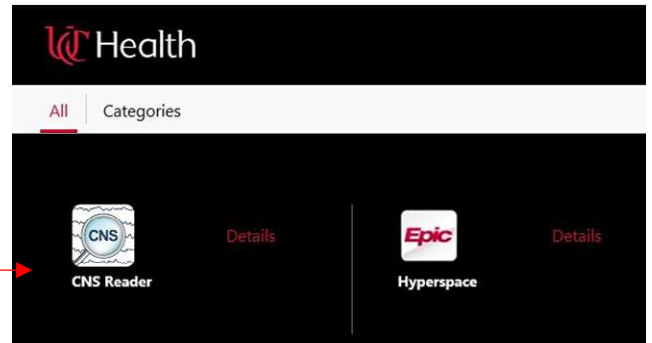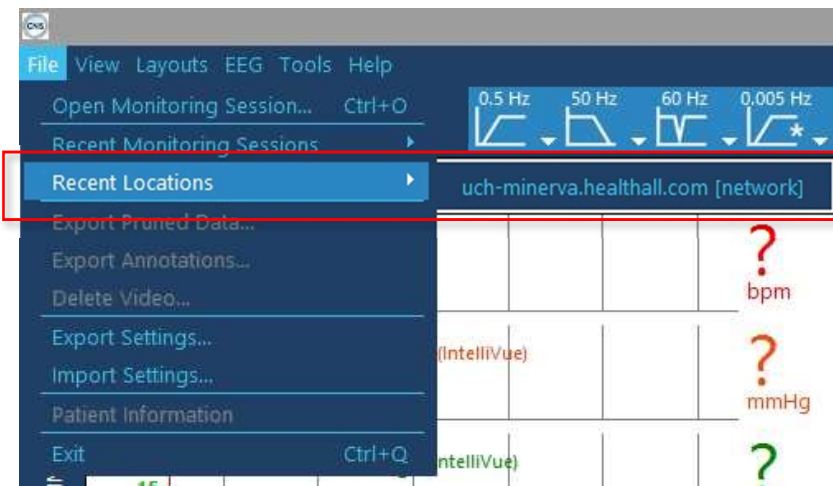# Citrix CNS Reader

In order to remotely view live MMM data from your patients, *Moberg CNS Reader* has now been installed on Citrix. Login to Citrix just as you would for Epic Hyperspace or Natus for EEG and you should see the **CNS Reader icon**. ⟶

Click on the icon to open the CNS Reader software.

Once you are in the software, you will open a hospital-based server that contains the live-archived Moberg CNS data in order to see your patient. In order to do this, go to **File** -> **Recent Location** and click "*uch-minerva.healthall.com [network]*"

This will bring up the list of *folders*:

01 – Moberg Archived Data.
>   These are older files and use an encoded ID (these are not *deidentified* data however and are there for academic purposes only)

02 – SDII Archived Data
>   These are research-level data used for an ongoing clinical trial; this folder and other research folders may appear from time to time
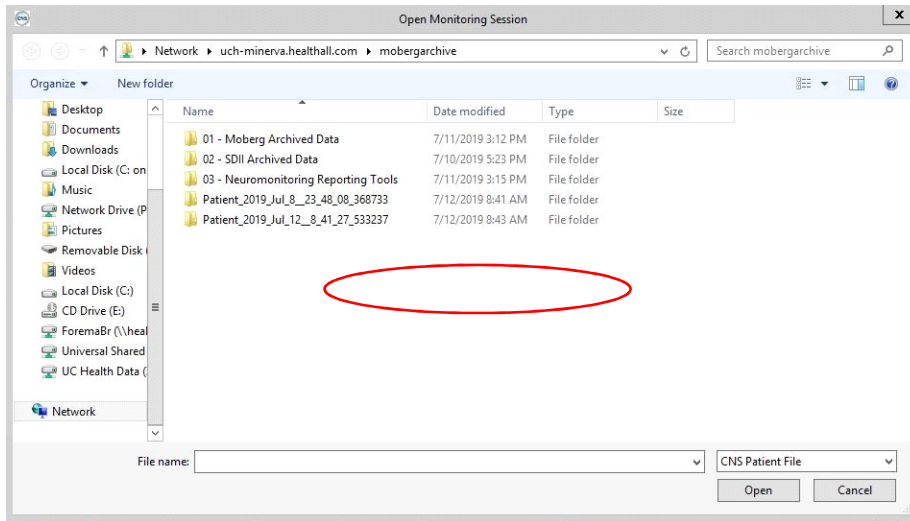
03 – Neuromonitoring Reporting Tools:
>   Here you will find the Neuromonitoring Reporting Template document for your reference and some snippets of R code. This file may be updated with new tools over time.

Patient_XXXX_Mon_X_Time (circled below)
>   Each of these folders represents a LIVE PATIENT RECORDING. Select the folder of your patient based on when monitoring began. Files will be archived once they are no longer recording.

Once you select a folder, double-click on the "Patient.info" file to open the data and review.

Default Display (MMM + Trend, Display 3 & 4)

The trend screen shows all data over the specified interval (1 hour above); *right-click* a value or a panel to change the y-axis height as needed to view the data you want to see.

The threshold screen shows the average values over the 'Shift' (7a-7a; 24-hr); the pie chart shows the % outside of normal. For instance, for this record, the ICP averaged 17.8 mmHg since 7AM (579 minutes-worth of data ago) and 8.5% of the record was > 22 mmHg.

Feel free to make annotations, adjust the layout based on the information you'd like to see (see below for instructions). Please be aware that layout changes *will be temporary* and will disappear when you close Citrix CNS Reader. If there are changes you would like to see made permanently, email foremabo@ucmail.uc.edu.
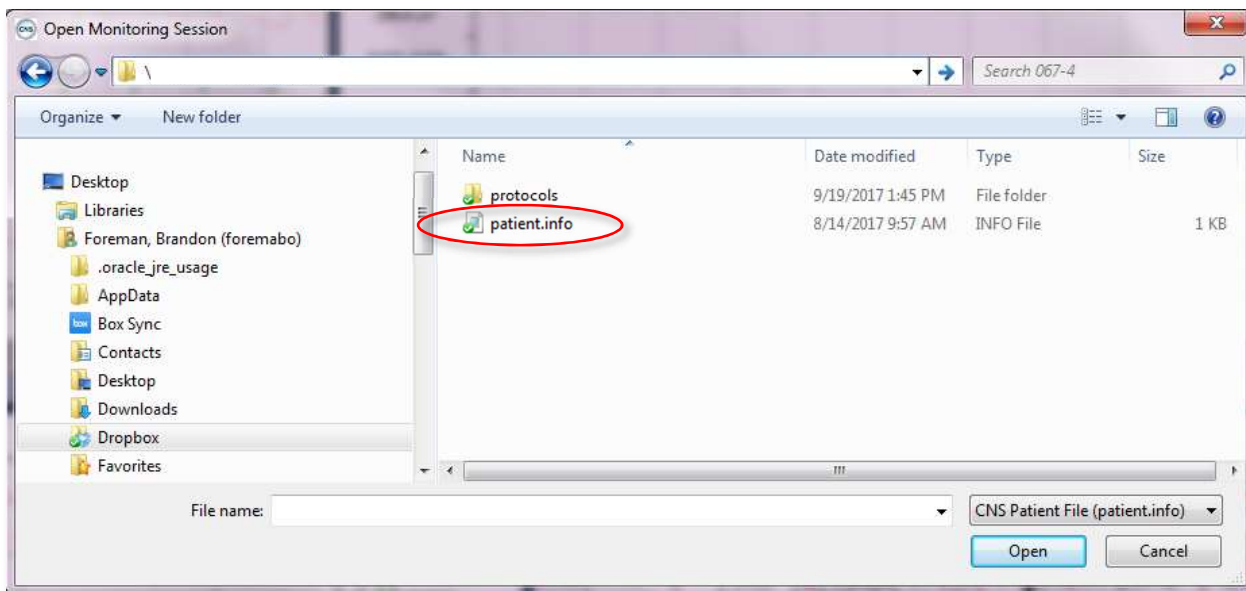
Navigating Data in CNS Reader (Z.00.25)

1. Opening a File
   a. **File** -> **Recent Locations** -> "uch-minerva.healthall.com [network]"
   b. Moberg File Structure:
      i. Select the **Folder** named 'Patient_XXXX_Mon_X_Time' that corresponds to your patients recording session and double click the **File** named 'Patient.info'
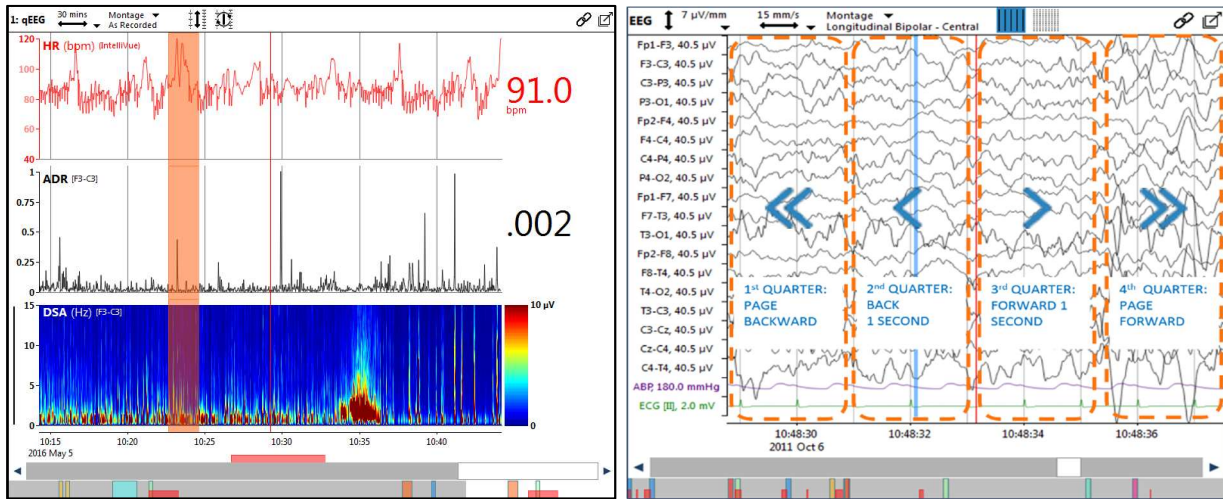

2. Navigating Layouts
   a. Once a CNS Reader file is open, the default **Layout** is opened, called "UC NSICU Layout"
   b. On the left side of the screen, select *MMM + Trend*, *MMM + SD*, *MMM + cEEG*, or *MMM + CMD* to select between different **Pages**
   c. In each page, select View or press the **Display Control** buttons to toggle:
      i. Display 1: Waveform display
      ii. Display 2: Raw EEG display
      iii. Display 3: MMM data trends display
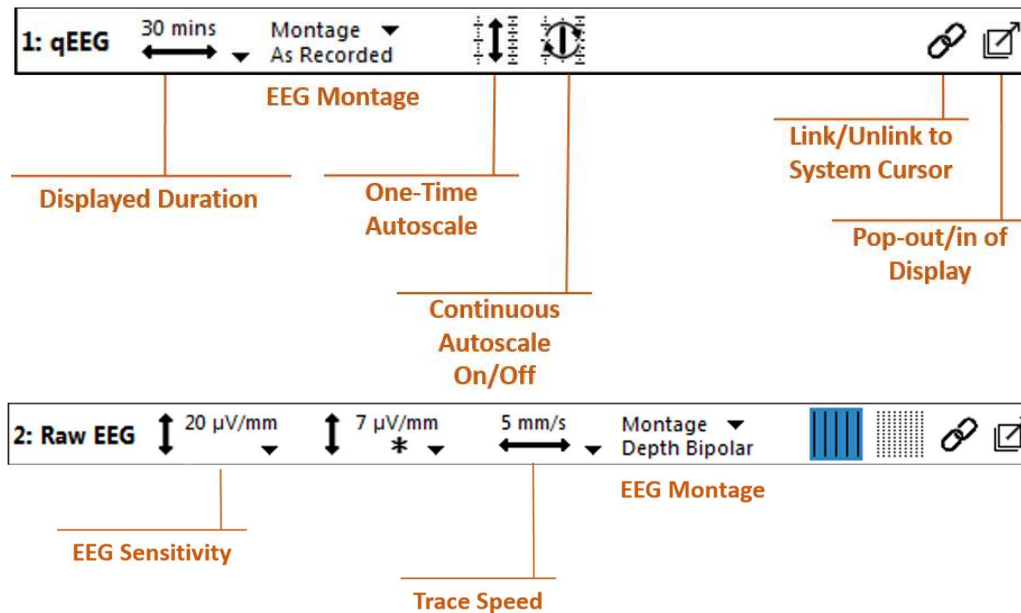   iv. Display 4: page specific threshold or EEG display

d. Select the **Notepad** icon to toggle annotations on and off; selecting any event in the annotations pane will *sync* all visible displays to that event

e. Select the **Camera** icon to toggle video camera on and off (no video is recorded at UC)

f. On the right side of the menu bar, select **Show Events** toggle to turn event highlighting on or off

3. Exploring Data

    a. CTRL+click to *sync* all visible displays (shown as a solid vertical red line)

    b. Slide the horizontal scroll bar or click directly on the display to explore; for waveform data, press the "Play" triangle button in the Data Playback Controls for continuous streaming

c. Each <u>trend</u> window has a duration button that can zoom in or zoom out to display 15 minutes to 1 full week; <u>waveform</u> windows have trace speeds between 5-120 mm/s

4. Adjusting Data Visualization

   a. Right-click on any trend to either "Annotate" or adjust "Measurement Settings" including the label and the Y axis.

   b. Select **Layouts** -> *Edit Layouts* and select **Edit** to adjust the contents of a given Page or its Displays in order to examine specific details as desired
   c. Each **Layout**, its **Pages**, and their **Displays** are fully customizable although changes will be lost through the Citrix CNS Reader.