



# communications

Telemetry-East

Intellibus

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# Introduction

- Data Acquisition System
- Data Acquisition System Metrics
- Limitations of Traditional Data Acquisition Systems
- A New Approach using IntelliBus
- Implementation of IntelliBus for Telemetry
- Summary of Benefits

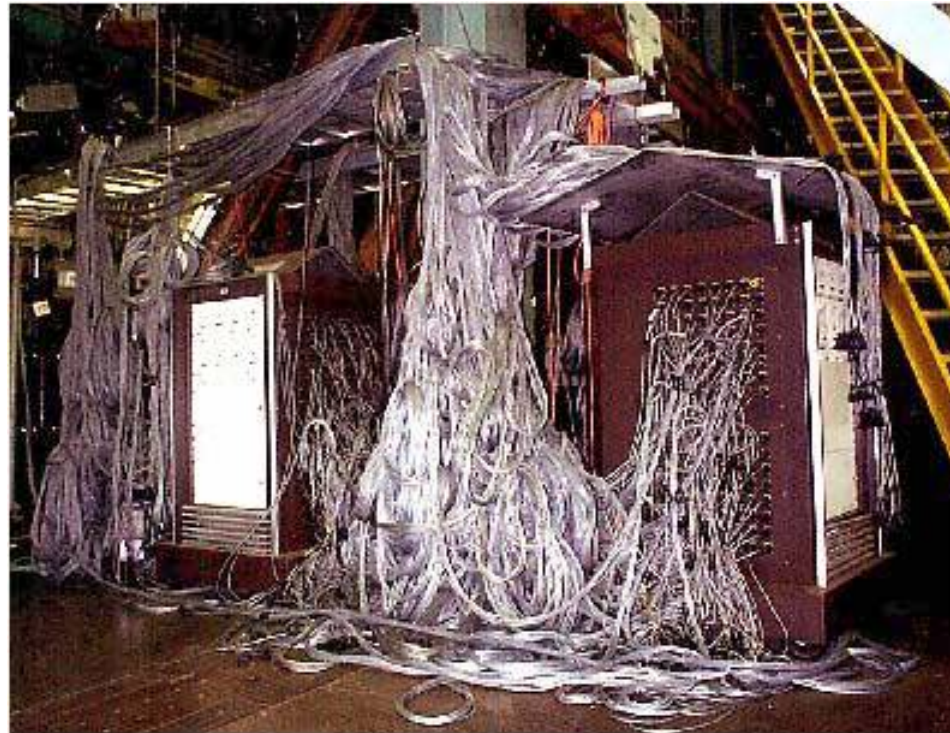
# Data Acquisition System

- Telemetry Applications
  - Instrumentation for new vehicle test
    - Temperature
    - Stress
    - Vibration
    - Monitoring avionic subsystems
      - ARINC429
      - CAIS
      - 1553
      - CAN
  - Diagnostics
  - Maintenance
- Key Components
  - Transducer interfaces
  - Data Formatter/Overhead Controller
  - Telemetry Interface

# Data Acquisition Metrics

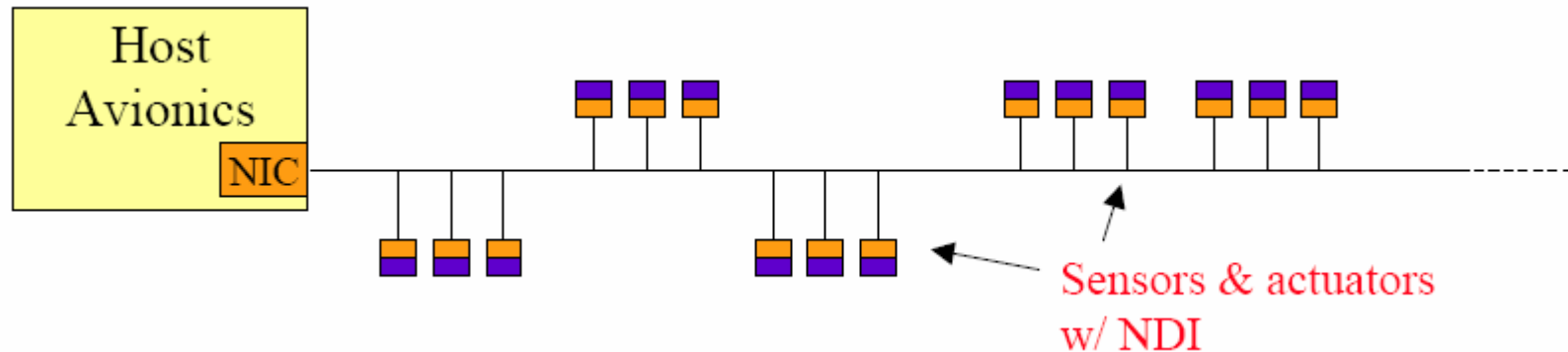
- Size & Weight
- Expansion Capability
- Data Integrity
  - Accuracy
  - Noise free resolution
  - Loss of data due to single point failure
  - Built-in test
  - Calibration
  - Time synchronization
- Environmental Ruggedness
  - Temperature
  - Shock/Vibration
  - EMI

# Limitations of Traditional Data Acquisition Systems



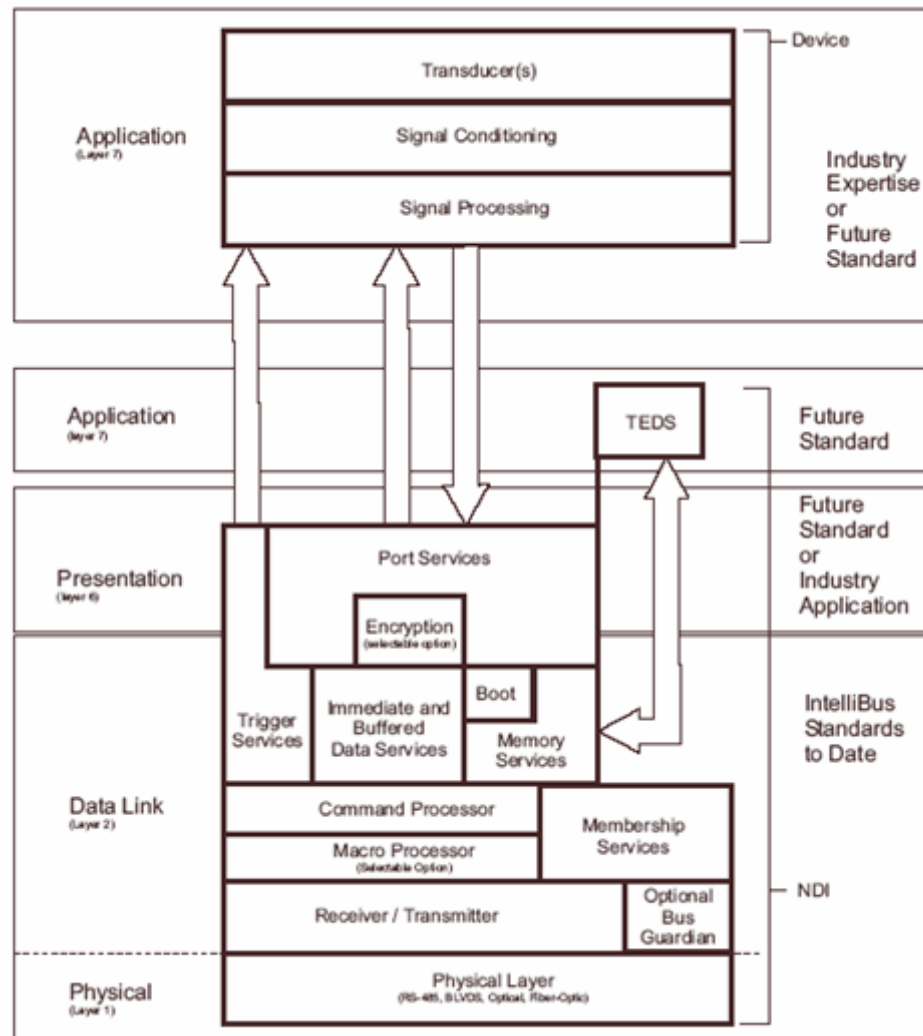
- Centralized signal conditioning
- Proprietary expansion bus

# A New Approach using IntelliBus



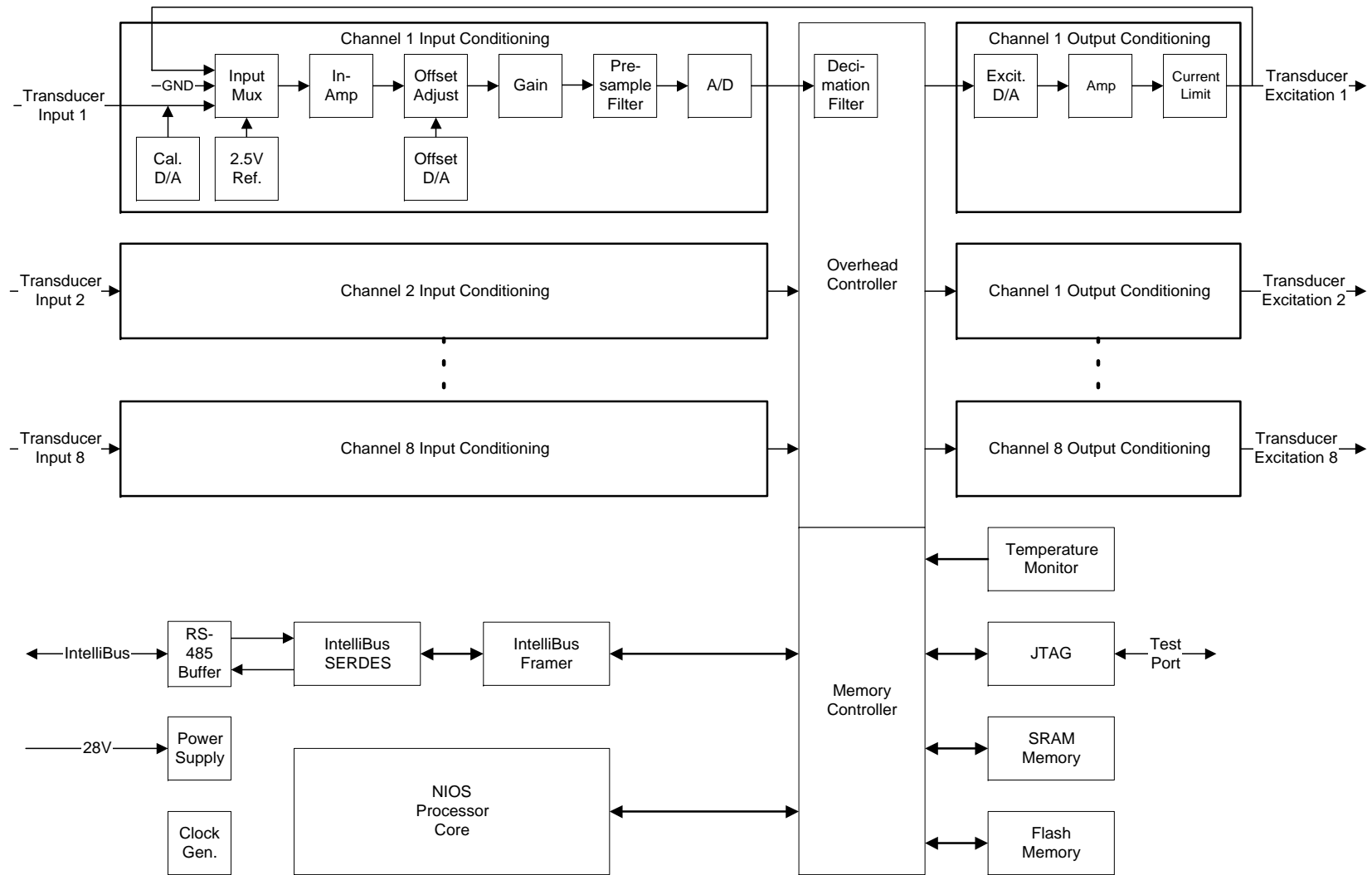
- Distributed Signal Conditioning
- Minimal cabling
- Fault tolerant
- Time Synchronization
- Real-time data streaming
- Minimal system resources
- Industry Standard

# IntelliBus Standards



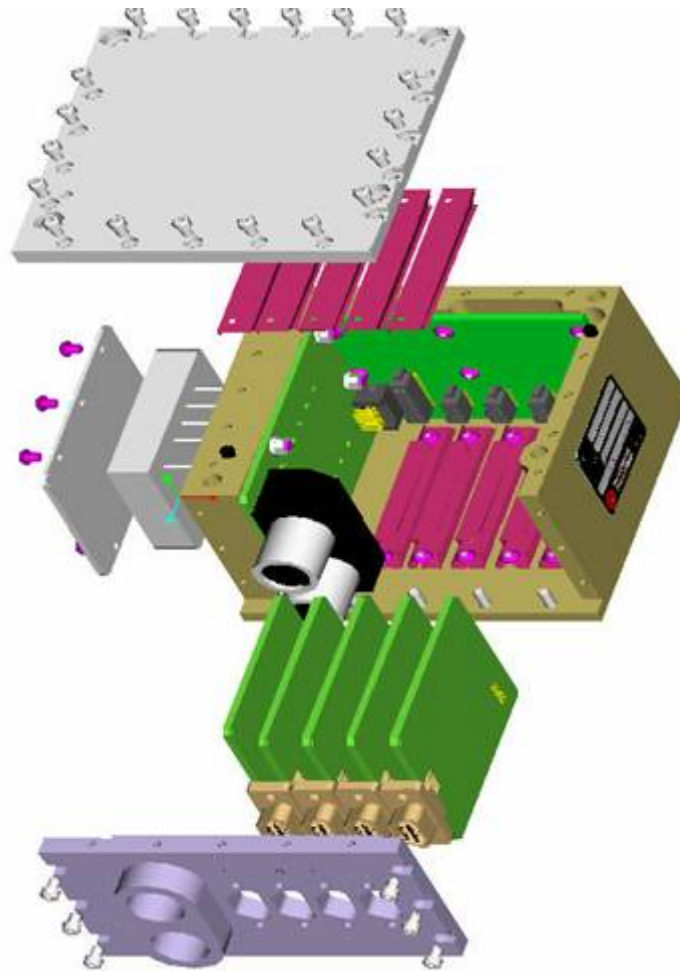


# Functional Block Diagram



Drawn: Tom Rosenbauer  
1/19/04

# Mechanical



# IntelliBus Summary

- Enabling technology for next generation Data Acquisition System
- Smaller
- Less cabling
- Less weight
- More efficient
- More reliable
- Less scar to test vehicle
- Improved data management