Efficient communication algorithms in wireless sensor networks

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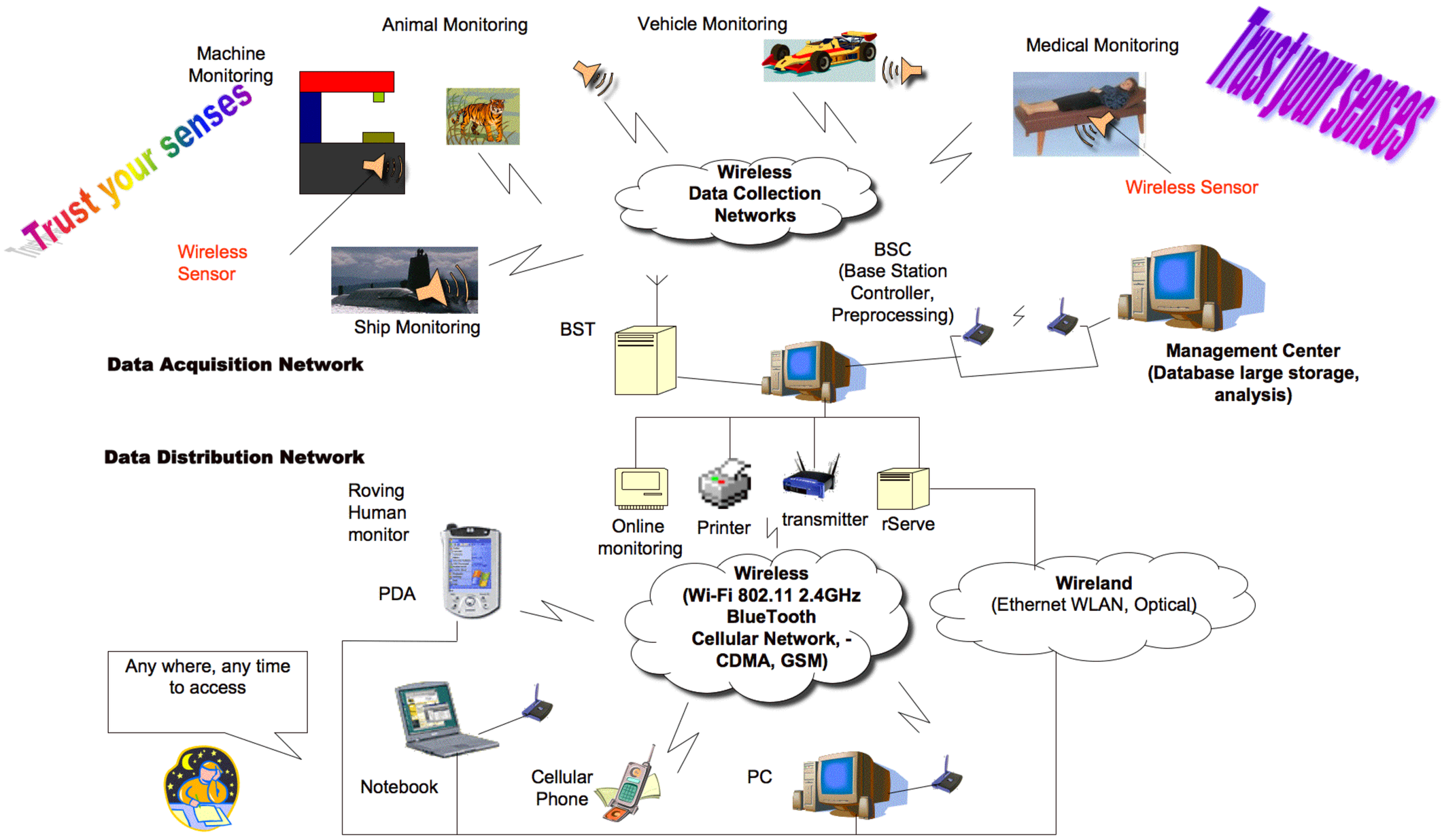
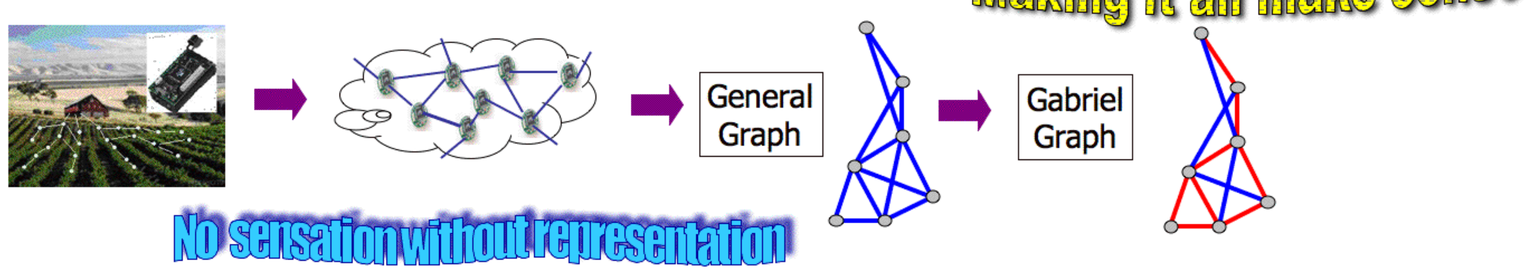
Wireless sensor networks

- Densely deployed wireless sensors
- Small and inexpensive
- Limited memory and power
- No fixed infrastructure
- Sense physical quantities
- Monitoring and controlling



Different types of wireless sensors

Modelling sensor networks



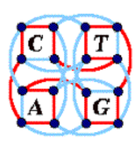
Algorithmic communication problems

Routing Problem

One-to-one: A sensor has a message to be sent to another particular sensor in the network.

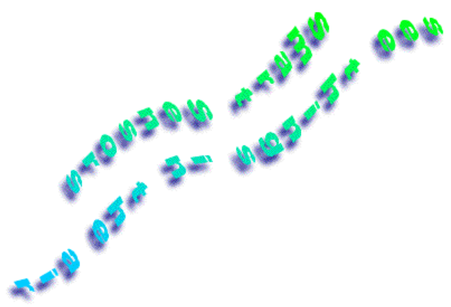
Broadcasting problem

One-to-all: A sensor has a message to be sent to all the other nodes in the network



Gossiping problem

All-to-all: Every sensor has a message to be sent to all the other nodes in the network



Credits to: http://www.microstrain.com/wireless-sensors.aspx

http://arri.uta.edu/acs/networks