1. Features

FieldMate is a PC based configuration tool that performs numerous tasks, including initial setup, daily maintenance, troubleshooting, and configuration backup for device replacement. These tasks are streamlined by FieldMate’s intuitive operation and integrated environment, which is independent from communication protocols and device vendors.

Moreover offline database function for up to 500 devices which maintains a complete record for all device configuration and maintenance activities.

FieldMate incorporates the open FDT/DTM standard and is compliant with DTM per the FDT1.2 and FDT2.0 simultaneously standard. FieldMate supports by Built-in DTM interpreting the existing Device Description (DD) instantaneously, for other vendor’s devices that do not have DTM available.

The FDT frame is an integral part of FieldMate. Many DTMs are included with the FieldMate application, and additional DTMs are available from most field device vendors.

* FDT: (Field Device Tool) is a frame application that standardsizes the communication and configuration interface between all field devices and host systems.

* DTM: (Device Type Manager) is the application which defines the Graphical User Interface (GUI) specific to the device.

2. Functional Details

- Communication Function
FieldMate supports the following communication protocols:

  - BRAIN
  - FOUNDATION™ fieldbus H1 *1
  - HART (HART 7 is supported)
  - PROFIBUS
  - ISA100.11a
  - Modbus

*1: FieldMate should connect to the devices in FOUNDATION™ fieldbus H1 segment without host system.
Device Interface Function

- Segment Viewer
  Displays a list of devices currently connected on the communication lines, grouped by protocol. Basic device specific information is displayed depending on protocol (Device ID, Manufacturer ID, address, Device type, Device revision, and status). Segment Viewer supports BRAIN, FOUNDATION fieldbus H1, HART, PROFIBUS, ISA100.11a*1, Modbus. *1 It displays either via gateway or infrared communication.

- Device Viewer
  Displays the current status of the field device, including errors, warnings and good status. The status display icon (red, yellow, green) clearly indicates the device's self-diagnostic status. Device Viewer supports FOUNDATION fieldbus H1, HART, ISA100.11a.

- Trend Graph Function
  Displays the acquired data on a trend graph. This function is informative for the evaluation of the trend of the acquired data.

Configuration Function

Device parameters can be easily configured.

- BT200 Tablet
  With the same screen and operation as the BT200, field engineer can configure and adjust the BRAIN device without changing the conventional procedure. In addition, by saving the device's parameter information on the FieldMate. So the printing operation on the field has become useless.

- Parameter Manager
  The Parameter Manager is a simple parameter viewing window, in which adjustment and field device configuration can easily be performed. Parameter Manager supports FOUNDATION fieldbus H1, HART, ISA100.11a.

- DTM Works
  The DTM Works provides not only configuration, but easy setup, calibration, simulation wizards etc. as defined by the device vendors’ DTM. DTM Works supports BRAIN, FOUNDATION fieldbus H1, HART, PROFIBUS, ISA100.11a, Modbus.

- DD Menu
  The existing fieldbus DD is utilized to enable function block configuration. DD Menu supports FOUNDATION fieldbus H1.

- Zero Adjustment
  The Zero Adjustment function is executed from Segment Viewer with one-click. This function supports YOKOGAWA Differential pressure transmitters (HART/FOUNDATION fieldbus H1/BRAIN).

- All Parameters Acquisition
  This function obtains all parameters from device with one-click. Obtained parameters can be compared with recorded parameters and then displayed the difference. Recorded parameters and comparison result can export in various formats (text, HTML etc.).

Database Function

- Device Maintenance Info.
  Provides advanced maintenance information consisting of:
  - Device Information
  - Sticky Note
  - Images
  - History
  - Parameter (All Parameters of Device, ZERO Adjustment Parameters of Device)
  - Attachment (Memo, Document, Parameter Manager Data, DTM Data)
  All information can be exported / imported.

- Device Navigator
  Shows all registered devices and provides a searching function by tag, device name, memo, etc.
  * Online registration and offline registration can directly be implemented from Segment Viewer/Device Navigator. (Up to approx. 500 devices can be registered) Marking it with flags to remind users of outstanding issues etc., simplifying daily maintenance.

History Function

FieldMate Operation log are automatically recorded.
- Date & Time
- Device Tag
- Device ID
- User
- Source: DTM works, DD Menu, Parameter Manager, etc.
- Category: Configuration (device parameter change) and System (logs of login, etc.).
- Message: Details log of changes

- Device Status View
  Displays the history of the device alarms.

Input Loop Check Support

This function is to output test signal from device. Some test pattern (Ex. 3 point check / 5 point check) and signal value can create easily. This test pattern can be saved and read. Any device can be operated through the same user interface - regardless supplier, type or communication protocol (HART/BRAIN).

3rd Party DTM Function

This function provides device interface in compliance with FDT standard, enabling the features defined by the device vendor’s DTM.

Pressure Calibration Support Function

Guides the calibration work in combination with CA700 pressure calibrator. This function provides the efficient calibration work by monitoring the pressure value and the current value in real time. Also, the high precision calibration work is provided by automatic recording calibration data. The calibration result can be outputted as calibration report.
**FLXA402/SA11 Calibration Management**
The dedicated screen is prepared for the new 4-Wire Converter FLXA402 and the SENCOM™ Smart adapter SA11 and supported the following functions.

- **Local Display system for FLXA402**
  It can be connected to the FLXA402 via the dedicated interface (*1), and the measured value / set value / history display of FLXA402 can be displayed with graphical display and comfortable operability.

- **Direct access system for SA11**
  It connects directly to SA11 and can perform calibration work for the sensor (SA11) and setting parameter management in work space other than the site. (*2)

*1: The target FLXA402 must support Bluetooth, Modbus TCP/IP, or Modbus RTU (RS-485).
*2: The Bluetooth interface box IB100 is required.

**Field Diagnostic Function**
NAMUR NE107 is a recommendation to categorize alarms into four status signals (Failure, Function Check, Out of Specification and Maintenance Required), this allows for reliable operation, more efficient planning of maintenance and higher confidence in the instruments operation.

The classification, configuration and status of many device alarms that conform to NE107 can be easily checked, changed and monitored by Field Diagnostic Function.
(It supports FOUNDATION fieldbus H1 and Profinbus)

**3rd Party COMM DTM support**
Provides advanced connections and communication networking enabling:
- Access PROFIBUS-PA/DP devices
- Access HART devices via PROFIBUS
- Access 3rd Party multiplexers.
User defined communication topology can be saved in FDT project.

**Serial Number Acquisition**
Applicable device: HART EJX and EJA series
Acquires serial number of the device and updates it in the Device Maintenance Information. Also exports the following information to a file.
- Serial Number
- Device Tag
- Device ID
- Device Revision
- Model and Suffix Code

**AXF Verification Tool**
(\NF option)
Verifies Magnetic flowmeters (AXF) and supports two types of verification. One is standard verification to verify it without having to disconnect from a process line. And another is enhanced verification to verify it more precise than standard one. The Verification result can be printed and stored in the Device Maintenance Information.
Applicable device: HART Magnetic Flowmeter AXF series

**PRM (Plant Resource Manager) Synchronization**
Synchronizes information between FieldMate and PRM to make use of PRM as a master data base. Bi-directional file transfer operation is supported.

**FieldMate Validator (\VT option)**
Validates the connection between N-IO node and field devices without CENTUM FCS (Field Control Station)/ProSafe-RS SCS (Safety Control Station). The N-IO node configuration and input/output validation are also possible without FCS/SCS.
This option enables FieldMate to communicate with field devices via N-IO node. (The Device Replacement Tool cannot be used via N-IO node.)
* FieldMate Validator can be used only while the communication between FCS/SCS and the N-Io node is not established.
* The I/O configuration data can be exported/imported between FieldMate Validator and CENTUM VP/ProSafe-RS. For that, the following software is required to be installed in CENTUM VP/ProSafe-RS system.

**External Interface Function (Tokuchu)**
This is the enhance communication function. This function provides the capability of uploading FieldMate data to the management system and downloading any information to FieldMate for plant maintenance. Also, FieldMate can communicate with non-standard communication protocol field devices.
This function is provided as a special order (Tokuchu). For any inquiries, please contact FieldMate support desk <FIELD-MATE-SUPPORT-DESK@cs.jp.yokogawa.com>.
3. Connection Example (for reference)
Sample BRAIN or HART configuration, connecting a pressure transmitter.

[Required Components]
- BRAIN or HART EJA Pressure Transmitter.
- 24 V DC Power supply
- Load Resistor (250Ω ±10%)
- USB FieldMate Modem: BRAIN/HART

4. System Requirements

<table>
<thead>
<tr>
<th>Software Operating Environment</th>
<th>OS</th>
<th>OS Language</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Windows 10 Pro, Home 32bit / 64bit (version 1709, version 1803)</td>
<td>English, Japanese, Chinese (simplified), German, French, Russian</td>
</tr>
<tr>
<td></td>
<td>Windows 7 Professional, Home Premium 32bit/64bit SP1 or later</td>
<td>*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hardware Operating Environment</th>
<th>Windows 10</th>
<th>Windows 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS Language</td>
<td>English, Japanese, Chinese (simplified), German, French, Russian</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hardware Operating Environment</th>
<th>Windows 10</th>
<th>Windows 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>1 gigahertz (GHz) or faster processor</td>
<td></td>
</tr>
<tr>
<td>Main Memory</td>
<td>2 GB or more</td>
<td></td>
</tr>
<tr>
<td>Hard disk space</td>
<td>4 GB or more</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DVD-ROM Drive</th>
<th>Windows 10 compatible</th>
<th>Windows 7 compatible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>1024×768 or better resolution recommended</td>
<td>1024×768 or better resolution recommended</td>
</tr>
<tr>
<td></td>
<td>Windows 10 compatible</td>
<td>Windows 7 compatible</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Network Port</th>
<th>Windows 10</th>
<th>Windows 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRAIN HART</td>
<td>Interface</td>
<td>One USB port USB2.0 standard</td>
</tr>
<tr>
<td>Modern</td>
<td>USB FieldMate Modem: BRAIN/HART (Yokogawa Option)</td>
<td></td>
</tr>
</tbody>
</table>

| FOUNDATION fieldbus H1 | Interface | One PCMCIA card slot |
| board | NI PCMCIA-FBUS Series 2 (National Instruments) |
| Driver | NI-FBUS Communications Manager 15.0 or later |

| FOUNDATION fieldbus H1 | Interface | One USB port USB2.0 standard |
| board | NI USB-8486 (National Instruments) |
| Driver | NI-FBUS Communications Manager 15.0 or later |

| PROFIBUS | Interface | One USB port USB2.0 standard |
| DP/PA coupler | PROFIdtm V2.11.01 or later | PROFIdtm V2.11.01 or later |
| commDTM & driver | Driver V5.46.8 or later | Driver V5.46.8 or later |

| PROFIBUS | Interface | One USB port USB2.0 standard |
| DP/PA coupler | PROFIdtm V2.11.01 or later | PROFIdtm V2.11.01 or later |
| commDTM & driver | Driver V5.46.8 or later | Driver V5.46.8 or later |

| HART | Interface | Bluetooth 2.0 |
| Modern | VIATOR® Bluetooth® Interface: Model 010041 (MACTek®) |

| ISA100.11a | Interface | One USB port USB2.0 standard |
| Modern | Infrared Adapter: ACT-IR224UN-LN96-LE 9600bps (ACTSYS) |
| Driver | Version 1.5.0 / Version 1.12.0 |

| ISA100.11a | Interface | One Ethernet port |
| Modern | Not supported |
| Driver | One USB port USB2.0 standard |

| Modbus Serial | Interface | One USB port USB2.0 standard |
| Modern | Isolated RS422/485 USB adaptor SP390A-R2 (BLACK BOX) |
| Driver | Version 2.0.0 or later |

Login
Account Administrator privilege
Communication performance depends on environment and interface you select.

*1 FieldMate should connect to the devices in FOUNDATION fieldbus H1 segment without host system

*2 Microsoft supplied Bluetooth stack is used

*3 ISA100.11a OOB infrared communication

*4 Holder for Infrared Adapter is available (recommended): Gorillamobile Original: GM1 (JOBY, Inc).

*5 ISA100.11a communication via gateway

*6 FieldMate Validator is supported with Windows 10 Pro 64bit and Windows 7 Professional 64bit.

*7 FieldMate Validator is supported with an English OS and a Japanese OS.

*8 Version 1.5.0 driver is used for PL2303 HA/HXA chip and Version 1.12.0 driver is used for PL2303TA chip

*9 Interface recommends to use the driver included OS. Version 1.7.0 driver is used if interface does not work well.

5. Model and Suffix Codes

Field device management software package: FieldMate Release: R3.04

**MODEL, SUFFIX CODES**

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Codes</th>
<th>Description</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA111</td>
<td>-S ..............</td>
<td>FieldMate</td>
<td>License number issued</td>
</tr>
<tr>
<td>License</td>
<td>- ..............</td>
<td>Single PC license</td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>-1 ..............</td>
<td>Always 1</td>
<td></td>
</tr>
<tr>
<td>Option Code (1)</td>
<td>/B ..............</td>
<td>USB FieldMate Modem</td>
<td>BRAIN/HART</td>
</tr>
<tr>
<td>Option Code (2)</td>
<td>/VF ..............</td>
<td>AXF Verification Tool</td>
<td></td>
</tr>
<tr>
<td>/VT ..............</td>
<td>FieldMate Validator *3</td>
<td>For N-IO Node</td>
<td></td>
</tr>
</tbody>
</table>

CD-ROM (FieldMate Software Media): F9197DS *1

DVD-ROM (Device Files Media): F9197DT *1

USB FieldMate Modem (BRAIN and HART protocols): F9197UF

*1 Replacement disk only

*2 With an English Windows OS, FieldMate English can be installed.

*3 With the following Windows OS, either FieldMate with the following language or FieldMate English can be installed.

Japanese, Chinese (simplified), German, French, Russian

FieldMate Validator software (including user’s manual) can be downloaded from Yokogawa web site.

A display language of FieldMate Validator is English.

A commercially available USB cable (Connector type of N-IO node: Micro-B) is necessary to connect to N-IO node.

● Upgrading from R2 to R3

- Upgrading from FieldMate Basic to FieldMate R3

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRA110</td>
<td>-S ..............</td>
<td>Upgrade from FieldMate Basic to R3</td>
</tr>
<tr>
<td>License</td>
<td>- ..............</td>
<td>Single PC license</td>
</tr>
<tr>
<td>Language</td>
<td>-1 ..............</td>
<td>Always 1</td>
</tr>
</tbody>
</table>

Notice: R2 license number needs to be stated on placing order

- Upgrading from FieldMate Advance to FieldMate R3

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRA111</td>
<td>-S ..............</td>
<td>Upgrade from FieldMate Advance to R3</td>
</tr>
<tr>
<td>License</td>
<td>- ..............</td>
<td>Single PC license</td>
</tr>
<tr>
<td>Language</td>
<td>-1 ..............</td>
<td>Always 1</td>
</tr>
<tr>
<td>Option Code</td>
<td>/VF ..............</td>
<td>From R2.x without Verification Tool to R3. with /VF option</td>
</tr>
<tr>
<td>/VFN ..............</td>
<td>From R2.x with /VF option to R3. with /VF option</td>
<td></td>
</tr>
</tbody>
</table>

Notice: R2 license number needs to be stated on placing order
6. External View
External view of USB FieldMate modem: BRAIN/HART

Fig. 3: USB FieldMate Modem
Total cable length: Approximately 2.3 m

<table>
<thead>
<tr>
<th>Technical Specifications</th>
<th>USB Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOFTWARE</td>
<td></td>
</tr>
<tr>
<td>USB Interface</td>
<td>USB2.0 standard *1</td>
</tr>
<tr>
<td>ELECTRICAL</td>
<td></td>
</tr>
<tr>
<td>Power Supply</td>
<td>System powered by USB Port</td>
</tr>
<tr>
<td>Supply Current</td>
<td>40mA@ + 5 V</td>
</tr>
<tr>
<td>Pins to Computer</td>
<td>USB Type-A connector</td>
</tr>
<tr>
<td>Pins to Device</td>
<td>2-pin, polarity insensitive Mini-grabber test clips. Detachable alligator clips additionally</td>
</tr>
<tr>
<td>Output Level (HART)</td>
<td>0.5 + / - 0.1 Vpp trapezoidal wave@1200/2200 Hz</td>
</tr>
<tr>
<td>Output Level (BRAIN)</td>
<td>1.0 + / - 0.1 Vpp trapezoidal wave@2400 Hz</td>
</tr>
<tr>
<td>Isolation(DC)</td>
<td>1910 VDC between instrument and computer</td>
</tr>
<tr>
<td>Isolation(AC)</td>
<td>1350 Vrms (50Hz)</td>
</tr>
<tr>
<td>ENVIRONMENTAL</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0 °C to 55 °C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 °C to 70 °C</td>
</tr>
<tr>
<td>Storage Humidity</td>
<td>0% to 95% relative humidity</td>
</tr>
<tr>
<td>PHYSICAL DIMENSIONS</td>
<td></td>
</tr>
<tr>
<td>Enclosure</td>
<td>84 x 46 x 18 mm, ABS industrial enclosure</td>
</tr>
<tr>
<td>Device Interface Cable</td>
<td>190 cm, 2-conductor terminating with two mini grabber clips</td>
</tr>
<tr>
<td>USB Cable</td>
<td>27 cm cable terminating in a USB type A connector</td>
</tr>
</tbody>
</table>

*1: USB2.0 also covers USB1.1

EMC Conformity Standards

- CE
  EN61326-1 Class A, Table1
  RoHS directive: EN50581
- KC Mark
  Registration No: MSIP-REM-YHQ-EEN441
- RMC
  EN61326-1 Class A, Table1
- EAC
  EN61326-1 Class A, Table1

7. Included Items
FieldMate includes the following items:
- Software and User’s Manual of FieldMate Validator are not included. Please download Software and User’s Manual of FieldMate via Yokogawa web site.

<Product>
- CD-ROM: FieldMate Software Media
- DVD-ROM: Device Files Media
- USB FieldMate modem: BRAIN/HART w/ cables (optional)

<Documentation>
- License number sheet
- Getting Started

8. Items Contained in Media

Items contained in the Media of FieldMate R3.04:

CD-ROM: FieldMate Media
- FieldMate Program
- USB modem driver

DVD-ROM: Device Files Media
- Device DTM for Yokogawa devices
  - BRAIN
  - FOUNDATION fieldbus H1
  - HART
  - PROFIBUS
  - ISA100.11a
  - Modbus
- Device DTM for the HART devices *1
- Built-in DTMs (DTM interprets DD and works right straight.)
  - FOUNDATION fieldbus H1
  - HART
  - ISA100.11a
- DD for the FOUNDATION fieldbus H1 devices *1
- DD for the HART devices *1

*1: Devices registered with FieldCom Group, some DTM or DD may not be included.

Remarks:
Yokogawa certifies the quality and operability only of DD and DTM which have been registered by Yokogawa.
9. Compatibility
Compatibility between FieldMate and Device Files is indicated on the web site at the following URL. For more information, see the “System Requirements”.
http://www.yokogawa.com/fieldmate/

10. User Registration
FieldMate can be installed on a single PC using the license number provided. FieldMate can be used for up to 30 days without registration.

For permanent installation, user registration is required. After registration an Activation Key is provided to the user. User registration can be done on the FieldMate User Registration web site.
https://partner.yokogawa.com/global/fieldmate/
The items required for user registration are the license number and Hard Disk serial number (Volume Serial Number) of the PC to which FieldMate is installed. Installation of FieldMate Validator requires activation of FieldMate.

11. Trademarks
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