Alternative ways of setting up the system are displayed below.

Alternative 1: Installing all FleetMaster applications on a computer connected to the automation system process network. This computer will now act as the sole FleetMaster PC.

Alternative 2: Installing the FleetMaster Ship Gateway application on a computer connected to the automation system process network. Other applications (Ship Viewer, Ship Trender) are installed

on dedicated client PCs connected to the ship's administrative network.

Alternative 1

Alternative 2

Automation systems
FleetMaster is compatible with any version of K-Chief 500 and DataChief C20, and with DataChief DC2000 version 46 or higher.

Ship Viewer / Ship Trender
The FleetMaster Ship Viewer and Ship Trender application may be installed on other workstations than the Ship Gateway, with access to the log files through a network interface.

Engine Reports
The FleetMaster Engine Reports must run on the Gateway computer.

Ship Gateway
The FleetMaster Ship Gateway application must be installed on-board to gain access to online data from the K-Chief / DataChief automation system.

Remote Support
On-board
• FleetMaster Technical Log must be installed.
• Standard e-mail system supporting automatic sending of data files.

At ship owner's office
• FleetMaster Remote Support

installed on a computer with Windows NT, Windows 2000 or Windows XP operating system.
• E-mail system for receiving data files from the vessel.

Computers (recommended)
• Type approved computer
• Windows XP, Windows Vista or Windows 7 operating system
• 100 Mb free space on hard disk
• Pentium 733 MHz processor
• 128 Mb RAM
• Two Ethernet network adapters (required for Gateway computer if running FleetMaster on clients)

• K-Chief 500 Alarm, Monitoring and Control System

• Maritime Black Box (MBB)

• K-Log Electronic Logbooks

Note!
This datasheet is subject to change without prior notice.

FleetMaster®

KONGSBERG

Management support system

The Kongsberg FleetMaster® management support system is designed to enable continuous access to primary vessel data both on-board the vessel and from ashore. The FleetMaster system can display data from the K-Chief 500 alarm, monitoring and control system. Reporting and trending is included.

On-board ship
Integration between the process network and the administrative network provides:
• Access to automation data
• Organization and storage of data
• Presentation and decision support
• Automatic and manual ship reporting

At ship owner's office
Integration of the fleet and the ship owner's office provides:
• Access to the information on the ship's process networks
• Organization and storage of data

• Presentation, curves and tag value lists

FleetMaster applications
Ship Viewer - displays online data generated by an alarm, monitoring and control system. Process information can be made available anywhere on-board a vessel through the ship's administrative network or in an office ashore using a standard personal computer. Data is presented using a mimic user-interface similar to that used by the Kongsberg K-Chief 500 system.

Ship Trender - records and presents vessel process data generated by the K-Chief 500, DataChief C20 and DC2000 alarm, monitoring and control systems.

Engine Reports - provides standardized reports based on online information generated by the K-Chief 500, DataChief C20 and DC2000 alarm, monitoring and control

systems. Report data may printed or stored as electronic PDF documents. The application includes a predefined range of report templates. The user may also create reports with self defined data.

Ship Gateway - provides online information from the K-Chief 500, DataChief C20 and DC2000 alarm, monitoring and control systems to 3rd party recipients in the administrative network. Typical data recipients are Planned Maintenance Systems and Loading Computers.

Remote Support - provides key information from the vessel to the ship owner's office. It also provides remote support in case of operational or technical problems on-board the vessel - subsequently saving the ship owner time and cost. In emergency situations, FleetMaster Remote Support may also be used to provide key information to emergency support centers, such as DNV, GL or others.

Ship Viewer

The Ship Viewer is used to provide the interface to an office **ashore**. This allows a shore-based user in near real-time to observe the same information as available to watch officers in the Engine Room aboard the vessel in question.

Access to Ship Viewer information allows more immediate and effective support to be rendered by shore-side personnel and helps avoid problems related to misunder-standing or lack of information.

The Ship Viewer can be interfaced with a K-Chief 500 process network (LAN) **on-board** the vessel, providing approved users online access to this critical information. For example, a Chief Engineer could check primary engine room or other critical parameters any time of day or night from his office.

Ship Viewer primary functions:
- Displays logged vessel data using a mimic user interface similar to that used by K-Chief 500 systems.
- Displays alarms registered on-board the vessel on a personal computer in the owner/operator's office ashore.
- Displays a complete history of alarms registered on-board the vessel.
- Provides on-line status of valves (open/closed), equipment (running/stopped) and similar information regarding other critical systems on-board the vessel.
- Provides owner/operators with an overview of primary vessel data, allowing better shore-side support of ships and their crews.

Ship Trender

The Ship Trender can record up to 30 different logs, each containing a maximum of 32 tags. Recorded data may be stored on-board and/or sent ashore for analysis or storage.

Logging may be performed as frequently as every second.
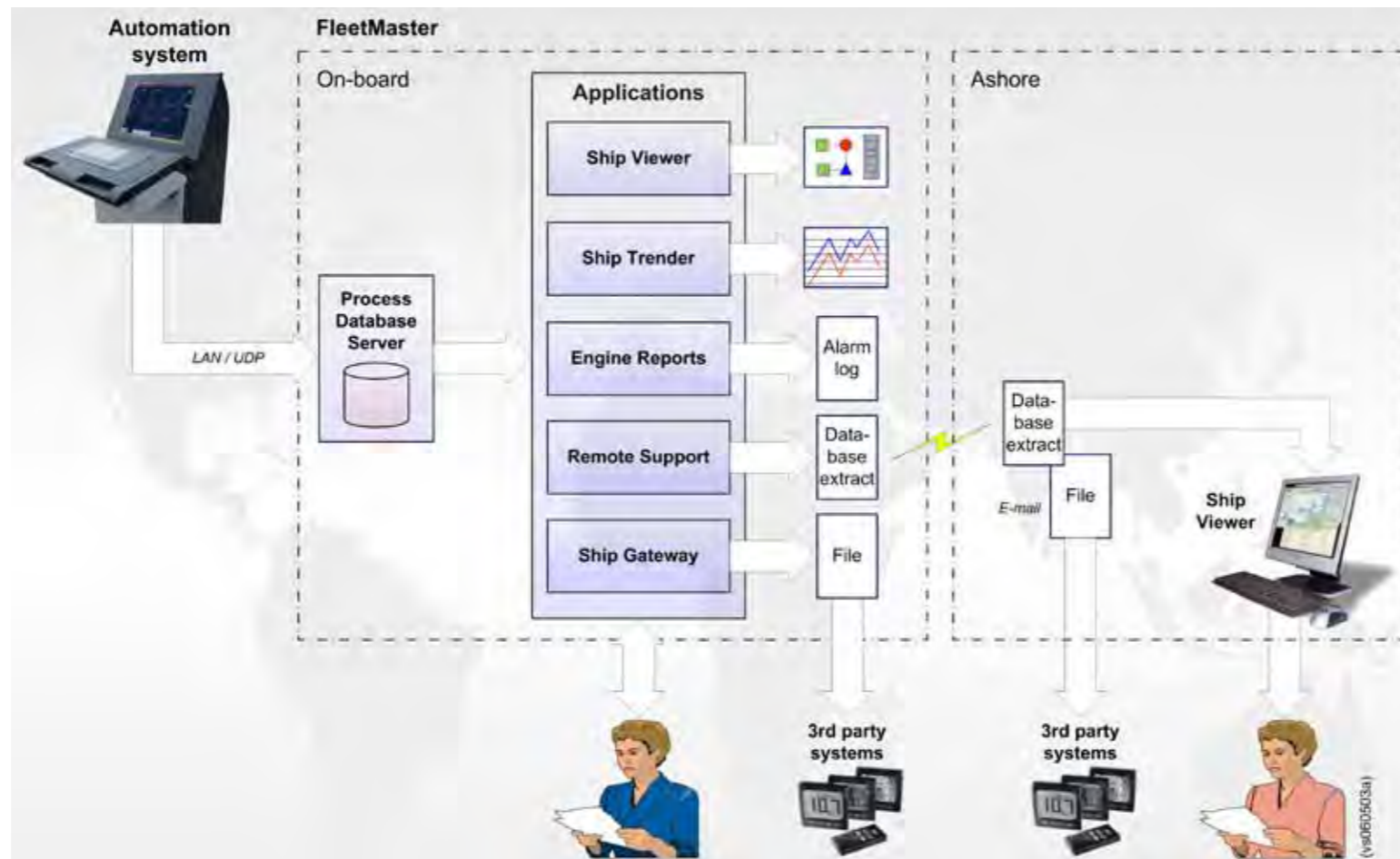
The log data may be configured to be recorded in several ways:
- **Using regular intervals** - logs automatically start and stop recording at pre-defined intervals.
- **Continuously** - logs are continuously recorded.
- **By event** - logs start recording when a predetermined event occurs.

The Ship Trender may be used for trending information such as fuel consumption, compressor recycle time, power consumption, power production and other values available in the automation system.

The Ship Trender can be utilized in a variety of ways. Typical uses of the application are:
- To record specific tags to observe the changes in a selected value over time.
- To aid in tuning controllers.
- To monitor the condition of vessel components such as main engine, compressors, pumps and auxiliary engines.
- To provide data for establishing the chain of events leading up to a particular incident.
- To facilitate track keeping of high-frequency trends and long term parameter analysis.
- To provide a permanent record or basis for analysis of events such as equipment start/stop or emergency shutdown.

Engine Reports

The following types of Engine Reports are available:
- **Channel reports** - consisting of auto log reports, channel group reports, customized group reports, custom reports and manoeuvre log.
- **Alarm reports** - consisting of alarm summary, alarm history, alarm overview and channel alarm history for each alarm.
- **Manoeuvre log** - used for recording of predefined events, change in values etc.
- **Tank report** - consisting of customized reports for all tanks on-board.

The Engine Reports may also be used for automatic recording of manoeuvre data and other events. This is done using the electronic manoeuvre log.

The Engine Reports can be utilized in a variety of ways. Typical uses of the application are:
- Automatically generated reports from the automation system, including all connected equipment.
- Documentation of testing of critical alarms, with a complete history of activated alarms.
- Statistic overview of all activated alarms.
- User configured reports for components such as main engine, auxiliary engine and turbo charges.

Ship Gateway

The Ship Gateway application is installed on a standard type approved computer. Its main purpose is to provide an interface with the ship's administrative network, allowing accesss to common system data.

The Ship Gateway application communicates with the automation system through a standard network interface. All tag information in the automation system is available to 3rd party recipients.

Data from the Ship Gateway is available in the following formats:
- Formatted ASCII files
- Excel worksheets
- Binary files

The Ship Gateway application is supplied with an easy to use configuration program. This allows the user to select the data tags and the data formats required.

The Ship Gateway can be utilized in a variety of ways. Typical uses of the application as a serial line replacement are:
- Exporting running hours to planned maintenance system such as Star Information Systems, Xantic and Hyundai.
- Tank Data to loading computers such as Kockumation, Loadship and LoadMaster.
- Engine values to diagnostic systems such as Man B&W's Cocos-EDS and MAK's Dicare.

Remote Support

The Remote Support application is a generic infrastructure for collection and transfer of information to/from on-board systems for subsequent data transfer to/from shore.

The Remote Support application **on-board** records a compressed log file containing Alarm History and process data from the automation system. These files may be sent to shore automatically or on request for diagnostics, support or other matters.

At **ship owner's office**, data is received in the e-mail recipient's in-box. By clicking on the received file, the system automatically stores and organizes the data, and then opens the Ship Viewer that will present the ship's mimic pictures.

The Remote Support application provides the following areas of use:
- Detailed information of the status on-board the vessel.
- Data presentation with mimics similar to those on-board the vessel.
- Alarm history and Summary information as recorded on-board.
- When operational or technical problems occur, the ship owner and/or supplier can provide efficient support, hence saving time and cost.
- The ship owner can monitor and evaluate the ship performance during loading and discharging.