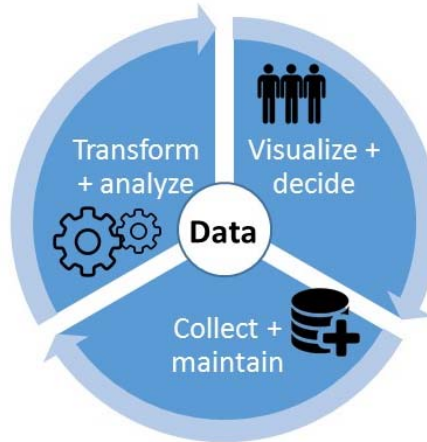# Data Handling: A Cloud Implementation for Data Capture and Data Processing

## Data Handling

**DATA HANDLING :** Since 2001, ZIN has demonstrated expertise in data capture, and data processing, of aerospace and medical data. ZIN provides data handling services for four on-orbit International Space Station (ISS) facility class payloads: The Fluids Integrated Rack (FIR), the Combustion Integrated Rack (CIR) the Space Acceleration Measurement System (SAMS) and the Space Communications and Navigation (SCaN) Testbed Facility.

**INFORMATION TECHNOLOGY SUPPORT:** ZIN provides the infrastructure and interfaces required to operate the GRC TSC including disaster preparedness and plans, inclusive of end to end testing facilities which interface other NASA control centers. Besides the architecture, our engineers understand organizational responsibilities for the various network services required for operations.

**IT SECURITY:** Our team maintains a NASA Center approved IT Security Plan. GRC IT Security provides approval and Authority to Operate (ATO). Our plan documents our LAN (and WAN) and all router and firewall configurations are configuration controlled per the plan..



ZIN has developed software systems that receive and process telemetry from ISS science payloads through TDRSS. ZIN can support both command center based and mobile ground systems with remote operations capability that ingests and processes spacecraft telemetry. ZIN engineers manage databases of telemetry, science data, payload configurations, and anomalies. We archive, post-process, and analyze data. We host public facing websites that provide data dissemination services to principle investigators. From these sites, science data can be securely transmitted for analysis at remote locations.

Based on payload requirements, our software archives telemetry using databases to facilitate trend analysis, science data, environment, operating parameters, and payload system configurations. ZIN provides a secure electronic repository for the data with customer access that is cataloged by data set and date. Each project/payload requires unique data archiving requirements, typically based on continuous or mission specific concept of operations.

- ❑ ZIN's total services include engineered systems for commanding, data collection, data archival, analysis, and data distribution through use of web based data marts.

- ❑ MISSION DATA COLLECTION AND DISTRIBUTION - ZIN ground software engineers also developed and implemented systems to collect, post process and archive telemetry and science data.

- ❑ SYSTEM ADMINISTRATION AND IT SECURITY - We have experience maintaining a NASA IT Security Plan through our work at the NASA Glenn Research Center (GRC) Telescience Support Center (TSC).

- ❑ DATABASE ADMINISTRATION - ZIN engineers manage databases of telemetry, science data, payload configurations, and anomalies.

- ❑ ABOUT ISS MISSION OPERATIONS - ZIN designed, developed, and operates an ISS Telescience Support Center (TSC). The TSC includes 20 consoles and provides accommodations for 50 personnel.
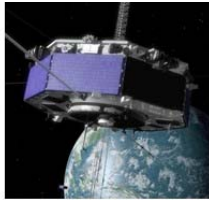
## ZIN Technologies Inc.

Founded in 1957, ZIN provides multidisciplinary engineering services to NASA and the aerospace industry and has managed the development of space flight and ground system hardware (aerospace/space systems) from formulation, design, and development through to fabrication, integration, testing, verification, and mission operations.

Our experience includes the development and validation of new technologies (sensors, inertial navigational measurement units (IMUs), composites, advanced acoustic resonant attenuation, optics, power, additive manufacturing and wireless/RF), ISS research investigations, space launch systems (Orion, commercial crew/resupply), satellite (IMU) accelerometer systems, and space based human research projects enabling future space and science missions.


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**ZIN Technologies, Inc. is an experienced developer of ground and flight systems for manned and unmanned aerospace applications. Marking history for almost five decades, we have provided integrated hardware and software development products and services to NASA, DoD and Fortune 500 companies.**

## OUR PRODUCTS & SERVICES



SPACE SYSTEMS INTEGRATION & OPERATIONS

MANUFACTURED PRODUCTS

ADDITIVE MANUFACTURING

ENGINEERING & TECHNICAL SERVICES

HARDWARE & SOFTWARE DEVELOPMENT

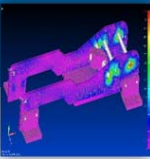HUMAN HEALTH & MEDICAL DEVICES



Research & Technology

Systems Concepts

Systems Design & Analysis

Engineering & Manufacturing

Systems Assembly

Systems Integration & Test

Management & Mission Operations

Logistics & Sustainment

- ❑ **Minority Owned-SDB**
- ❑ **AS9100 certified**
- ❑ **Experienced Team of scientists, engineers, designers, and technicians**
- ❑ **DCAA Approved Forward Pricing**
- ❑ **Headquartered Cleveland Ohio**
- ❑ **Award Winning Capabilities**

## ZIN Technologies Inc.