

Smart Cities Pollution Monitoring

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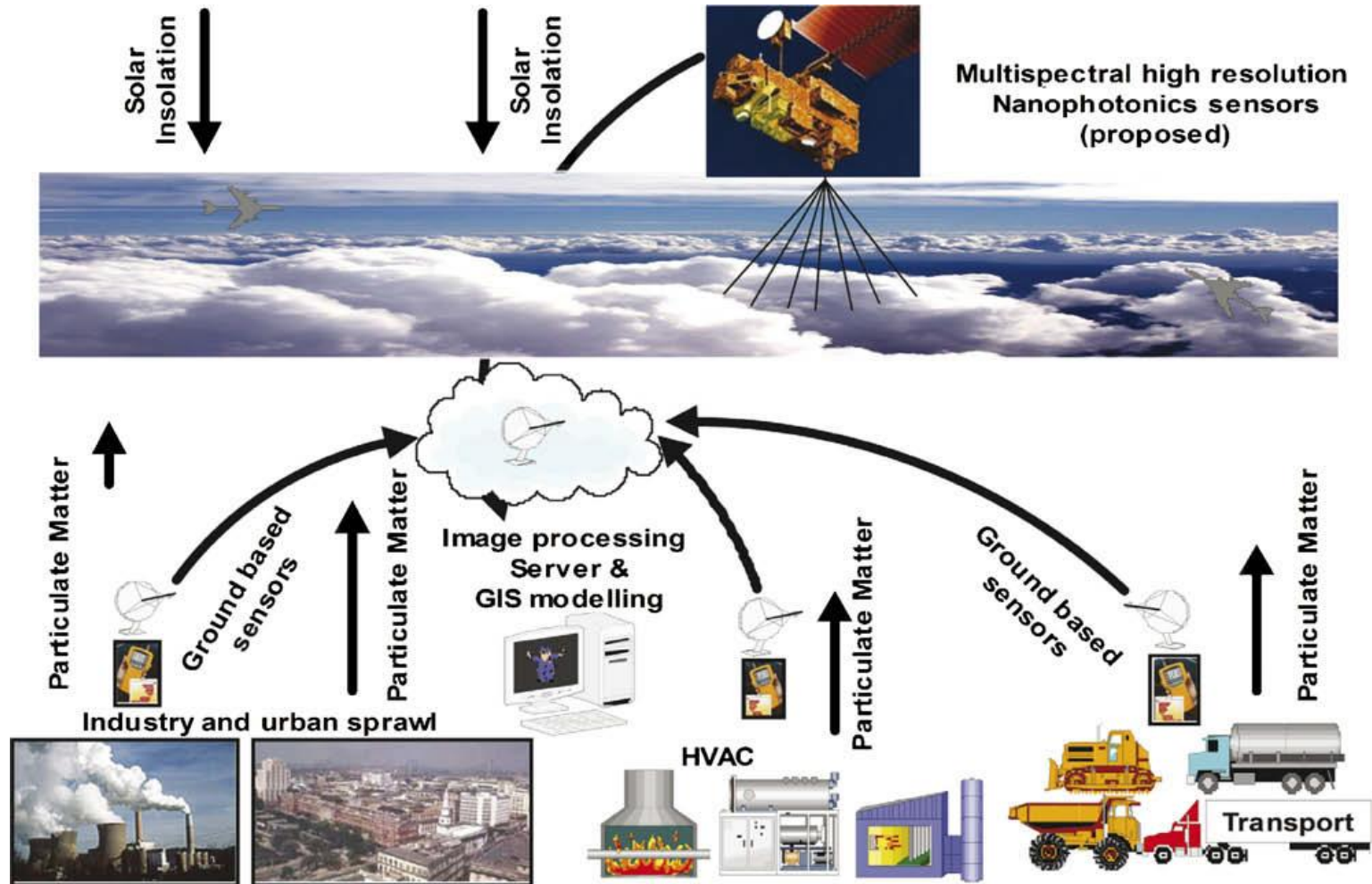
Cape Town – South Africa

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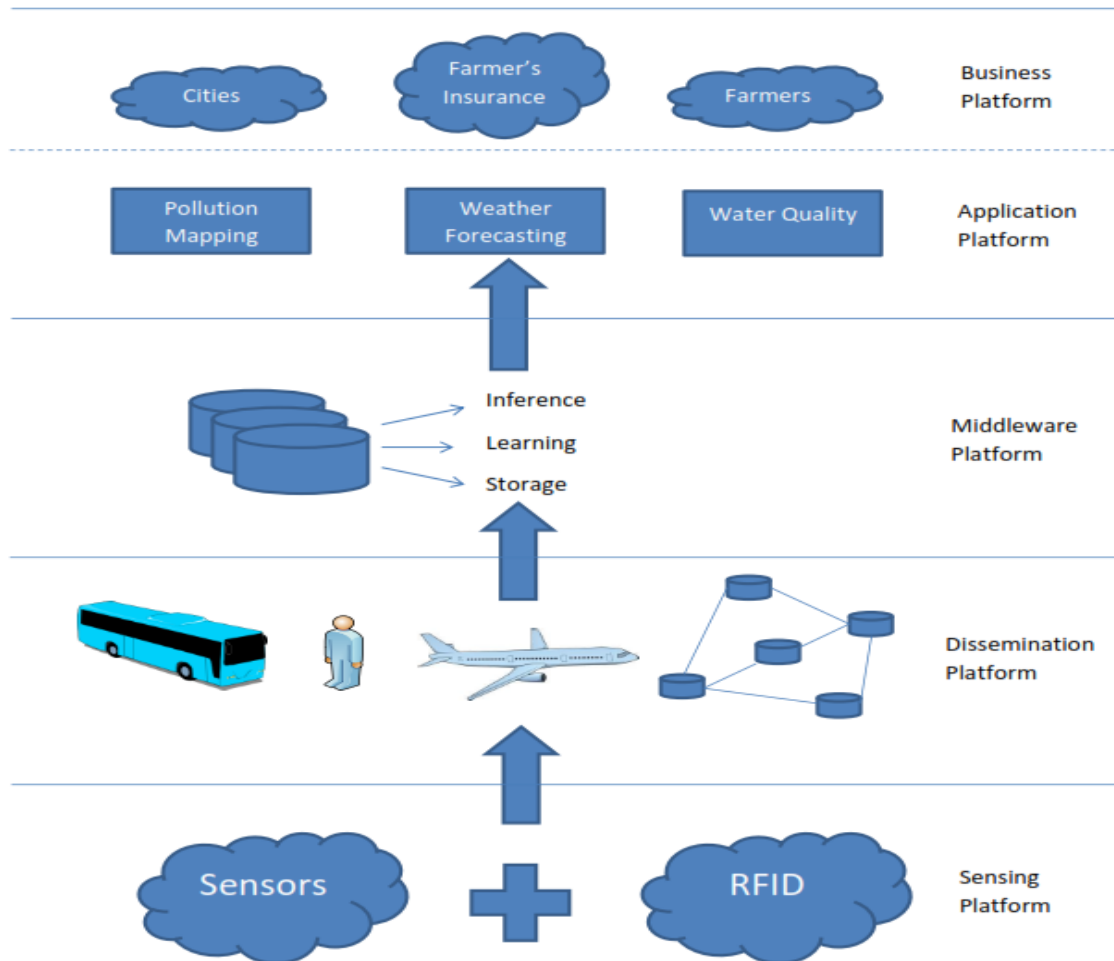
The Air We Breathe Might Be Polluted



A Potential Solution ??



Pollution Monitoring Framework



Types and Applications

❖ Pollution Monitoring types:

- Air Pollution
- Water Pollution
- Noise Pollution

❖ Pollution Monitoring Applications:

- Cyber-healthcare: Healthy Living Areas
- Under-ground Mining: Toxicity Monitoring
- Green House Monitoring: UWC
- Many others

Student Tasks

❖ Sensing Layer: Prototyping and Sensing

- Prototyping the break board for Air Pollution
- Prototyping a IoIo board for Gaz sensors
- Sky Pictures capturing using Drones

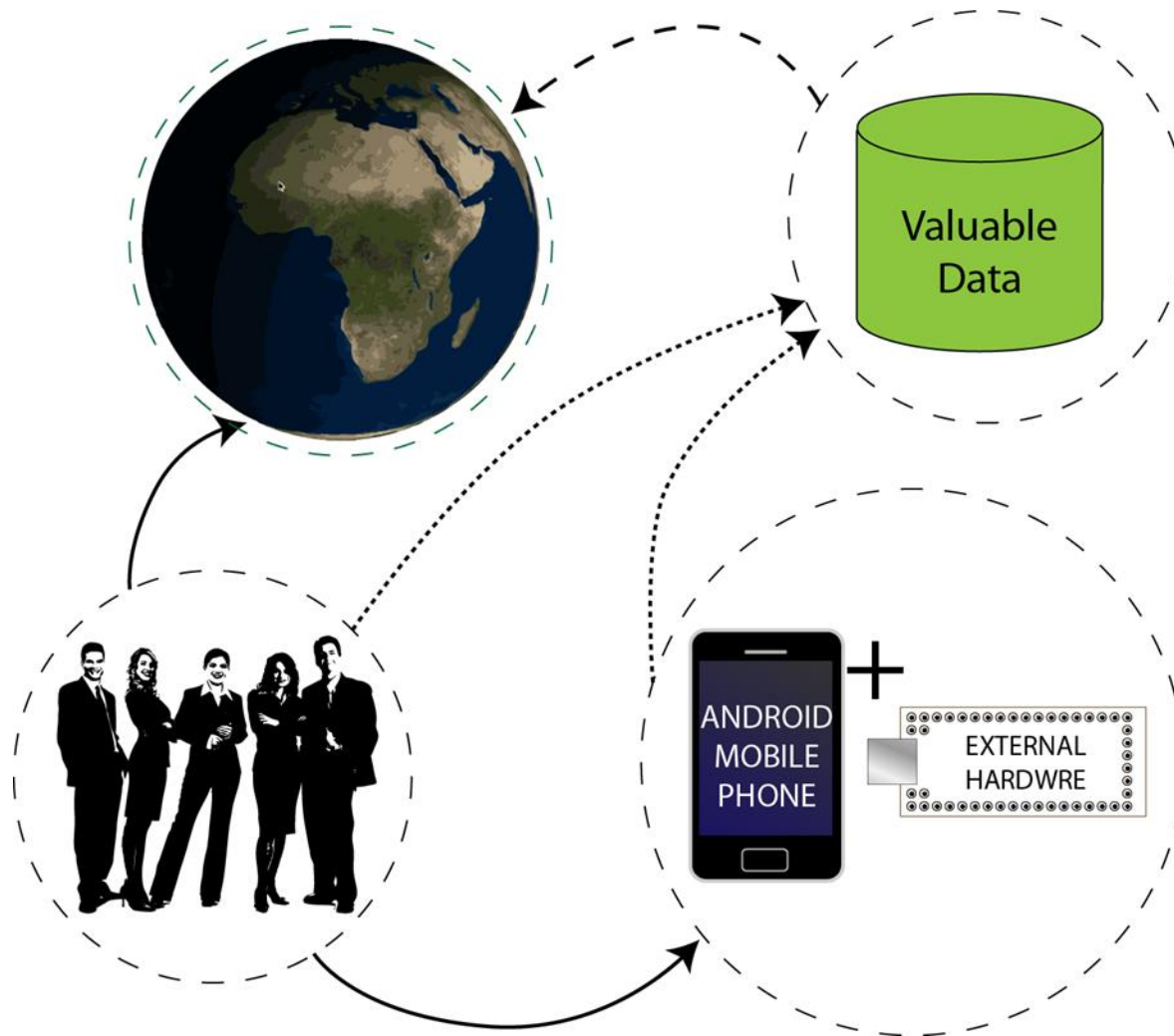
❖ Networking Layer: Network Selection

- Network selection between WiFi and bluetooth
- Delay-tolerant Forwarding to the Cloud

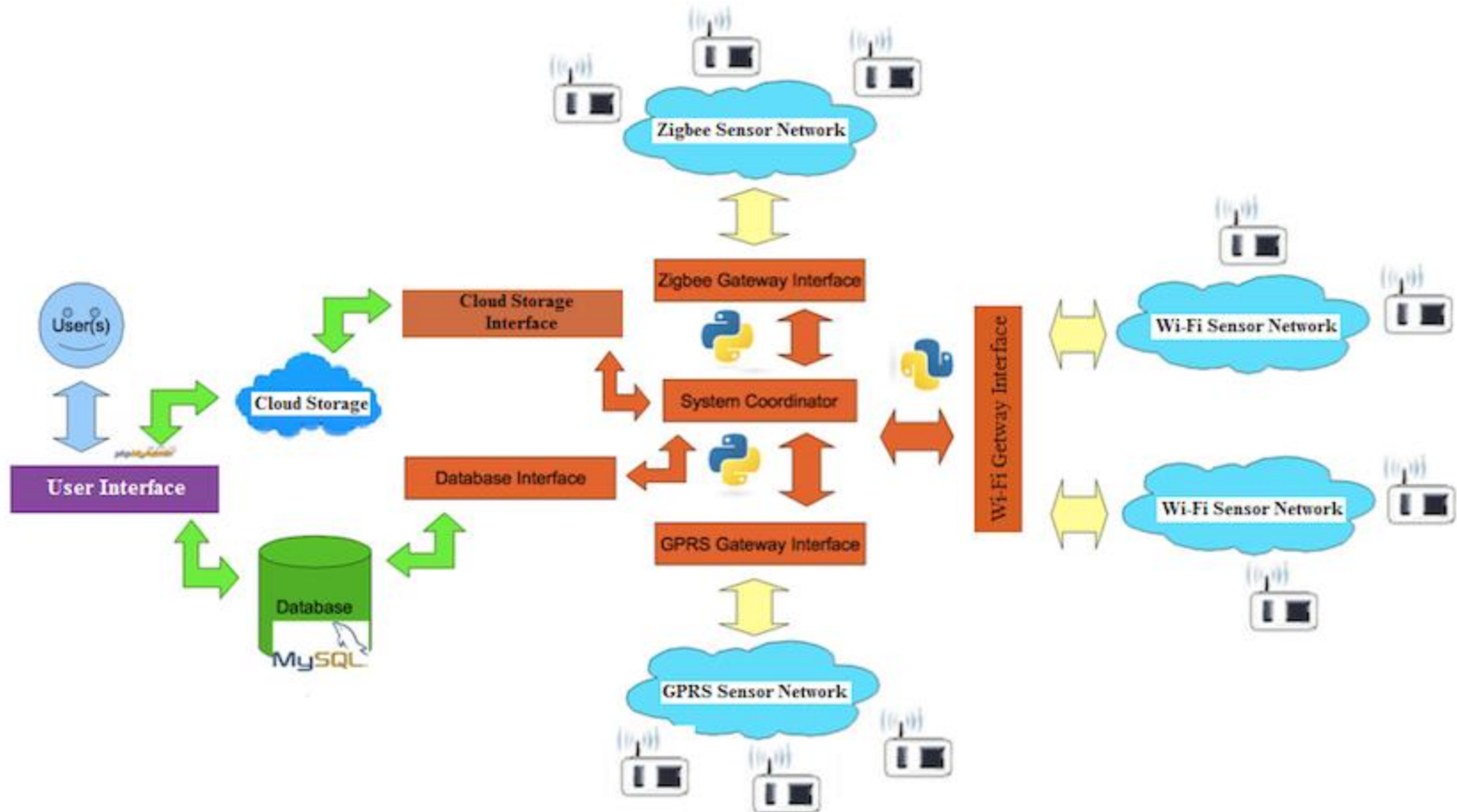
❖ Middleware Layer: Situation Recognition

- Cloud Systems Design using Open Stack
- Machine-learning based Situation Recognition
- Image Processing based Situation Recognition

Expected Results



Expected Results



Expected Results: City Monitor

