

ADEX Toolkit for National Instruments' LabVIEW

The ADEX Toolkit for NI LabVIEW provides control engineers with the necessary tools to apply the ADEX control methodology in their process control schemas. The ADEX Toolkit allows for both PC-based simulations and the integration of ADEX controllers within industrial applications using a PC or NI Real-Time Controllers. The ADEX Toolkit includes both help documentation for quick reference support, and a complete user manual. The *NI Example Finder* tool provides users with helpful examples of ADEX applications.



- Take advantage of the benefits offered by the ADEX Control Methodology within LabVIEW and NI Real-Time Controllers.
- ADEX Controllers can be easily integrated into the LabVIEW control schema designed by the user.
- Additional ADEX Toolkit functions are also provided for accessing to the controller's parameters.
- The ADEX Toolkit Installer includes the ADEX Configurator whose intuitive graphic interface allows users to configure the implemented controllers.

Description

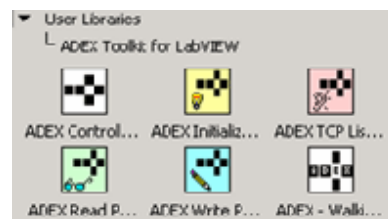
Integration of ADEX Controllers

Once the ADEX toolkit has been installed in the corresponding LabView environment, the inclusion of an ADEX Controller into a LabView VI requires a 2-step programming:

Step 01: To initialize the ADEX toolkit operation the person doing the programming has to indicate the directories where the created controllers and the register of events will be stored, and then set the TCP port used to communicate with the ADEX Configurator tool. The two functions for doing this are *ADEX Initialization* and *TCP Listener*, respectively. This step is only necessary during the first implementation of the ADEX system.

Step 02: This consist in the implementation of the control & optimization strategy (COS), which integrates ADEX Controllers.

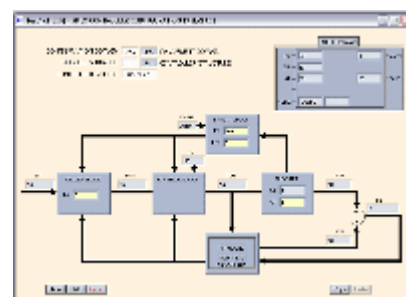
ADEX Controllers allow for the configuration of up to 9 inputs and 3 outputs, when controlling multivariable processes with measurable perturbations.



ADEX Toolkit Palette

Additional Function Blocks

The kit has two additional functions that allow the engineer to access the controller configuration values from their schemes, so as to modify them as required by their design. The identification of each parameter is achieved by means of the parameter's name, which can be obtained using the search tool available in the ADEX Toolkit help function.



ADEX Configurator

ADEX Configurator

The main way to define the parameters of a Controller is to use the ADEX Configurator; a tool which is characterized by its user friendliness. In the ADEX Configurator, the Controller and its different blocks are presented graphically, which makes it easier to understand and to set the parameters value. The ADEX Configurator can be accessed by means of direct links that automatically appear on the desktop or in the start menu, during the installation process.

ADEX Toolkit for RealTime Controllers

You can develop real-time advanced control applications with NI's 3 types of Real-Time Controllers – PXI, Compact FieldPoint and CompactRIO – by using ADEX Toolkit for LabVIEW. It is compatible with all types of PXI and Compact FieldPoint controllers, as well as for the ETS operating system for CompactRIO controllers. Be sure to ask for a special version of the ADEX Toolkit for the NI Real-Time Controllers if you decide to apply ADEX to your industrial control environment.



NI's CompactRIO