Integrated Documentation System (IDS™)

Overview

The Integrated Documentation System (IDS™) is a fundamental component of AKA's engineering process. The IDS™ provides a complete documentation package that fully details the engineering scope of supply and details the integration of all vendor equipment.

The final documentation package of a system references all supplied equipment. It includes; operational philosophies, technical specifications, operation/maintenance procedures, parts lists, mechanical drawings, electrical schematics, and system software.

AKA's documentation team works collaboratively with the client to produce the required documentation. The documentation development process ensures the highest quality of project deliverables.

The IDS™ development process includes the following tasks:

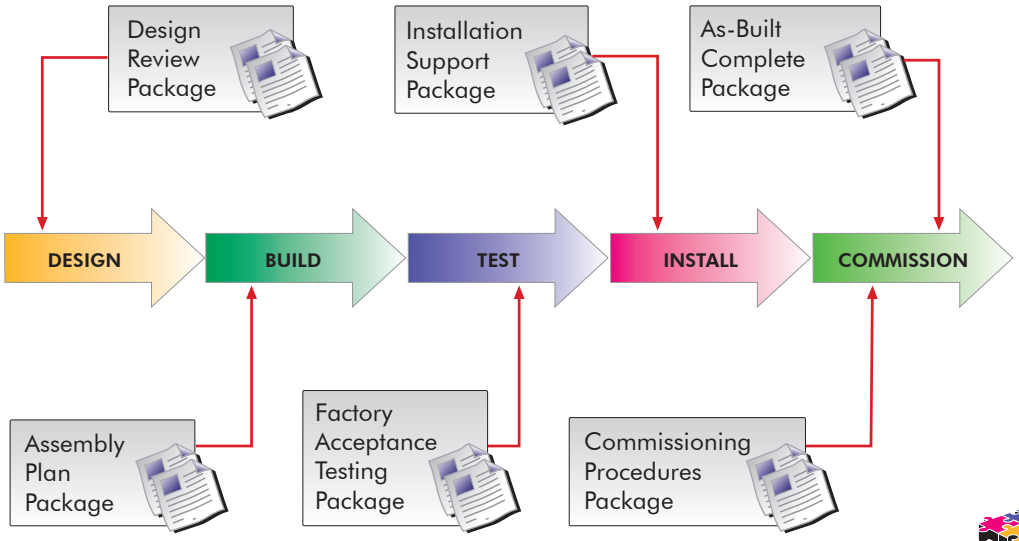
- Project documentation familiarization.
- Assessment of client needs and source document gap analysis.
- Resource acquisition.
- Overall design of deliverables.
- Storyboarding.
- Overall graphic design.
- Database population.
- Revision tracking.
- In-depth project technical familiarization.
- Issue tracking.
- Technical writing.
- Technical illustration.
- IDS™ E-DOCS creation.

Features and Benefits

- The IDS™ reduces the system learning period and provides access to the necessary information required for troubleshooting.
- Personnel can identify any physical device and use the component's device number to quickly access the appropriate area of the IDS™ for more information.
- The IDS™ E-DOCS provide easy access to any system document from any PC or laptop. This provides critical on-site support for end users and project personnel during installation, commissioning and operation.
- AKA relieves the client's design team of the arduous task of translating and formatting technical information into user friendly documents.
- Documents are produced and presented as though they were original client documents.
- Mission critical data such as PLC programs and programmable device configuration files can be archived as part of the E-DOCS collection.
- The IDS™ documents are reproducible. All documents are electronically stored and can be reproduced in their original quality as required.

Overview

IDS in the Engineering Process



Guide Form Specifications

The Concept of Integrated Documentation

The final documentation will combine the device manufacturers' information with an in-depth analysis of a project's integrated systems to produce an operator/ maintenance-orientated package.

Traditional documentation provides a physical combination of all of the various generic information packages from the system sub-suppliers and OEMs. The IDS™ will focus on providing a fully integrated package of installation-specific documentation. It binds all system installation components to the documentation package using comprehensive cross-referencing and a master reference manual.

The master reference manual will provide an overview of the entire system, providing the user with a general understanding of the system's philosophy of operation.

The functions of all devices will be described from a technical and operational viewpoint, with respect to their operation within the system. The OEM documentation will describe any additional special configuration.

Installed system(s) will be described from both an operational and maintenance perspective.

Information Access

The final documentation will provide an access path to appropriate points within the documentation set from any point within the physical installation, or from within the documentation package. This is accomplished through a coordinated approach to documentation development, field referencing, and information cross-referencing working together to integrate the documentation with the system installation.

From a practical standpoint, this allows maintenance and operational field personnel to identify any physical device they wish to reference or troubleshoot by using the component's device number to access the appropriate area of the final documentation.

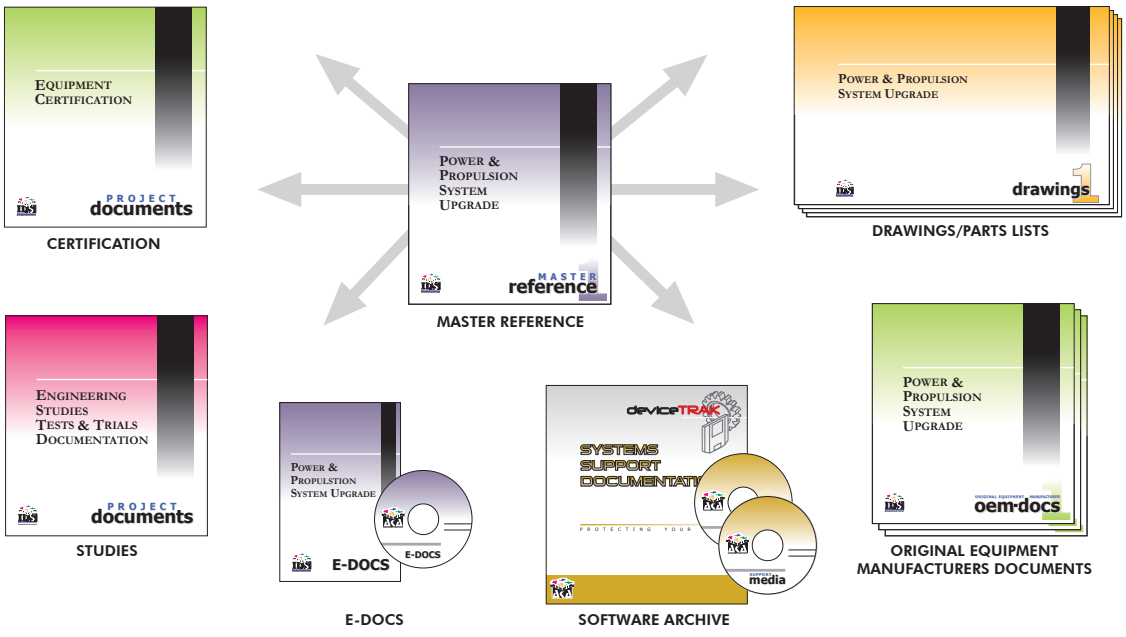
The first point of access is through the systems' parts list. The parts list identifies all schematics in which the device can be found. This allows the user to effectively begin troubleshooting the problem. Alternatively, the parts list provides cross-referencing to the device's OEM documentation. This allows the user to look up generic manufacturers' documents. The master reference will enable the user to review specific device configuration and integration within the installation.

Access from the documentation to the field will be just as seamless, with cross-referencing built into the drawing package and the master reference identifying and linking all devices to physical plant locations and system functions.

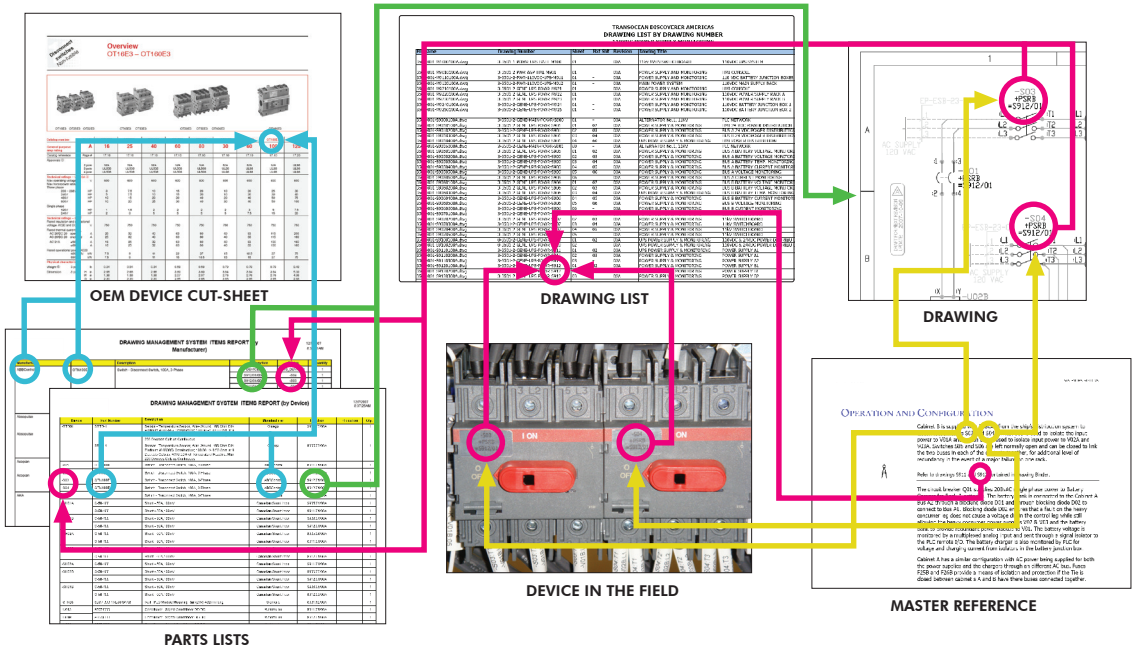
In addition to being an invaluable tool for the end user, the predefined final documentation structure will allow the supplied systems data to be readily available during a project. This provides critical on-site installation and commissioning support for project personnel and reduces the amount of lost time and resources.

Diagram

Components of an IDS Implementation



Cross Referencing of Devices



Products

Products

A typical IDS™ will contain the following major components.

Master Reference

The Master Reference has been designed as the master access book to the technical documentation, instruction manuals, specifications, parts list, cable list, tests and trials documentation, systems software archive and the drawings and schematics for all systems. The referenced documentation is contained within accompanying book sets.

The purpose of the Master Reference is to facilitate the operators' access to information by providing a range of access devices and cross-referencing to all IDS™ components. In this way, operational staff would use the Master Reference as the main reference point in their search for any installation-specific information.

Beyond its role as a reference book, the Master Reference provides the operational philosophies of all systems with component descriptions, line diagrams, photographs, and operational and procedural information, as well as maintenance and troubleshooting techniques. This information, which is presented in logical modules, is provided in a simple and concise manner, ensuring that the Master Reference also serves as an effective training/reference tool throughout the life of the installation.

The Master Reference is fully indexed and cross-referenced to all other IDS™ and field components. A glossary of terms is also included to facilitate understanding.

The Master Reference includes the following topics:

- Introduction to the Use of the Master Reference
- Systems Overview
- Operating Procedures
- Periodic Safety and Maintenance
- Fault Diagnosis and Repair
- Propulsion Control System
- Generator Control System
- Control Power System
- Alarm and Monitoring System
- Programmable Logic Controllers
- Glossary and Index

deviceTRAK Systems Software Archive

Developed by AKA, deviceTRAK is a unique configuration management tool that captures, organizes, stores, protects and controls system-specific configurations for programmable devices of an entire plant. It also provides all required support material for maintenance personnel.

deviceTRAK is populated and used as the software "vault" that contains the installed versions of all programmable device configurations for the installed system. Source code is then available for modification via a "check-out" system where all configuration updates are tracked and recorded.

The deviceTRAK support documentation contains a detailed list of all programmable devices that require unique and specific configuration information to function as an integral part of the overall system. It also provides information on the device itself, including its location and its parent sub-system and system.

Products

Parts List and Spare Parts List

The parts list is developed in conjunction with the development of the system drawings. The parts list is presented in electronic and hard copy format by location, by device, by manufacturer and by part number, thereby expediting user access.

The parts database contains the following fields:

- Device number;
- Part number;
- Model number;
- Manufacturer;
- Supplier;
- Part description;
- Quantity fitted;
- Associated drawings; and
- Sheet number.
- A spare parts list is also provided in similar formats.

OEM Documentation

The OEM documentation contains operation and maintenance manuals, as well as the technical sheets and narratives for each installed piece of equipment as supplied by the appropriate manufacturer. Manuals and other technical documentation are catalogued according to manufacturer, and are arranged in this book with tables of contents to facilitate the accessibility of information. OEM documentation is referenced in the Master Reference according to book and section numbers.

Drawings and Schematics

All drawings and schematics, after being validated and determined FINAL AS BUILT, are presented in 11” x 17” format. All drawings are grouped into discrete binders with a contents page and a drawing index, which provides a location in the document set, drawing number, sheet number, drawing title, and all other data available through the title block. AKA will use its Project Tools to automatically extract and compile the relevant title block information.

All drawing development and drawing related information (i.e. parts lists, cross references) is managed within AKA’s Drawing Management System (DMS) utility. The DMS supports the engineering process through establishing the relationship between devices, functions and locations within an installation.

Cable List

An extraction of cable information from the drawings enables the provision of detailed cable lists for the refitted systems on each installation. This is provided in both electronic and paper format.

QuickFind Documentation Map

The purpose of the QuickFind documentation map is to provide the user with a single page content reference to the IDS™. The QuickFind is a laminated card detailing the location of each documentation component as an additional information access device for the end user.

Notes

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