

## GLOBAL NAVIGATION-SATELLITE SYSTEM BROADCAST BINARY MESSAGE (MESSAGE 17)

This differential GNSS broadcast message should be transmitted by a base station, which is connected to a DGNSS reference source, and configured to provide DGNSS data to receiving stations. The contents of the data should be in accordance with [Recommendation ITU-R M.823](#), excluding preamble and parity formatting.

Parameter	Number of bits	Description
Message ID	6	Identifier for Message 17; always 17
Repeat indicator	2	Used by the repeater to indicate how many times a message has been repeated. 0-3; 0 = default; 3 = do not repeat any more
Source ID	30	MMSI of the base station
Spare	2	Spare. Should be set to zero. Reserved for future use
Longitude	18	Surveyed longitude of DGNSS reference station in 1/10 min ( $\pm 180^\circ$ , East = positive, West = negative). If interrogated and differential correction service not available, the longitude should be set to 181°
Latitude	17	Surveyed latitude of DGNSS reference station in 1/10 min ( $\pm 90^\circ$ , North = positive, South = negative). If interrogated and differential correction service not available, the latitude should be set to 91°
Spare	5	Not used. Should be set to zero. Reserved for future use
Data	0-736	Differential correction data (see below). If interrogated and differential correction service not available, the data field should remain empty (zero bits). This should be interpreted by the recipient as DGNSS data words set to zero
Number of bits	80-816	80 bits: assumes N = 0; 816 bits: assumes N = 29 (maximum value)

**Differential Correction Data Table**

Parameter	Number of bits	Description
Message type	6	Recommendation ITU-R M.823
Station ID	10	Recommendation ITU-R M.823 station identifier
Z count	13	Time value in 0.6 s (0-3 599.4)
Sequence number	3	Message sequence number (cyclic 0-7)
N	5	Number of DGNSS data words following the two word header, up to a maximum of 29
Health	3	Reference station health (specified in Recommendation ITU-R M.823)

DGNSS data word	N = 24	DGNSS message data words excluding parity
Number of bits	736	Assuming N = 29 (the maximum value)

Notes:

- It is necessary to restore preamble and parity in accordance with Recommendation ITU R M.823 before using this message to differentially correct GNSS positions to DGNSS positions.
- Where DGNSS corrections are received from multiple sources, the DGNSS corrections from the nearest DGNSS reference station should be used taking into account the Z count, and the health of the DGNSS reference station.
- Transmissions of Message 17 by base stations should take into account ageing, update rate and the resulting accuracy of the DGNSS service. Because of the resulting effects of VDL channel loading, the transmission of Message 17 should be no more than necessary to provide the necessary DGNSS service accuracy.

(Source: [Rec. ITU-R M.1371-5](#))