

White Paper

On

Privacy Issues: 'Mobile Location' Usage by LBS Applications

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Contents

Definitions..... 3
Introduction 4
Objective and Audience 4
Mobile Location Usage- Telecom Operator 5
 Usage of Mobile-Location for basic voice services 5
 Usage of Mobile-Location for other services 6
Existing Location Usage by LBS Applications 7
Regulations- Existing & Future 7
 Guidelines from Independent Forums 7
 Indian Existing Regulations..... 7
 Guidelines being followed for existing and future laws by the government..... 8
Beneficial Usage of location in existing scenario..... 8
Conclusion 9
References 10

Definitions

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| BSC | Base Station Controller |
| BTS | Base terminal station |
| GMLC | Gateway Mobile Location Center |
| HLR | Home Location Register |
| LBS | Location Based Services |
| LCS | Location Service |
| LCS Client | A location based application that takes location from Location service (LCS) |
| LIF | Location Interoperability Forum |
| MLP | Mobile Location Protocol |
| OEM | Original equipment manufacturers |
| OMA | Open Mobile Alliance |
| SMLC | Serving Mobile Location Center |
| SMSC | Short Message Service Center |

Introduction

Recent times have shown phenomenal growth in mobile phone usage. Mobile phones also bring with them a new eco-system providing innumerable innovative business application opportunities. Use of mobile-location for various location-based-applications is one such business application opportunity.

This opportunity has also brought along with it the issue of privacy associated with sharing of location of an individual for different applications. At this juncture Independent forums like OMA (Open mobile alliance), MMA (Mobile marketing association) and others have come up with certain guidelines. Laws by government are being worked out to address these issues.

Objective and Audience

The objective of this white-paper is to collate information on mobile-location related privacy laws in India and abroad and touch upon different scenarios and solutions, which are helping the government and independent forums to build up rules & regulations. The objective is also to educate third parties who are interested in building and deploying beneficial mobile-location based services.

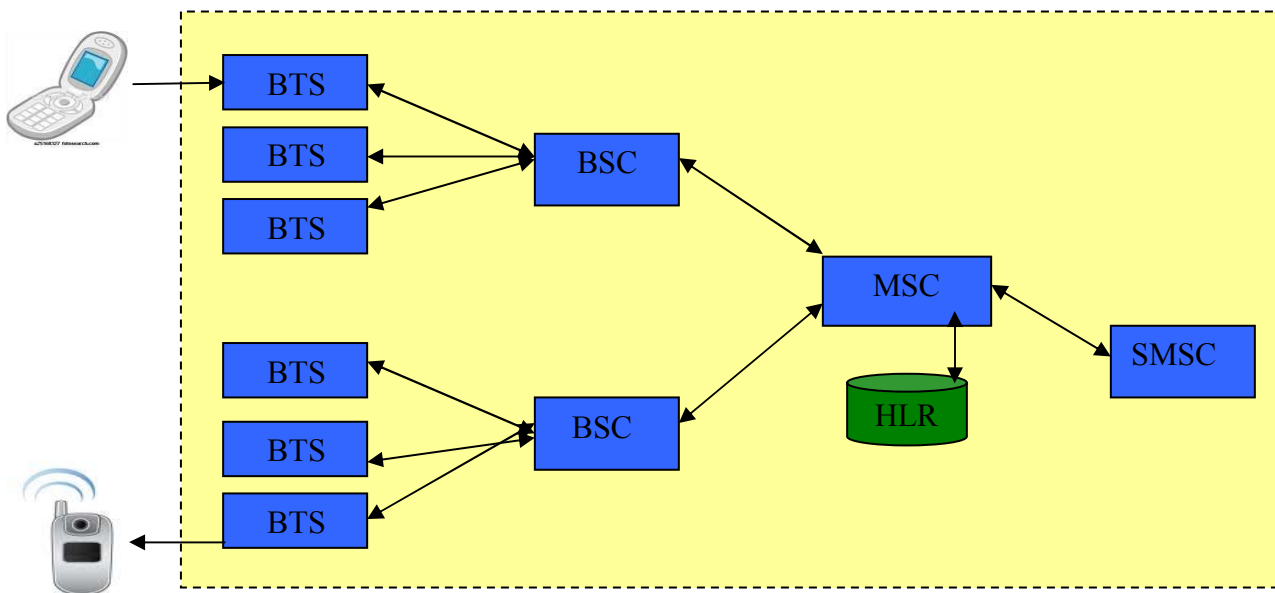
The target audience is Telecom operators, application developers, mobile-location service providers, OEM and other entities involved in mobile-location based solutions.

Mobile Location Usage- Telecom Operator

The basic concept of Mobile Telecom operator is to provide voice, messaging and data services to an end-user who is mobile (keep moving from one place to another). Below is an explanation of how a Mobile Telecom operator provides its basic service.

Usage of Mobile-Location for basic voice services

When a call is initiated the signals goes through the network (BTS and BSC respectively) to the Mobile Switching Center (MSC). The MSC then queries the Home Location Register (HLR) which contains the current location of all the subscribers at all time. The MSC retrieves the location of the destination subscriber from HLR and route the call to the receiver through the Network (BSC and BTS respectively).



The following observations can be made about the usage of mobile location by the Telecom operators:-

1. HLR (Home location Register) stores the current location of the end-user all the time
2. Telecom operator uses the Mobile location of the end-user for providing the basic Voice service.

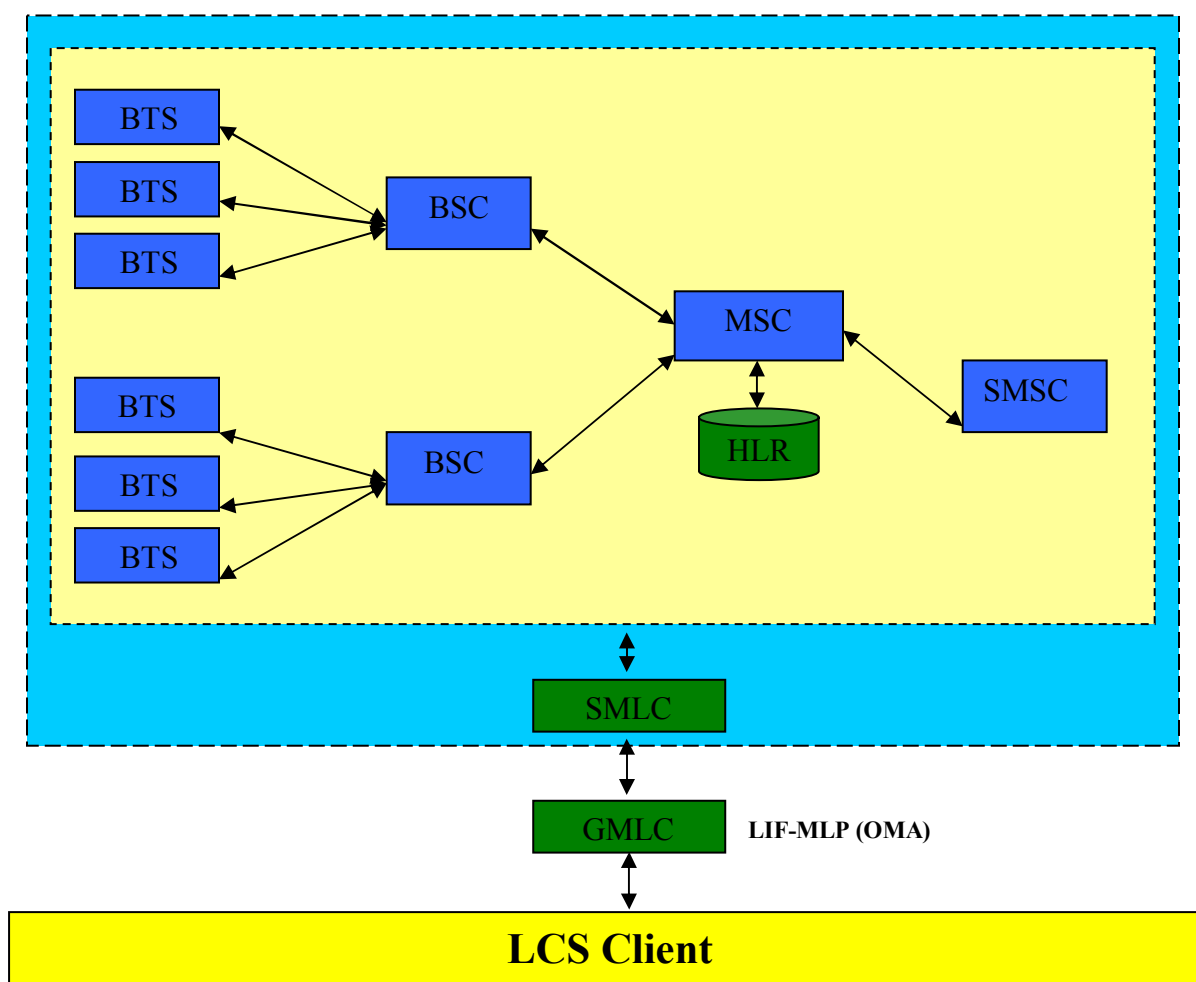
Usage of Mobile-Location for other services

The External applications (LCS Client) gets the location of the user through GMLC, which acts as an interface between SMLC and Location services (LCS) applications.

Serving Mobile Location Center (SMLC) and Gateway Mobile Location center (GMLC) have the functionality to support Location Services (LCS).

Serving Mobile Location Center (SMLC) is a network element in GSM Networks that resides in the BSC (Base Station Controller) which calculates network-based location of mobile stations (handsets). The SMLC may control several LMUs (Location Measurement Units) which measure radio signals to help find mobile stations in the area served by the SMLC.

SMLC communicates with the GMLC, which is the interface to external LCS clients



Existing Location Usage by LBS Applications

A lot of third party (companies other than the Telecom operator) Location-Based services have been made in India and abroad, which are being used extensively today by users. These applications use various mechanisms for taking consent from the user. A list of such application is mentioned below: -

| <u>Functionality</u> | <u>Location Source</u> | <u>User Consent</u> |
|-----------------------------|-------------------------------|----------------------------|
| Locate a Friend | Telco- Cell-d | Consent SMS |
| Follow friend on Map | GPS | Mobile-Wap |
| Social Networking | Telco-Cell-id/ GPS/ SMS | Mobile-Wap |
| Friends & Place Alerts | Telco- Cell-id | Mobile-Wap |

Regulations- Existing & Future

Guidelines from Independent Forums

OMA (Open Mobile Alliance) Privacy Guidelines- OMA guidelines permit the use of mobile location for useful applications after taking due consent from the user and the controller (Telecom operator). Please refer to the appendix for more details

MMA (Mobile Marketing Association) advocates consent based mobile advertising. The consent can be taken by SMS, Mobile-wap or Web. Please refer to the appendix for more details

Indian Existing Regulations

In India no specific legislation pertaining to data protection and privacy has been enacted. The right of privacy is not expressly recognized in the Constitution of India, although the Supreme Court of India has implied it from article 21 of the Constitution, which states that, "No person shall be deprived of his life or personal liberty except according to procedure established by law." However, this right is not absolute and can be restricted under procedures established by law or if a superior interest commands it.

Our constitution has provided the law relating to privacy under the scope of Article 21. Its interpretation is found insufficient to provide adequate protection to the data. Laws that do exist relate to the privacy of data held by public financial bodies (e.g. banks) and electronic data (the Information Technology Act of 2000). India is moving to bring their privacy laws in step with Europe and other jurisdictions. The Personal Data Protection Bill 2006 India, based primarily on foreign privacy legislations, was introduced in 2006 and is currently still pending.

Guidelines being followed for existing and future laws by the government

1. Objective should be to regulate principles and not technology, so that they don't inhibit innovation
2. Encourage good use of location e.g. Opt-in Value Ads, Status updates, Fraud prevention
3. Discourage bad usage of location- Personal spying, unwanted ads
4. Clear mechanism for Opt-In and Opt-Out
5. Proper care for security threats in the software
6. Regulate- Principles for Purpose or Intent & execution

Currently IT Act is undergoing comprehensive amendment. It is presently under Parliamentary-process. These Amendments will address many of the data privacy and security issues in the near future. The *Personal Data Protection Bill* was introduced in Parliament in 2006; hopefully it should see the light of day and get approved by the parliament.

Beneficial Usage of location in existing scenario

In the existing scenario taking cognizance of the existing Location-Based-Applications especially in developed countries like USA, which has more stringent privacy laws we believe that location (either from Telco or from GPS) of a user can be used for beneficial applications after taking due consent from the user. The consent can be taken from the user through SMS, mobile-wap or Web. However the following care should be taken while using the mobile-location of the user: -

1. The location should be passed on to the application from the telecom network in an encrypted format
2. The customer should be duly informed whether the informal would be used on transitory basis or it will be stored for a longer duration
3. The consent can be taken through SMS, Mobile-wap or web.
4. Taking consent for using the mobile-location should be simple and clear and it should not be the default setting
5. There should be simple and clear mechanism of canceling the service for mobile-location use.
6. Chain of trust between Telecom operator and third parties
 - a. Consent should mention the purpose of the third party
 - b. The data transmission between Telco and third parties should be encrypted or secured
 - c. The period of storage of location information should be told to the customer
 - d. There should be proper contract between the parties for non-disclosure of location

Conclusion

Mobile phone location of a mobile user is stored and used by Telecom operators for routing the calls and SMS. This mobile location can be used for providing other Mobile-location based services as well. Existing responsible location based service providers take due customer consent and these are called opt-in services. The existing third party location based applications and location usage by Telecom operator can be used as precedence for other third party location based applications for using mobile-location after due customer consent. The existing self and official governing laws are evolving but they do not hinder in any way for usage of mobile-location for applications in the present scenario.

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