Final Specifications for *In-vivo* Microultrasound Imaging system for Small animal echocardiography

1. Non-Invasive, potable, *in-vivo* Microultrasound Imaging system which should allow Real Time Imaging for multiple species of small laboratory animals including mouse, rat and rabbit suitable for cardiovascular applications. The system should have the capability to perform respiratory and cardiac gated analysis in mice and rats. Suitable for visualizing intima media thickness and quantify vascular and valvular diseases.
2. The system should have broadband linear array transducers that allow for routine scanning of small animals. Broadband Transducers with Frequency range from 9 to 60 MHz which should provide a resolution of at least 30 microns.
3. The system should allow imaging of small animals like mouse, rats and rabbits at a frame rate of more than 500 frames per second.
4. The system should have features like LV Trace, Cardio-specific measurements and calculations should allow quick calculations of ejection fraction, fractional shortening and cardiac output in mice and rats.

5. **Imaging Features:**
   I. Standard B-Mode/M-Mode /Pulsed Wave/ Doppler Mode / Color (Velocity) Doppler Mode /
   II. The system should have upgradeability option for Molecular imaging for perfusion and targeting information.
   III. ECG-Triggered Cardiac and Respiratory Gated Analysis
6. **Imaging Processing and Quantification:**
   I. Large number of measurements and calculations suitable for cardio-specific measurements like ejection fraction, fractional shortening & cardiac output, Research focused data management
   II. The system should have integrated Preclinical imaging software designed for use with small animal research with multiple small animal-based predetermined measurements and calculations embedded within the software.
   III. Integrated physiological trace: temperature, heart rate, ECG, respiration waveforms
7. The system should have dedicated software package for B-mode (2D) image capture and Analysis Cine loop image review, real time capture and display, Software analytics for advanced, measurements & annotations. The Images should be saved as cineloop movies in .avi or QuickTime formats and as. bmp or tif files for static images. The data generated should be exported to avi, tiff, bmp, raw format for further data analysis.
8. The system software should display Integrated physiological trace including the display of ECG, Respiration Waveform and body temperature.
9. The system should have a list of optional scan heads which should be available at multiple frequencies, each optimized for its specific small-animal applications in the range of 15MHz to 60 MHz or better for imaging small animals upto 250 g or more.

10. The system should have an integrated anesthesia system which should be a compact table top system for administering isofluorane gas anesthesia before and during imaging procedures, with nose cones, induction chambers and gas scavenging system.
11. The system should have Mouse Handling Table for placement, warming animal and physiological monitoring and Imaging.
12. The system should come with an integrated computer with the following specs: 24inch monitor, and latest features suitable for high speed data acquisition and processing with Video card and ethernet connectivity for network connection.
13. The system should have the upgradeability for performing contrast agent studies with targeted and not targeted microbubble contrast agents for quantitative molecular analysis.
14. Reference with publications and installations worldwide and in India.
15. The company should have a direct office in India for prompt service support.
16. 3 years warranty is required.
17. Supply with suitable branded UPS with appropriate power back up.