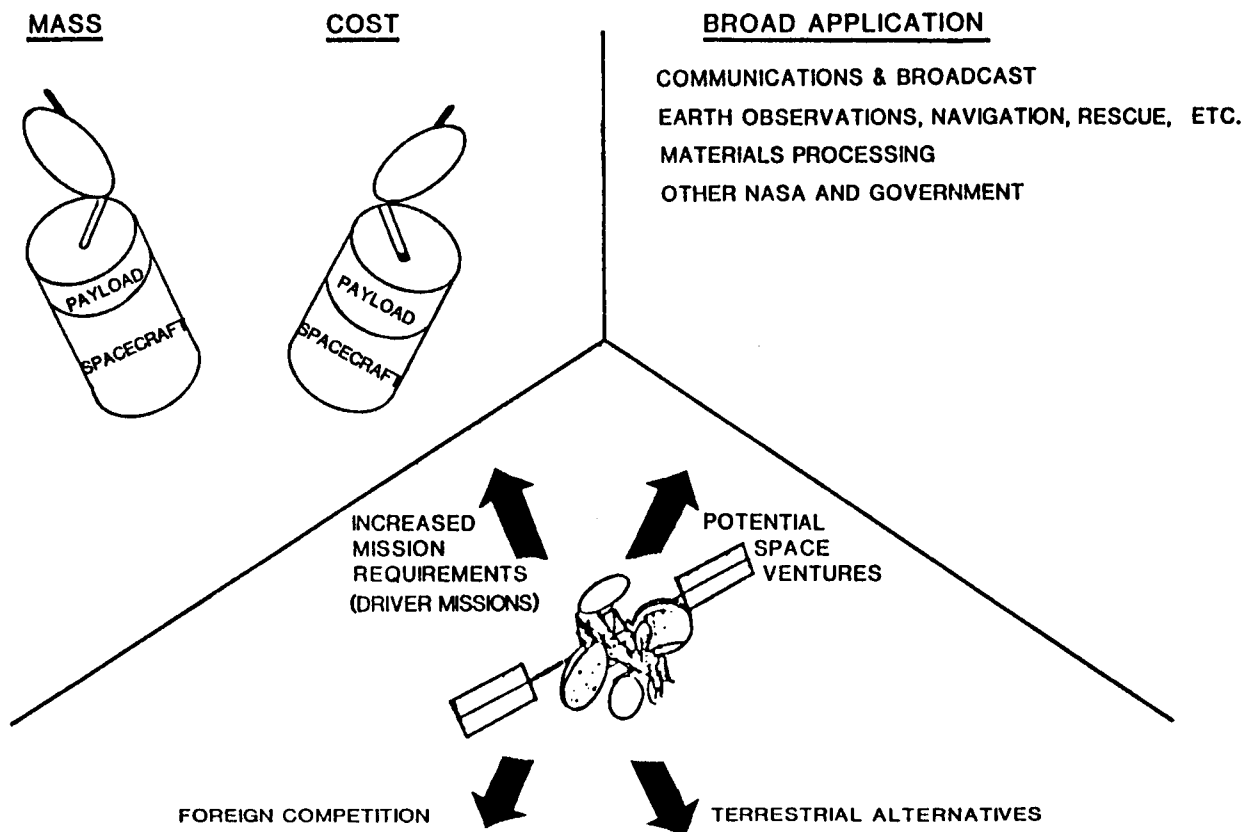


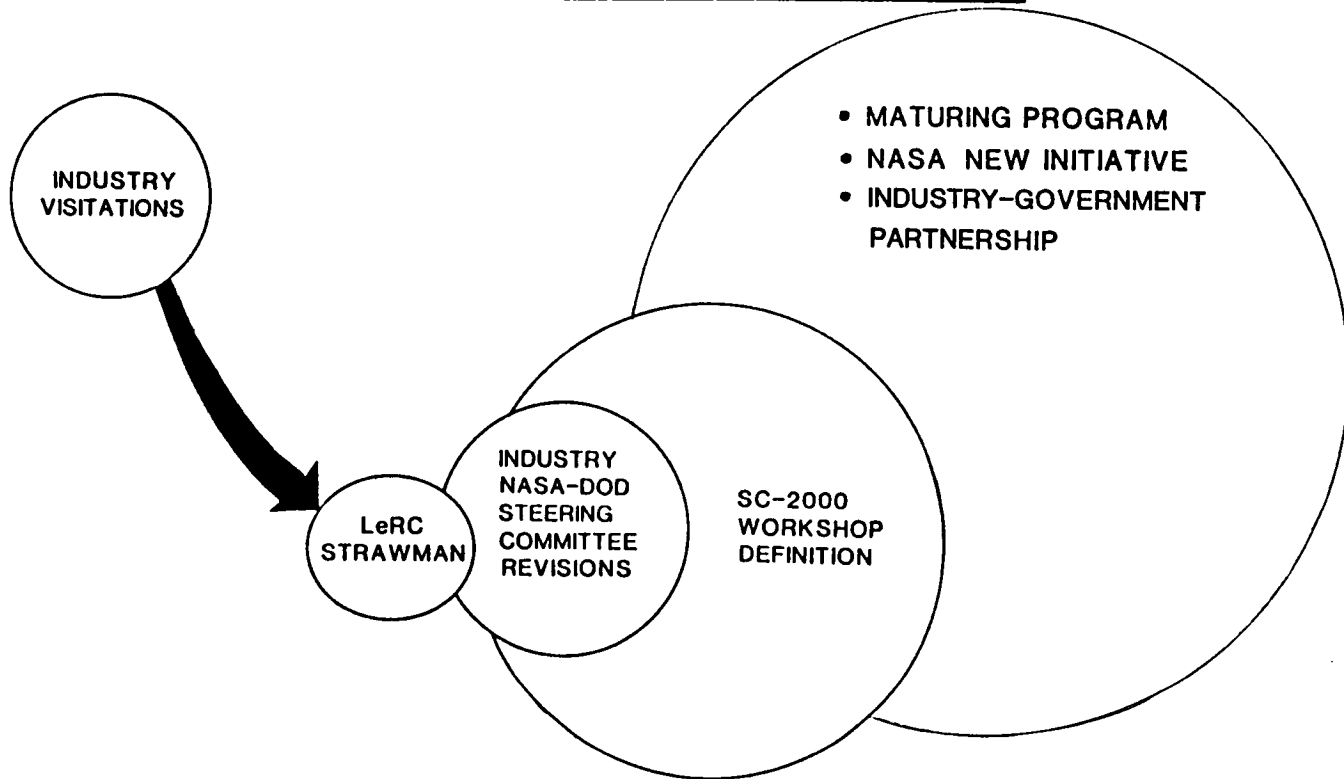
N88-10085

## SPACECRAFT 2000 PROGRAM OVERVIEW

Robert Bercaw  
NASA Lewis Research CenterWHY FOCUS ON THE SPACECRAFT?BARRIERS TO TECHNOLOGY DEVELOPMENT & UTILIZATION

<u>DEFINITION</u>	<u>ADVOCACY</u>	<u>DEVELOPMENT</u>	<u>UTILIZATION</u>
0 SYSTEM COMPLEXITY	0 LACK OF GOAL	0 COMMUNICATION OF NEED	0 TECHNICAL RISK
0 DESIGN VARIETY	0 ENABLING VS ENHANCING	0 REQUIREMENT DEFINITION	0 INCOMPATIBILITY WITH EXISTING DESIGNS
			0 SPREAD OF TECH READINESS DATES

## SPACECRAFT 2000 PROGRAM FORMULATION



### SC-2000 PROGRAM DEVELOPMENT

#### INDUSTRY VISITATIONS

- 0 DISCUSSIONS WITH NINE COMPANIES
  - WIDE VARIETY OF SPECIFIC PROBLEMS
- 0 AGREEMENT ON CRITICAL ISSUES
  - SPACECRAFT-RELATED COSTS
  - SPACECRAFT SUBSYSTEM WEIGHTS
  - SYSTEM LIFETIME & RELIABILITY
  - TECHNICAL RISKS
- 0 CONSENSUS IS THAT A "SPACECRAFT 2000" TYPE PROGRAM IS IN THE NATIONAL INTEREST

S/C 2000 NASA/DOD/INDUSTRY STEERING COMMITTEE

MAJOR OBJECTIVES & SCOPE

- PARTICIPATION: VOLUNTARY, FROM MAJOR SPACECRAFT VENDORS/SUBSYSTEMS SUPPLIERS/USERS  
ONE REPRESENTATIVE (OR ALTERNATE) PER ORGANIZATION
- ROLE: RECOMMEND PROGRAM STRATEGY, OVERALL GOAL, TECHNOLOGY  
DEVELOPMENT/VERIFICATION PLAN. SUGGEST WAYS TO SERVE AND MEET NATIONAL  
NEEDS. ASSIST IN ADVOCACY OF POTENTIAL NEW INITIATIVES.
- ADVISORY: PROVIDE ADVICE/GUIDANCE TO S/C 2000 WORKSHOP, AND ON PROJECTS OF MUTUAL  
INTEREST.
- CONFIDENTIALITY: MAINTAIN AND PRESERVE CONFIDENTIALITY. RETAIN INTEGRITY OF INTERNAL  
PROGRAMS/PROCESSES OF PARTICIPATING ORGANIZATIONS
- COORDINATION: COORDINATE OVERALL ACTIVITIES. FACILITATE TECHNOLOGY TRANSFER TO FLIGHT.  
EXCHANGE INFORMATION ON CONFIDENTIAL BASIS.

PROGRAM OBJECTIVE

TO IDENTIFY THE TECHNOLOGIES REQUIRED TO BUILD SPACECRAFT OF THE 21ST  
CENTURY, AND TO IMPLEMENT THE TECHNOLOGY PROGRAMS NEEDED TO ACHIEVE THEM.

INITIAL PROGRAM FOCUS

MASS LIMITED SYSTEM

GEO SATELLITES  
GEO PLATFORMS  
POLAR PLATFORMS  
PLANETARY

SYSTEMS

STRUCTURES  
BUS SYSTEMS  
INTEGRAL PROPULSION SYSTEMS

## PROGRAM APPROACH

- 0 GOVERNMENT/INDUSTRY PARTNERSHIP
- 0 TOTAL SYSTEM APPROACH AT SPACECRAFT LEVEL
  - FOCUSED TECHNOLOGY
  - TECHNOLOGY READINESS DATE
- 0 ADDRESS ANCILLARY NONTECHNOLOGY ISSUES
  - DESIGN, DEVELOPMENT & TESTING
  - MANUFACTURING
  - OPERATIONS
- 0 VALIDATION USING TERRESTRIAL AND/OR IN-SPACE TEST BEDS
  - E.G., OAST OUTREACH/INREACH PROGRAM

## KEY ISSUES

- 0 MAJOR TECHNICAL PROBLEMS IN CURRENT SPACECRAFT
- 0 MAJOR COST FACTORS IN CURRENT SPACECRAFT
- 0 ANTICIPATED SPACE INFRASTRUCTURE
- 0 MAJOR TECHNOLOGY REQUIREMENTS FOR FUTURE SPACECRAFT
- 0 ANTICIPATED DEMANDS FOR FUTURE TYPES OF SPACECRAFT
  - NASA
  - DOD
  - COMMERCIAL

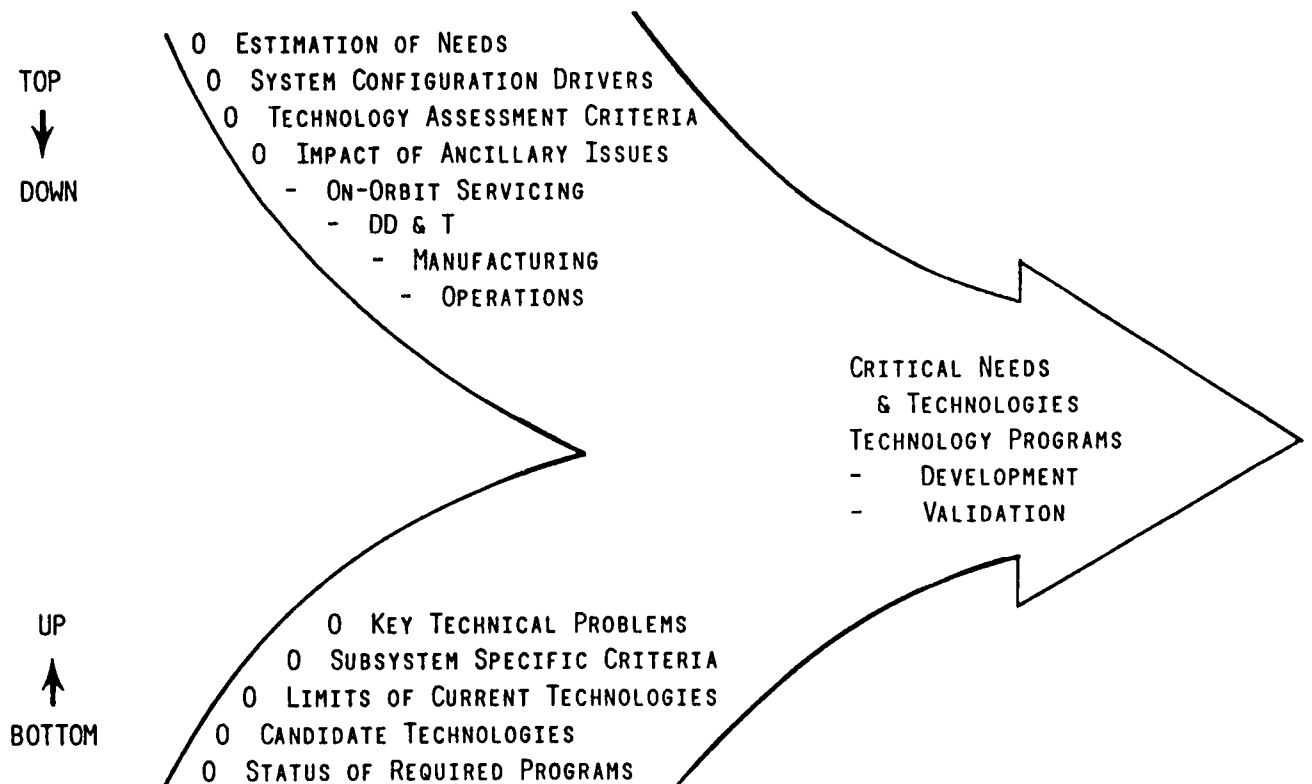
## GOALS

- 0 TO IDENTIFY THE CRITICAL NEEDS AND TECHNOLOGIES FOR SPACECRAFT OF THE 21ST CENTURY.
- 0 TO RECOMMEND TECHNOLOGY DEVELOPMENT AND VALIDATION PROGRAMS, AND POSSIBLE GOVERNMENT/INDUSTRIAL ROLES AND PARTNERSHIPS.

## OBJECTIVES

- 0 INCREASE AWARENESS AND EXCHANGE OF IDEAS AMONG PARTICIPANTS
- 0 HIGHLIGHT THE SPACECRAFT AS A FOCAL POINT FOR TECHNOLOGY
- 0 FACILITATE INDUSTRY-GOVERNMENT COORDINATION

## WORKSHOP APPROACH



WORKSHOP OUTPUT

CONFERENCE PROCEEDINGS

0 PRESENTATIONS

0 WORKING GROUP REPORTS

- CRITICAL TECHNOLOGIES
- REQUIRED PROGRAMS VS TECHNOLOGY READINESS DATES
- IMPACT OF SPACE INFRASTRUCTURE
- VALIDATION REQUIREMENTS
- COLLATERAL TECHNOLOGIES
- ASSESSMENT OF ISSUES
- RECOMMENDATIONS

0 CONFERENCE RECOMMENDATIONS  
(STEERING COMMITTEE)

BASIS FOR INITIAL PROGRAM PLAN

FOUNDATION FOR DESIGN & TECHNOLOGY TRADE STUDIES

WORKSHOP ORGANIZATION

LISA KOHOUT

GALE SUNDBERG

JIM KISH

HENRY CURTIS

KARL FAYMON

IRA MYERS

KAREN WESTER (CONFERENCE COORDINATOR)

MARJORIE FULLER

PAULA MITCHELL