Air Force Center for Knowledge Sharing Lessons Learned

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Abstract

The Air Force Center for Knowledge Sharing Lessons Learned (AFCKSLL) is responsible for managing all lessons learned for the U.S. Air Force. We are tasked to standardize the lessons-learned input format to enhance the combat effectiveness of all Air Force units while maintaining full compatibility with the Department of Defense Joint Lessons Learned system. Currently, the AFCKSLL manages an Internet and Secret Internet Protocol Router Network (SIPRNET) web site that provides dynamic search and analysis capability for all military users. The AFCKSLL has been used by the Air Force Experimentation Office during the two previous Expeditionary Force Experiments. We developed experimental lessons-learned collection systems for use during these events to provide real-time feedback to the assessors and the experiment control personnel. The next phase of lessons-learned collection for AFCKSLL is an active, interactive web-based collection method to support U.S. Air Force personnel deployed around the world.

AFCKSLL Mission

The Air Force Center for Knowledge Sharing Lessons Learned's (AFCKSLL's) mission is to support all Air Force Major Commands using Joint lessons learned after-action reports and to standardize those reports for distribution through electronic media using web-based technology, with an end goal of enhancing Air Force combat effectiveness using knowledge sharing techniques. The AFCKSLL mission is accomplished through two databases, one classified and one unclassified, containing lessons learned from past Air Force events, including exercises, operations and natural disasters. These databases contain over 30,000 individual lessons learned and provide a single source of information for Air Force members worldwide.

Knowledge Sharing

The databases are made available through two knowledge-sharing web sites, one on the Internet and one on the SIPRNET. Both sites deliver user-selected information and allow a comprehensive search and analysis of all lessons learned. The unclassified database will return all lesson titles regardless of classification and includes annotations to visit the classified site for full details as required. The classified database contains lessons up to the SECRET level plus all the unclassified lessons.

For maximum user flexibility, the search engine is separated into four different types—basic search, advanced search, event search, and ID search. The basic search checks for the information entered by the user. This type of search may return a large amount of data, depending upon the search request. The site will return any and all items that contain the words entered, independently of whether those words are connected. This type of request results in the user receiving the maximum amount of information possible.

The advanced search feature is the best feature for detailed analysis. This search uses a Boolean equation process and returns more specific information. (Examples: A and B = return with both inputs; A or B = return with either input.) The user defines the specific information needed by entering any desired words, an event name, or a specific category of lesson. This request will return any lesson that contains the specific data the user entered.

Often, users require information from a specific event or exercise. In this case, the event search is the best selection. If the user does not know the full event name, any word from the event title will return all events with that word in the title. The user then selects the specific event of interest to receive the lessons learned from that event. A key difference in this search is that the program returns an event title

listing first, rather than the individual lessons learned returned by the other search types. As an example, the Air Force may hold many Blue Flag exercises per year. A user could enter "Blue Flag" in the event name and receive all Blue Flag exercise reports by title and designation number; i.e., Blue Flag 98-4. Then, by selecting the specific report, the user will receive only the lessons from that specific event.

The unique ID search is a request for a specific lesson based upon the Joint Universal Lesson Learned (JULL) number. This search permits the user to select only one item for action. This search type is especially useful when the lesson is classified. The unclassified file contains all lesson titles in both the unclassified and classified databases. When a classified lesson is returned on the unclassified site, the user receives an annotation that the data is classified and refers to the classified site. The user may then use the unique ID search on the SIPRNET site to recall the specific lesson for review. These four types of searches allow any user the maximum capability in identifying specific lessons-learned information.

The AFCKSLL home site also contains an online submission form that may be used to submit lessons learned for entry into the lessons-learned databases. This form allows anyone to make a submission, regardless of location worldwide.

Site Structure

The site actually consists of two mirrored Internet sites to support the Air Force operations. Anyone entering the site Universal Resource Locator (URL) "knowledge.langley.af.mil" will connect to one of the two AFCKSLL sites. The site contains an Internet Protocol (IP) address identifier that determines the type of the originating IP address. Any IP identified as .gov or .mil will have full access to all functions of the site. Users at any other type of IP address can view all the pages and search for title information on the lessons but cannot view the actual lesson text. This dynamic switching is transparent to the user and enables us to make the input form available to Air Force members from any location in the world.

The web sites are developed, created, and managed using Microsoft Front Page, Microsoft Visual Studio, Java Scripting, and Dynamic HTML. The servers are managed and deployed with Microsoft NT Server, Microsoft BackOffice Server software suite, Microsoft SQL Server 7.0, and Microsoft Internet Information Server.

Experimentation

AFCKSLL developers created an active, lessons-learned management web site to support the Air Force Experimentation Office during Expeditionary Force Experiments 1998 and 1999. These web sites were developed to receive Command and Control operator and experiment participant inputs from 40 Air Force locations in the continental U.S., Korea, and the Pacific Ocean. Operators were required to initially register and submit personal demographic information into the assessment database. They then created personal passwords that enabled access to three different types of forms: general observation, operator assessment, and problem reports. The general observation form was for generic information as well as for comment on management aspects of the experiment. The operator assessment form was used for initiative-specific evaluation of the experiment initiatives. This form contained specific questions for each initiative, a Likert scale to rate the initiative plus the capability to comment on any aspect of the Likert selections or initiative performance. The problem reporting form was used to evaluate network operations and capture operator input on computer or network malfunctions.

Assessment team members had additional privileges and could access the database through the web site to extract real-time operator information submitted. The assessor could filter the operator inputs by location, initiative, date, operation cell, or even individual operator. The generic form information was provided as text files for review. The initiative assessment information was returned as graphs to reflect the Likert scale information and text to show any comments submitted. The assessors were given write privileges to the original operator input so that they could add additional information to clarify operator comments as required.

Network personnel managed the problem report forms through an automatically updating control screen. Within two minutes, the operator's input appeared on the management console. Network personnel could then open the input and evaluate the problem, assign the problem to a technician, or comment on any action taken in reference to the submission. The technicians could make status comments and repair action updates for the job from any console on the network. Upon completion of the repair, the network management personnel could close the event and automatically archive it away from the management console. All of these possible actions were available at any of the 40 worldwide

locations, and the network personnel could see the status of any part of the network by selecting its location in the experiment.

The entire operator input area allowed immediate assessment of the inputs received during the experiment. In most cases, initiative assessment was occurring within minutes of the actual submission by the experiment participants. The experiment leadership could check the status of any initiative or network operation at any of the 40 locations by activating the assessment functions on the web site.

Future Collection Program

One problem the Air Force has had in the past is the timely collection and evaluation of lessons learned submitted from events. AFCKSLL is aiding the lessons learned collection and action effort through a web-based lesson learned collection and processing system. AFCKSLL personnel, in conjunction with the Air Expeditionary Force Center (AEFC), have developed an interactive, dynamic, web-based lessons-learned input system. This system was designed to assist the AEFC in management of lesson learned inputs from multiple units and wings as they deploy under Air Expeditionary Force (AEF) parameters to various locations around the world.

Virtual JULLS

The web based collection system was developed to the current parameters of the Joint Universal Lessons Learned System (JULLS) and allows input from any worldwide web location. This "virtual JULLS system" provides an on-line capability that enables full tracking and editing of the input from "cradle to grave." A coordination function enables AEFC personnel to "staff" the input through the submitter's chain of command.

If an AEF member wishes to submit an observation during an event, he or she registers on the Lessons Learned collection website. The registration includes the demographic information needed to contact the individual user if clarification is needed on the observation submitted. Demographic information will also be used during tracking of the input for management and control. After registration, the individual can enter observations into the system using screen forms. Information submitted on the forms are then compiled into the database. During the registration process, the submitter will indicate a chain of command for validation and tracking purposes. If, while completing the form, the individual determines more information is required for clarity, he may save the "draft" observation for later completion. When the form is complete, the individual submits the observation. After submission, the "write" privileges for this entry are no longer available to the submitter and are transferred to the individual in the previously indicated validation chain.

The validation person is notified by e-mail that a submission has been made into the database. This evaluator can then read and edit or add to the entry. If the evaluator feels that further clarification is required, he can return the input to the submitter. The originator receives an e-mail and again has "write" privileges to add information as required.

The observation is handled "virtually" within the system. Every person who has write privileges is doing so on an AFCKSLL database server. The e-mail notifications contain a link to the observation within the database and not to the observation itself. The observation is processed in this manner until a validation authority decides to close the item and archive it in the central repository. Write privileges are restricted to one individual at a time to prevent unknown changes being made while the observation is being processed though the chain.

Currently, this system is being used to support the AEFC during Air Expeditionary Force deployment and is not yet available for general Air Force use. As this "virtual JULLS" program matures it will be available for Air Force wide implementation.