

# Chapter XXXII

## Location Privacy

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### ABSTRACT

*In this chapter, the author raises a number of issues surrounding the ever-growing capabilities of geoinformatics. Location privacy can be defined as the claim of individuals to determine for themselves when, how, and to what extent information about their geographic location is communicated to others. Location privacy has become an especially important issue in geoinformatics because of the emergence of location-aware computing. This implication of the interaction between these technology and personal rights is explored in this chapter.*

### INTRODUCTION

A person's geographic location is personal and sensitive information that needs to be protected. Unprotected information about where a person is located can be misused in a number of ways, including:

- *Causing personal harm:* Information about a person's location may be used to cause that person harm. For example, a variety of criminal activities, such as stalking or even physical assault, require that individual's location is known to the criminal.
- *Inferring other personal information:* Geographic location fundamentally limits many of the activities a person can be engaged

in. For this reason, location can be used to infer other personal information about an individual. For example, the information that Anna is regularly located in a hospital oncology unit might be used to infer that Anna is suffering from cancer. An insurance company might then unfairly use this inference to deny health insurance to Anna.

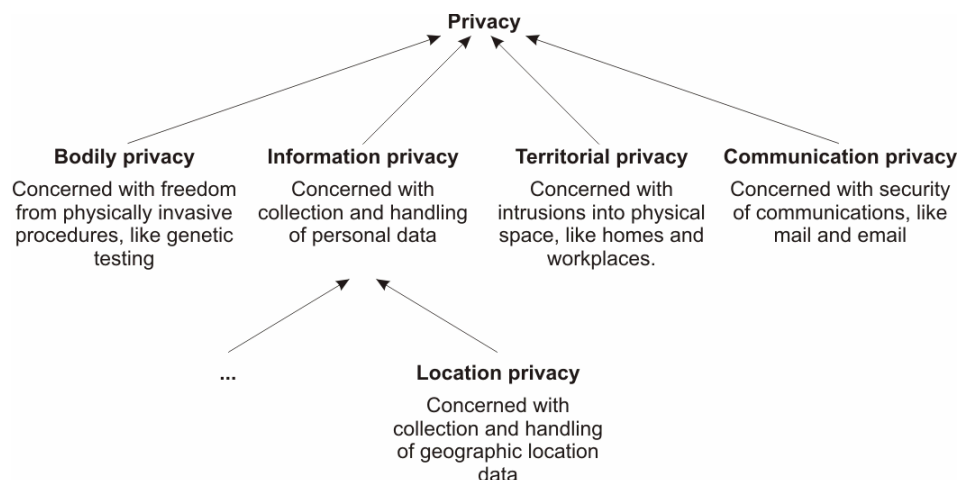
Location privacy can be defined as *the claim of individuals to determine for themselves when, how, and to what extent information about their geographic location is communicated to others*. Location privacy is a special type of *information privacy*. Information privacy is usually defined as the “claim of individuals, groups, or institutions to determine for themselves when, how, and to what extent information about them is communicated to others” (Westin, 1967, p. 7). As Figure 1 shows, information privacy is just one of several types of privacy. Privacy in general is regarded as a fundamental human right, recognized in Article 12 of the UN Universal Declaration of Human Rights (1948).

## PRIVACY IN LOCATION-AWARE ENVIRONMENTS

Location privacy has become an especially important issue in geoinformatics because of the emergence of location-aware computing. Location-aware computing environments combine high-power mobile computer platforms, like personal digital assistants (PDAs) or cellular phones; location-sensing technology, like global positioning system (GPS); and wireless communication, like WiFi or Bluetooth. Using location-aware computing environments it is possible to track an individual’s location in real-time, and communicate that information to interested parties anywhere in the world (e.g., via the Internet).

Users of location-aware technology can potentially take advantage of many new and highly beneficial location-based services. Examples of increasingly common location-based services include navigation and emergency response systems. People using location-based services must reveal information about their location to a service provider. One of the first location-based services, the AT&T “Find Friends” service, enabled friends and family to share information about their location

Figure 1. Classification of types of privacy, after Rotenberg and Laurant (2004)



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