REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE *(DD-MM-YYYY)* 08-05-2023	**2. REPORT TYPE** PowerPoint slides	**3. DATES COVERED** *(From - To)* 22MAY2023 – 26MAY2023
4. TITLE AND SUBTITLE Digital Engineering 3D Scanned Models for Airborne Instrumentation		**5a. CONTRACT NUMBER** **5b. GRANT NUMBER** **5c. PROGRAM ELEMENT NUMBER**
6. AUTHOR(S) Joseph Lopez		**5d. PROJECT NUMBER** **5e. TASK NUMBER** **5f. WORK UNIT NUMBER**
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) AND ADDRESS(ES) 812 AITS 300 E. Yeager Blvd. Edwards AFB, CA 93524-0001		**8. PERFORMING ORGANIZATION REPORT NUMBER** 412TW-PA-23056
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 aircraft T-2 modification process to instrument F-16 aircraft employed by the 812 AITS is currently labor and time intensive and involves taking test aircraft away from mission support for measurement, installation, and troubleshooting. When aircraft are down for extended periods of time, they are unable to support critical test and training sorties for the 416 CTF. The 412 TW wishes to embrace the Digital Vision directed by AFMC and SAF/AQ and utilize Digital Engineering tools and processes to drastically reduce aircraft downtime.

Recently, 3 dimensional (3D) point cloud scans of interior bays of the F-16D have been captured, processed, and delivered to the 812 AITS design team. Using already existing software and modeling tools, the point cloud files have been converted into compatible formats to import into assembly models. Using these scanned models, virtual fit checks of the instrumentation installations were performed. Digital photographic results of the scanned files with models of installation equipment are compared with physical fit checks provide insight into the experience, benefits, and limitations of using 3D scans for aircraft instrumentation design.

15. SUBJECT TERMS
USAF TPS, Stanford GPS Lab, ARAIM, DPA, GNSS, Flight Test, C-12J

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
Unclassified			None	44	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