Quality Management with SAM for Into Plane Pools and Tank Farms

Vehicle check with PDA

Quality management gets in more important each day. Through the usage of SAM - Scheduling and Administration of Maintenance Work - you will retain an overview of:

- schedules
- maintenance intervals
- tasks assigned to external companies
- training schedules of your personnel

With the help of a prognostic maintenance/repair paired with an economical usage of resources you will save costs.

SAM will assist you in the implementation of new legal regulations and requirements. It will guarantee that the daily work complies with the regulations.

SAM documents all accomplished work in accordance with audit requirements. Thus SAM provides the prerequisite for a smooth external audit.

With SAM you can freely define your work orders and inspections. Moreover you can easily control the actual execution of these tasks as well as to document everything.

SAM-Modules

The program SAM includes the following modules:

- **Tasks:** Definition of all tasks that need to be performed on your objects.
- **Objects:** Vehicles, buildings, fire extinguishers, etc., on which you need to perform work and checks.
- **Work Orders:** List of all unfinished work orders.
- **Reports:** Definition of your own reports as well as access to standard reports.
- **Stock:** Management of a stock with functionality to mail orders.
- **Warnings:** Self defined and automatically generated warnings to prevent safety relevant problems with your objects.
- **History:** Read only access to all historical data with different search criteria.
- **Administration:** Management of personnel and access rights, definition of forms and reports, administration of customers and suppliers.

Options

- SAM supports the data capturing via **PDAs** (also intrinsically save) for data capturing at the location.
- SAM has an interface to **SCADA** systems.
- Outfit your objects with **Barcodes** or **RFID-Tags** for a fast, efficient and secure correlation of the captured data.
- Via an interface SAM can exchange data with an **Inventory Control** system.

Service

On demand we will support you with:

- a requirement analysis
- the installation and configuration
- the implementation of external rules like for example the JIG.
- the training of your personnel
- and the support

Furthermore we can advise you on how to implement existing documentation and data into SAM. As a special service we can also capture your data to guarantee you a smooth start.

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Practical Example

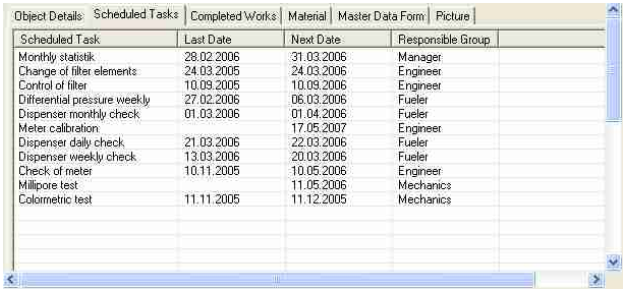
Maintenance on a Filter

The example Maintenance on a Filter will illustrate some of the functionality of SAM.

In SAM the master data of a filter can be freely configured and stored to fit your individual needs. Master data of a filter can for instance be:

- maker
- identification number
- date of installation
- maximum throughput

You define the task either directly for one filter or generally for all filters. SAM will automatically calculate the rotational schedule for these tasks according to your input. Afterwards you will have a complete schedule available.



Scheduled Task	Last Date	Next Date	Responsible Group
Monthly statistik	28.02.2006	31.03.2006	Manager
Change of filter elements	24.03.2005	24.03.2006	Engineer
Control of filter	10.09.2005	10.09.2006	Engineer
Differential pressure weekly	27.02.2006	06.03.2006	Fueler
Dispenser monthly check	01.03.2006	01.04.2006	Fueler
Meter calibration		17.05.2007	Engineer
Dispenser daily check	21.03.2006	22.03.2006	Fueler
Dispenser weekly check	13.03.2006	20.03.2006	Fueler
Check of meter	10.11.2005	10.05.2006	Engineer
Millipore test		11.05.2006	Mechanics
Colormetric test	11.11.2005	11.12.2005	Mechanics

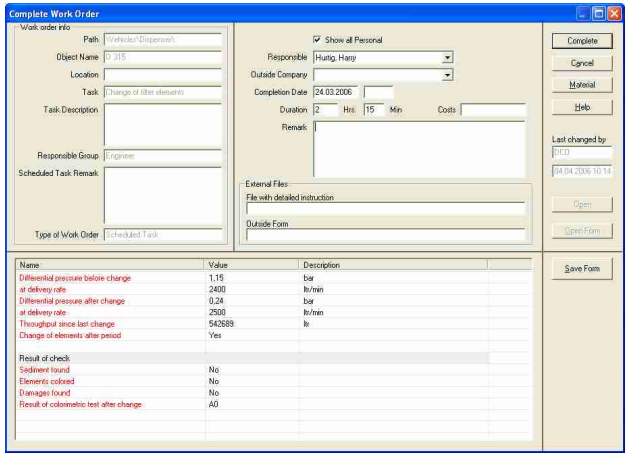
Schedule of a dispenser

On the basis of this schedule SAM will generate the due work orders. These can be found and subsequently be closed in the list of work orders. Overdue work orders are marked red to guarantee that no work order is overseen and everything gets done on time.

Scheduled Date	Path	Object	Task	Responsible Group	Outside Compan
16.03.2006	\Vehicles\Dispenser\D 321\...	Hose 321 Hydrant	Hose test monthly	Engineer	
20.03.2006	\Vehicles\Dispenser\	D 315	Dispenser weekly ...	Fueler	
21.03.2006	\Vehicles\Tanker\	T 207	Control of filter	Engineer	
21.03.2006	\Vehicles\Dispenser\	D 324	Differential pressur...	Fueler	
21.03.2006	\Vehicles\Dispenser\	D 317	Differential pressur...	Fueler	
22.03.2006	\Vehicles\Dispenser\	D 315	Dispenser daily ch...	Fueler	
23.03.2006	\Vehicles\Dispenser\	D 316	Meter calbration	Engineer	
24.03.2006	\Vehicles\Dispenser\	D 315	Change of filter el...	Engineer	
24.03.2006	\Vehicles\Dispenser\	D 324	Change of filter el...	Engineer	
25.03.2006	\Vehicles\Dispenser\D 318\...	Hose 08/15	Hose replacement	Mechanics	
25.03.2006	\Vehicles\Dispenser\	D 316	Change of filter el...	Engineer	
25.03.2006	\Vehicles\Dispenser\	D 318	Change of filter el...	Engineer	
25.03.2006	\Vehicles\Dispenser\D 317\...	Hose 17/4	Hose replacement	Mechanics	
27.03.2006	\Vehicles\Dispenser\	D 317	Change of filter el...	Engineer	
31.03.2006	\Vehicles\Dispenser\	D 315	Monthly statistik	Manager	
01.04.2006	\Vehicles\Dispenser\	D 315	Dispenser monthly...	Fueler	

List of work orders

A work order can be associated with a freely definable form. This has to be filled out to close the work order. If your system has the optional link-up to a PDA the form will be send to the PDA. There it can be filled out directly on location after the assigned work is finished.



Work order change of filter

SAM generates special warnings if security relevant parameters are not met. This enables you for instance to get a warning if the measured differential pressure is too high. In this case it would indicate that the filter needs to be replaced.

All data can be accessed in the history function. Even after several years you can exactly tell who where and when did what work on this filter.

For means of monitoring a filter it is common practice to generate a differential pressure curve. SAM has included such a report. With it you can analyse your regular differential pressure measurements.

In the differential pressure report the measured data (throughput, differential pressure and volume) are listed by calendar week and are displayed in a chart. You can see at once when the filters needs to be replaced.

Week	Volume l	Total m³	Pressure bar	Flowrate l/min	Computed bar
14	1.458.442	2.458	0,26	2.760	0,31
15	1.756.111	4.215	0,30	3.000	0,33
16	1.358.741	5.573	0,26	2.500	0,34
17	1.423.500	6.997	0,25	2.500	0,33
18	1.345.121	8.342	0,28	2.700	0,34
19	1.211.440	9.553	0,28	2.550	0,36
20	1.087.225	10.641	0,30	2.815	0,35
21	113.445	10.754	0,32	3.156	0,33
22	1.058.994	11.813	0,30	2.595	0,36
23	1.125.894	12.939	0,29	2.500	0,36
24	1.199.254	14.138	0,33	3.300	0,33
25	1.412.622	15.551	0,30	2.300	0,43
26	1.235.441	16.786	0,35	2.840	0,41
27	1.584.235	18.371	0,30	3.000	0,33
28	1.235.841	19.607	0,32	3.156	0,33
29	1.458.226	21.065	0,29	2.500	0,36
30	1.348.552	22.413	0,30	2.815	0,35
31	1.258.125	23.671	0,26	2.760	0,31
32	1.234.557	24.906	0,30	2.300	0,43
33	1.458.645	26.365	0,28	2.700	0,34
34	1.358.441	27.723	0,28	2.600	0,35
35	1.158.972	28.882	0,30	2.850	0,35
36	1.258.790	30.141	0,32	3.160	0,33
37	1.441.335	31.582	0,30	2.590	0,38
38	987.589	32.570	0,28	2.550	0,36
39	1.058.936	33.629	0,30	2.815	0,35
40	1.125.834	34.755	0,32	3.156	0,33

Week	Volume l	Total m³	Pressure bar	Flowrate l/min	Computed bar
41	1.482.554	36.237	0,30	2.595	0,38
42	1.055.871	37.293	0,29	2.500	0,38
43	1.157.422	38.450	0,33	3.300	0,33
44	1.058.456	39.509	0,30	2.300	0,43
45	1.314.784	40.824	0,35	2.840	0,41
46	957.845	41.781	0,30	2.800	0,35
47	785.427	42.567	0,35	2.900	0,40
48	825.431	43.392	0,40	2.500	0,53
49	690.480	44.083	0,44	3.000	0,48
50	720.586	44.803	0,45	3.150	0,47
51	115.896	44.919	0,40	2.500	0,53
52	181.258	45.101	0,41	2.500	0,54
1	934.624	46.035	0,70	3.200	0,72
2	1.420.307	47.455	0,60	2.400	0,82
3	826.954	48.282	0,60	2.800	0,71
4	734.146	49.017	0,60	2.500	0,79
5	1.163.703	50.180	0,60	2.600	0,76
6	829.733	51.010	0,70	2.500	0,92
7	745.898	51.756	0,75	2.800	0,88
8	1.341.642	53.098	1,00	3.100	1,06
9	1.091.319	54.189	0,85	2.500	1,12
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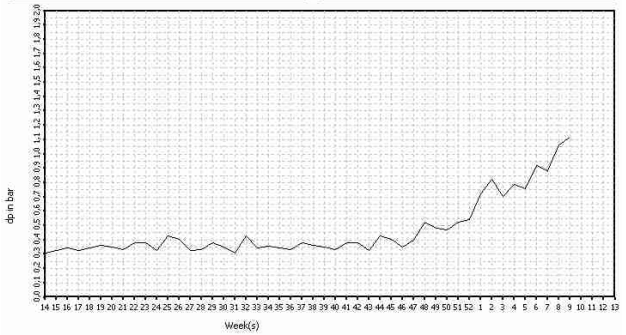

Differential pressure report of a filter