



ADAM is a proprietary software system developed by K2 Technology specifically for the purpose of providing the advanced data capture and analysis required for the development of an effective EAM (CMMS) system, and to provide data files in a format suitable for upload to clients Asset Management Systems, thus eliminating potential human error.

The most significant advantage of ADAM is the ability to manage project data and reviews via one true 'single source' database while verifying and value adding to the data.

The program has been developed using Microsoft .Net technology and is thus fully web enabled giving K2 project, client and supplier/vendor personnel easy access to the system. It uses a 3 tier thick client interface with separate Microsoft SQL and application servers.

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ASSET DATA

ADAM allows the user to build an asset register with a functional hierarchy to suit the client requirements.

With the asset register in place the program then allows the user to collate and record the following information against each item in the asset register:

- Equipment hierarchy
- Manufacturer and Model
- Equipment design/nameplate data
- Verification information
- RBI/SIL and other Maintenance build data
- Maintenance procedures
- Bills of materials (BoM)
- Spares inventory requirements
- Craft requirements for Maintenance build
- Document linking

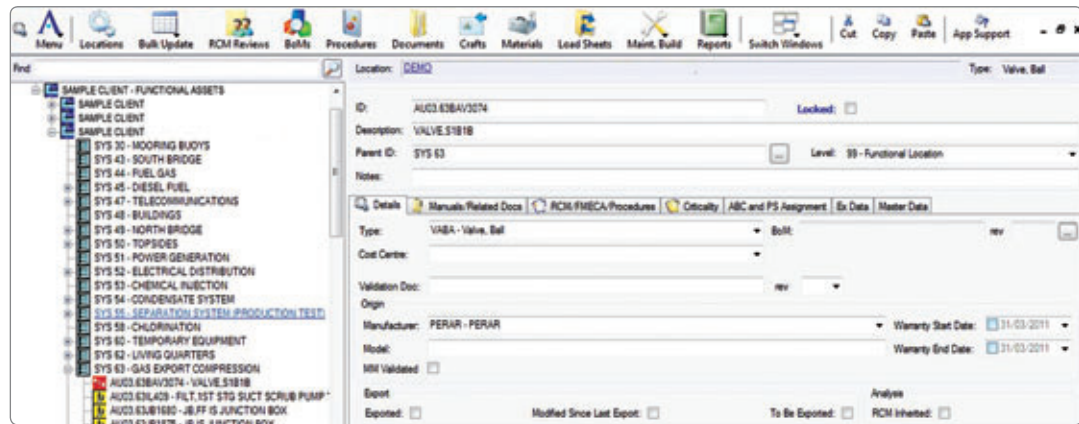


Figure 1. Main ADAM display screen, detailing all information trees at a first glance.

CONFIGURABLE FOR CLIENT DATA

The program has been specifically designed to be configurable such that clients existing CMMS/EAM data tables, rules, reporting requirements/ KPIs etc can be used in the configuration of the ADAM database.

INTERFACE WITH CONFIGURABLE TAG ALLOCATION DATABASE

The most common issue K2 personnel encounter on projects is the difficulty in controlling the issue of tag numbers during project engineering. K2 has developed a database and process to allow control of tag allocations in line with the client's tagging rules. ADAM is configured to allow ease of import from the tag allocation database.

CRITICALITY

The program has an inbuilt criticality review tool which allows our staff to load the clients Risk/Safety matrix for utilisation as the basis for equipment criticality allocation. This equipment criticality information can then be used as the basis for prioritising and reporting on maintenance and spares build progress.

RELIABILITY CENTRED MAINTENANCE (RCM)

ADAM utilises the existing asset register as it is being developed to conduct RCM studies, the results of which are recorded including FMECA data. ADAM can also be used to capture the results of other studies/reviews including RBI, SIL etc. ADAM also enables the development of the work program resulting from the RCM, RBI, FMECA, SIL, Statutory requirements and OEM recommendation, including maintenance procedures, associated spare parts, labour types and durations etc.



MAINTENANCE PLAN BUILD

Once the Maintenance recommendations have been reviewed ADAM then has a Maintenance Plan Build module which allows the user to develop the actual Maintenance Plans to be loaded to the clients system.

This tool is based on the SAP Maintenance Plan requirements, however it is configured so that it can be used for other systems as well.

The resulting maintenance plan/work program can then be electronically exported to the clients CMMS/EAM.

SPARE PARTS REVIEW

ADAM has the capability of conducting a simplified spare parts review using client provided parameters to configure the review basis. Parts information can be loaded from existing catalogue sources into ADAM to enable Bills of Materials (BoM) to be developed from existing catalogue data. ADAM can then verify that all applicable equipment has an appropriate BoM and can conduct comparisons on like equipment to ensure data integrity.

VERIFICATION

The verification process encompasses comparisons between client P&ID's, vendor MDRs, installed equipment and specification datasheets.

ADAM provides a unique opportunity to integrate project verification services with operational groups through real-time data comparisons, enabling the verification process to be captured/recorded, and thereby eliminates costly rework exercises.

MMS DATA VALIDATION/ REPORTING

Through a series of reporting tools K2 are able to verify by system and sub system which areas of the facility are complete.

A sample system is then usually uploaded to the clients CMMS test environment for testing prior to uploading of information to the 'live' CMMS.

Reports can be configured for automatic verification, thereby reducing the risk of data upload failure. This process also serves as a QA/QC data check saving time and money prior to uploading to the CMMS.

ID	Rev	Description	Manufacturer	Model	Notes	Rank	Materials	Sub-BoM	Location	Used By BoMs
BOM000508	0	STARTER.ABB.DOL 0.15KW 8E/2 1P	ASEA BROWN BOVERI	DOL 0.15KW 8E/2 1P		100 %	25	0	2	0
BOM000509	0	STARTER.ABB.DOL 0.37-11KW 8E/2	ASEA BROWN BOVERI	DOL 0.37-11KW 8E/2		100 %	26	0	2	0
BOM000510	0	SWBD.ABB.BUSTIE 52MCC103	ASEA BROWN BOVERI	BUSTIE 52MCC103		100 %	40	0	1	0
BOM000511	0	STARTER.ABB.DOL 15-22KW 8E/2 ...	ASEA BROWN BOVERI	DOL 15-22KW 8E/2 15KW 80A		100 %	28	1	14	0
BOM000512	0	STARTER.ABB.DOL 15-22KW 8E/2 ...	ASEA BROWN BOVERI	DOL 15-22KW 8E/2 11KW 83A		100 %	28	0	12	0

ID	Description	Type	Parent
AJ03.52MCC1014F403	START.T100 GG LUBE OIL PUMP A	Starter. LV (MCC)	SWBD.415V NORMAL
AJ03.52MCC1014F404	START.T100 GG LUBE OIL PUMP B	Starter. LV (MCC)	SWBD.415V NORMAL

Figure 2. Display screen of 'Bill of Materials' information.

DATA MANIPULATION AND CLEANSING

Through a variety of inbuilt tools and reports ADAM allows the user to manage and clean data including:

- Ability to load data from any spreadsheet without need for standard load sheets
- Configurable large quantity copying of information across assets without the need to review each asset
- Multiple views of attached data (eg. Document links) to allow comparison and clean up
- Configurable data queries in Excel type format which allow bulk review and rectification of data
- Standard and Configurable reporting

SECURITY

K2 has developed a secure site for the ADAM software that is separate from the main website and is protected by virtue of the fact it is proprietary software. If you do not have a copy of the front end you cannot access the database.

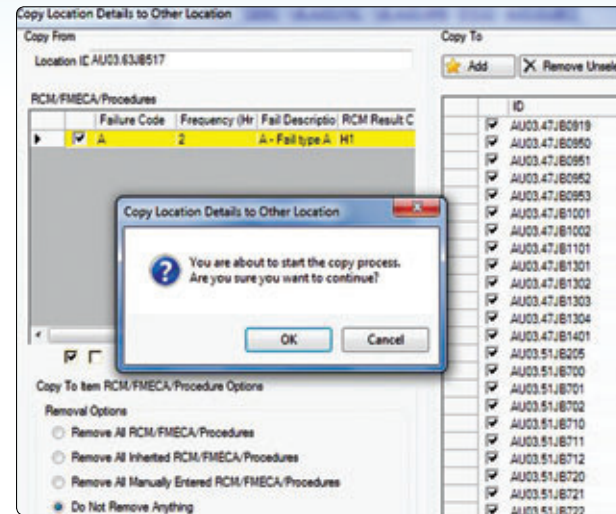


Figure 3. Display screen of 'Copy Location Details'.

ADAM employs industry standard 3 tier technology utilising a thick client interface with separate SQL and application servers. Each layer is filtered for communications with the two software systems each employing their own individual security measures.

In addition access is further controlled by login IDs, passwords and user group access rights.

All data passed through the system is encrypted and so cannot easily be captured while being transferred between client and server.

MULTIPLE PROJECT MANAGEMENT CAPABILITY

ADAM has the advantage that it provides access for K2 and client project, operations, commissioning and vendor personnel to single source data thereby allowing projects to be managed from multiple locations around the world.

An example being projects where topsides and hulls are being built in separate locations, all personnel will be looking at the same Asset Register despite being geographically separated.

Personnel can access ADAM from construction/commissioning locations around the world thus enabling onsite verification and update of the single source data, giving as close to real-time information as possible to all project personnel.

REMOTE CLIENT ACCESS

Clients can have access from anywhere via the World Wide Web and can monitor specific project progress.