Category 02 - Meteorological sequences common to surface data

TABLE REFERENCE F X Y	TABLE REFERENCE	ELEMENT NAME	Status
		(SHIP "instantaneous" data from VOS)	
3 02 062	*3 02 001*	*Pressure data*	*Validation*
	3 02 052	*Temperature and humidity data*	
	3 02 053	*Horizontal visibility*	
	0 07 033	*Height of sensor above water surface (set to missing to cancel the previous value)*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 000	*Short delayed descriptor replication factor*	
	3 02 034	*Total precipitation past 24 hours R24R24R24R24*	
	0 07 032	*Height of sensor above marine deck platform (set to missing to cancel the previous value)*	
	0 20 010	*Cloud cover (total) N*	
	0 08 002	*Vertical significance*	
	0 20 013	*Height of base of cloud h*	
	1 04 000	*Delayed replication of 4 descriptors*	
	0 31 000	*Short delayed descriptor replication factor*	
	0 20 011	*Cloud amount (of low or middle clouds) N_h*	
	0 20 012	*Cloud type (low clouds) C_L*	
	0 20 012	*Cloud type (middle clouds) C_M*	
	0 20 012	*Cloud type (high clouds) C_H*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 001	*Delayed descriptor replication factor*	
	3 02 005	*Cloud data*	
	0 08 002	*Vertical significance (set to missing to cancel the previous value)*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 000	*Short delayed descriptor replication factor*	
	3 02 055	*Icing and ice*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 000	*Short delayed descriptor replication factor*	
	3 02 056	*Sea/water temperature*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 000	*Short delayed descriptor replication factor*	
	3 02 021	*Waves*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 000	*Short delayed descriptor replication factor*	
	3 02 024	*Wind waves*	
		(SHIP "period" data from VOS)	
3 02 063	*3 02 038*	*Present and past weather*	*Validation*
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 000	*Short delayed descriptor replication factor*	
	3 02 040	*Precipitation measurement*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 000	*Short delayed descriptor replication factor*	
	3 02 058	*Extreme temperature data*	
	3 02 064	*Wind data*	

		(Wind data from VOS)	
3 02 064	*0 07 032*	*Height of sensor above marine deck platform (for wind measurement)*	*Validation*
	0 07 033	*Height of sensor above water surface (for wind measurement)*	
	0 02 002	*Type of instrumentation for wind measurement*	*i_w*
	0 08 021	*Time significance (= 2 (time averaged))*	
	0 04 025	*Time period (= -10 minutes, or number of minutes after a significant change of wind)*	
	0 11 001	*Wind direction*	*dd*
	0 11 002	*Wind speed*	*ff*
	0 08 021	*Time significance (= missing value)*	
	1 03 000	*Delayed replication of 3 descriptors*	
	0 31 001	*Delayed descriptor replication factor*	
	0 04 025	*Time period in minutes*	
	0 11 043	*Maximum wind gust direction*	
	0 11 041	*Maximum wind gust speed*	*$910f_mf_m$, $911f_xf_x$*
		(Additional synoptical parameters)	
3 02 067	*0 01 023*	*Observation sequence number*	*Validation*
	0 04 025	*Time period (= 0 minutes)*	
	0 02 177	*Method of snow depth measurement 0 = Manual observation, 1 = Ultrasonic method, 2 = Video camera method, 3-13 = Reserved, 14 = Others, 15 = Missing value*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 001	*Delayed descriptor replication factor*	
	0 20 003	*Present weather*	*960ww, 961ww*
	1 02 000	*Delayed replication of 2 descriptors*	
	0 31 001	*Delayed descriptor replication factor*	
	0 05 021	*Bearing or azimuth*	*981VV-988VV*
	0 20 001	*Horizontal visibility*	*VV*
	0 05 021	*Bearing or azimuth (=set to missing to cancel previous entry)*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 000	*Short delayed descriptor replication factor*	
	3 02 056	*Sea surface temperature, method of measurement, and depth below sea surface*	
	1 03 000	*Delayed replication of 3 descriptors*	
	0 31 000	*Short delayed descriptor replication factor*	
	0 33 041	*Attribute of following value*	
	0 20 058	*Visibility seawards from a coastal station*	*$980V_sV_s$*
	0 22 061	*State of the sea*	*$924SV_s$*
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 000	*Short delayed descriptor replication factor*	
	3 02 022	*Wind waves*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 001	*Delayed descriptor replication factor*	
	3 02 023	*Swell waves*	
	1 05 000	*Delayed replication of 5 descriptors*	
	0 31 001	*Delayed descriptor replication factor*	
	0 20 054	*True direction from which a phenomenon or clouds are moving*	*D_a, D_p*
	0 20 137	*Evolution of clouds*	*$940Cn_3$*
	0 20 012	*Cloud type (C)*	*$941CD_p$, $943C_LD_p$*
	0 20 090	*Special clouds*	*$993C_sD_a$*
	0 20 136	*Supplementary could type*	*$948C_0D_a$, $949C_aD_a$, $950N_mn_3$, $951N_vn_4$*

0 04 025	*Time period in minutes (= reference period of fresh fallen snow)*	
0 13 012	*Depth of fresh snow*	
0 04 025	*Time period in minutes (=-60)*	
0 11 042	*Maximum wind gust speed (10 min mean wind)*	*912ff*
1 04 000	*Delayed replication of 4 descriptors*	
0 31 001	*Delayed descriptor replication factor*	
0 08 021	*Time significance (=30 time of occurrence or =17 start of phenomenon)*	
0 04 025	*Time displacement (=-xx)*	*902tt*
0 11 042	*Maximum wind gust speed (10 min mean wind)*	*912ff*
0 08 021	*Time significance (=set to missing to cancel previous entry)*	
1 15 000	*Delayed replication of 15 descriptors*	
0 31 001	*Delayed descriptor replication factor*	
0 08 021	*Time significance (= 30 time of occurrence or = 17 start of phenomenon*	
0 04 015	*Time increment (= - xx1)*	
0 08 021	*Time significance (= 2 (time averaged)*	
0 04 025	*Time period (= -10 minutes, or number of minutes after a significant change of wind)*	
0 11 001	*Wind direction*	*915dd*
0 11 002	*Wind speed*	*913ff*
0 08 021	*Time significance (= 22 time of occurrence of wind shift)*	
0 04 015	*Time increment (= +xx2)*	
0 08 021	*Time significance (= 2 (time averaged))*	
0 04 025	*Time period (= -10 minutes, or number of minutes after a significant change of wind)*	
0 11 001	*Wind direction*	*915dd*
0 11 002	*Wind speed*	*913ff*
0 08 021	*Time significance (= set to missing to cancel previous entry)*	
0 04 025	*Time displacement (= 0 minutes)*	
0 04 015	*Time increment (= +(xx1-xx2), non negative to reset the time to the actual time)*	
1 03 000	*Delayed replication of 3 descriptors*	
0 31 001	*Delayed descriptor replication factor*	
0 04 025	*Time period in minutes (= -xx i.e. from)*	
0 04 025	*Time period in minutes (= -xx i.e. to)*	
0 20 003	*Present weather*	*962ww, 963w_1w_1, 964ww, 965w_1w_1, 966ww, 967w_1w_1*
1 10 000	*Delayed replication of 10 descriptors*	
0 31 001	*Delayed descriptor replication factor*	
0 04 025	*Time period in minutes (= -xx i.e. from)*	
0 04 025	*Time period in minutes (-xx i.e. to)*	
0 05 021	*Bearing or azimuth*	*D_a, D_p*
0 05 021	*Bearing or azimuth*	*D_a, D_p*
0 20 054	*True direction from which a phenomenon or clouds are moving*	*D_a, D_p*
0 20 024	*Intensity of phenomena (1= Light, 2 = Moderate, 3 = Heavy, 4 = Violent, 5 = Severe)*	
0 20 025	*Obscuration*	
0 20 026	*Character of obscuration*	
0 20 027	*Phenomenon occurrence*	
0 20 063	*Special phenomena*	

Category 06 - Meteorological or oceanographic sequences common to oceanographic observations

TABLE REFERENCE F X Y	TABLE REFERENCE	ELEMENT NAME	Status
		(Sequence for representation of tide station identification, method of transmission, time the message is transmitted and reference time for reports in a time series)	
3 06 011	*3 01 021*	*Latitude, longitude (high accuracy)*	*Validation*
	0 01 075	*Tide station alphanumeric ID (5 characters)*	
	0 02 147	*Method of transmission to collection centre*	
	3 01 011	*Year, month, day (Time the message is transmitted to the collection centre)*	
	3 01 013	*Hour, minute, second*	
		(Sequence for representation of sensor type, significance qualifier for sensor and status of operation)	
3 06 012	*0 02 007*	*Type of sensor for water level measuring instrument*	*Validation*
	0 08 015	*significance qualifier for sensor*	
	0 08 032	*Status of operation*	
	3 06 029	*Sample (interval, period, numbers)*	
		(Sequence for representation of water level and residual in the time series)	
3 06 013	*3 06 012*	*sensor type, significance qualifier for sensor and status of operation*	*Validation*
	3 01 011	*Year, month, day (Reference date/time for the time series)*	
	3 01 013	*Hour, minute, second*	
	0 22 120	*Tide station automated water level check*	
	0 22 121	*Tide station manual water level check*	
	0 04 015	*Time increment added to reset the reference time*	
	0 04 065	*Time increment added to each data value in the time series*	
	1 02 000	*Delayed replication of 2 descriptors*	
	0 31 001	*Delayed replication factor*	
	0 22 038	*Tidal elevation with respect to local chart datum*	
	0 22 040	*Meteorological residual tidal elevation (surge or offset)*	
		(Sequence for representation of water level in the time series, similar to 306013 but with no residual)	
3 06 014	*3 06 012*	*Sensor type, significance qualifier for sensor and status of operation*	*Validation*
	3 01 011	*Year, month, day (Reference date/time for the time series)*	
	3 01 013	*Hour, minute, second*	
	0 22 120	*Tide station automated water level check*	
	0 22 121	*Tide station manual water level check*	
	0 04 015	*Time increment added to reset the reference time*	
	0 04 065	*Time increment added to each data value in the time series*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 001	*Delayed replication factor*	
	0 22 038	*Tidal elevation with respect to local chart datum*	

		(Sequence for representation of ancillary meteorological data associated with water level data)	
3 06 016	*3 01 011*	*Year, month, day (Reference date/time for the time series)*	*Validation*
	3 01 013	*Hour, minute, second*	
	0 10 004	*Station level pressure*	
	0 10 051	*Mean sea level pressure*	
	3 02 032	*Temperature, humidity, wind*	
		(Buoy data including directional and non-directional wave data)	
3 06 032	*0 02 032*	*Indicator for digitization*	*Validation*
	0 02 033	*Method of salinity/depth measurement*	
	1 03 000	*Delayed replication of 3 descriptors*	
	0 31 001	*Replication factor*	
	0 07 062	*Depth below sea surface*	
	0 22 043	*Subsurface sea temperature*	
	0 22 062	*Salinity*	
	0 22 066	*Water Conductivity*	

Category 07 - Surface report sequences (land)

TABLE REFERENCE F X Y	TABLE REFERENCE	ELEMENT NAME	Status
		(BUFR template for surface observations from n-minute period with national and WMO station identification)	
3 07 092	*3 01 089*	*National station identification*	*Validation*
	3 01 090	*Fixed surface station identification; time, horizontal and vertical co-ordinates*	
	0 08 010	*Surface qualifier (for temperature data)*	
	3 01 091	*Surface station instrumentation*	
	0 04 015	*Time increment (= -n minutes)*	
	0 04 065	*Short time increment (= 1 minute)*	
	1 30 000	*Delayed replication of 30 descriptors*	
	0 31 001	*Delayed descriptor replication factor (= n)*	
	0 10 004	*Pressure*	
	3 02 070	*Wind data*	
	3 02 072	*Temperature and humidity data*	
	1 03 000	*Delayed replication of 3 descriptors*	
	0 31 001	*Delayed descriptor replication factor*	
	0 07 032	*Height of sensor above local ground*	
	0 08 010	*Surface qualifier*	
	0 12 120	*Ground temperature*	
	0 07 032	*Height of sensor above local ground (set to missing to cancel the previous value)*	
	0 08 010	*Surface qualifier (set to missing to cancel the previous value)*	
	1 03 000	*Delayed replication of 3 descriptors*	
	0 31 000	*Short delayed descriptor replication factor*	
	1 01 005	*Replicate 1 descriptor 5 times*	
	3 07 063	*Depth below land surface and soil temperature*	
	0 07 061	*Depth below land surface (set to missing to cancel the previous value)*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 000	*Short delayed descriptor replication factor*	
	3 02 069	*Visibility data*	
	0 07 032	*Height of sensor above local ground (set to missing to cancel the previous value)*	
	0 07 033	*Height of sensor above water surface (set to missing to cancel the previous value)*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 000	*Short delayed descriptor replication factor*	
	3 02 073	*Cloud data*	
	1 01 000	*Delayed replication of 1 descriptor*	
	0 31 000	*Short delayed descriptor replication factor*	
	3 02 076	*Precipitation, obscuration and other phenomena*	
	1 02 000	*Delayed replication of 2 descriptors*	
	0 31 000	*Short delayed descriptor replication factor*	
	0 13 155	*Intensity of precipitation*	
	0 13 058	*Size of precipitation element*	
	1 02 000	*Delayed replication of 2 descriptors*	
	0 31 000	*Short delayed descriptor replication factor*	
	0 20 031	*Ice deposit (thickness)*	
	0 20 032	*Rate of ice accretion*	
	1 01 000	*Delayed replication of 1 descriptor*	

	0 31 000	Short delayed descriptor replication factor	
	3 02 078	State of ground and snow depth measurement	
	1 02 000	Delayed replication of 2 descriptors	
	0 31 000	Short delayed descriptor replication factor	
	3 02 079	Precipitation measurement	
	0 07 032	Height of sensor above local ground (set to missing to cancel the previous value)	
	1 01 000	Delayed replication of 1 descriptor	
	0 31 000	Short delayed descriptor replication factor	
	3 02 080	Evaporation measurement	
	1 01 000	Delayed replication of 1 descriptor	
	0 31 000	Short delayed descriptor replication factor	
	3 02 081	Total sunshine data	
	1 01 000	Delayed replication of 1 descriptor	
	0 31 000	Short delayed descriptor replication factor	
	3 02 082	Radiation data	
	1 02 000	Delayed replication of 2 descriptors	
	0 31 000	Short delayed descriptor replication factor	
	0 04 025	Time period (= -n minutes)	
	0 13 059	Number of flashes	
	1 01 000	Delayed replication of 1 descriptor	
	0 31 000	Short delayed descriptor replication factor	
	3 02 083	First-order statistics of P, W, T, U data	
	0 33 005	Quality information (AWS data)	
	0 33 006	Internal measurement status information (AWS)	
		(Nominal values)	
3 07 093	2 23 000	Substituted values operator	Validation
	2 36 000	Backward reference bit map	
	1 01 000	Delayed replication of 1 descriptor	
	0 31 001	Delayed descriptor replication factor = number of element descriptors	
	0 31 031	Data present indicator	
	0 01 033	Indication of originating/generating centre	
	0 01 032	Generating application	
	0 08 083	Nominal value indicator	
	1 01 000	Delayed replication of 1 descriptor	
	0 31 001	Delayed descriptor replication factor	
	2 23 255	Substituted values	
	1 08 000	Delayed replication of 8 descriptor	
	0 31 001	Delayed descriptor replication factor	
	2 23 000	Substituted values operator	
	2 37 000	Use previously defined bit map	
	0 01 033	Indication of originating/generating centre	
	0 01 032	Generating application	
	0 08 083	Nominal value indicator	
	1 01 000	Delayed replication of 1 descriptor	
	0 31 001	Delayed descriptor replication factor	
	2 23 255	Substituted values	

Category 08 - Surface report sequences (sea)

TABLE REFERENCE F X Y	TABLE REFERENCE	ELEMENT NAME	Status
		(Report from a buoy observation)	
3 08 008	*3 01 093*		*Validation*
	3 02 062		
	3 02 063		
		(Synoptic report from a sea station suitable for SHIP observation data from VOS station)	
3 08 014	*3 01 093*	*Ship identification, movement, type, date/time, horizontal and vertical coordinates*	*Validation*
	3 02 062	*SHIP "instantaneous" data from VOS*	
	3 02 063	*SHIP "period" data from VOS*	
		(Template for WAVEOB data expressed as frequency (Ia=0 in FM-65 WAVEOB)	
		Identification	
3 08 015	*0 01 003*	*WMO region*	*Validation*
	0 01 020	*WMO region sub-area*	
	0 01 005	*Buoy/platform identifier*	
	0 01 011	*Ship or mobile land station identifier*	
	0 01 007	*Satellite identifier*	
	0 01 001	*WMO block number*	
	0 01 002	*WMO station number*	
	0 02 044	*Indicator for method of calculating spectral wave data*	
	0 02 045	*Indicator for type of platform*	
	3 01 011	*Date*	
	3 01 012	*Time*	
	3 01 021	*Latitude and longitude (high accuracy)*	
		Basic data (WAVEOB Section 0)	
	0 22 063	*Total water depth (m)*	
	1 05 002	*Replication 5 descriptors 2 times*	
	0 02 046	*Type of wave sensor*	
	0 22 070	*Significant wave height (m)*	
	0 22 071	*Spectral peak wave period (s)*	
	0 22 073	*Maximum wave height*	
	0 22 074	*Average wave period (s)*	
	0 02 046	*Type of wave sensor*	
	0 22 076	*Direction of coming dominant waves (deg)*	
	0 22 077	*Directional spread of dominant wave (deg)*	
	0 22 094	*Total number of wave bands*	
	0 25 043	*Wave sampling interval (time, s)*	
	0 22 078	*Duration of wave record (s)*	
		Spectral data (WAVEOB Section 1 - 5)	
	1 21 000	*Replication 21 descriptors*	
	0 31 001	*Replication factor*	
	0 02 046	*Type of wave sensor*	
	0 22 082	*Maximum non-directional spectral wave density (m^2/Hz)*	
	0 22 084	*Band containing maximum non-directional spectral wave density*	

	1 16 000	Delayed replication 16 descriptors
	0 31 001	Replication factor
	0 22 080	Waveband central frequency (Hz)
	0 22 085	Spectral wave density ratio
	0 22 086	Mean direction from which waves are coming (deg)
	0 22 087	Principal direction from which waves are coming (deg)
	0 22 088	First normalized polar coordinate from fourier coefficients
	0 22 089	Second normalized polar coordinate from fourier coefficients
	1 03 000	Delayed replication 3 descriptors
	0 31 001	Replication factor
	0 22 090	Non-directional spectral estimate by wave frequency (m^2/Hz)
	0 22 186	Direction from which waves are coming (deg)
	0 22 187	Directional spread of wave (deg)
	1 03 000	Delayed replication 3 descriptors
	0 31 001	Replication factor
	0 22 092	Directional spectral estimate by wavefrequency (m^2/Hz/radian)
	0 22 186	Direction from which waves are coming (deg)
	0 22 187	Directional spread of wave (deg)
	0 02 046	Type of wave sensor

		(Template for WAVEOB data expressed as the wave number (I_a=1 in FM-65 WAVEOB)	
		Identification	
3 08 016	0 01 003	WMO region	Validation
	0 01 020	WMO region sub-area	
	0 01 005	Buoy/platform identifier	
	0 01 011	Ship or mobile land station identifier	
	0 01 007	Satellite identifier	
	0 01 001	WMO block number	
	0 01 002	WMO station number	
	0 02 044	Indicator for method of calculating spectral wave data	
	0 02 045	Indicator for type of platform	
	3 01 011	Date	
	3 01 012	Time	
	3 01 021	Latitude and longitude (high accuracy)	
		Basic data (WAVEOB Section 0)	
	0 22 063	Total water depth (m)	
	1 05 002	Replication 5 desc 2 times	
	0 02 046	Type of wave sensor	
	0 22 070	Significant wave height (m)	
	0 22 072	Spectral peak wave length (m)	
	0 22 073	Maximum wave height	
	0 22 075	Average wave length (m)	
	0 02 046	Type of wave sensor	
	0 22 076	Direction of coming dominant waves (deg)	
	0 22 077	Directional spread of dominant wave (deg)	
	0 22 094	Total number of wave bands	
	0 25 044	Wave sampling interval (space, m)	
	0 22 079	Length of wave record (m)	
		Spectral data (WAVEOB Section 1 - 5)	
	1 21 000	Replication 21 descriptors	
	0 31 001	Replication factor	
	0 02 046	Type of wave sensor	

0 22 083	*Maximum non-directional spectral wave number (m^3)*
0 22 084	*Band containing maximum non-directional spectral wave density*
1 16 000	*Delayed replication 16 descriptors*
0 31 001	*Replication factor*
0 22 081	*Waveband central wave number (1/m)*
0 22 085	*Spectral wave density ratio*
0 22 086	*Mean direction from which waves are coming (deg)*
0 22 087	*Principal direction from which waves are coming (deg)*
0 22 088	*First normalized polar coordinate from fourier coefficients*
0 22 089	*Second normalized polar coordinate from fourier coefficients*
1 03 000	*Delayed replication 3 descriptors*
0 31 001	*Replication factor*
0 22 091	*Non-directional spectral estimate by wave number (m^3)*
0 22 186	*Direction from which waves are coming (deg)*
0 22 187	*Directional spread of wave (deg)*
1 03 000	*Delayed replication 3 descriptors*
0 31 001	*Replication factor*
0 22 093	*Directional spectral estimate by wave number (m^4)*
0 22 186	*Direction from which waves are coming (deg)*
0 22 187	*Directional spread of wave (deg)*
0 02 046	*Type of wave sensor*

Category 10 - Vertical sounding sequences (satellite data)

TABLE REFERENCE F X Y	TABLE REFERENCE	ELEMENT NAME	Status
		(AOT (Aerosol optical thickness) data)	
3 10 064	*0 01 007*	*Satellite identifier*	*Validation*
	0 01 033	*Identification of originating/generating centre*	
	0 01 034	*Identification of originating/generating sub-centre*	
	0 02 019	*Satellite instruments*	
	0 02 020	*Satellite classification*	
	3 01 011	*Year, month, day*	
	3 01 012	*Hour, minute*	
	2 07 003	*Increase scale and bit width*	
	0 04 006	*Second*	
	2 07 000	*Cancel increase scale and bit width*	
	0 05 040	*Orbit number*	
	2 01 133	*Increase bit width*	
	0 05 041	*Scan line number*	
	0 05 043	*Field of view number*	
	2 01 000	*Cancel increase bit width*	
	0 33 082	*Geolocation quality flags*	
	3 01 021	*Latitude, longitude (high accuracy)*	
	2 01 129	*Increase bit width*	
	0 07 002	*Height or altitude*	
	2 01 000	*Cancel increase bit width*	
	0 07 024	*Satellite zenith angle*	
	0 05 021	*Bearing or azimuth*	
	0 07 025	*Solar zenith angle*	
	0 05 022	*Solar azimuth*	
	0 08 075	*Ascending/descending orbit qualifier*	
	0 33 086	*Quality of pixel level retrieval*	
	0 08 029	*Surface type*	
	0 08 046	*Atmospheric chemical or physical constituent type*	
	0 33 085	*Aerosol optical thickness quality flags*	
	0 15 049	*Aerosol Angstrom wavelength exponent*	
	1 02 011	*Repeat the following 2 descriptors 11 times*	
	0 02 155	*Satellite channel wavelength*	
	0 15 024	*Optical depth*	
		(OMPS (Ozone mapping and profiler suite) nadir profile data)	
3 10 065	*0 01 007*	*Satellite identifier*	*Validation*
	0 01 033	*Identification of originating/generating centre*	
	0 01 034	*Identification of originating/generating sub-centre*	
	0 02 019	*Satellite instruments*	
	0 02 020	*Satellite classification*	
	3 01 011	*Year, month, day*	
	3 01 012	*Hour, minute*	
	2 07 003	*Increase scale and bit width*	
	0 04 006	*Second*	
	2 07 000	*Cancel increase scale and bit width*	
	0 05 040	*Orbit number*	

0 33 082	*Geolocation quality flags*
3 01 021	*Latitude, longitude (high accuracy)*
2 01 129	*Increase bit width*
0 07 002	*Height or altitude*
2 01 000	*Cancel increase bit width*
0 07 024	*Satellite zenith angle*
0 05 021	*Bearing or azimuth*
0 07 025	*Solar zenith angle*
0 05 022	*Solar azimuth*
0 08 075	*Ascending/descending orbit qualifier*
0 33 071	*Profile ozone quality*
0 33 070	*Total ozone quality*
0 20 021	*Type of precipitation*
0 15 045	*Sulfur dioxide*
0 15 046	*Volcano contamination index*
0 08 065	*Sun-glint indicator*
0 33 087	*Extent of satellite within South Atlantic anomaly*
0 08 003	*Vertical significance (satellite observations)*
0 10 004	*Pressure*
0 08 003	*Vertical significance (satellite observations)*
2 07 002	*Increase scale and bit width*
0 15 001	*Total ozone*
2 07 000	*Cancel increase scale and bit width*
1 05 012	*Repeat the following 5 descriptors 12 times*
0 10 040	*Number of retrieved layers*
0 10 004	*Pressure*
2 07 002	*Increase scale and bit width*
0 15 005	*Ozone p*
2 07 000	*Cancel increase scale and bit width*
0 08 046	*Atmospheric chemical or physical constituent type*
1 07 019	*Repeat the following 7 descriptors 19 times*
0 10 040	*Number of retrieved layers*
0 10 004	*Pressure*
0 08 090	*Decimal scale of following significand*
2 07 006	*Increase scale and bit width*
0 15 008	*Significand of volumetric mixing ratio*
2 07 000	*Cancel increase scale and bit width*
0 08 090	*Decimal scale of following significand (“Missing” = cancel)*

Category 12 - Single level report sequences (satellite data)

TABLE REFERENCE F X Y	TABLE REFERENCE	ELEMENT NAME	Status
none			

Category 15 - Oceanographic report sequences

TABLE REFERENCE F X Y	TABLE REFERENCE	ELEMENT NAME	Status
		(Typically reported underwater sounding without optional fields)	
3 15 006	*0 01 011*	*Ship's call sign*	*Validation*
	3 01 011	*Date*	
	3 01 012	*Time*	
	3 01 023	*Latitude and longitude (coarse accuracy)*	
	3 06 032	*Depth, temperature, salinity*	