***Give you a feel*®**

When every point of the optical fiber is a sensor

Server Unit for Neubrescopes

NEUBREGATE NBX-PRIME

High performance workstation for data processing and visualization

NEUBREGATE DynamicMonitor

NEUBREGATE Data/Viewer

NEUBREGATE Advisory

NEUBREGATE Control Center / Management

NBX-1000-3 1x17 optical switch integrated

Detailed specifications

Function	Description
Database Application	NEUBREGATE
Optical Switch	1x8ch (Prime100), 2x8ch or 1x16ch (Prime200), expandable to 2 x 32ch
Fiber Connector	FC/ APC (default), E2000 / APC (factory option)
Suitable fiber	Single mode optical fiber
CPU	Intel Xeon™ Gold 5215 2.5GHz
Memory	64GB
Storage Media	SSD 1TB and HDD 8TB RAID1
Operating System	Windows11 Pro (64 bit)
Power Supply	AC 100~240V　50/60 Hz　250 VA
Dimensions / Weight	approx. 448(W) × 657(D) ×297(H) mm / approx. 15 kg
Operating Temperature	10~40 ℃, Humidity below 85 % (no dew condensation)
Storage Temperature	0~50 ℃
Input/output Interface	HDMI x1, USB3.0 x4, RJ45(Gigabit LAN) x1
Place of Production	Japan

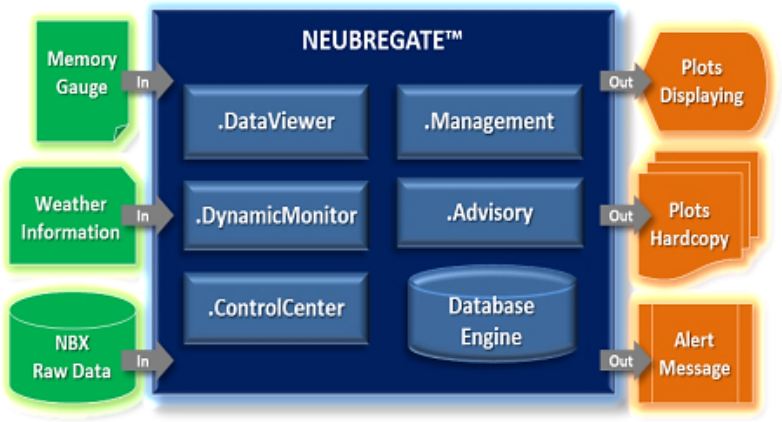
Detailed Specifications of Database application: NEUBREGATE

1. Requirement Definition

The purpose of the NEUBREGATE is to collect measurement data collected by the optical fiber temperature / strain measurement device, analyze it, and output it directly and numerically (using graphic images) to the user. In addition, information (temperature, etc.) at the measurement site can be managed and used together. The NEUBREGATE comprises a database server device, application software, and a client license.

The information to be input is based on the following items.
a) Measurement data of optical fiber temperature / strain measuring device
b) Other measurement data (strain gauge, thermometer, etc.)
The information to be output is based on the following items.
a) Measurement history
b) Measurement data (plot)
c) Time series data (plot)
d) Surface (bird's eye view) data

The image of the data flow of this device is shown in the following figure.



Data Flow of the NEUBREGATE

2. Functional requirements

The NEUBREGATE implements the following functions.

a) Data management function
i) By connecting to an optical fiber strain / temperature distribution measurement device, the acquired measurement data is automatically imported to form a database.
(1) Distribution data of up to 200,000 sampling points can be acquired for each case (Number of cases is not limited by system specifications, depends on the number of points per case and disk capacity)
(2) BCF (Brillouin Center Frequency) and RCF (Rayleigh Correlation Frequency) data output from the measurement device can be acquired.
(3) Data import from other sensors such as strain gauges in CSV format is possible

ii) Save the Result data (strain, temperature) after data processing to disk

iii) Direct manipulation of measurement data in the database
(1) Data export (CSV format)

(2) Search, refine, and compare data
(3) Route and segment settings
(4) Setting and referencing by segment

b) Data display function
i) Plot display of acquired data
(1) Number of simultaneously displayed measurement data: Up to 50
(2) Number of trend displays: Up to 2000
(3) Number of 3D display simultaneously: 1000 maximum
(4) Display value range range Unlimited (automatic / manual setting)

ii) The data list screen can be used to check the existence of data at the corresponding time and directly display the plot
(1) Display the presence / absence of measurement data in the hour / day / month / year cell
(2) Click the displayed cell to display a list of measurement data for the corresponding time

iii) The acquired data can be displayed in a layer structure for each process.
(1) Layers are created for each processing stage for imported measurement
Example) CF layer >> (conversion processing to strain / temperature) >> Result layer
(2) Has a user interface that allows you to switch between layers with tabs, with the measurement position and data acquisition time as one page

iv) Measurement data can be displayed along a 2D figure
Figures can be drawn directly or displayed by reading a DXF file

v) External sensor data in CSV format can be imported and compared with the acquired data of optical fiber strain / temperature measurement equipment

c) Data processing function
i) Accumulated measurement data can be automatically processed sequentially according to logic
(1) Initial data definition and difference
(2) Position correction processing
(3) Temperature correction processing
(4) Moving average processing
(5) Conversion of measurement data into strain and temperature
(6) Temperature and strain separation treatment

ii) Acquired raw measurement data of Rayleigh scattered light can be captured, and the raw measurement data can be converted into a frequency difference amount after processing.

d) Access control function
i) Access and data editing authority can be set individually for multiple users
ii) A user's access log to the server can be saved

e) Alert dispatch function
i) By setting a threshold value in advance, it is possible to automatically record an incident or send an email when the acquired data exceeds the threshold value.

3. System operating requirements

a) Measurement data management instrument
i) CPU equivalent to Intel® Xeon® processor, 4Core or more recommended
ii) Built-in memory 8GB or more
iii) HDD system installation: 10GB or more, database: 1TB or more
iv) OS Windows (64bit)
v) PostgreSQL must be installed and available

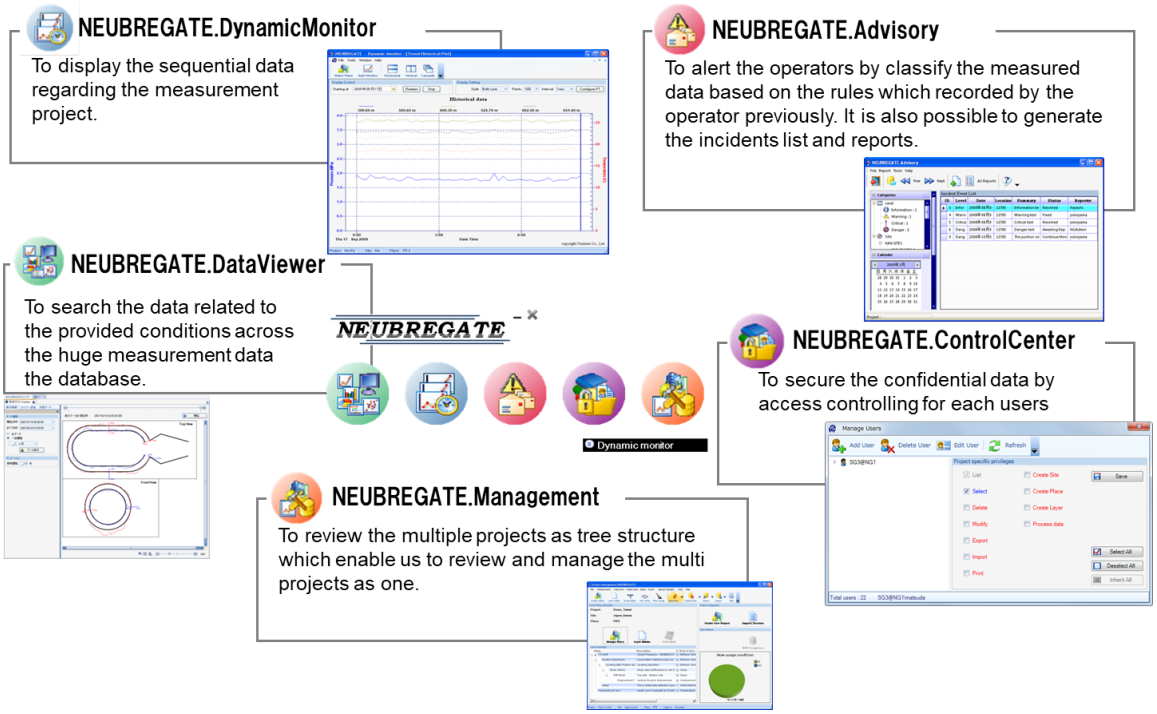
b) Client
i) User license management via USB dongle
(1) Deliver two user licenses that can access the server from a client PC
ii) Supported OS Windows10, Windows11 32bit / 64bit, Japanese version / English version
iii) Screen resolution 1280 x 1024 or higher
iv) The client PC performs network settings for the client PC

4. Platform requirements

a) Environment .NET Framework 4.6.1 or higher

5. Others

a) Neubrex carries in equipment installation and operation check to the installation place designated by the orderer.
b) When using this equipment connected to the orderer's network environment, the network settings shall be made by the orderer.



System Configuration of the NEUBREGATE

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