Artificial Intelligence Applications Institute

• AIAI is a technology transfer organisation that promotes the application of Artificial Intelligence research for the benefit of commercial, industrial, and government clients

• Based in the leading Artificial Intelligence group in Europe, and one of the top in the world

• Over four decades of world leading research and teaching

• 30 years of innovative applications of Artificial Intelligence
AIAI Key Achievements

• **Formation** - a system to lay out all British Telecom Yellow Pages directories and to create a new business area for Pindar Set Ltd for responsive marketing support and catalogue layout systems. Winner of an award for innovative applications of AI in 1998

• **Expert Provisioner** - a system for the RAF Logistics to assist with procurement of spare parts. Saves £30m per annum for the RAF and subsequently deployed to the British Army and Royal Navy

• **EASE** - system deployed throughout Europe to estimate occupational exposure to hazardous substances for health and safety regulations.

• **Fraud Detection** - Case-Based Reasoning has been applied to screen applications for financial products with MCL Software

• **Ghostwriter** - multilingual support for aero-engine maintenance procedures with British Aerospace and Dassault Aviation (France)

• **O-Plan and I-X** - command, planning and control agents to support non-combatant evacuation operations, US Army military operations in urban terrain, multinational coalition operations, disaster relief, emergency response, Virtual Operation Centres (I-Rooms), etc

• **Optimum-AIV** - planning system for assembly, integration and test of Ariane payloads for the European Space Agency

• **EUMETSAT** - specification of the tele-command system for the European Meteorological Spacecraft Control Centre

• **International Standards** - inputs to the development of standards for process specification, workflow, enterprise modelling, web services, etc
AIAI Technology Areas

- Knowledge-Based Systems: data mining, expert systems, knowledge management, KBS methodology, ontologies
- Planning and Workflow Systems: modelling, task setting, planning, execution, monitoring and coordination of activities
- Adaptive Systems: case-based reasoning: a technique for utilising past experiences and existing corporate resources such as databases to guide diagnosis and fault finding
- Intelligent User Interfaces: intelligent agents, document presentation and argumentation, dynamic creation of content
- Intelligent Virtual Worlds: collaborative workspaces, virtual operations centres, meeting assistants
AIAI Application Areas

- Aerospace
- Petroleum
- Business Intelligence
- Process Support and Workflow
- Logistics and Supply Chains
- Financial Advisory Systems
- Documentation and Layout
- Emergency Response
- Homeland Security
- Bio-Informatics
- Etc.
AIAI Clients & Collaborators


- **AIAI's government agency clients** include:
  - UK: CCTA, DERA, Dstl, Fire Service College, GCHQ, Health & Safety Executive, Health & Safety Laboratory, Office of the Deputy Prime Minister, RAF
  - Europe: ESA, EUMETSAT
  - USA: DARPA, NIST, NRL, US Army, USAF AFRL, USJFCOM, USPACOM
  - Asia: DSTO, NCHC

- **AIAI academic collaborators** include: CMU, Dartmouth College, Edinburgh Parallel Computing Centre, IHMC, Imperial College London, Institute of High Performance Computing Singapore, MIT, National e-Science Centre, Potomac Institute, SRI International, Stanford University, University of Maryland, University of Michigan, USC/ISI, University of Texas
AIAI Types of Work

• Applied collaborative research
• Develop/tailor generic methods, techniques and tools to meet specific application requirements (foreground IPR retained)
• Key achievements, deployments and widespread interaction with industry, government agencies and other organisations
• Technology transfer via contract research projects, consultancy projects, hands-on workshops, continuing education/visitor programmes, application development and other tailored corporate support
• Affiliate Programme for long-term stable relationships
• Study Programme in AI Applications for visitor project support
International Innovation in AI

• More details at http://www.aiai.ed.ac.uk

• Brochures and key achievements at http://www.aiai.ed.ac.uk/i3ai/