



# Evaluation of the Future Air Navigation System (FANS) Oceanic Data Link Communications System

**Objective** Investigate interface-related operational problems experienced by flight crews using the FANS pilot-controller data link system in the South Pacific airspace.

**Approach** Three methods used in the evaluation:

- Conducted a "cognitive walkthrough" usability evaluation of the FANS data link interface
- Distributed FANS data link usability survey of 747-400 pilots at United Airlines, Air New Zealand and Qantas
- Reviewed ASRS incidents reports related to use of FANS data link, and contacted pilots for "callback" interviews to obtain more information as needed.

**Results** The ASRS study indicates the most serious unresolved problem is pilot misunderstandings of conditional clearances. The usability evaluation identified many instances where task relevant information was poorly represented or missing from the interface. Preliminary survey results show:

- confirmation of problems identified by usability evaluation,
- inadequacies in training and flight documentation, and
- pilots greatly prefer data link for routine ATC communications.

A final report will be available in early 2000, and will include recommendations for training, documentation and interface improvements to address the operational problems identified in this evaluation. This report will be available in early 2000.

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**[http://humansystems.arc.nasa.gov/ihi/research\\_groups/air-ground-integration/](http://humansystems.arc.nasa.gov/ihi/research_groups/air-ground-integration/)**

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