

Request For Proposal for

Design of seismic mass for horizontal vibration shaker

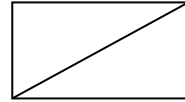


September 2014

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IMPORTANT

1. This RFP should be kept in confidentiality and should neither be copied nor distributed to the third parties.
2. The questions and opinions on this RFP can be asked or suggested to Korea Aerospace Research Institute before submission of the proposal.
3. This RFP should be returned to Korea Aerospace Research Institute with bidder's proposal.
4. This RFP shall be legal bind after the contract is awarded unless the bidder explicitly expresses the differences from the RFP in the compliance sheet.

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I. OVERVIEW

1. Overview of the project

- 1.1 Korea Aerospace Research Institute (hereinafter referred to as "KARI") is located at Daeduk Research Complex, 140 km south of Seoul.
- 1.2 KARI has a satellite assembly, integration and test center (hereinafter referred to as "AITC") for joint use by corporations and research institutes for the purpose of the effective development of domestic satellites. And basic facilities and equipment for satellite assembly and test have been supplied, installed and used.
- 1.3 The purposes of this project is To design the seismic mass(reaction mass) and produce the detailed drawings for fabrication
- 1.4 All the descriptions in this RFP are minimum requirements and the supplier can suggest the better one to improve the overall performance and cost. But in this case, the proposal should clearly indicate the improvements from KARI's requirements.

2. Requisites of participants

- 2.1 The participants shall also have experience of manufacturing, integration, installation and operation for the 3m x 3m T-Film Slip table vibration system equipped with electro dynamic shaker.

3. Scope of the contract

- 3.1 The Contract shall supply the following;
 - ✓ FEM model and Analysis report for seismic mass
 - ✓ Detailed engineering drawings for fabrication

II. Technical Requirements

1. Total System Configuration

To increase the horizontal shaker capability, 3mx3m slip table system will be designed and built. Before the installation of the slip-table system and vibration shaker, seismic mass should be designed to support dynamic load during the vibration test

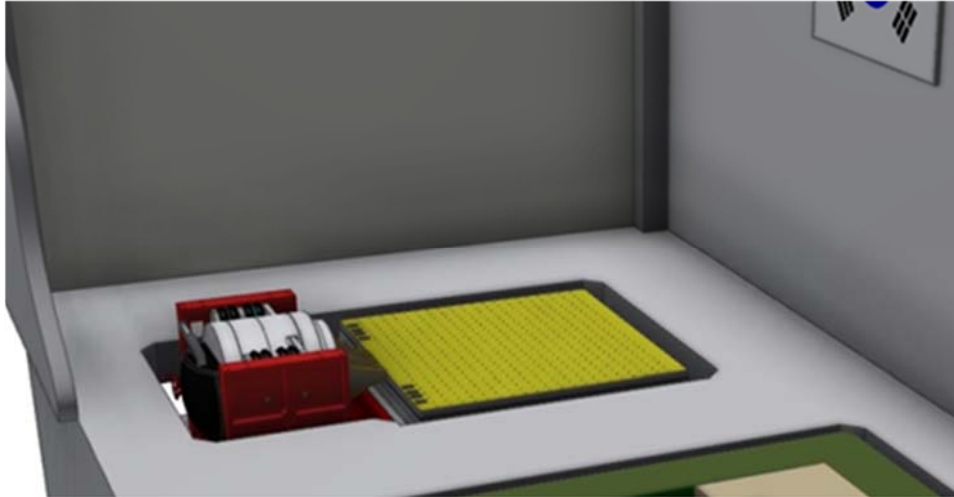


Figure 1 Concept for New Horizontal Vibration System

2. Requirements for seismic mass design

2.1 Mass requirement for seismic mass design

- ✓ Mass of test object : Max 10 ton
- ✓ Mass of shaker system : 13 ton
- ✓ Mass of slip table : 5 ton
- ✓ Excitation force of shaker = 30 ton
- ✓ Overturning moment = Max. 1,000kN
- ✓ Seismic mass : 113 ton
- ✓ Overall support load by seismic mass : 141 ton

2.2 Supporting method for seismic mass : Air isolator system

2.3 Resonance of seismic mass & shaker system < 2Hz

2.4 Dimension of seismic block : 5.6m x 4.2m x ? (Height)

2.5 Interface requirements:

- ✓ Accommodation of LDS V994 shaker
- ✓ Accommodation of TEAM 3m x 3m slip table assembly with seventy seven (77) active T-film bearings and Two (2) High-Yaw bearing

2.6 Verification of design of the seismic mass by FEM Analysis

- ✓ Stress analysis imposed by static and dynamic loading
- ✓ Mode shape of seismic mass
- ✓ Frequency response analysis

2.7 Deliverable items

- ✓ FEM model and Analysis report for seismic mass
- ✓ Detailed engineering drawings for fabrication