AVIATION SAFETY/AUTOMATION PROGRAM OVERVIEW

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FY89 BASE AUGMENTATION

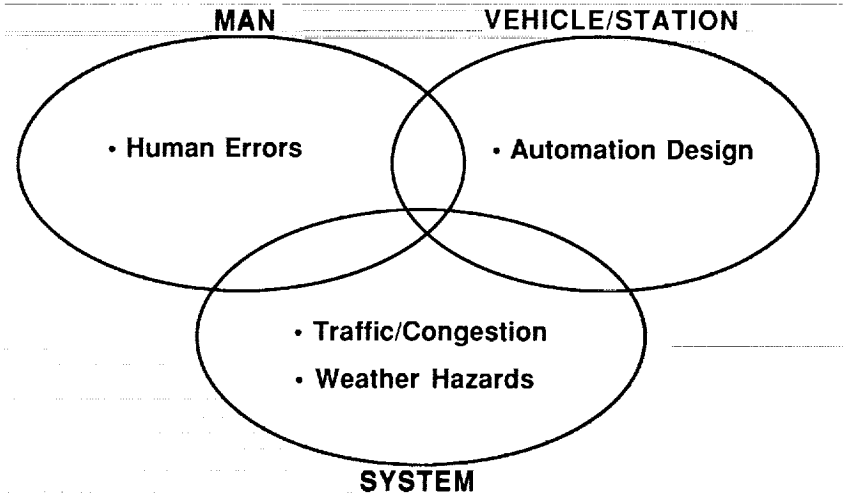
NASA Ames Research Center • NASA Langley Research Center

GOAL

PROVIDE THE TECHNOLOGY BASE LEADING TO IMPROVED SAFETY OF THE NATIONAL AIRSPACE SYSTEM THROUGH DEVELOPMENT AND INTEGRATION OF HUMAN-CENTERED AUTOMATION TECHNOLOGIES FOR AIRCRAFT CREWS AND AIR TRAFFIC CONTROLLERS

AVIATION SAFETY/AUTOMATION

The Problems



Perspective

- Automation can improve the efficiency, capacity and dependability of the national aviation system

— BUT —

- Humans will manage, operate and assure the safety of the next generation system

— THEREFORE —

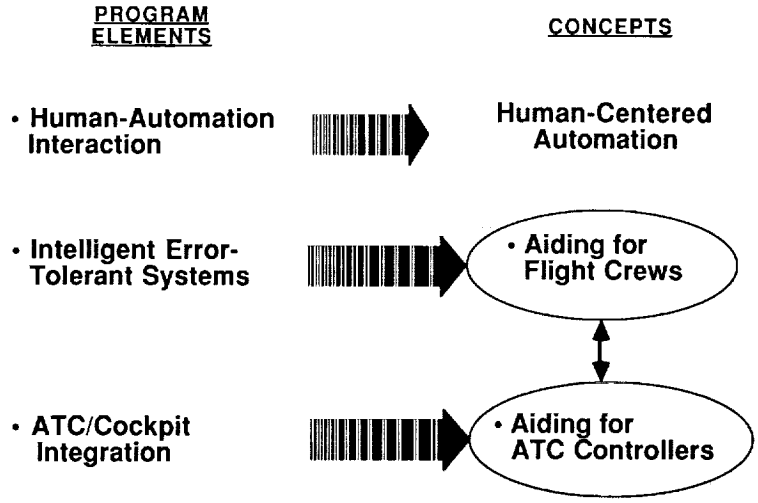
- Human-centered automation is the key to system effectiveness

AVIATION SAFETY/AUTOMATION

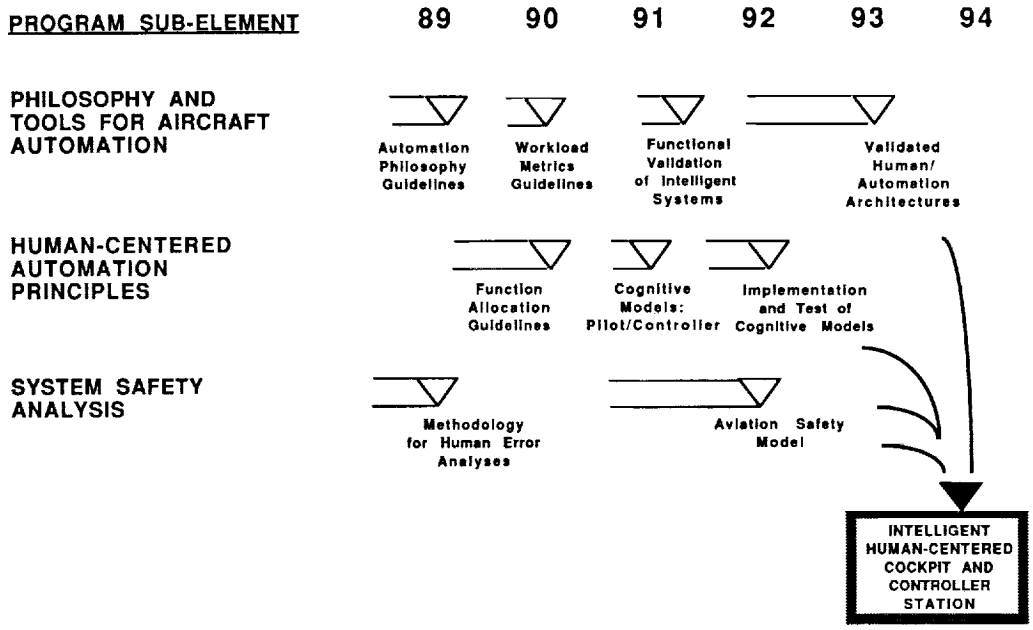
Specific Objectives

- To develop the basis, consisting of philosophies and guidelines, for applying human-centered automation to the flight deck and ATC controller station
- To provide human-centered automation concepts and methods to the flight crew which ensure full situation awareness
- To provide human-centered automation concepts and methods for ATC controllers which allow integration and management of information and air-ground communications

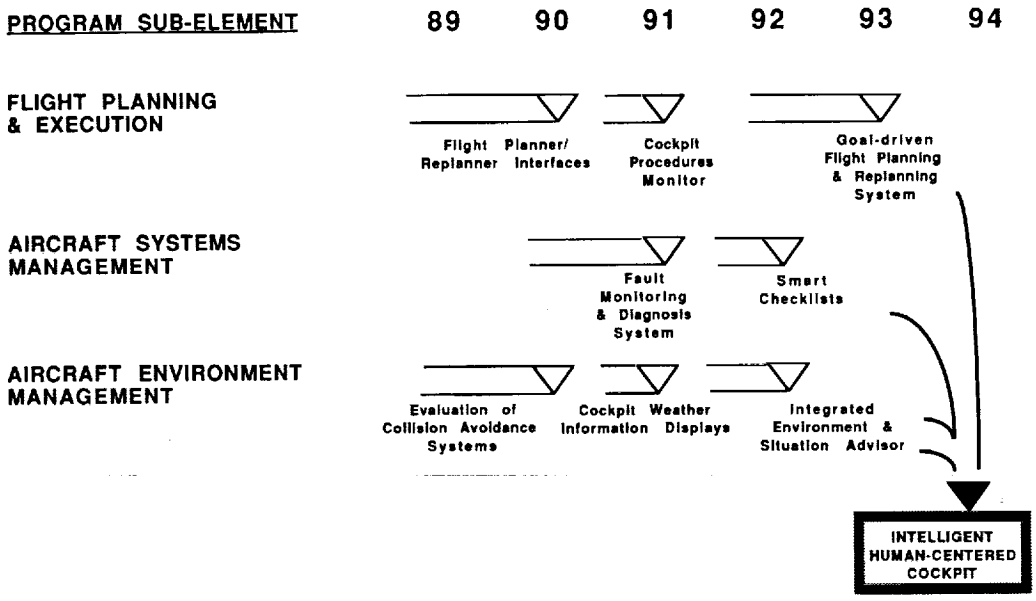
Overview



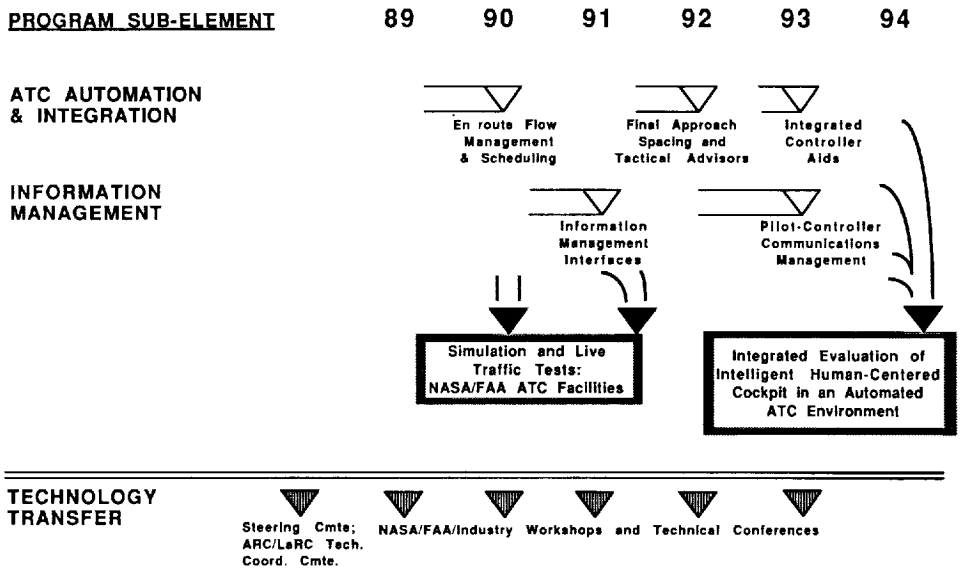
HUMAN-AUTOMATION INTERACTION



INTELLIGENT ERROR-TOLERANT SYSTEMS



ATC/COCKPIT INTEGRATION



PROGRAM ELEMENT I

HUMAN/AUTOMATION INTERACTION