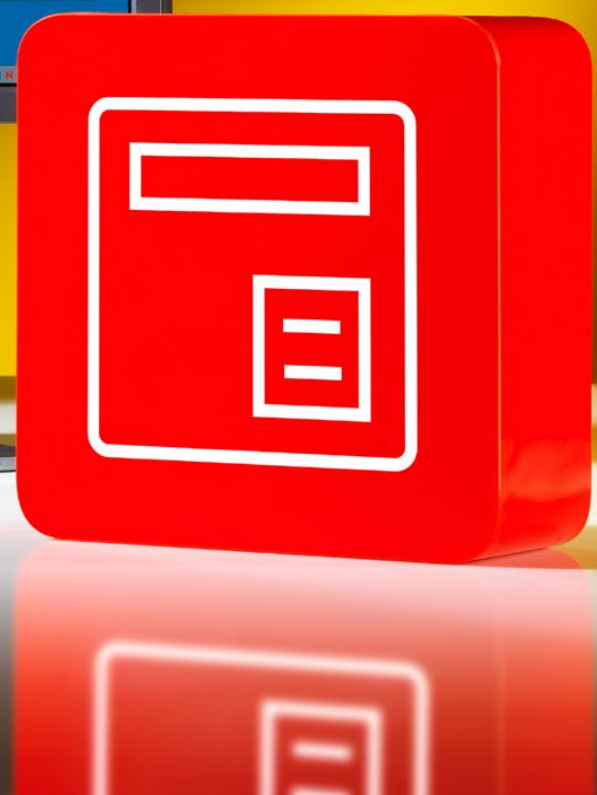


# ADMO

Maintenance management solution for protection systems



# Keeping track with ADMO

## The challenge

Proper functioning of the protection system with all its individual components has a major impact on the reliability of the bulk electric system. Therefore, proper testing of assets and regular maintenance are essential to keep the system in good working order. In addition, quick access to relevant test documentation is indispensable.

For efficient planning and in order to provide proof when requested, you must be able to answer the following questions at any time:

- > When was the last maintenance test carried out for each component of the protection system?
- > When are the next maintenance tests scheduled?
- > Where are the test reports (evidence for maintenance) for all the components?
- > What is the testing and maintenance status of the overall protection system?

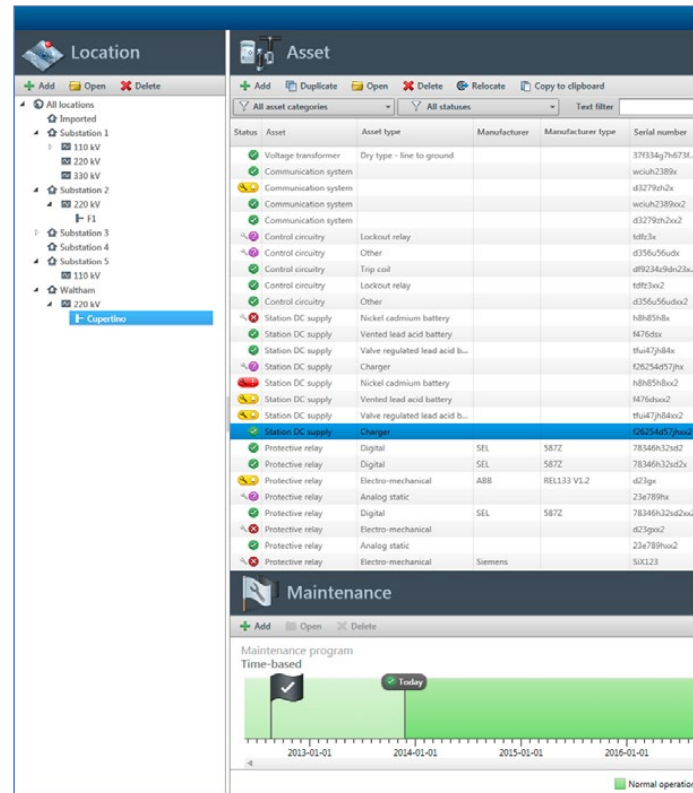
In practice, it is often difficult to keep track of maintenance schedules, test data and associated documents. For example, documents such as test plans, data sheets and test reports are often kept in various locations. This causes a lot of organizational overhead and makes it difficult to access these documents in case of a compliance audit.

## The solution

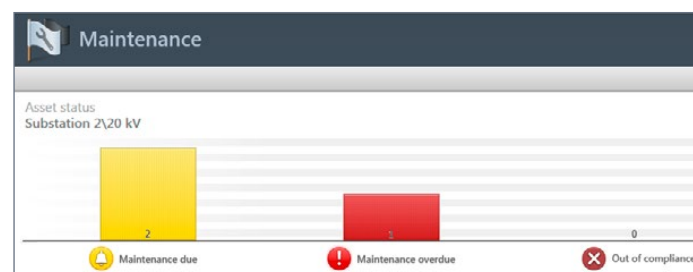
In order to provide user-friendly access to all information and documents, we offer the innovative solution: ADMO is an easy-to-use database software for central planning and management of all testing and maintenance activities for protection systems in the power industry.

You can manage the following protection system components:

- > Protective relays
- > Communication systems
- > Control circuitry
- > Current and voltage transformers
- > Circuit breakers
- > Station DC supplies
- > Energy meters



Convenient and clear user interface




Maintenance status of all system components

Administration ? Help ? About

50 of 50 displayed assets

Substation	Last maintenance	Next maintenance	Maintenance due	Maintenance overdue	Out of compliance	Segment
Cupertino	2012-08-02		2022-08-02	2023-08-02	2024-08-02	
Cupertino	2012-08-14		2016-08-14	2017-08-14	2018-08-14	
Cupertino	2008-05-13	2013-09-20	2012-05-13	2013-05-13	2014-05-13	
Cupertino	2010-08-02		2014-08-02	2015-08-02	2016-08-02	
Cupertino	2012-08-02		2016-08-02	2017-08-02	2018-08-02	
Cupertino						
Cupertino	2012-08-02		2016-08-02	2017-08-02	2018-08-02	
Cupertino	2012-08-02		2016-08-02	2017-08-02	2018-08-02	
Cupertino	2012-08-02		2022-08-02	2023-08-02	2024-08-02	
Cupertino	2012-07-09		2012-10-09	2012-10-09	2012-11-09	
Cupertino	2012-08-30		2012-11-30	2012-11-30	2012-12-30	
Cupertino	2012-10-29	2013-03-14	2013-01-29	2013-01-29	2013-02-28	
Cupertino	2012-08-02		2012-11-02	2012-11-02	2012-12-02	
Cupertino	2012-08-02		2012-11-02	2013-02-02	2013-04-02	
Cupertino	2012-10-11		2012-11-11	2013-01-11	2013-02-11	
Cupertino	2012-08-02	2013-08-15	2013-08-02	2013-11-02	2014-02-02	
Cupertino	2012-08-02		2016-08-02	2017-08-02	2018-08-02	
Cupertino	2012-08-02		2016-08-02	2017-08-02	2018-08-02	
Cupertino	2011-01-18		2012-01-18	2013-01-18	2014-01-18	
Cupertino						
Cupertino	2012-08-02		2016-08-02	2017-08-02	2018-08-02	
Cupertino	2005-03-02	2013-01-23	2009-03-02	2010-03-02	2011-03-02	
Cupertino	2012-08-02		2016-08-02	2017-08-02	2018-08-02	
Cupertino	2005-05-18		2009-05-18	2010-05-18	2011-05-18	

Show all events Show default range



For all assets managed with ADMO, asset data, location, maintenance cycles and all associated test documents are stored. The well-structured layout and the clearly arranged graphics allow you to see which maintenance events are currently due, as well as the current maintenance status of the various assets. Stored test documents and maintenance information are available at any time.

ADMO supports storing of OMICRON Test Universe test data, third-party test documents and documents individually created in Microsoft Excel, Microsoft Word or Adobe Acrobat (PDF) file formats. Of course you can attach graphic files as well (e.g., photos of the test set-up, screenshots).

16 of 16 assets displayed

Substation	Last maintenance	Next maintenance	Maintenance due	Maintenance overdue	Out of compliance	Segment

0 4 0 0

No maintenance defined

## Your benefits

- > Fast and easy access to all test documents, also while testing in a substation without direct network access
- > Well-structured management of maintenance tests
- > Maintenance status overview of the complete protection system and its individual components
- > Type- and manufacturer-specific management of documents in one central location

# Convenient maintenance management

The functionality of ADMO is based on the interaction between three levels: Location – Asset – Maintenance. Once a location is defined, assets can be added by entering the component-specific data and the appropriate maintenance cycles. Subsequently, all related maintenance events are scheduled and managed at the maintenance level.



The hierarchically structured location management allows a clear representation of all relevant power stations and substations with their voltage levels and feeders. When a location is selected, ADMO gives you an overview of the maintenance status of all assigned assets.



System components to be added are assigned to a location and defined. The definition includes the precise data of the asset and its maintenance cycle. For the maintenance intervals individual settings can be selected. On completion of the input, the component appears in the overview with its current maintenance status. Important alterations are tracked in the History.



For a selected asset ADMO displays a timeline with the maintenance status and past and future activities. You can schedule maintenance events and archive your test data. Everything is well-organized, recorded and easily visible at a glance, from commissioning to scheduled and performed maintenance events. Associated test reports and measurement results can be retrieved quickly and easily.

The screenshot displays two main sections of the ADMO software interface. The top section, titled "Location", shows a "Substation" form with various input fields. The bottom section, titled "Hierarchical location management", shows a tree view of locations.

**Substation Form:**

Substation		Contact person	
Name	Waltham	Name	John Smith
Region	North East	Phone no. 1	1-781-672-6200
Division	RI2	Phone no. 2	
Area		E-mail	info@omicronusa.com
Plant	Waltham III	Attachments: + - x	
Address	Fifth Avenue	Map.jpg	
City	Waltham		
State/Province	Massachusetts		
Postal code	02451		
Country	United States of America		
Geo coordinates	N 42°23'20" / E 71°14'32"		
<input type="button" value="Edit coordinates..."/>			
▼ Company information			
Company	OMICRON electronics GmbH	Address	Third Avenue
Department		City	Waltham
Phone no.	1-800-OMICRON	State/Province	Massachusetts
E-mail	info@omicronusa.com	Postal code	02451
		Country	United States of America
<input type="button" value="Load default"/> <input type="button" value="Save as default"/>			
▶ Additional addresses			

**Hierarchical location management:**

- ▲ All Locations
  - ▲ Substation 1
    - ▲ 500 kV
      - Feeder1
      - Feeder2
      - Feeder3
    - ▲ 230 kV
      - Feeder1
      - Feeder2

## Asset

**Protective relay**

Asset data History

Asset type: Digital

Manufacturer: SEL

Manufacturer type: SEL 421

Serial no.: 123456

Manufacturing year: 2009

Asset system code: 042106112221X4E

Apparatus ID: 1833-F12

Substation: Airport Copalda

Voltage level:

Feder:

Comment:

Application: Distance Protection

Model number: 12BVK234

Relay loadability: 1 A

Settings revision:

Firmware version:

Additional FW info:

Ratings

Operation

In operation

Monitored

Alarm path with monitoring

Maintenance

Responsible person:

Status: No maintenance defined

Maintenance program: Time-based

Segment:

Maximum interval: 6 years

Warning interval: 5 years

Planned interval: 4 years

Last maintenance: n/a

Next maintenance: n/a

Defining assets and maintenance cycles

	Protective Relay	Digital
	Protective Relay	Electro-Mechanical
	Protective Relay	Electro-Mechanical
	Protective Relay	Digital
	Protective Relay	Electro-Mechanical
	Protective Relay	Digital
	Protective Relay	Digital
	Protective Relay	Digital

System components with maintenance status

## Maintenance

**Maintenance event**

Timestamp: 2010-06-16

Event status: Completed

Work order: 826549

Comment: Routine test

Test

Test assessment: Passed

Tester: Jack White

Test set type: CMC 55a

Test set serial number: B1559-F

Test documents:

Other

Requires a follow-up

Comment:

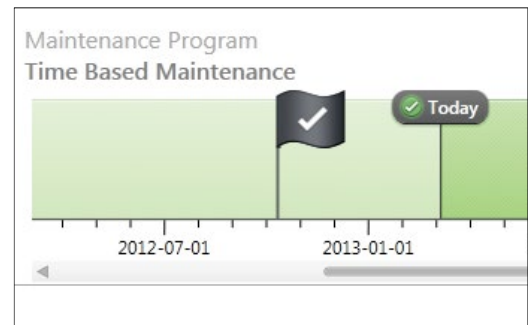
Restart calculation of maintenance intervals from this event

Countable event

Comment:

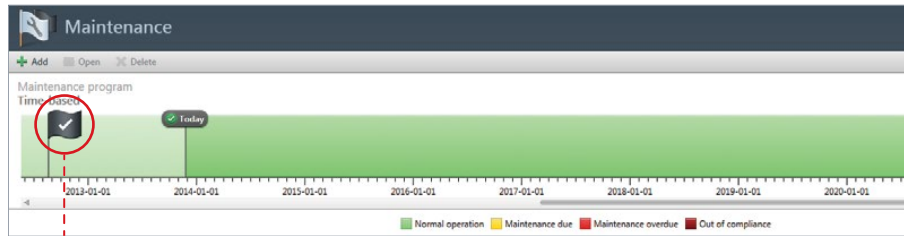
Attachments:

Managing and archiving test data



Maintenance program view

# Track it or lose it



## Easy access to test documents

Just click on the event flag to display all test data recorded for selected assets like test reports, OMICRON Control Center (OCC) test documents, etc.

## Maintenance status overview

The maintenance status of the complete protection system or a selected sub-area is clearly visible.



## Maintenance status of individual assets

- Maintenance Required
- Maintenance Overdue
- No Maintenance Defined
- Out of Compliance

## Search and filter functions

The search and filter functions facilitate quick access to test data and provide maximum productivity.

The figure shows an 'Asset' list table with search and filter functions highlighted. The table has columns for Status, Asset, Asset Type, Manufacturer, Manufacturer Type, Serial Number, Location, Last Mainten., Next Planned, Mainten. Required, Mainten. Overdue, Out Of Compliance, and Segment. A red circle highlights the 'Text filter' input field. Another red circle highlights the 'Details' button for the selected row.

Status	Asset	Asset Type	Manufacturer	Manufacturer Type	Serial Number	Location	Last Mainten.	Next Planned	Mainten. Required	Mainten. Overdue	Out Of Compliance	Segment
	Miscellaneous		Atmel	STK 500	125-623-56	Feeder II						
	Miscellaneous		Omicron	CMC 356	342-123-534	Feeder II	2001-01-18		2011-01-18	2012-01-18	2013-01-18	
	Protective Relay	Digital	Siemens	SIPROTEC 4 7SA522	823-460-234	Feeder II	2008-01-18		2012-01-18	2013-01-18	2014-01-18	
	Protective Relay	Digital	Siemens	SIPROTEC 4 7SA522	929-236-127	Feeder II	2008-01-18		2012-01-18	2013-01-18	2014-01-18	
	Protective Relay	Digital	Siemens	SIPROTEC 4 7SA522	824-953-35	Feeder II	2008-01-18	2013-01-18	2012-01-18	2013-01-18	2014-01-18	
	Circuit Breaker	Dead Tank SF6 Breaker	Siemens	SPS2	345-234-862	Feeder II	2006-01-18		2010-01-18	2011-01-18	2012-01-18	
	Communication System		Siemens	SXS 33A	472-832-523	Feeder II	2003-01-18		2013-01-18	2014-01-18	2015-01-18	

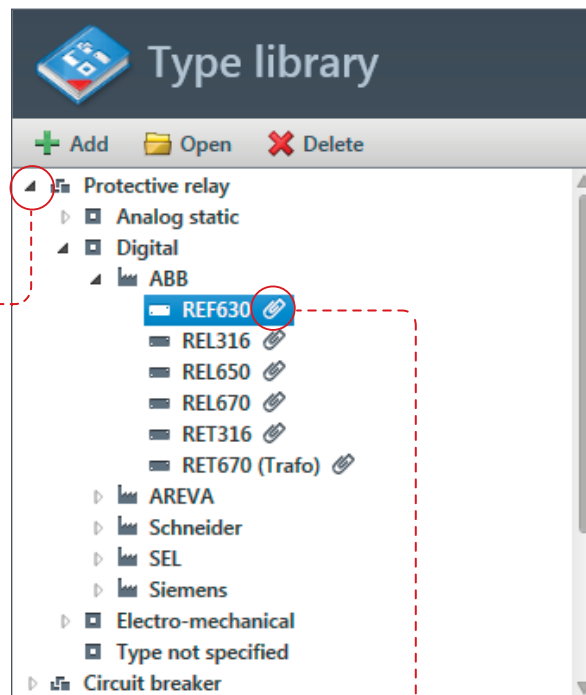
## Central document management

When performing tests it is often important that manuals or other documents are easily accessible.

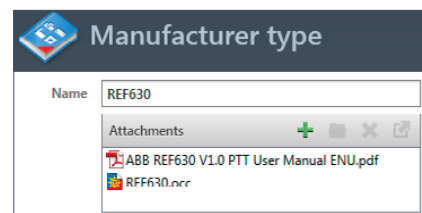
The type library allows you to deposit and maintain type- and manufacturer-specific documents in one central location. All assigned documents appear at the specific assets and are easy to retrieve.

### Structure tree

Manufacturer- and type-specific structure of all components in your utility.



**Type-specific document management**  
Easily assign documents to relevant type categories. (Example: PTL test plan)



# Import / export of location and asset data

## Import

The import function facilitates initial data migration or occasional create/update requirements from leading asset management systems. Time-consuming population of the database is no longer necessary. ADMO supports the import of XML files from Microsoft Excel and OMICRON PTM (Primary Test Manager).

ADMO allows you to automatically create missing type library entries during import.

### XML Import via Microsoft Excel

The XML import works by means of a provided Microsoft Excel template and is carried out in three simple steps:

1. Enter location and asset data into the template
2. Export table in XML format
3. Import XML file into ADMO

### Example:

	A	B	C
1	Asset	Asset type	Manufacturer
2			
3	Protective Relay	Digital	SEL
4	Protective Relay	Digital	SEL
5	Protective relay	Digital	SEL
6	Protective relay	Digital	SEL
7	Protective relay	Digital	SEL
8	Protective relay	Digital	SEL
9	Protective relay	Electro-Mechanical	ABB
10	Protective relay	Electro-Mechanical	ABB
11	Protective relay	Electro-Mechanical	ABB
12	Protective Relay	Digital	Siemens
13	Protective Relay	Digital	ABB
14	Protective Relay	Digital	Alstom
15	Protective Relay	Digital	Alstom
16	Station DC Supply	Nickel Cadmium Battery	
17	Station DC Supply	Nickel Cadmium Battery	
18	Station DC Supply	Nickel Cadmium Battery	
19	Station DC Supply	Nickel Cadmium Battery	
20	Station DC Supply	Nickel Cadmium Battery	
21	Current Transformer		Wirges
22	Current Transformer		Wirges
23	Current Transformer		Wirges
24	Current Transformer		Ritz
25	Current Transformer		Ritz
26	Current Transformer		Ritz
27	Circuit Breaker	Air-Blast Breaker	
28	Circuit Breaker	Air-Blast Breaker	
29	Circuit Breaker	Air-Blast Breaker	

### Entering location and asset data into template

### Export Microsoft Excel table in XML format

### Import XML file into ADMO

File selection

Open Excel® template for import data

Select file for import

C:\ADMO\Import.xml

Create missing type library entries during import

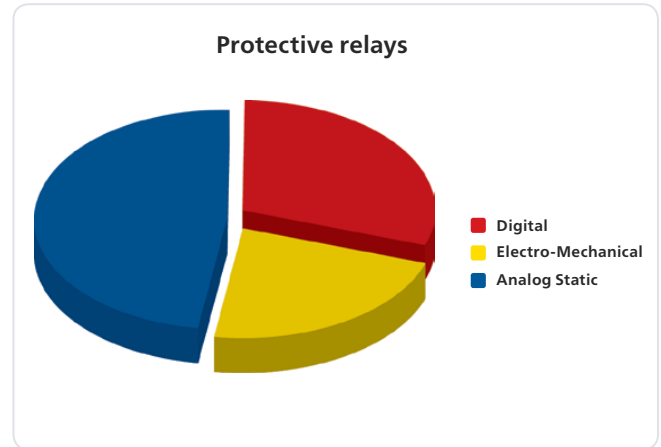
Replace existing assets on conflict



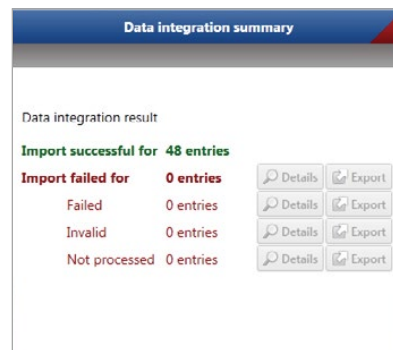
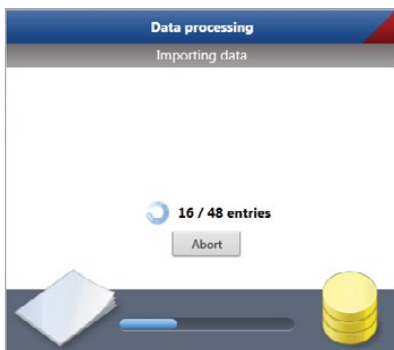
## Export

ADMO supports a basic copy-to-clipboard functionality. This allows you to use selected location and asset data in other applications (Microsoft Word, Microsoft Excel) for individual reporting and data analysis.

Manufacture	Serial number	Substation	Voltage level	Feeder
SEL-421	12041964	Substation 2	380000	D01
SEL-421	12568371	Substation 2	380000	D02
SEL-421	12798372	Substation 2	380000	D03
SEL-411L	12040971	Substation 2	380000	D01
SEL-411L	12040972	Substation 2	380000	D02
SEL-411L	12040973	Substation 2	380000	D03
KDXG	9055	Substation 2	220000	F07
KDXG	9056	Substation 2	220000	F07
KDXG	9057	Substation 2	220000	F07
7SA6x	BF0	Substation 2	380000	F03
REB 650	423	Substation 2	220000	
P 433	BF0	Substation 2	220000	C04
P 433	BF0	Substation 2	380000	C11
B-1		Substation 2	380000	
B-1		Substation 2	220000	
B-2		Substation 2	220000	
B-2		Substation 2	110000	
B-3		Substation 2	110000	
C11		Substation 2	380000	C01
C11		Substation 2	380000	C01
C11		Substation 2	380000	C01
R35		Substation 2	220000	C11
R35		Substation 2	220000	C11
R35		Substation 2	220000	C11
AX		Substation 2	220000	
AX		Substation 2	220000	
AX		Substation 2	220000	



Individual data analysis in Microsoft Excel



# Stay connected with ADMO

## Multi-user functionality

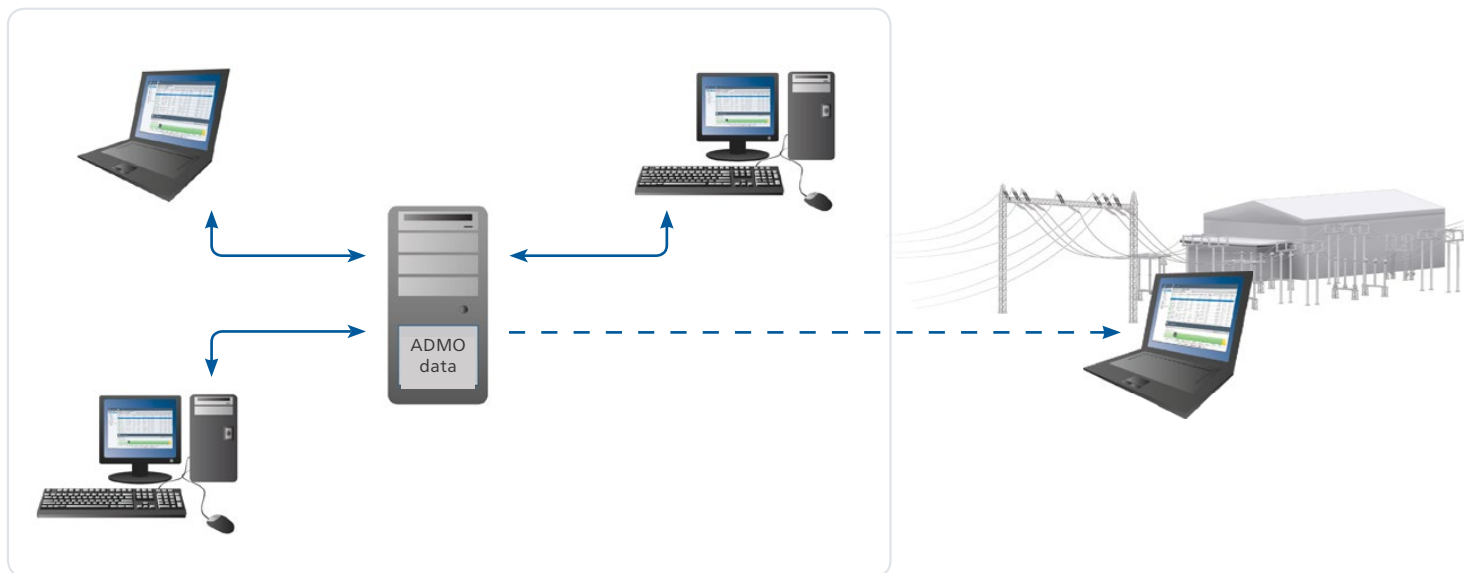
In bigger utilities multiple users manage and plan all maintenance activities. To keep track, they need to rely on a convenient maintenance management solution which fulfills their requirements.

The ADMO multi-user functionality (client-server edition) supports these requirements and allows users to work with ADMO from different locations simultaneously. The data is stored on a central SQL server and shared within the network. This allows central maintenance management and immediate access to test documents.

Users can create an offline copy of the ADMO database to have access to templates, instructions and related documents while testing in a substation without direct network access.

## Multi-user benefits at a glance

- > Multi-user access to central database
- > Immediate availability of documents (user manuals, e.g.)
- > Central administration of maintenance activities
- > Upcoming maintenance tasks clearly visible for all users
- > Source for templates, instructions and related documents while testing in a substation without direct network access



Client-server edition: Access to ADMO database from several PCs in parallel and offline support while testing

## ADMO license options

ADMO is available as client-server or standalone edition, depending on your individual requirements:

### Stand-alone edition

The stand-alone edition is appropriate for smaller utilities where one user manages maintenance activities.

### Client-server edition

The client-server edition is suitable for larger utilities where several users work in parallel, using the same database.

## Uniform user interface

ADMO's user interface is similar to the Primary Test Manager (PTM), our test and management software for primary assets. Customers performing both secondary and primary testing using ADMO and PTM benefit from a uniform and familiar user environment.

### Ordering information

ADMO – Asset data & maintenance solution for protection systems.

[Stand-alone edition](#) VESM2053

ADMO – Asset data & maintenance solution for protection systems.

[Client-server edition](#) VESM2054

The client-server edition is to be configured according to customer specific requirements. Please contact your local sales representative to get a quote.

[Additional user](#) VESM2055

[Additional users](#) (package with 5 licenses) VESM2056

[Additional read-only user](#) VESM2057

[Additional read-only users](#) (package with 5 licenses) VESM2058



OMICRON is an international company serving the electrical power industry with innovative testing and diagnostic solutions. The application of OMICRON products allows users to assess the condition of the primary and secondary equipment on their systems with complete confidence. Services offered in the area of consulting, commissioning, testing, diagnosis and training make the product range complete.

Customers in more than 140 countries rely on the company's ability to supply leading-edge technology of excellent quality. Service centers on all continents provide a broad base of knowledge and extraordinary customer support. All of this together with our strong network of sales partners is what has made our company a market leader in the electrical power industry.

For more information, additional literature, and detailed contact information of our worldwide offices please visit our website.