Development of the Code of Practice for Recording of Underground Utility Networks and services in Roads and Highways

1. Introduction

Subsurface networks comprise of a set of apparatus laid continuously below the ground surface normally spanning to the most of urban areas. Most common location for these networks is under the roads and highways passing through those areas. Development and management of such networks is gradual process linked with the growth of the particular urban area. Naturally networks laid at a particular point of time will be upgraded after some time leading to the possibilities of conflicts with the existing networks. These conflicts in turn result in damages of such networks. The best possible way would be to avoid excavating or drilling at all such locations where networks can be expected. The need therefore is of properly recorded documents detailing all the apparatus laid below the surface in a particular right of way.

With a view to this, a solution to avoid such conflicts would be that Civic service providers should maintain up to date and make available for inspection, records of every item of apparatus belonging to them in the roads and highways as soon as reasonably practicable after placing it in the right of way, altering its position or locating it in the course of executing any other works. All the utility owners do maintain such records. However the level of accuracy and the standards of such record keeping are far from being standard.

The need therefore is of a code of practice to standardize all such records. This code of practice needs to set out a standard regime for keeping accurate records of apparatus buried beneath the roads and highways. It would help in improving the standard of record keeping with a view to minimising injury to those carrying out works, damage to apparatus and inconvenience to road users and utility (e.g. gas, water, sewer, and electricity companies) customers.

2. Purpose

The purpose of this Code is to enhance the quality of record keeping of underground apparatus installed within the roads and highways and to encourage the making information relating to such apparatus available to persons digging or drilling in such locations subject to the limitations of confidentiality.

The specific aims of this Code will be to minimise:

(a) injury to operatives and others;
(b) disruption to undertakers' customers;
(c) inconvenience to street users;
(d) damage to apparatus.

This Code will be aimed to set a common standard for the establishment, maintenance and making available of records of underground apparatus.

3. Scope

The scope this code of practice is proposed to cover is as under:

3.1. Establishment of Standards

General

The code will propose adoption of common recording standards. It will help to improve the quality and consistency of all records of underground apparatus in roads and highways.

Form of the Record

The code will proposed a standard form of the record of apparatus able to supply the appropriate and intelligible information to enable identification of underground apparatus in proper ways.

Accuracy

The code will identify the level of accuracy of the recordings within a specified tolerance range.

Maintenance of Records

The code will identify the modes of maintaining and updating the records of the apparatus.

Using the Record to Locate Underground Apparatus

The code shall identify the systems or modes of locating the apparatus from the prepared records.

Safe Digging and Drilling Practices

The code shall identify the safe Digging and Drilling practices to develop such apparatus under roads and highways.

Service Records

The code will define the modalities for creating and maintaining Services records as may be practical. It will also standardize the key routes for apparatus.

3.2 Provisions relating to persons proposing to excavate in the street

One of the key areas to be addressed by the code would be the provisions related to the persons proposing to carry out excavations in the roads and highways. These provisions shall relate to both, the stipulations for the services under development as well as the items detected / shifted during the course of such excavations.

3.3 Typical Routes for Service Pipes and Cables

In urban settings mainly five types of civic service networks are laid below the ground:

1. Telecommunication Cables;

2. Electrical Cables;
3. Gas pipelines
4. Water Supply Pipelines
5. Sewer Networks.

The code will provide stipulations on typical routes, location details like depths, covers, and physical details like colours/ spacing etc. of such apparatus.

3.4 Highway Authority Apparatus

Other than the basic services Highways may also have the following apparatus:

- ☑ street lighting cables and ducting
- ☑ highway drainage
- ☑ CCTV cables and ducting
- ☑ illuminated traffic sign cables and ducting
- ☑ traffic signal cables and ducting
- ☑ traffic signal loops and ducting
- ☑ vehicle detector loops and ducting
- ☑ traffic/speed camera cables and ducting
- ☑ traffic monitoring camera cables and ducting
- ☑ variable message sign cables and ducting
- ☑ automatic bollards cables and ducting
- ☑ height protection systems cables and ducting
- ☑ toll booth and barrier cables and ducting
- ☑ culverts
- ☑ wildlife tunnels
- ☑ foundations to structures

Proposed code of practice shall be addressing stipulations to cover these structures.

4. Working Modalities

For these code formation activities Indian Society for Trenchless Technology (IndSTT) has formed a working group who would be responsible to collect, assimilate, analyse the data available internationally and provide their recommendations to IndSTT. Based on those recommendations, IndSTT secretariat shall compile the Codes of Practice.