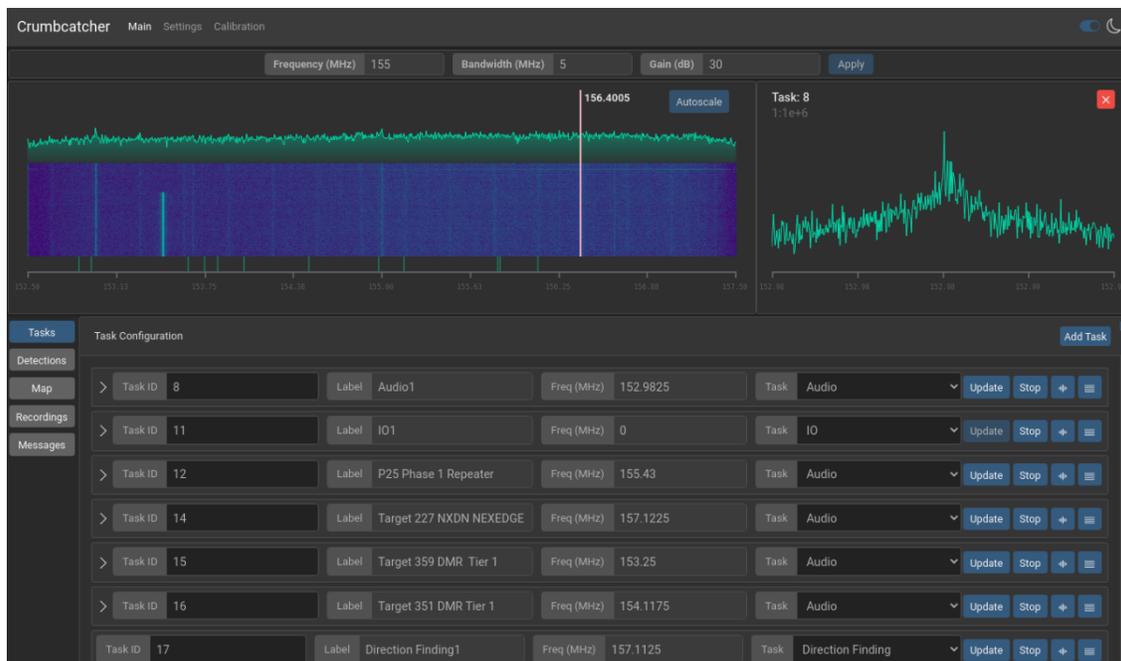# CRUMBCATCHER - Big SIGINT for Small Teams

- Live, full spectrum survey and logging
- Deep Learning Signal Classification
- Live Signal Decoding for over 400 communications signals
- High resolution Direction Finding

Northeast Information Discovery, Inc. (NEID) is revealing its latest Signals Intelligence (SIGINT) product to bring substantially greater capability to single and small-number SIGINT teams. CRUMBCATCHER™ is an integrated suite of SIGINT tools designed to provide end-to-end operational workflows, from signal detection and interception through signal classification, decoding, and direction finding; all in one small package.

NEID's CRUMBCATCHER core SIGINT capability readily integrates software-defined radio (SDR) technologies and legacy systems to provide wideband spectrum survey, RF energy detection, signal monitoring, RF and audio recording/replay, signal classification, signal decoding, and direction finding (DF)/geolocation. CRUMBCATCHER's interoperability frameworks and web-based, Operator-focused user interface readily support the integration of other SIGINT, Electronic Warfare (EW), and Cyber technologies.

From the ground up, CRUMBCATCHER was built around Open Architectures. CRUMBCATCHER can be deployed on Intel and ARM-based machines and is largely RF front-end agnostic.
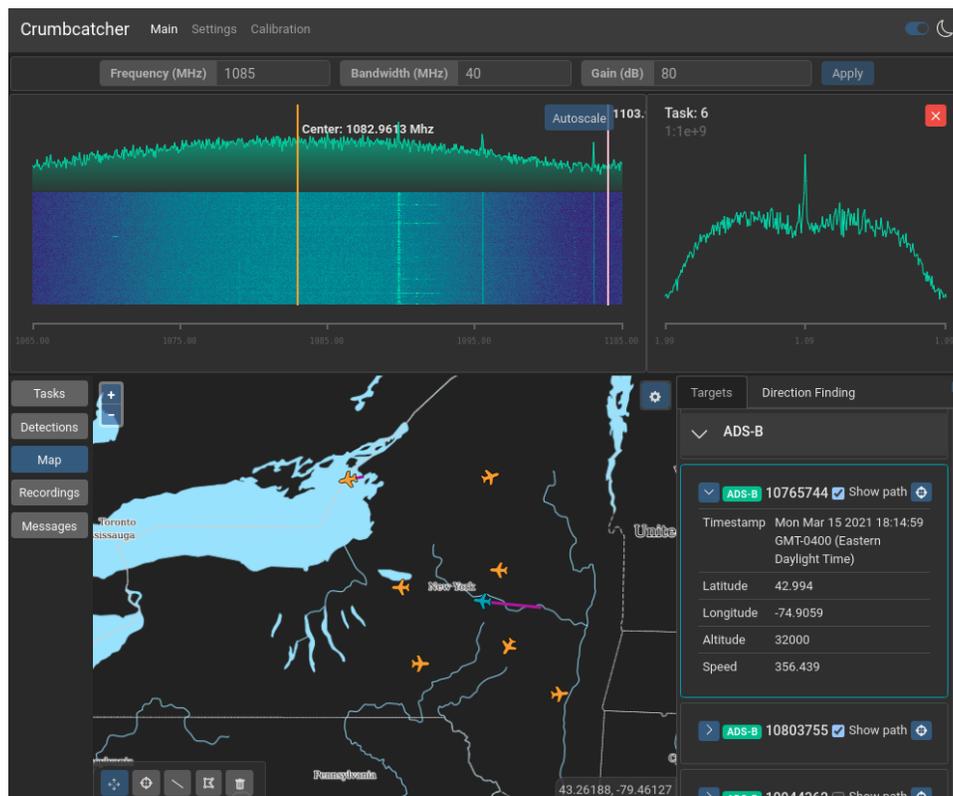
LOCAL/REMOTE OPERATION. CRUMBCATCHER's web-based design provides the same user interface for both local and remote operations. Whether the host computer is next to the Operator or thousands of miles away, the web browser interface provides the same robust interface via almost any type of network connection.
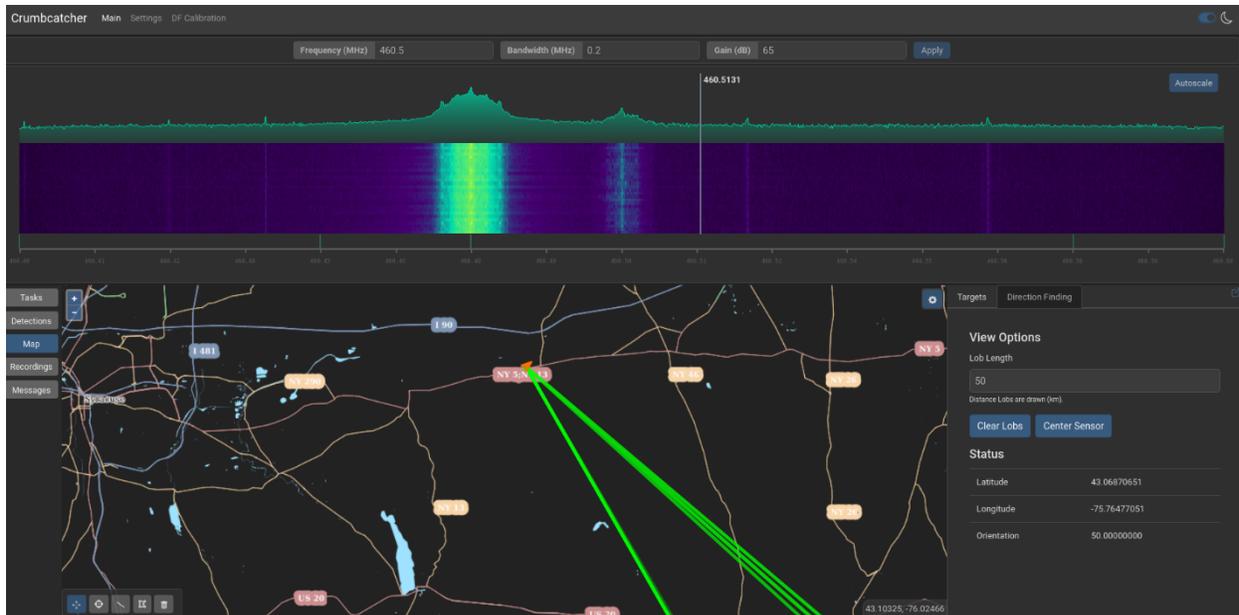
DETECT. CRUMBCATCHER automatically surveys a large swatch of radio spectrum to instantaneously detect each frequency being used, to include short up-time emitters. This differs from traditional frequency scanning techniques, which can miss an emitter if it's not transmitting while the scan is looking at a different part of the spectrum.

CLASSIFY. A collection of signal classifiers can identify the general or specific type of signal, such as push-to-talk emitter communications standards and even remote-controlled vehicles by make and model. A running list of targets can produce an RF environment baseline, which is useful for anomaly detection.

DECODE. Out of the box, CRUMBCATCHER comes with over 400 signal decoders for common voice and data communications in HF through UHF. Additional decoders are available for systems in different frequency ranges.

DIRECTION FINDING. CRUMBCATCHER's direction finding (DF) subsystem can DF multiple targets at once. It's typically deployed with a four-element array. If a different array is needed, it can be calibrated using known emitters and their locations. High resolution lines of bearing provide target direction and can provide geolocation if used on a mobile platform or with distributed sensor and antenna nodes. DF is fully automated, although manual control is available.

RECORD AND REPLAY. CRUMBCATCHER allows a user to record IQ and audio data, as well as replay them for mission re-listens, post-mission analysis, and training.

HAND SCAN. A hand scan interface is built right in to ensure live Operator notes are associated with the right collection. The tool records a time stamp for each entry added by the Operator and allows for editing.

RESOURCE MANAGEMENT. A central system manager keeps track of which resources are connected to the system and helps the Operator by automatically maximizing resource allocations.

AUTOMATION. Many workflows and tasks can be automated to free up the Operator for higher-order tasks. Automated intercept and record, direction finding, classification, and decoding, to name a few, are ideal tasks for background collection activities.

HARDWARE. CRUMBCATCHER is currently deployed on NEID's FIRE ANT™ mini mission computer, a high-performance, low profile computer that fits in small spaces but handles the computing needs of CRUMBCATCHER and other software.

Northeast Information Discovery, Inc., a woman-owned business, is an innovator in SIGINT solutions to support airborne, maritime, and ground applications, both military and civil. While our experience is predominantly with defense applications, our technologies are well suited to law enforcement, security, border control, and related operations. NEID also offers its own optimized Size, Weight, Power, and Cost (SWaP-C) mission computers for footprints under 6" x 6".

EMAIL: info@neidinc.com
PHONE: 315-875-5467

www.neidinc.com