Innovative Strategies for Airport Operations and Revenue
MODERATOR & SPEAKERS

Moderator:
Martin Blake, Indiana

Speakers:
Ron Cote, Invisible Intelligence
Grant Bishop, Silent Falcon UAS Technologies
Bob Brock, Kansas
Adam White, Garver
The Makers of the G.A.R.D.® System

Invisible Intelligence, LLC
The Makers of the G.A.R.D.® System
Our Philosophy

**OUR MISSION**
Provide GA airports and other facilities with an affordable and simple, yet effective way, to capture both radio traffic and operation counts.

**OUR VISION**
To see the G.A.R.D.® system monitoring airports globally within the next five years, as well as, expanding to multiple types of facilities.

**OUR VALUES**
Providing high quality products, excelling in customer service, and always looking for ways to improve and expand our offerings.
What is the difference between Data and information?
Sole Source Products

Unique hardware & software

- G.A.R.D. Interface Box
- G.A.R.D. Software
- GARD Dashboard Software
- System Monitoring Software
Safety Testimonial

“... We have already seen the safety benefit in the short amount of time that we and other Maine Airports have had the system in place. Numerous issues have been already identified through the recorded audio recordings, and safety training sessions have been conducted to make those airports safer for the traveling public...”
There are currently several different methods being used to sample airport operations:

- Acoustical,
- Airport guest logs,
- Fuel sales, based aircraft & IFR records
- Pneumatic,
- Video image detection,
- Visual.
Invisible Intelligence Dashboard ADSB

Estimated aircraft operations per day for month 12

Estimated hourly operations to date

Estimated aircraft operations for month 12 Year 2014

Total for month 1535

Invisible Intelligence, LLC
G.A.R.D.
your airport

Altitude Threshold: 5000
Plane Altitude: 44.356778
North Lat: 44.356778
Time: 
West Lon: -69.645739
East Lon: -69.751403
Reg Number: 
Plane Position: 44.284525
South Lat: 44.284525
CallSign: 
Knots / MPH: 5
Fence Size: 
Heading: 

Seconds Recorded: 0.000
Status: Waiting Input
<table>
<thead>
<tr>
<th>Date/Time</th>
<th>ICAO</th>
<th>Manufacturer</th>
<th>Model</th>
<th>Wingspan</th>
<th>Length</th>
<th>Tail Height</th>
<th>Max Takeoff Weight</th>
<th>A/C</th>
<th>ADG</th>
<th>Weight</th>
<th>Cat</th>
<th>Engine Type</th>
<th>Owner</th>
<th>Street1</th>
<th>Street2</th>
<th>City</th>
<th>State</th>
<th>Zip</th>
</tr>
</thead>
<tbody>
<tr>
<td>14-Nov-2018</td>
<td>A032FD</td>
<td>CESSNA</td>
<td>208B</td>
<td>51.08</td>
<td>41.58</td>
<td>17.42</td>
<td>9,062 A</td>
<td>II</td>
<td></td>
<td></td>
<td></td>
<td>Up To 12</td>
<td>Fixed Wing</td>
<td>AVION C17251 SANE</td>
<td>ANCHORA AK</td>
<td>9.5E+08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-Nov-2018</td>
<td>A032FD</td>
<td>CESSNA</td>
<td>208B</td>
<td>51.08</td>
<td>41.58</td>
<td>17.42</td>
<td>9,062 A</td>
<td>II</td>
<td></td>
<td></td>
<td></td>
<td>Up To 12</td>
<td>Fixed Wing</td>
<td>AVION C17251 SANE</td>
<td>ANCHORA AK</td>
<td>9.5E+08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-Nov-2018</td>
<td>A032FD</td>
<td>CESSNA</td>
<td>208B</td>
<td>51.08</td>
<td>41.58</td>
<td>17.42</td>
<td>9,062 A</td>
<td>II</td>
<td></td>
<td></td>
<td></td>
<td>Up To 12</td>
<td>Fixed Wing</td>
<td>AVION C17251 SANE</td>
<td>ANCHORA AK</td>
<td>9.5E+08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-Nov-2018</td>
<td>A07862</td>
<td>CESSNA</td>
<td>208B</td>
<td>51.08</td>
<td>41.58</td>
<td>17.42</td>
<td>9,062 A</td>
<td>II</td>
<td></td>
<td></td>
<td></td>
<td>Up To 12</td>
<td>Fixed Wing</td>
<td>ICECAP LLI4700 OLD</td>
<td>ANCHORA AK</td>
<td>9.5E+08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-Nov-2018</td>
<td>A07862</td>
<td>CESSNA</td>
<td>208B</td>
<td>51.08</td>
<td>41.58</td>
<td>17.42</td>
<td>9,062 A</td>
<td>II</td>
<td></td>
<td></td>
<td></td>
<td>Up To 12</td>
<td>Fixed Wing</td>
<td>ICECAP LLI4700 OLD</td>
<td>ANCHORA AK</td>
<td>9.5E+08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-Nov-2018</td>
<td>A07862</td>
<td>CESSNA</td>
<td>208B</td>
<td>51.08</td>
<td>41.58</td>
<td>17.42</td>
<td>9,062 A</td>
<td>II</td>
<td></td>
<td></td>
<td></td>
<td>Up To 12</td>
<td>Fixed Wing</td>
<td>ICECAP LLI4700 OLD</td>
<td>ANCHORA AK</td>
<td>9.5E+08</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

... (more rows)
Click on the map below to view locations.

- **Monitored by G.A.R.D.**
- **Not Monitored by G.A.R.D.** (Yet)
- **G.A.R.D. Demos**
Benefits of Our Products
Why we’re the best choice on the market

Accurate Operation Counts
Our software removes the guess work and room for human error, providing managers and State Departments with an accurate picture of what kind of activity an airport or facility is experiencing at any given time.

Team Viewer Technical Support
The use of team viewer for technical support allows us to provide fast, hassle free, access to customers systems to correct any issues that may arise, both locally and worldwide.

Training & Accident Investigation Tool
Whether it be airports, correctional facilities, or marinas, the valuable data collected can be used to assist in training and in accident investigations. It removes the element of who said what and when.

Simple, Affordable & Flexible
Our products are simple, user friendly and can provide an affordable solution to a wide range of customers, in various environments, that can benefit from the recording of radio traffic and the data produced from it’s collection.
Thank you NASAO for allowing Invisible Intelligence to present today.
Testimonial

“... I strongly support the GARD system, it is an economical, simple yet elegant solution to several historically difficult issues at small airports...”
“New Technologies and Strategies for Airport Economic Development”
National Association State Aviation Officials (NASAO)

- Reduce costs with new technology
- Increase Situational Awareness (SA) with new technology
- Leverage cost savings and SA to increase Economic Development/Revenue Streams

Runway market today ....Roads tomorrow
**Digitize**

**Digital Twinning** is a process in which a physical object, system or a being is recreated on a virtual interface.

A fully developed digital replica is constructed in order for it to be used for future testing, development, and experimentation.

---

**Analyze**

**Analyze** with AI deep learning algorithms within Neural networks (AI-DLNN). are a subset of machine learning and analyze fused data at near real time speeds through virtual computing.

---

**Visualize**

**Data visualization** converts granular data into easily understood, visually compelling—and useful—business information to see your critical Go/No-Go data and decision points more clearly.

---

**About us: Silent Falcon UAS Technologies (SFUAS)**

SFUAS Proprietary Link
Grant Bishop
President and Chief Executive Officer at Silent Falcon UAS Technologies

1980-1985
- Reagan “Star Wars”
  - R&D Designer
  - Image Non-Cooperative Satellites
  - ID & Target Satellites
  - 100 KJ laser

1985-2005
- USAF F16 Fighter Pilot
  - 4th FS Commander
  - NATO IG
  - Combat Ops

2005-2019
- Global Airport Solution provider
  - 3x FOD detection patents
  - FAA/FCC/ICAO Rule making
  - Rapid Airfield Damage Assessment System
  - DARPA Passive GPS system
  - Counter UAS
  - Airport Revenue Generation Solutions

2019-Present
- Lead SFUAS Team
  - Drone OEM
    - Made in USA
    - Multiple types & sizes
  - Data: Capture AI & Analysis
    - No runway closure PCI inspection
    - PCI Patent Pending
    - PCI+™ Trademark awarded
  - Delivery: “Middle Mile” Heavy lift
    - 50lbs/50mph/50+ miles
New technologies and Strategies for Airport Economic Development

- Reduce costs with new technology
- Increase Situational Awareness (SA) with new technology
- Leverage cost savings and SA to increase Economic Development/Revenue Streams

Better.......Faster.......Cheaper!!!
Current PCI: **10%** sampling + **90%** Extrapolation

“**90% Guess-timate**”

PCI+™: **100%** data with ASTM 5340 standards and ArcGIS

**100% Data**

PCI+™ is Better, Faster & Cheaper!
Digitize—Analyze-- Visualize

Our Scan Zone

GSD mm

1.5mm

1.95mm thick

2 mm

3 mm

4 mm

10 mm

20 mm

40 mm

Proprietary & Confidential of Silent Falcon UAS
©Silent Falcon UAS 2021
Key Factors to Growth:
- All 9 FAA Regions covered
- 11 States
- 30 Airports
- 600+ miles of scanning
- AI Object Model Automation
- Outside CONUS

FAA BAA: Only company of 16 applicants that can produce a PCI inspection using drones & AI

Scheduled with FAA next
Integrating New Technology: On time, On target, No interruption to Airflow

Flight Plan/RSA Deconfliction

PCI Section Identification

10 mile “Aircraft inbound”: Drones maneuver to land or clear of RSA

5-mile ring

5 mile “Aircraft at Final Approach Fix”: Drones confirmed on Ground or clear of RSA
Digitize

Enhanced Distress Layer (EDL)

Analyze

Heat Map

Visualize
Figure A.9. Airport airspace survey surfaces.

Digitize inside and out
100% data driven decisions: Reduce costs and increase revenue
**Airflow data**

**Operations: 23,434**
Takeoff Weight: 80,000,000 lbs
Landing Weight: 20,000,000 lbs

**Operations: 45,069**
Takeoff Weight: 150,000,000 lbs
Landing Weight: 76,000,000 lbs

---

**SFUAS Proprietary Data**

**SFUAS Digitized Airfield**

**SFUAS Airfield Sensors**

---

<table>
<thead>
<tr>
<th>Rank</th>
<th>May Total</th>
<th>Aircraft Type</th>
<th>MTOW</th>
<th>Total Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>122</td>
<td>C172</td>
<td>2425.1</td>
<td>295862.2</td>
</tr>
<tr>
<td>2</td>
<td>38</td>
<td>C182</td>
<td>3086.5</td>
<td>117287</td>
</tr>
<tr>
<td>3</td>
<td>21</td>
<td>P28A</td>
<td>2204.8</td>
<td>46296.6</td>
</tr>
<tr>
<td>4</td>
<td>17</td>
<td>H500</td>
<td>3747.9</td>
<td>63714.3</td>
</tr>
<tr>
<td>5</td>
<td>17</td>
<td>B407</td>
<td>5511.6</td>
<td>91809.7</td>
</tr>
<tr>
<td>6</td>
<td>15</td>
<td>B06</td>
<td>1086.5</td>
<td>46297.9</td>
</tr>
<tr>
<td>7</td>
<td>11</td>
<td>M20P</td>
<td>2645.5</td>
<td>29100.5</td>
</tr>
<tr>
<td>8</td>
<td>10</td>
<td>PA22</td>
<td>3306.9</td>
<td>33069</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>P28T</td>
<td>2645.5</td>
<td>23809.5</td>
</tr>
<tr>
<td>10</td>
<td>9</td>
<td>SR22</td>
<td>3306.9</td>
<td>29762.1</td>
</tr>
</tbody>
</table>
30-60% Savings on Pavement Management:
• Itemized ASTM 5340 Distress ID
• Pinpoint location and size of the distresses
• 100% data-no estimates
• PCI+™ reports & ARCGIS integration
• Improved lifetime of pavement
Utilizing Business Intelligence to Manage Pavement Assets and More

September 14, 2021
History of KDOT Airport Asset Management

Pavement Data Collection and Use for Airport Improvements

Airport Data Collection and Use in State System
CUSTOMIZED SOLUTION FOR Kansas Department of Transportation

Customized Solution Required:

- Commercially Available Software
- Ability to View and Analyze Data
- Capability to Maintain and Expandable

Power Pavement Management
LET'S GO!
What’s Next for KDOT Aviation?

**Kansas Airport Tools**
- Airspace Analysis
- CIP Management
- Aircraft Routing

**Other Tools**
- Emergency Management
- State System Plans