

Java for Flight Software

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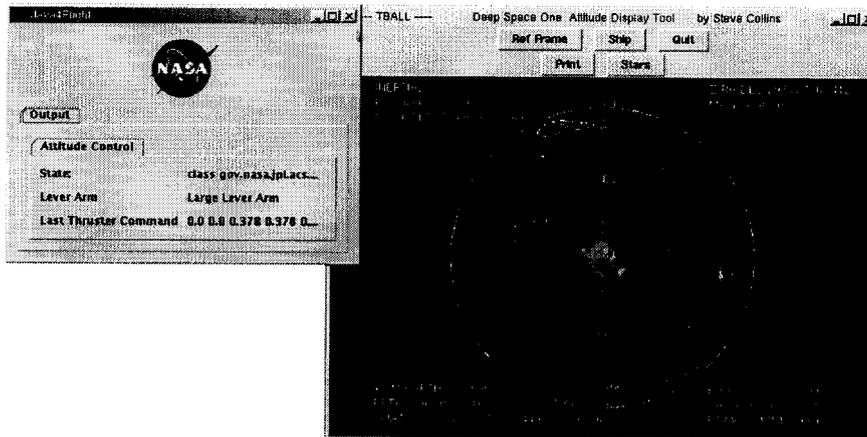


What is Java?

- Java is
 - A modern object-oriented programming language
 - Everywhere, from mobile phones to web servers
- Java allows software developers to be more productive.
- The Real-Time Specification for Java (RTSJ)
 - Extends Java for real-time development



Real-Time Java Prototype Application



- Pure Java detumble implementation based on the Deep Space 1 mission

Advantages of Java

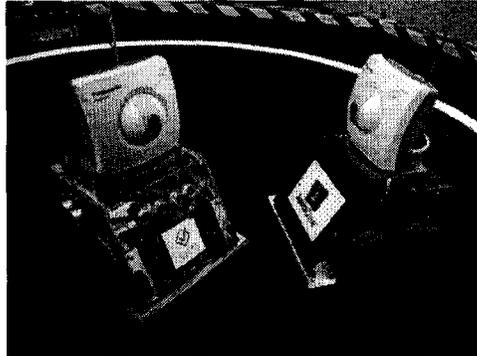


- Java leads to improved software maintainability
- 40% reduction in development costs
- Two-fold increases in developer productivity
- Fewer bugs



Potential Industrial Applications **JPL**

- Real-time control systems for
 - Aerospace industry
 - Automotive industry
 - Manufacturing
 - Embedded devices
- Fault Protection



Current Status **JPL**

- Spacecraft Attitude Control prototype
 - Runs in real-time on a standard Java platform
- Re-usable Java Fault Protection framework
- Units of measure framework available
- Debug on a desktop
 - Deploy on a real-time system
- Currently integrating with the RTSJ
- Partnerships welcome

