Objective:

Provide a multi-radio data connectivity to Android devices in multi-voltage, reduced form factor, ruggedized package.

Attributes:

- Does not require modifications to most Android devices; does not require rooting.  
  - Rooting a phone allows for additional capability.
- Charges Android device during use.
- Can be expanded to support additional external USB devices such as memory sticks, video encoders, laser range finders, and other commonly used accessories.
- Minimize or eliminate significant configuration requirements for end users.
- Provides ATAK access to radios within a single software baseline.
- Provides a user-friendly tool for high-level configuration with military radios.
- Provides a device comprised of a full computing device with additional processing power.
TI OMAP 3730 running Angstrom Linux
  – Kernel 3.5 with Standard Debian Packages custom selected.
• 1 USB host connection – phone only
• 1 Ethernet connection
• 1 auxiliary USB host connection capable of supporting directly or through a hub one or more of the following tested devices (not limited to)
  • USB Audio: specifically C-Media CM119
  • Harris 152 PPP Cable
  • 117G USB Connection
  • USB Drive
  • Hauppauge Hardware MPEG-2 Encoder
  • Cisco Linksys 300M
  • Keyboards
• 1 power input 3.3v->28v
Look and Feel

- Waterproof (1 ft – 15 minutes)
- Resistant to dust, wind and water
- Small form factor
  - Dimensions: 3.1”x 2.0”x 1.0”
  - Weight: Panel Mount: 5 oz  
    Cable Mount: 7 oz
Device Support

Integrated to be radio & Android device agnostic

Currently tested with:

Android Devices (not exhaustive)
- Dell Streak 5"
- HTC Thunderbolt ADR6400L
- Samsung Devices:
  - Galaxy SII GT-I9100, GT-I9100G
  - Galaxy SIII GT-I9300
  - Galaxy Note GT-N7000, SGH-I717
  - Galaxy Note II GT-N7100, GT-N7105
  - Galaxy Note III N9005
  - Galaxy Tab 7.0 Plus GT-P6201, GT-P6210

New Horizon Capabilities
- USB Devices (e.g., Laser Range Finder)
- 64gb Solid State Expansion for a local Web Map Service
- Expand legacy radio support

Military Radios
- Harris 152 – SA Tracks Only
- Harris 152A – IP capable
- Harris 117G – IP capable
- Persistent Systems MPU4
- L3 TACROVER (SIR)
- Trellisware AVAS
- Others upon request

ISO 9001:2008 Certified
www.pargovernment.com
This document includes data that may be company proprietary in nature.
## GvTether Functionality

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Fully Internet Capable</th>
<th>Proxy Network Capable</th>
<th>Auto Tether</th>
<th>Semi Auto Tether</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kit Kat 4.4</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Jelly Bean 4.1, 4.2, 4.3</td>
<td></td>
<td>X</td>
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<td>X</td>
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<tr>
<td>Ice Cream Sandwich 4.0</td>
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<td>X</td>
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<tr>
<td>Honeycomb 3.0</td>
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<td>X</td>
</tr>
<tr>
<td>Gingerbread 2.3</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Jelly Bean 4.1 <strong>Rooted</strong></td>
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<td>Ice Cream Sandwich 4.0 <strong>Rooted</strong></td>
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</tbody>
</table>

**Note for Rooted Device** — Supports either stock or Persistent Systems custom Kernel

Device Mode, Phone is not used in Host Mode
Sample Architectures
Single Radios/Capabilities (not exhaustive)

Tested & Demonstrated:

- **PRC-152 SA Mode PPP**
  Ability to provide the SA CoT data from the radio to the phone.

- **PRC-152A ANW2 (not pictured)**
  Full network provider.

- **PRC-117G ANW2 / SA Mode PPP (not pictured)**
  Full network provider or SA CoT mode.

- **TAC Rover**
  Receives video feed.

- **MPU-4**
  Full network provider.

- **AVAS (not pictured)**
  Full network provider.
Dual Radio/Capabilities (not exhaustive)

Tested & Demonstrated:

- **PRC-152 / PRC-152A (not pictured)**
  Provides for local SA CoT traffic from the PRC-152 (intersquad) and full network connectivity with the PRC-152A. Can forward PRC-152 SA over PRC-152A.

- **PRC-152 / MPU-4**
  Provides for local SA CoT traffic from the PRC-152 (intersquad) and full network connectivity with the PRC-152A. Can forward PRC-152 SA over MPU-4.

- **PRC-152 / TacRover**
  Provides for local SA CoT traffic from the PRC-152 and video from the TacRover.

- **PRC-152A / TacRover**
  Provides for local video and full network connectivity over the PRC-152A. Can forward the video over the PRC-152A.

- **PRC-117G / TacRover (not pictured)**
  Provides for local video and full network connectivity over the PRC-117G. Can forward the video over the PRC-152A.
Radio Capabilities  (not exhaustive)

Tested & Demonstrated:

- **PRC-152/TacRover/MPU-4**
  Provides for local SA CoT traffic from the PRC-152 (intersquad) and full network connectivity with the PRC-152A. Can forward PRC-152 SA over the MPU-4. Can listen to local video.

- **PRC-152/TacRover/PRC-152A**
  Provides for local SA CoT traffic from the PRC-152 (intersquad) and full network connectivity with the PRC-152A. Can forward PRC-152 SA over the PRC-152A. Can listen to local video.
Additional Information
Situational awareness across military radios with video architecture (i.e., Android devices) using GvTether and ATAK.
SA and Video Multi-radio updated in Real-time Using a GvTether with ATAK

Different instances of moving map display and real time video enhanced with zoom feature.