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**Title** : **GOCE L1b Data Quality Control Report  
January 2013**

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## DOCUMENT CHANGE RECORD

| Issue | Date       | Reason for Change | Changed Pages/Paragraphs |
|-------|------------|-------------------|--------------------------|
| 1.0   | 19/03/2013 | First issue       |                          |



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## 1. INTRODUCTION

### 1.1 Purpose and Scope

This document contains the Quality report for GOCE L1b data for January 2013.

The latest version of this document is available on the GOCE Data Quality portal at:

<http://earth.esa.int/GOCE/> → “Level 1b QC” → “Monthly”

The GOCE Data Quality portal is the principal source for any quality-related information on GOCE products.

<http://earth.esa.int/GOCE/> → “Level 1b QC”.

### 1.2 Glossary

The following acronyms and abbreviations have been used in this report.

| ABBREVIATION | MEANING                                    |
|--------------|--|
| EGG          | Electrostatic Gravity Gradiometer          |
| DFACS        | Drag Free and Attitude control system      |
| SST-I        | Satellite-to-satellite tracking instrument |
| CTR          | Control Voltages                           |
| STR          | Star Tracker                               |
| Trace SD     | Trace Spectral Density                     |
| ICM          | Inverse Calibration Matrix                 |
| GAR          | Gradiometer Angular Rates                  |
| FPM          | Fine Pointing Mode                         |
| MBW          | Measurement Bandwidth                      |

## 2. JANUARY 2013 OVERVIEW

- 13-Jan to 14-Jan-13** Around 013.09.05.42 a Fallback to Fine Pointing Mode occurred when the software of the ion propulsion system stopped working. Recovering activities took place to resume science operations on 14<sup>th</sup> January.
- 27-Jan-13** Beam out event at around UTC 03:00

## 3. JANUARY 2013 DATA QUALITY ANALYSIS

### 3.1 S/C anomaly of 13<sup>th</sup> January

On 13th Jan a fallback to Fine Pointing Mode occurred when the software of the ion propulsion system stopped working, leading to the first interruption of drag-free mode since June 2012. The EGG was commanded back to acquisition mode by the DFACS in the course of the fallback to FPM.

On 14<sup>th</sup> January the recovery from the anomaly was completed, bringing the spacecraft back to drag-free mode and recovering the altitude lost.

### 3.2 Beam Out events

The following Beam Out events occurred during January 2013 reference frame:

| EVENT     | UTC TIME                    |
|-----------|-----------------------------|
| 27-Jan-13 | Beam Out event at UTC 03:00 |

**Table 1 Beam out events**

The effects of a Beam Out event are clearly visible in the common mode acceleration, component 14\_x, as a sharp peak in the acceleration values. The effect is the same as reported in previous monthly reports.

The Beam Out event enters in the gradients time series notably in the Uxx component without any relevant impacts on performance.