



**ACCELEROMETER FOR THE NEXT GENERATION GRAVITY MISSION
(ESA CONTRACT N°4000134460/21/NL/AD)**

MANUFACTURING OF THE ROUGH PROOF-MASS

NGGM-RQ-ONE-017

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CHANGE NOTICE

Version Revision	Date	Change notice description
1.0	01/12/2021	Initial Issue
2.0	19/02/2024	Suppression of ONERA Spare parts usable to produce new parts

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1 INTRODUCTION

This document defines the requirements for the providing of the Platinum/Rhodium alloy material, and the manufacturing of the rough Proof-Mass of the MicroSTAR ASH.

2 APPLICABLE AND REFERENCE DOCUMENTS

2.1 APPLICABLE DOCUMENTS

The following documents are applicable to the extent as defined in this document.

[AD1] Proof-Mass

NGGM-DW-ONE-0201A

2.2 REFERENCE DOCUMENTS

The following documents provide supporting information.

[RD1] N/A

3 DEFINITIONS AND ACRONYMS

ASH Accelerometer Sensor Head

NGGM New Generation Gravity Mission

4 REQUIREMENT

4.1 MATERIAL

- Platinum alloy with 10% of Rhodium: PtRh10%
- Impurity: less than 500 ppm
- Microstructural state: Annealed
- Homogeneity: 10^{-4}

4.2 DIMENSIONS

- The rough proof-mass is a cube of 29,6mm side (29,6x29,6x29,6mm)
- The dimensions have to be in the tolerance $\pm 0,05\text{mm}$
- The parallelism and the perpendicularity between each face have to be lower than 0.1mm

4.3 QUANTITY

- Defined in the order

4.4 PART CONDITIONING

- For the delivery, the part has to be cleaned with:
 - Ethyl acetate in US bath (degreasing)
 - Isopropyl alcohol in US bath
- After cleaning, the part has to be manipulated with gloves
- The part has to be conditioned unitarily into protected packaging

4.5 PART TRANSPORT

- The manufacturer has to ensure the transportation of the rough Proof-Mass
- The manufacturer is responsible up to the part delivery at ONERA

5 QUALITY AND PRODUCT ASSURANCE

5.1 REVIEW

- A kick-off meeting to review the applicable documentation
- Progress meeting could be organized to follow the manufacturing if necessary
- A delivery review will be organized to validate all the deliverables before the delivery of the part

5.2 DELIVERABLES

- Certificate of compliance
- Certificate of material analyses (Impurity, homogeneity)
- Certificate of tests (Hardness, Grain size)
- The dimensional and geometrical measured values and the conformity state in accordance with the requirement §4.2
- The certificate of conformity of the control tools used

End of the document