

Record of Decision

National Aeronautics and Space Administration

It is my decision to select the proposed action to continue with the preparation for launch of the Galileo and Ulysses missions on the Space Transportation System (i.e., the Shuttle) using the Inertial Upper Stage (IUS) in the October 1989 and October 1990 launch opportunities, respectively.

This environmental impact statement (EIS) was developed to address the redesign of the Galileo and Ulysses missions following the cancellation of the Shuttle-Centaur (i.e., the Centaur G-Prime) in June 1986. Scoping commenced in January 1987 and continued through February 1987 and no comments were received during this period. The Supplemental Draft EIS (DEIS) was made available to the public in November 1987. A total of five (5) comment letters were submitted concerning the DEIS. These responses largely dealt with the possibility of avoiding the Earth fly-bys of the Venus Earth Earth Gravity Assist (VEEGA) trajectory and the need to substantiate the estimate of VEEGA reentry probabilities. In addition, there was one comment which dealt with the fate of the Radioisotope Thermoelectric Generators (RTGs) at the conclusion of the mission.

The alternatives addressed in the EIS (Tier-1) were:

1. Continue with modifications to the Galileo and Ulysses spacecraft to use the Space Transportation System (STS) with the IUS in place of the Centaur G-Prime upper stage and adopting the VEEGA trajectory for the Galileo mission. This will allow the launch opportunity for the Galileo spacecraft in October 1989 to be preserved while conducting detailed safety and environmental analyses, and also will allow the necessary up-front IUS integration activities for the Ulysses launch planned in 1990 to be performed in a timely, programmatically sound manner.
2. Delay the program, including stopping modifications to the spacecraft, until the Safety Analysis Report (SAR) and the additional National Environmental Policy Act related documentation for completion and operation of the missions are completed, precluding a launch of Galileo in 1989 but still allowing a Ulysses launch in 1990 (or 1991 for both spacecraft), and using the STS or the Titan IV launch vehicle configuration.
3. Continue with either the Galileo or Ulysses mission and cancel the other mission.

4. Adopt the no-action alternative, resulting in termination of the further commitment of resources to both missions.

In considering the consequences of the alternatives, it was recognized that there were no direct or immediate environmental impacts resulting from any of the alternatives. The only expected environmental consequences were associated with the launch. The environmental consequences of normal launches have been addressed in the Shuttle EIS and the Kennedy Space Center EIS, and the impacts were deemed acceptable.

The detailed safety and environmental analysis for both missions had begun but were not yet complete. Nevertheless, the environmental consequences of launch accidents were treated in a preliminary way. The preliminary assessment took account of:

1. The early definition of Shuttle accidents and environments;
2. The safety verification test and analysis data base for the General Purpose Heat Source-Radioisotope Thermoelectric Generator (GPHS-RTG); and
3. The Earth avoidance analysis prepared for the VEEGA mission design.

The result of the preliminary assessment was that there was no basis for either terminating or delaying further work at this time, pending completion of the detailed safety and environmental analysis.

Since there were no immediate or direct environmental consequences of any of the alternatives, and since a decision at this time to continue preparations would neither obviate nor preclude a later decision to delay or cancel, the choice among alternatives was made on programmatic grounds.

The proposed action, alternative one, was the obvious choice based on programmatic grounds for the following reasons:

1. Alternative one, to continue modifications, would enable the earliest return of scientific information, avoid disruption of the project, and conserve scarce human and financial resources.
2. The delay alternative would risk the loss of key personnel and add to program cost and risk.
3. The no-action alternative would abandon a sizeable financial and human investment and impede the space exploration effort.

The decision to continue preparations is fully consistent with the mandate of the Space Act to contribute materially, among other things, to the expansion of human knowledge of phenomena in space.

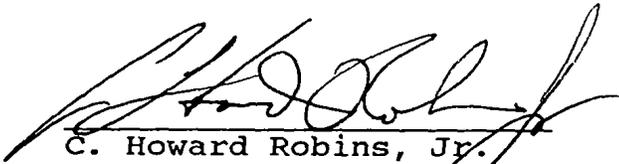
As there are no immediate or direct environmental consequences of this decision, there is no requirement for monitoring or mitigation. For the actual launch of the Galileo and Ulysses missions, NASA will, in consultation with Department of Energy and other Federal, State and local authorities, develop a comprehensive Federal Radiological Emergency Response Plan. The plan will cover monitoring and mitigating activities associated with launch contingencies.



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