



## The story behind HEPKIE



Dr. Fredrik Tufvesson, a specialist in radio waves and wireless communication, got an idea one day while skiing. *“What if we could use mobile phones as rescue beacons? Almost everyone has a mobile phone in their pocket so we could find phones that are buried in metres of snow”*. He realized that if this was possible, people in need also could be located at very long distances, theoretically up to 35 kilometres away. What a perfect Search & Rescue tool! He soon understood that if he could do this he would be creating a revolutionary product. People would literally have a rescue beacon in their pocket. All they would require is a mobile phone that is turned on. Making something into a rescue beacon without people having to buy anything, download software or upgrade their subscription, would be the optimal way to get closer for the ultimate goal; For everyone to be found.

He started to investigate the concept and the system needed to make this possible. The system would consist of three separate parts: a jammer, a base unit and a search unit. The jammer disturbs the mobile networks, causing the phones to lose connection with their network. The base unit (an altered mobile base station) catches the phones which are trying to connect to their mobile networks, and forces them to constantly communicate with it. The search unit is used to search for the phones and locate them. But he soon ran into problems. The smallest available mobile base stations had the size of an aircraft trolley with a weight of more than 25 kilograms. This made it very impractical to manoeuvre especially when being used in avalanche search and rescue.



Avalanche dog training



Fortunately Mats Lindoff, recently Corporate Vice President and CTO at Sony Ericsson, who is one of the pioneers in the development of the world's first GSM phones, had initiated a project some years ago. The project was to build the world's smallest base station for home usage. With it being the size of a pocket book he had actually solved one of the problems for making the Search & Rescue system. He initiated a cooperation with Ericsson AB, one of the world's leading suppliers in telecom equipment and the company responsible for the product, and therefore ResQU could get access to the base station.



The Search Unit prototype in action

The research project started in 2006 and in 2008 a prototype of the search unit was ready to be tested in the field. The Swedish Mountain Rescue was the first to try it, and succeeded in finding a phone buried 1,80 metres in the snow and also one placed 6 kilometres away on a mountain opposite to the test area. The first milestone was passed and the ResQU AB team knew they were on the right track.

A system was specified together with experts in the Search & Rescue field. The first product to reach the market is the HEPKIE Helicopter System. A HEPKIE portable search unit will complement the HEPKIE Helicopter System for close range search. A portable lightweight HEPKIE system will make it possible to search by foot.

This is a system that decreases search time radically, working 24/7 in most countries worldwide, reaching almost everyone. This is applied science at its best!

HEPKIE – The smart way to find missing people.

*ResQU AB is a Swedish company situated in Lund, in the southern part of Sweden. The company was founded in 2009 by Fredrik Tufvesson, an Associate Professor in Radio Systems at Lund Technical University and Mats Lindoff, former Corporate Vice President and CTO at Sony Ericsson. Dr. Tufvesson had a theory of a new method to track mobile phones and this has lead into a new type of Search & Rescue equipment: HEPKIE, a mobile phone locating system. HEPKIE is patent pending and ResQU AB has an agreement with Ericsson AB, giving access to important technology and equipment. HEPKIE means hawk in Saami, the native language of the northern Laplanders.*