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Fifth International Symposium
on Artificial Intelligence,
Robotics and
Automation in Space

iSAIRAS '99

ESTEC, Noordwijk, The Netherlands
1 – 3 June 1999

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iSAIRAS '99

Objectives of the Symposium

Following the four previous meetings held in Kobe (Japan 1990), Toulouse (France 1992), Pasadena (USA 1994) and Tokyo (Japan 1997), i-SAIRAS '99 was the fifth in this series of international symposia. It was devoted to the technology of Artificial Intelligence (AI), Automation and Robotics (A&R) and its application in space. The Symposium took place on 1-3 June 1999 at ESTEC, the European Space Agency's Technology Centre located at Noordwijk in the Netherlands. The main topics covered by the Symposium were:

Artificial intelligence for space systems

- Spacecraft autonomy: Onboard software for mission planning and execution (resource management, fault protection, science data analysis, guidance, navigation and control), smart sensors, testing and validation, architectures;
- Mission operations automation: Decision support tools (for mission planning and scheduling, anomaly detection and fault analysis), innovative operations concepts, data visualisation;
- Design tools and optimisation methods, electronic documentation;
- Artificial intelligence methods (automated planning and scheduling, agents, model-based reasoning, machine learning and data mining).

Robotics and automation for space systems

- Application scenarios (e.g. space base assembly and servicing, external and internal payload tending, satellite inspection and servicing, planetary and cometary exploration, ground processing), programmatic and utilisation aspects;
- Robotics technologies for A&R systems, support equipment, ground segments, mobility, manipulation, end effectors and tools, sensing and robot vision, control, robot-friendly payload design, test and operations;
- Technology for (non-robotic) space laboratory automation, payload control systems, data communications, imaging, user interfaces and telepresence/telescience.

iSAIRAS '99

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