



Network Geolocalisation System

# i-geo



Inpal

A new decree project targeting the improvement of accurate network location for sensitive installations and securing its safe delivery is on the drawing board in Europe.

In this specific context, **we offer a reliable location system for district networks :**



→ **Accurate** : Use of RFID microchips (Identification via radio-frequency)

→ **Simple** : Implementation of unique plastic location buoys in various key points.

→ **Lasting** : Reliable and robust system resistant to extreme outdoor conditions.

→ **Complete** : Complete service offered by INPAL.

## STAGE 1 : Description of the requirements

The specific network information is gathered and integrated to each plastic location buoy.

**The buoys can inform the following :**

→ **Network location**

→ **Specific components of the network**  
(bends, tees, valves, burrows)

→ **The depth where the pipes are buried**

→ **Various strategic locations**  
(ex : crossing with other utilities such as gas, water or data telecom)

## The location of your

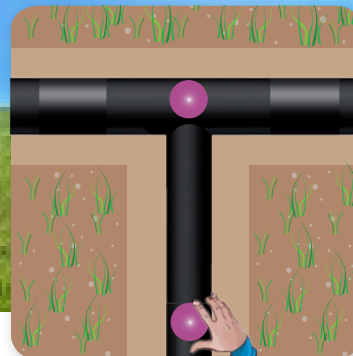
1

Data gathering for recording and solution proposal



2

Creation of data fields and recording. Installation of the buoys in strategic areas



## STAGE 2 : Programming and positioning of the location buoys

### Memory

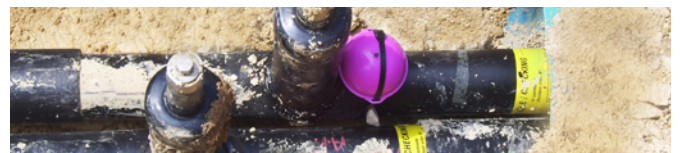
- Unique identification number
- Memory reinscriptable >1000 times
- Data retention = 100 years
- 6 labels + 6 descriptions
- Autonomous : no power supply required

### Writing, reading and depth

- Writing available up to 45 cm distance with the assistance of a detector
- Reading available up to 2,80 m maximum

### Environment

- Anti-freezing liquid with no environmental impact



The buoys are positioned by our team on site directly on the pipes in various **strategic points**, which have been previously defined with yourselves.

The buoys are **fixed with adapted accessories**, thus guaranteeing their position after backfilling.

## STAGE 3 : Data recording



Detector ↔ GPS

Data recording necessary to the network location is carried out by our team on site with a **GPS associated to a detector**.

After positioning the buoys, the following data can be retrieved :

- Geographical coordinates of the buoys (Longitude and latitude)
- Depth
- Unique identification number
- Other data already programmed in the buoy

- Nominal diametre
- Pressure
- Fluid temperature
- Date of service
- Application type (heat, steam..)

## network step by step

3

Data recording on GPS assisted by a detector



4

Data transfer and processing via Google Earth or any CAO software



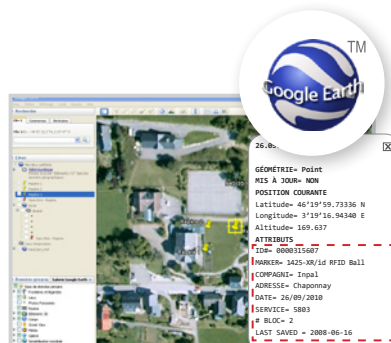
## STAGE 4 : Data processing and storage

Once the bouys are preset and the data collected, it is therefore possible to :

→ **Realise the «as-built» drawing** with the assistance of the CAO software type Autocad.



→ **Import the data in Google Earth** in order to easily visualise the network routing.



→ **Save the whole data** in order to set up a database for every network.

	A	B	C	D	E	F
1	Name	Site City	LatDMS	Longitude	Lon	
2	Puget1	Everett	48 08 52	48 14 70	123 11 30	
3	Puget2	Lake City	47 51 52	47 08 44	123 37 30	
4	Puget3	Olympia	48 52 59	48 08 31	123 09 52	
5	Puget4	Shoreline	48 36 35	48 03 97	122 54 42	
6	Puget5	West Seattle	47 45 35	47 59 97	122 52 42	
7	Puget6	Seattle	47 51 07	48 51 86	122 75 36	
8	Puget7	Friday Harbor	47 07 07	47 11 06	122 55 36	
9	Puget8	Seattle	48 09 48	48 16 33	123 48 04	
10	Puget9	Sequim	47 74 48	48 24 67	123 08 04	
11						

## ← A Complete service

Inpal Energie offers a bespoke service including :

→ System supply

→ RFID Microship programming

→ Location buoys installation on the network

→ GPS recording and data sending



Options +



**Positioning  
GPS coordinates**  
on a network drawing



Data gathering with  
**Google Earth**



**Secured data storage**  
on database

## ← Advantages

### → A turnkey service

Study • Material • Installation • Maintenance

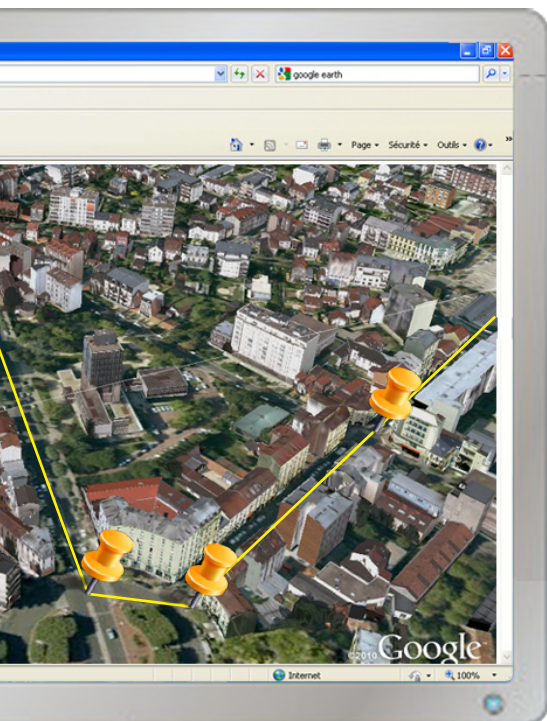
### → Multi data storage

### → A reliable, robust and independent system

- Buoy casing made of Polyethylene
- Power free system  
(activation via the detector)

### → Accurate detection

### → System respecting the environment



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