

## Type Approval Particulars Inmarsat Mini-C MES

**MES Model:** Felcom 19  
**Manufacturer:** Furuno  
**T.A.P. Number:** 01  
**Certificate Number:** 4FE089  
**Issue Date:** 23 April 2012

**DCE Software Version Number:** 1650248-01  
**DTE Software Version Number:** 1650241-01

1650166-06

| CATEGORY | ELEMENTS | STATUS |
|----------|----------|--------|
|----------|----------|--------|

| 1 MES TYPE |   |   |
|------------|---|---|
| 1a         | Pre CN114 GMDSS Maritime MES Category 1                 |   |
| 1b         | SOLAS SES with Distress calling                         |   |
| 1c         | SOLAS SES without Distress calling                      |   |
| 1d         | NON-SOLAS SES with Distress calling                     |   |
| 1e         | NON-SOLAS SES without Distress calling                  | ✓ |
| 1f         | Land Mobile Earth Station (for installation on vehicle) |   |
| 1g         | Land Portable Earth Station                             |   |
| 1h         | SCADA (unattended operation)                            |   |
| 1i         | Aero-C  |   |
| 1j         | Others  |   |

| 2 MES CLASS |   |   |
|-------------|---|---|
| 2a          | Class 0 (stand-alone EGC or add-on to Inmarsat-A, -B, -M, etc.) |   |
| 2b          | Class 1 (no EGC capability)                                     |   |
| 2c          | Class 2 (Inmarsat-C and EGC)                                    | ✓ |
| 2d          | Class 3 (simultaneous Inmarsat-C and EGC)                       |   |

This MES includes an integrated GPS receiver. The Inmarsat Type Approval certifies that the MES meets all Inmarsat-C technical requirements whilst the GPS receiver is in operation. The operation and performance of the GPS receiver is not included in Inmarsat's Type Approval tests and these Type Approval Particulars do not imply any approval of the GPS receiver.

This MES includes a manufacturer's proprietary SSAS messaging application. The Inmarsat Type Approval certifies that this SSAS messaging application does not impair any of the Inmarsat-C services supported by the MES as listed in these Type Approval Particulars. The operation and performance of the SSAS messaging application is not included in Inmarsat's Type Approval tests and these Type Approval Particulars do not imply any approval of the SSAS messaging application.

| 3 ANTENNA TYPE |   |   |
|----------------|---|---|
| 3a             | Omnidirectional                         | ✓ |
| 3b             | Optimised (usable elevation angles) G/T |   |
| 3c             | Directional G/T                         |   |
| 3d             | Others                                  |   |

| 4 UNIT CONFIGURATION |  |   |
|----------------------|--|---|
| 4a                   | Separate antenna, combined DCE and DTE       |   |
| 4b                   | Separate antenna, DCE, DTE                   | ✓ |
| 4c                   | Combined antenna and DCE, separate DTE       |   |
| 4d                   | Combined antenna, DCE and DTE                |   |
| 4e                   | Integrated GPS                               | ✓ |
| 4f                   | Maximum cable length between antenna and DCE |   |
| 4g                   | Remote distress button                       |   |
| 4h                   | Remote audible alarm                         |   |
| 4i                   | Character display (CRT, LCD, etc.)           |   |
| 4j                   | Others                                       |   |

| 5 MESSAGE PROTOCOL |   |           |
|--------------------|---|-----------|
| 5a                 | Store-and-forward                       | ✓         |
| 5b                 | Prefixed store-and-forward              | ✓         |
| 5c                 | Multi-addressing                        | ✓         |
| 5d                 | Network access: Telex                   | ✓         |
| 5e                 | PSDN                                    | ✓         |
| 5f                 | PSTN                                    | ✓         |
| 5g                 | MHS (X.400)                             |           |
| 5h                 | Closed network                          | ✓         |
| 5i                 | Special access code, 2 digits           | ✓         |
| 5j                 | Special access code, more than 2 digits | ✓         |
| 5k                 | Presentation codes: IA5                 | ✓         |
| 5l                 | IA2                                     | ✓         |
| 5m                 | Data                                    | ✓         |
| 5n                 | Maximum transmit message length         | 32K bytes |
| 5o                 | Message storage capability              | 32K bytes |

| 6 DISTRESS ALERTING PROTOCOL |             |  |
|------------------------------|-------------|--|
| 6a                           | Maritime    |  |
| 6b                           | Land Mobile |  |

| 7 DATA REPORTING PROTOCOL |   |        |
|---------------------------|---|--------|
| 7a                        | DCE configuration I [sub-address = physical port](no. of ports) |        |
| 7b                        | DCE configuration II [sub-address = logical port]               |        |
| 7c                        | DCE configuration I and II (no. of ports)                       | 2 port |
| 7d                        | Unreserved  | ✓      |
| 7e                        | Program reserved  | ✓      |
| 7f                        | Program unreserved  | ✓      |
| 7g                        | Macro Encoded Messages  | ✓      |
| 7h                        | Data  | ✓      |
| 7i                        | Download/delete DNID  | ✓      |
| 7j                        | Position reporting  | ✓      |
| 7k                        | Sub-addressing  | ✓      |
| 7l                        | Support VMS   | ✓      |
| 7m                        | Enhanced Data Reporting (CN141)                                 | ✓      |
| 7n                        | Data Report via Messaging (CN145)                               | ✓      |
| 7o                        | Enhanced Pre-Assigned Date Reporting (CN143, CN147 bis)         | ✓      |

| 8 POLLING PROTOCOL |   |        |
|--------------------|---|--------|
| 8a                 | Individual poll                               | ✓      |
| 8b                 | Group poll                                    | ✓      |
| 8c                 | Area poll                                     | ✓      |
| 8d                 | Unreserved                                    | ✓      |
| 8e                 | Program reserved                              | ✓      |
| 8f                 | Program unreserved                            | ✓      |
| 8g                 | Macro Encoded Messages                        | ✓      |
| 8h                 | Data  | ✓      |
| 8i                 | Download/delete DNID                          | ✓      |
| 8j                 | Maximum no. of DNIDs stored/no. of characters | Max 64 |
| 8k                 | All Ship Area poll (CN146)                    | ✓      |
| 8l                 | NCS Delete all command (CN148)                | ✓      |

| 9 EGC PROTOCOL |  |           |
|----------------|--|-----------|
| 9a             | System EGC   | ✓         |
| 9b             | SafetyNET  | ✓         |
| 9c             | FleetNET   | ✓         |
| 9d             | Presentation code IA5  | ✓         |
| 9e             | ITA2   | ✓         |
| 9f             | Data   | ✓         |
| 9g             | Message storage capacity on EGC reception                      | 32K bytes |
| 9h             | Maximum number of ENIDs stored/no. of characters               | 64        |
| 9i             | FleetNET reception in restoration mode                         | ✓         |
| 9j             | Automatic identification of NAVAREA/METAREA code from position | ✓         |
| 9k             | Automatic identification of WMO/IHO chart area from position   | ✓         |
| 9l             | Simultaneous entry of NAVAREA/METAREA codes                    | ✓         |
| 9m             | Simultaneous entry of Coastal warning codes                    | ✓         |
| 9n             | Simultaneous reception of EGC messages                         | ✓         |
| 9o             | Revised EGC SafetyNET matrix with NAVAREAs/METAREAs            | ✓         |

| 10 INTERFACES |  |             |
|---------------|--|-------------|
| 10a           | DCE-DTE interface: RS232-C                           |             |
| 10b           | RS-449   |             |
| 10c           | Others   | LAN (RJ-45) |
| 10d           | Inmarsat recommended DCE-DTE interface control codes | ✓           |
| 10e           | Navigational interface: NMEA0183                     | ✓           |
| 10f           | Others   |             |
| 10g           | Printer interface (RS232/Centronix/others)           |             |

| 11 POSITION UPDATING |           |   |
|----------------------|-----------|---|
| 11a                  | Automatic | ✓ |
| 11b                  | Manual    | ✓ |

| 12 SCANNING |                                 |   |
|-------------|---------------------------------|---|
| 12a         | NCS scanning on BBER: Automatic | ✓ |
| 12b         | Manual                          | ✓ |
| 12c         | Others                          |   |

| 13 AS REQUIRED FOR SOLAS (GMDSS) COMPLIANCE Not applicable for Land Mobile Earth Stations* |         |  |
|--|---------|--|
| 13a  | DCE     |  |
| 13b  | DTE     |  |
| 13c  | Printer |  |
| 13d  | Others  |  |

|   |         |  |
|---|---------|--|
| 13 PRE-CHANGE NOTE 114 GMDSS COMPLIANCE Not applicable for Land Mobile Earth Stations |         |  |
| 13i   | DCE     |  |
| 13ii  | DTE     |  |
| 13iii   | Printer |  |
| 13iv  | Others  |  |

|                 |                  |   |
|-----------------|------------------|---|
| 14 POWER SUPPLY |                  |   |
| 14a             | AC               |   |
| 14b             | DC               | ✓ |
| 14c             | Built-in battery |   |

|                              |                               |   |
|------------------------------|-------------------------------|---|
| 15 ENVIRONMENTAL CONDITIONS* |                               |   |
| 15a                          | As required for SOLAS (GMDSS) |   |
| 15b                          | PRE-CN114 SOLAS (GMDSS)       |   |
| 15c                          | for Inmarsat-C LMES           |   |
| 15d                          | for Inmarsat-C LPES           |   |
| 15e                          | for Inmarsat-C SES            | ✓ |
| 15f                          | for Aeronautical MES          |   |
| 15g                          | Ice                           | ✓ |
| 15h                          | Rain                          | ✓ |
| 15i                          | Wind                          | ✓ |
| 15j                          | Solar radiation               | ✓ |
| 15k                          | Mechanical shock              | ✓ |

|                    |  |  |
|--------------------|--|--|
| 16 EMC COMPLIANCE* |  |  |
| 16a                | <u>Details attached</u><br>EMC test out of IEC60945 certified by Labotech Report FLI 12-12-036 |  |

|        |                                      |  |
|--------|--------------------------------------|--|
| 17 DTE |                                      |  |
| 17a    | <u>Models name and number</u><br>N/A |  |

|        |                               |  |
|--------|-------------------------------|--|
| 18 OEM |                               |  |
| 18a    | <u>Models name and number</u> |  |

\* Note any national / international regulatory type authority documentation used for compliance.

Date: 23 April 2012

Agreed on behalf of Inmarsat:

  
 \_\_\_\_\_  
 Ian Cooper  
 Product Manager E&E  
 Product and Service Management