New Features

This documents many of the new things you can do in New XINA.

Miscellaneous Features

- **Hints**: In the very top right is a ? button. Click it to show help for many things on the page. If there are new things to read, the button will be yellow.
- **Followed Walls**: Walls work like they used to, but there's a new "Follow" button at the top right of any wall. Posts to *any* followed wall will give you a XINA notification and show up in your feed on the home page or through the Notifications interface.
- **Emails**: Team Admins can send emails to members through the Teams page, under the top bar's "System" dropdown.
- **Notebook Activity**: On the home page, the "Notebook Activity" card will list recent posts from all Notebooks.
- **Chart Right Click Menu**: You can now right click on any chart and access several new controls. Most charts allow you to customize some chart, axis, or series settings from there, and all allow you to measure distances on the chart or force it to reload.

Profile & Preferences

In the very top right, if you click on your name, there are a number of new controls available.

- **User Profile**: In your user profile, you can customize your display name and preferred email.
- **Access Keys**: The User Profile "Access Keys" tab allows you to create and manage API keys.
- **User Preferences**: If you open your "User Preferences", you can customize your XINA experience. "Style" allows you to customize the background. "Palettes" allows you to view and customize the colors automatically applied to series, and includes colorblind-friendly options. "Charts" lets you customize almost every shared presentation aspect of XINA charts. If you use multiple XINA for multiple project, there's also an interface to import and export preferences through a button in the top right.
- **Clear Cache**: Within the User Preferences, the "Cache" tab allows you to clear XINA's local data, if needed.

Old Tools

While most new tools do not map one-to-one to old tools, those listed here reimplement or combine functionality from old tools, but also offer new enhancements.

Events

The Events tool is similar to the Alerts, Marker Log, Marker Log Trending, Message Log, and Message Log trending tools.

Detailed feature list coming soon.

Mnemonic Plot & Mnemonic Trending

The Mnemonic Plot and Mnemonic Trending tools are similar to all of the old Housekeeping tools, and also the Laser tool. The difference between the two is that the Mnemonic Plot looks at a single interval of time, and the Mnemonic Trending can look at multiple distinct intervals. Beyond that, their functionality is mostly shared.

First, there are many, many new, powerful mnemonic settings. You can access them through the gear button next to a mnemonic in the "Select Mnemonics" card, or through the chart's right-click menu:

- Expanded presentation settings, including series type.
- A time shift lets you move a particular series forwards or backwards in time, to correct alignment issues or for visualizing an offset.
- Data thresholds let you ignore data points that are outside of particular bounds. For example, if you know any values below 0 are bad data, you can filter those points out.
- Reference values allow you to instead use the delta relative to earlier values.
- Transformations are an incredibly powerful data manipulation system. They allow you to apply many different mathematical or statistical effects to a series, things like summation, change, percentage, rate of change, normalization, thresholds, rolling averages, regression slope, arithmetic, digitizing. Moreover, any number of these can be chained in series. For example, you could take the rate of change since the previous value, and then use a threshold to drop the bottom 90% of values, so that you can easily see the times where the rate of change is fastest.

Beyond that, other new features include:

- Bin sizes can be manually controlled or disabled.
- The *Mnemonic Plot*'s single time range can just be a single TID, but it doesn't have to be; you can select any time range, and you can select it in many different ways.
- The *Mnemonic Trending* allows you to select many individual TIDs, but you can also select markers or even instants (e.g. messages or alerts) by giving a time range around them.
- The Mnemonic Search interface is more flexible than the HK Search, with many filters and options for search and display. It also allows you to mark some mnemonics as favorites, for easy access.
- The Y Axis settings, available through the gear button or by right-clicking on the chart, have been expanded.
- The controls for adding markers, messages, and other events to the plot are now more powerful.
- The Chart settings, available through the chart's settings button or by right-clicking on the chart, have been expanded. In Old XINA, most similar tools allowed you to customize the chart title, but now you can also customize the subtitle, caption, and legend.
- There are new x axis modes.
- You can interpolate values, which makes mnemonic over mnemonic cross charts more usable when data is misaligned.
- If enabled, when you hover your cursor over the chart, the nearest event will be displayed. You can filter to limit which show up, and you can click on them to see details or pin.
- Nominal ranges, which include expected values and limits, have expanded plotting options.
- There's a new stats table, with information about data from each series.

Spectra Viewer

The Spectra Viewer is most similar to the old MOMA Science Trending tool, but has been made flexible enough to handle use cases from most of the other science tools. But there are some things that couldn't have been done in any tool, before:

- Selecting scans freely, instead of just by TID
- Grouping scans in many different ways
- In both charts, there are chart settings, available through the chart's settings button or by right-clicking on the chart. Both allow you to customize the chart title, subtitle, legend and more.
- In the summary chart (the first chart), you've got new x axis and y axis options, including arbitrary SICs and cSICs.
- Both charts support plotting multiple y values at once. For example, the summary chart can now show several different SICs together.
- New presentation options in the summary chart, including series type, aggregation, and stacking plots.
- In the spectra chart (the second chart), you can apply transformations. Transformations are an incredibly powerful data manipulation system. They allow you to apply many different mathematical or statistical effects to a series, things like summation, change, percentage, rate of change, normalization, thresholds, rolling averages, regression slope, arithmetic, digitizing. Moreover, any number of these can be chained in series. For example, you could take the rate of change since the previous value, and then use a threshold to drop the bottom 90% of values, so that you can easily see the times where the rate of change is fastest.

Diagram Viewer, Simulator, & Editor

The new Diagram tools was designed to replace the old MOMA Diagram, but in a much more flexible way.

- Any vector image can be uploaded, hooked to XINA data, and provided with presentation logic, allowing any user to create their own diagrams like the original MOMA Diagram. Many different diagrams and dashboards can be created.
- It's also much easier to edit or re-draw existing diagrams. The old MOMA Diagram was out of date; it's now much easier to correct that.
- The logical rules can be derived from mnemonics, events, or other logical rules, allowing for fairly complicated events.
- Based on those logical rules, many different visual effects can be applied: modifying border or background colors, a highlight, blinking, text modifications, or filling in numeric mnemonic values.
- The Diagram Simulator, instead of using real data, allows you to enter a simple "Sequence File", simulated data in a hand-writable format.
- Along with the diagram, you now get a configurable chart showing any state or mnemonic values.

New Tools

Many tools are entirely new.

Mnemonic Export, Mnemonic Trend Export, & Packages

The *Mnemonic Export* and *Mnemonic Trend Export* tools can configure and kick off export processes, ideal when dealing with too much data to view in the browser. These export products can contain CSV data tables and PDF

plots, and they can be configured to generate automatically on some schedule or when new data is received, and to be emailed out. For example, you could set up an automatic report plotting long-term consumable values that's emailed to you every month, or you could set up an automatic report with some significant summary data that's emailed out for each TID as it's mined.

The *Package* tool allows you to browse these export products.

Nominal Range Export

The *Nominal Range Export* tool allows you to manage and export nominal ranges. The main interface is an editor for creating or editing nominal ranges, and through the "Export" button in the top right you can export selected nominal ranges in one or more mission-relevant formats.

Nominal Range Trending

The *Nominal Range Trending* tool is the best way to generate a "limit report" kind of document. It's built around a table comparing nominal ranges across intervals. For example, you could select all "expected values", and all "baseline" TIDs or all instances of a particular marker, and then you'll get an exportable table checking each expected value across each interval, showing red, yellow, or green. The table can use one row per nominal range or can condense them to one row per mnemonic. You can also overwrite or manually populate values. For example, you might note that one particular limit event should be ignored, or you might include some manually-populated values. And, of course, you can export the table through the button in the top right, either as plain CSVs or as a color-coded XLSX spreadsheet.

Mnemonic Management

The *Mnemonic Management* tool allows advanced users to correct issues with mnemonic names, definitions, and aliases. Most users will never need to use it; please seek particular instruction if you think you need this.

Model Management

The *Model Management* tool helps advanced users to correct some mining issues and manage scheduled tasks. Most users will never need to use it; please seek particular instruction if you think you need this.

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