

High performance. Delivered.

Comparison of location-based technologies


BEACONS

GPS

WI-FI

NFC

	BEACONS	GPS	WI-FI	NFC
Recommended for	In/near-store and micro-location use-cases	Macro-location and out of store use-cases	In-store use-cases	Close proximity, secure interaction
Some potential uses	In-aisle notifications and offers, in-store navigation, hands-free payment	Near-store notifications and offers, pre-arrival customer 'check-in'	In-aisle notifications and offers, in-store navigation, hands-free payment	Payments, product tagging
Ease of set up and maintenance 	Medium Requires physical beacons to be installed Batteries claimed to last 1-3 years, USB and powered beacons do exist Need to configure beacon IDs and ranges	Medium-high No physical hardware required Need to set up/maintain geo-fences and radius Potential to leverage existing databases of locations	Medium Potential to leverage existing Wi-Fi infrastructure for presence detection (in/out of range) but typically require new hardware for micro-location detection	Medium Requires a number of hardware and software components to support NFC (near field communications) Is now standard on a lot of payment pin entry devices (PEDs)
Range 	Medium Typically up to 70m, varies depending on hardware used. Range can be shortened to suit use	Long Unlimited, set by GPS coordinates	Medium-low Typically up to 30m, varies depending on hardware used	Close Typically <15cm
Accuracy 	Medium Is open to interference, e.g. people, water and some hard surfaces	Medium-low Varies depending on receiver and sky conditions. Possible accuracy to <3m. Requires GPS connectivity so accuracy will decrease indoors	Medium Typically accurate up to 5m. Can be improved with hardware upgrades	High Highly accurate within range
Ease of use for consumer 	Medium Typically requires consumer to have an app on their phone, Bluetooth enabled, accept tracking of their location and push notifications	Medium Typically requires consumer to have an app on their phone, GPS enabled, accept tracking of their location and push notifications	Medium-high Most smartphones come Wi-Fi enabled. Consumers typically have Wi-Fi enabled for access to data networks	Medium-high NFC is standard on most new smartphones. High number of older smartphones in circulation are not NFC enabled (typical upgrade cycle is 2-3 years)
Energy efficiency on consumer device 	Medium-high Bluetooth low energy (BLE) typically uses little energy	Medium-low Searching for satellites is energy consumptive. Recommended for solutions that are not 'always on'	Medium-high Polling for Wi-Fi connections typically consumes little energy	High NFC tags produce their own energy when in close proximity of a receiver