# Peter Hopton

Innovator in the Field of GreenIT Technology

# Areas Covered

- My Definition Of Green IT
  - Eco Efficient ICT
  - Smart ICT
  - Ecological & Materials Sustainability
- Innovation on the Desktop PC estate
  - BroadLeaf Design Methodology
  - PecoBoo Technology
- Innovation in the Server Room
  - Iceotope Technology

# BroadLeaf

- Establish A design methodology to minimise CO2 emissions both in manufacture and use.
- Produce a desktop PC that is both high performance, efficient and environmentally friendly.

BroadLeaf™

# What Can We Do Today To Make Green IT?

- Reduce size/qty of material
- Reduction of energy consumption in operation
- Turning equipment off/down when not needed
- Maintaining the performance expected from the user
- Use Materials Produced From Renewable Energy
- Eliminate PVC/BFR and other bad Halogens
- Find ways in which IT can reduce carbon emissions elsewhere


Innovation On The Desktop

# PecoBoo

(patent pending)

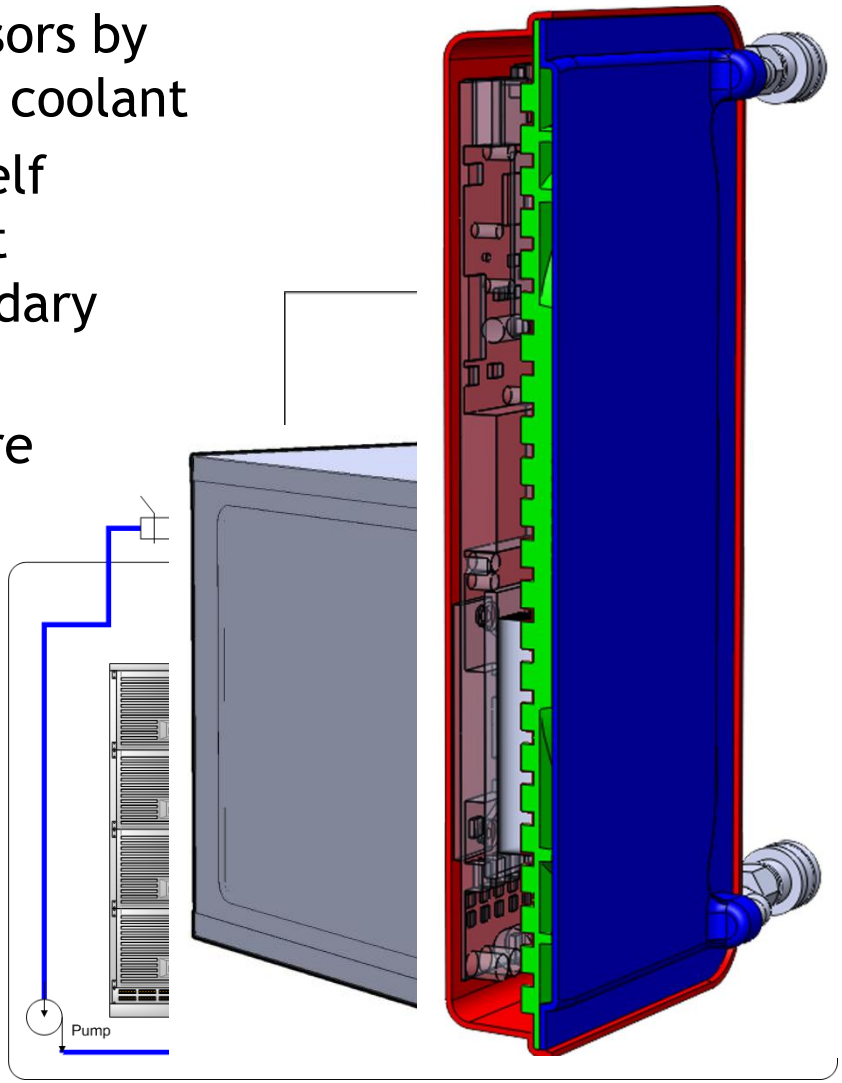
# The Principle of PecoBoo

- Use a Face Detection Algorithm with a low power webcam to determine if a user is present.
- Deactivate devices or enter low standby modes when no user is detected.
- Reactivate devices when a user is detected.
- Run at low frame rate to keep power usage minimal
- Use ‘Double Take’ technology to avoid false positives, but maintain low power use.


iceotope
Innovation In The Server Estate
Iceotope

# Key Technology

- Key is transferring heat from processors by immersing motherboard in ‘primary’ coolant
  - A ‘module’ contains an off-the-shelf motherboard(s) in primary coolant compartment; has separate secondary coolant channel(s)
  - Primary & secondary coolants share optimised heat transfer surface
  - Common ‘secondary’ coolant plumbing in ‘chassis’
  - Multiple shelves in ‘rack’
- Secondary water carries heat to external environment
  - “Free-cooling” by ambient air
  - Just pumps and (final) fan



# Benefits

- To the end-user
  - Chiller-less “free cooling” at high ambient temperatures – 40 to 50ºC
    - 93% reduction in cooling costs (associated carbon reduction)
  - Deploy high density systems
    - 84% reduction in space required
  - Use the most powerful processors (e.g.150W) in high density systems
    - 2.5x “bang per rack”
  - Add computing capacity without chiller CAPEX

# About Us

- A small innovative company in the UK
- Currently supply to UK public sector through partners
- Keen to find partners in the EU
- We’re an ethical company committed to sustainability goals.
- Really interested in helping people reduce CO2 emissions both ‘for IT’ and ‘using IT’