

|                         |  |
|-------------------------|--|
| 1. Record Nr.           | UNINA9910778627103321  |
| Titolo                  | The role of small satellites in NASA and NOAA earth observation programs [[electronic resource] /] / Committee on Earth Studies, Space Studies Board, Commission on Physical Sciences, Mathematics, and Applications, National Research Council  |
| Pubbl/distr/stampa      | Washington, D.C., : National Academy Press, c2000  |
| ISBN                    | 0-309-18370-7<br>1-280-18552-X<br>9786610185528<br>0-309-59409-X<br>0-585-25489-3  |
| Descrizione fisica      | 1 online resource (104 p.)   |
| Disciplina              | 550/.28  |
| Soggetti                | Microspacecraft - United States<br>Artificial satellites in earth sciences - United States   |
| Lingua di pubblicazione | Inglese  |
| Formato                 | Materiale a stampa   |
| Livello bibliografico   | Monografia   |
| Note generali           | "Support for this project was provided by Contract NASW 96013 between the National Academy of Sciences and the National Aeronautics and Space Administration"--T.p. verso.   |
| Nota di bibliografia    | Includes bibliographical references.   |
| Nota di contenuto       | ""THE ROLE OF SMALL SATELLITES IN NASA AND NOAA EARTH OBSERVATION PROGRAMS""; ""Copyright""; ""Foreword""; ""Acknowledgment of Reviewers""; ""Contents""; ""Executive Summary""; ""SMALL SATELLITES VERSUS SMALL MISSIONS""; ""MEETING CORE OBSERVATIONAL NEEDS""; ""CAPABILITY OF SMALL SATELLITES TO PERFORM EARTH OBSERVATION MISSIONS""; ""FLEXIBILITY AND NEW OPPORTUNITIES PROVIDED BY SMALL SATELLITES""; ""AVAILABILITY OF RELIABLE LAUNCH VEHICLES""; ""COST OF SMALL SATELLITE MISSIONS""; ""SENSOR DEVELOPMENT""; ""MISSION ARCHITECTURE""; ""MANAGEMENT OF SMALL SATELLITE PROGRAMS""; ""MISSION PLANNING"" ""CONCLUSION""""1 Introduction ""; ""REFERENCES""; ""2 Core Observational Needs ""; ""REQUIRED MEASUREMENTS""; ""Measurements in Support of Climate and Global Change Research""; ""Measurements in Support of Operational Applications""; ""CHARACTERIZATION, |

CALIBRATION, AND VALIDATION"; "Prelaunch Sensor  
Characterization"; "Calibration"; "Validation"; "DATA CONTINUITY";  
"Operational Data Continuity"; "Data Continuity in Research";  
"SIMULTANEITY"; "SAMPLING ERRORS"; "SUMMARY";  
"REFERENCES"; "3 Payload Sensor Characteristics "  
"PAYLOAD DESIGN AND ACCOMMODATION REQUIREMENTS""  
CURRENTLY PLANNED SENSORS"; "SENSOR COSTS"; "FUTURE SENSOR  
DESIGNS: IMPLICATIONS OF ADVANCED TECHNOLOGIES"; "Size and  
Design Constraints"; "Fundamental Limits on Size"; "Technological  
Limits on Size"; "Measurement Strategies and Mission Architectures";  
"SUMMARY"; "4 Small Satellite Buses "; "CAPABILITIES OF SMALL  
SATELLITE BUSES"; "SPACECRAFT BUS COSTS"; "UTILITY OF  
"COMMERCIAL" SPACECRAFT"; "SPACECRAFT CAPABILITY AS A  
PAYLOAD DESIGN PARAMETER"; "PRINCIPAL INVESTIGATOR-LED  
PROJECTS"; "FUTURE TRENDS"; "SUMMARY"  
"REFERENCES""5 Small Launch Vehicles"; "SMALL LAUNCH VEHICLES  
FOR EOS AND NPOESS"; "SUMMARY"; "6 Small Satellites and Mission  
Architectures "; "OPTIONS FOR DISTRIBUTING SENSORS"; "Single-  
Sensor Platforms"; "Multisensor Platforms"; "Clusters";  
"Constellations"; "COST-EFFECTIVENESS OF SMALL SATELLITE  
ARCHITECTURES"; "Maintenance"; "NPOESS"; "EOS"; "SUMMARY";  
"REFERENCES"; "7 Opportunities and Challenges in Managing Small  
Satellite Systems "; "PROGRAMMATIC APPROACHES TO TECHNICAL  
ISSUES"; "RISKS"; "Programmatic Risks"; "Management of  
Programmatic Risks"  
"Hidden Programmatic Costs""Scientific Risks"; "Management of  
Scientific Risks"; "Hidden Scientific Costs"; "SUMMARY";  
"REFERENCES"; "8 Findings and Recommendations "; "MISSION  
COSTS"; "MEETING MISSION GOALS: OPPORTUNITIES WITH SMALL  
SATELLITES"; "OPERATIONAL AND RESEARCH EARTH OBSERVATIONS";  
"PAYLOADS"; "SATELLITE BUSES"; "LAUNCH VEHICLES"; "MISSION  
ARCHITECTURES"; "SYSTEM MANAGEMENT"; "SUMMARY";  
"Appendixes"; "A Statement of Task "; "ANALYSIS OF SMALL  
SATELLITE CAPABILITIES IN LIGHT OF SCIENCE REQUIREMENTS FOR  
CORE OBSERVATIONAL NEE..."  
"B Effects of Technology on Sensor Size and Design "

---