

## SHUTTLE SERIES

### EARLY AVIONICS STUDIES

These documents were sent to us from William E. Mallary of the Spacecraft Data Management Office (EH). They consist primarily of contractor reports from early avionics studies produced between 1968 and 1975. The documents constitute a run of three linear feet organized by contractor name and are arranged in chronological order.

#### Inventory

| <b>SubHeading:</b>               | <b>Box Number: 1</b>   |               |
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| ARNIC (Aeronautical Radio, Inc.) | Saturn Program and Other Related MSFC Reliability Program Experience 1958-1965   | 1965          |
| ARNIC (Aeronautical Radio, Inc.) | General Guidance for Equipment and Installation Designers ARNIC Report No. 414   | Sept. 3, 1968 |
| ARNIC (Aeronautical Radio, Inc.) | Aircraft Integrated Data System (AIDS)ARNIC Characteristic 563   | Jan. 29, 1969 |
| ARNIC (Aeronautical Radio, Inc.) | Mark 4 Sub-Sonic Air Data System (All Digital Outputs) Dads ARNIC Characterist 576                                     | Feb. 10, 1969 |
| ARNIC (Aeronautical Radio, Inc.) | Aeronautical Radio, Inc. The Air Ground System CIRCA 1970's Datalink   | June 1969     |
| ARNIC (Aeronautical Radio, Inc.) | Radio Altimeter ARNIC Characteristic No. 552, Issues Nov. 1, 1962  | Jan. 8, 1970  |
| ARNIC (Aeronautical Radio, Inc.) | "Pre-Approval" Draft 3 of ARNIC Report No. 420, "Design Guidance for Standby Attitude Indicator Flag Newsletter No. 43 | May 1970      |
| ARNIC (Aeronautical Radio, Inc.) | Mark 1 Air Transport Area Navigation System ARNIC Characteristic 581   | June 30, 1970 |
| ARNIC (Aeronautical Radio, Inc.) | MARK 2 Aircraft Integrated Data System (AIDS Mark 2) ARNIC Characteristic 573-1  | July 1, 1970  |
| ARNIC (Aeronautical Radio, Inc.) | Air Transport Intertial Navigation System-Ins ARNIC Characteristic No. 561-6   | July 15, 1970 |
| ARNIC (Aeronautical Radio, Inc.) | Intertial Sensor System (ISS) ARNIC Characteristic 571   | Aug. 10, 1970 |
| ARNIC (Aeronautical Radio, Inc.) | Mark 2 Air Transport Area Navigation System ARNIC Characteristic 582   | Aug. 10, 1970 |
| ARNIC (Aeronautical Radio, Inc.) | ARNIC Research Corp. Publications List 1952-1972   | 1972          |
| ARNIC (Aeronautical Radio, Inc.) | Technical Report "The use of Warranties for Defense Avionics Procurement   | June 1973     |
| ARNIC (Aeronautical Radio, Inc.) | The use of Warranties for Defense Avionics Procurement   | Jan. 1974     |
| ARNIC (Aeronautical Radio, Inc.) | ARNIC - Support of the Space Shuttle Program   | Feb. 1975     |
| ARNIC (Aeronautical Radio, Inc.) | ARNIC Research Corp. Examples of Test and Evaluation Experience  | n.d.          |
| ARNIC (Aeronautical Radio, Inc.) | Failure Modes, Effect and Criticality Analysis (FMECA) for System Design, Improvement, and Management                  | n.d.          |
| <b>SubHeading:</b>               | <b>Box Number: 2</b>   |               |
| Autonetics                       | Electronics for Business Industry and Aerospace  | Nov. 1971     |
| Autonetics                       | Briefing Presented to NASA MSC on Autonetics Computers as Applied to Space Shuttle BR71-11161401                       | Dec. 8, 1971  |
| Autonetics                       | GC6 Development, IR&D CFY 1971 Final Report  | 1971          |

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| Autonetics  | Autonetics/Space Shuttle ITS<br>Statement of Work  | March 22, 1973 |
| Cornell Lab   | Final Report of a Feasibility Study for<br>an Advanced Avionics Flight Test<br>Aircraft MSC-02526  | Nov. 1970      |
| Cubic Corporation   | Final Technical Report CR-100<br>Implementation Study for Space<br>Shuttle   | June 1971      |
| Delco   | Space Shuttle Orbiter PMS-Instrument<br>Approach, S72-27   | Sept. 1972     |
| Delco   | Space Shuttle On-Board PMS<br>Capabilities to Launch Support at<br>NASA KSC, NASA/KSC s72-30   | Oct. 1972      |
| <b>SubHeading:</b>  | <b>Box Number: 3</b>   |                |
| Delco   | Intermetrics   | 1970 - 1972    |
| Multiprocessor Interface Processor<br>Specification Statement of Work | Standard Interface Definition and<br>Specification   | Nov. 17, 1970  |
| Multiprocessor Interface Processor<br>Specification Statement of Work | Intermetrics Tasks Proposed Contract<br>Schedule   | Nov. 1970      |
| Multiprocessor Interface Processor<br>Specification Statement of Work | Program Plan, Outline of Final Report,<br>Progress Report # 1, 2, and 3,<br>Statement of Work  | Feb. 3, 1971   |
| Multiprocessor Interface Processor<br>Specification Statement of Work | Final Report-Standard Interface<br>Definition for Avionics Data Bus<br>System  | May 1971       |
| Multiprocessor Interface Processor<br>Specification Statement of Work | Space Shuttle Approach and Landing<br>Navigation Performance Using<br>Distance Measureing Equipment  | July 21, 1971  |
| Multiprocessor Interface Processor<br>Specification Statement of Work | Space Shuttle Landing Navigation<br>Using Precision Distance Measuring<br>Equipment  | Aug. 2, 1971   |
| Multiprocessor Interface Processor<br>Specification Statement of Work | New Technology Final Report Contract<br>NAS9-11477 Standard Interface<br>Definition of Avionic Systems                                       | 1971           |
| Multiprocessor Interface Processor<br>Specification Statement of Work | Phased Control System Development  | March 13, 1972 |
| Multiprocessor Interface Processor<br>Specification Statement of Work | HAL Language and Program<br>Examples   | Aug. 1972      |
| Multiprocessor Interface Processor<br>Specification Statement of Work | Preliminary Singer-Kearfott SKC-2000<br>Test Results Transient<br>Radiation/Power Limits Test Report   | April 16, 1973 |
| Multiprocessor Interface Processor<br>Specification Statement of Work | Control Systems Development Division<br>Internal Note - The Kearfott<br>Accelerometer Evaluation JSC-EG-73-<br>17, JSC-08424                 | July 1973      |
| <b>SubHeading:</b>  | <b>Box Number: 4</b>   |                |
| Multiprocessor Interface Processor<br>Specification Statement of Work | MIT (Charles Stark Draper Laboratory)  | 1970 - 1974    |
| Multiprocessor Interface Processor<br>Specification Statement of Work | Preliminary STS Avionics System<br>Concept Description and Specification<br>Format   | Dec. 5, 1969   |
| Multiprocessor Interface Processor<br>Specification Statement of Work | SSV Entry Navigation and Guidance<br>Studies   | July 9, 1970   |
| Multiprocessor Interface Processor<br>Specification Statement of Work | MIT/CSDL Shuttle Avionics<br>Presentation  | Oct. 23, 1970  |
| Multiprocessor Interface Processor<br>Specification Statement of Work | Status Report Space Shuttle Avionics   | Dec. 1970      |
| Multiprocessor Interface Processor<br>Specification Statement of Work | MIT Task   | 1970           |
| Multiprocessor Interface Processor<br>Specification Statement of Work | Space Shuttle Avionics, A Redundant<br>IMU On-Board Checkout and<br>Rendundancy Management System  | March 9, 1971  |
| Multiprocessor Interface Processor<br>Specification Statement of Work | MIT Review Comments of the<br>Functional and Performance<br>Requirements Specification Space<br>Shuttle Avionics System, MSC-04075<br>Rev. A | April 9, 1971  |

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| Multiprocessor Interface Processor Specification Statement of Work | Statement of Work for Extended Study of the Space Shuttle Integrated Avionics System              | Aug. 5, 1971   |
| Multiprocessor Interface Processor Specification Statement of Work | MIT-DL Interim Status Review Shuttle Avionics Phased Development Tasks                            | Oct. 1971      |
| Multiprocessor Interface Processor Specification Statement of Work | Status Report of Active Space Shuttle Analysis Tasks  | Dec. 1, 1971   |
| Multiprocessor Interface Processor Specification Statement of Work | DOD Space Shuttle DMS and Software Development Study, Executive and Technical                     | July 18, 1972  |
| Multiprocessor Interface Processor Specification Statement of Work | E-2728 Rev. 1 Top-Down, Bottom-Up Structured Programming and Program Structuring                  | Dec. 1972      |
| Multiprocessor Interface Processor Specification Statement of Work | MIT/CSDL Development Plan for MSC/SSFC on Orbit GN&C Simulation Task, Task # 13-A, 16-A, and 22-A | 1972           |
| Multiprocessor Interface Processor Specification Statement of Work | MIT/CSDL Development Plan for MSC/SSFC Entry to Landing GN&C Simulation Task No. 19A              | 1972           |
| <b>SubHeading:</b>   | <b>Box Number: 5</b>  |                |
| Multiprocessor Interface Processor Specification Statement of Work | Revision to MIT/DL Space Shuttle Task Summary Document  | April 30, 1973 |
| Multiprocessor Interface Processor Specification Statement of Work | Space Shuttle Development Plan Meeting No. 1  | Oct. 19, 1973  |
| Multiprocessor Interface Processor Specification Statement of Work | Entry and Landing Navigation Filter Studies   | Jan. 21, 1974  |
| Multiprocessor Interface Processor Specification Statement of Work | SIRU Utilization Volume 1, Theory, Development and Test Evaluation                                | March 1974     |
| Multiprocessor Interface Processor Specification Statement of Work | On Orbit Flight Control Algorithm Description   | May 1975       |
| Multiprocessor Interface Processor Specification Statement of Work | Satellite Retrieval Study   | Sept. 1978     |
| Multiprocessor Interface Processor Specification Statement of Work | Conceptual Description of the OEX Advanced Auto Pilot Phase I                                     | July 1981      |
| Multiprocessor Interface Processor Specification Statement of Work | GPS Simulation Requirements Document  | Sept. 1981     |
| Multiprocessor Interface Processor Specification Statement of Work | Preliminary Flight Control Avionics Requirements for Orbiter - Attached Large Space Structures    | Jan. 1982      |
| Multiprocessor Interface Processor Specification Statement of Work | OEX Advanced Autopilot Functional Description Document  | March 1984     |
| Systems Technology, Inc.   | Application of an Approach and Landing System Model to the Space Shuttle Orbiter Vehicle          | Feb. 1972      |