

# RadioFinder: Camera for cell phone localization

University of Chile has generated a Novel Camera for detection of electromagnetic (EM) radiation, useful for people search in building collapses, avalanches, security, control and planning/ monitoring in telecommunications.

## THE CHALLENGE

In most countries are more cell phones than people so assuming that where is a cell phones there is a person does not far away from reality. For a cell phone to report its position must be connected to the cellular and GPS network, so if you do not have a GPS signal (underground), or you do not have a phone signal, it is impossible to notify your location. This is why applications such as Google-Maps do not serve as means to locate people, underground or in the wild.

## THE TECHNOLOGY

This device for detection of electromagnetic (EM) radiation was created base in radio Astronomy Technology. The RadioFinder creates a map of the EM emission of cellphones (1.8 GHz) and Wi-Fi/Bluetooth devices (2.4 GHz) and overlays it on a video image. The device can be customize for other frequency bands (GSM, 5.8 GHz, radar, military, etc.).

## STAGE OF DEVELOPMENT

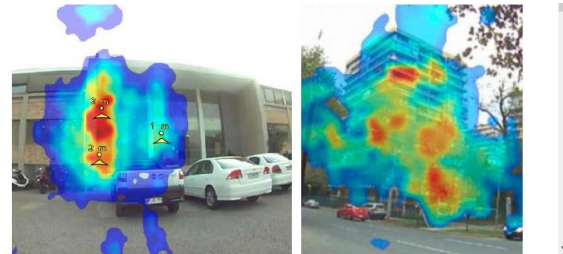
- Functional prototype has been validated on field and different conditions, with touch screen.
- 3D design for commercial device is available.

## COMPETITIVE ADVANTAGES

- Detect cell phones 1 km away in free space and 40 meters through building (depending on the walls material).
- The RadioFinder localizes a radiation source with a 3 degree error, that equals to 1 meter of lateral error if the source is 20 meter away.
- Portable : 3.5 Kg.
- Battery life: 6 hours.



First prototype - Second Prototype – Commercial 3D Model



Detection of cell phones though walls.

## APPLICATIONS

- Search and rescue of trapped persons in collapses building, avalanches, or low visibility zones.
- Useful for planning and inspection of cell phone networks, radiation monitoring of cellular antennas, and other monitoring of cell antennas, and other communications services.
- Useful for environments that required special surveillance and security conditions such as military compounds, prisons (illegal cell phone localization in prison), police, GPS Jammers.

## OPORTUNITY

Available for **out-licensing**.

## INTELLECTUAL PROPERTY/REFERENCES

- Patent Applications CL 3302-2016, US, EPO, IL, PE, CN, AU, CO, BR.