Introduction

The SKF @ptitude Monitoring Suite is a modular software solution that conforms to your asset monitoring needs.

With supporting applications and add-ons, you may add or remove functionality as your system expands or is optimized to meet your condition monitoring needs. This publication lists the optional supporting applications and core-application add-ons available for SKF @ptitude Analyst and SKF @ptitude Inspector.

Supporting applications are stand-alone software programs that are dependent on the core application’s data to diagnose, post-process, or transfer of data. Application add-ons provide a set functionality that can be activated in a core-application, functionality such as software features to support a specific SKF data acquisition device (DAD).
Contents

SKF @ptitude Decision Support .................................................................................................................. 3
SKF @ptitude Analyst Thin Client Transfer ................................................................................................. 9
SKF @ptitude Analyst Work Notification ..................................................................................................... 11
SKF @ptitude Analyst Trend Oil .................................................................................................................. 13
SKF @ptitude Analyst Human Machine Interface (HMI) ........................................................................... 15
SKF @ptitude Analyst NT Authentication .................................................................................................... 17
OPC Client Interfaces for SKF @ptitude Analyst and SKF @ptitude Decision Support ........................................ 19
Analysis and Reporting Manager (ARM) .................................................................................................... 20
Product Support Plans (PSP) ....................................................................................................................... 23
SKF @ptitude Decision Support

Managing knowledge to optimize asset efficiency

The SKF @ptitude Decision Support system enhances your team’s ability to keep plant machinery up and running. It systematizes the reliability maintenance decision-making process by automatically identifying probable faults with an asset or process, then prescribing appropriate action and enabling a consistent methodology among employees throughout your local or global organization.

SKF @ptitude Decision Support enables your workforce to rapidly determine:

- What is the problem?
- How serious is it?
- What should be done about it – priority?
- What are the potential risks to productivity, quality, worker safety and the environment?

Users benefit from the power of the SKF @ptitude Decision Support solution

- Optimize asset efficiency
  - Users maintain a continuous awareness of machine health enabling a proactive approach to reliability maintenance
- Improved time utilization
  - Automatic analysis lets users spend less time analyzing spectrum and correlating data
  - Document management feature reduces time spent accessing related documentation
- Reduced training time
  - Capture and retain the knowledge of your most seasoned professionals for use by everyone, reducing the learning curve for new employees
- Earlier fault resolution reduces the likelihood of downtime
  - The SKF @ptitude system enables a proactive approach to reliability by identifying faults and symptoms before they result in failures

- Decreased maintenance costs
  - Facilitate consistent, effective and efficient decision making system for improved business results
- Improved operational efficiency
  - Data to information to action
- Provides a powerful structure to capture, retain and utilize knowledge
  - Enhance the knowledge of your team overall
The SKF @ptitude Decision Support system

SKF @ptitude Decision Support is an embedded knowledge-based system that automatically analyzes asset health data, identifies symptoms and faults, then notifies a user of the specific nature of the problem, its severity priority and recommended actions.

The SKF @ptitude Decision Support system incorporates today’s most advanced technologies to integrate data from multiple sources into an easy-to-use application that enables workers to apply decision-making criteria quickly and uniformly, based on meaningful data and a predetermined set of procedures and priorities.

Asset Knowledge Science

Asset Knowledge Science (AKS) is a core component of the SKF @ptitude Decision Support system solution and is the fundamental concept of how knowledge is stored within SKF @ptitude Decision Support. AKS combines process and inspection data, performance parameters, and Key Performance Indicators (KPIs). AKS goes beyond traditional models like Failure Modes and Effects Analysis (FMEA), Fault Tree Analysis, Reliability-Centered Maintenance (RCM), and others. It provides a methodology that embodies a fundamental understanding of the predominant failure modes of equipment, the measurements required to effectively monitor equipment health, and the consequences of failure.

The AKS hierarchy consists of the following:

- An Asset is broken down to its components.
- A Component has multiple Failure Modes. All Failure Modes are listed per Component.
- A Failure Mode is indicated by a Fault or a combination of Faults.
- A Symptom is detected if a Symptom or a combination of Symptoms are present.
- A Key Feature is a signal that is generated by an asset when it is operating. Measurements are set up to capture all possible key features.

To enable customization of the Asset Knowledge Science with your organization’s own Intellectual Capital, SKF @ptitude Decision Support offers an AKS editor. This editor allows authorized users to make changes at any level in the AKS hierarchy, which includes rules and detection levels.

SKF @ptitude Decision Support application interfaces

The SKF @ptitude Decision Support system provides two user interfaces:

- A Windows-based client allows users on a LAN to access the SKF @ptitude Decision Support base server.
- A web enabled browser allows users to access SKF @ptitude Decision Support base server via the internet.

Computerized Maintenance Management System interfaces

A Computerized Maintenance Management System (CMMS) interface allows for work request generation and work order history tracking for correlation with asset health and performance. By providing a connection to the CMMS, SKF @ptitude Decision Support transforms raw data into information and actions. SKF @ptitude Decision Support can interface with CMMS’s such as:

- SAP
- Maximo
- API Pro
- Engica
- and others

SKF @ptitude Decision Support provides User Notifications of asset or system faults via pager and email.

Data provider interfaces

A data provider interface is a data mining engine that extracts key features from vibration data in condition monitoring systems to identify symptoms. Symptoms are sent to SKF @ptitude Decision Support to be combined with symptoms from other data providers and then resolved to detect faults.

SKF @ptitude Decision Support offers a wide selection of custom-made interfaces

- Process control systems using OPC
- Data historians
- Other plant systems via an open ASCII file interface
- User entered data
Transforming data into action

Spectrum data
SKF @ptitude Decision Support uses vibration diagnostic rules configured by SKF or you to analyze data from SKF @ptitude Monitoring Suite or other third party condition monitoring software.

**SKF @ptitude Decision Support**

Once identified, the appropriate symptom is sent to the SKF @ptitude Decision Support software module. Here it is processed by Asset Knowledge Science (AKS) to be resolved to detect faults for user notification.

**CMMS**

SKF @ptitude Decision Support will also generate work order requests within a Computerized Maintenance Management System (CMMS).
Ordering information

Suggested SKF @ptitude Decision Support kits

• SKF @ptitude Decision Support system kit for SKF @ptitude Analyst [CMSW 7460-X-EN]

With the following kit options:

Startup Kit (X = A)
• Delivers all the necessary components for a single client system with five (5) asset types (models), model definition editor, monitoring capability to monitor up to 200 assets and OPC Client Connect

Advanced Kit (X = B)
• Delivers all the necessary components for a single client system with ten (10) asset types (models), model definition editor, monitoring capability to monitor up to 500 assets and OPC Client Connect

Enterprise Kit (X = C)
• Delivers all the necessary components for a single client system with 20 asset types (models), model definition editor, monitoring capability to monitor up to 1500 assets and OPC Client Connect

SKF @ptitude Decision Support application servers

• SKF @ptitude Decision Support base server, 100 assets [CMSW 7450]
• SKF @ptitude Decision Support add-on, 100 assets upgrade [CMSW 7452]

SKF @ptitude Decision Support application clients

• SKF @ptitude Decision Support application Client for Windows [CMSW 7453]
• SKF @ptitude Decision Support web-client for web browser [CMSW 7454]

SKF @ptitude Decision Support application add-ons

• SKF @ptitude Decision Support Asset Knowledge Science (AKS) add-on, one asset type (model) [CMSW 7451]
• SKF @ptitude Decision Support application add-on, model definition editor [CMSW 7455]

SKF @ptitude Decision Support application interfaces for data providers

• SKF @ptitude Decision Support application interface for SKF @ptitude Analyst and SKF @ptitude Inspector [CMSW 7460]
• SKF @ptitude Decision Support application interface for OPC Client Connect, versions 2.0 or 3.0 [CMSW 7467]

Note: Please contact your local SKF representative for SKF @ptitude Decision Support interfaces for data providers and CMMS connection details and availability.

Installation and training

Installation and training available through your local SKF sales representative.
SKF @ptitude Analyst Thin Client Transfer

Route transfer support solution

SKF @ptitude Analyst Thin Client Transfer is an integrated software support solution for the SKF Microlog line of portable data collectors / analyzers and SKF MARLIN inspection system. Working in conjunction with SKF @ptitude Analyst and SKF @ptitude Inspector software, SKF @ptitude Analyst Thin Client Transfer enables the transfer of route data “to” and “from” the field via e-mail attachment or over low bandwidth networks.

Global connectivity

Now you can send route data collected by your SKF Microlog or SKF MARLIN anywhere in the world for analysis. With SKF @ptitude Analyst Thin Client Transfer and e-mail access, transferring data for “remote” analysis has never been easier. Route or non-route data may be transferred via SKF @ptitude Analyst Thin Client Transfer, then processed and analyzed on any system using SKF @ptitude Analyst.

Optimize resources

Use SKF @ptitude Analyst Thin Client Transfer to optimize data collection and analysis. Field operators can now easily collect data, then quickly transfer routes anywhere – to your analysts at another plant location, a team of consultants or any of SKF extensively trained analysts throughout the world.

Improved performance

The 2013 Edition of SKF @ptitude Analyst Thin Client Transfer software is significantly faster while providing much more feedback for the operators. These improvements and enhancements include; faster upload speed, new user notifications, status updates and progress animations. This increased efficiency puts more time back into the hands of the user, while providing the most important information about the progress of the transaction; gives your team in the field the peace of mind that their important data has been processed and successfully transferred to the SKF @ptitude Analyst software.

Consistent analysis

SKF @ptitude Analyst Thin Client Transfer can facilitate the consistency and standardization of your analysis processes.

With SKF @ptitude Analyst Thin Client Transfer Direct the operator has access to all hierarchies, routes and workspaces made available under their SKF @ptitude Analyst user profile.

Establish a core team of experienced and highly trained analysts at a centralized location – locally or globally – then equip them with SKF @ptitude Analyst and SKF @ptitude Decision Support for results you can count on.

Value-added

In situations where a remotely situated analyst requires additional data for more in-depth analysis or needs a second opinion, SKF @ptitude Analyst Thin Client Transfer is the solution that saves time, reduces the cost of travel and facilitates root cause analysis.

Decision support

Take complete control of your reliability maintenance decision making by combining SKF @ptitude Analyst and SKF @ptitude Analyst Thin Client Transfer with SKF @ptitude Decision Support system. The SKF @ptitude Decision Support system helps to further improve efficiency by replacing labor-intensive analysis with an automated process. It takes the data uploaded into SKF @ptitude Analyst, identifies the probability of specific faults within an asset or process and then prescribes appropriate action. The SKF @ptitude Decision Support is the perfect complement to your team of experienced analysts.
The SKF @ptitude Analyst Thin Client Transfer solution

SKF @ptitude Analyst Thin Client Transfer consists of two main applications: the SKF @ptitude Analyst Thin Client Transfer File application and the SKF @ptitude Analyst Thin Client Transfer Direct application.

The SKF @ptitude Analyst Thin Client Transfer File allows the creation, modification and management of electronic routes. An electronic route consists of compressed route data which may be copied and transferred via any portable storage media, including multimedia cards, PCMCIA and others. It also allows for verification of data by creating a text file listing the contents to be loaded into the SKF Microlog or SKF MARLIN and the results from data collected.

SKF @ptitude Analyst Thin Client Transfer Direct is a simple, user-friendly interface that may be installed in practically any portable PC running Windows. The client application enables the download and upload of routes from and to a SKF Microlog or SKF MARLIN via low bandwidth networks. Routes uploaded from the field are automatically processed into SKF @ptitude Analyst for immediate analysis.

Features and capabilities

Product benefits

- Quick and easy transfer of route data
  - Transfer routes to and from the field
- Adds value to the overall solution
  - Saves time and money
  - Achieve more with limited resources
- Enhances decision support process
  - Enables route data to be processed into SKF @ptitude Decision Support system
  - Facilitates consistent decision making
- Transfer data globally
  - Transfer route's directly from the SKF @ptitude Analyst database
  - Send data via e-mail attachment
- Streamline data analysis processes
  - Centralize data analysis
- Compatible with SKF @ptitude Analyst and SKF @ptitude Inspector 2013
- License Key activated
- Product Support Plan (PSP) available

For more information, contact your local SKF sales representative or visit our web site at www.skf.com/cm.

Ordering information

- SKF @ptitude Analyst Thin Client Transfer File for SKF Microlog and SKF MARLIN [CMSW 7320]
- SKF @ptitude Analyst Thin Client Transfer Direct for SKF Microlog and SKF MARLIN [CMSW 7321]

SKF @ptitude Analyst Thin Client Transfer Direct and File functionality is enabled by a license key at the transition server site, therefore, one installation of SKF @ptitude Analyst Thin Client Transfer may use both Direct and File license keys.

Note 1: The SKF @ptitude Analyst Thin Client Transfer is available in Single and Multi Client configurations. Please contact your local SKF sales representative for Multi Client model information.

Note 2: SKF Microlog Inspector does not require this product to transfer data.

Installation and training

Installation and training available through your local SKF sales representative.
SKF @ptitude Analyst Work Notification

Helps operators improve machine reliability by facilitating work order requests

Operator Driven Reliability
Being in close proximity to the machines – 24 hours a day, 7 days a week, operators are often the first to notice even the smallest changes in machine condition. Operator Driven Reliability (ODR), the framework for organizing the activities of plant operations personnel, is key to an organization’s reliability maintenance program.

The SKF Microlog Inspector inspection system is the frontline tool for operators, enabling improved reliability through better communication with the plant wide team.

It facilitates a team approach whereby operations and maintenance personnel work together to improve machine and plant reliability.

With the SKF Microlog Inspector system, operations personnel make their rounds, collecting machine condition, inspection and process data easily and efficiently in the palm-sized unit.

Link to CMMS (Computerized Maintenance Management System)
When used with SKF @ptitude Analyst Work Notification, machine operators can initiate work orders quickly, easily and directly from the point of inspection – helping to eliminate missed or overlooked tasks essential to ensuring machine reliability.

Create and prioritize work orders
SKF @ptitude Analyst Work Notification system enables the user to pinpoint the location by machine or asset name, and then select the type of work required. The system allows for a description of the problem and a recommendation of corrective action(s). The system also allows the user to assign a degree of priority for the work order and to choose a “fix by” date.

Multiple work notifications can be created and viewed for machines and inspection points including those that have not been downloaded to the SKF Microlog Inspector. The system also permits the user to view historical work notifications to prevent duplication of previously created work notifications.

Create consistent and thorough work notifications with pre-configured priorities, problem descriptions, recommended corrective actions and work types.
Specifications

Hardware
- SKF Microlog Inspector firmware version 4.3 or higher

Software
- SKF @ptitude Analyst 2012 or higher
- SKF @ptitude Inspector 2012 or higher

CMMS interfaces
Contact your local SKF sales representative for CMMS interface information.

Ordering information
- SKF @ptitude Analyst Work Notification application add-on [CMSW 7302]

Installation and training
Installation and training available through your local SKF sales representative.

The system interfaces with a range of computerized maintenance management systems. The SKF @ptitude Analyst Work Notification Manager in the software provides a view of the current work notifications and allows operators to sort, add, edit and remove work notifications.

Use of the SKF @ptitude Analyst Work Notification system leads to the creation of work orders that may have previously been ignored. By empowering machine operators to discover, identify and report potential problem conditions, maintenance personnel are freed to focus more resources on fixing and preventing future problems.

SKF at your service
SKF offers a vast array of implementation services and support to ensure the essential cultural, process and technology improvements are made to facilitate the success of your Operator Driven Reliability program. A Client Needs Analysis may be conducted to enable an objective view of your plant’s reliability program and to make a determination for the best use of the SKF Microlog Inspector system work notifications to improve your plant’s productivity.

SKF is at your service to share our competencies in condition monitoring and reliability maintenance services. The intention is to help address your specific requirements to fully integrate the SKF Microlog Inspector system into your plant-wide program. Our ultimate goal is to make the reliability improvements that align with your organization’s business objectives.

For more information contact your local SKF sales representative or visit our web site at www.skf.com/cm.
SKF @ptitude Analyst Trend Oil

Combines oil analysis and vibration data for more efficient lubrication management

SKF has introduced a simpler way to access relevant machine data. SKF @ptitude Analyst Trend Oil is an application add-on that allows you to display and overlay oil analysis data with vibration data in one convenient software package. With this add-on, users can easily view data and trending information and display report comments for both lubrication and vibration. Using just one software package for both functions helps to increase accuracy, efficiency and effectiveness. SKF @ptitude Analyst Trend Oil provides:

- Trending and display of oil analysis data in SKF @ptitude Analyst
- Exception or alarm reporting on scalar values and display of the report comments
- Overlays of oil and vibration data

The Trend Oil wizard provides fast access to critical information

SKF @ptitude Analyst Trend Oil incorporates user-friendly “Wizards” – embedded intelligence that puts critical analysis information at your fingertips quickly and easily. The SKF @ptitude Analyst Trend Oil Wizard imports your oil analysis reports into SKF @ptitude Analyst for immediate viewing. It supports major labs and any other lab whose reports comply with the Microsoft Excel-based SKF universal oil template (*).

* Microsoft Excel required on the target computer.

Oil lab results can be overlaid with process or vibration data in SKF @ptitude Analyst to provide enhanced information on machine status.
Easy for novices and experts alike

This technology makes it easy for novices and experts alike to detect, analyze and correct machine problems. Here's how it works:

Step 1
The oil lab sends the analysis report to you via email in machine-readable format.

Step 2
Using the attachment, you run SKF @ptitude Analyst Trend Oil, select the correct oil lab format and point to the file location of the oil analysis report.

Step 3
SKF @ptitude Analyst imports and stores particle count values, report comments and automatically updates the SKF @ptitude Analyst hierarchy point status indicators.

Seamless integration SKF @ptitude Analyst and SKF @ptitude Inspector

The SKF @ptitude Monitoring Suite of software includes the SKF @ptitude Analyst software as the core. The SKF @ptitude Analyst supports the SKF Microlog portable data collectors / analyzers, SKF Microlog Inspector and SKF Microlog Inspector inspection systems (an ODR tool) and SKF Multilog On-line Systems. It also integrates seamlessly with SKF’s @ptitude Decision Support system.

For more information, contact your local SKF sales representative or visit our web site at www.skf.com/cm.

Ordering information

- SKF @ptitude Analyst Trend Oil application add-on [CMSW 7308-SC-SL]

Note: The SKF @ptitude Analyst Trend Oil is available in Single and Multi Client configurations. Please contact your local SKF sales representative for Multi Client model information.

Installation and training

Installation and training available through your local SKF sales representative.
SKF @ptitude Analyst Human Machine Interface (HMI) is an application add-on for SKF @ptitude Analyst and SKF @ptitude Inspector; core applications of the SKF @ptitude Monitoring Suite family of asset optimization software.

Benefits

Information sharing
The SKF @ptitude Analyst HMI add-on provides operations, maintenance and vibration analysis personnel with a means to apply a proactive approach to keeping plant machinery up and running. It enables the sharing of important machine information while facilitating effective communication across functional lines – all with the objective of keeping the plant operating optimally. User-friendly graphical displays instantly present machine status information from off-line and on-line monitoring systems, providing the specific information needed by the range of plant users.

Simple and flexible
Easy to activate and configure, the SKF @ptitude Analyst HMI add-on sets itself apart from other human machine interface systems in its simplicity and flexibility. Within a few “click and drag” operations the user can import digital images, link hot spots to hierarchy nodes, and generate a multi-level HMI Display; all within the SKF @ptitude Analyst program. Minimal set-up time and maximum effectiveness allow for easy customization and significant benefits for any machine or industry.

Information for production
By providing up-to-the-minute machine status information, the SKF @ptitude Analyst HMI add-on gives control room personnel a significant vantage point from which to manage production activity. Because on-line and off-line systems collect, process and present data round-the-clock, operators know how their machines are running at any given moment in time. Actual machine and process images displayed on-screen indicate machine condition status in multiple dimensions.

Operators can view the entire machine or drill down to a specific section. When a change in machine condition occurs, hot spots on the machine, or process image indicate the alarm by changing color and flashing (until acknowledged). Because the SKF @ptitude Analyst HMI add-on provides rapid updating of displays at the control room, the production team can visualize the sudden development of a component related problem in the machine, and alert vibration analysis or maintenance personnel before the problem becomes critical.

Identify machine problems
The vibration analysis and maintenance teams also benefit from the SKF @ptitude Analyst HMI add-on. Using the HMI display as a starting point, analysts can easily and quickly “drill down” to the location of the alarm condition and invoke any of the native SKF @ptitude Analyst powerful diagnosis and analysis capabilities. Additionally, SKF @ptitude Analyst along with the SKF @ptitude Analyst HMI add-on provides the capability for automatic, frontline monitoring 24/7.

The power to act as a team
The SKF @ptitude Analyst HMI add-on enables SKF @ptitude Analyst to display and translates complex and dynamic machine data into meaningful asset health information. Now your maintenance, operations and vibration analysis personnel have the precise information they need, when they need it, to act as a team in improving machine assets and plant reliability.
Product features and capabilities

- A Human Machine Interface (HMI) which operates cooperatively with the standard SKF @ptitude Analyst hierarchy
- User friendly graphical monitoring interface for operators, analysts and supervisors
- A powerful tool to simplify the display of complex data
- Drag and Drop nodes from the hierarchy into the graphic area
- Button bar for alarm level display for each view and quick level access
- Wide range of customization options for each hot spot
- HMI Layout Manager allows users to create many different Graphical layouts

Ordering information

- SKF @ptitude Analyst Human Machine Interface Add-on [CMSW 7315]

Note: The SKF @ptitude Analyst Human Machine Interface add-on is available for SKF @ptitude Analyst for SKF Microlog Analyzer [CMSW 7300] and SKF @ptitude Inspector [CMSW 7200]. This add-on is integrated in SKF @ptitude Analyst [CMSW 7400].

For more information contact your local SKF sales representative or visit our website at www.skf.com/cm.
SKF @ptitude Analyst
NT Authentication

Added database security for SKF @ptitude Analyst

Benefits
The SKF @ptitude Analyst database security add-ons deliver the following benefits.

Prevents unauthorized access
The NT Authentication add-on allows your Database Administrator (DBA) to use the user’s network ID and password to control access to the database as shown in Figure 1. Whereas, the IT Security add-on enables the DBA to set and / or reset the SKF @ptitude Analyst database accounts and passwords for an extra level of database security as shown in Figure 2.

Proactive approach to for data integrity
Because of the increased need to safeguard data from disgruntled employees, fun-seeking hackers, and malicious criminals, this add-on prevents the unauthorized entry, deletion, and / or modification of the customer’s valuable data within the SKF @ptitude Analyst database.

Meets corporate security guidelines
Several regulatory agencies are requiring our customers to safeguard their data and demonstrate proactive approaches to compliance. The SKF @ptitude Analyst database security add-ons seamlessly fulfill these two requirements; data security and compliance every at every log in attempt.

Figure 1. To gain access to the SKF @ptitude Analyst database; the user must also be authenticated using his network credentials.
Product features and capabilities

- Oracle 10g / 11g and Microsoft SQL Server 2008, SQL Server 2008 / R2, SQL 2012 support
- Compatible with SKF @ptitude Analyst and SKF @ptitude Inspector 2012
- License Key activated
- Stand alone and multi client support
- Only one database security add-on can be deployed within the same system
- Temporary (trial) license keys available upon request
- Product Support Plan (PSP) available
- Installation services available

Order information

- SKF @ptitude Analyst NT Authentication [CMSW 7305]
- SKF @ptitude Analyst IT Security [CMSW 7306]
The SKF @ptitude Analyst and SKF @ptitude Decision Support OPC Clients connect to readily available OPC Servers within your organization’s network to send and receive data from production and operations information systems, such as, DCS and data historians.

Benefits
The SKF @ptitude Analyst and SKF @ptitude Decision Support OPC Client interfaces deliver the following benefits:

Enhanced condition monitoring
The OPC Client equips your organization’s condition monitoring system with a comprehensive asset health snapshot by enabling the user to correlate vibration measurements with process measurements, such as; temperature, current load, oil flow and other parameters from non-condition monitoring systems. Hence, the biggest benefit is enabling one system to monitor, analyze, store and report on the different parameters found in today’s complex plant wide systems.

Friendlier integration
System integrations (from an IT perspective) are easier and less expensive when deploying an OPC architecture because all data is shared through a common protocol, hence, avoiding the need to purchase drivers or develop custom interfaces, as shown in Figure 3. Additionally, the SKF @ptitude Analyst OPC Client features an OPC Manager and configuration utility for rapid and easy linking of POINTs and OPC tags by allowing the user to perform wildcard filtering and click and drag operations.

Increased analytical functionality
Once an OPC Client measurement is stored in SKF @ptitude Analyst, the measurement can be either post processed through one of the many derived POINTs analytical or statistical function. Furthermore, when OPC measurements are accessed with SKF @ptitude Decision Support, any Asset Knowledge Science (AKS) model can be programmed to utilize these measurements to increase accuracy when performing asset diagnostics.

Product features and capabilities
- Configuration utility – OPC manager
- Two-way communication (sends/receives data)
- Event log for data transfer confirmation
- Compatible with OPC server OPC DA 2.0* and OPC DA 3.0
- Included in SKF @ptitude Analyst [CMSW 7400] upon request
- Compatible with SKF @ptitude Analyst for SKF Microlog Analyzer 2013, SKF @ptitude Inspector 2013, and SKF @ptitude Decision Support 3.1 or later versions, as available
- Product Support Plan (PSP) available
- Installation services available

* DA 2.0 servers will store SKF @ptitude Analyst measurements with the datestamp of when the measurement is stored in the DA 2.0 server.

Ordering information
- SKF @ptitude Analyst OPC Client [CMSW 7473]
- SKF @ptitude Decision Support OPC Client [CMSW 7467]
SKF’s Analysis and Reporting manager is a PC based application for transferring, displaying and analyzing data generated by the application modules of the SKF Microlog AX and GX series instruments.

With Analysis and Reporting Manager, data may be exported to ASCII or Excel files for easy viewing using Microsoft Excel or other third party software. Analysis and Reporting Manager provides an easy mechanism for uploading data from your instrument via USB, once uploaded, the data is automatically shown in the application main window, and a single mouse click is all that is needed to view the data in a powerful, interactive graphical plot. Analysis and Reporting Manager also provides a range of post-processing features that allow users to get the most out of the application module data.

Analysis and Reporting Manager support is provided to the following modules:

- Balancing
- Bump Test
- Data Recorder
- Frequency Response Function (FRF)
- Run up Coast down (RuCd)
- Spindle Test
- FFT Analyzer
- Conformance Check

Data collected for these modules can be imported into the SKF’s Analysis and Reporting Manager, stored alongside the asset and then linked to SKF @ptitude Analyst, allowing users to provide additional information about the data.

Note: “Asset” has no meaning in the stand-alone version. For the add-on version, it means you can associate some Analysis Reporting Manager data with a node in the SKF @ptitude Analyst hierarchy.

Key features:

- Digital Signal Processing (DSP) window – enables post processing of time waveform data using Fast Fourier Transform (FFT) routines into Spectrum or Waterfall plots
- File download management – specify file locations on your PC or network; data is sorted by date / time and module type when it is uploaded
- Import of Conformance Check module results, including the report table with the machine graphic, as well as the spectral results files
- Conformance Check results can be combined to generate trend plots
- Import of Run up Coast down (RuCd) module data files, including the original .wav recording and the CSV results files
- Export of data to UFF (type 58) files allowing easy import into structural analysis packages
- Batch exporting of data into Microsoft Excel, allowing consolidation of multiple measurements into a single workbook with multiple tabs, or separate workbooks
- Creation of Microsoft Word documents from data, including support of templates via bookmarks. Graph plots as well as numerical values may be included, and Conformance Check results tables may be created.
- Custom balance reports created in Microsoft Word
Analysis and Reporting Manager

Powerful interactive graph plots:
- Single and multiple time waveform or spectrum
- Waterfall
- Overlay
- Orbit and polar plots (with a moving zoom function allowing easy traversal of orbit/polar data)
- Bode and Nyquist
- Spectrogram
- Balance run polar plots

Easy to use graphical display:
- Zooming and magnification
- Dynamic cursor types (harmonic, power, peak-in-band, side band, etc.)
- Integration, control of engineering units and vertical scale
- Unlimited annotations and notes, allowing you to record and highlight information about your data

Enhanced functionality
Analysis and Reporting Manager has new functionality for the stand-alone product as well as the embedded version that will now be included with both the popular CMSW 7400 and now the CMSW 7300 software products. Analysis and Reporting Manager functionality allows users to upload, view and post-process field collected data from modules in our SKF Microlog Analyzers.

SKF’s Analysis and Reporting Manager application now has the ability to calculate enveloped (gE) overall limits and store calculations with the collected data. SKF’s acceleration enveloping (gE) feature contains a set of calculated warning and alarm levels. These warning limits depend on a specific bearing bore, speed and the Fmax selected for your enveloped spectrum. To assist in setting the correct alarm and warning levels, there is now an SKF bearing database lookup feature that is built right into the Analysis and Reporting Manager software.

The Digital Signal Processing Module (DSP) provides several post-processing features including acceleration enveloping (gE) analysis. This menu has many advanced features including waterfall, and Fast Fourier Transforms (FFT) along with other advanced features. It supports the recording of raw data from a series of sensors to allow users to collect data from a machine running for a short duration. This can be very helpful where route collection would not normally collect enough data; either fast enough, or where collection of data over an extended period of time is not practical. The raw signals can then be post processed, using Analysis and Reporting Manager software to produce all of the spectra required for analysis.

With the latest version of Analysis and Reporting Manager, the post processing options allow you to perform SKF acceleration enveloping (gE) and display the results right in the analyzer window. Once the data is captured, it can then be overlaid with bearing fault frequencies onto the post processed spectra to calculate warning and alert levels.

In addition to the impressive list of post processing options available in the Analysis and Reporting Manager, SKF has also added Cepstrum, Power Cepstrum, and Power Spectrum to the list of available features. Cepstrum analysis is a tool for detecting periodicity in an FFT which is especially useful when diagnosing potential gear box failures. Power spectrum provides a plot of the portion of a signal’s power (energy per unit time) for any given frequency in the FFT where the energy is measured at the cursor position.

The new License key support replaces the older style dongle technology with current SKF @ptitude License Keys supporting customer trials and product evaluations.
Analysis and Reporting Manager

Customized reporting
The Analysis and Reporting Manager automatically imports data into your PC; it can then be browsed and manipulated using a familiar Explorer style tree display. Extensive context (pop up) menus and customizable toolbars allow simple manipulation and configuration of your data display including customizing the colors and fonts used in the plots and records can be moved around using the Windows clipboard and drag-and-drop feature. A large number of standard file formats are supported, including .wav, ASCII and UFF (Universal File Format).

Data management
The Analysis and Reporting Manager automatically stores data in data stream files which embed the original data and all user added settings such as cursors and ranges, as well as annotations and notes. Customizable text based reports can be generated from the data, and any record can be output as ASCII text or the graph plot copied to the clipboard as a bitmap file. All data can be saved to ASCII or UFF files or written directly into Microsoft Excel workbooks.

Technical specifications

Data transfer
Direct downloading of data from SKF MicroLog Analyzer is done via Microsoft ActiveSync using USB, Windows Mobile Device Center 6.1 (if using Windows 7) or any other supported connection type.

Inputs
The following types of data can be input into the Analysis and Reporting Manager:

- Analyzer, Non-route, Bump Test, Frequency Response Function (FRF) and Conformance Check results files (.csv and .ccr)
- Balancing module files (.txt)
- Recorder module files (.wav)
- Run up Coast down (RuCd) module files (.wav and .csv)
- Universal File Format type 58 (.uff)
- Native Analysis and Reporting Manager data stream files (.pds)
- Single or multiple column ASCII file format (.txt)
- Microsoft Excel workbooks (requires Excel 2000 and/or Word 2000 or later on host)

Outputs
Data may be output in general X-tab-Y column format ASCII files, UFF type 58 files, Microsoft Excel workbooks and Analysis and Reporting Manager data stream files. Data may be copied to the clipboard (as both ASCII and data stream formats).

- Graphs may be copied to the clipboard as bitmaps.
- Multiple records may be output as a single, multiple column ASCII file or Microsoft Excel worksheet.
- Time waveform data may be used to produce single spectrum or waterfall plots using FFT analysis.

Processed data is automatically stored in Analysis and Reporting Manager data stream files.

Microsoft Word documents may be created directly from data, either via template files using bookmarks as placeholders, or to blank documents.
UFF options
Output to UFF files includes user specification of reference and response node information and supports the SKF convention on embedding this information in the analyzer record names. All records may be output to a single UFF file or individual files as required.

Hardware requirements

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Minimum requirements</th>
<th>Recommended requirements</th>
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</thead>
<tbody>
<tr>
<td>Operating system</td>
<td>Windows 7 OR Windows XP Professional with Service Pack 2+</td>
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</tr>
<tr>
<td>Processor</td>
<td>Intel 1.0 GHz, 32-bit (x86), or better</td>
<td>Intel Core 2 Duo, 2.0 GHz, or better</td>
</tr>
<tr>
<td>RAM</td>
<td>1.0 GB</td>
<td>8 GB or more</td>
</tr>
<tr>
<td>Disk space available for stand-alone computer</td>
<td>1.2 GB</td>
<td>1.2 GB or more</td>
</tr>
<tr>
<td>DVD drive</td>
<td>One (1) required</td>
<td>One (1) required</td>
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<tr>
<td>Video display</td>
<td>1280 × 1024 or larger</td>
<td></td>
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<tr>
<td>USB port for data transfer.</td>
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Ordering information
The Analysis and Reporting Manager is available in the following configurations:

- **CMSW 7311-SL** Analysis and Reporting Manager stand-alone PC based application
- **CMSW 7400** Analysis and Reporting Manager integrated into SKF @ptitude Analyst

SKF Product Support Plans

SKF is committed to customer support excellence. The goal of a SKF Product Support Plan (PSP) is to help you increase and optimize your return on investment in SKF products. This includes extending the life of their product and facilitating the success of their program. This allows you to compete in your industry, save downtime and be on the cutting edge of technology.

SKF Product Support Plans give you full confidence that your equipment is maintained to the SKF quality standards. Condition monitoring products are an investment and there is no better way to protect your investment for years than with a SKF Product Support Plan.

Greater peace of mind
- Unlimited telephone technical support
- E-mail/web-based technical support
- Live chat technical support
- Software maintenance releases
- Software updates
- Remote Workstation access
- SKF Knowledge Centre subscription
- SKF Technical Support Self-Help Portal access
- Live webinar training notifications
- Web-based e-Learning courses
The Power of Knowledge Engineering
Combining products, people, and application-specific knowledge, SKF delivers innovative solutions to equipment manufacturers and production facilities in every major industry worldwide. Having expertise in multiple competence areas supports SKF Life Cycle Management, a proven approach to improving equipment reliability, optimizing operational and energy efficiency and reducing total cost of ownership.

These competence areas include bearings and units, seals, lubrication systems, mechatronics, and a wide range of services, from 3-D computer modelling to cloud-based condition monitoring and asset management services.

SKF’s global footprint provides SKF customers with uniform quality standards and worldwide product availability. Our local presence provides direct access to the experience, knowledge and ingenuity of SKF people.

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