



## NASA SBIR 2011 Phase I Solicitation

### X13.02 Non-Wet Prep Electrodes

Lead Center: JSC

Participating Center(s): ARC

Although physiological monitoring has been conducted since the earliest human flights, there has not been substantial improvement in the technology of the sensors used in space since those early years. The current systems on the International Space Station (ISS) are still using wet-prep electrodes - which are time consuming and inconvenient, requiring shaving, application of electrodes, signal checks, and management of lead wires. Skin irritation sometimes develops from the electrode's interactions with roughened skin. And the signals are still subject to noise, corruption, and loss.

NASA desires a non-wet prep sensor system that:

- Is easy to don/doff (requires no shaving or skin prep), has no disposables, and can be worn comfortably for 48 hours.
- Maintains signal integrity at clinical quality (meets or exceeds ANSI/AAMI EC11 Standard for Diagnostic Electrocardiographic Devices) during rigorous exercise.
- Solutions that partially involve software (as opposed to strictly hardware) are acceptable, but any developed software code must be easily integrated into the ECG software system(s) used by NASA and not just into the given company's proprietary and/or standalone product.

NASA Deliverable: Functioning sensor system

