

**Department of Computer Science and Engineering
Indian Institute of Technology Delhi**

**Notice Inviting Quotations
Subject: Purchase of a Force Feedback Device**

Tender Date: 20th March, 2013

NIQ NO. IITD/BCSE/IRD/PK/10

Due Date 04th April 2013

Interested parties are requested to submit separate technical and commercial quotation for the following item in a sealed envelope to the undersigned in Computer Science and Engineering office latest by 5 p.m. on 04th April 2013.

Force feedback device (Quantity one) with the following technical specifications

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|--|--|
| 1. Force feedback workspace | > 160 W x 120 H x 120 D mm |
| 2. Nominal position resolution | > 1100 dpi
~ 0.023 mm |
| 3. Backdrive friction | < 0.06 N |
| 4. Maximum exertable force at nominal (orthogonal arms) position | >= 7.9 N |
| 5. Continuous exertable force (24 hrs) | > = 1.75 N |
| 6. Stiffness | X axis > 1.86 N / mm
Y axis > 2.35 N / mm
Z axis > 1.48 N / mm |
| 7. Inertia (apparent mass at tip) | ~ 45-50 g |
| 8. Force feedback | x, y, z |
| 9. Position sensing | x, y, z (digital encoders)
[Pitch, roll, yaw ($\pm 3\%$ linearity potentiometers)] |
| 10. Interface | Parallel port and Firewire |
| 11. OpenHaptics®/SDK compatibility | Yes |

Accessories

- All required accessories such as cables, etc. should be included.

Terms and Conditions:

- For imported items, quotation in foreign currency may also be provided
- The sealed cover should contain separate quotations for 'technical bid' and 'commercial bid' in two separate envelopes appropriately labeled.
- The institute reserves the right to purchase both/either/none of the options.
- Payment will be made on installation and verification.
- Institute reserves the right to accept or reject any quotation without assigning any reason.
- The validity of the quotation should be at least six months.
- The prices should be quoted FOB.
- Delivery schedule should be mentioned.
- Any other terms must be clearly mentioned.

Prof. Prem Kumar Kalra