

Wireless Sensor Networks for Industrial Processes

Trevor York – University of Manchester

The Long-term Vision

● The ability to “scatter” large numbers of small capsules with wireless communications capability into industrial processes such that they can sense their environment, broadcast the results to a host computer and respond to commands to influence the process.

- *Generic interest to industry with significant potential benefit*

Aims of the Project :

● Generic : to establish a leading position for the UK in addressing the long term challenges in establishing wireless sensor network technology for interrogating industrial processes

● Specific : to deliver a demonstrator that promises significant benefit

“Storage and Granular Flow in Hoppers” – *realistic and challenging*

The Team

- **University of Manchester**

Sensing, Imaging and Signal Processing group

Trevor York

Microwave & Communication Systems group

Andrew Gibson, Peter N. Green, Peter R. Green, Rob Sloan

Satake Centre for Grain Process Engineering

Colin Webb

- **From the grain processing industry :**

Cargill – *silos for trials, support staff, consultancy*

Satake - *consultancy*

- **From the wider industry :**

Nexia Solutions (BNFL) – *hoppers and infrastructure for trials*

Phoenix Inspection Systems Ltd - *consultancy*

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both human and animal consumption.

Cancer fears

He is alleged to have tried to sell durum wheat, used in the manufacture of pasta, which was contaminated with a naturally occurring mould or fungus called ochratoxin, created by storage in unsuitably hot or humid conditions.

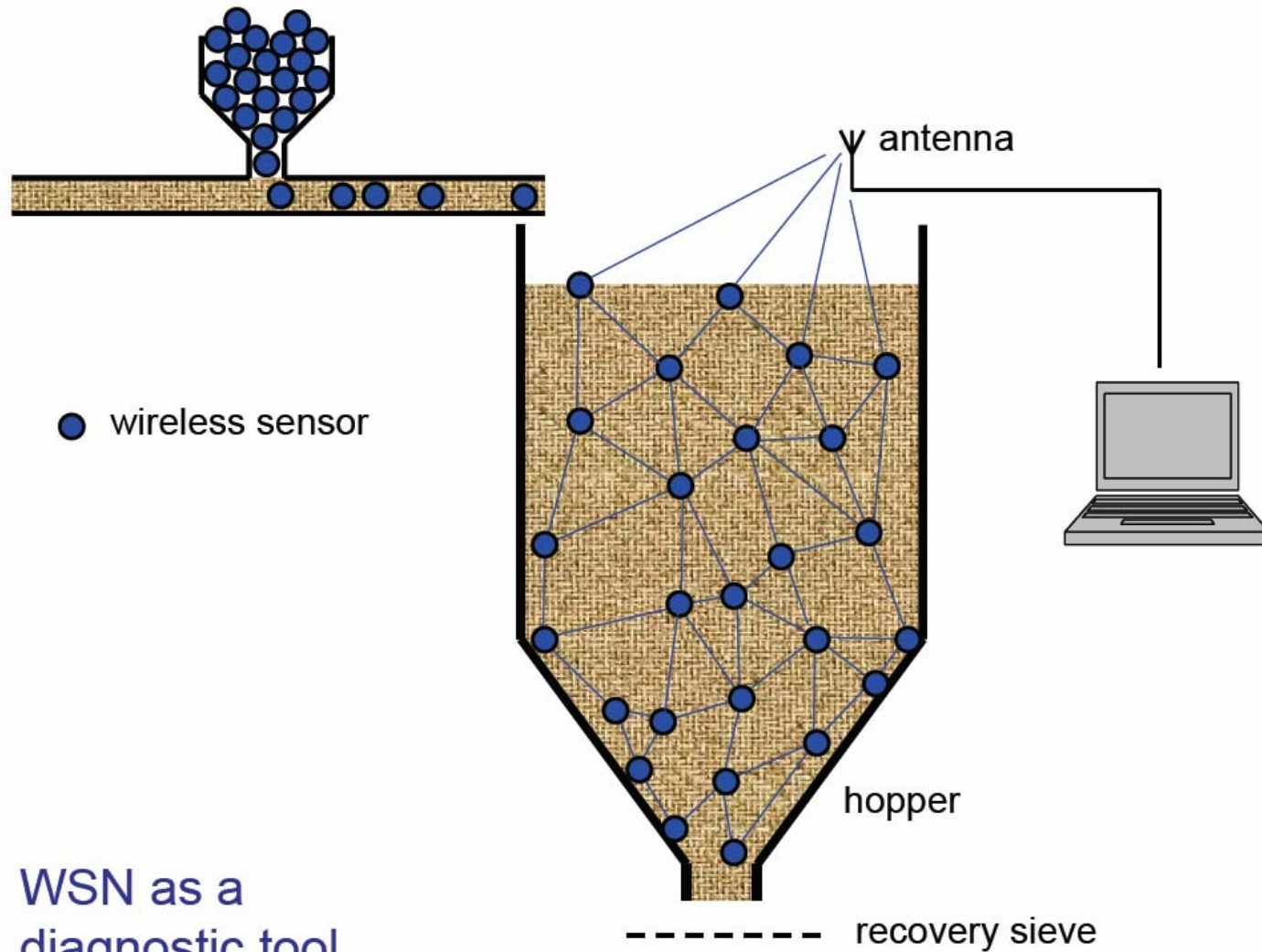
Police allege Mr Casillo's company imported a shipload of Canadian-grown durum wheat seized by authorities in Bari last year after laboratory tests showed toxic contamination three times above the level permitted under EU rules.

Police said ochratoxin was present in quantities likely to cause the growth of cancers in consumers of pasta made from this consignment of wheat.

Mr Casillo is alleged to have attempted to mix the durum wheat with other uncontaminated grain.

Mr Casillo's family company has so far made no comment on the arrest of its managing director.

Schematic



WSN as a
diagnostic tool

Industrial Trials



*Morton Laboratory
University of Manchester
On-going throughout project*



Final trials



Final trials

Status

- **3 year project**
- **Currently recruiting**
- **Start Date : October 1st 2006**
- **Web-site – imminent**