



NASA SBIR 2011 Phase I Solicitation

X12.02 Portable Load Sensing Systems

Lead Center: GRC

Participating Center(s): JSC

NASA seeks a portable, force/load measurement system capable of being integrated into existing International Space Station (ISS) exercise systems. During long duration spaceflight, exercise countermeasures are prescribed to mitigate bone and muscle loss. However, advancement of these exercise prescriptions may require biomechanical analysis of exercise on orbit. Output parameters from the proposed device must operate in the bandwidth from 0-100Hz and be able to be synchronized with existing analog data systems. Vertical and shear forces are required and the portable system should be low-maintenance, durable, easy to set-up and calibrate, non-disruptive to exercise form (e.g., running, squat, dead lift, and calf raises), reliable, accurate (

Phase I Deliverable: Fully developed concept complete with feasibility and top-level drawings/computational methodology as applicable. A breadboard or prototype system is highly desired.