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**ELEVATE**

# RESOLVE

**RESOLVE**

 **CERTIFIED**  
SOLUTION PROVIDER

# RESOLVE

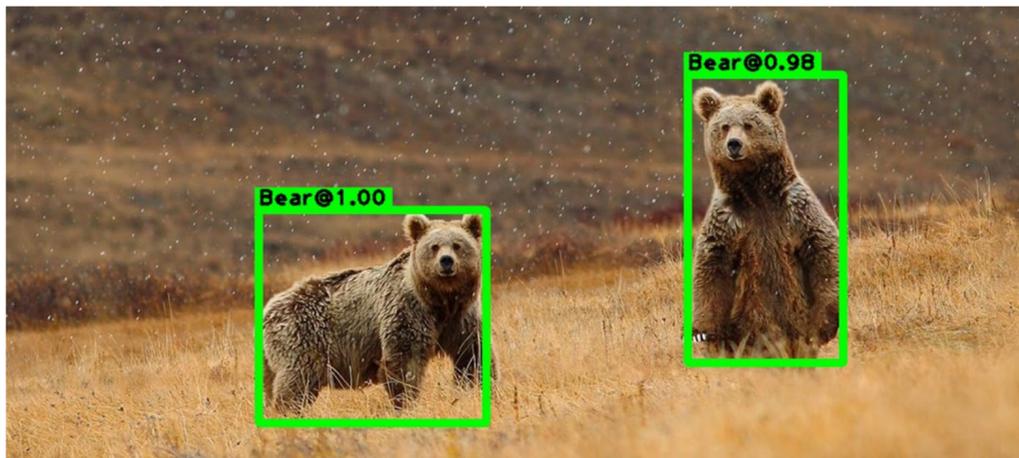
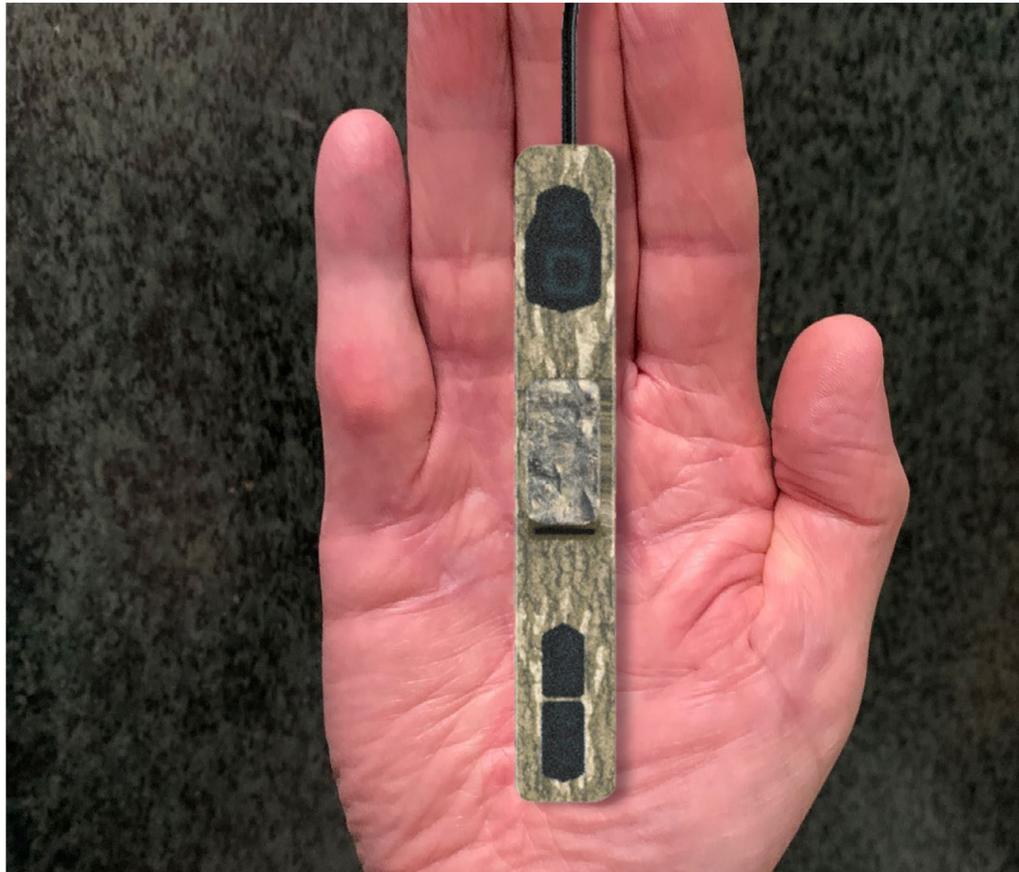
RESOLVE has developed a range of preventative AI-based technologies to protect wildlife, forests, people, and industrial resources through the use of camera-based alert systems that can detect and accurately identify intrusions before they can cause harm or disturbance.

TrailGuard AI from RESOLVE detects and identifies intruders through advanced AI, allowing the system to send image alerts to designated parties in near real time.

By leveraging Inmarsat's ultra-reliable L-band, global, mobile satellite communications network, this vital visual information can be transmitted even in the most remote areas.

By acting as de facto 'eyes-on-the-ground', TrailGuard AI enables law enforcement and park rangers to efficiently monitor threats and respond much more effectively. TrailGuard AI image alerts provide situational awareness of threats, improving the safety of staff, and local communities on the front lines when it comes to wildlife conservation.

In partnership with Intel and CVEDIA, RESOLVE has adapted TrailGuard AI for applications including illegal logging, human-wildlife conflict, mine security, and detecting agricultural pests. All variants share an identical hardware platform but run different AI models.



## ADVANTAGES

- ↳ A low-cost, highly reliable surveillance and deterrence product to detect interference ahead of time
- ↳ Near real time text and image alerts allow for more effective decision making and preventative action
- ↳ Embedded AI detects humans, vehicles, wildlife and filters out irrelevant noise, preserving battery life and minimising data transmission
- ↳ Connectivity anywhere via cellular, LoRa or satellite networks
- ↳ Smaller, cheaper, more advanced image recognition, and better connectivity than leading trail cameras

## FEATURES

- ↳ Camera-based alert systems featuring motion-triggered camera and power-optimised AI/CV pipelines enabled by RESOLVE's partner Luxonis, offering low-cost connectivity
- ↳ Portable satellite modem provides real-time connectivity to transmit alerts anywhere
- ↳ State-of-the-art AI detection models created from synthetic datasets by RESOLVE's partner CVEDIA
- ↳ Advanced AI models that allow TrailGuard AI to detect target objects or species in the day or in low-light conditions
- ↳ Low-cost, durable, low-power and easy-to-use technologies for conservation and monitoring

## USER SCENARIOS

- ↳ Prevent poaching and deforestation before intruders cause harm
- ↳ Effectively manage human-wildlife conflict near urban areas and identify extinction-endangered species
- ↳ Detect intruders near valuable industrial and mining assets or agricultural livestock
- ↳ Monitor illegal bycatch of threatened marine species
- ↳ Minimise battery usage and data transmission rates while monitoring remote industrial infrastructure

## KEY BENEFITS:

1. Strategically placed miniaturised cameras prevent theft and vandalism.
2. CVEDIA's AI models run on the camera to detect target objects and filter out irrelevant images.
3. Quick and easy setup, target images are compressed to <20 kb and transmitted in near real time.
4. TrailGuard AI operates in a low-power "sleep" mode until woken up by the PIR sensor – enabling batteries to last three+ years in the field on a single charge.
5. Onboard pipelines of AI models and CV functions powered by Luxonis' Gen2 DepthAI Pipeline Builder can be updated or interchanged for a different detector (e.g. logging trucks, wildlife species) with a simple swap of the microSD card.
6. Systems strategically placed on chokepoints of access routes enable limited monitoring forces to act with increased efficiency to protect vast areas.

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## ABOUT RESOLVE

RESOLVE is a Washington, DC-based non-profit organisation that focusses on creative solutions to address some of the biggest problems in the world. Its innovative partnerships cover both non-profit and commercial organisations, providing tangible benefits for everything from climate change to sustainability and asset protection to healthcare, with a specific focus on conservation.



*“To use remote sensors in far flung places effectively and economically, it all comes down to extending battery life and establishing a dependable connectivity platform. TrailGuard AI has solved the battery life issue by using AI to filter out images of non-interest, and Inmarsat’s satellite technology enables reliable and affordable connectivity even in the most remote environments. Thanks to advanced AI and Inmarsat, the TrailGuard solution saves on battery life and airtime.”*

Eric Dinerstein  
Director of WildTech and Senior Advisor for Biodiversity  
and Wildlife Solutions

# RESOLVE

**HOW TO BUY**

**E:** [edinerstein@resolve.ngo](mailto:edinerstein@resolve.ngo)

**W:** [www.resolve.ngo/trailguard.htm](http://www.resolve.ngo/trailguard.htm)

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