

LBS Platforms and Technologies

LBS Platforms and Technologies is the fifth consecutive report from Berg Insight analysing the latest developments on the global market for LBS platforms and middleware.

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- **Discover** new players in the indoor location platform market.
- **Recognise** how different use cases and market segments drive location platform developments.
- **Predict** which location technologies will be deployed in the future.
- **Anticipate** future drivers for location platforms and middleware revenues.



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When will high-accuracy indoor location solutions become a reality?

Mobile location platforms enable three categories of location-based services (LBS): public safety, national security and law enforcement, as well as commercial services. About 70 percent of all emergency calls are placed from mobile phones and it can often be difficult for callers to convey their location to first responders. Location platforms can not only reduce the time to find the location of the caller, but also enable more efficient handling of simultaneous calls from people reporting the same incident to distinguish single accidents from multiple events. Another use case is public warning systems that locate and send messages to all handsets within a geo-fenced area. Government agencies can use location platforms and data mining systems for infrastructure protection and location-enhanced lawful intercept.

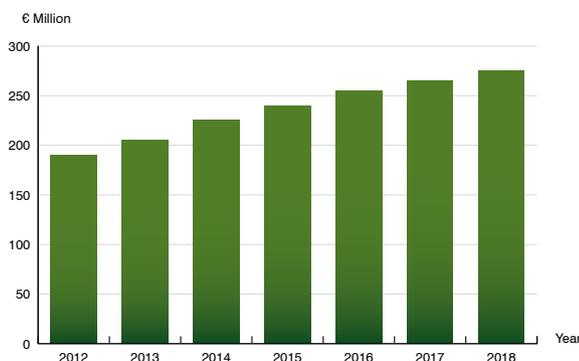
Location technologies can be divided into handset-based technologies (such as GPS) with intelligence mainly in the handset, network-based technologies (for instance Cell-ID, RF Pattern Matching and U-TDOA) with intelligence mainly in the network, as well as hybrid technologies (for instance A-GPS and OTDOA) with intelligence in both the handset and the network. Several new hybrid location technologies are in development, aiming to improve the performance of global navigation satellite systems (GNSS) in difficult environments. In pure indoor environments where GNSS is unavailable, the most common location technologies rely on Wi-Fi location using RF Pattern Matching or multi-lateration, augmented with data from sensors in the handset such as accelerometer, gyroscope, compass and barometer.

The Federal Communications Commission's (FCC) E911 mandates for location of mobile emergency calls released in 1996 was a major driver behind the development of location platforms for the North American market. In Europe, as well as in other developed countries such as Japan and South Korea, early deployments of location platforms focused on supporting commercial services due to the lack of a clear mandate for emergency services. In the first deployment phase, lasting from 2000 to 2003, operators invested in platforms and services. Overall, the results did not live up to the expectations in terms of uptake or usage and many operators therefore lost interest in LBS as a mass-market proposition. In developed countries, most commercial LBS – especially consumer-oriented services – are now provided by third party app developers and handset platform vendors that rely on GPS and Wi-Fi location data obtained directly from handsets. Instead, ►

► mobile operators are showing a growing interest in using location data as an enabler for numerous enterprise and B2B services. Network-based location data can for instance support various forms of fraud management and secure authentication services. Operators are also starting to leverage location data for advertising and analytics applications. Government mandates continue to drive deployments of location platforms and new technologies. In most parts of the world, governments and telecom regulators are gradually introducing emergency call and lawful intercept mandates that require at least basic location platforms. Although most regulators have not yet imposed any specific location accuracy requirements as part of the mandates, more stringent location accuracy may well be demanded in the future as technologies mature and costs decrease. For instance, in the US, the FCC is considering updated mandates that would introduce accuracy requirements also for emergency calls made indoors.

In addition to supporting emergency services, a diverse set of players are also developing indoor location technologies to enable various commercial use-cases ranging from navigation, to marketing and analytics. The established location platform vendors and chipset vendors are extending their offerings to enable indoor location. At the same time, a growing number of technology specialists and start-up companies launch software or infrastructure solutions that enable handset vendors, app developers, enterprises and venue owners to add indoor location capabilities to apps and handsets that are already in use.

Berg Insight estimates that approximately 40 percent of the mobile network operators worldwide have deployed at least some type of basic location platform. Additional deployments as well as updates of existing platforms to support new location technologies and features can be expected in most markets in the coming years. The primary driver remains government mandates, but growing operator interest in advertising and analytics services will also play an important role in future growth. Berg Insight forecasts that total global annual revenues for GMLC/MPC, SMLC/PDE, SUPL A-GNSS and passive location systems will grow from € 190 million in 2012 to € 275 million in 2018. These revenues comprise licenses for new platform deployments, as well as capacity and technology upgrades, maintenance and support services for existing platforms.



Location platform and middleware revenue forecast, € million (World 2012–2018)

This report answers the following questions:

- What is the current status of the global mobile LBS platform market?
- Which mobile operators have deployed LBS platforms and middleware?
- How is GPS-technology altering the conditions for LBS app developers?
- Which use cases and market segments are driving location platform development?
- How is GPS-technology affecting network-based location technologies?
- How will lawful intercept requirements affect technology choice for operators?
- Which location platforms and technologies are best suited for location-based advertising?
- Which vendors provide location platforms and middleware today?

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Glossary

About the Author



André Malm is a Senior Analyst with a Masters degree from Chalmers University of Technology. He joined Berg Insight in 2006 and his areas of expertise include location-based services, wireless M2M and personal navigation services.

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