Location Communication

A fire-fighter can pretty easily get lost and disorientated when surrounded by smoke in the middle of the night. GPS navigation is great, but not for working inside buildings because of the absence of line of sight to satellites, while cellular positioning methods generally fail to provide a satisfactory degree of accuracy. In most countries mobile users are the majority callers for emergency response. It's obvious that most people spend most of their time indoors, and the majority of location-based services are actually being initiated indoors or in environments where GPS fails to deliver acceptable end-user performance. Conventional GPS receivers do not work inside buildings, so that the majority of the world's commerce and social interaction is conducted indoors and thus unable to take advantage of outdoor positioning systems like GPS. The delivered position fixes cannot even be used for determining whether a target person stays inside or outside a certain building, not to mention the barrier to location represented by granularity of rooms or floors.

Over the past decade these difficulties have been resolved by advances in location positioning technology. These GPS-complementary technologies are now being introduced to the market as hybrid solutions: GPS + Wi-Fi (Wireless Fidelity) + RFID (Radio-Frequency IDentification). Hybrid solutions enable many kinds of indoor location-aware application. Outside the remit of 2G, 2.5G, 3G and 4G cellular networks there exist other families of positioning technologies often referred to as 'local positioning' which utilise short-range networks such as WiFi, Bluetooth, RFID, ultrasound, UWB (Ultra-WideBand) or TV radio signals.

The ultimate solution would ideally apply across all existing devices and leverage existing communication infrastructures. This would obviate the need for victims and rescue units to be equipped with special devices. In addition, the solution would preferably not require download, registration, login or password. So that victims could instantly receive emergency evacuation routes. An example of such a solution comes from ZOS Communications, which provides a location communication utility that enables any mobile phone to receive evacuation directions in the case of emergency. User location can be established leveraging native device capabilities or network-based location using GPS, A-GPS, cell towers or Wi-Fi nodes, or user reply to an SMS text message. SMS, email or native applications can be used for instant communication, resulting in every mobile user getting notified.

https://www.gim-international.com/content/article/location-communication