

# System 1\* Condition Monitoring and Diagnostic Software

Bently Nevada\* Asset Condition Monitoring

# S1

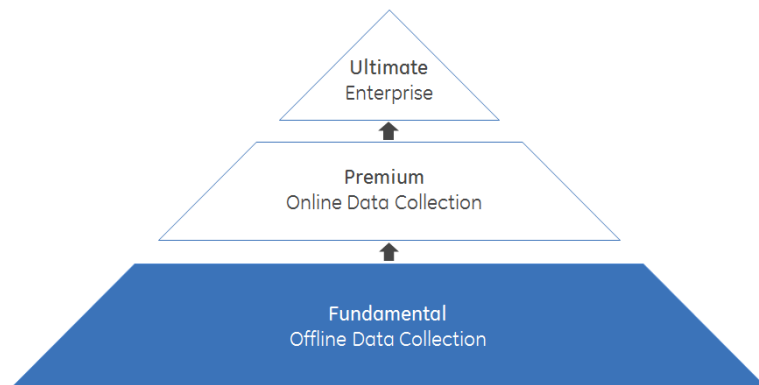
## System 1\*

Condition Monitoring Software



## Fundamental Package

The System 1\* Fundamental Package represents GE Bently Nevada's premier base level condition monitoring (CM) solution with seamless integration to our industry leading line of portable vibration analyzers and data collectors. This package offers an economical entry point designed to enable foundational CM at your facility for equipment whose health can be monitored and managed through periodic data collection and analysis.



### System 1 Solution Packages

Establishing and maintaining a best-in-class CM program at your facility requires equipment knowledge with an understanding of failure modes and operational criticality combined with a cross functional team, process rigor, and enabling technology. Bently Nevada offers flexible solutions ranging from product delivery with deployment services to complete solution coverage through a supporting service agreement where we partner with your facility to manage the CM program.

### Keys to a Successful CM Program Bently Nevada Solution Scope



imagination at work

Specifications and Ordering Information  
Part Number 102M6707-01  
Rev E (05/15)  
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# The Evolution of System 1\*

System 1\* software represents the core of Bently Nevada's CM solution and the **Fundamental Package** represents a **refreshed approach** in our mission to provide users with a **single ecosystem** for **plant-wide machinery management**.

Leverage CM alarms, long term trended data, and diagnostics to **understand the health of your equipment**. Combine this with people and process to enable **strategic data driven maintenance planning and decision making**.

## User Experience

Modern consumer software applications have pushed the envelope when it comes to user experience; we believe the same expectations apply for industrial CM applications

- ✓ Modern and Intuitive Interface
- ✓ Continuous User Involvement
- ✓ User Driven CM and Diagnostic Workflows

## Capability

The Fundamental Package provides scale when it comes to database management, diagnostics, and work prioritization

- ✓ Flexible Route Management
- ✓ Bulk Template Configuration<sup>1</sup>
- ✓ Best-in-Class Anti-Friction Bearing Diagnostics
- ✓ Diagnostic Reporting

## Accessibility

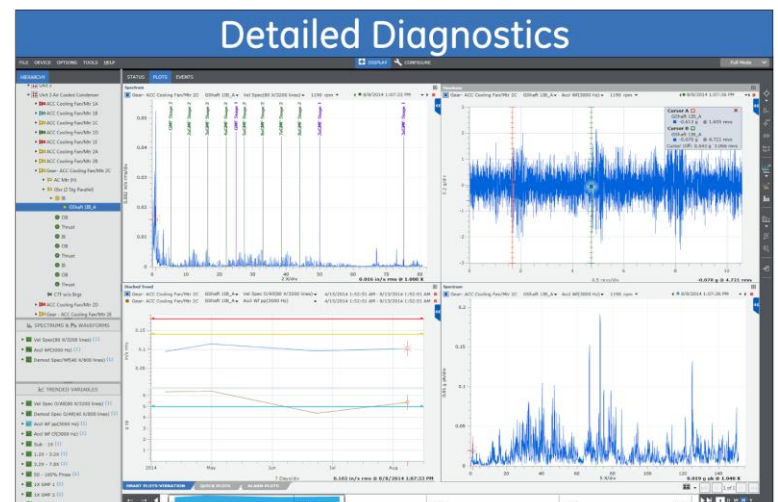
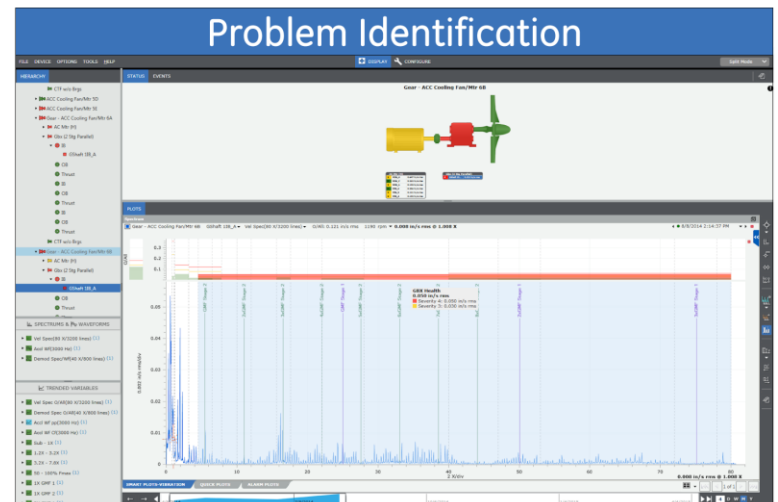
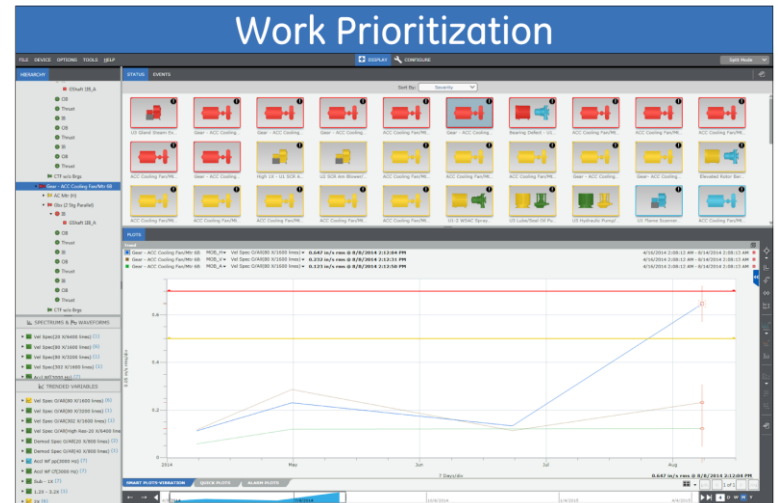
Successful CM programs require collaboration between departments and controlled access to the tools

- ✓ Distributed Client/Server Deployment Model
- ✓ Remote Portable Data Transfer
- ✓ User Security Profiles<sup>1</sup>

## Embedded Expertise

Bently Nevada differentiates itself by providing equipment focused solutions and best practice configuration & diagnostics

- ✓ Pre-Canned Equipment Templates
- ✓ Technical Associates Proven Method Wizard
- ✓ Embedded ISO 10816-3, 10816-7, & 14694 Wizards



## System 1 Ordering Information

The System 1 Fundamental Package provides flexible ordering options based on the number of users and servers required to implement your CM program.



### 3071/01 – AA – BB Fundamental Package

**AA:** Quantity of Display Clients

- 01 – **Single** Client Package
- 05 – **Small** Package [6 Clients]
- 10 – **Medium** Package [11 Clients]
- 15 – **Unlimited** Clients

**BB:** Quantity of Server Licenses

**##** – **Numeric Entry** [1→n]

### What is a display client (AA)?

A System 1 display client connects to the System 1 server locally (same computer) or remotely via network access. These clients can have full access to the CM database; however, remote clients can only display the CM database when direct or networked access to the server is available.

### What is a server (BB)?

A System 1 server contains one or more CM databases, which can be accessed from one or more display clients. Historical data and configuration structure is contained on the server, so the CM databases are always available.

### Ordering Example

A CM program requires a minimum of five users to have access to a centralized System 1 server, which will contain multiple CM databases. In addition, laptops will be utilized by two users to enable data collection and software analysis at remote sites without access to the centralized System 1 server.

Recommended Ordering Option: **3071/01-05-03**

## Portable Device Ordering Information

Data collection and analysis is enabled by Bently Nevada's line of portable vibration analyzers & data collectors.



**CSA Class1/Div2 Rating**

**KALC0328** vB8 Analyzer [4 Chl + Tach, 80 KHz, 12,800 Lines]

**KALC0327** vB7 Analyzer [2 Chl + Tach, 40 kHz, 6400 Lines]

**KALC0326** vB6 Collector [4 Chl + Tach, 40 kHz, 12800 Lines]

**KALC0325** vB5 Collector [1 Chl + Tach, 40 kHz, 6400 Lines]



**ATEX Zone 2 Rated Analyzers**

**SCOUT140-EX** [4 Chl + Tach, 80 KHz, 12,800 Lines]

**SCOUT100-EX** [2 Chl + Tach, 40 KHz, 6400 Lines]

## Portable Device Accessories

**KTBL0318** 4 Channel Balancing Kit

**KTBL0317** 2 Channel Balancing Kit

**DTC70262** Dust Cover for vbX/SCOUT

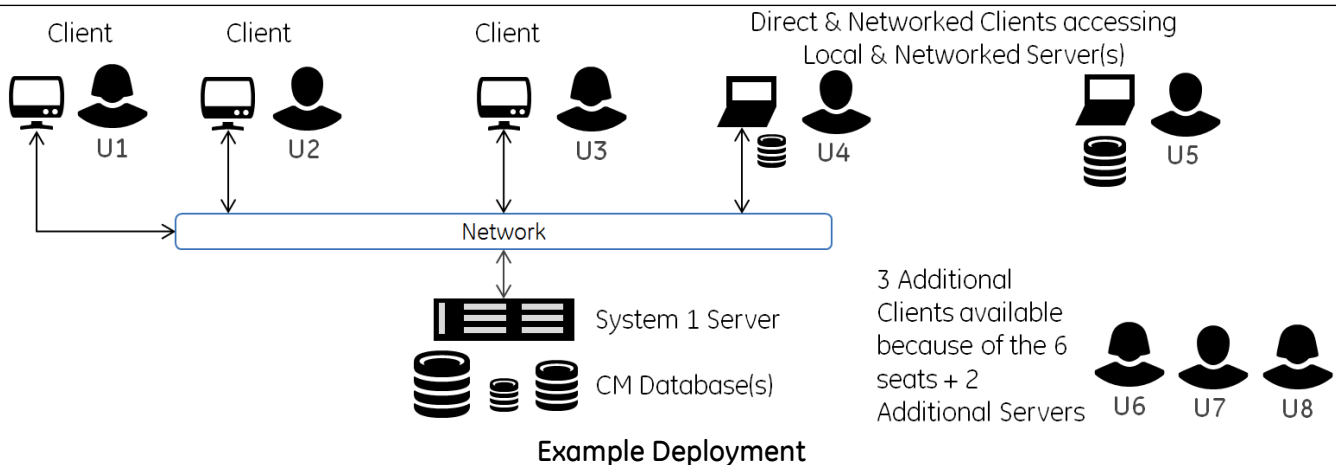
**PELC0563** Pelican Case

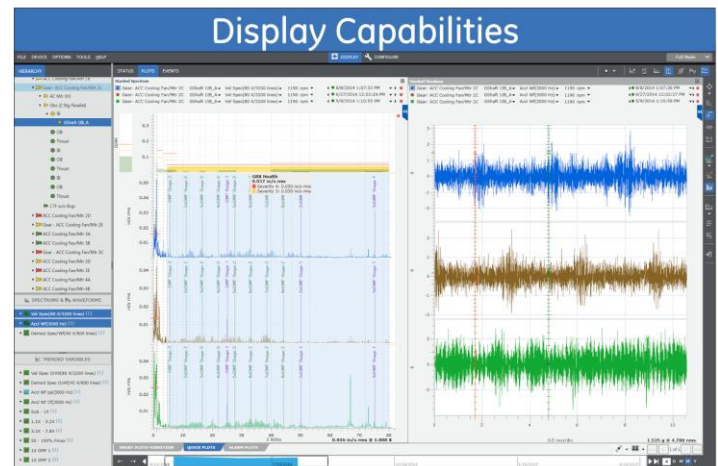
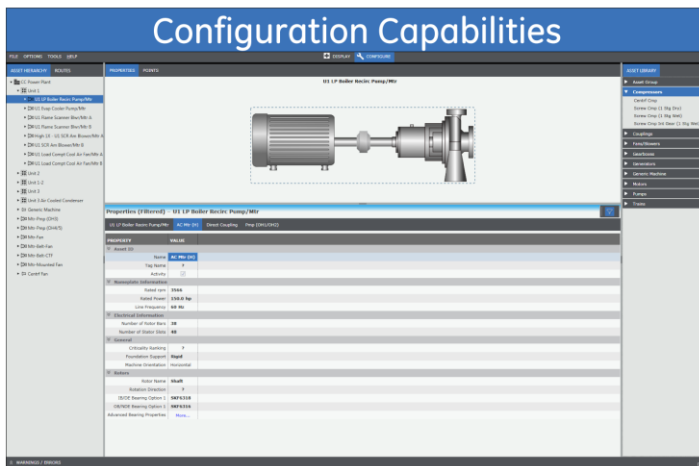
**KTTC0331** TriAxial Sensor Kit [C1D1, 20%]

**LASA0315** Laser Tachometer & Block

**CBL50216** Laser Cable 5m with Lemo Connector

**CALV0238** Certified Calibration for Portable Data Collector





## Configuration Wizards

- ✓ Build a four bearing machine and apply the comprehensive **TA Proven Method** or targeted **ISO configuration standards** in under 2 minutes across 12 points
- ✓ **Copy & Paste** complete machine trains to efficiently build CM databases

## Manual Configuration

- ✓ Generate your own configuration standards & **custom templates**<sup>1</sup> when built in standards are not applicable
- ✓ Leverage **spreadsheet style configuration** to apply broad changes to configuration structure

## Route Management

- ✓ **Build flexible routes**, add/remove equipment, points and measurements to customize routes (Heavy/Light)
- ✓ Improve CM by including **Observation Notes**<sup>1</sup> in route (Oil Leak, Machine Off, etc.)
- ✓ Improve CM by including **gauge readings** (Suction Pressure, Discharge Pressure, Bearing Temp, etc.)

## Equipment Library

- ✓ Build **comprehensive databases** starting with: Centrifugal/Screw Compressors, Centrifugal Fans, Gearboxes, Generators, Motors, Overhung/Between Bearing/Vertical Pumps, Cooling Tower Fans, Axial Compressors<sup>1</sup>, Gas Turbines<sup>1</sup>, Steam Turbines<sup>1</sup>
- ✓ Leverage **Embedded Anti-Friction Bearing Database**

## You Asked & We Listened

- ✓ Flexible Cut/Copy/Paste of Points & Measurements<sup>2</sup>

## General Navigation & Work Identification

- ✓ **Prioritize work** through **equipment alarm level status sorting**
- ✓ **Navigate** from the **hierarchy** or **graphically** in the primary workspace to drill down and identify equipment health issues
- ✓ Select an alarm from the historical list to **automatically present** appropriate **supporting evidence** in the form of meaningful plots

## Condition Monitoring & Diagnostics

- ✓ Evaluate condition using diagnostic plots: **Trend, Spectrum, Waterfall, Waveform, Orbit**<sup>1</sup>, **Bode**<sup>1</sup>
- ✓ **Understand** changing condition by **comparing data**: Previous Sample(s), Baselines, Machine A to Machine B, Bearing A to Bearing B, Point A to Point B, etc.
- ✓ Pinpoint frequencies of interest with **standard, harmonic, and sideband cursoring**
- ✓ **Estimate true running speed** when true speed measurement not practical through **spectral cursor peak interpolation**; set this value as sample speed and cascade across all equipment measurements
- ✓ **Link trend cursor position** with **associated waveform & spectrum plots** to efficiently facilitate root cause identification

## Reporting

- ✓ Generate context sensitive **quick diagnostic report** from plotting & alarming workspaces
- ✓ **Copy/paste** view from any workspace using standard interactions to **build external report**

## You Asked & We Listened

- ✓ Status Visualization & Alarming Improvements<sup>2</sup>



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## General Capabilities & Specifications

### Distributed Client/Server Deployment

- ✓ TCP/IP Client to Server Communication
- ✓ Run up to 3 different CM databases simultaneously on a server from remote clients

### User Security Profiling<sup>1</sup>

- ✓ Leverages Windows Domain & Local Accounts
- ✓ **Administrator Profile** (Read, Write, Database Management)
- ✓ **Advanced Profile** (Read, Write)
- ✓ **Basic Profile** (Read Only)

### Database & Server Capacity

- ✓ Each CM database can contain a maximum of 1500 pieces of equipment (motor + pump = 2)
- ✓ **Embedded Proficiency\* Historian** for data storage & management
- ✓ Configure up to 50 CM databases per server

### Display Unit Preferences

- ✓ Effortlessly switch between "as configured", Imperial, and SI unit systems from Display

### Portable Device Data Transfer

- ✓ **Remote Communication Transfer** via WIFI, controlled from Portable Device [**Simplified Work Practice**]
- ✓ TCP/IP Ethernet Transfer, controlled from Software
- ✓ USB Transfer, controlled from SoftwareXML File Mode Transfer, controlled from Portable Device & Software

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## Supported Languages

System 1 has been designed for internationalization and is supported in the following languages

- ✓ English
- ✓ Spanish<sup>3</sup>
- ✓ Russian<sup>3</sup>
- ✓ Simplified Chinese<sup>3</sup>
- ✓ Japanese<sup>3</sup>
- ✓ Brazilian Portuguese<sup>3</sup>

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## System Specifications

### Laptop

17", 2.60 GHz Intel® Core™ 3720QM processor or above  
16 GB RAM or above  
500 GB hard disk drive  
Available USB port (if this method required for portable data transfer)  
DVD-ROM drive  
256 MB video card

### Servers 64 bit:

2.40 Ghz Intel® Xeon™ processor or above  
16 GB RAM or above  
500 GB hard disk drive  
Available USB port (if this method required for portable data transfer)  
DVD-ROM drive

### Operating Systems:

Microsoft Windows 2008 Server Standard Edition 32 bit and 64 bit  
Microsoft Windows 2008 Server R2 Standard Edition 64 bit  
Microsoft Windows 7 Professional 32 bit and 64 bit

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### Footnotes:

1. Feature will be available in Q3 2015 System 1 Release
2. Feature planned for Q3 2015 System 1 Release
3. Language translations will be available in Q4 2015
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