Adaptive Space-Time Processing  
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**Background:** GPS Anti-Jamming protects GPS receivers from interference and intentional jamming. By the time a GPS signal reaches Earth’s surface, it is weak and susceptible to being overcome by higher power Radio Frequency (RF) energy.

**Technology Description:**
The Air Force Research Laboratory has developed software that is capable of mitigating large numbers of wideband and narrowband interferences, independent of multi-element antenna technology. The invention provides improved anti-jam technology for Global Positioning System (GPS) in a less complex system than previous methods. The invention relies on two-layer processing. The Outer layer with chip-rate processing and adaptive Frost filtering to suppress wideband interference and noise. The Inner layer with Maximin adaptive array processor further nulling narrowband interference and noise while maximizing desired signals.

**Market Applications:**
- **On-Board Diagnostics Devices (OBDs):**
  - Electronic Logging Device (ELD) Mandate in North America
  - Driving high demands for OBDs in tracking car’s location, emergency help after crash, etc.
- **Commercial Vehicles:**
  - Largest market size in automation of workflow processes, streamlined operations, etc.
  - GPS tracking devices monitoring trucks, buses, construction vehicles, etc.
- **Global GNSS/GPS Receivers:**
  - Precision agriculture and aviation
  - Wearable health-care devices, commercial/military satellite communications services, global Long-Term Evolution (LTE) infrastructures and smart phones, smart cities, etc.

**Key Advantages:**
- Complexity is much less than the current state of the art
- Reduced size
- Reduced weight
- Reduced cost

For information about this technology, please contact Anna Kuuttila from our Tech Engagement Team at: anna@afrlnewmexico.com