

# R & M

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USAF Reliability & Maintainability

## CBM+ Journey Continues with Auto-Dit

What is  
Weibull Analysis?

Information Corner:  
Safeguarding  
Air Force R&M Data



AIR FORCE LIFE CYCLE MANAGEMENT CENTER  
Product Support Engineering Division (AFLCMC/EZP)



Photo courtesy of af.mil

# CBM+ Journey Continues with Auto-DIT

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Data integrity is synonymous with quality. And in today's world, most everything is driven by data that are converted into information used to make decisions and take action. Therefore, the foundation of many business and operational decisions comes from initial raw data sets. Confidence in raw data should be high to ensure desired outcomes. For that reason, many organizations invest heavily in "big data" and implement solutions to increase data integrity at every level. The Air Force (AF) is no different. In fact, one can argue it's of greater importance given the mission of the AF to protect our Nation against any threat, at any time with the desired outcome always being to win. For this reason, it is crucial that the AF maintains a reliable, mission ready fleet at all times. Ensuring the greatest mission capable (MC) rates is always the focus on an AF maintainer.

For an AF maintainer to properly manage the reliability, availability and maintainability of an asset, it is extremely important to understand the health of that asset as well as have awareness of the entire fleet. Having an accurate snapshot of a fleet promotes the ability to ensure high MC rates, predict parts usage, reduce duplicative maintenance actions, and decrease troubleshooting time. This accurate snapshot requires a foundation built upon quality, high-confidence data. To assist with data accuracy, the AF requires the function of a Data Integrity Team (DIT) to act as a first level review to catch and correct errors in data before the data are finalized and entered into authoritative data systems. The DIT is a critical step in the overall data→to information→to decisions process. Remember, decisions downstream can only be as good as the initial data used to derive them.

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## CBM+ Journey Continues with Auto-DIT continued >

Plus (CBM+) Initiative, the Air Force Life Cycle Management Center, Product Support Engineering Division (AFLCMC/EZP) teamed with the DIT from Ellsworth Air Force Base (AFB), led by SSgt Jacob Armstrong, to evaluate an advanced data integrity tool. The effort kicked off during the fourth quarter of 2016 and has already shown positive results. Simply based on the large amounts of data that require evaluation on a daily basis, an automated tool is required to accurately flag maintenance records while reducing the workload on DIT monitors. Prior to this evaluation, Team Ellsworth was using “Auto-DIT 4.0” to complete their work; however, that tool was limited in functionality and how accurately it identified potential errors was questionable. The DIT were not able to modify the software to enhance the tool’s performance, but just like every other challenge, our AF maintainers did what they do best – they made it work and pushed on.

Enter, “Clockworks Auto-DIT.” Today, Team Ellsworth has a tool they can modify that enhances their capabilities to flag more errors and increase confidence in their findings. The Clockworks Auto-DIT platform, which is a fully-automated, easily-configured tool, is accessible from any Government desktop or laptop through a web portal. Clockworks Auto-DIT operates similar to other automated tools that some AFBs may be using today... with a few differences and benefits.

**1.** The AF is the “owner” and can manipulate the tool to enhance performance. Clockworks Auto-DIT is built upon free and open source software (FOSS) so there are no proprietary languages to learn. DIT users can write new and/or modify existing rules to flag errors in maintenance records, which satisfies a need to develop technical expertise organically. And, DIT users do not need to be coding experts to accomplish this. The tool is responsive to basic directives that users can quickly learn during training.

**2.** The tool offers a solution that is fully customizable to the community built on a standard platform that all AF users can access, which in itself offers another benefit – the ability for all DITs to collaborate and share data rules to enhance overall effectiveness. And, like other AF collaborative environments, the Clockworks Auto-DIT platform can be enhanced based on common requests received by multiple DITs as updates and pushed out to all users.

**3.** The tool is also customizable in regards to user access and control levels, which can be set and/or re-set by the respective DIT Manager(s).

**4.** The tool offers a traceable record validation process, all in one screen. Clockworks Auto-DIT allows DIT monitors to display,



validate, and correct flagged errors in maintenance records all on the same page. Changes made to maintenance records are exported as a change log and the maintainer responsible for the erroneous record can then make corrections within the authoritative data source (this step is also used to train maintainers to prevent future incorrect entries).

**5.** DIT managers can generate summary reports to identify the error type, review status, and participation rate of individual shops to provide in support of monthly Data Integrity Program status reports for Unit Commanders.

**6.** Because Clockworks Auto-DIT is web-accessible, data analysis is virtually performed and does not require any modifications to hardware or software.

The Clockworks Auto-DIT tool has been successfully tested at Ellsworth AFB using a team of six (6) DIT monitors and two (2) managers. So, let’s talk results. To date, Team Ellsworth has found the tool to be a positive force multiplier. Their team has successfully and easily modified rules and has expedited data quality and change correction needs with backshops. They have been able to flag new errors, and they have increased the confidence level in their results. The DIT has also been able to reduce the steps in their overall process from six to three steps by requiring less time invested in back-and-forth passing between screens to accomplish their duties. They went from having to work across four screens to now being able to complete their assessments in one screen. Overall, greater effectiveness... with more to come as the number of DIT monitors accessing Clockworks Auto-DIT continues to increase across base.

If you’d like to learn more or want to access Clockworks Auto-DIT, please contact the AFLCMC/EZP Home Office (see back cover for contact information). ✦