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OFFICE OF PREPUBLICATION AND SECURITY REVIEW

C5 Wire Test Data Ingestion and Power Bi Analysis

Joseph Ronca
Sr Database Admin | WSIRD Tech Lead
KIHOMAC INC.
Joseph.ronca@kihomac.com



C5 AWTs Data Ingestion & Analysis

- Introduction

- 8 Years in USAF Data Analysis

- AFLCMC/HB Cost Analysis

- Reliability Data Analysis

- C5

- U2

- A/H/M C130J

- JSTARS

- Data Engineering, Web Development, Network Engineering





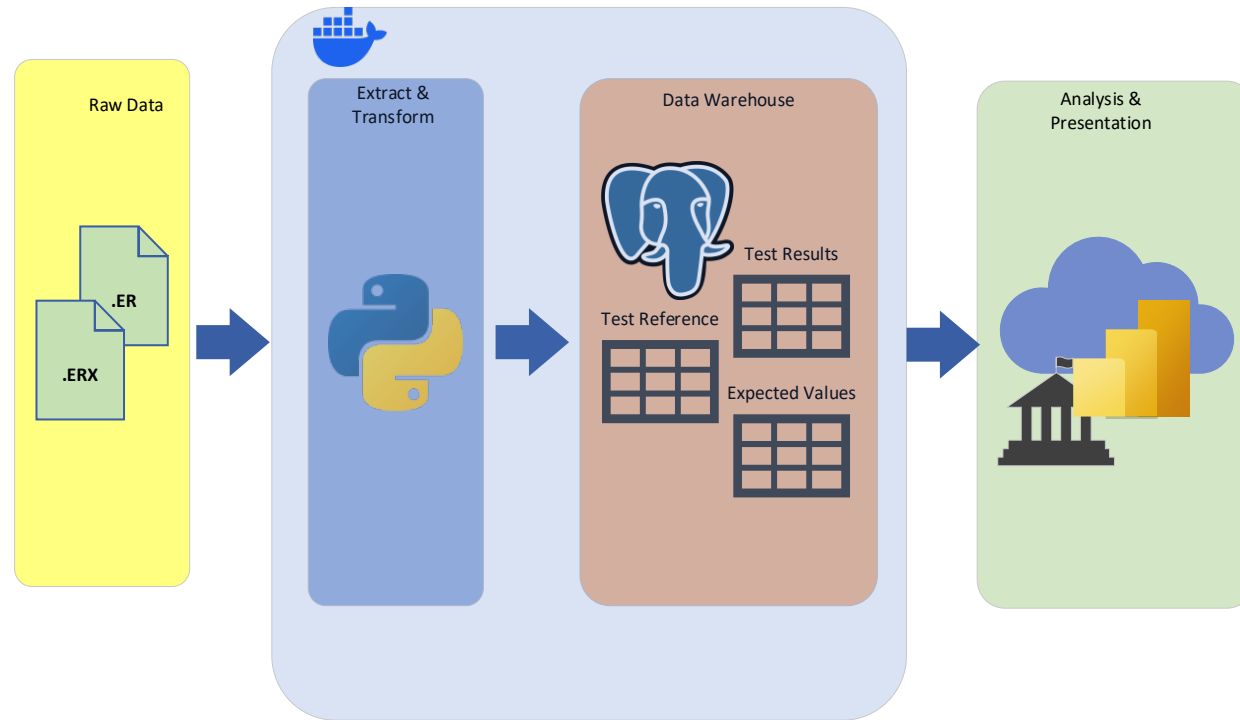
C5 AWTs Data Analysis History

- Data being collected from AWTs testing is easily readable but not ready for analysis and reporting
- Engineers spend days extracting the relevant results from test results once [if] they are received
- This burden reduces our ability to understand fleet wide EWIS trends
- Results are not connected to maintenance actions, giving reliability engineers an incomplete picture

BLUF: AWTs data is often underutilized when making reliability assessments, data inaccessibility does not help



AWTS Data Ingest Architecture



- Two Python Applications: MAGNUS and EVE
- Results Published to DoD PowerBi, along side REMIS data



Current Reports

- Test Event Debrief Page
 - What was tested and what failed from previous test?
- Wire Path History
 - Are there any Wire sections that consistently fail?
- Test Event Comparison Tool
 - How have measured or expected values
- Fleet Failure Metrics
- Test Results Search



DISTRO A DEMO



The dashboard interface features a dark blue background with a central graphic of a truck outline composed of circuit lines. A blue ice cream cone with a circuit pattern on its scoop is positioned above the truck. The text "AWTS IC3 CR34M Dashboard" is prominently displayed in white. On the left, a vertical sidebar contains five icons: a wrench and screwdriver for "TOOLS", a line graph for "METRICS", a circuit board for "EWIS", a headset for "SUPPORT", and a bar chart for "HOME". In the top right corner, the "WSIRD" logo is shown with the tagline "Weapon System Interactive Reporting Dashboard". At the bottom, a footer contains the text "Developed by KIHOMAC | 107 Industrial Way, Byron GA 31008 | WSIRD Portal | Contact Us".

AWTS
IC3 CR34M
Dashboard

WSIRD
Weapon System Interactive Reporting Dashboard

TOOLS
METRICS
EWIS
SUPPORT
HOME

Developed by KIHOMAC | 107 Industrial Way, Byron GA 31008 | [WSIRD Portal](#) | [Contact Us](#)

Last Record: Thursday, May 08, 2025

Distribution A



AWTS Test Comparison

DISTRO A

AWTS *Prototype*
Test Comparison Tool

Date (Left)
All

Unit Under Test (Left)
Loud Speaker

Test Number (Left)
All

Serial Number (Left)
0000000004

Pass/Fail (Left)
All

Date (Right)
All

Unit Under Test (Right)
Loud Speaker

Test Number (Right)
All

Serial Number (Right)
0000000001

Pass/Fail (Right)
FAILED

Filter Print More

Serial Number	Test Number	Wires	Measure Value	Result	Expected Value	Date
0000000004	6.04.012	Wire A	2.19	PASSED	<5.000ohm	Monday, August 26, 2024
0000000004	6.04.012.CTP1	Wire A	2.22	PASSED	<2.57ohm	Monday, August 26, 2024
0000000004	6.04.012.CTP2	Wire A	2.22	PASSED	<2.57ohm	Monday, August 26, 2024
0000000004	6.04.012.CTP3	Wire A	2.19	PASSED	<2.57ohm	Monday, August 26, 2024
0000000004	6.04.012.CTP4	Wire A	0.00	PASSED	>-50.0mohm, <50.0moh	Monday, August 26, 2024
0000000004	6.04.012.CTP5	Wire A	0.00	PASSED	>-50.0mohm, <50.0moh	Monday, August 26, 2024

Serial Number	Test Number	Wire	Measured Value	pass/fail	Expected Value	Date
0000000001	6.04.012.CTP2	Wire A	2.73	FAILED	<2.57ohm	Saturday, February 01, 2025
0000000001	6.04.012.CTP3	Wire A	2.68	FAILED	<2.57ohm	Saturday, February 01, 2025



Wire Path History

DISTRO A

AWTS Prototype

Wire History

5/17/2024

5/8/2025

Serial Number
All

Unit Under Test
Landing Gear

Test Type
All

Wire
Wire B

Failure Rate Trend

Graph Depicts Overall Failure Rate Unless Filtered

History

Serial Number	Wire	Date of Test	Total Tests	Failed Tests	Failure Rate per Wire Path (%)
0000000009	Wire A	Friday, May 17, 2024	2		0.00
0000000009	Wire B	Friday, May 17, 2024	2		0.00
0000000009	Wire C	Friday, May 17, 2024	2		0.00
0000000007	Wire A	Wednesday, August 07, 2024	3	3	100.00
0000000007	Wire B	Wednesday, August 07, 2024	3	3	100.00
0000000007	Wire C	Wednesday, August 07, 2024	3	3	100.00
0000000004	Wire A	Monday, August 26, 2024	2		0.00
Total			23	5	21.74

Fail Notes

Serial Number	Wires	Date	Failure Note
0000000007	Connector B --> Connector B	Wednesday, August 07, 2024	CONTINUITY TEST FAILED HIGH RESISTANCE - Resistance between SM1 J1-41 and SM1 J1-42 failed. - It is strongly recommended to repair the AAG before continuing. - Kelvin Pair errors may cause false results.



Test Search results

DISTRO A

AWTS
↶ ⏏ ↷

Search Tool *Prototype*

5/17/2024 📅 5/8/2025 📅

Test Type: Multiple selections ⌵

Test Result: All ⌵

Connector Identifier: All ⌵

Unit Under Test: All ⌵

Serial Number: 0000000001 ⌵

TPS Version: All ⌵

CTP Version: All ⌵

Work Unit Code	Test Type	JCN	Pass/Fail	Result	Measured Value	Time	Min Dwell	Max Dwell	Stim	Stim Unit	Wires2	Min Limit	Min Limit U
XXXXX	UUT Continuity	NOT ENTERED	FAILED	HIGH	2.52	0.13	0.01	0.10	0.10	A	Wire A	-99,999,999,999.00	ohms
XXXXX	UUT Continuity	NOT ENTERED	FAILED	HIGH	2.68	0.21	0.01	0.15	0.01	A	Wire A	-99,999,999,999.00	ohm
XXXXX	UUT Continuity	NOT ENTERED	FAILED	HIGH	2.73	0.13	0.01	0.10	1.00	A	Wire A	-99,999,999,999.00	ohms
XXXXX	UUT Isolation	NOT ENTERED	FAILED	LOW	94,886.50	0.54					Wire C		
XXXXX	UUT Isolation	NOT ENTERED	FAILED	LOW	95,128.52	0.54					Wire C		
XXXXX	UUT Continuity	NOT ENTERED	PASSED	PASSED	2.51	0.11	0.01	0.15	0.01	A	Wire A	-99,999,999,999.00	ohm
XXXXX	UUT Continuity	NOT ENTERED	PASSED	PASSED	2.78	0.11	0.01	0.15	0.01	A	Wire A	-99,999,999,999.00	ohm
XXXXX	UUT Continuity	NOT ENTERED	PASSED	PASSED	2.81	0.11	0.01	0.15	0.01	A	Wire A	-99,999,999,999.00	ohm
XXXXX	UUT Continuity	NOT ENTERED	PASSED	PASSED	2.82	0.07	0.01	0.10	0.10	A	Wire A	-99,999,999,999.00	ohms
XXXXX	UUT Continuity	NOT ENTERED	PASSED	PASSED	2.82	0.11	0.01	0.15	0.01	A	Wire A	-99,999,999,999.00	ohm
XXXXX	UUT Continuity	NOT ENTERED	PASSED	PASSED	2.83	0.11	0.01	0.15	0.01	A	Wire A	-99,999,999,999.00	ohm
XXXXX	UUT Continuity	NOT ENTERED	PASSED	PASSED	2.85	0.07	0.01	0.10	0.10	A	Wire A	-99,999,999,999.00	ohms
XXXXX	UUT Continuity	NOT ENTERED	PASSED	PASSED	2.88	0.11	0.01	0.15	0.01	A	Wire A	-99,999,999,999.00	ohm
XXXXX	UUT Continuity	NOT ENTERED	PASSED	PASSED	2.90	0.07	0.01	0.10	0.10	A	Wire A	-99,999,999,999.00	ohms
XXXXX	UUT Continuity	NOT ENTERED	PASSED	PASSED	2.91	0.11	0.01	0.15	0.01	A	Wire A	-99,999,999,999.00	ohm



Conclusion

- AWTs Test Data has been potentially underutilized within the C5 SPO
- Key enabler to using AWTs data is the intensive translation from ER/ERX format to a flat format
 - Automating translation turns hours of searching to minutes of query
- Once translated, AWTs data is useful for understanding and communicating wire health within fleet