

The header has 72 bytes and consists of these values:

- **double meterLatitude** - this is an approximated value of how much latitude degrees correspond to one meter.
 - **double meterLongitude** - this is an approximated value of how many longitude degrees correspond to one meter.
 - **int zoneSizeInMeters** - the first division of the whole area; this says how many meters should one zone be.
 - **int areaSizeInMeters** - the second division of the whole area; this says how many meters should one area be.
 - **double fromLongitude** - the minimum longitude of the whole area.
 - **double toLongitude** - the maximum longitude of the whole area.
 - **double fromLatitude** - the minimum latitude of the whole area.
 - **double toLatitude** - the maximum latitude of the whole area.
 - **int zoneAmountLon** - number of longitude-wise zones.
 - **int zoneAmountLat** - number of latitude-wise zones.
 - **int areaAmountLon** - number of longitude-wise areas.
 - **int areaAmountLat** - number of latitude-wise areas.
-

There are **zoneAmountLon * zoneAmountLat** elements following the header. Each element has 5 bytes representing these values:

- **bool somethingIn** - which is true when there is anything in the given zone and 0 if there is nothing.
- **int offsetZ** - offset - gives the position of the areas from the start of the file.

To find the right element you count the offset like this:

$$\text{Offset} = (\text{zoneLonIndex} * \text{zoneAmountLat} + \text{zoneLatIndex}) * \text{packetSize} + \text{headersize};$$

where the **packetSize** is 5 bytes and **headersize** is 72.

After all of the zone elements, there are blocks of **areaAmountLon * areaAmountLat** for each zone which had **somethingIsInZone** set to true. Once again there are 5 bytes elements this time corresponding to the areas:

- **bool somethingIn** - which is true when there is anything in the given area and 0 if there is nothing.
- **int offsetA** - offset - gives the position of the ids of pipes inside from the start of the file.

To find the right offset of the area element you want to read you'll count it like this:

$$\text{Offset} = \text{offsetZ} + (\text{areaLonIndex} * \text{amountsOfAreasLat} + \text{areaLatIndex}) * \text{packetSize}$$

where the **packetSize** is 5 bytes.

If **somethingIsInArea** was true, you can find the data about the cell at **offsetA**

The data have this form:

- **int length** - number of ids that will follow.
- **int ids** -- an id of the utility line going through this area. (There is a length amount of them).

In case you do not know what your zone and area indexes are, you can get them like this:

```
zoneLonIndex = Math.Floor(((YOURLONGITUDE - fromLongitude) / meterLongitude *  
    zoneSizeInMeters));  
zoneLatIndex = Math.Floor(((YOURLATITUDE - fromLatitude) / meterLatitude * zoneSizeInMeters));  
zoneFromLon= fromLongitude + (LongitudeIndex) * (meterLongitude * zoneSizeInMeters);  
zoneFromLat = fromLatitude + (LatitudeIndex) * (meterLatitude * zoneSizeInMeters);  
areaLonIndex = Math.Floor(((YOURLONGITUDE - zoneFromLon) / meterLongitude *  
    areaSizeInMeters));  
areaLatIndex = Math.Floor(((YOURLATITUDE - zoneFromLat) / meterLatitude * areSizeInMeters));
```