



CSAR, the search for the missing changes face: what if the beacon were the smartphone?

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In **CSAR (Combat Search and Rescue)** operations and, more generally, in **Personnel Recovery**, the most critical variable is time. **Reducing the minutes of the search means increasing the chances of recovering an isolated soldier alive**, injured or disoriented, often in difficult weather conditions, at night or in areas where visibility is poor and the environment can be hostile. In this scenario, a technology is gaining attention because it overturns an assumption: the person does not need to send a signal or activate a dedicated beacon. It is enough that they **have a powered-on mobile phone with them**.

This concept is the basis of **Lifeseeker**, a **system defined as an “aeronautical mission system” for Search and Rescue**: it exploits the widespread presence of phones to turn them into a localization reference, even when the user is unable to interact with the smartphone. In practice, if the **phone is on, it can become a hook point to guide recovery teams** towards an increasingly precise location. The promise, for missions where every second counts, is to

replace or integrate the long traditional search “sweeps” with a faster and more targeted process, reducing the vulnerability window of the deployed assets and the overall exposure of the force.

The potential value for CSAR/PR also lies in the fact that the system **does not depend on network coverage** like in a normal localization by a telephone operator. Lifeseeeker claims operability in various conditions: from 2G/3G/4G networks up to 5G (NSA), but also in **areas without coverage**. This is a crucial point for projection in remote, mountainous, desert areas or in zones where the infrastructure is damaged or simply absent. Moreover, its use is not tied to a single platform: it can be installed on **helicopters and fixed-wing aircraft**, but also on **UAVs and drones**, expanding the choice of assets and flight profiles for the search.

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From localization to contact: what changes in the field

In recovery missions, locating is not enough: it is necessary to understand “who” is being found and “how” they are. This is where the functions that make an Airborne Phone Location System interesting in terms of personnel recovery emerge. Lifeseeeker, in addition to geolocation, is designed to allow **communications with the missing person via SMS or calls**, without requiring specific actions on their part. This is an operational detail that can make a difference: the team can quickly obtain information about the subject's condition, any injuries, medical needs, or ability to move, and give simple instructions (“stay still”, “take cover”, “move towards a recognizable point”) while the recovery phase is organized.

Another declared advantage concerns the ability to work even in **low visibility**, including night operations. In journalistic terms: it is a way to “tighten” the search area without relying solely on visual observation or EO/IR acquisition, which can be limited by weather and morphology. If the system reduces tracking times, the benefit falls on multiple levels: fewer flight hours, less personnel deployment, lower operational costs, and above all, a higher probability of completing the mission before the clinical or tactical situation worsens.

Completing the picture is the theme of integration: Lifeseeeker can function as a stand-alone system or be connected to the main **Mission Management Systems (MMS)**, allowing the fusion of localization data with maps, routes, restrictions, and mission plans. In a PR

environment, this means transforming a technical datum (an estimated position) into a decision-making information: where to send the recovery team, which route to choose, which asset to employ, and how to coordinate the “transition” from search to extraction.

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Opportunities and limits: technology is not enough, rules and TTP are needed

Like any solution applied to personnel recovery, the “phone-based” approach also brings opportunities and constraints. The first is evident: **the phone must be on**. This is not a trivial requirement in contexts where the battery may be dead, the device damaged, or turned off for security reasons. The second concerns the framework of use: the **privacy and compliance** dimension is often addressed by manufacturers from a civilian SAR perspective, but in a military context, adoption must be integrated into procedures consistent with rules of engagement, authorizations, and data management policies.

Finally, there is the issue of the operational “signature”: any technology interacting with the communications ecosystem can have implications on OPSEC and electronic warfare, requiring case-by-case evaluations. For this reason, more than a magic wand, Lifeseeker presents itself as a **multiplier**: it accelerates localization, enables contact, and reduces uncertainty, but it truly works when integrated into a PR doctrine made of training, coordination, and procedures. Not surprisingly, the system also includes tools dedicated to training and reporting, useful for building and improving TTP over time.

In summary, the idea that “the cell phone is the most widespread beacon in the world” is moving from theory to becoming a concrete option. And in Personnel Recovery, where the difference between success and failure can be measured in minutes, this is a possibility that many planners no longer want to ignore.