Gravy Analytics Data Flow

February 2017

Gravy Analytics
Privacy Rights and Data Flows

Introduction

Gravy Analytics is a first of its kind capability that allows the understanding of digital device locations, movement patterns, and associated analytics.

Over 5 years of development, the data platform behind Gravy Analytics automatically compiles, processes & validates 15+ billion daily location signals from 250+ million mobile devices. This document depicts how this data is collected in a privacy friendly manner with appropriate license rights and supplier protections for reuse by our customers.

Fast Facts

- **All digital device locations are captured with 100% user opt-in to location capture**

- **Data Source Privacy Policies permit sharing with 3rd parties**

- **No Personally Identifiable Information is captured or stored**

- **No Mobile Ad ID's**

Gravy Analytics enables unique digital device location analysis in a privacy friendly manner. The patented intelligence platform ensures privacy rights and data usage rights are obtained and maintained through the supply chain.

Data Flow

① Collection

(b) (7)(E)

② Processing

(b) (7)(E)

③ Gravy Platform

(b) (7)(E)

Gravy
ANALYTICS

Location Investigation Case Report

Feb 13th, 2017

Case Information Provided

Incident #: 1

Type: Robbery

Location: (b) (7)(E)

(b) (7)(E)

Time: Feb. 6, 2017
Between
21:42 – 21:45

2

Incident 1 – Location Analysis

(b) (7)(E)

3

Incident 1 – Device 1
Pattern of Life Analysis

(b) (7)(E)

Incident 1 – Device 1
Frequented Locations

(b) (7)(E)

Incident 1 – Device 2
Pattern of Life Analysis

(b) (7)(E)

Incident 1 – Device 2
Frequented Locations

(b) (7)(E)

Incident 1 – Device 3
Pattern of Life Analysis

(b) (7)(E)

Incident 1 – Device 3
Frequented Locations

(b) (7)(E)

(b) (7)(E)

We capture and verify attendancesto every event and point of interest in the US
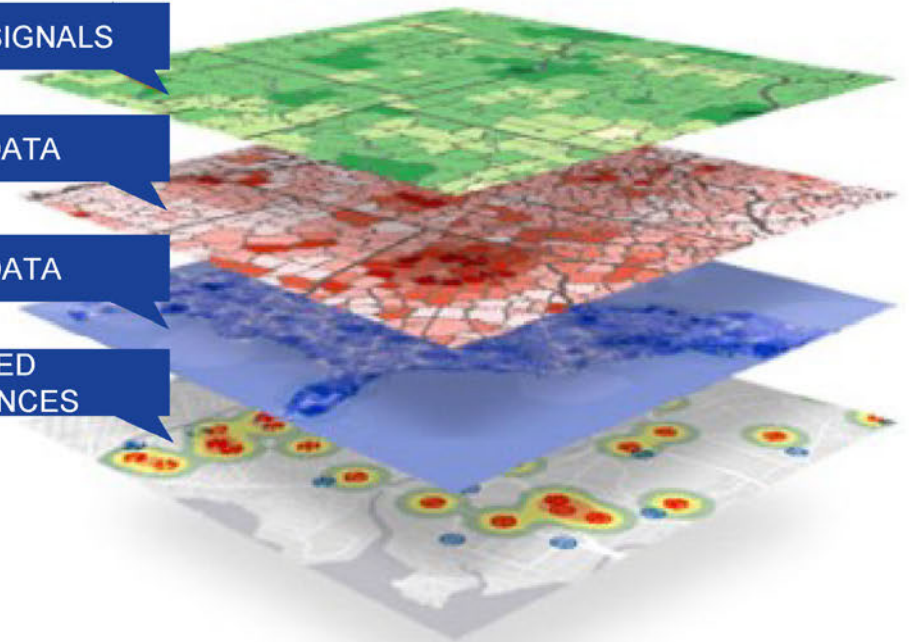
The only customer intelligence platform delivering predictive analytics and real-time insights on how people engage across more than **10 million** locations and daily events.

LOCATION SIGNALS

PLACE DATA

EVENT DATA

VERIFIED ATTENDANCES

Proprietary IP & Patents:US Patent Application No. 14/001,020 – Utility/Design - DISCOVERY METHOD AND DISCOVERY SYSTEM - USING LOCATION-TIME INTERSECTIONSUS Provisional Patent: Attendance Algorithm. Application No. 62/109,138 US Patent and Trademark Office No.

Gartner 2016
CoolVendor

451 Research
YANKEE GROUP

Gravy Proprietary and Confidential | gravyanalytics.com

gravy

How it works

(b) (7)(E)

gravy

2021-ICLI-00013 0188

The status location based data

(b) (7)(E)

gravy

2021-ICLI-00013 0189

We understand...

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

"What you do and where you do it defines who you are"

The First Verified Location Intelligence

(b) (7)(E)

(b) (7)(E)

2021-ICLI-00013 0192

Gravy operates with PRIVACY by Design

Our fundamental operational model is built on Privacy by Design principles:No Universal Tracking: Gravy does not universally track users, we only geo-fence places and events relevant to shopping, dining and events (no residences or PII related locations)No PII: Gravy does not collect or maintain PII; all records received from clients or sent to clients are hashed100% Opt In: All of our signals come from consumers who opted in

CONSUMER PRIVACY PROTECTION IS A CORNERSTONE FOR GRAVY

gravy

Phone

703.728.(b) (6), (b) (7)(C)@grav
yanalytics.com

(b) (6), (b) (7)(C)

Gartner 2016
CoolVendor™

451 Research®
YANKEE GROUP

gravy®

2021-ICLI-00013 0194

Example of Border Crossing Surveillance

(b) (7)(E)

gravy

2021-ICLI-00013 0195

Example of Border Crossing Surveillance

(b) (7)(E)

gravy

Understanding where those devices go

(b) (7)(E)

gravy

(b) (7)(E)

(b) (7)(E)

gravy

2021-ICLI-00013 0198

ICE Data Solutions: Sources

SRG Offers Extensive Breadth & Depth of Data Coverage

PEOPLE

Over 11 BILLION name and address combinations

→ Over **350 million** unique SSNs

→ Over **4 billion** address records

→ Nearly **3 billion** email records

→ Bankruptcy, lien and foreclosure records

→ Over **30 million** photos

→ Over **90 million** adult millennials age 18-36

→ Over **1 billion** criminal records

→ Over **1 billion** unique identities

→ Over **100 million** deceased records

→ Over **50 million** thin file consumers

ASSETS AND UTILITIES

Over 190 MILLION identities linked to a utility

→ **4 billion** telephone records with updates daily

→ Over **40%** of phone records are mobile or VOIP

→ Over **1.6 billion** proprietary phone records

→ Over **2 billion** real property records

→ Over **17 billion** vehicle registration and vehicle sightings records

BUSINESS AND EMPLOYMENT

Almost 2 BILLION business records

→ Over **250 million** international business records

→ Over **290 million** business phone records

→ Over **225 million** employment records

→ Over **70 million** proprietary employment records

 Confidential | Internal use only
2021-ICLI-00013 0980

TransUnion

(b) (7)(E)

 Confidential | Internal use only
2021-ICLI-00013 0981

TransUnion

Credit Header Data

(b) (7)(E)

(b) (7)(E)

  Confidential | Internal use only
2021-ICLI-00013 0982

TransUnion

Bank Header Data

(b) (7)(E)

(b) (7)(E)

 Confidential | Internal use only
2021-ICLI-00013 0983

TransUnion

Alternative Data

(b) (7)(E)

(b) (7)(E)

TransUnion

Public Records & Court Filings

(b) (7)(E)

(b) (7)(E)

Confidential | Internal use only
2021-ICLI-00013 0985

TransUnion

Rental Screening Header Data

(b) (7)(E)   (b) (7)(E)

| Confidential | Internal use only
2021-ICLI-00013 0986

TransUnion

SRG API Integration

- **Application Program Interface - Securely integrate high volumes of data into our customer's software systemTransUnion SRG offers fully automated API access to many residential and business databases using fast and easy XML gatewaysOur delivery capacity is one of the best in the industry, with a substantial network of hardware systems that accommodate millions of searches per day Our average response time is under two seconds for instant search resultsBatch Interface also available**

TransUnion

Data Flow Rights & Privacy

April 2017

VENNTEL

Introduction

- **Venntel**
  - First-of-its-kind platform
  - Insight into digital device locations and movement patterns
  - Associated analytics

- **The data platform behind Venntel**
  - 5+ years of development
  - Compiles, processes & validates 15+ billion location signals daily
  - 240+ million mobile devices in the United States
  - Other countries are available upon request

Venntel enables unique digital device location analysis in a privacy friendly manner

The patented intelligence platform powering Venntel ensures privacy and data usage rights are obtained and maintained through the supply chain

VENNTEL

Venntel: Privacy Rights

FAST FACTS

- All digital device locations are captured with 100% user opt-in to location capture
- Data Source Privacy Policies permit sharing with 3rd parties
- No Personally Identifiable Information (PII) is captured or stored
- No Mobile Ad IDs in Venntel

- This document illustrates how this data is collected in a privacy friendly manner

- This includes appropriate license rights and supplier protections for reuse by our customers

VENNTEL

Venntel: Collection

(b) (7)(E)

- **Digital device location signals are captured**

  (b) (7)(E)

- **Various data sources including**
  (b) (7)(E)

- **No personally identifiable information (PII) is ever collected**

- **100% of users opt-in to location data collection**
  - Data Source Privacy Policies disclose data use by 3rd parties
  - No mobile network operator data

VENNTEL

Venntel: Processing

- Captured location signals are aggregated, de-duplicated, verified for accuracy, assigned an anonymous identification number, and made ready for use by the Venntel system

- No collection of PII - such as name, social login, address, email or device ID during entirety of processing

- License rights from data sources permit processing and analysis of location data, and sublicensing of such processed and analyzed data

Data sources represent that location data was obtained with all necessary consents and indemnify partners for breach of this warranty, for third party infringement claims, and for violation of any applicable law or regulation

VENNTEL

Venntel: "X" Platform

- Query, Visualization, built to requirements

- No personally identifying information

- ONLY random hashed identifier – no mobile ad IDs

- Supplier representations ensure that data collected:
  - (i) does not infringe third party IP rights
  - (ii) was obtained with the appropriate consents and with compliance of all laws and regulations
  - (iii) that it has all rights necessary to provide such data

- License rights permit creation of derivative works

VENNTEL

Thank you.

@venntel.com

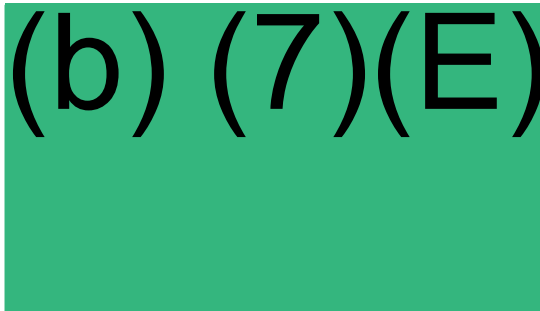**VENNTEL**

VENNTEL

MOBILE. LOCATION. INTELLIGENCE.

Innovative big data applications for analytics for commercial and government clients. Quickly identify threats and reduce the time and resources required to investigate them.

OUR SOLUTIONS

Venntel's proprietary platform analyzes billions of commercially-available location signals to provide insight into digital device locations and movement patterns.
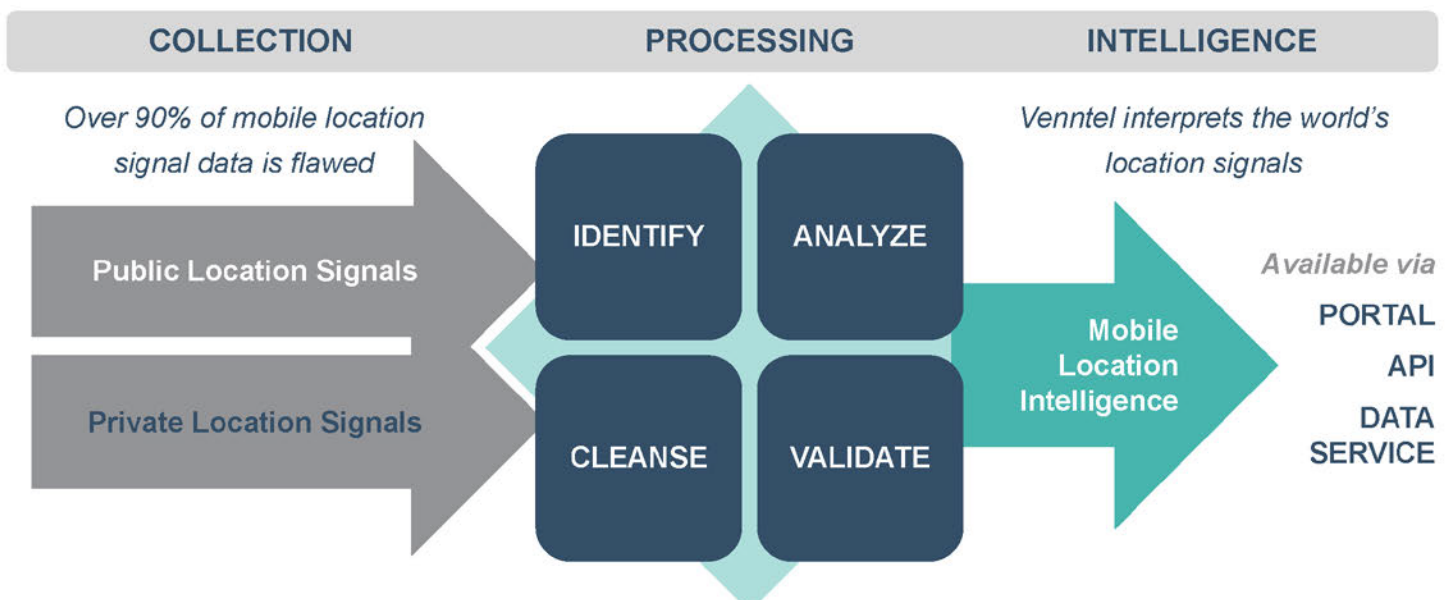
BENEFITS

(b) (7)(E)

- Identify mobile devices observed at places of interest - ideal for tipping and cueing

- Filter by date or date range, time-of-day and more

- Monitor high-risk areas; identify repeat visitors, frequented locations, pinpoint known associates and discover pattern of life

- Data license rights permit processing, analysis and sub-licensing of location data

OUR PLATFORM

HIGHLIGHTS

- **Proven technology platform.** 5+ years of research and development to create the Venntel platform.

- **Unmatched scale.** Compiles, processes and validates billions of location signals daily.

- **Comprehensive coverage.** Analyzes location signals from 250 million mobile devices in the U.S.

- **100% Opt-in.** All users opt-in to location data collection. No PII is ever collected.

COLLECTION	PROCESSING	INTELLIGENCE

Over 90% of mobile location signal data is flawed

Venntel interprets the world's location signals

Public Location Signals

Private Location Signals

IDENTIFY | ANALYZE

CLEANSE | VALIDATE

Mobile Location Intelligence

Available via

PORTAL

API

DATA SERVICE

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

VENNTEL

MOBILE. LOCATION. INTELLIGENCE.

Innovative big data applications for analytics for commercial and government clients. Quickly identify threats and reduce the time and resources required to investigate them.

OUR SOLUTIONS

Venntel's proprietary platform analyzes billions of commercially-available location signals to provide insight into digital device locations and movement patterns.

BENEFITS

(b) (7)(E)

- Identify mobile devices observed at places of interest - ideal for tipping and cueing
- Filter by date or date range, time-of-day and more

- Monitor high-risk areas; identify repeat visitors, frequented locations, pinpoint known associates and discover pattern of life
- Data license rights permit processing, analysis and sub-licensing of location data

OUR PLATFORM

HIGHLIGHTS

- **Proven technology platform.** 5+ years of research and development to create the Venntel platform.

- **Unmatched scale.** Compiles, processes and validates billions of location signals daily.

- **Comprehensive coverage.** Analyze location signals from millions of devices, domestic and international. Additional countries available by request.

- **100% Opt-in.** All users opt-in to location data collection. No PII is ever collected.

COLLECTION	PROCESSING	INTELLIGENCE

Over 90% of mobile location signal data is flawed

Public Location Signals

Private Location Signals

IDENTIFY   ANALYZE

CLEANSE   VALIDATE

Venntel interprets the world's location signals

Mobile Location Intelligence

Available via

PORTAL

API

DATA SERVICE

(b) (7)(E)

(b) (7)(E)

Geoneutron Portal V2
User's Guide
April 2020

Table of Contents

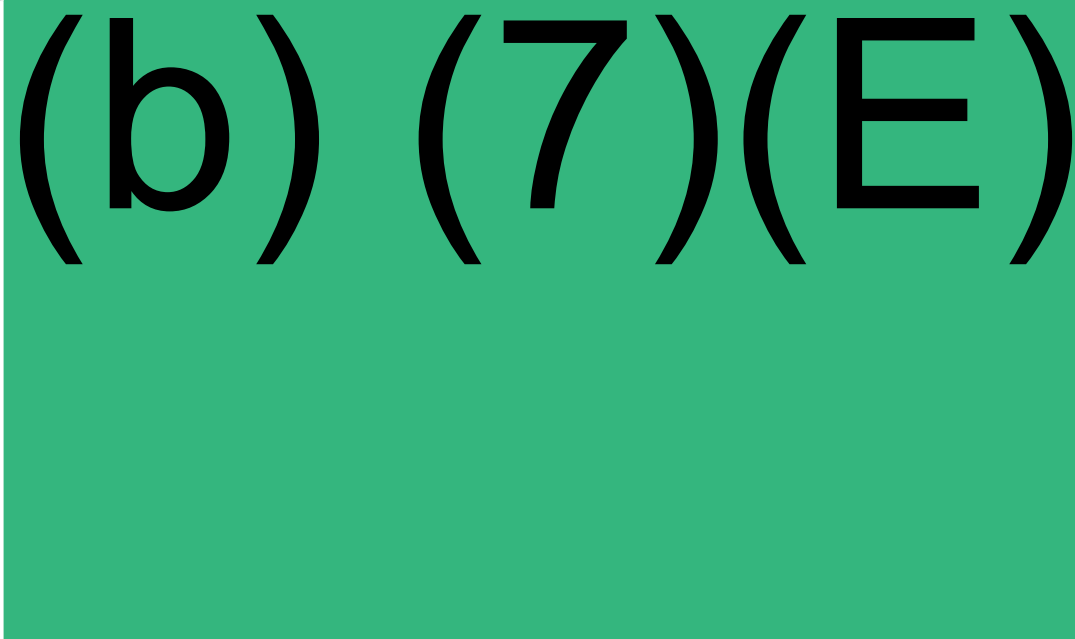Click a on the link to navigate to that section of the guide.

GeoNeutron Portal v2 User's Guide
Explore, Discover, and IP Search

Accessing the Portal

Following your Portal kickoff and training session, your account manager will have sent you the portal domain, as well as your username and password.

(b) (7)(E)

To login, simply enter your **username** (all in lowercase) and **password** (case sensitive) in their respective fields.

If this is your first time logging into the portal, you may be prompted to update your password.

Additionally, if your organization has required the use of **Multifactor Authentication (MFA)**, you will be prompted to set up an authentication option upon your first login.

If you have forgotten your password, click "Reset my Password" and a new password will be automatically emailed to you. If you are still unable to login, contact your account manager to reset your account details.

User Dashboard

Once you have successfully logged in to the Portal, you will be presented with your command center, the **Dashboard**.

Dashboard Basics

The Dashboard's convenient toolbar will provide you with quick access to queries and projects, as well as saved query objects like locations and devices.

(b) (7)(E)

(b) (7)(E)

Sharing and Cloning Queries

All Queries, Projects, and Objects that you save can be shared within your organization.

(b) (7)(E)

(b) (7)(E)

In order to edit a Query, Project, or Object that has been shared with you, you must create your own copy. (b) (7)(E)

(b) (7)(E)

(b) (7)(E)

Portal Workspace Basics

Queries are the various database searches you create of geofences, polygons, devices, IPs, etc. The GeoNeutron Portal allows you to visualize your query results in an easy to understand GUI.

Navigating to Portal Workspace

(b) (7)(E)

(b) (7)(E)

Map Tools

(b) (7)(E)

Query Tools

(b) (7)(E)

(b) (7)(E)

VENNTEL

(b) (7)(E)

Creating Queries

(b) (7)(E)

GeoFence

Search for signals within a certain radius or polygon, or set of radii or polygons, within a given timeframe. (b) (7)(E)

Locations

Next, you are able to identify and label named locations of interest.

(b) (7)(E)

Single Locations

(b) (7)(E)

Geofence type

(b) (7)(E)

Date Range

(b) (7)(E)

VENNTEL

Batch locations

(b) (7)(E)

Manage Geofences
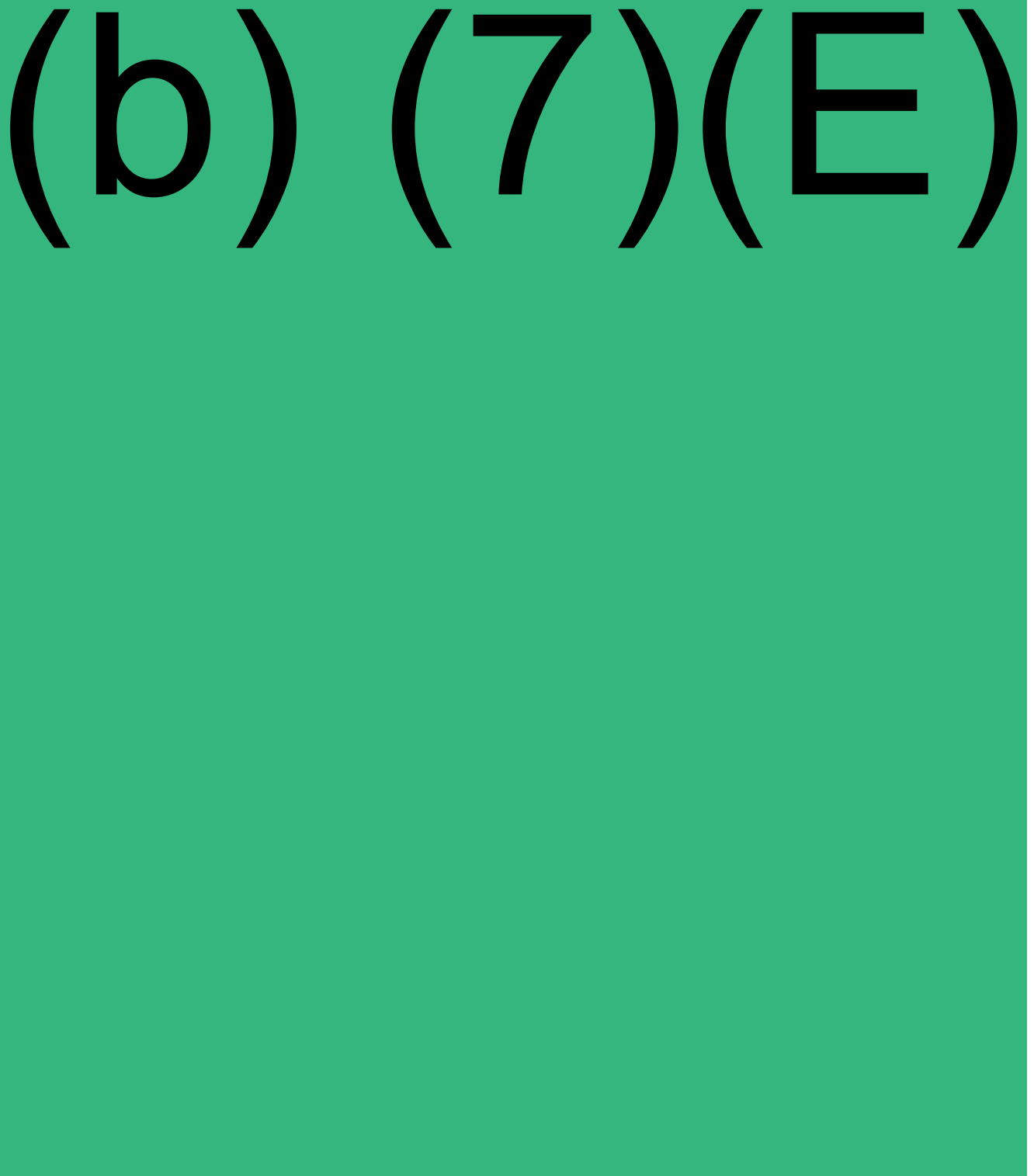
(b) (7)(E)   (b) (7)(E)

Options

(b) (7)(E)

(b) (7)(E)

Pattern of Life

View the recorded locations of a known device (or set of devices) in a given timeframe. (b) (7)(E)

Manage Devices

(b) (7)(E)

(b) (7)(E)

IP Address

(b) (7)(E)

IP Search

(b) (7)(E)

(b) (7)(E)

Forensic Flags

(b) (7)(E)

Filtering with Forensic Flags

(b) (7)(E)

**Types of Forensic Flags**

(b) (7)(E)

(b) (7)(E)

Viewing and Exploring Query Results

Once you've executed your query, you are now able to view and explore the Query Results in your workspace.

For the purposes of this guide, we will be using (b) (7)(E)   There are some small additional differences between query types that will be covered in this section, but the basic tools and functionalities will remain the same between query types.

Query Results Basics

(b) (7)(E)

Map View

(b) (7)(E)
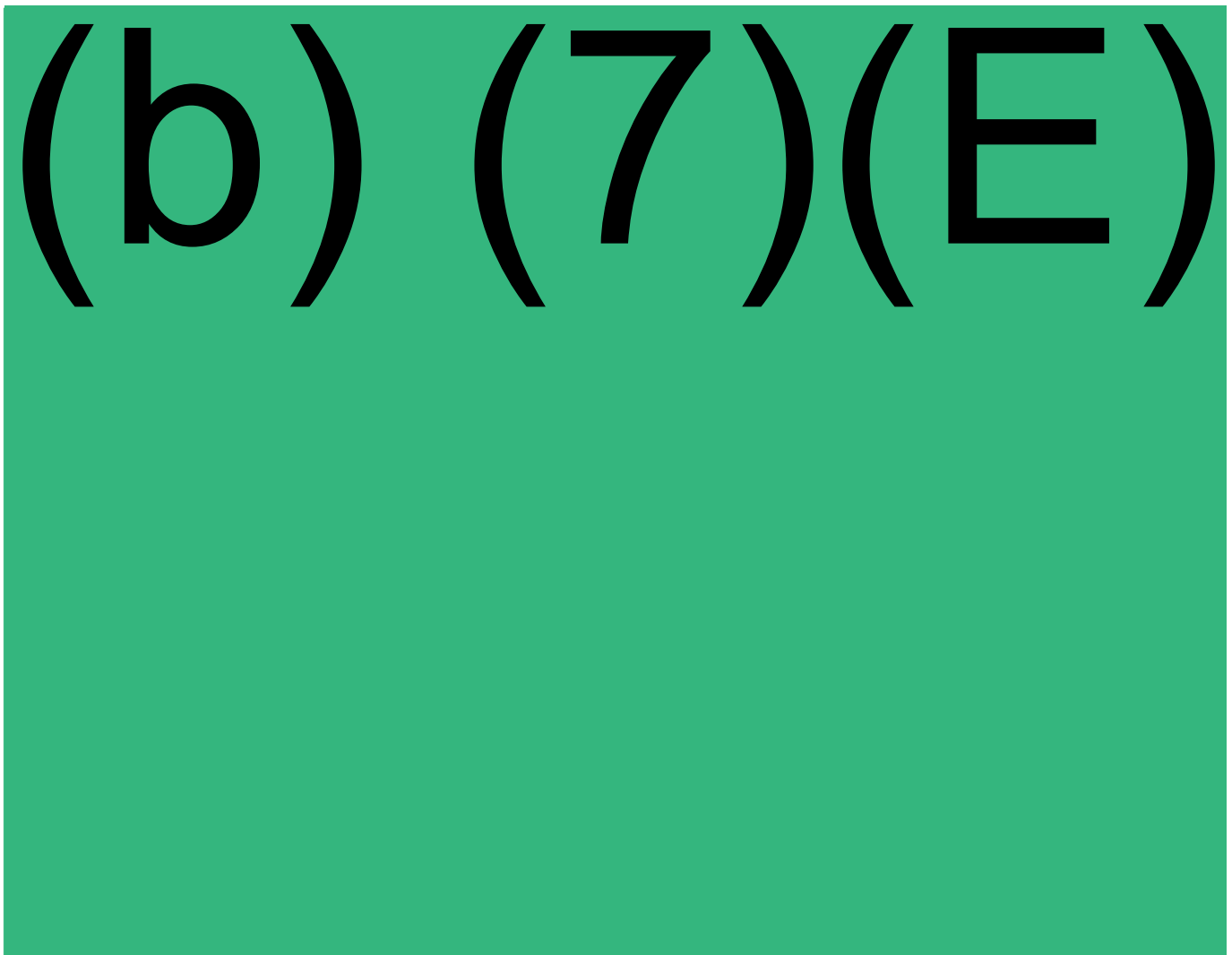
(b) (7)(E)

Detailed Signal View

(b) (7)(E)

2021-ICLI-00013 0044

(b) (7)(E)

Query Results Panel

(b) (7)(E)

(b) (7)(E)

Actions

(b) (7)(E)

(b) (7)(E)

Panel Navigation

(b) (7)(E)

(b) (7)(E)

User Settings

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

Password Management

(b) (7)(E)

Change your Password

(b) (7)(E)

2021-ICLI-00013 0050

29

![VENNTEL]

(b) (7)(E)

Multifactor Authentication (MFA)

MFA can increase the security of your portal account.

Enable Multifactor Authentication

(b) (7)(E)

Portal User Guide
June 2018

VENNTEL
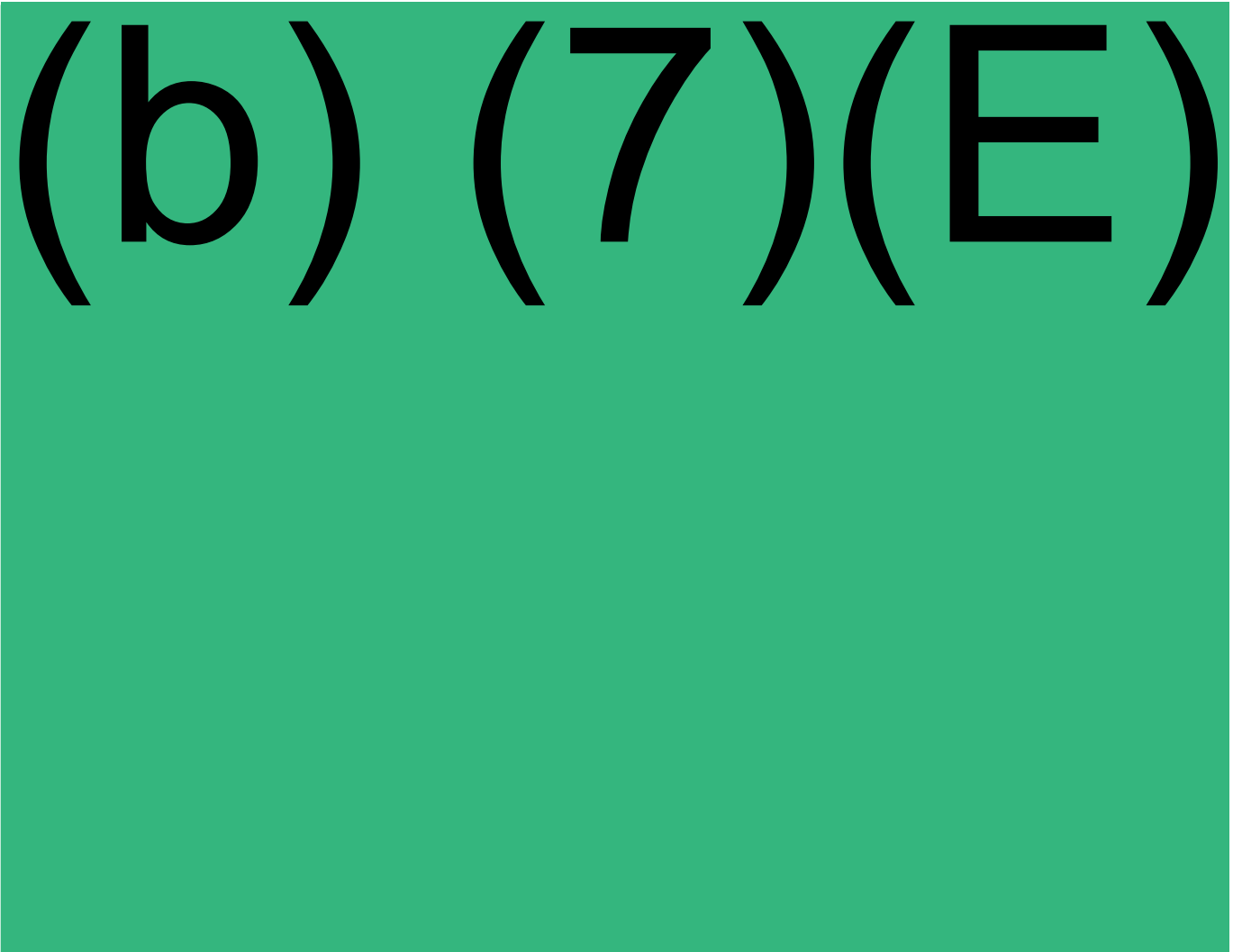
Logging In

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

Appendix A
Signal "Flag" Legend

(b) (7)(E)

(b) (7)(E)

Venntel Enhancement Guide

January 2019

VENNTEL

New Signal Flags

(b) (7)(E)

New - Signal Filtering Capability

(b) (7)(E)

Applying Filters Post Query Execution

(b) (7)(E)

(b) (7)(E)

New - Query Shortcuts

(b) (7)(E)

(b) (7)(E)

New Display Format for Latitude and Longitude

(b) (7)(E)

New Dataset - Signal IP address

(b) (7)(E)

(b) (7)(E)

Devices – New Capabilities, New Meta Data

(b) (7)(E)