Harvest Seminar
November 28, 2014, Kuopio, Finland

Situation awareness in environmental monitoring

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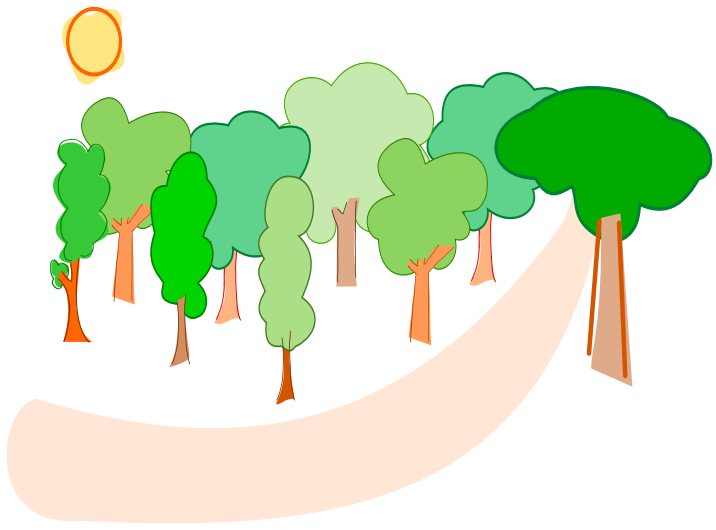

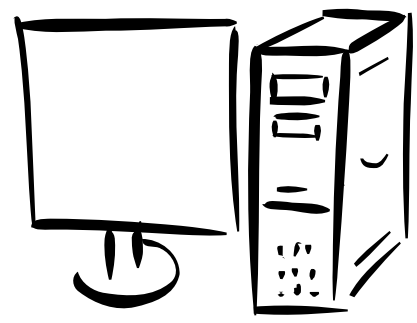

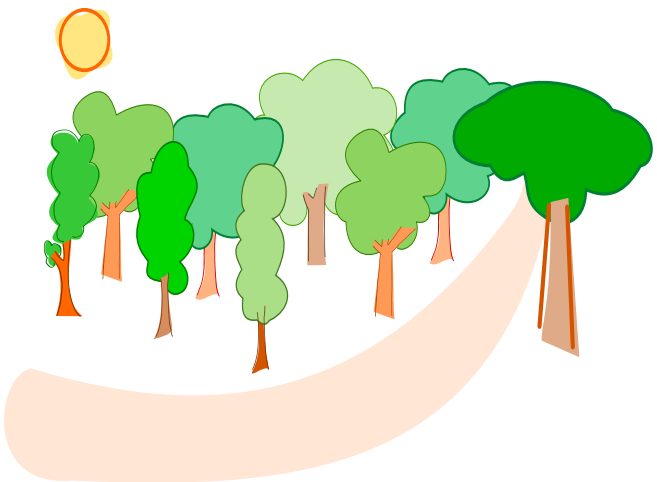

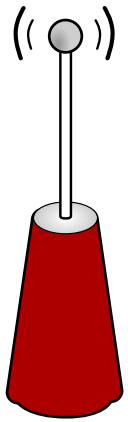

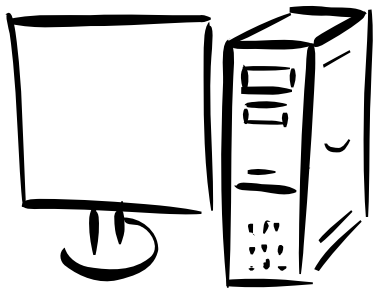

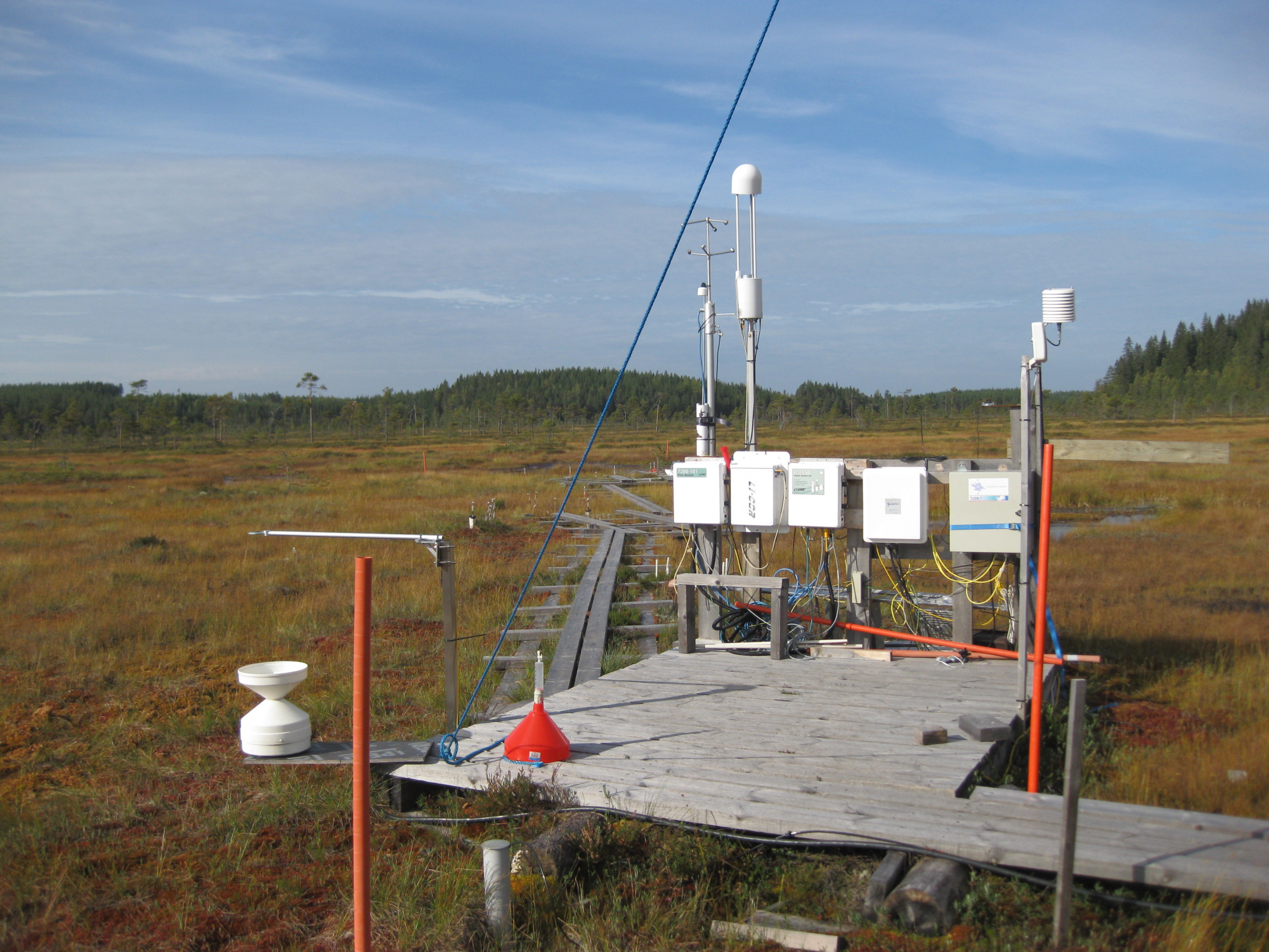

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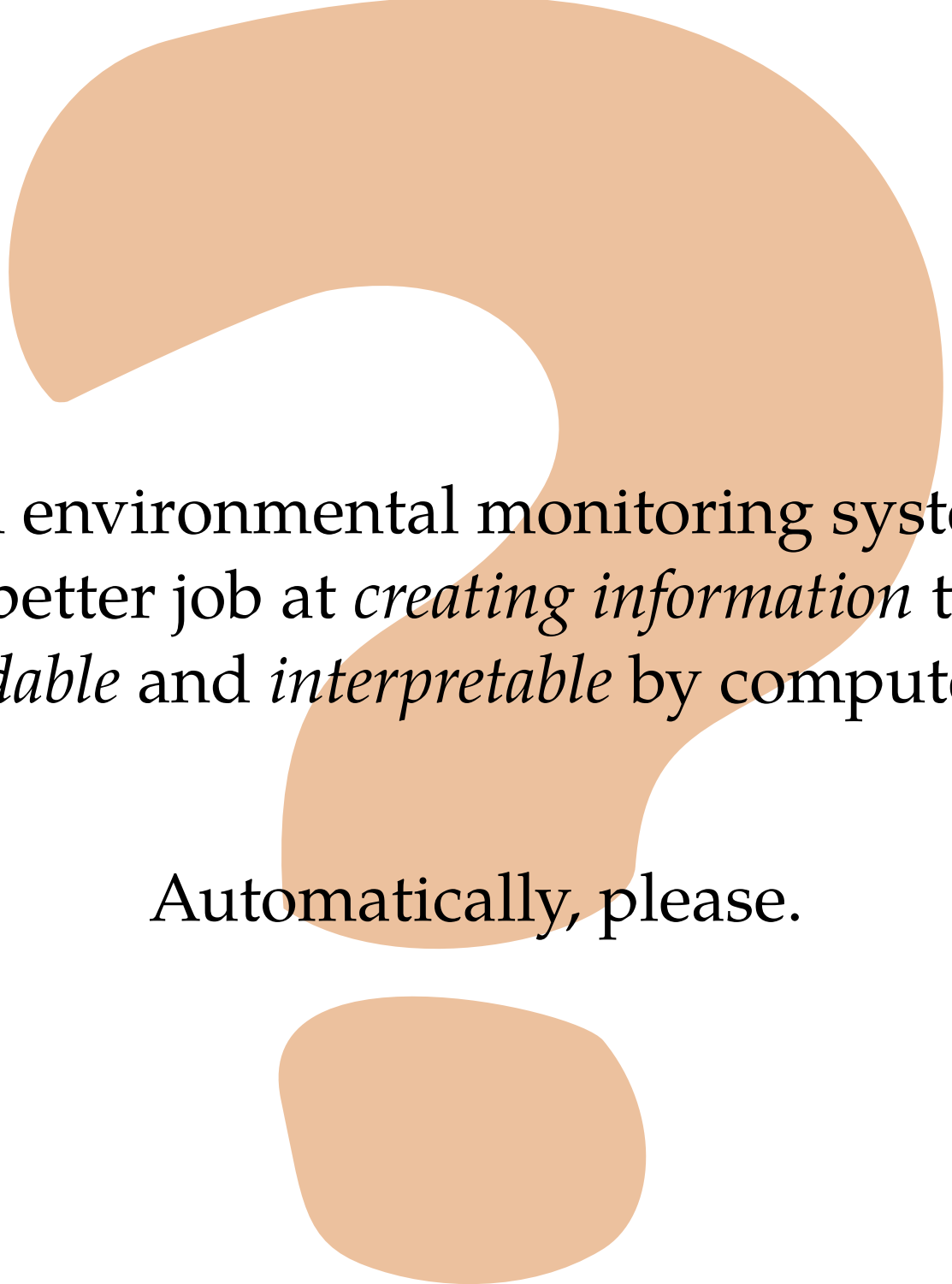


Can environmental monitoring systems do a better job at *creating information* that is *readable* and *interpretable* by computers.

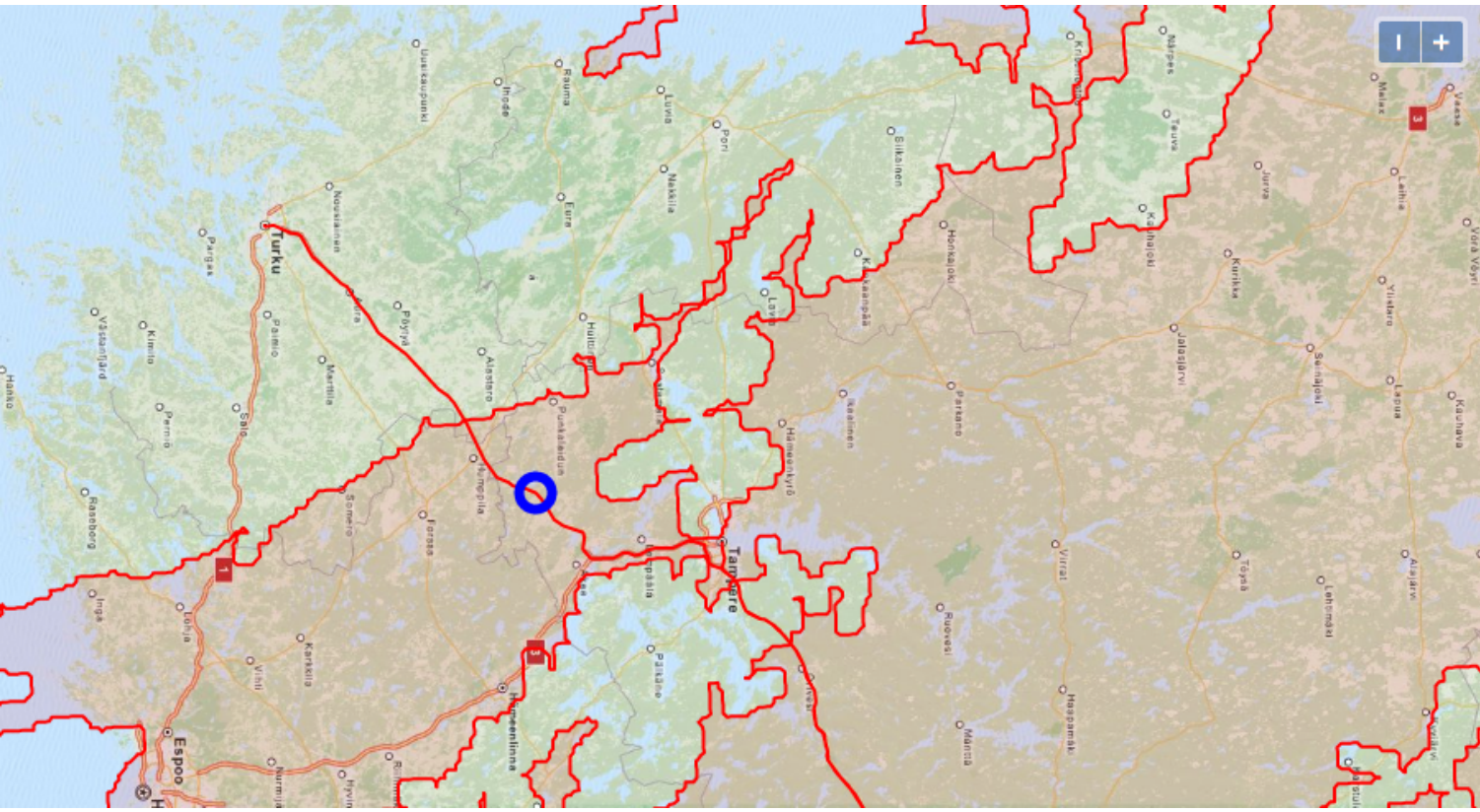
Automatically, please.

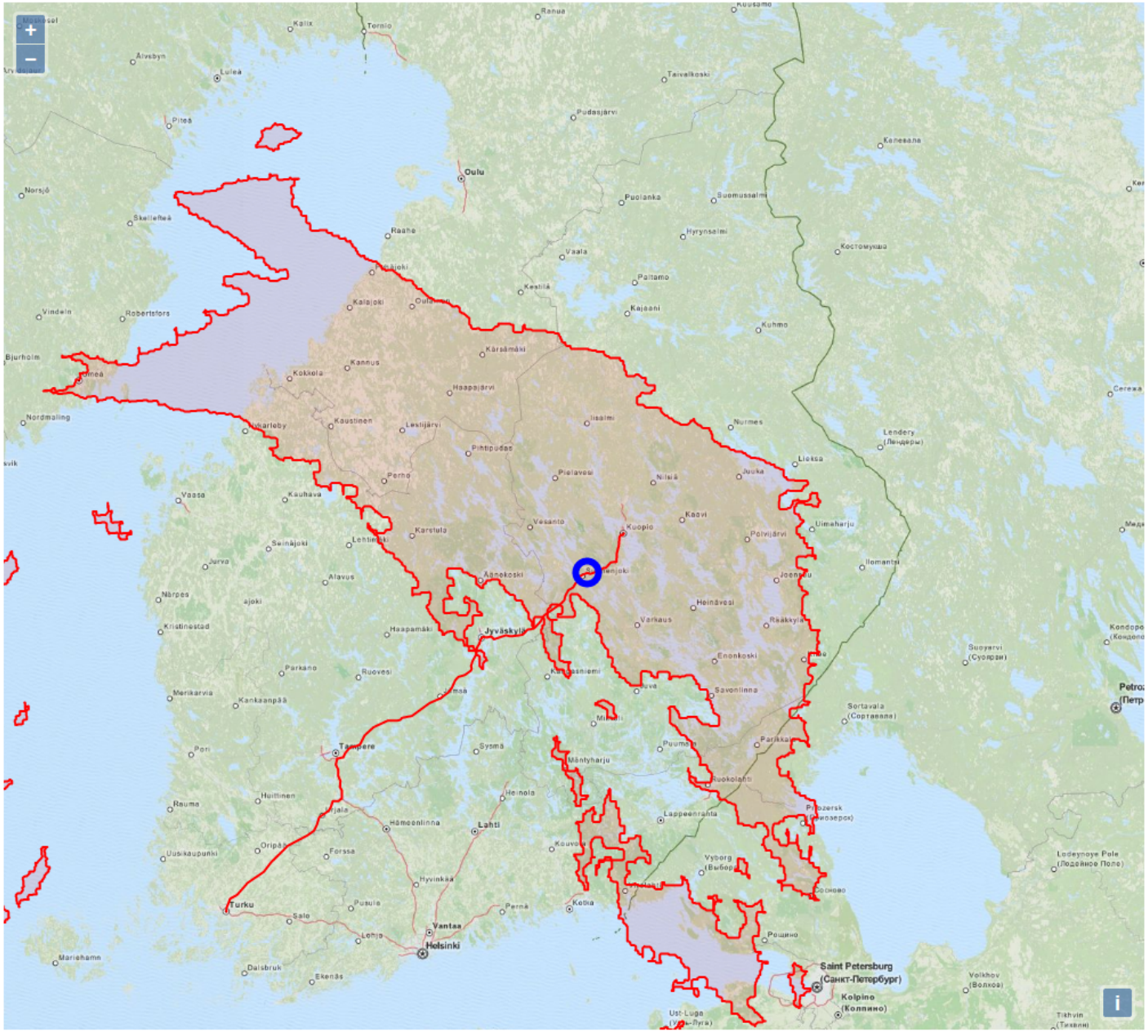
Approach

The recipe

- Get the data from somewhere
  - Sensors, files, database
- Process the data
  - Necessary to achieve anything useful
- Obtain information from data
  - Lot's of ways, manually and automatically
- Write information
  - So that it is readable and interpretable *by machines*
  - Yes, not *just* in a PDF or Word document, or a figure

Example





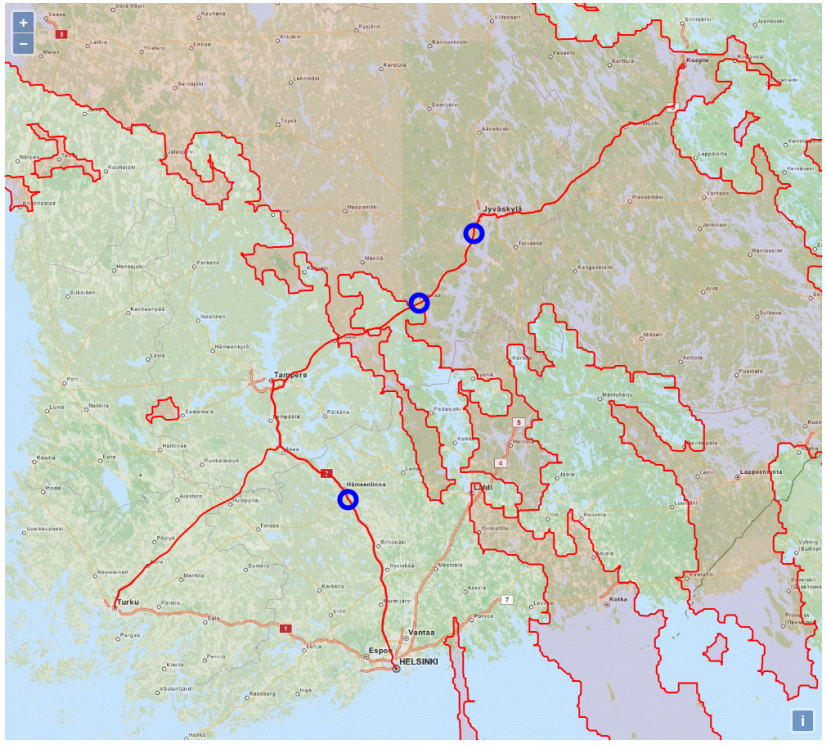
New Direction

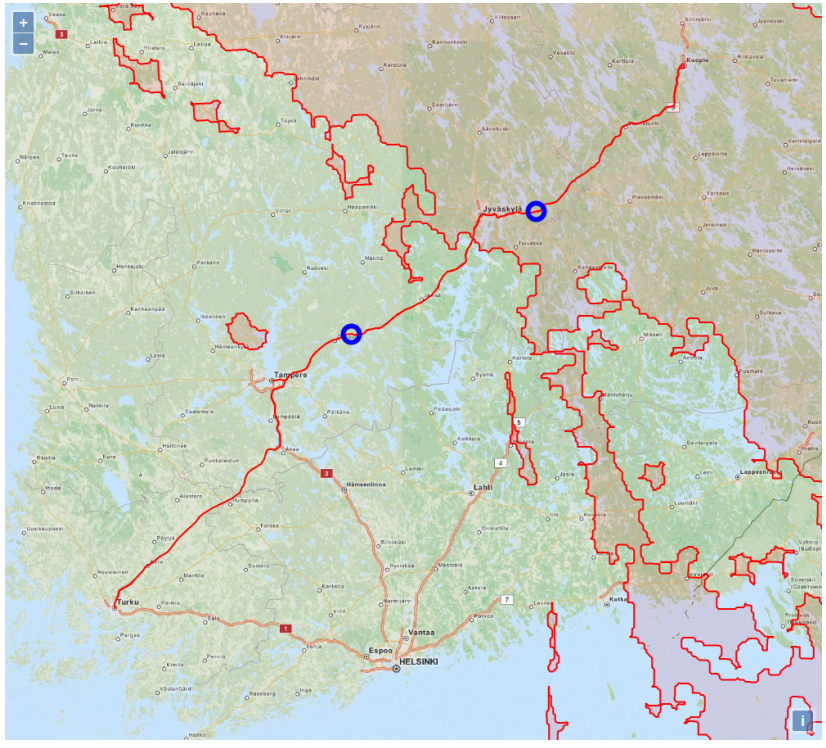
Origin

Destination

Departure time

add clear


Jyväskylä
Tampere
Hämeenlinna
Lahti
Turku
Vantaa
Espoo
HELSINKI
Kotka
Kuopio
Lappeenranta


Jyväskylä
Tampere
Lahti
Turku
Vantaa
Espoo
HELSINKI
Kotka

Query situations

```
a Situation [
  storm-at ;
  [ location ?location1 ] ;
  [ inXSDDateTime ?time1 ] ;
  [ hasArea [ hasAttributeValue [ attributeValue ?area ] ] ]
]
a Situation [
  driver-at ;
  [ location ?location2 ] ;
  [ inXSDDateTime ?time2 ] ;
  [ direction [ location ?direction ] ]
]
filter (?time1 = ?time2)
filter (inside(?location2, ?location1))
```

Take aways

- Increasing role of sensors and computers in scientific processes
- A lot more data and complex data management and processing
- Systems should automatically create information
- Information should be readable and interpretable by computers