Sequencing Analysis Viewer (SAV) Overview

Page	Narration
Welcome	Welcome to the Sequencing Analysis Viewer (S-A-V) Overview. This course provides the basics of how to get started using SAV. Click Next to continue.
Navigation Help	Before we begin, take a moment to review tips for navigating through this training. To view these directions from any page of the course, click Help in the top right corner of the page.
Course Objectives	By the end of this course, you will be able to: • Identify the purpose of SAV • List the steps to load data into SAV • Describe the tabs in SAV
Sequencing Analysis Viewer	SAV is an application that allows you to view important quality metrics generated by the real-time analysis (RTA) software on the Illumina sequencing systems. Download SAV from the Illumina website. You can install the software off-instrument, on your computer.
SAV and Run Files	Use SAV to view metrics for completed runs or runs that are in progress. To show run metrics, SAV needs certain files in the run folder. The InterOp folder, a RunInfo.xml file, and a RunParameters.xml file are required. Thumbnail images are optional. Find required files in the run folder on the instrument or designated network location. If you are using BaseSpace, download SAV data from the Runs tab. Click the link on your screen to view the steps on how to download SAV data from BaseSpace. Navigate to the Runs page. Click to the right of the run name. Then, click Download. From the Download Options window, click SAV Data. Save the data to your computer.
Loading Data	To view run data in SAV: • Launch SAV on your computer. • Click Browse and locate the run folder. Click OK. • Click Refresh to display analysis results. If the run is in progress, periodically click Refresh to view the latest metrics for the run.
SAV Interface	SAV organizes run information into six tabs – Analysis, Imaging, Summary, Tile Status, TruSeq Controls, and Indexing. Here are a few general navigation tips before we get started. • Use pull-down fields to change the data you are viewing, • Use the chevrons, at the top of a window, to enlarge a pane or return to the default view. • Plots are displayed with tailored scaling by default. Check the Fix Scale checkbox to remove the tailored scaling. • Some graphs or plots allow additional exploration. Pan by clicking and dragging; zoom in by using the mouse wheel; or zoom in on a particular axis by using the mouse wheel over that axis. In the next pages of this course, we cover each of the tabs in more detail.

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Analysis Tab	The Analysis tab contains six panes. Most of the panes have drop-down fields that allow you to select different run metrics to determine the quality of the run. The **Status pane** shows the progress of the analysis. Extracted shows the last complete cycle for which image analysis has been performed. Called shows the last complete cycle that has been base-called. Scored shows the last complete cycle that has been quality scored. The **Flow Cell Chart** shows a heat map of the flow cell. Use the drop-down to change the type of data shown, which surfaces you want to view, the cycle shown, or which base is shown. You can pull the scale up and down. Click a tile to view detail for it on the Imaging tab. **Data by Cycle** plot shows the progression of quality metrics during a run. The x-axis shows the cycle number and the y-axis shows whatever is selected in the top drop-down menu. You can change the lanes displayed or the surfaces shown, if desired. The **Data by Lane** plot shows quality metrics per lane. Clusters shows two box plots, one for raw clusters and one for passing filter. The numbers above the X-axis indicate the number The **QScore Distribution** plot shows Q Scores in the x axis and the total number of bases on the y axis. The quality score is cumulative for current cycle and previous cycles, and only reads that pass the quality filter are included. Use the cutoff slider to highlight how many bases have a minimum Q Score or higher. The **QScore heat map** shows QScore by cycle. The color represents the percentage of the bases that have a particular Q Score. Right clicking the color bar allows you to change the color scheme.
Imaging Tab	The Imaging tab lists detailed data and metrics for the run. If there are thumbnails in the run folder, you can view them here. We'll enlarge the pane to view more columns. Use the drop-down fields to select a cycle, lane, surface, swath, or section to view. You can use the clear filter icon to view all data for the run. To further explore the data, you can sort or rearrange the columns; create a scatter plot or box plot; or filter the data.
Summary Tab	The Summary tab has tables with basic data quality metrics summarized per lane and per read. All the statistics are given as means and standard deviations over the tiles used in the lane. Use the buttons at the bottom of the tab to copy the data to your computer or generate Intensity vs Cycle (IVC) plots.

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Tile Status Tab	The Tile Status tab shows what step of the analysis process each tile is in; specifically the number of cycles that have been extracted, called, and scored for a given tile. The top number shows the last base-called cycle for the tile. The lower number shows the last quality-scored cycle for the tile. This example shows tiles for a completed run.
TruSeq Controls	The TruSeq Controls tab shows in-line controls for the sample prep. Controls can be spiked into the TruSeq sample prep. View counts of successfully prepped controls in this tab.
Indexing Tab	The Indexing tab lists count information for indexes used in the run. The Indexing tab is only available if a sample sheet was supplied to the instrument control software at the start of the run and the run is an index run. Click a row to view the Index Number on the graph.
For More Information	For more information on SAV, visit the SAV support page to download the SAV software or view the SAV User Guide.
Additional Exercises	Want additional practice with SAV? Try our offline exercise. To complete the exercise, you'll need: • The SAV installer from the website (if it is not already installed on your computer) • Step-by-step exercise instructions • And run data to use with the exercise
Summary	Take a moment to review the key points from this course.
Course Completion	Congratulations! You have completed this course.