



SPECIFICATIONS FOR v9

DAD is a systems and link tool (SALT) which enables users to build software models of connected systems. These models can store all information necessary for design, construction, project management and maintenance.

1. INSTALLATION REQUIREMENTS

DAD is a thin client/server application running on the Microsoft SQL 2005 database engine. The application layer is written in Microsoft .NET 3.5.

For installation with 3 or less users and a database size less than 3GB it is possible to use the free Microsoft SQL Desktop Express. In other installations a SQL 2005 server license must be purchased. No other 3rd party software is required for DAD.

A DAD server should have these features or better

Software

- Microsoft SQL Server 2005/2008
- Windows 2000 or later
- Adobe Acrobat Reader v6 or later

Minimum Hardware

- Intel Based Server, P4 1GHz
- 4GB RAM
- 10GB free HDD space.

DAD installations with 3 or less users and smaller than 3GB may use the free Microsoft SQL Server 2005/2008: Express Edition. Installations with more than 15 concurrent users should contact I&E Systems to discuss the details of their proposed server and network configuration for optimum performance.

A DAD client should have these features or better

Software

- Windows 2000 later
- .NET 3.5 Framework
- Adobe Acrobat Reader v7 or higher

Minimum Hardware

- Intel based Pentium III 600MHz
- 2GB RAM
- 600MB free hard drive space



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2. LICENSE TERMS

The license term has no limit.

There are no restrictions on the quantity of data except the Microsoft SQL limits. We do not recommend a model larger than 300,000 components on the hardware described in section 1 above.

The license limits the maximum number of concurrent users. This is set on initial installation; however additional concurrent users can be added at any time.

3. FUNCTIONS AND FEATURES

There are no add-on modules for DAD. Each installation has all features.

DAD can represent any form of connected system. Users have total control of the characteristics of all objects in the model and how they are placed in the structure. It is in use for instrumentation, control, power and ICT systems.

3.1. SECURITY

Security of the model is controlled by appropriate setting of the rights of the user team members. The rights are set by one of the team who can also act as the DAD Administrator. When logged as the Administrator this person can at any time:

- Add/remove DAD users
- Grant/withdraw rights to each DAD user individually. The rights are defined in detail covering 20+ activities; refer to the DAD User Manual for a full description.

Windows authentication is used to establish the identity of users

3.2. OBJECT ORIENTED MODEL

The model is made up of Components and the Connectors that link them to one another. The GUI displays these in a easily recognized form where users can handle them as objects.

Users can define the following features of components:

- The type of equipment that each object represents and the detailed features and behaviour that they display
- The location of each object in their plant model.



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Users can define the following features of connectors:

- The type of connector that each object represents and their features such as number of cores
- The components that are joined together by the connector.

Components and connectors inherit their properties from the type, location and group folders that they belong to. So changes to these parent objects flow to their child objects according to the rule of inheritance:

- Changes to Attribute membership or order in a parent folder of the Type and Location Views will flow to all their children
- Changes to the values stored in Attributes in parent folders will flow to their children unless these are overridden in the actual object
- Changes to the Shapes used to represent a Type of component will flow from the parent folder to all children
- Changes to the terminal (connection points) of a Type folder will not flow to its children until they are resynced.
- Changes to the cores in connectors will not flow to its children until they are resynced.

3.3. FLEXIBILITY

Users can redefine components types and locations by dragging and dropping them (or cutting and pasting) between folder in these Views. This action will retain all the existing data in these components subject to the inheritance rules.

Users can redefine connector types by cutting and pasting them between folders, again this action will retain existing data subject to the inheritance rules.

Users can define additional terminals and rename existing terminals (connection points) in components as required.

Users can define additional cores in cables and rename existing cores as required.

Attributes can be created, deleted or renamed by users. The data type of attributes cannot be changed by users except at the time of their creation.

When a user performs an action which will cause the deletion or modification of data due to the action of the model rules a message box appears detailing these. The user must confirm his action before the command is executed.



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3.4. REPEATING OF DATA

There is no need for users to repeat any data in the model. The automatic flow of data under the inheritance rules can be employed to eliminate all repeats.

In general data can be edited by the user in any context within the GUI and when this happens it will flow so that it is visible in all other windows on the model.

3.5. RE-USE OF EXISTING DATA

Users can create full copies (clone) of any components in the model.

Users can create full copies of any components and the connectors that link them (clone with connections). This will make exact copies of assemblies such as panels and systems. Cloning is limited to 100 components at a time. This is a key enforced limit and can be varied by I&E Systems subject to negotiation.

3.6. IMPORTING EXISTING DATA

There are inbuilt utilities that allow the user to import data from lists such as:

- cable schedules (CSV format)
- equipment lists (CSV format)
- other DAD models.

Users can also import Shapes and Icons from other DAD models.

Users can cut array data from any CSV source (Excel is best) and paste it into the DAD spreadsheet. This feature also allows the export of tabular data to any CSV target.

3.7. FULL HISTORY

All users actions in the model are automatically logged. Every change in data or connection is stored with time, date and user name. The previous configuration of the piece of data is also stored.

We recommend you generate work procedures outside DAD and then use the History Log to audit and enforce these. This approach offers flexibility with consistency.

There are simple built in tools that allow users to check for duplicate names and data consistency within the model.



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Users can redefine components types and locations but dragging and dropping them (or cutting and pasting) between folder in these Views. This action will retain all the existing data in these components subject to the inheritance rules.

3.8. STORAGE OF FILES AND DOCUMENTS

Users can import files and documents of any type (compatible with Windows OS). These are embedded within the SQL tables and so are controlled copies subject to the DAD history logging. Emails can also be stored and responded to from within DAD.

3.9. LINKING EXTERNAL FILES FOR EASY REFERENCE

Users can attach external files to any object in the model. This feature is a convenient way of allowing immediate access to references such as:

- manufacturers' data sheet
- photo of the installation
- test record
- maintenance report
- calculations.

3.10. PUBLISHING

Any body of data in DAD can be published as a PDF file (or exported as a .DGN or .DWG script file).

The DAD workpad can contain many levels each showing some different aspect of the model. These can all be published by the user.

Published files are stored within the Document View in DAD. They can be opened there.

Each document has a full audit history similar to other object in the model.

Document title blocks can be fully configured by the user. Document title consistency is achieved by using self-source look up fields.

There are automatic checks preventing the duplication of any drawing number and revision. The number and revision can be any format.

To facilitate change management in the mode when a document is published links are made to store:

- in any component the documents that it has been published on



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- in any connector the documents that contain it
- in any document the components and connectors that it displays.

Published documents can be opened for editing by the user. When this is done:

- a new workpad opens showing the content of the document as a view on the model ready for editing
- any data in the active layer that has been modified will be have been updated in this display
- any tabular data from a spreadsheet will be updated with current data when it is re-opened and used to replace the existing table
- when this is republished the title detail will be retained.

3.11. FORMATTING OF PUBLISHED DOCUMENTS

There is an extensive suite of tools to allow the user to control the formats displayed on drawings. There are report format builders for users that allow them to achieve sophisticated tabular reports.

It is possible to have graphics, tables and imported images all on the same document when published from DAD.

3.12. MARK UP TOOLS

DAD has a utility to produce sketches and to mark up published documents. This can be used to build up complex shapes.

3.13. FINDING DATA IN THE MODEL

Objects are inherently stored in the following views:

- by the type of equipment. Type folders list the material of a particular type – they can be used as an inbuilt Material Take Off
- by location. Location folders list the components in any area with the system modeled
- by the connector type. These folders can be directly as cable take offs.

There is a quick find utility that acts similarly to the Google desktop search

Users can also create sophisticated filters to find data on any of the object types. The syntax used to create these is simple and does not require knowledge of SQL expressions.



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3.14. EXPORTING DATA FROM DAD

There are utilities to export data for use in other DAD models.

I&E Systems will build SQL Views that allow users to query the DAD model from external applications. This manner of linking DAD to other database applications has significant advantages:

1. low cost to create
2. simple for the user to extend or change the data exchange.

4. TRAINING, SUPPORT AND UPGRADES

Training for DAD is a simple 1 day course for new users.

We recommend hands on support for your first model set up. We offer this support in a number of forms:

- a skilled DAD person to work in your office for the set up. This period can last between 2 and 30 days depending on the nature of the project and other circumstances
- on-line support during the set up using Skype, Webex or ConnectNow.

All users have free access to a web site support page:

- where they can see prior questions and responses
- read news about current development
- post their queries which are answered within one working day.

Bug fixes and minor version upgrades are issued at no cost.

Enhanced support can be purchased. This level of support guarantees on-line support via Skype or GoToMeeting. It also entitles the user to obtain all major version upgrades of DAD without further charge.

We support all earlier versions of DAD and can upgrade the model from any of these to the latest issue. So users can perform upgrades of DAD when and if they choose.