

Overview and Basic System Use

Updated for SOS 5.3

Definitions:

1. **Content** – General term that we use for anything that can be displayed on the sphere and should be stored somewhere in /shared/sos/media - mp4, jpg, png, pip, overlay, label, colorbar...
2. **Dataset** – A packaged collection of coherent content, which may include multiple layers, labels, legends, colorbars, etc...
 - a. **Texture** – A single, static image on the sphere that rotates
 - b. **Time series** – animates through time and by default doesn't rotate. Can be an image sequence or a mpeg4
 - i. **Image sequence** – a directory of images that are played in sequence
 - ii. **MPEG4** – the only video format accepted by SOS
3. **Presentation playlist** – A collection of datasets grouped together in a list for a presentation
4. **Playlist.sos** – A text file that specifies how a dataset should be displayed on the sphere. Each dataset must have its own playlist.sos file

1. Basic Setup

- a. SOS is two computers, four video projectors, one sphere
- b. Four video projectors
 - i. One to four starting with number one closest to the computer and then going counterclockwise
- c. One six-output graphics cards to support the four projectors and a second graphics card to run the user interface
- d. The computer is responsible for:
 - i. running the main user interface to the system
 - ii. real time data collection
 - iii. providing the interface to the automation control protocol
- e. All Linux operating system Ubuntu (currently version 16.04)
- f. "hot" spare is identical to the primary computer as a backup system
- g. All of the SOS software is written and maintained by NOAA.

2. Turning the System On and Off

- a. Primary computer should be always on
 - i. It will automatically log into the user sosdemo
- b. Spare computer doesn't have to be on, but should be for backups
- c. To change users log out and then log in using username and password
- d. Power button icon in the top right menu bar for logging in and out
- e. To shut the system off use the same icon
- f. To force a sudden power off hold the power button for 5 seconds

3. SOS Stream GUI

- a. Launched by icon on the Desktop labeled “SOS Start”
- b. Four menus: “SOS,” “File,” “Library,” and “Controls.”
- c. Includes information about current dataset, buttons similar to those on a VCR, the current playlist, and a search bar
- d. Menu Options
 - i. SOS Menu - Only has two items, “About SOS” and “Quit.”
 - ii. File Menu - open playlists and content, download missing data, turn on autorun
 - iii. Library Menu - browse content and update library
 - iv. Controls Menu - options for orienting the sphere
 - v. Utilities Menu - maintenance and support options
- e. For more information about the currently loaded dataset (and where to find it in your computer), click the “Details” button in the SOS Stream GUI
- f. The Search Bar will generate a playlist from user search criteria

4. Opening a Playlist

- a. In the SOS Stream GUI
 - i. Normal-demo.sos is automatically opened when SOS is launched
 - ii. Click on the “File” menu and select “Open Playlist”
 - iii. Playlists are saved in the directory /home/sos/sosrc for the user sos and /home/sosdemo/sosrc for the user sosdemo.
 - iv. A warning message will pop up for any errors
 - v. Click a dataset to load it on the sphere
 - vi. Yellow while loading
 - vii. Green if it loads properly
 - viii. Red if it is unable to load
 - ix. Make sure to reload playlist if any changes are made
- b. With iPad
 - i. Tap the folder icon at the top left on the presentation tab and then tap the playlist you want to load.
 - ii. Use the alphabet on the right to jump through the list
 - iii. Make sure to reload playlist if any changes are made

5. Presenting a Playlist

- a. In Autorun mode the system will run through the playlist on an automatic timer
 - i. Can be turned on through GUI or iPad
- b. Can control system from the keyboard of the primary computer
 - i. Slider bar indicates frame number
 - ii. Control menu documents keyboard shortcuts
- c. SOS Remote app for iPad
 - i. Can open & edit playlists, browse library, annotate, layer, and zoom, access “Spotlight Datasets,” split the sphere into repeating windows...

6. Organization of Data & How to Search/Browse Data Catalog (sos.noaa.gov)
 - a. Seven main categories
 - i. Air
 - ii. Extras
 - iii. Land
 - iv. People
 - v. Snow and Ice
 - vi. Space
 - vii. Water
 - b. There are many subcategories within each category
 - c. Datasets can be in multiple categories and subcategories
 - d. Datasets can also be filtered by Properties like *narrated movie*, *real-time*, *has audio*
 - e. Each dataset is in its own folder which contains (if available): FTP example
 - i. **JPEG or PNG file named for resolution (if still image)**
 - ii. Folder with images named for the resolution of the images
 - iii. An equatorial cylindrical equidistant video (.mp4) of the data
 - iv. Text file labeled labels.txt
 - v. **Text file labeled playlist.sos**
 - vi. Color bars and other supporting images
 - vii. Media folder with thumbnails, videos, and supporting documents
7. Directory Tree in shared/sos/media on SOS Computer
 - a. A uniform naming convention has been used among the folders
 - b. Datasets that are related to one another are all grouped into one folder
 - c. NOTE: folder for datasets are organized based on the old category system
 - i. You can find the location of a dataset by clicking “Details” when on the SOS Stream GUI when it’s loaded, or by clicking “Data Info” on the iPad or going to FTP through the dataset description.
8. Two Types of Datasets
 - a. Textures consist of one still image that can be set to rotate on the sphere
 - b. Time series are either image sequences or MPEG4 files that animate
9. Making or editing a Dataset
 - a. Can be done with the **Visual Playlist Editor** or by hand.
 - b. Needs to be stored in the directory: /shared/sos/media/site-custom
 - c. More information on making “content” is in the content creation manual found on our website - Support > Manuals > Content Creation Guidelines
10. Playlist.sos (text file for each dataset, found in each dataset folder)
 - a. Each dataset must have a playlist.sos to specify how the data is displayed on the sphere

- b. Any specifications that are made in the playlist.sos will be used in all of the playlists that include that dataset
- c. Only one dataset per playlist.sos file
- d. At very minimum, “name” and “data” must be included
- e. Anything with a “#” in front of it is considered a comment and won’t affect how the dataset is displayed
- f. Can be multiple playlist.sos files in one folder for different versions of the dataset, the file names simply need to start with playlist and end with sos

11. Presentation Playlists

- a. A presentation playlist is an ordered list of datasets
- b. All playlist file names have to end with the extension .sos and are stored in either /home/sos/sosrc or /home/sosdemo/sosrc depending on the user
- c. Basic format of a playlist is a file that points to all of the playlist.sos files for the datasets
- d. Make personal changes in your demo playlist under the “include =”.
- e. Presenter notes can be added to a playlist using the marker #> before each line
 - i. Example: /shared/sos/media/extras/live_programs/mitigation_adaptation (move to sosrc)

12. Making/Editing a Presentation Playlist

- a. First method for making playlist is to manually type the playlist in a text editor and save the file with a .sos extension
- b. Second (BEST) method is to use the **Visual Playlist Editor**, which is a drag and drop program - *More in-depth training to come in Content Creation session.*
 - i. Can be launched from the “Visual Playlist Editor” icon on the Desktop, or through the SOS Stream GUI with the “Edit Playlists” option under “File.”
 - ii. There is Presentation mode and Dataset mode.
 - iii. Playlists can be exported to take to other sites!
 - iv. Can add presenter notes
 - v. Can edit datasets
- c. Third method is to use the Playlist Builder, which is on the SOS website
 - i. Can be launched from the Dataset Description pages on the website
 - ii. Save file and manually transfer to the SOS computer
 - iii. Cannot modify datasets with the Playlist Builder
- d. Fourth method is to use the Playlist Builder on the iPad
 - i. Always presenters to create and modify playlists on the fly
 - ii. Has interface for adding presenter notes
 - iii. Cannot modify datasets with the Playlist Builder

13. Giving a Presentation

- a. Can be broad and include datasets from all of the categories, or narrowly focused on a topic such as climate change or the solar system

- b. The preferred way to present Science On a Sphere® is with a live presenter to lead the audience through a playlist using either the Wii remote or the SOS Remote app.
- c. Standard presentation at the David Himes Planet Theater at NOAA in Boulder, CO is 30 – 45 minutes and includes 10 datasets on average
- d. SOS Remote App offers many tools for enhancing a live docent presentation including annotation, zooming, and layering

14. Autorun

- a. The system displays each dataset for a default three minutes
 - i. Change individual datasets in the Playlist Editor or all by changing in `/home/sos/sos_stream_control.config` file
- b. Best practice has supporting audio or text so that the audience can understand the dataset
- c. Many sites give live presentations with the sphere throughout the day, and in between presentations leave the sphere on Autorun often with a collection of narrated movies

15. SOS Add-ons

- a. Side wall projectors or flat screen televisions can be linked to show supplementary material
- b. Kiosk software can be used for a supported visitor experience

16. Translations

- a. The iPad App and the Kiosk include localized user interfaces
 - i. Dynamic translation of text in labels, buttons, and dialog boxes to a native language.
- b. The SOS Data Catalog supports localization of dataset names and descriptions, major and sub categories, and keywords
- c. More information can be found on the SOS website: Support > Manuals > NOAA Translations Guide

17. Audience Considerations

- a. Consider if the audience will sit in one location or move about the sphere
- b. If audience is distributed, allow a dataset to play through several times, rotating it so that everyone gets to see everything

18. SOS Users Collaborative Network

- a. NOAA Office of Education List Serve
- b. SOS Yahoo List Serve
- c. SOS Education Forum - Quarterly webinars, all welcome!

19. Using the SOS Remote App (most important - leave plenty of time!)

- a. SOS Remote App is freely available through the Apple App Store
- b. Presentation tab - for control sphere and giving presentations
- c. Data Catalog tab - for navigating the library by searching or browsing
- d. Playlist Builder tab - for creating playlists
- e. Settings tab - for connecting the iPad and syncing the library
 - i. The iPad must be on the same Wi-Fi network as the SOS system
- f. For more information use SOS Remote App Manual found on our website:
Support > Manuals > SOS Remote App (iPad) pdf