

#### WINDOWS SUPPORT

Windows support for version 7 and forward. This includes 64-bit operating systems and Windows 10.

#### VIRTUALIZATION

Gen2 was developed with a virtual environment in mind, but it is not required.

#### COMMUNICATION

Improved communications which prevent networks from affecting process and real-time data.

#### QUICK/SIMPLE

#### USER INSTALLATION

Now a much simpler installation which allows users to install Mix Vision Gen2 on a new computer without requiring Mesabi support.



#### Overview:

Mix Vision Gen2 was built from the ground up applying the knowledge acquired from over 25 years of implementing our Gen1 mixing control systems. Gen2 is written in Microsoft Visual Studio using C# and Windows Presentation Forms which communicates to a SQL Server database. Gen2 will run in all current supported versions of Windows, including Windows 10, and will operate in a fully virtualized or standard PC hardware environment. Gen2 PLC communications and data logging is now located on the server instead of on the workstations. Tag printing and reporting have been developed in Microsoft Visual Studio using SQL Server Reporting Services (SSRS). This gives the end user the ability to edit and develop their own reports and tags if desired. Utilizing Microsoft Visual Studio also has greatly simplified the Gen2 software installation process so that a simple setup file is all that is needed to install it on any client or office PC. Gen2 data collection was also improved with more data points than ever before, including a full operational history for users. Gen2 also adds Downtime recording to give live mix line OEE values. Recipe management and control was also revamped with the ability to require verification and retain all of the save points to provide a comprehensive history of changes that were made. The Recipe management still retains the "save as" function to easily create new recipes based upon some that were previously created. Gen2 was also designed to improve integration to business and lab systems. This integration can include recipes, raw materials, scheduling, material consumption and material production, and batch history.

# Mix Vision Gen2 Highlights

## Communication:

- The Server is the single source of data collection and PC to PLC communication to limit network communication issues affecting the control system operation.
- Top Server with OPC-UA (Trusted Endpoint) is used for communications between the PC and PLC.
- A dedicated service on the server for the data collection so that the workstation operational status does not affect the data collection operation.
- A dedicated service on the server for the PLC communication so that the workstation operational status does not affect the PLC communications operation.

## Windows and SQL:

- Minimum requirement of Windows 7.
- Runs on Windows 8, 8.1 and 10.
- Minimum requirements SQL 2008 R2
- Runs on SQL 2012, 2014 and 2016.
- Minimum Windows Server requirements 2012
- Runs on Windows Server 2012 R2 and 2016.
- Runs in a Virtual or PC Environment.

## Programming Language:

- Visual Studio 2017 using C# and WPF, utilizing the newest version to ensure longevity.
- SQL Server Reporting Services 2016 (SSRS), updated as new versions come out.

## Recipe Control:

- Added verification levels to allow multi user check of recipes.
- Recipe change/save history with change notes. Allowing review of change history.
- Save As functionality to start a new recipe from an existing recipe.

## Data Collection:

- Expanded buffering on both the PLC and Server to prevent data loss.
- User interaction data collection, user interactions with workstations are logged and associated with the batch.
- Initial state step data, a data point sample is taken before the mixing cycle begins.
- Downtime recording at the mixer, with configurable downtime reasons.
- Mixing Overall Equipment Effectiveness (OEE) with Downtime (planned and unplanned).

## Client Installation:

- Single installation package with no other mapping or computer setting changes.
- Automatically updates when Mix Vision Gen2 starts.
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## Tags and Reporting:

- Reports are developed in SSRS, this gives the end user the ability to edit.
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- Support for 3D barcodes.