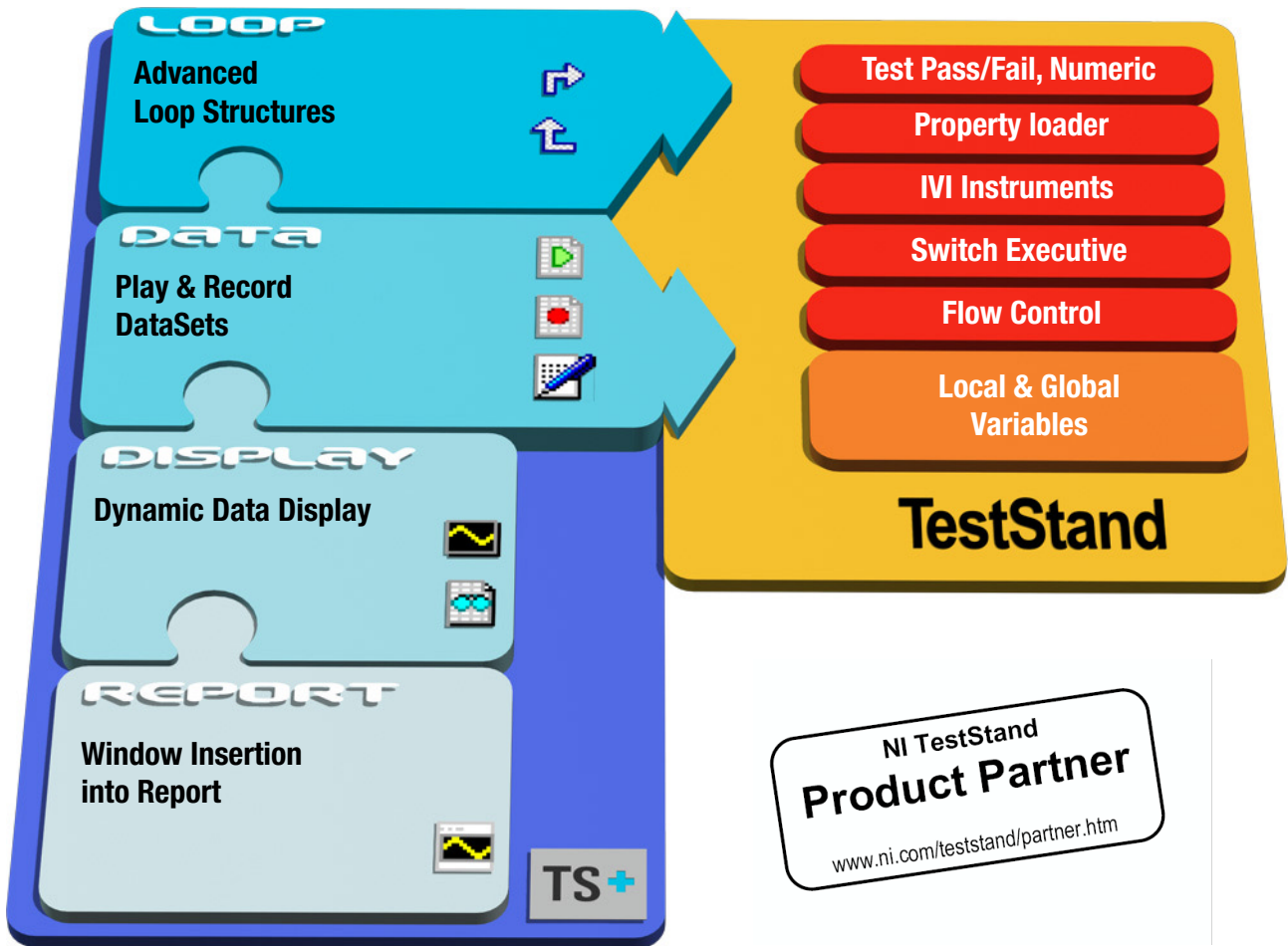


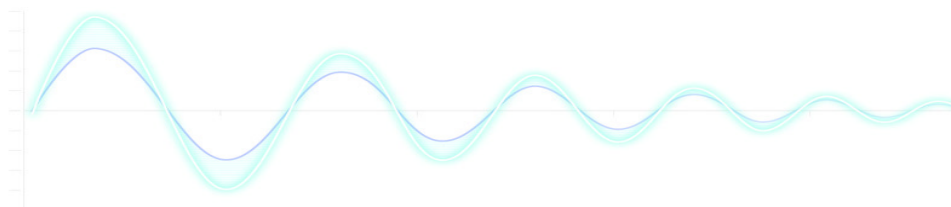


Characterization and Validation Toolset for NI TestStand™



Overview of TS+

- TS+ provides a set of ready-to-run steps as a complement to NI TestStand™ standard steps.
- TS+ is completely integrated in TestStand as it uses configurable sequence steps. TS+ step parameters can include TestStand variables, which gives you flexibility in sequence creation.
- TS+ compatibility with IVI steps and NI Switch Executive™ allows instrumentation control without any programming.
- The description field of each TS+ step outlines the main parameters, which improves sequence editing and maintainability.
- TS+ embeds an editor which enables data input including spreadsheet formulas, fully compatible with Microsoft Excel™ for convenient copy/paste.
- TS+ data can be saved as ASCII file (LVM format), and re-used into any spreadsheet or NI Diadem™.



TS+ LOOP

- LoopStart** : Loop on numeric values
 - Four methods to calculate loop values (start, end, step, number of values)
 - Linear or Logarithmic scale

LoopStartStr : Loop on strings

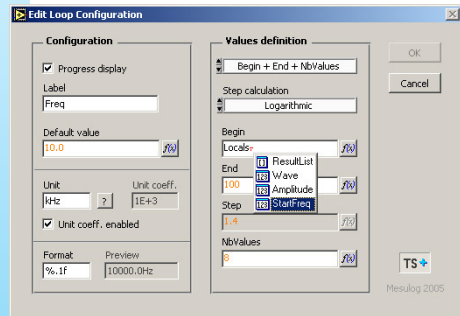
LoopNext : End of loop automatically created

- List of values can include spreadsheet formulas
- Value definition can be a TestStand numeric array variable
- Current loop value can feed a TestStand variable
- Values are available for other instrumentation or acquisition steps
- Unit is managed with automatic conversion according to unit prefix
- A loop can be disabled when editing or executing
- Loops are displayed as « structure-blocks » with indention
- Loops can be linked (with shared index)

Sequence example including TS+ steps

| Step | Description |
|--------------------|--|
| Loop V_out | Loop on "Vcc" from 1V to 2V with 21 steps |
| AO SGL write | Action, DAQmx Write (Analog DBL 1Chan 15Samp).vi |
| AI SGL read | Action, DAQmx Read (Analog DBL 1Chan 15Samp).vi |
| RecordData | Record data to 2D table, 3 channels |
| BrowseData | Browse data from 'RecordData' |
| PlotData | Plot data from 'RecordData' |
| Loop next | Goto 'Loop V_out', next Index |
| PlotWindowInReport | Include 'PlotData' panel in report |
| ExportData | Export data from 'RecordData' to LVM file |
| <End Group> | |

LoopStart : configuration panel



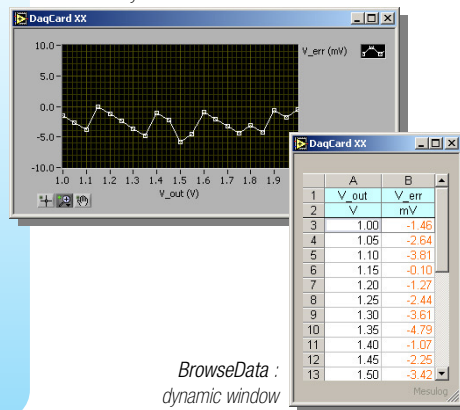
TS+ DATA

- PlayData** : Sends values to TestStand variables each time the step is processed
- RecordData** : Records TestStand variables into a dataset each time the step is processed
- ExportData** : Exports values to an LVM file

PlayData : values edition

| Label | Unit | A | B | C | D | Comment |
|-------|------|-------|----------|----------|---|----------|
| 1 | | Delay | Voltage1 | Voltage2 | | |
| 2 | s | 0.50 | mV | V | | |
| 3 | | | 100.00 | 0.00 | | Start |
| 4 | | | =B3*1.1 | | | |
| 5 | | | 123.00 | | | |
| 6 | | | 133.10 | | | |
| 7 | | | 146.41 | 1.00 | | Init Out |

PlotData : dynamic window



BrowseData : dynamic window

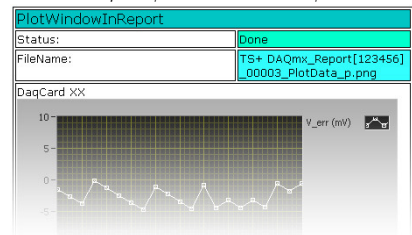
TS+ DISPLAY

- PlotData** : Displays dynamic data as graphs
 - Graph attributes can be specified (e.g. scales, formats, colours)
- BrowseData** : Displays dynamic data as list of values
 - List attributes can be specified (e.g. font, column width, colours)
- Three options to close the window (manual, when execution is released, when execution is ended)
- Possibility to specify position, size and title of a window

TS+ REPORT

- WindowInReport** : Inserts a **TS+ Display** window dumpscreen into the report (HTML or XML)
 - Picture saved in PNG format

WindowInReport : picture insertion into report



Prerequisites :

Microsoft Windows XP or Seven
 NI TestStand 4.1 (or above)
 NI LabVIEW Runtime 8.6.1
 Microsoft Excel or Microsoft Office Web Components (version 2003 or 2007)

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