PRAGMA12 Working Group Breakout, Telescience Working Group

Sensor Network for Weather Forecast

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Background

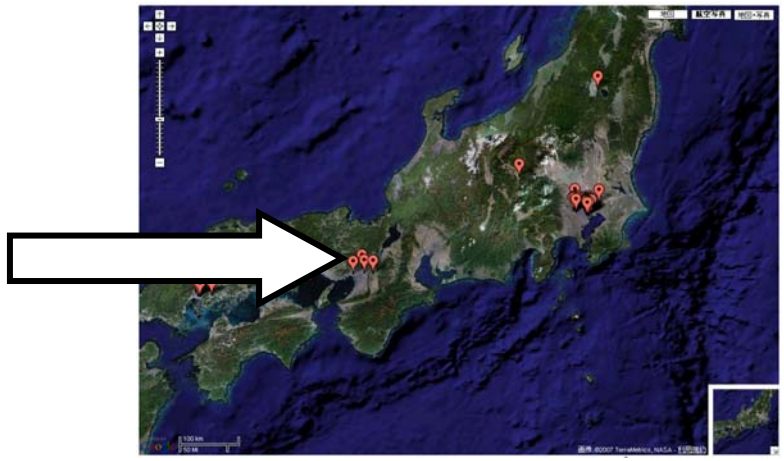
- AMeDAS : 1200 points(1 point per 20km²)
  System of Japanese Meteorological Agency

- Limits of number of sensor that
  one organization can set up

- Low cost Weather Station
  & Constant connection to the Internet
  → Grass-roots Weather Network

Weather Network

- Ex) LiveE! Project
  - One of the grass-roots weather network



But

- System management of a long term
  - Running / Maintenance Cost
  - If no one manages the server..

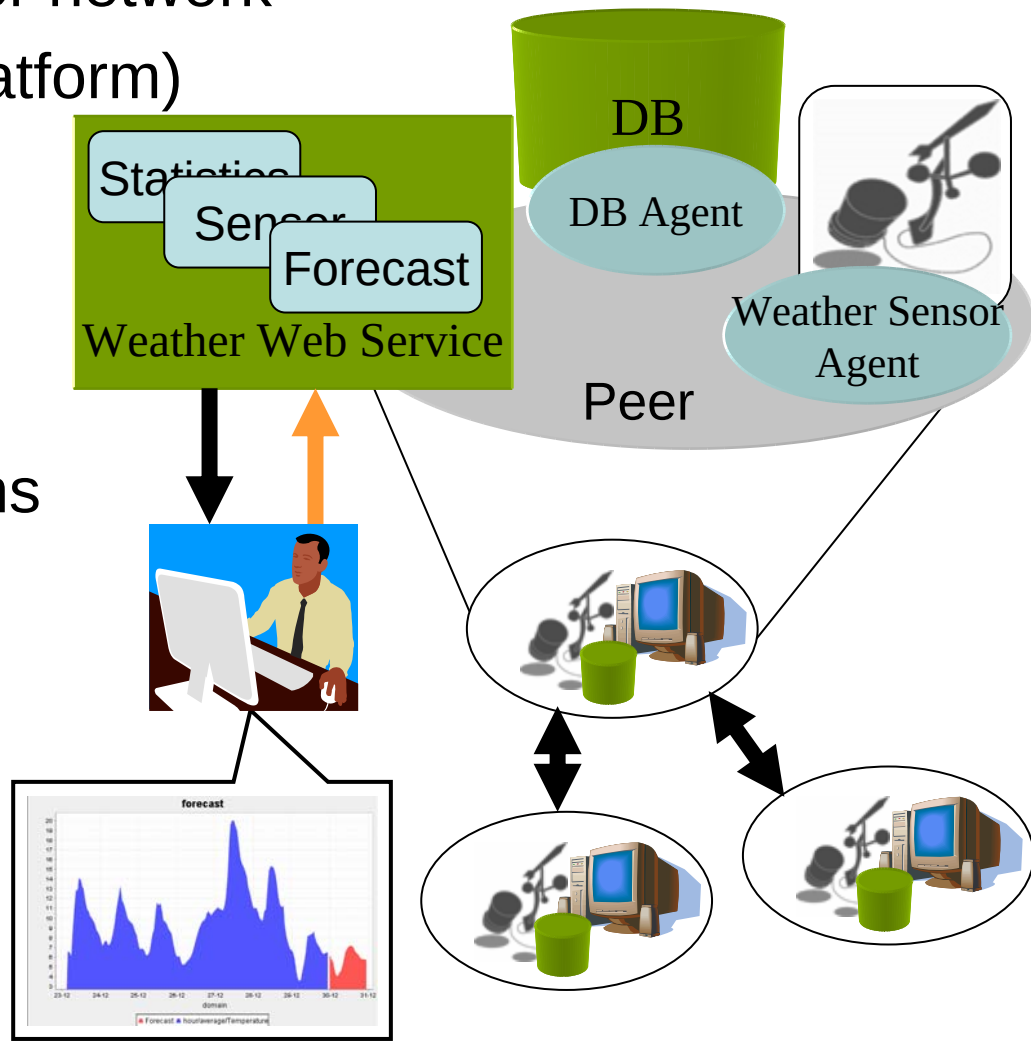
⇒ Peer-to-Peer Weather Observation System

System

- Prototype of P2P weather network
- Use PIAX (P2PAgent Platform)
  - Location based overlay network
  - Powerful Mobile-Agent

- Each peer has 3 functions
  - Sensor
  - Storage
  - Application

a necessary for the system



Weather Application

- How utilize Mobile-Agent at this System?

  Ex) The weather forecast by time series analysis

  - Distributed processing by agent dispatch
  - Dispatch user's original agent

Summary

- Prototype of decentralized weather observation system
- Suitable time series forecast application for this environment
- Future work
  - Improvement of system reliability, architecture.
  - Data redundancy

    Loss, unexpected value, and mischief