



Rolls-Royce

Industry Opportunities for the GRID in Engineering Design and Product Support

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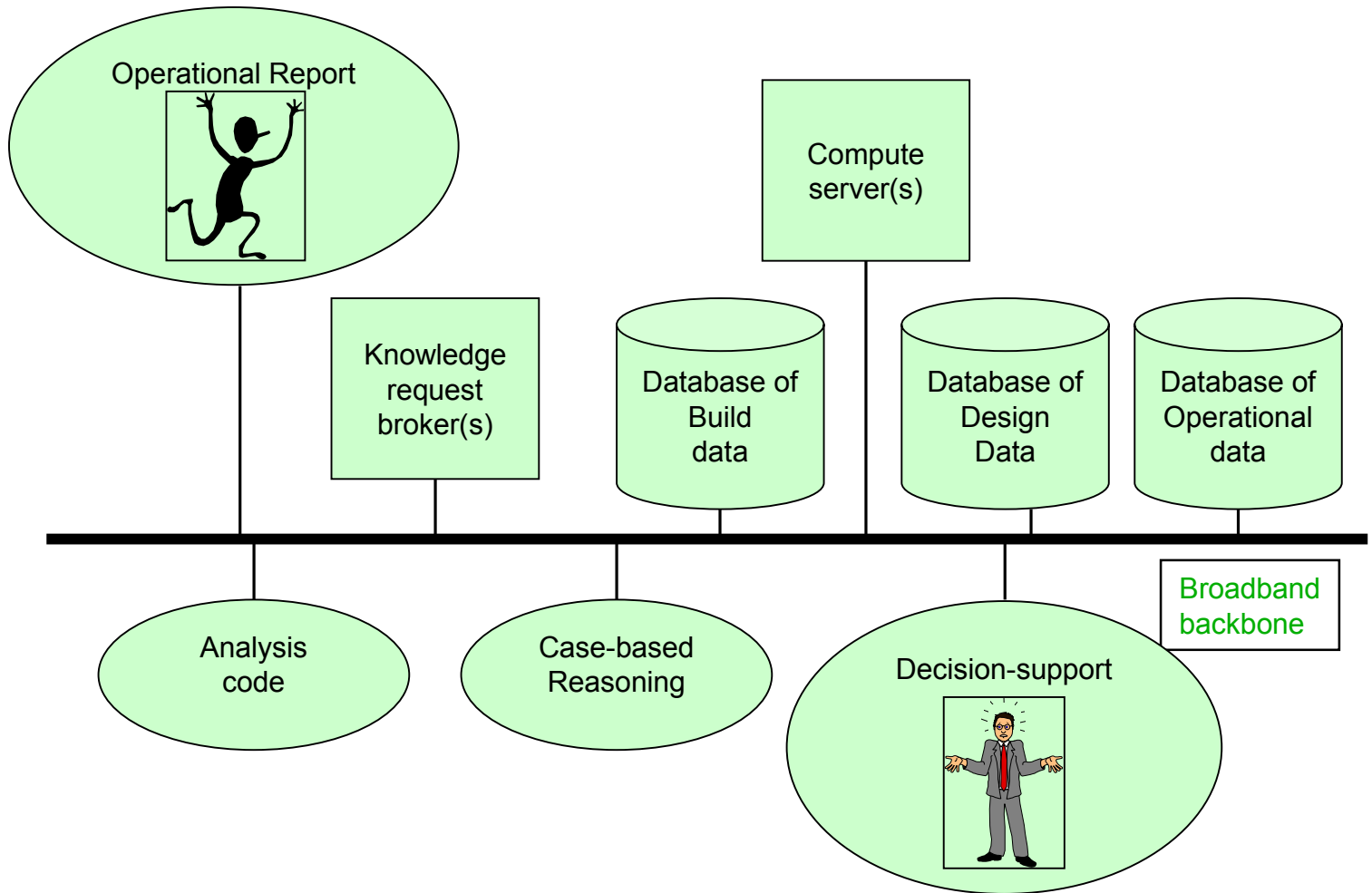
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WhiteRosewhite
29 Jan 03

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What we would like

- **Reduced cost**

- **Access high end services on demand**
- **Protect proprietary methods**
- **Protect proprietary data**
 - ... While facilitating trade

- **Easier maintenance**

- **Modify or add elements without an extensive rewrite**
- **Automate the interfaces between systems in an intelligent way**
- **Avoid point to point code**

- **Easier collaborative working**

- **Access distributed data as though local (design and operational)**

Integration

Between disciplines

mechanical
aerodynamic
cost modelling ...

Between components

compressor
combustor
turbine
whole engine

Minimise testing (~\$1B devt.)

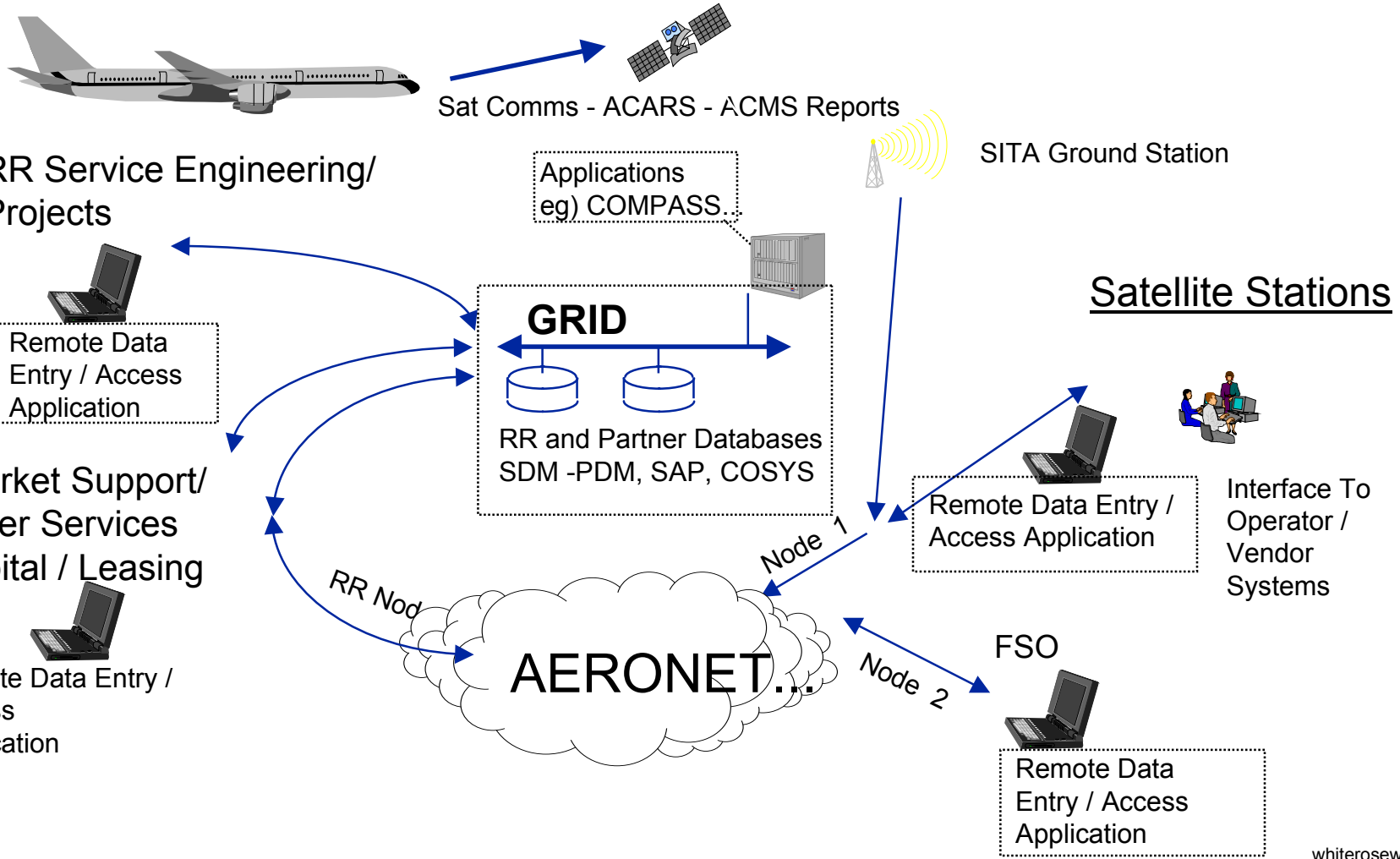
Optimise on new attributes



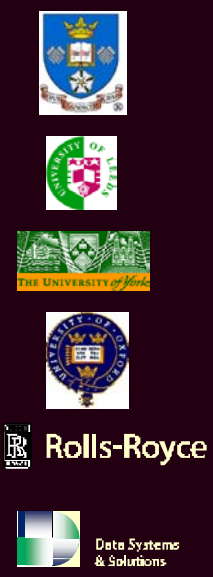
Health monitoring

- **Aim to provide early advice**
- **Answer the challenge of systems which can't be deliberately damaged - people or expensive machines**
- **Builds on two top rated EPSRC funded projects:**
 - **Oxford + RR + Oxford Instruments**
 - Novelty detection
 - **York + others (pharmaceutical)**
 - Data search and retrieval

In service monitoring and support

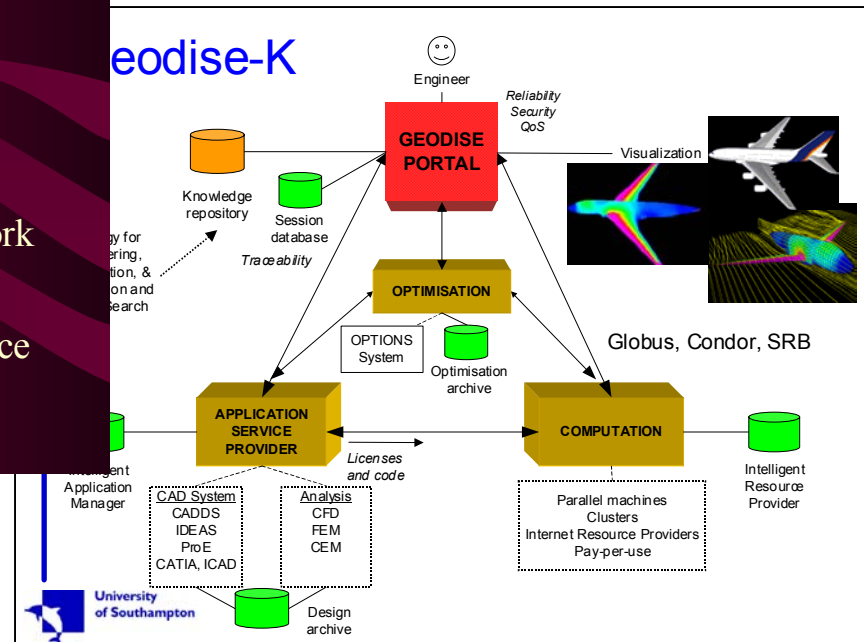


Rolls-Royce evaluation



Distributed Aircraft Maintenance Environment

Presentation Team:
 Jim Austin, University of York
 Peter Dew, Leeds
 Graham Hesketh, Rolls-Royce



Experience so far ...

- **The Research Programme is timely**
- **The Programme has been started up remarkably quickly**
 - **with no perceptible loss of quality**
- **Have achieved the critical mass needed to make good progress**
- **Universities are pleased to have fully funded programmes**
 - **and are working hard to resource the projects effectively**
- **DTI has been helpful at drawing industry attention to the technology and seeding evaluation work**

Issues

- **Security**
- **Charging**
- **Connection to backbone**
- **Timescale**
- **Quality of service**

Spin off

- **Much simpler systems integration**
- **Plug and play software**
- **Intelligent interfaces**
- **Integration within an organisation or partnership**
- **Distributed databases**
- **Distributed compute resources**

What next

- **Commend using the auspices of the DTI to evaluate the Grid. The bigger the scale of the trials the greater their value.**
- **Build partnerships to evaluate inter-company working and widen experience**
- **Congratulations to the White Rose Partnership, the DTI and the Research Councils on an imaginative programme**