REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

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1. REPORT DATE *(DD-MM-YYYY)*
26-04-2021

2. REPORT TYPE
Briefing Slides

3. DATES COVERED *(From - To)*
Unlimited

4. TITLE AND SUBTITLE
Bomber Modular Data Acquisition System Overview
ITEA May 2021 BMDAS Presentation

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)
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5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) AND ADDRESS(ES)
JT4 LLC,
821 Grier Dr,
Las Vegas, NV 89119

8. PERFORMING ORGANIZATION REPORT NUMBER
412TW-PA-21215

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
412th Test Wing
195 E Popson Ave
Edwards AFB CA 93524

10. SPONSOR/MONITOR'S ACRONYM(S)
N/A

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release Distribution Statement A: distribution is unlimited.

13. SUPPLEMENTARY NOTES
Source Code 012100 (This number comes from STINFO via EAFB Technical Library)
CA: 412th Test Wing, Edwards AFB, CA

14. ABSTRACT

The Bomber Instrumentation Team from the 812th Aircraft Instrumentation Test Squadron (AITS) at Edwards Air Force Base needed a data acquisition system that would serve as the optimal backbone for test B-52H Stratofortress aircraft at Edwards for current and future instrumentation requirements. The modular Ethernet based system would be expandable so that when future programs required additional data parameters to be captured the aircraft would only be grounded for a month or two instead of 6-8 months. The modular tray design allows not only for each subsystem to flow from the laboratory test environment to airborne instrumentation seamlessly but it also successfully has integrated into other programs and aircraft platforms. Due to flexibility of the system, BMDAS is already been established as backbone for the Radar Modernization Program (RMP). The future of BMDAS will be used to collect thousands of analog parameters, including strain, vibration, acoustics, temperature, and flow on the Commercial Engine Replacement Program (CERP) aircraft. The overall success of the system on the B-52H has caused the Bomber Instrumentation Team to investigate the feasibility of incorporating BMDAS on the B-1B Lancer test aircraft.

15. SUBJECT TERMS
BMDAS, B-52H

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
Unclassified			None	17	412 TENG/EN (Tech Pubs)
a. REPORT	b. ABSTRACT	c. THIS PAGE			19b. TELEPHONE NUMBER *(include area code)*
Unclassified	Unclassified	Unclassified			661-277-8615

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18