



# Geofencing Use Cases and Requirements

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## Abstract

This document describes basic use cases and requirements for geofencing.

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## 1. Introduction

### ISSUE 1

A geofence is a virtual fence that circumscribes a geographical area. In its simplest form, a geofence can be described by a centroid and a radius (this defines a 2 dimensional circular geofence). However, more complex geofences are possible (e.g. polygonal boundaries). This document provides sample scenarios and derived requirements for a geofencing feature in the context of the [W3C Geolocation API \[GEOLOCATION-API\]](#).

## 2. Scenarios

### 2.1 Alerts when points of interest are in the user's vicinity (derived from [GEOLOCATION-API])

A tour-guide Web application can use the geofencing-enhanced Geolocation API to monitor the user's position and trigger visual or audio notifications when interesting places are in the vicinity. An online task management system can trigger reminders when the user is in the proximity of landmarks that are associated with certain tasks.

### 2.2 Asset Tracking

Web technologies are finding a place in mobile devices used for asset or property tracking. A mobile tag attached to an asset could leverage a web-based geofencing solution to trigger alerts when it enters or leaves a geofenced area. For instance, commercial merchandise can be tracked in a warehouse, or construction equipment can be tracked in a building site.

## 2.3 Mobile Marketing

Internet advertising is often measured by click-through rates, i.e. The click-through rate is the number of unique instances where an user ineracts with the ad ("clicks" on it) divided by the total number of ad impressions (the times an advertisement was served). Physical click-through is possible with geofencing. In this case, a retailer can determine if an end user has actually entered an establishment after viewing an ad.

## 3. Requirements

3.1 R1: The Geolocation API must provide a way for the application to set a geofence around a centroid.

3.2 R2: The Geolocation API must provide a way for the application to perform a one-shot query as to whether the device is inside or outside of a geofence defined around a centroid.

3.3 R3: The Geolocation API must provide a way for the application to register to receive notifications when the device breaches a geofence, including information as to whether the device is entering or leaving the geofenced area.

## A. References

### A.1 Normative references

#### [GEOLOCATION-API]

Andrei Popescu. [Geolocation API Specification](http://www.w3.org/TR/geolocation-API/). 24 October 2013. W3C Recommendation. URL: <http://www.w3.org/TR/geolocation-API/>