



DGNSS Central Monitor

.....

REMOTE OPERATION OF DGNSS INFRASTRUCTURE

The Central Monitor (CM) is a software application developed to provide a complete solution for the utilisation of the DGNSS reference station and integrity monitor for navigation. The application offers full remote control and overview over configuration and status parameters for an unlimited number of DGNSS reference stations and integrity monitor stations.

In a DGNSS network infrastructure, the Central Monitor operates together with a DRS 500 (Differential Reference Station) and an IMS 500 (Integrity Monitor Station) in a TCP/IP network. Several reference stations, far-field stations and central monitors may operate in the same network.

System features

The main objective of the CM application is to provide tools for remote control, monitoring, data collection and on-line quality control of a network of DGNSS reference stations. The product features a new graphical user interface for real-time operation and system control. The primary goal of the new HMI (Human Machine Interface) is for the operator to identify and react to critical situations effectively and safely.

The system features include:

- System performance status monitoring
- Early warning to operators if performance is outside thresholds
- Continuous recording of differential corrections and data from the reference stations

- GNSS integrity checking and monitoring
- System components monitoring
- Radio transmission quality monitoring
- Remote configuration of reference station and integrity monitor
- Recording of reference station integrity data and performance statistics in a database
- Alarm handling
- Storing of alarms and data

Network

The CM application uses a TCP/IP based network infrastructure. Each unit at the reference station sites and far-field monitor sites, has its own unique IP address and the data is transferred directly from the sites to the Central Monitor. The originating IP address of the data is used to identify the source of the data to the applications and services in the CM application software. To simplify the management and configuration, a Data Router is used to route and encapsulate the data internally in the network, making it possible to concentrate the data into a single TCP or UDP network data stream.

The Windows operating system enables the CM application to interact with a wide range of third party software and solutions such as SQL databases, anti-virus systems, back-up systems, network management systems, network monitoring systems etc.

Supported message formats

- Compliant with RSIM v. 1.2 and RTCM v. 2.3
- Fully compatible with all 40 RSIM v.1.2 messages
- Broadcast integrity modes:
 - Post broadcast integrity mode
 - Pre broadcast integrity mode
 - Combined pre and post broadcast integrity mode

Configuration

The CM comprises full remote configuration of all DGNSS reference stations and integrity monitors.

The HMI based configuration includes:

- Alarm threshold and observation interval settings
- RTCM message scheduling
- RSIM message scheduling
- GNSS receiver parameter settings
- GNSS receiver resets
- MF modulator and demodulator configuration
- Transmitter configuration
- Remote power control
- Configuration of monitored and controlled sites
- Broadcast integrity mode configuration
- Alarm action configuration including side switch control
- Audible alarm and alarm clear configuration
- HMI based configuration of predefined RTCM 7/16/27 messages
- Three user levels for operator functionality control

Monitoring

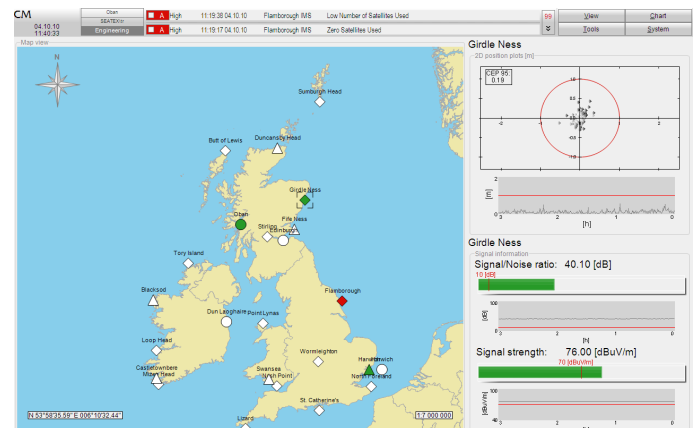
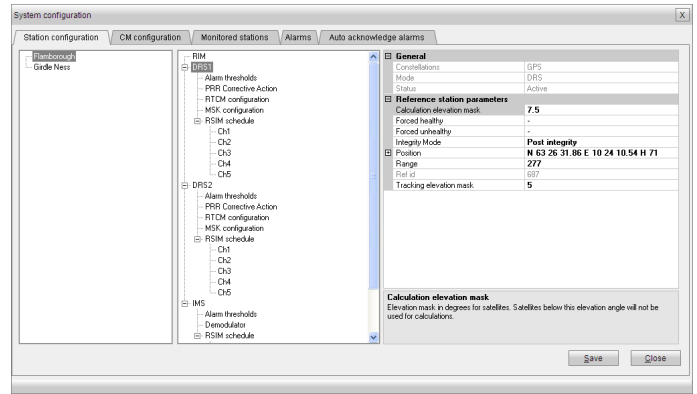
The CM HMI comprises full status monitoring of all DGNSS reference stations and integrity monitors.

The system features include:

- 2D position plot and graph
- Signal status bars and graphs
- Active and historic alarms
- Acknowledgement of alarms and alarms clear
- Module mimic diagram
- Transmitter status
- Satellite status
- Correction data status
- DGPS status
- RTCM status and message type details
- Map overview of site status

Database logging

All RSIM messages from all sites are stored in the database. In addition, operator configuration changes and all alarms and alarm clear acknowledgements are stored.

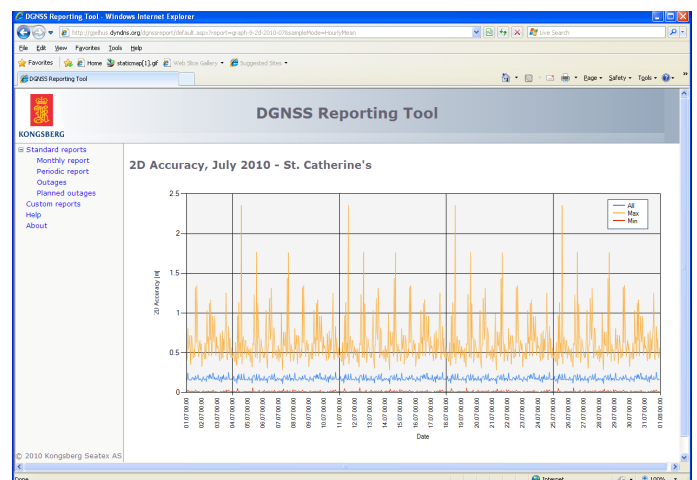


Transmitters

The DGNSS reference stations are fully compatible with DGPS Reference Station Transmitters from Southern Avionics Company (SAC). The transmitters amplify the signals generated from the DGNSS reference stations. The transmitters are fully configurable from the CM application. Other transmitters are available on request.

Reporting

A DGNSS Reporting Tool is available as a stand-alone application primarily used to ease the periodic reporting for DGNSS service providers. The data used in the reporting tool is collected from central data storage. Each report and graph can be printed and stored from the application. The application can also be used for a more in-depth analysis of the collected data.



Specifications subject to change without any further notice.

KONGSBERG SEATEX AS
 Switchboard: +47 73 54 55 00
 Global support 24/7: +47 33 03 24 07
 E-mail sales: km.sales.seatex@km.kongsberg.com
 E-mail support: km.support.seatex@km.kongsberg.com

km.kongsberg.com/seatex

KONGSBERG

