR Edition 3

### - COMMON CODE TABLE C-2: Radiosonde/ sounding system used

Code table 3685 -r<sub>a</sub>r<sub>a</sub> Radiosonde/sounding system used – for alphanumeric codes

Code table 0 02 011 Radiosonde type in BUFR

### - COMMON CODE TABLE C-3: Instrument type for water temperature profile measurement with fall rate equation coefficients

Code table 1770-l<sub>X</sub>l<sub>X</sub>l<sub>X</sub> Instrument type for XBT, with fall rate equation coefficients - for alphanumeric codes

Code Table 0 22 067 Instrument type for water temperature profile measurement in BUFR

### - COMMON CODE TABLE C-4: Water temperature profile recorder types

Code table 4770-X<sub>R</sub>X<sub>R</sub> Recorder type - for alphanumeric codes

Code Table 0 22 068 Water temperature profile recorder types in BUFR

### - COMMON CODE TABLE C-5: Satellite identifier

l<sub>6</sub>l<sub>6</sub>l<sub>6</sub> for alphanumeric codes

Code Table 0 01 007 in BUFR

Code used in GRIB Edition 2

### - COMMON CODE TABLE C-6: List of Units for BUFR Table B and CREX Table B AND C

### - COMMON CODE TABLE C-7: Tracking technique/status of system used

Code Table 3872 - s<sub>a</sub>s<sub>a</sub> for alphanumeric code

Code Table 0 02 014 in BUFR

### - COMMON CODE TABLE C-8: Satellite Instruments

Code table 0 02 019 in BUFR

### - COMMON CODE TABLE C-11 – Originating/Generating Centres

BUFR 0 01 035

CREX Edition 2, 00000 in Group P00000ppp of Section 1/ GRIB Edition 2,

Octets 6-7 in Section 1/BUFR Edition 4, Octets 5-6 in Section 1

### - COMMON CODE TABLE C-12: Sub-Centres of Originating Centres (*entries in Common Tables C-1 or C-11*)

BUFR 0 01 034

Octet 5 in Section 1 of BUFR Edition 3

Octets 7-8 in Section 1 of BUFR Edition 4

Octet 26 in Section 1 of GRIB Edition 1

Octets 8-9 in Section 1 of GRIB Edition 2

ppp in Group P00000ppp of Section 1 of CREX Edition 2

### - COMMON CODE TABLE C-13: Data sub categories of *categories defined by entries in BUFR Table A*

BUFR Edition 4, Octet 12 of Section 1 (if = 255, it means other sub-category or undefined)

CREX Edition 2, mmm in group Annnmmm of Section 1

### *(AWAITING VALIDATION)* COMMON CODE TABLE C-14: Atmospheric chemical or physical constituent type

Common code table

Code Table 4.230 in GRIB 2

Code Table 0 08 046 in BUFR

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### COMMON CODE TABLE C-1: Identification of originating/generating centre

Common Code Table: (F<sub>1</sub>F<sub>2</sub> for alphanumeric codes  
(F<sub>3</sub>F<sub>3</sub>F<sub>3</sub> for alphanumeric codes  
(Code Table 0 in GRIB Edition 1/Code Table 0 01 033  
in BUFR

Code figure for F <sub>1</sub> F <sub>2</sub>	Code figure for F <sub>3</sub> F <sub>3</sub> F <sub>3</sub>	GRIB Ed1, Octet 5 in Sec 1/ BUFR Ed3, Octet 6 in Sec 1	
00	000	0	WMO Secretariat
			<b>01-09: WMCs</b>
01	001	1	Melbourne
02	002	2	Melbourne
03	003	3	)
04	004	4	Moscow
05	005	5	Moscow
06	006	6	)
07	007	7	US National Weather Service, National Centres for Environmental Prediction(NCEP)
08	008	8	US National Weather Service TelecommunicationsGateway (NWSTG)
09	009	9	US National Weather Service - Other
			<b>10-25: Centres in Region I</b>
10	010	10	Cairo (RSMC)
11	011	11	)
12	012	12	Dakar (RSMC)
13	013	13	)
14	014	14	Nairobi (RSMC)
15	015	15	)
16	016	16	Casablanca (RSMC)
17	017	17	Tunis (RSMC)
18	018	18	Tunis Casablanca (RSMC)
19	019	19	)
20	020	20	Las Palmas
21	021	21	Algiers (RSMC)
22	022	22	ACMAD
23	023	23	Mozambique NMC
24	024	24	Pretoria (RSMC)
25	025	25	La Réunion (RSMC)
			<b>26-40: Centres in Region II</b>
26	026	26	Khabarovsk (RSMC)
27	027	27	)
28	028	28	New Delhi (RSMC)
29	029	29	)
30	030	30	Novosibirsk (RSMC)
31	031	31	)
32	032	32	Tashkent (RSMC)
33	033	33	Jeddah (RSMC)
34	034	34	Tokyo (RSMC), Japan Meteorological Agency
35	035	35	)
36	036	36	Bangkok
37	037	37	Ulan Bator
38	038	38	Beijing (RSMC)
39	039	39	)
40	040	40	Seoul
			<b>41-50: Centres in Region III</b>
41	041	41	Buenos Aires (RSMC)
42	042	42	)
43	043	43	Brasilia (RSMC)

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44	044	44	)
45	045	45	Santiago
46	046	46	Brazilian Space Agency - INPE
47	047	47	Colombia NMC
48	048	48	Ecuador NMC
49	049	49	Peru NMC
50	050	50	Venezuela NMC
<b>51-63: Centres in Region IV</b>			
51	051	51	Miami (RSMC)
52	052	52	Miami RSMC, National Hurricane Center
53	053	53	Montreal (RSMC)
54	054	54	)
55	055	55	San Francisco
56	056	56	ARINC Centre
57	057	57	U.S. Air Force Air Force Global Weather Central
58	058	58	Fleet Numerical Meteorology and Oceanography Center, Monterey, CA
59	059	59	The NOAA Forecast Systems Laboratory, Boulder, CO, USA
60	060	60	United States National Centre for Atmospheric Research (NCAR)
61	061	61	Service ARGOS - Landover
62	062	62	U.S. Naval Oceanographic Office
63	063	63	IRI (International Research Institute for Climate and Society)
<b>64-73: Centres in Region V</b>			
64	064	64	Honolulu (RSMC)
65	065	65	Darwin (RSMC)
66	066	66	)
67	067	67	Melbourne (RSMC)
68	068	68	Reserved
69	069	69	Wellington (RSMC)
70	070	70	)
71	071	71	Nadi (RSMC)
72	072	72	Singapore
73	073	73	Malaysia NMC
<b>74-99: Centres in Region VI</b>			
74	074	74	UK Meteorological Office - Exeter (RSMC)
75	075	75	)
76	076	76	Moscow (RSMC)
77	077	77	Reserved
78	078	78	Offenbach (RSMC)
79	079	79	)
80	080	80	Rome (RSMC)
81	081	81	)
82	082	82	Norrköping
83	083	83	)
84	084	84	Toulouse (RSMC)
85	085	85	Toulouse (RSMC)
86	086	86	Helsinki
87	087	87	Belgrade
88	088	88	Oslo
89	089	89	Prague
90	090	90	Episkopi
91	091	91	Ankara
92	092	92	Frankfurt/Main)
93	093	93	London (WAFC)
94	094	94	Copenhagen
95	095	95	Rota
96	096	96	Athens
97	097	97	European Space Agency (ESA)
98	098	98	European Centre for Medium-range Weather Forecast (ECMWF), (RSMC)
99	099	99	De Bilt

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			<b>Additional Centres</b>
n.a.	100	100	Brazzaville
n.a.	101	101	Abidjan
n.a.	102	102	Libyan Arab Jamahiriya NMC
n.a.	103	103	Madagascar NMC
n.a.	104	104	Mauritius NMC
n.a.	105	105	Niger NMC
n.a.	106	106	Seychelles NMC
n.a.	107	107	Uganda NMC
n.a.	108	108	Tanzania NMC
n.a.	109	109	Zimbabwe NMC
n.a.	110	110	Hong-Kong, China
n.a.	111	111	Afghanistan NMC
n.a.	112	112	Bahrain NMC
n.a.	113	113	Bangladesh NMC
n.a.	114	114	Bhutan NMC
n.a.	115	115	Cambodia NMC
n.a.	116	116	Democratic People's Republic of Korea NMC
n.a.	117	117	Islamic Republic of Iran NMC
n.a.	118	118	Iraq NMC
n.a.	119	119	Kazakhstan NMC
n.a.	120	120	Kuwait NMC
n.a.	121	121	Kyrgyz Republic NMC
n.a.	122	122	Lao People's Democratic Republic NMC
n.a.	123	123	Macao, China
n.a.	124	124	Maldives NMC
n.a.	125	125	Myanmar NMC
n.a.	126	126	Nepal NMC
n.a.	127	127	Oman NMC
n.a.	128	128	Pakistan NMC
n.a.	129	129	Qatar NMC
n.a.	130	130	Republic of Yemen NMC
n.a.	131	131	Sri Lanka NMC
n.a.	132	132	Tajikistan NMC
n.a.	133	133	Turkmenistan NMC
n.a.	134	134	United Arab Emirates NMC
n.a.	135	135	Uzbekistan NMC
n.a.	136	136	Socialist Republic of Viet Nam NMC
n.a.	137 to 139	137 to 139	Reserved for other centres
n.a.	140	140	Bolivia NMC
n.a.	141	141	Guyana NMC
n.a.	142	142	Paraguay NMC
n.a.	143	143	Suriname NMC
n.a.	144	144	Uruguay NMC
n.a.	145	145	French Guyana
n.a.	146	146	Brazilian Navy Hydrographic Centre
n.a.	147	147	COMISION NACIONAL de Actividades Espaciales (CONAE) - Argentina
n.a.	148 to 149	148 to 149	Reserved for other centres
n.a.	150	150	Antigua and Barbuda NMC
n.a.	151	151	Bahamas NMC
n.a.	152	152	Barbados NMC
n.a.	153	153	Belize NMC
n.a.	154	154	British Caribbean Territories Centre
n.a.	155	155	San Jose
n.a.	156	156	Cuba NMC
n.a.	157	157	Dominica NMC
n.a.	158	158	Dominican Republic NMC
n.a.	159	159	El Salvador NMC
n.a.	160	160	US NOAA/NESDIS
n.a.	161	161	US NOAA Office of Oceanic and Atmospheric Research
n.a.	162	162	Guatemala NMC
n.a.	163	163	Haiti NMC
n.a.	164	164	Honduras NMC

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n.a.	165	165	Jamaica NMC
n.a.	166	166	Mexico
n.a.	167	167	Netherlands Antilles and Aruba NMC
n.a.	168	168	Nicaragua NMC
n.a.	169	169	Panama NMC
n.a.	170	170	Saint Lucia NMC
n.a.	171	171	Trinidad and Tobago NMC
n.a.	172	172	French Departments in RA IV
n.a.	173	173	US National Aeronautics and Space Administration (NASA)
n.a.	174	174	Integrated System Data Management/Marine Environmental Data Service (ISDM/MEDS - Canada)
n.a.	175 to 189	175 to 189	Reserved for other centres
n.a.	190	190	Cook Islands NMC
n.a.	191	191	French Polynesia NMC
n.a.	192	192	Tonga NMC
n.a.	193	193	Vanuatu NMC
n.a.	194	194	Brunei Darussalam NMC
n.a.	195	195	Indonesia NMC
n.a.	196	196	Kiribati NMC
n.a.	197	197	Federated States of Micronesia NMC
n.a.	198	198	New Caledonia NMC
n.a.	199	199	Niue
n.a.	200	200	Papua New Guinea NMC
n.a.	201	201	Philippines NMC
n.a.	202	202	Samoa NMC
n.a.	203	203	Solomon Islands NMC
n.a.	204 to 209	204 to 209	Reserved for other centres
n.a.	210	210	Frascati (ESA/ESRIN)
n.a.	211	211	Lannion
n.a.	212	212	Lisboa
n.a.	213	213	Reykjavik
n.a.	214	214	Madrid
n.a.	215	215	Zürich
n.a.	216	216	Service ARGOS Toulouse
n.a.	217	217	Bratislava
n.a.	218	218	Budapest
n.a.	219	219	Ljubljana
n.a.	220	220	Warsaw
n.a.	221	221	Zagreb
n.a.	222	222	Albania NMC
n.a.	223	223	Armenia NMC
n.a.	224	224	Austria NMC
n.a.	225	225	Azerbaijan NMC
n.a.	226	226	Belarus NMC
n.a.	227	227	Belgium NMC
n.a.	228	228	Bosnia and Herzegovina NMC
n.a.	229	229	Bulgaria NMC
n.a.	230	230	Cyprus NMC
n.a.	231	231	Estonia NMC
n.a.	232	232	Georgia NMC
n.a.	233	233	Dublin
n.a.	234	234	Israel NMC
n.a.	235	235	Jordan NMC
n.a.	236	236	Latvia NMC
n.a.	237	237	Lebanon NMC
n.a.	238	238	Lithuania NMC
n.a.	239	239	Luxembourg
n.a.	240	240	Malta NMC
n.a.	241	241	Monaco
n.a.	242	242	Romania NMC
n.a.	243	243	Syrian Arab Republic NMC
n.a.	244	244	The former Yugoslav Republic of Macedonia NMC
n.a.	245	245	Ukraine NMC
n.a.	246	246	Republic of Moldova NMC
n.a.	247	247	Operational Programme for the Exchange of weather RAdar information (OPERA) - EUMETNET

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n.a.	248 to 253	248 to 253	Reserved for other centres
n.a.	254	254	EUMETSAT Operation Centre
n.a.	255	255	Missing value
n.a.	256 to 999	n.a.	Not used

### NOTES:

- (1) The closed bracket sign ) indicates that the corresponding code figure is reserved for the previously named centre.
- (2) n.a. means not applicable.
- (3) With GRIB or BUFR, to indicate whether the originating/generating centre is a sub-centre or not, the following procedure should be applied:  
Use in GRIB Edition 1 of Octet 26, Section 1, or use in BUFR Edition 3 of Octet 5, Section 1 with the following meaning:

### Code figure

- |          |   |
|----------|---|
| 0        | Not a sub-centre, the originating/generating centre is the centre defined by Octet 5, Section 1 of GRIB Edition 1 or Octet 6, Section 1 of BUFR edition 3.  |
| 1 to 254 | Identifier of the sub-centre which is the originating/generating centre. The identifier of the sub-centre is allocated by the associated centre, which is defined by octet 5, Section 1 of GRIB Edition 1 or octet 6, Section 1 of BUFR Edition 3. The sub-centre(s) identifiers should be supplied to the WMO Secretariat by the associated centre(s) for publication. |
- (4) For Sub-centres definition provided to the WMO Secretariat, see Common table C-12.

**COMMON CODE TABLE C-2: RADIOSONDE/ SOUNDING SYSTEM USED**

Common Code Table: (Code table 3685 -r<sub>a</sub>r<sub>a</sub> (Radiosonde/sounding system used) – for alphanumeric codes  
(Code table 0 02 011 (Radiosonde type) in BUFR

Date of Assignment of number (necessary after 30/06/2007)	Code figure for r <sub>a</sub> r <sub>a</sub> (Code table 3685)	Code figure for BUFR (Code table 0 02 011)	
Not Applicable	00	000	Reserved
Before	01	001	iMet-1-BB (USA)
Not Applicable	02	002	No radiosonde – passive target (e.g. reflector)
Not Applicable	03	003	No radiosonde – active target (e.g. transponder)
Not Applicable	04	004	No radiosonde – passive temperature-humidity profiler
Not Applicable	05	005	No radiosonde – active temperature-humidity profiler
Not Applicable	06	006	No radiosonde – radio-acoustic sounder
Before	07	007	iMet-1-AB (USA)
Not Applicable	08	008	No radiosonde –.....(reserved)
Not Applicable	09	009	No radiosonde – system unknown or not specified
Before	10	010	VIZ type A pressure-commutated (USA)
Before	11	011	VIZ type B time-commutated (USA)
Before	12	012	RS SDC (Space Data Corporation – USA)
Before	13	013	Astor (no longer made — Australia)
Before	14	014	VIZ Mark I MICROSONDE (USA)
Before	15	015	EEC Company type 23 (USA)
Before	16	016	Elin (Austria)
Before	17	017	Graw G. (Germany)
Before	18	018	Graw DFM-06 (Germany)
Before	19	019	Graw M60 (Germany)
Before	20	020	Indian Meteorological Service MK3 (India)
Before	21	021	VIZ/Jin Yang Mark I MICROSONDE (South Korea)
Before	22	022	Meisei RS2-80 (Japan)
Before	23	023	Mesural FMO 1950A (France)
Before	24	024	Mesural FMO 1945A (France)
Before	25	025	Mesural MH73A (France)
Before	26	026	Meteolabor Basora (Switzerland)
Before	27	027	AVK-MRZ (Russian Federation)
Before	28	028	Meteorit Marz2-1 (Russian Federation)
Before	29	029	Meteorit Marz2-2 (Russian Federation)
Before	30	030	Oki RS2-80 (Japan)
Before	31	031	VIZ/Valcom type A pressure-commutated (Canada)
Before	32	032	Shanghai Radio (China)
Before	33	033	UK Met Office MK3 (UK)
Before	34	034	Vinohrady (Czechoslovakia)
Before	35	035	Vaisala RS18 (Finland)
Before	36	036	Vaisala RS21 (Finland)
Before	37	037	Vaisala RS80 (Finland)
Before	38	038	VIZ LOCATE Loran-C (USA)
Before	39	039	Sprenger E076 (Germany)
Before	40	040	Sprenger E084 (Germany)
Before	41	041	Sprenger E085 (Germany)
Before	42	042	Sprenger E086 (Germany)
Before	43	043	AIR IS - 4A - 1680 (USA)
Before	44	044	AIR IS - 4A - 1680 X (USA)

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Date of Assignment of number (necessary after 30/06/2007)	Code figure for r <sub>a</sub> r <sub>a</sub> (Code table 3685)	Code figure for BUFR (Code table 0 02 011)	
Before	45	045	RS MSS (USA)
Before	46	046	Air IS - 4A - 403 (USA)
Before	47	047	Meisei RS2-91 (Japan)
Before	48	048	VALCOM (Canada)
Before	49	049	VIZ MARK II (USA)
Before	50	050	GRAW DFM-90 (Germany)
Before	51	051	VIZ-B2 (USA)
Before	52	052	Vaisala RS80-57H
Before	53	053	AVK-RF95 (Russian Federation)
Before	54	054	GRAW DFM-97 (Germany)
Before	55	055	Meisei RS-016 (Japan)
Before	56	056	M2K2 (France)
Before	57	057	M2K2-DC Modem (France)
Before	58	058	AVK-BAR (Russian Federation)
Before	59	059	Modem M2K2-R 1680 MHz RDF radiosonde with pressure sensor chip (France)
Before	60	060	Vaisala RS80/MicroCora (Finland)
Before	61	061	Vaisala RS80/Loran/Digicora I,II or Marwin (Finland)
Before	62	062	Vaisala RS80/PCCora (Finland)
Before	63	063	Vaisala RS80/Star (Finland)
Before	64	064	Orbital Sciences Corporation, Space Data Division, transponder radiosonde, type 909-11-XX, where XX correspond to the model of the instrument (USA)
Before	65	065	VIZ transponder radiosonde, model number 1499–520 (USA)
Before	66	066	Vaisala RS80 /Autosonde (Finland)
Before	67	067	Vaisala RS80/Digicora III (Finland)
Before	68	068	AVK-RZM-2 (Russian Federation)
Before	69	069	MARL-A or Vektor-M-RZM-2 (Russian Federation)
Before	70	070	Vaisala RS92/Star (Finland)
Before	71	071	Vaisala RS90/Digicora I,II or Marwin (Finland)
Before	72	072	Vaisala RS90/PC-Cora (Finland)
Before	73	073	Vaisala RS90/Autosonde (Finland)
Before	74	074	Vaisala RS90/Star (Finland)
Before	75	075	AVK-MRZ-ARMA (Russian Federation)
Before	76	076	AVK-RF95-ARMA (Russian Federation)
Before	77	077	GEOLINK GPSonde GL98 (France)
Before	78	078	Vaisala RS90/Digicora III (Finland)
Before	79	079	Vaisala RS92/Digicora I,II or Marwin (Finland)
Before	80	080	Vaisala RS92/Digicora III (Finland)
Before	81	081	Vaisala RS92/Autosonde (Finland)
Before	82	082	Sippican MK2 GPS/STAR (USA) with rod thermistor, carbon element, and derived pressure
Before	83	083	Sippican MK2 GPS/W9000 (USA) with rod thermistor, carbon element, and derived pressure
Before	84	084	Sippican MARK II with chip thermistor, carbon element, and derived pressure from GPS height
Before	85	085	Sippican MARK IIA with chip thermistor, carbon element, and derived pressure from GPS height
Before	86	086	Sippican MARK II with chip thermistor, pressure, and carbon element
Before	87	087	Sippican MARK IIA with chip thermistor, pressure, and carbon element
Before	88	088	MARL-A or Vektor-M-MRZ (Russian Federation)
Before	89	089	MARL-A or Vektor-M-BAR (Russian Federation)

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Date of Assignment of number (necessary after 30/06/2007)	Code figure for r <sub>a</sub> r <sub>a</sub> (Code table 3685)	Code figure for BUFR (Code table 0 02 011)	
Not Applicable	90	090	Radiosonde not specified or unknown
Not Applicable	91	091	Pressure-only radiosonde
Not Applicable	92	092	Pressure-only radiosonde plus transponder
Not Applicable	93	093	Pressure-only radiosonde plus radar-reflector
Not Applicable	94	094	No-pressure radiosonde plus transponder
Not Applicable	95	095	No-pressure radiosonde plus radar-reflector
Not Applicable	96	096	Descending radiosonde
Before	97	097	BAT-16P (South Africa)
Before	98	098	BAT-16G (South Africa)
Before	99	099	BAT-4G (South Africa)
	Not available	100	Reserved for BUFR only
	01	101	Not vacant
	Not available	102-106	Reserved for BUFR only
	07	107	Not vacant
	Not available	108-109	Reserved for BUFR only
01/01/2008	10	110	Sippican LMS5 w/Chip Thermistor, duct mounted capacitance relative humidity sensor, and derived pressure from GPS height
01/01/2008	11	111	Sippican LMS6 w/Chip Thermistor, external boom mounted capacitance relative humidity sensor and derived pressure from GPS height
	12	112	Not vacant
Needed	13-16	113-116	Vacant
	17-22	117-122	Not vacant
Needed	23-25	123-125	Vacant
	26-29	126-129	Not vacant
Needed	30-31	130-131	Vacant
	32	132	Not vacant
Needed	33-35	133-135	Vacant
	36-37	136-137	Not vacant
Needed	38-46	138-146	Vacant
	47	147	Not vacant
Needed	48	148	Vacant
	49-63	149-163	Not vacant
Needed	64-65	164-165	Vacant
	66-76	166-176	Not vacant
Needed	77	177	Vacant
	78-89	177-189	Not vacant
	Not available	190-196	Reserved for BUFR only
	97-99	197-199	Not vacant
	Not available	200-254	Reserved for BUFR only
		255	Missing value

**NOTES:**

- (1) References to countries in brackets indicate the manufacturing location rather than the country using the instrument.
- (2) Some of the radiosondes listed are no longer in use but are retained for archiving purposes.
- (3) The alphanumeric code format reports only 2 digits, and the first digit for BUFR is identified from the date: the first digit is 0 if the introduction of the radiosonde for observation was before the date of 30/06/2007, or 1 otherwise. Entries in the second part of the table (after 99), which are declared "Vacant" can be used for new radiosondes because the 2 digits number was originally attributed to sondes, which are no longer used. *This system has been adopted to accommodate reporting in TEMP Traditional Alphanumeric Code format up to the time BUFR is fully used for radiosonding reports.*

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### COMMON CODE TABLE C-3: Instrument make and type for water temperature profile measurement with fall rate equation coefficients

Common Code Table: [Code table 1770-I<sub>X</sub>I<sub>X</sub>I<sub>X</sub>(Instrument type for XBT, with fall rate equation coefficients) - for alphanumeric codes  
[Code Table 0 22 067(Instrument type for water temperature profile measurement) in BUFR

Code figure for I <sub>X</sub> I <sub>X</sub> I <sub>X</sub>	Code figure for BUFR (Code table 0 22 067)	Instrument Make and Type	Equation Coefficients	
			a	b
001	001	Sippican T-4	6.472	-2.16
002	002	Sippican T-4	6.691	-2.25
011	011	Sippican T-5	6.828	-1.82
021	021	Sippican Fast Deep	6.390	-1.82
031	031	Sippican T-6	6.472	-2.16
032	032	Sippican T-6	6.691	-2.25
041	041	Sippican T-7	6.472	-2.16
042	042	Sippican T-7	6.691	-2.25
051	051	Sippican Deep Blue	6.472	-2.16
052	052	Sippican Deep Blue	6.691	-2.25
061	061	Sippican T-10	6.301	-2.16
071	071	Sippican T-11	1.7779	-0.255
081	081	Sippican AXBT (300 m probes)	1.52	0.0
201	201	TSK T-4	6.472	-2.16
202	202	TSK T-4	6.691	-2.25
211	211	TSK T-6	6.472	-2.16
212	212	TSK T-6	6.691	-2.25
221	221	TSK T-7	6.472	-2.16
222	222	TSK T-7	6.691	-2.25
231	231	TSK T-5	6.828	-1.82
241	241	TSK T-10	6.301	-2.16
251	251	TSK Deep Blue	6.472	-2.16
252	252	TSK Deep Blue	6.691	-2.25
261	261	TSK AXBT		
401	401	Sparton XBT-1	6.301	-2.16
411	411	Sparton XBT-3	5.861	-0.0904
421	421	Sparton XBT-4	6.472	-2.16
431	431	Sparton XBT-5	6.828	-1.82
441	441	Sparton XBT-5DB	6.828	-1.82
451	451	Sparton XBT-6	6.472	-2.16
461	461	Sparton XBT-7	6.472	-2.16
462	462	Sparton XBT-7	6.705	-2.28
471	471	Sparton XBT-7DB	6.472	-2.16
481	481	Sparton XBT-10	6.301	-2.16
491	491	Sparton XBT-20	6.472	-2.16
501	501	Sparton XBT-20DB	6.472	-2.16
510	510	Sparton 536 AXBT	1.524	0
700	700	Sippican XCTD standard		
710	710	Sippican XCTD deep		
720	720	Sippican AXCTD		
730	730	Sippican SXCTD		
741	741	TSK XCTD	3.42543	-0.47
742	742	TSK XCTD-2		
743	743	TSK XCTD-2F		
751	751	TSK AXCTD		
800	800	Mechanical BT		Not applicable
810	810	Hydrocast		Not applicable
820	820	Thermistor Chain		Not applicable
825	825	Temperature (sonic) and Pressure probes		Not applicable
830	830	CTD		Not applicable
831	831	CTD-P-ALACE float		Not applicable
840	840	PROVOR, No conductivity sensor		Not applicable
841	841	PROVOR, Seabird conductivity sensor		Not applicable
842	842	PROVOR, FSI conductivity sensor		Not applicable
845	845	Webb Research, No conductivity sensor		Not applicable
846	846	Webb Research, Seabird conductivity sensor		Not applicable
847	847	Webb Research, FSI conductivity sensor		Not applicable
850	850	SOLO, No conductivity sensor		Not applicable
851	851	SOLO, Seabird conductivity sensor		Not applicable
852	852	SOLO, FSI conductivity sensor		Not applicable
853-854	853-854	Reserved		Not applicable
855	855	Profiling Float, NINJA, no conductivity sensor		Not applicable

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Code figure for I <sub>x</sub> I <sub>x</sub> I <sub>x</sub>	Code figure for BUFR (Code table 0 22 067)	Instrument Make and Type	Equation Coefficients	
			a	b
856	856	Profiling Float, NINJA, SBE conductivity sensor		Not applicable
857	857	Profiling Float, NINJA, FSI conductivity sensor		Not applicable
858	858	Profiling Float, NINJA, TSK conductivity sensor		Not applicable
859	859	Profiling Float, NEMO, no conductivity		Not applicable
860	860	Profiling Float, NEMO, SBE conductivity sensor		Not applicable
861	861	Profiling Float, NEMO, FSI conductivity sensor		Not applicable
862-899 Reserved	862-899 Reserved	Reserved		
900	900	Sippican LMP-5 XBT	9.727	-0.0000473
901-994 Reserved	901-994 Reserved	Reserved		
995	995	Instrument attached to marine mammals		Not applicable
996	996	Instrument attached to animals other than marine mammals		Not applicable
997-999 Reserved	997-999 Reserved	Reserved		
	1000-1022 Reserved	Reserved		
	1023	Missing value		

Notes:

- (1) The depth is calculated from coefficients a and b and the time t as follows:  

$$z = at + 10^{-3}bt^2$$
- (2) All unassigned numbers are reserved for future use.
- (3) The values of a and b are supplied for information only.

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### COMMON CODE TABLE C-4: Water temperature profile recorder types

Common Code Table: [Code table 4770- $X_R X_R$  (Recorder type) - for alphanumeric codes  
[Code Table 0 22 068 (Water temperature profile recorder types) in BUFR

Code figure for $X_R X_R$	Code figure for BUFR (Code table 0 22 068)	
01	1	Sippican Strip Chart Recorder
02	2	Sippican MK2A/SSQ-61
03	3	Sippican MK-9
04	4	Sippican AN/BHQ-7/MK8
05	5	Sippican MK-12
06	6	Sippican MK-21
08	8	Sippican MK-10
10	10	Sparton SOC BT/SV Processor Model 100
11	11	Lockheed-Sanders Model OL5005
20	20	ARGOS XBT-ST
21	21	CLS-ARGOS / Protecno XBT-ST Model-1
22	22	CLS-ARGOS / Protecno XBT-ST Model-2
30	30	BATHY Systems SA-810
31	31	Scripps Metrobyte Controller
32	32	Murayama Denki Z-60-16 III
33	33	Murayama Denki Z-60-16 II
34	34	Protecno ETSM2
35	35	Nautilus Marine Service NMS-XBT
40	40	TSK MK-2A
41	41	TSK MK-2S
42	42	TSK MK-30
43	43	TSK MK-30N
45	45	TSK MK-100
46	46	TSK MK-130 Compatible recorder for both XBT and XCTD
47	47	TSK MK-130A XCTD recorder
48	48	TSK AXBT RECEIVER MK-300
50	50	JMA ASTOS
60	60	ARGOS communications, sampling on up transit
61	61	ARGOS communications, sampling on down transit
62	62	Orbcomm communications, sampling on up transit
63	63	Orbcomm communications, sampling on down transit
64	64	Iridium communications, sampling on up transit
65	65	Iridium communications, sampling on down transit
70	70	CSIRO Devil-1 XBT acquisition system
71	71	CSIRO Devil-2 XBT acquisition system
80	80	Applied Microsystems Ltd., MICRO-SVT&P
99	99	Unknown
	127	Missing value

Note: All unassigned numbers are reserved for future use.

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## COMMON CODE TABLE C-5: Satellite identifier

Common Code Table: (I<sub>6</sub>I<sub>6</sub>I<sub>6</sub> for alphanumeric codes  
(Code Table 0 01 007 in BUFR  
Code used in GRIB Edition 2

(EVEN DECILES INDICATE POLAR-ORBITING SATELLITES AND ODD DECILES INDICATE GEOSTATIONARY SATELLITES)

Code figure for I <sub>6</sub> I <sub>6</sub> I <sub>6</sub>	Code figure for BUFR (Code table 0 01 007)	Code figure for GRIB 2	
000	000	000	Reserved
<b>001 099: Allocated to Europe</b>			
001	001	001	ERS 1
002	002	002	ERS 2
003	003	003	METOP-1
004	004	004	METOP-2
005	005	005	METOP-3
020	020	020	SPOT1
021	021	021	SPOT2
022	022	022	SPOT3
023	023	023	SPOT4
040	040	040	OERSTED
041	041	041	CHAMP
042	042	042	TerraSAR-X
046	046	046	SMOS
050	050	050	METEOSAT 3
051	051	051	METEOSAT 4
052	052	052	METEOSAT 5
053	053	053	METEOSAT 6
054	054	054	METEOSAT 7
055	055	055	METEOSAT 8
056	056	056	METEOSAT 9
057	057	057	METEOSAT 10
058	058	058	METEOSAT 1
059	059	059	METEOSAT 2
060	060	060	ENVISAT
070	070	070	METEOSAT 11
<b>100-199: Allocated to Japan</b>			
120	120	120	ADEOS
121	121	121	ADEOS II
150	150	150	GMS 3
151	151	151	GMS 4
152	152	152	GMS 5
171	171	171	MTSAT-1R
172	172	172	MTSAT-2
<b>200-299: Allocated to USA</b>			
200	200	200	NOAA 8
201	201	201	NOAA 9
202	202	202	NOAA 10
203	203	203	NOAA 11
204	204	204	NOAA 12
205	205	205	NOAA 14
206	206	206	NOAA 15
207	207	207	NOAA 16
208	208	208	NOAA 17
209	209	209	NOAA 18
220	220	220	LANDSAT 5
221	221	221	LANDSAT 4
222	222	222	LANDSAT 7
223	223	223	NOAA 19
224	224	224	NPP
240	240	240	DMSP 7
241	241	241	DMSP 8
242	242	242	DMSP 9
243	243	243	DMSP 10
244	244	244	DMSP 11
245	245	245	DMSP 12
246	246	246	DMSP 13
247	247	247	DMSP 14
248	248	248	DMSP 15
249	249	249	DMSP 16
250	250	250	GOES 6

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Code figure for I6I6I6	Code figure for BUFR (Code table 0 01 007)	Code figure for GRIB 2	
251	251	251	GOES 7
252	252	252	GOES 8
253	253	253	GOES 9
254	254	254	GOES 10
255	255	255	GOES 11
256	256	256	GOES 12
257	257	257	GOES 13
258	258	258	GOES 14
259	259	259	GOES 15
260	260	260	JASON-1
261	261	261	JASON-2
281	281	281	QUIKSCAT
282	282	282	TRMM
283	283	283	CORIOLIS
285	285	285	DMSP17
286	286	286	DMSP18
<b>300-399: Allocated to Russian Federation</b>			
310	310	310	GOMS 1
311	311	311	GOMS 2
320	320	320	METEOR 2-21
321	321	321	METEOR 3-5
322	322	322	METEOR 3M-1
323	323	323	METEOR 3M-2
341	341	341	RESURS 01-4
<b>400-499: Allocated to India</b>			
410	410	410	KALPANA-1
430	430	430	INSAT 1B
431	431	431	INSAT 1C
432	432	432	INSAT 1D
450	450	450	INSAT 2A
451	451	451	INSAT 2B
452	452	452	INSAT 2E
470	470	470	INSAT 3A
471	471	471	INSAT 3D
472	472	472	INSAT 3E
<b>500-599: Allocated to China</b>			
500	500	500	FY-1C
501	501	501	FY-1D
510	510	510	FY-2
512	512	512	FY-2B
513	513	513	FY-2C
514	514	514	FY-2D
<b>600-699: Allocated to Europe</b>			
<b>700-799: Allocated to USA</b>			
700	700	700	TIROS M (ITOS 1)
701	701	701	NOAA 1
702	702	702	NOAA 2
703	703	703	NOAA 3
704	704	704	NOAA 4
705	705	705	NOAA 5
706	706	706	NOAA 6
707	707	707	NOAA 7
708	708	708	TIROS-N
710	710	710	GOES (SMS 1)
711	711	711	GOES (SMS 2)
720	720	720	TOPEX
721	721	721	GFO (GEOSAT Follow On)
722	722	722	GRACE A
723	723	723	GRACE B
731	731	731	GOES 1
732	732	732	GOES 2
733	733	733	GOES 3
734	734	734	GOES 4
735	735	735	GOES 5
740	740	740	COSMIC-1
741	741	741	COSMIC-2
742	742	742	COSMIC-3
743	743	743	COSMIC-4
744	744	744	COSMIC-5

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Code figure for I_61_6	Code figure for BUFR (Code table 0 01 007)	Code figure for GRIB 2	
745	745	745	COSMIC-6
763	763	763	NIMBUS 3
764	764	764	NIMBUS 4
765	765	765	NIMBUS 5
766	766	766	NIMBUS 6
767	767	767	NIMBUS 7
780	780	780	ERBS
781	781	781	UARS
782	782	782	EARTH PROBE
783	783	783	TERRA
784	784	784	AQUA
785	785	785	AURA
<b><i>800-849 Allocated to other satellite operators</i></b>			
800	800	800	SUNSAT
820	820	820	SAC-C
850-998	850-998	850-998	Reserved
999 Missing	999-1022	999-65534	Reserved
	1023	65535	Missing value

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### COMMON CODE TABLE C-6: List of Units for BUFR Table B and CREX Table B AND C

Code figure	Base SI Units (1)	Conventional abbreviation	Abbreviation in IA5/ASCII (5)	Abbreviation in ITA2 (5)	Definition in Base Units (2)
001	Metre	m	m	M	
002	Kilogram	kg	kg	KG	
003	Second	s	s	S	
004	Ampere	A	A	A	
005	Kelvin	K	K	K	
006	Mole	mol	mol	MOL	
007	Candela	cd	cd	CD	
<b>Supplementary SI Units (1)</b>					
021	Radian	rad	rad	RAD	
022	Steradian	sr	sr	SR	
<b>Derived SI Units with special names (1)</b>					
030	Hertz	Hz	Hz	HZ	s <sup>-1</sup>
031	Newton	N	N	N	kg m s <sup>-2</sup>
032	Pascal	Pa	Pa	PAL	kg m <sup>-1</sup> s <sup>-2</sup>
033	Joule	J	J	J	kg m <sup>2</sup> s <sup>-2</sup>
034	Watt	W	W	W	kg m <sup>2</sup> s <sup>-3</sup>
035	Coulomb	C	C	C	A s
036	Volt	V	V	V	kg m <sup>2</sup> s <sup>-3</sup> A <sup>-1</sup>
037	Farad	F	F	F	kg <sup>-1</sup> m <sup>-2</sup> s <sup>4</sup> A <sup>2</sup>
038	Ohm	Ω	Ohm	OHM	kg m <sup>2</sup> s <sup>-3</sup> A <sup>-2</sup>
039	Siemens	S	S	SIE	kg <sup>-1</sup> m <sup>-2</sup> s <sup>3</sup> A <sup>2</sup>
040	Weber	Wb	Wb	WB	kg m <sup>2</sup> s <sup>-2</sup> A <sup>-1</sup>
041	Tesla	T	T	T	kg s <sup>-2</sup> A <sup>-1</sup>
042	henry	H	H	H	kg m <sup>2</sup> s <sup>-2</sup> A <sup>-2</sup>
060	degree Celsius	°C	Cel	CEL	K+273.15
070	lumen	lm	lm	LM	cd sr
071	lux	lx	lx	LX	cd sr m <sup>-2</sup>
080	becquerel	Bq	Bq	BQ	s <sup>-1</sup>
081	gray	Gy	Gy	GY	m <sup>2</sup> s <sup>-2</sup>
082	sievert	Sv	Sv	SV	m <sup>2</sup> s <sup>-2</sup>
<b>SI Unit prefixes (1) (3) (4)</b>					
no	(yotta)	(Y)	(Y)	(Y)	
no	(zetta)	(Z)	(Z)	(Z)	
no	exa	E	E	E	
no	peta	P	P	PE	
no	tera	T	T	T	
no	giga	G	G	G	
no	mega	M	M	MA	
no	kilo	k	k	K	
no	hecto	h	h	H	
no	deca	da	da	DA	
no	deci	d	d	D	
no	centi	c	c	C	
no	milli	m	m	M	
no	micro	:	u	U	
no	nano	n	n	N	
no	pico	p	p	P	
no	femto	f	f	F	
no	atto	a	a	A	

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Code figure	Base SI Units (1)	Conventional abbreviation	Abbreviation in IA5/ASCII (5)	Abbreviation in ITA2 (5)	Definition in Base Units (2)
no	(zepto)	(z)	(z)		
no	(yocto)	(y)	(y)		
<b>Other, non-SI, units recognised by CGPM (4)</b>					
110	degree (angle)	°	deg	DEG	
111	minute (angle)	'	'	MNT	
112	second (angle)	"	"	SEC	
120	litre	l or L	l or L	L	
130	minute (time)	min	min	MIN	
131	hour	h	h	HR	
132	day	d	d	D	
150	tonne	t	t	TNE	
160	electron volt	eV	eV	EV	
161	atomic mass unit	u	u	U	
170	astronomic unit	AU	AU	ASU	
171	parsec	pc	pc	PRS	
<b>Non-SI Units tolerated because of widespread use</b>					
200	nautical mile				
201	knot	kt	kt	KT	
210	decibel (6)	dB	dB	DB	
220	hectare	ha	ha	HAR	
230	week				
231	year	a	a	ANN	
<b>Other Units as used by WMO (7)</b>					
300	percent	%	%	PERCENT	
301	parts per thousand	‰	0/00	PERTHOU	
310	eighths of cloud	okta	okta	OKTA	
320	degrees true	°	deg	DEG	
321	degrees per second	degree/s	deg/s	DEG/S	
350	degrees Celsius (8)	°C	C	C	
351	degrees Celsius per metre	°C/m	C/m	C/M	
352	degrees Celsius per 100 metres	°C/100 m	C/100 m	C/100 M	
360	Dobson Unit (9)	DU	DU	DU	
430	month	mon.	mon	MON	
441	per second (same as hertz)	s <sup>-1</sup>	/s	/S	
442	per second squared	s <sup>-2</sup>	s-2		
501	knots per 1000 metres	kt/1000 m	kt/km	KT/KM	
510	foot	ft.	ft	FT	
511	inch	in.	in	IN	
520	decipascals per second (microbar per second)	dPa s <sup>-1</sup>	dPa/s	DPAL/S	
521	centibars per second	cb s <sup>-1</sup>	cb/s	CB/S	
522	centibars per 12 hours	cb/12 h	cb/12 h	CB/12 HR	
523	dekapascal	daPa	daPa	DAPAL	
530	hectopascal	hPa	hPa	HPAL	
531	hectopascals per second	hPa s <sup>-1</sup>	hPa/s	HPAL/S	

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Code figure	Base SI Units (1)	Conventional abbreviation	Abbreviation in IA5/ASCII (5)	Abbreviation in ITA2 (5)	Definition in Base Units (2)
532	hectopascals per hour	hPa h <sup>-1</sup>	hPa/h	HPAL/HR	
533	hectopascals per 3 hours	hPa/3 h	hPa/3 h	HPAL/3 HR	
535	nano bar = hPa 10 <sup>-6</sup>	nbar	nbar	NBAR	
620	grams per kilogram	g kg <sup>-1</sup>	g/kg	G/KG	
621	grams per kilogram per second	g kg <sup>-1</sup> s <sup>-1</sup>	g kg-1 s-1		
622	kilograms per kilogram	kg kg <sup>-1</sup>	kg/kg	KG/KG	
623	kilograms per kilogram per second	kg kg <sup>-1</sup> s <sup>-1</sup>	kg kg-1 s-1		
624	kilograms per square metre	kg m <sup>-2</sup>	kg m-2		
630	acceleration due to gravity	g	g		
631	geopotential metre	gpm	gpm		
710	millimetre	mm	mm	MM	
711	millimetres per second	mm s <sup>-1</sup>	mm/s	MM/S	
712	millimetres per hour	mm h <sup>-1</sup>	mm/h	MM/HR	
713	millimetres to the sixth power per cubic metre	mm <sup>6</sup> m <sup>-3</sup>	mm6 m-3		
715	centimetre	cm	cm	CM	
716	centimetres per second	cm s <sup>-1</sup>	cm/s	CM/S	
717	centimetres per hour	cm h <sup>-1</sup>	cm/h	CM/HR	
720	decimetre	dm	dm	DM	
731	metres per second	m s <sup>-1</sup>	m/s	M/S	
732	metres per second per metre	m s <sup>-1</sup> /m	m s-1/m		
733	metres per second per 1000 metres	m s <sup>-1</sup> /1000 m	m s-1/km		
734	square metres	m <sup>2</sup>	m2	M2	
735	square metres per second	m <sup>2</sup> s <sup>-1</sup>	m2/s	M2/S	
740	kilometre	km	km	KM	
741	kilometres per hour	km h <sup>-1</sup>	km/h	KM/HR	
742	kilometres per day	km/d	km/d	KM/D	
743	per metre	m <sup>-1</sup>	m-1	/M	
750	becquerels per litre	Bq l <sup>-1</sup>	Bq/l	BQ/L	
751	becquerels per square metre	Bq m <sup>-2</sup>	Bq m-2	BQ/M2	
752	becquerels per cubic metre	Bq m <sup>-3</sup>	Bq m-3	BQ/M3	
753	millisievert	mSv	mSv	MSV	

### Notes:

(1) The international system of units, *Système International*, SI, was established by the 11th *Conférence Générale des Poids et Mesures* (CGPM) in 1960, and extended at the 1980 conference. There are 7 Base Units, 2 dimensionless Supplementary Units and a set of prefixes for decimal scaling. These may be combined to give compound units. Some compound units have special names, and are called Derived Units.

(2) When documenting compound SI units, each symbol for each base unit has been separated from the others by a space. There is no space between the unit and any prefix or exponent. Any prefix establishes a new unit to which any exponent applies (e.g. km<sup>2</sup> = (km)<sup>2</sup> = m<sup>6</sup> not k(m<sup>2</sup>) = m<sup>5</sup>). Prefixes must be in the case specified. The full name of the unit must not start with an upper case letter. If the solidus (/) is used, there must be only one. There is no space before or after it.

(3) Prefixes beyond exa and atto have been proposed but not yet adopted. Use of the prefixes hecto, deka, deci and centi is discouraged.

(4) Prefixes generally should not be used with units having non-decimal multiples and sub-multiples, such as units of time and angle, or with knots and nautical miles.

(5) Non-WMO abbreviations with limited character sets taken from ISO 2955-1983. Other abbreviations try to be consistent with this.

(6) The decibel is one tenth of a bel, which is the decimal logarithm of a ratio of two powers. Frequently, suffixes are supplied to indicate information about one of the quantities in the ratio, such as dB(mW), dBm, dBW, dBmW, dB(uV/m). It is recommended that only dB is used, with the full meaning of the ratio explained, including reference levels.

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(7) This list consists of the units not mentioned previously that occur in existing WMO Manuals.

(8) The abbreviation for degrees Celsius proposed for WMO use, C, could be confused with Coulombs. In this case, Amperes second should be used instead.

(9) Dobson Unit = DU. One Dobson Unit corresponds to a layer of 0.01 mm of pure ozone, if the whole column of atmosphere were compressed at  $P=1013$  hPa and  $T = 0^{\circ}\text{C}$ .

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### COMMON CODE TABLE C-7: Tracking technique/status of system used

Common code table      Code Table 3872 - s<sub>a</sub>s<sub>a</sub> for alphanumeric code  
Code Table 0 02 014 in BUFR

Code figure s <sub>a</sub> s <sub>a</sub>	Code figure for BUFR (Code table 0 02 014)	
00	0	No windfinding
01	1	Automatic with auxiliary optical direction finding
02	2	Automatic with auxiliary radio direction finding
03	3	Automatic with auxiliary ranging
04	4	Not used
05	5	Automatic with multiple VLF-Omega signals
06	6	Automatic cross chain Loran-C
07	7	Automatic with auxiliary wind profiler
08	8	Automatic satellite navigation
09-18	9-18	Reserved
19	19	Tracking technique not specified
TRACKING TECHNIQUE/STATUS OF ASAP SYSTEM		
STATUS OF SHIP SYSTEM		
20	20	Vessel stopped
21	21	Vessel diverted from original destination
22	22	Vessel's arrival delayed
23	23	Container damaged
24	24	Power failure to container
25-28	25-28	Reserved for future use
29	29	Other problems
SOUNDING SYSTEM		
30	30	Major power problems
31	31	UPS inoperative
32	32	Receiver hardware problems
33	33	Receiver software problems
34	34	Processor hardware problems
35	35	Processor software problems
36	36	NAVAID system damaged
37	37	Shortage of lifting gas
38	38	Reserved
39	39	Other problems
LAUNCH FACILITIES		
40	40	Mechanical defect
41	41	Material defect (hand launcher)
42	42	Power failure
43	43	Control failure
44	44	Pneumatic/hydraulic failure
45	45	Other problems
46	46	Compressor problems
47	47	Balloon problems
48	48	Balloon release problems
49	49	Launcher damaged
DATA ACQUISITION SYSTEMS		
50	50	R/S receiver antenna defect
51	51	NAVAID antenna defect
52	52	R/S receiver cabling (antenna) defect
53	53	NAVAID antenna cabling defect
54-58	54-58	Reserved
59	59	Other problems
COMMUNICATIONS		
60	60	ASAP communications defect
61	61	Communications facility rejected data
62	62	No power at transmitting antenna
63	63	Antenna cable broken
64	64	Antenna cable defect
65	65	Message transmitted power below normal
66-68	66-68	Reserved
69	69	Other problems
70	70	All systems in normal operation
71-98	71-98	Reserved
99	99	Status of system and its components not specified
	100-126	Reserved
	127	Missing value

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### COMMON CODE TABLE C-8: Satellite Instruments

Code table 0 02 019 in BUFR

Code	Agency	TYPE	INST. SHORT NAME	INSTRUMENT LONG NAME
10	BNSC	Radiometer	AATSR	Advanced Along Track Scanning Radiometer
11	BNSC	Radiometer	ATSR	Along track scanning radiometer
12	BNSC	Radiometer	ATSR-2	Along Track Scanning Radiometer -2
13	BNSC	Radiometer	MWR	Microwave Radiometer
30	CNES	Communications	ARGOS	
40	CNES	Lidar	Laser reflectors	
41	CNES	Lidar	DORIS	Doppler Orbitography and Radio-positioning Integrated by Satellite
42	CNES	Lidar	DORIS-NG	Doppler Orbitography and Radio-positioning Integrated by Satellite-NG
47	CNES	Radar altimeters	POSEIDON-1 (SSALT-1)	Positioning Ocean Solid Earth Ice Dynamics Orbiting Navigator (single frequency solid state radar altimeter)
48	CNES	Radar altimeters	POSEIDON-2 (SSALT-2)	Positioning Ocean Solid Earth Ice Dynamics Orbiting Navigator (dual frequency solid state radar altimeter)
50	CNES	Imager radiometer	ATSR/M	ATSR/M
51	CNES	High resolution optical imagers	HRG	
52	CNES	Radiometer	HRV	High Resolution Visible
53	CNES	Radiometer	HRVIR	High Resolution Visible and Infra-red
54	CNES	Radiometer	ScaRaB/MV2	Scanner for Earth's Radiation Budget
55	CNES	Radiometer	POLDER	POLDER
60	CNES	Spectrometer	VEGETATION	VEGETATION
61	CNES	Spectrometer	WINDII	WINDII
80	CSA	Communications	RADARSAT DTT	
81	CSA	Communications	RADARSAT TTC	
85	CSA	Radar	SAR (CSA)	Synthetic Aperture Radar (CSA)
90	CSA	Radiometer	MOPITT	Measurements Of Pollution In The Troposphere
91	CSA	Chemistry Instruments	OSIRIS	Optical Spectrograph and Infra-Red Imaging System
97	CSIRO	Radiometer	Panchromatic imager	
98	CRCSS	Atmospheric temperature and humidity sounders	GPS receiver	
102	DLR	Radiometer	CHAMP GPS Sounder	GPS TurboRogue Space Receiver (TRSR)
103	DLR	Radiometer	IGOR	Integrated GPS and Occultation Receiver
116	DLR	Magnetometer	CHAMP gravity package (Accelerometer+GPS)	STAR Accelerometer
117	DLR	Magnetometer	CHAMP magnetometry package (1 Scalar+2 Vector Magnetometer)	Overhauser Magnetometer (OVM) and Fluxgate Magnetometer (FGM)
120	ESA	Communications	ENVISAT Comms	Communications package on ENVISAT
121	ESA	Communications	ERS Comms	Communication package for ERS
130	ESA	Lidars	ALADIN	Atmospheric LAser Doppler INstrument
131	ESA	Lidars	ATLID	ATmospheric LIDar
140	ESA	Radar	AMI/SAR/Image	Active Microwave Instrumentation. Image Mode
141	ESA	Radar	AMI/SAR/wave	Active Microwave Instrumentation. Wave mode
142	ESA	Radar	AMI/scatterometer	Active Microwave Instrumentation. Wind mode
143	ESA	Radar	ASAR	ASAR
144	ESA	Imaging microwave radars	ASAR	Advanced Syntetic Apertura Radar (Image mode)
145	ESA	Imaging microwave radars	ASAR	Advanced Syntetic Apertura Radar (Wave mode)
146	ESA	Cloud profile and rain radars	CPR	Cloud Radar
147	ESA	Radar	RA-2/MWR	Radar Altimeter - 2
148	ESA	Radar	RA/MWR	Radar Altimeter
150	ESA	Scatterometers	SCATTEROMETER	Scatterometer
161	ESA	Radiometer	MIPAS	Michelson Interferometric Passive Atmosphere Sounder
162	ESA	Imaging multi-spectral radiometers (passive microwave)	MWR-2	MicroWave Radiometer-2
163	ESA	Atmospheric chemistry instruments	SOPRANO	Sub-milimetre Observation of Processes in the Absorption Noteworthy for Ozone
170	ESA	Atmospheric chemistry instruments	GOME I	Global Ozone Monitoring Experiment
172	ESA	Spectrometer	GOMOS	Global Ozone Monitoring by Occultation of Stars
174	ESA	Spectrometer	MERIS	Medium Resolution Imaging Spectrometer
175	ESA	Spectrometer	SCIAMACHY	Scanning Imaging Absorption Spectrometer for Atmospheric Cartography
176	ESA	Radiometer	MIRAS	Microwave Imaging Radiometer Using Aperture

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Code	Agency	TYPE	INST. SHORT NAME	INSTRUMENT LONG NAME
				Synthesis
181	EUMETSAT	Communications	METEOSAT Comms	Communications package for METEOSAT
182	EUMETSAT	Communications	MSG Comms	Communications package for MSG
190	ESA/ EUMETSAT	Scatterometers	ASCAT	Advanced Scatterometer
200	EUMETSAT	Radiometer	GERB	Geostationary Earth Radiation Budget
202	ESA/ EUMETSAT	Radiometer	GRAS	GNSS Receiver for Atmospheric Sounding
203	EUMETSAT	Radiometer	MHS	Microwave Humidity Sounder
205	EUMETSAT	Radiometer	MVIRI	METEOSAT Visible and Infra-Red Imager
207	EUMETSAT	Radiometer	SEVIRI	Spinning Enhanced Visible and InfraRed Imager
208	EUMETSAT	Imaging multi-spectral radiometers (vis/IR)	VIRI	VIRI
220	ESA/ EUMETSAT	Spectrometer	GOME-2	Global Ozone Monitoring Experiment - 2
221	CNES/ EUMETSAT	Atmospheric temperature and humidity sounders	IASI	Infra-red Atmospheric Sounding Interferometer
240	CAST	Communications	DCP	Data Collection Platform Transponder
245	CAST	Radiometer	CCD	High Resolution CCD Camera
246	INPE	Atmospheric temperature and humidity sounders	HSB	Humidity Sounder/Brazil
248	INPE	Imaging multi-spectral radiometers (vis/IR)	OBA	Observador Brasileiro da Amazonia
250	CAST	Radiometer	WFI	Wide Field Imager
255	CAST	Spectrometer	IRMSS	Infra Red Multi Spectral Scanner
260	ISRO	Precision orbit	BSS & FSS transponders	
261	ISRO	Precision orbit	DRT-S&R	
262	ISRO	Communications	INSAT Comms	Communications package for INSAT
268	ISRO	High resolution optical imagers	HR-PAN	High Resolution Panchromatic Camera
269	ISRO	Imaging multi-spectral radiometers (passive microwave)	MSMR	Multifrequency Scanning Microwave Radiometer
270	ISRO	Imaging multi-spectral radiometers (vis/IR)	VHRR	Very High Resolution Radiometer
271	ISRO	Imaging multi-spectral radiometers (vis/IR)	WiFS	Wide Field Sensor
275	ISRO	High resolution optical imagers	AWiFS	Advanced Wide Field Sensor
276	ISRO	High resolution optical imagers	LISS-I	Linear imaging Self Scanner - I
277	ISRO	High resolution optical imagers	LISS-II	Linear Imaging Self Scanner - II
278	ISRO	High resolution optical imagers	LISS-III	Linear Imaging Self Scanner - III
279	ISRO	High resolution optical imagers	LISS-IV	Linear Imaging Self Scanner - IV
284	ISRO	High resolution optical imagers	PAN	Panchromatic Sensor
285	ISRO	Imaging multi-spectral radiometers (vis/IR)	MOS	Modular Opto-electronic Scanner
286	ISRO	Ocean colour instruments	OCM	Ocean Colour Monitor
290	JMA	Communications	MTSAT Comms	Communications package for MTSAT
294	JMA	Imaging multi-spectral radiometers	IMAGER/MTSAT-1R	Imager/MTSAT
295	JMA	Imaging multi-spectral radiometers	IMAGER/MTSAT	Imager/MTSAT
296	JMA	Imaging multi-spectral radiometers	VISSR (GMS4)	Visible and Infra-red Spin Scan Radiometer (GMS4)
300	NASA	Lidars	GLAS	Geoscience Laser Altimeter System
301	NASA	Precision orbit	LRA	Laser Retroreflector Array
302	NASA	Lidars	MBLA	Multi Beam Laser Altimeter
309	NASA	Cloud profile and rain radars	CPR (Cloudsat)	Cloud Profiling Radar
312	NASA	Radar	NSCAT	NASA Scatterometer
313	NASA	Radar	SeaWinds	ADEOS II - NASA Scatterometer
330	NASA	Earth radiation budget radiometer	ACRIM	Active Cavity Radiometer Irradiance Monitor
334	NASA	Total and Profile ozone	BUV	Backscatter Ultraviolet Instrument
336	NASA	High resolution optical imagers	ALI	Advanced Land Imager
347	NASA	High resolution optical imagers	ASTER	Advanced Spaceborne Thermal Emission and Reflection Radiometer
348	NASA	Earth radiation budget radiometer	CERES-2	Cloud and the Earth's Radiant Energy System
351	CONAE	Atmospheric temperature and humidity sounders	GPSDR	GPS Demonstration Receiver
353	NASA	Total and Profile ozone	HIRDLS	High Resolution Dynamics Limb Sounder
354	NASA	Total and Profile ozone	HRDI	High Resolution Doppler Imager
356	NASA	Radiometer	LIS	Lightning Imaging Sensor
358	NASA	Magnetic field, Auroal imageryScintillation boundary	PEM	Particle Environment Monitor
359	NASA	Ocean colour instruments	SeaWiFS	Sea-Viewing Wide Field-of-View Sensor
360	NASA	Earth radiation budget radiometer	SUSIM (UARS)	Solar Ultraviolet Irradiance Monitor

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Code	Agency	TYPE	INST. SHORT NAME	INSTRUMENT LONG NAME
363	NASA	Total and Profile ozone	SBUV/1	Solar Backscatter Ultraviolet 1 instrument
365	NASA	Imaging multi-spectral radiometers (passive microwave)	TMI	TRMM Microwave Imager
366	NASA	Imaging multi-spectral radiometers (passive microwave)	JMR	JASON-1 Microwave Radiometer
369	NASA	Total and Profile ozone	LIMS	Limb Infrared Monitor of the Stratosphere
370	NASA	Total and Profile ozone	LRIR	Limb Radiance Inversion Radiometer instrument
371	NASA	Total and Profile ozone	EPIC	Earth PolyChromatic Imaging Camera
372	NASA	Earth radiation budget radiometer	NISTAR	NIST Advanced Radiometer
373	NASA	Magnetic field, Auroal imagery Scintillation boundary	Plasma-Mag	
374	NASA	Other	XPS	XUV Photometer System
375	NASA	Imaging multi-spectral radiometers (vis/IR)	VIRS	Visible Infra-red Scanner
376	CNES	Multiple direction/polarisation radiometers	POLDER II	Polarization and Directionality of the Earth's Reflectance - II
377	NASA	Earth radiation budget radiometer	TIM	Total Irradiance Monitor
379	NASA	Imaging multi-spectral radiometers (vis/IR)	WFC	Wide Field Camera
382	NASA	Spectro-radiometer	CLAES	Cryogenic Limb Array Etalon Spectrometer
383	NASA	Spectro-radiometer	HALOE	Halogen Occultation Experiment
384	NASA	Spectro-radiometer	ISAMS	Improved Stratospheric and Mesospheric Sounder
385	NASA	Spectro-radiometer	MISR	Multi-angle Imaging SpectroRadiometer
386	NASA	Spectro-radiometer	MLS	Microwave Limb Sounder
387	NASA	Spectro-radiometer	MLS (EOS-Aura)	Microwave Limb Sounder (EOS-Aura)
389	NASA	Spectro-radiometer	MODIS	MODerate-Resolution Imaging Spectroradiometer
393	NASA	Gravity	HAIRS	High Accuracy Inter-satellite Ranging System
394	NASA	Total and Profile ozone	OMI	Ozone Measuring Instrument
395	NASA	Radiometer	Atmospheric Corrector	Atmospheric Corrector
396	NASA	Radiometer	Hyperion	Hyperspectral imager
399	NASA	Spectro-radiometer	SAGE I	Stratospheric Aerosol and Gas Experiment-I
400	NASA	Spectro-radiometer	SAGE II	Stratospheric Aerosol and Gas Experiment-II
401	NASA	Spectro-radiometer	SAGE III	Stratospheric Aerosol and Gas Experiment-III
402	NASA	Spectro-radiometer	SAMS	Stratospheric And Mesospheric Sounder
403	NASA	Spectro-radiometer	SAM II	Stratospheric Aerosol Measurement II
404	NASA	Spectro-radiometer	IRIS	Infrared Interferometer Spectrometer
405	NASA	Atmospheric temperature and humidity sounders	GIFTS	Geosynchronous Imaging Fourier Transform Spectrometer
420	NASA	Spectrometer	AIRS	Atmospheric Infra-red Sounder
426	NASA	Spectrometer	SOLSTICE	SOLar STellar Irradiance Comparison Experiment
430	NASA	Spectrometer	TES	Tropospheric Emission Spectrometer
431	NASA	Spectrometer	TOMS	Total Ozone Mapping Spectrometer
450	JAXA	Communications	ADEOS Comms	Communications package for ADEOS
451	JAXA	Communications	DCS (JAXA)	Data Collection System (JAXA)
453	JAXA	Communications	GMS Comms	Communications package on GMS
454	JAXA	Communications	JERS-1 Comms	Communications package for JERS-1
460	JAXA	Lidar	RIS	Retroreflector in Space
461	JAXA	Radar	PR	Precipitation Radar
462	JAXA	Imaging microwave radars	SAR	Syntetic Aperture Radar
470	JAXA	Imaging microwave radars	PALSAR	Phased Array type L-band Synthetic Aperture Radar
479	JAXA	Imaging multi-spectral radiometers (passive microwave)	AMSR-E	Advanced Microwave Scanning Radiometer-EOS
480	JAXA	High resolution optical imagers	PRISM (ALOS)	Panchromatic Remote-sensing Instrument for Stereo Mapping
481	JAXA	Radiometer	AMSR	ADVANCED Microwave Scanning Radiometer
482	JAXA	High resolution optical imagers	AVNIR	Advanced Visible and Near Infrared Radiometer
483	JAXA	High resolution optical imagers	AVNIR-2	Advanced Visible and Near Infra-red Radiometer type 2
484	JAXA	Imager	GLI	Global Imager
485	JAXA	Radiometer	MESSR	Multispectral Electronic Self Scanning Radiometer
486	JAXA	Radiometer	MSR	Microwave Scanning Radiometer
487	JAXA	Radiometer	OCTS	Ocean Color and Temperature Scanner
488	JAXA	Radiometer	OPS	Optical Sensor
489	JAXA	Spectro-radiometer	VISSR (GMS5)	Visible and Infra-red Spin Scan Radiometer (GMS5)
490	JAXA	Radiometer	VTIR	Visible and Thermal Infra-red Radiometer
510	JAXA	Spectrometer	ILAS-I	Imorved Limb Atomosphiric Spectrometer
511	JAXA	Spectrometer	ILAS-II	Improved Limb Atomosphiric Spectrometer
512	JAXA	Spectrometer	IMG	Inferometric Monitor of Greenhouse gases

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Code	Agency	TYPE	INST. SHORT NAME	INSTRUMENT LONG NAME
514	JAXA	Space environment	SEM	Space Environment Monitor (JAXA)
515	JAXA	Total and Profile ozone	SOFIS	Solar Occultation Fourier transform spectrometer for Inclined Orbit Satellite
540	NOAA	Communications	DCS (NOAA)	Data Collection System (NOAA)
541	NOAA	Communications	GOES Comms	Communications package on GOES
542	NOAA	Communications	LANDSAT Comms	Communications package for LANDSAT
543	NOAA	Communications	NOAA Comms	Communications package for NOAA
544	NOAA	Communications	S&R (GOES)	Search and Rescue
545	NOAA	Communications	S&R (NOAA)	Search and Rescue
546	NOAA	Communications	WEFAX	Weather Facsimile
547	NOAA	Spectrometer	SEM(GOES)	Space Environment Monitor
550	NOAA	Magnetic field	SSM	Special Sensor Magnetometer
551	NOAA	Magnetic field	SSJ/4	Special Sensor Precipitating Plasma Monitor
552	NOAA	Space environment	SSIES-2	Special Sensor Ionospheric Plasma Drift/Scintillation Meter
553	NOAA	Space environment	SSB/X-2	Special Sensor Gamma Ray Particle Dectector
570	NOAA	Radiometer	AMSU-A	Advanced Microwave Sounding Unit-A
574	NOAA	Radiometer	AMSU-B	Advanced Microwave Sounding Unit-B
580	NOAA	Radiometer	ATOVS (HIRS/3 + AMSU + AVHRR/3)	Advanced TIROS Operational Vertical Sounder
590	NOAA	Radiometer	AVHRR/2	Advanced Very High Resolution Radiometer/2
591	NOAA	Radiometer	AVHRR/3	Advanced Very High Resolution Radiometer/3
592	NOAA	Radiometer	AVHRR/4	Advanced Very High Resolution Radiometer/4
600	NOAA	Radiometer	ERBE	Earth's Radiation Budget Experiment
601	NOAA	Radiometer	ETM+	Enhanced Thematic Mapper
605	NOAA	Radiometer	HIRS/2	High Resolution Infra-red Sounder/2
606	NOAA	Radiometer	HIRS/3	High Resolution Infra-red Sounder/3
607	NOAA	Radiometer	HIRS/4	High Resolution Infra-red Sounder/4
615	NOAA	Radiometer	IMAGER	Imager
616	NOAA	Imaging multi-spectral radiometers (vis/IR)	VIIRS	Visible/Infrared Imager Radiometer Suite
620	NOAA	Atmospheric temperature and humidity sounders	CrIRS/NP	Cross track Infra-red Sounder/NPOESS
621	NOAA	Atmospheric temperature and humidity sounders	ATMS	Advanced Technology Microwave Sounder
622	NOAA	Radiometer	MSS	Multispectral Scanning System
623	NOAA	Radiometer	MSU	Microwave Sounding Unit
624	NOAA	Radiometer	SBUV/2	Solar Backscattter Ultra-Violet Instrument/2
625	NOAA	Radiometer	SBUV/3	Solar Backscattter Ultra-Violet Instrument/3
626	NOAA	Radiometer	SOUNDER	SOUNDER
627	NOAA	Radiometer	SSU	Stratospheric Sounding Unit
628	NOAA	Radiometer	TM	Thematic Mapper
629	NOAA	Radiometer	TOVS (HIRS/2 + MSU + SSU)	TIROS Operational Vertical Sounder
630	NOAA	Radiometer	VAS	VISSR Atmospheric Sounder
631	NOAA	Radiometer	SSZ	
645	NOAA	Spectrometer	SEM	Space Environment Monitor
650	NRSCC	Radiometer	MVIRSR (10 channel)	Multispectral Visible and Infra-red Scan Radiometer
651	NRSCC	Radiometer	MVIRSR (3 channel)	Multispectral Visible and Infra-red Scan Radiometer
652	NRSCC	Radiometer	MVIRSR (5 channel)	Multispectral Visible and Infra-red Scan Radiometer
670	NSAU	Radar	RLSBO	Side looking microwave radar
680	NSAU	High resolution optical imagers	MSU-EU	Multi-Spectral Radiometer with High Resolution
681	NSAU	Imaging multi-spectral radiometers (vis/IR)	MSU-UM	Visible Multi-Spectral Radiometer
682	NSAU	Radiometer	RM-08	Imaging Microwave Radiometer
683	NSAU	High resolution optical imagers	SU-UMS	Stereo Radiometer with High Resolution
684	NSAU	High resolution optical imagers	SU-VR	Visible Radiometer with High Resolution
685	NSAU	Radiometer	TRASSER	
700	ROSCOSMOS	Communications	KONDOR-2	Data collection and transmission system
701	ROSCOSMOS	Communications	BRK	
710	ROSCOSMOS	Lidar	ALISSA	Backscatter lidar
712	ROSCOSMOS	Lidar	Balkan-2 lidar	
715	ROSCOSMOS	Lidar	MK-4	
716	ROSCOSMOS	Lidar	MK-4M	
730	ROSCOSMOS	Radar	Greben	Radar altimeter
731	ROSCOSMOS	Radar	SAR-10	Syntetic Aperture Radar
732	ROSCOSMOS	Radar	SAR-3	Syntetic Aperture Radar

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Code	Agency	TYPE	INST. SHORT NAME	INSTRUMENT LONG NAME
733	ROSCOSMOS	Radar	SAR-70	Syntetic Aperture Radar
740	ROSCOSMOS	Radar	SLR-3	Side looking Radar
745	ROSCOSMOS	Radar	Travers SAR	
750	ROSCOSMOS	Radiometer	174-K	Temperature and Humidity Profiler
751	ROSCOSMOS	Radiometer	BTVK	Scanning television radiometer
752	ROSCOSMOS	Radiometer	Chaika	Scanning IR radiometer
753	ROSCOSMOS	Radiometer	DELTA-2	Multispectral microwave scanner
755	ROSCOSMOS	Radiometer	IKAR-D	Multispectral microwave scanner
756	ROSCOSMOS	Radiometer	IKAR-N	Multispectral microwave scanner
757	ROSCOSMOS	Radiometer	IKAR-P	Multispectral microwave scanner
760	ROSCOSMOS	Radiometer	ISP	
761	ROSCOSMOS	Radiometer	KFA-1000	Photographic camera
762	ROSCOSMOS	Radiometer	KFA-200	Photographic camera
763	ROSCOSMOS	Radiometer	KFA-3000	Photographic camera
770	ROSCOSMOS	Radiometer	Klimat	Scanning IR radiometer
771	ROSCOSMOS	Radiometer	Klimat-2	Scanning IR radiometer
775	ROSCOSMOS	Radiometer	MIRAS	
776	ROSCOSMOS	Radiometer	MIVZA	
777	ROSCOSMOS	Radiometer	MIVZA-M	Microwave scanning radiometer
780	ROSCOSMOS	Radiometer	MR-2000	
781	ROSCOSMOS	Radiometer	MR-2000M	
785	ROSCOSMOS	Radiometer	MR-900	Scanning telephotometer
786	ROSCOSMOS	Radiometer	MR-900B	Scanning visual band telephotometer
790	ROSCOSMOS	Radiometer	MSU-E	Multispectral high resolution electronic scanner
791	ROSCOSMOS	Radiometer	MSU-E1	Multispectral high resolution electronic scanner
792	ROSCOSMOS	Radiometer	MSU-E2	Multispectral high resolution electronic scanner
793	ROSCOSMOS	Radiometer	MSU-M	
794	ROSCOSMOS	Radiometer	MSU-S	Multispectral medium resolution scanner
795	ROSCOSMOS	Radiometer	MSU-SK	Multispectral medium resolution conical scanner
796	ROSCOSMOS	Radiometer	MSU-V	Multispectral high resolution conical scanner
810	ROSCOSMOS	Radiometer	MTZA	Scanning microwave radiometer
815	ROSCOSMOS	Imaging multi-spectral radiometers (passive microwave)	MZOAS	Scanning microwave radiometer
820	ROSCOSMOS	Imaging multi-spectral radiometers (passive microwave)	R-225	Single channel microwave radiometer
821	ROSCOSMOS	Radiometer	R-400	
822	ROSCOSMOS	Radiometer	R-600	Single channel microwave radiometer
830	ROSCOSMOS	Radiometer	RMS	Radiation measurement system
835	ROSCOSMOS	Radiometer	TV camera	
836	ROSCOSMOS	Radiometer	SILVA	
840	ROSCOSMOS	Spectro-radiometer	SROSMO	Spectroradiometer for ocean monitoring
850	ROSCOSMOS	Spectrometer	BUFS-2	Backscatter spectrometer/2
851	ROSCOSMOS	Spectrometer	BUFS-4	Backscatter spectrometer/4
855	ROSCOSMOS	Spectrometer	ISTOK-1	Infra-red Spectrometer
856	ROSCOSMOS	Spectrometer	SFM-2	Spectrometer to measure direct solar radiation
857	ROSCOSMOS	Spectrometer	DOPI	
858	ROSCOSMOS	Spectrometer	KGI-4	
859	ROSCOSMOS	Spectrometer	Ozon-M	
860	ROSCOSMOS	Spectrometer	RMK-2	
900	NOAA	Radiometer	MAXIE	Magnetospheric Atmospheric X-ray Imaging Experiment
901	NOAA	Radiometer	OLS	Operational Linescan System
905	NOAA	Radiometer	SSM/I	Mission Sensor Microwave Imager
906	NOAA	Radiometer	SSM/T-1	Mission Sensor Microwave Temperature Sounder
907	NOAA	Radiometer	SSM/T-2	Mission Sensor Microwave Water Vapor Sounder
908	NOAA	Radiometer	SSMIS	Special Sensor Microwave Imager Sounder
910	NOAA	Radiometer	SXI	Solar X-ray Imager
930	NOAA	Spectrometer	EHIC	Energetic Heavy Ion Composition Experiment
931	NOAA	Spectrometer	X-ray astronomy payload	
932	NRSCC	Imaging multi-spectral radiometers (vis/IR)	IVISSR (FY-2)	Improved Multispectral Visible and Infra-red Scan Radiometer (5 channels)
933	NRSCC	Atmospheric temperature and humidity sounders	IRAS	InfraRed Atmospheric Sounder
934	NRSCC	Atmospheric temperature and humidity sounders	MWAS	MicroWave Atmospheric Sounder
935	NRSCC	Atmospheric temperature and humidity sounders	IMWAS	Improved MicroWave Atmospheric Sounder
936	NRSCC	Atmospheric temperature and humidity sounders	MWHS	MicroWave Humidity Sounder

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Code	Agency	TYPE	INST. SHORT NAME	INSTRUMENT LONG NAME
937	NRSCC	Imaging multi-spectral radiometers (vis/IR)	MVIRS	Moderate Resolution Visible and Infrared Imaging Spectroradiometer
938	NRSCC	Imaging multi-spectral radiometers (passive microwave)	MWRI	MicroWave Radiation Imager
940	ROSCOSMOS	Atmospheric temperature and humidity sounders	MTVZA-OK	Scanning microwave radiometer
941	CNES	Atmospheric temperature and humidity sounders	SAPHIR	
944	NOAA	Radar altimeters	ALT	Altimeter
945	NOAA	Earth radiation budget radiometer	TSIS	Total Solar Irradiance Sensor
946	NOAA	Imaging multi-spectral radiometers (passive microwave)	CMIS	Conical-scanning Microwave Imager/Sounder
947	NOAA	Total and Profile ozone	OMPS	Ozone Mapping and Profiler Suite
948	NOAA	Space Environment Atmospheric temperature and humidity sounders	GPSOS	Global Positioning System Occultation Sensor
949	NOAA	Magnetic field, Auroal imagery Scintillation boundary	SESS	Space Environmental Sensor Suite
950	NRSCC	Imaging multi-spectral radiometers (vis/IR)	VIRR	Multispectral Visible and Infra-red Scan Radiometer (10 channels)
951	NRSCC	Total and Profile ozone	TOM	Total Ozone Mapper
952	NRSCC	Total and Profile ozone	OP	Ozone Profiler
953-999	Reserved			
1000-2046	Reserved for long-term future use			
2047	Missing value			

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### COMMON CODE TABLE C-11: Originating/generating centre

CREX Edition2 B 01 035 (5 characters), ooooo in Group Poooooppp of Section 1	GRIB Edition 2, Octets 6- 7 in Section 1/ BUFR Edition 4, 0-01-035 (16 bits), Octets 5-6 in Section 1	
00000	00000	WMO Secretariat
		<b>00001-00009: WMCs</b>
00001	00001	Melbourne
00002	00002	Melbourne
00003	00003	)
00004	00004	Moscow
00005	00005	Moscow
00006	00006	)
00007	00007	US National Weather Service, National Centres for Environmental Prediction(NCEP)
00008	00008	US National Weather Service TelecommunicationsGateway (NWSTG)
00009	00009	US National Weather Service - Other
		<b>00010-00025: Centres in Region I</b>
00010	00010	Cairo (RSMC)
00011	00011	)
00012	00012	Dakar (RSMC)
00013	00013	)
00014	00014	Nairobi (RSMC)
00015	00015	)
00016	00016	Casablanca (RSMC)
00017	00017	Tunis (RSMC)
00018	00018	Tunis Casablanca (RSMC)
00019	00019	)
00020	00020	Las Palmas
00021	00021	Algiers (RSMC)
00022	00022	ACMAD
00023	00023	Mozambique NMC
00024	00024	Pretoria (RSMC)
00025	00025	La Réunion (RSMC)
		<b>00026-00040: Centres in Region II</b>
00026	00026	Khabarovsk (RSMC)
00027	00027	)
00028	00028	New Delhi (RSMC)
00029	00029	)
00030	00030	Novosibirsk (RSMC)
00031	00031	)
00032	00032	Tashkent (RSMC)
00033	00033	Jeddah (RSMC)
00034	00034	Tokyo (RSMC), Japan Meteorological Agency
00035	00035	)
00036	00036	Bangkok
00037	00037	Ulan Bator
00038	00038	Beijing (RSMC)
00039	00039	)
00040	00040	Seoul
		<b>00041-00050: Centres in Region III</b>
00041	00041	Buenos Aires (RSMC)
00042	00042	)
00043	00043	Brasilia (RSMC)
00044	00044	)
00045	00045	Santiago
00046	00046	Brazilian Space Agency - INPE
00047	00047	Colombia NMC
00048	00048	Ecuador NMC

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CREX Edition2 B 01 035 (5 characters), oooo in Group Pooooopp of Section 1	GRIB Edition 2, Octets 6- 7 in Section 1/ BUFR Edition 4, 0-01-035 (16 bits), Octets 5-6 in Section 1	
00049	00049	Peru NMC
00050	00050	Venezuela NMC
		<b>00051-00063: Centres in Region IV</b>
00051	00051	Miami (RSMC)
00052	00052	Miami RSMC, National Hurricane Center
00053	00053	Montreal (RSMC)
00054	00054	)
00055	00055	San Francisco
00056	00056	ARINC Centre
00057	00057	U.S. Air Force Air Force Global Weather Central
00058	00058	Fleet Numerical Meteorology and Oceanography Center, Monterey, CA
00059	00059	The NOAA Forecast Systems Laboratory, Boulder, CO, USA
00060	00060	United States National Centre for Atmospheric Research (NCAR)
00061	00061	Service ARGOS - Landover
00062	00062	U.S. Naval Oceanographic Office
00063	00063	IRI (International Research Institute for Climate and Society)
		<b>00064-00073: Centres in Region V</b>
00064	00064	Honolulu (RSMC)
00065	00065	Darwin (RSMC)
00066	00066	)
00067	00067	Melbourne (RSMC)
00068	00068	Reserved
00069	00069	Wellington (RSMC)
00070	00070	)
00071	00071	Nadi (RSMC)
00072	00072	Singapore
00073	00073	Malaysia NMC
		<b>00074-00099: Centres in Region VI</b>
00074	00074	UK Meteorological Office - Exeter (RSMC)
00075	00075	)
00076	00076	Moscow (RSMC)
00077	00077	Reserved
00078	00078	Offenbach (RSMC)
00079	00079	)
00080	00080	Rome (RSMC)
00081	00081	)
00082	00082	Norrköping
00083	00083	)
00084	00084	Toulouse (RSMC)
00085	00085	Toulouse (RSMC)
00086	00086	Helsinki
00087	00087	Belgrade
00088	00088	Oslo
00089	00089	Prague
00090	00090	Episkopi
00091	00091	Ankara
00092	00092	Frankfurt/Main
00093	00093	London (WAFC)
00094	00094	Copenhagen
00095	00095	Rota
00096	00096	Athens
00097	00097	European Space Agency (ESA)
00098	00098	ECMWF, RSMC
00099	00099	De Bilt
00100	00100	Brazzaville
00101	00101	Abidjan

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CREX Edition2 B 01 035 (5 characters), ooooo in Group Pooooopp of Section 1	GRIB Edition 2, Octets 6- 7 in Section 1/ BUFR Edition 4, 0-01-035 (16 bits), Octets 5-6 in Section 1	
00102	00102	Libyan Arab Jamahiriya NMC
00103	00103	Madagascar NMC
00104	00104	Mauritius NMC
00105	00105	Niger NMC
00106	00106	Seychelles NMC
00107	00107	Uganda NMC
00108	00108	Tanzania NMC
00109	00109	Zimbabwe NMC
00110	00110	Hong-Kong, China
00111	00111	Afghanistan NMC
00112	00112	Bahrain NMC
00113	00113	Bangladesh NMC
00114	00114	Bhutan NMC
00115	00115	Cambodia NMC
00116	00116	Democratic People's Republic of Korea NMC
00117	00117	Islamic Republic of Iran NMC
00118	00118	Iraq NMC
00119	00119	Kazakhstan NMC
00120	00120	Kuwait NMC
00121	00121	Kyrgyz Republic NMC
00122	00122	Lao People's Democratic Republic NMC
00123	00123	Macao, China
00124	00124	Maldives NMC
00125	00125	Myanmar NMC
00126	00126	Nepal NMC
00127	00127	Oman NMC
00128	00128	Pakistan NMC
00129	00129	Qatar NMC
00130	00130	Republic of Yemen NMC
00131	00131	Sri Lanka NMC
00132	00132	Tajikistan NMC
00133	00133	Turkmenistan NMC
00134	00134	United Arab Emirates NMC
00135	00135	Uzbekistan NMC
00136	00136	Socialist Republic of Viet Nam NMC
00137 to 00139	00137 to 00139	Reserved for other centres
00140	00140	Bolivia NMC
00141	00141	Guyana NMC
00142	00142	Paraguay NMC
00143	00143	Suriname NMC
00144	00144	Uruguay NMC
00145	00145	French Guyana
00146	00146	Brazilian Navy Hydrographic Centre
00147	00147	COMision Nacional de Actividades Espaciales (CONAE) - Argentina
00148-00149	00148-00149	Reserved for other centres
00150	00150	Antigua and Barbuda NMC
00151	00151	Bahamas NMC
00152	00152	Barbados NMC
00153	00153	Belize NMC
00154	00154	British Caribbean Territories Centre
00155	00155	San Jose
00156	00156	Cuba NMC
00157	00157	Dominica NMC
00158	00158	Dominican Republic NMC
00159	00159	El Salvador NMC
00160	00160	US NOAA/NESDIS
00161	00161	US NOAA Office of Oceanic and Atmospheric

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Pooooopp of  
Section 1**

**GRIB Edition 2, Octets 6-  
7 in Section 1/  
BUFR Edition 4, 0-01-035  
(16 bits), Octets 5-6 in  
Section 1**

		Research
00162	00162	Guatemala NMC
00163	00163	Haiti NMC
00164	00164	Honduras NMC
00165	00165	Jamaica NMC
00166	00166	Mexico
00167	00167	Netherlands Antilles and Aruba NMC
00168	00168	Nicaragua NMC
00169	00169	Panama NMC
00170	00170	Saint Lucia NMC
00171	00171	Trinidad and Tobago NMC
00172	00172	French Departments in RA IV
00173	00173	US National Aeronautics and Space Administration (NASA)
00174	00174	Integrated System Data Management/Marine Environmental Data Service (ISDM/MEDS - Canada)
00175-00189	00175-00189	Reserved for other centres
00190	00190	Cook Islands NMC
00191	00191	French Polynesia NMC
00192	00192	Tonga NMC
00193	00193	Vanuatu NMC
00194	00194	Brunei NMC
00195	00195	Indonesia NMC
00196	00196	Kiribati NMC
00197	00197	Federated States of Micronesia NMC
00198	00198	New Caledonia NMC
00199	00199	Niue
00200	00200	Papua New Guinea NMC
00201	00201	Philippines NMC
00202	00202	Samoa NMC
00203	00203	Solomon Islands NMC
00204-00209	00204-00209	Reserved for other centres
00210	00210	Frascati (ESA/ESRIN)
00211	00211	Lannion
00212	00212	Lisboa
00213	00213	Reykjavik
00214	00214	Madrid
00215	00215	Zürich
00216	00216	Service ARGOS Toulouse
00217	00217	Bratislava
00218	00218	Budapest
00219	00219	Ljubljana
00220	00220	Warsaw
00221	00221	Zagreb
00222	00222	Albania NMC
00223	00223	Armenia NMC
00224	00224	Austria NMC
00225	00225	Azerbaijan NMC
00226	00226	Belarus NMC
00227	00227	Belgium NMC
00228	00228	Bosnia and Herzegovina NMC
00229	00229	Bulgaria NMC
00230	00230	Cyprus NMC
00231	00231	Estonia NMC
00232	00232	Georgia NMC
00233	00233	Dublin
00234	00234	Israel NMC
00235	00235	Jordan NMC
00236	00236	Latvia NMC

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CREX Edition2 B 01 035 (5 characters), ooooo in Group Pooooopp of Section 1	GRIB Edition 2, Octets 6- 7 in Section 1/ BUFR Edition 4, 0-01-035 (16 bits), Octets 5-6 in Section 1	
00237	00237	Lebanon NMC
00238	00238	Lithuania NMC
00239	00239	Luxembourg
00240	00240	Malta NMC
00241	00241	Monaco
00242	00242	Romania NMC
00243	00243	Syrian Arab Republic NMC
00244	00244	The former Yugoslav Republic of Macedonia NMC
00245	00245	Ukraine NMC
00246	00246	Republic of Moldova
00247	00247	Operational Programme for the Exchange of weather RAadar information (OPERA) - EUMETNET
00248 to 00253	00248 to 00253	Reserved for other centres
00254	00254	EUMETSAT Operation Centre
00255	00255	<b>Not to be used</b>
00256	00256	Angola NMC
00257	00257	Benin NMC
00258	00258	Botswana NMC
00259	00259	Burkina Faso NMC
00260	00260	Burundi NMC
00261	00261	Cameroon NMC
00262	00262	Cape Verde NMC
00263	00263	Central African republic NMC
00264	00264	Chad NMC
00265	00265	Comoros NMC
00266	00266	Democratic Republic of the Congo NMC
00267	00267	Djibouti NMC
00268	00268	Eritrea NMC
00269	00269	Ethiopia NMC
00270	00270	Gabon NMC
00271	00271	Gambia NMC
00272	00272	Ghana NMC
00273	00273	Guinea NMC
00274	00274	Guinea Bissau NMC
00275	00275	Lesotho NMC
00276	00276	Liberia NMC
00277	00277	Malawi NMC
00278	00278	Mali NMC
00279	00279	Mauritania NMC
00280	00280	Namibia NMC
00281	00281	Nigeria NMC
00282	00282	Rwanda NMC
00283	00283	Sao Tome and Principe NMC
00284	00284	Sierra Leone NMC
00285	00285	Somalia NMC
00286	00286	Sudan NMC
00287	00287	Swaziland NMC
00288	00288	Togo NMC
00289	00289	Zambia NMC
00290 to 65534	00290 to 65534	Reserved for other centres
65535	65535	Missing value
65536 to 99999	n.a.	Not used

NOTES:

(1) The closed bracket sign “)” indicates that the corresponding code figure is reserved for the previously named centre.

(2) n.a. means not applicable.

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- (3) With GRIB or BUFR, to indicate whether the originating/generating centre is a sub-centre or not, the following procedure should be applied:

Use in GRIB Edition 2 of Octets 8-9, Section 1, or use in BUFR Edition 4 of Octets 7-8, Section 1 with the following meaning:

### Code figure

- 0 Not a sub-centre, the originating/generating centre is the centre defined by Octets 6-7, Section 1 of GRIB Edition 2 or Octets 5-6, Section 1 of BUFR Edition 4.
- 1 to 254 Identifier of the sub-centre which is the originating/generating centre. The identifier of the sub-centre is allocated by the associated centre, which is defined by octets 6-7, Section 1 of GRIB Edition 2 or octets 5-6, Section 1 of BUFR Edition 4. The sub-centre(s) identifiers should be supplied to the WMO Secretariat by the associated centre(s) for publication.
- (4) For Sub-centres definition provided to the WMO Secretariat, see Common table C-12.

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**COMMON CODE TABLE C-12: Sub-Centres of Originating Centres defined by entries in Common Tables C-1 or C-11**

ORIGINATING CENTRES		SUB-CENTRES	
C-1 or C-11		<i>BUFR Edition 3, Octet 5 in Section 1</i> <i>BUFR Edition 4, 0 01 034 and Octets 7-8 in Section 1</i> <i>GRIB Edition 1, Octet 26 in Section 1</i> <i>GRIB Edition 2, Octets 8-9 in Section 1</i> <i>CREX Edition 2, ppp in Group Poooooppp of Section 1</i>	
Code figure	Name	Code figure	Name
		0	No Sub-Centre
<b>Region II</b>			
00034	Tokyo (RSMC), Japan Meteorological Agency	207	Syowa
		240	Kiyose
00039	Beijing (RSMC)	225	Beijing
		226	Guangzhou
		228	Urumuqi
00040	Seoul	243	Seoul
		245	Jincheon
00110	Hong-Kong, China	229	Hong-Kong
<b>Region III</b>			
00046	Brazilian Space Agency - INPE	10	Cachoeira Paulista (INPE)
		11	Cuiaba (INPE)
		12	Brasilia (INMET)
		13	Fortaleza (FUNCEME)
		14	Natal (Navy Hygrog. Centre)
		15	Manaus (SIVAM)
		16-20	Reserved
00147	COMision Nacional de Actividades Espaciales (CONAE) - Argentina	10	Córdoba
		20	Marambio
		30	Santiago de Chile
		40	Punta Arenas
		50	Base Presidente Frei
		60	Cotopaxi
<b>Region IV</b>			
00007	US National Weather Service, NCEP	1	NCEP Reanalysis Project
		2	NCEP Ensemble Products
		3	NCEP Central Operations
		4	Environmental Modeling Center
		5	Hydrometeorological Prediction Center
		6	Ocean Prediction Center
		7	Climate Prediction Center
		8	Aviation Weather Center
		9	Storm Prediction Center
		10	National Hurricane Center
		11	NWS Techniques Development Laboratory
		12	NESDIS Office of Research and Applications
		13	Federal Aviation Administration
		14	NWS Meteorological Development Laboratory
		15	North American Regional Reanalysis Project
		16	Space Weather Prediction Center
00160	U.S. NOAA/NESDIS	10	Tromso (Norway)
		11	McMurdo (Antarctica)
00161	U.S. NOAA Office of Oceanic and Atmospheric Research (NOAA/OAR)	1	Great Lakes Environmental Research Laboratory
		2	Earth System Research Laboratory
00173	US National Aeronautics and Space Administration (NASA)	1	Ames Research Center
		2	Dryden Flight Research Center
		3	Glenn Research Center

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		4	Goddard Space Flight Center
		5	Jet Propulsion Laboratory
		6	Johnson Space Center
		7	Kennedy Space Center
		8	Langley Research Center
		9	Marshall Space Flight Center
		10	Stennis Space Center
		11	Goddard Institute for Space Studies
		12	Independent Verification and Validation Facility
		13	NASA Shared Service Center
		14	Wallops Flight Facility
<b>Region V</b>			
00002	Melbourne	201	Casey
		203	Davis
		211	Melbourne Crib Point 1
		214	Darwin
		217	Perth
		219	Townsville
		232	Fiji
		235	Noumea
		237	Papeete
		250	Vladivostock
		251	Guam
		252	Honolulu
00069	Wellington (RSMC)	243	Kelburn
00072	Singapore	249	Singapore
<b>Region VI</b>			
00074	UK M.O., Exeter (RSMC)	1	Shanwick Oceanic Area Control Centre
		2	Fucino
		3	Gatineau
		4	Maspalomas
		5	ESA ERS Central Facility
		6	Prince Albert
		7	West Freugh
		13	Tromso
		21	Agenzia Spaziale Italiana (Italy)
		22	Centre National de la Recherche Scientifique (France)
		23	GeoForschungsZentrum (Germany)
		24	Geodetic Observatory Pecny (Czech Republic)
		25	Institut d'Estudis Espacials de Catalunya (Spain)
		26	Swiss Federal Office of Topography
		27	Nordic Commission of Geodesy (Norway)
		28	Nordic Commission of Geodesy (Sweden)
		29	Institute de Geodesie National (France)
		30	Bundesamt für Kartographie und Geodäsie (Germany)
		31	Institute of Engineering Satellite Surveying and Geodesy (U.K.)
00254	EUMETSAT Operation Centre	10	Tromso (Norway)
		20	Maspalomas (Spain)
		30	Kangerlussuaq (Greenland)
		40	Edmonton (Canada)
		50	Bedford (Canada)
		60	Gander (Canada)
		70	Monterey (USA)
		80	Wallops Island (USA)
		90	Gilmor Creek (USA)
		100	Athens (Greece)
		120	Ewa Beach, Hawaii
		130	Miami, Florida
		140	Lannion, France
		150	Svalbard, Norway
		170	St Denis (La Réunion)
		180	Moscow
		190	Muscat

**COMMON CODE TABLE C-13: Data sub categories of *categories defined by entries in BUFR Table A***

Data categories		International data sub-categories	
BUFR Edition 4, Octet 11 in Section 1 CREX Edition 2, nnn in group Annnmmm of Section 1		BUFR Edition 4, Octet 12 in Section 1 (if = 255, it means other sub-category or undefined) CREX Edition 2, mmm in group Annnmmm of Section 1	
Code figure	Name	Code figure	Name (corresponding traditional alphanumeric codes are in brackets)
000	Surface data — land	000	Hourly synoptic observations from fixed-land stations (SYNOP)
		001	Intermediate synoptic observations from fixed-land stations (SYNOP)
		002	Main synoptic observations from fixed-land stations (SYNOP)
		003	Hourly synoptic observations from mobile-land stations (SYNOP MOBIL)
		004	Intermediate synoptic observations from mobile-land stations (SYNOP MOBIL)
		005	Main synoptic observations from mobile land stations (SYNOP MOBIL)
		006	One-hour observations from automated stations
		007	n-minute observations from AWS stations
		010	Routine aeronautical observations (METAR)
		011	Special aeronautical observations (SPECI)
		020	Climatological observations (CLIMAT)
		030	Spherics locations (SFLOC)
		040	Hydrologic reports
		050	Hourly synoptic observations with supplementary one-hour data
		051	Intermediate synoptic observations with supplementary one-hour data
052	Main synoptic observations with supplementary one-hour data		
001	Surface data — sea	000	Synoptic observations (SHIP)
		006	One-hour observations from automated stations
		007	n-minute observations from AWS stations
		020	Climatological observations (CLIMAT SHIP)
		025	Buoy observation (BUOY)
		030	Tide gauge
		031	Observed water level time series

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002	Vertical soundings (other than satellite)	001	Upper-wind reports from fixed-land stations (PILOT)
		002	Upper-wind reports from ships (PILOT SHIP)
		003	Upper-wind reports from mobile-land stations (PILOT MOBIL)
		004	Upper-level temperature/humidity/wind reports from fixed-land stations (TEMP)
		005	Upper-level temperature/humidity/wind reports from ships (TEMP SHIP)
		006	Upper-level temperature/humidity/wind report from mobile-land stations (TEMPMOBIL)
		007	Upper-level temperature/humidity/wind reports from dropwindsondes (TEMP DROP)
		010	Wind profiler reports
		011	RASS temperature profiles
		020	ASDAR/ACARS profiles (AMDAR)
		025	Climatological observations from fixed-land stations (CLIMAT TEMP)
		026	Climatological observations from ships (CLIMAT TEMP SHIP)
		003	Vertical soundings (satellite)
001	TIROS (TOVS)		
002	ATOVS		
003	AMSU-A		
004	AMSU-B		
005	HIRS		
006	MHS		
007	IASI		
020	<i>(Awaiting validation) IR temperature/humidity sounding</i>		
030	<i>(Awaiting validation) Hyperspectral temperature/humidity sounding</i>		
040	<i>(Awaiting validation) MW temperature/humidity sounding</i>		
050	<i>(Awaiting validation) Radio occultation sounding</i>		
004	Single level upper-air data (other than satellite)	000	ASDAR/ACARS (AMDAR)
		001	Manual (AIREP, PIREP)
005	Single level upper-air data (satellite)	000	Cloud wind data (SATOB)
006	Radar data	000	Reflectivity data
		001	Doppler wind profiles
		002	Derived products
		003	Ground radar weather (RADOB)
007	Synoptic features	000	Forecast Tropical cyclone tracks from EPS
		001	Squall Line
008	Physical/chemical constituents	000	Ozone measurement at surface
		001	Ozone vertical sounding
009	Dispersal and transport	000	Trajectories, analysis or forecast
010	Radiological data	001	Observation (RADREP)
		002	Forecast (RADOF)
012	Surface data (satellite)	000	ERS-uwa
		001	ERS-uwi

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		002	ERS-ura
		003	ERS-uat
		004	SSM/I radiometer
		005	Quikscat
		006	Surface temp./radiation (SATOB)
		007	SCAT data
021	(Awaiting validation) Radiances (satellite measured)	000	(Awaiting validation) Earth radiation budget
022	(Awaiting validation) Radar (satellite) but not altimeter and scatterometer	000	(Awaiting validation) Cloud and precipitation radar
		001	(Awaiting validation) Synthetic Aperture Radar
023	(Awaiting validation) Lidar (satellite)	000	(Awaiting validation) Lidar based missions (for wind, for cloud/aerosol, for water vapour, for altimetry)
024	(Awaiting validation) Scatterometry (satellite)	000	(Awaiting validation) Wind scatterometry
025	(Awaiting validation) Altimetry (satellite)	000	(Awaiting validation) Radar altimetry
026	(Awaiting validation) Spectrometry (satellite)	000	(Awaiting validation) Cross nadir shortwave spectrometry (for chemistry)
		001	(Awaiting validation) Cross nadir IR spectrometry (for chemistry)
		002	(Awaiting validation) Limb sounding shortwave spectrometry
		003	(Awaiting validation) Limb sounding IR spectrometry
		004	(Awaiting validation) Limb sounding sub-millimetre wave spectrometry
031	Oceanographic data	000	Surface observation
		001	Surface observation along track (TRACKOB)
		002	Spectral wave observation (WAVEOB)
		003	Bathythermal observation (BATHY)
		004	Sub surface floats (profile)
		005	XBT/XCTD profiles (TESAC)
		006	Waves reports
		007	Tsunameter data
101	Image data (satellite)	000	(Awaiting validation) Multi-purpose VIS/IR imagery
		001	(Awaiting validation) Conical scanning MW imagery (intermediate frequencies)
		002	(Awaiting validation) Low frequency MW imagery
		003	(Awaiting validation) Ocean colour imagery
		004	(Awaiting validation) Imagery with special viewing geometry
		005	(Awaiting validation) Lightning imagery
		006	(Awaiting validation) High resolution shortwave imagery for land observation
		007	SMOS data

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**(AWAITING VALIDATION) COMMON CODE TABLE C-14: Atmospheric chemical or physical constituent type**

Common code table      Code Table 4.230 in GRIB 2  
    Code Table 0 08 046 in BUFR

Code figure	Meaning	Chemical formula
0	Ozone	O <sub>3</sub>
1	Water vapour	H <sub>2</sub> O
2	Methane	CH <sub>4</sub>
3	Carbon dioxide	CO <sub>2</sub>
4	Carbon monoxide	CO
5	Nitrogen dioxide	NO <sub>2</sub>
6	Nitrous oxide	N <sub>2</sub> O
7	Formaldehyde	HCHO
8	Sulphur dioxide	SO <sub>2</sub>
9	Ammonia	NH <sub>3</sub>
10	Ammonium	NH <sub>4</sub> <sup>+</sup>
11	Nitrogen monoxide	NO
12	Atomic oxygen	O
13	Nitrate radical	NO <sub>3</sub>
14	Hydroperoxyl radical	HO <sub>2</sub>
15	Dinitrogen pentoxide	N <sub>2</sub> O <sub>5</sub>
16	Nitrous acid	HONO
17	Nitric acid	HNO <sub>3</sub>
18	Peroxynitric acid	HO <sub>2</sub> NO <sub>2</sub>
19	Hydrogen peroxide	H <sub>2</sub> O <sub>2</sub>
20	Molecular hydrogen	H
21	Atomic nitrogen	N
22	Sulphate	SO <sub>4</sub> <sup>2-</sup>
23	Radon	Rn
24	Elemental mercury	Hg(0)
25	Divalent mercury	Hg <sup>2+</sup>
26	Atomic chlorine	Cl
27	Chlorine monoxide	ClO
28	Dichlorine peroxide	Cl <sub>2</sub> O <sub>2</sub>
29	Hypochlorous acid	HClO
30	Chlorine nitrate	ClONO <sub>2</sub>
31	Chlorine dioxide	ClO <sub>2</sub>
32	Atomic bromine	Br
33	Bromine monoxide	BrO
34	Bromine chloride	BrCl
35	Hydrogen bromide	HBr
36	Hypobromous acid	HBrO
37	Bromine nitrate	BrONO <sub>2</sub>
38-9999	Reserved	
10000	Hydroxyl radical	OH
10001	Methyl peroxy radical	CH <sub>3</sub> O <sub>2</sub>
10002	Methyl hydroperoxide	CH <sub>3</sub> O <sub>2</sub> H
10004	Methanol	CH <sub>3</sub> OH
10005	Formic acid	CH <sub>3</sub> OOH
10006	Hydrogen Cyanide	HCN
10007	Aceto nitrile	CH <sub>3</sub> CN
10008	Ethane	C <sub>2</sub> H <sub>6</sub>
10009	Ethene (= Ethylene)	C <sub>2</sub> H <sub>4</sub>

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10010	Ethyne (= Acetylene)	C <sub>2</sub> H <sub>2</sub>
10011	Ethanol	C <sub>2</sub> H <sub>5</sub> OH
10012	Acetic acid	C <sub>2</sub> H <sub>5</sub> OOH
10013	Peroxyacetyl nitrate	CH <sub>3</sub> C(O)OONO <sub>2</sub>
10014	Propane	C <sub>3</sub> H <sub>8</sub>
10015	Propene	C <sub>3</sub> H <sub>6</sub>
10016	Butanes	C <sub>4</sub> H <sub>10</sub>
10017	Isoprene	C <sub>5</sub> H <sub>10</sub>
10018	Alpha pinene	C <sub>10</sub> H <sub>16</sub>
10019	Beta pinene	C <sub>10</sub> H <sub>16</sub>
10020	Limonene	C <sub>10</sub> H <sub>16</sub>
10021	Benzene	C <sub>6</sub> H <sub>6</sub>
10022	Toluene	C <sub>7</sub> H <sub>8</sub>
10023	Xylene	C <sub>8</sub> H <sub>10</sub>
10024-10499	reserved for other simple organic molecules (e.g. higher aldehydes, alcohols, peroxides,...)	
10500	Dimethyl sulphide	CH <sub>3</sub> SCH <sub>3</sub> (DMS)
10501-20000	Reserved	
20001	Hydrogen chloride	
20002	CFC-11	
20003	CFC-12	
20004	CFC-113	
20005	CFC-113a	
20006	CFC-114	
20007	CFC-115	
20008	HCFC-22	
20009	HCFC-141b	
20010	HCFC-142b	
20011	Halon-1202	
20012	Halon-1211	
20013	Halon-1301	
20014	Halon-2402	
20015	Methyl chloride (HCC-40)	
20016	Carbon tetrachloride (HCC-10)	
20017	HCC-140a	CH <sub>3</sub> CCl <sub>3</sub>
20018	Methyl bromide (HBC-40B1)	
20019	Hexachlorocyclohexane (HCH)	
20020	Alpha hexachlorocyclohexane	
20021	Hexachlorobiphenyl (PCB-153)	
20022-29999	Reserved	
30000-59999	Reserved	
60000	HOx radical (OH+HO <sub>2</sub> )	
60001	Total inorganic and organic peroxy radicals (HO <sub>2</sub> + RO <sub>2</sub> )	RO <sub>2</sub>
60002	Passive Ozone	
60003	NO <sub>x</sub> expressed as nitrogen	NO <sub>x</sub>
60004	All nitrogen oxides (NO <sub>y</sub> ) expressed as nitrogen	NO <sub>y</sub>
60005	Total inorganic chlorine	Cl <sub>x</sub>
60006	Total inorganic bromine	Br <sub>x</sub>
60007	Total inorganic chlorine except HCl, ClONO <sub>2</sub> : ClO <sub>x</sub>	
60008	Total inorganic bromine except HBr, BrONO <sub>2</sub> : BrO <sub>x</sub>	

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60009	Lumped Alkanes	
60010	Lumped Alkenes	
60011	Lumped Aromatic Compounds	
60012	Lumped Terpenes	
60013	Non-methane volatile organic compounds expressed as carbon	NMVOC
60014	Anthropogenic non-methane volatile organic compounds expressed as carbon	aNMVOC
60015	Biogenic non-methane volatile organic compounds expressed as carbon	bNMVOC
60016	Lumped oxygenated hydrocarbons	OVOC
60017-61999	Reserved	
62000	Total aerosol	
62001	Dust dry	
62002	Water in ambient	
62003	Ammonium dry	
62004	Nitrate dry	
62005	Nitric acid trihydrate	
62006	Sulphate dry	
62007	Mercury dry	
62008	Sea salt dry	
62009	Black carbon dry	
62010	Particulate organic matter dry	
62011	Primary particulate organic matter dry	
62012	Secondary particulate organic matter dry	
62013-65534	Reserved	
65535	Missing	