System Requirements and Update
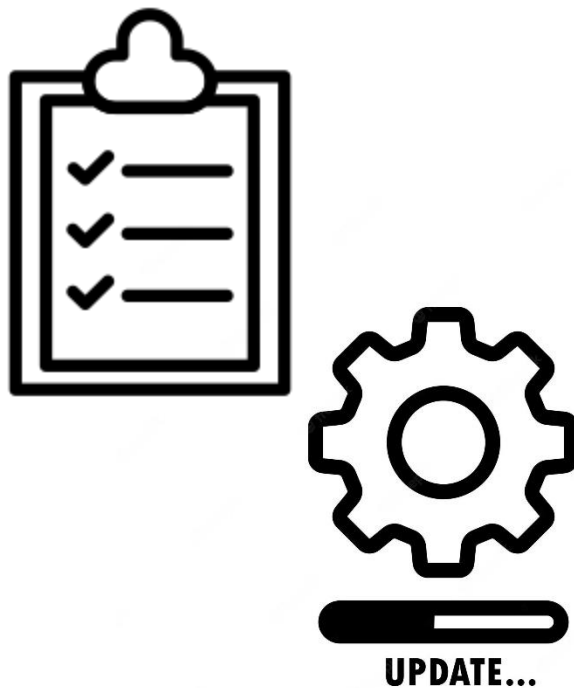
Content

1 General Considerations

The "BatchXpert" process control systems have two main components that have specific minimum and optimum requirements to be able to function in a proper manner.

This document is intended as a guideline for the System Integrator for selecting appropriate and cost-effective automation equipment. The above-mentioned values are based on experience from other automation projects with BatchXpert Systems. Of course, as the Technology advances, the recommendation might change or outdate. The recommendation mentioned is based on data available on 11.08.2025.

1 General PLC Requirements

The PLC frame can function in various flavors on various PLC systems available on the market. For the PLC one must consider the available RAM, Memory-Card and CPU speed. The BatchXpert PLC-Frame has specific minimum requirements depending on the PLC type that is used in Automation to be able to work but also has requirements depending on the user application that is going to be automated. The Requirements presented in this manual are the basic requirements for the PLC frame and some common scenarios. Based on these requirements one can estimate the actual requirements and select an appropriate PLC based on these estimations.

1.1 Remanent Data

Remanent data is of special consideration in all PLC's, as it holds most of the control modules configuration data. Remanent memory is mostly a problem for PLCs from "Siemens" since on them it is often limited to a fraction of the whole data ram. On Vipa PLCs, the whole data ram is remanent.

1.2 Supported CPU types

Currently we recommend using a Simatic S7-1500 series PLC from Siemens. The smaller 1200er Series should only be considered for small applications that only include a single unit such as "CIP Stations", "Mixing Stations" etc. Simatic 300 and 400 series, as well as Vipa Speed7 and Vipa Slio are still fully supported and can be used for new projects.

Currently the following PLCs are supported:

- Simatic S7-1500
- Simatic S7-300
- Simatic S7-400
- Simatic S7-1200 (for small, single unit projects)
- Vipa 300S
- Vipa SLIO
- Vipa Micro PLC (for small projects)

1.3 S7-300 discontinuation announcement

> *"The S7-300 CPUs and associated FEPROM and RAM memory cards MC 951 will be finally discontinued, following a 10-year phase-out period, as per October 1, 2020. With this discontinuation, these CPUs and memory cards will no longer be available as a spare part and can no longer be repaired. State-of-the-art successors are available for all CPUs."*

This Press Release from Siemens means that these PLCs should not be used for new projects anymore and an alternative should be used.

1.4 Programming Software

The BatchXpert system is being programmed by using either "Simatic Manager" or "TIA Portal V16+", both from Siemens.

1.5 PLC communication Resources

Some common resource in a plc that is often overlooked are the communication resources it has. Each connection from either an HMI station, plc-plc communications, BatchXpert or a programmer will consume one of these resources. Different CPU types and different Communication processor will have different amounts of available connections.

When connecting equipment to a plc, you must keep these communication resource limitation in mind. Usually, the amount of communication is 16 or even 32, but for some Communication processes may be as low as just 4 connections.

2 Siemens S7 1500

The Simatic S7-1500 line of controllers is supported from the BatchXpert Version 1.9 onwards. The most important requirement is the available RAM. The amount of RAM needed from the PLC-Frame is strongly depending on the amount of Control Modules that are used in the Application. To reduce the Memory footprint of the PLC-Frame, one can simply reduce the amount of use Control Modules and adjust them to fit the needs of the actual automation.

The Cycle time of the PLC is less important for the BatchXpert PLC-Frame since it is very optimized and modern PLCs are fast enough to be able to execute the PLC-Frame in less than 50 milliseconds.

The Full BatchXpert system requires a lot of memory due to the amount of control modules and the Reporting engine used in the system. The amount of control modules is strongly affecting the memory footprint of the PLC program. By reducing the amount of control modules one can strongly reduce the memory footprint.

Units do have the highest memory footprint with about 30kb per Unit in use. This 30kb include the necessary data and code blocks including an estimation of a typical sequence phase's implementation.

The requirements for Memory are as follows:
- 2 MB for 20 Units and all control modules
- 4 MB for 50 Units and all control modules
- 6 MB for 80 Units and all control modules
- 8 MB for 120 Units and all control modules

2.1 Minimum
As a **minimum** for small plants an amount of **at least 2**00kb of Code RAM** and 1 MB or Data RAM is needed. This does NOT include all control modules, and is a cut down version of the BatchXpert systems, and include: 3 Process units, 64 Acts, 64 Din, 32 Ain, 8 PID, and 32 Msg
One can utilize an **S7-1512 with at least 200kb Code Ram.**

2.2 Recommended
It is strongly recommended to utilize a **S7-1515** with 500 kB of Code RAM and 2 Mb of data RAM.

2.3 Remanent Memory
Remanent memory is an important consideration for S7-1500 PLC's, as they have comparatively a little remanent memory. Even though they may have megabytes of data ram, only about 200 kb of that is remanent, which for most applications is just not enough.

We recommend the use of the "Battery buffered Power supply" "6ES7505-0RB00-0AB0". This power supply converts all Data ram into remanent Data ram, thus eliminating the remanent data restriction of S7-1500 PLC's.

As an Alternative you can use the "Persistence" functionality of BatchXpert, which utilizes the Memory card. This results in considerable "Wear" on flash memory. The "Persistence" functionality is optimized for this but still results in about "20-year lifetime" of the flash memory. The Persistence functionality will save modification at most every 20 minutes, so the" Resolution" is limited to this interval.

A typical Simatic Memory Card will allow 500.000 writes per cell, which at most every 20 minutes will result in about 20 years of Memory Card life.

2.4 Memory Card

All Simatic PLCs require the use of a memory card, so the 1500 series also requires a memory card to function and will not work without an appropriate memory card. The Memory Card holds non-runtime relevant data from the downloaded project and should be about 12x the code AND data size of your project.

If you have a project that uses 200kb of Code ram and 300kb of data ram, you should use at least have a memory card with 6MB of Memory.

We **recommend a 12MB card** since this has enough memory for most projects.

Objects	Load memory	Code work-memory	Data work-memory	Retain memory
	44 %	34 %	12 %	9 %
Total:	12 MB	614400 bytes	2621440 bytes	2621440 bytes
Used:	5535715 bytes	209780 bytes	324602 bytes	234450 bytes

Figure 1 Example Project with about 525 kB of RAM usage and 5.5 MB of memory card usage.

3 Siemens S7-300 and S7-400

3.1 Discontinuation

"The S7-300 CPUs and associated FEPROM and RAM memory cards MC 951 will be finally discontinued, following a 10-year phase-out period, as per October 1, 2020. With this discontinuation, these CPUs and memory cards will no longer be available as a spare part and can no longer be repaired. State-of-the-art successors are available for all CPUs."

This Press Release from Siemens means that these PLCs should not be used for new projects anymore and an alternative should be used.

3.2 Specifications

The most important requirement for S7-300 and S7-400 PLCs is the available RAM. The amount of RAM needed from the PLC-Frame is strongly depending on the amount of Control Modules that are used in the Application. To reduce the Memory footprint of the PLC-Frame, one can simply reduce the amount of use Control Modules and adjust them to fit the needs of the actual automation.

The Cycle time of the PLC is less important for the BatchXpert PLC-Frame since it is programmed in an optimized manner and modern PLCs are fast enough to be able to execute the PLC-Frame in less than 50 milliseconds.

The Full BatchXpert system requires a lot of memory due to the amount of control modules and the Reporting engine used in the system. The amount of control modules is strongly affecting the memory footprint of the PLC program. By reducing the amount of control modules one can strongly reduce the memory footprint.

Units do have the highest memory footprint with about 30kb per Unit in use. This 30kb include the necessary data and code blocks including an estimation of a typical sequence phase's implementation.

For all Simatic PLCs, the amount of remanent memory is especially critical, as it is generally limited to a small amount of the total amount of ram of the CPU. Especially for 300 series PLCs you must carefully check the amount of remanent data ram.

The requirements for Memory are as follows:
- 2 MB for 20 Units and all control modules
- 4 MB for 50 Units and all control modules
- 6 MB for 80 Units and all control modules
- 8 MB for 120 Units and all control modules

3.3 Minimum

As a **minimum** for small plants an amount of **at least 300kb of RAM** is needed. This 300 kb do NOT include all control modules, and is a cut down version of the BatchXpert systems, and include: 3 Process units, 64 Acts, 64 Din, 32 Ain, 8 PID, and 32 Msg

One can utilize an **S7-315 with at least 384** kb of memory (at approx. 30ms cycle time) or an **S7-412-2 PN with 512 kb of Data and 512 kb of code memory.**

3.4 Recommendation

It is strongly recommended utilizing a **S7-416-2** with 4 Mb of code and 4 Mb of data RAM or a **S7-317-2 PN/DP** with 1 Mb for bigger automation projects.

3.5 Remanent Memory

On Simatic 300 series PLCs depends on the amount of Remanent data memory that comes with the selected CPU. For 300 series PLCs you must carefully check the amount of remanent data ram that comes on the selected CPU and select an appropriate CPU. For the 300 series CPU's there are no factory solutions to include a buffer battery to enable full data ram remanence.

For Simatic 400 series PLCs, the data remanence depends on the power supply and buffer battery used. You should select a power supply that allows for RAM buffering using buffer batteries, to make the full code and data RAM remanent.

3.6 Memory Card

All Simatic PLCs require the use of a memory card, so the 300 and the 300 series also require a memory card to function and will not work without an appropriate memory card. The Memory Card holds non-runtime relevant data from the downloaded project and should be about 5x the code AND data size of your project.

We **recommend an 4MB card** since this has enough memory for most projects.

4 Vipa 300S+, SLIO and Micro PLC

Vipa Speed 7, Vipa Slio and Vipa Micro. share the same architecture as the S7-300 series from siemens and are being programmed by the same software (Simatic Manager). The distinction between S7-300 and Vipa Plc's is that Vipa generally makes the whole data ram remanent, whereas in Siemens PLC's this is limited to a fraction of the total Data ram.

The engineering of all Vipa PLCs (Speed7, SLIO y Micro) is the same and done via "Simatic Manager" or "Tia Portal", the same way as you would for an S7-300 from Siemens.

The most important requirement for Vipa PLCs is the available RAM. The amount of RAM needed from the PLC-Frame is strongly depending on the amount of Control Modules that are used in the Application. To reduce the Memory footprint of the PLC-Frame, one can simply reduce the amount of use Control Modules and adjust them to fit the needs of the actual automation.

The Cycle time of the PLC is less important for the BatchXpert PLC-Frame since it is programmed in an optimized manner and modern PLCs are fast enough to be able to execute the PLC-Frame in less than 50 milliseconds.

The Full BatchXpert system requires a lot of memory due to the amount of control modules and the Reporting engine used in the system. The amount of control modules is strongly affecting the memory footprint of the PLC program. By reducing the amount of control modules one can strongly reduce the memory footprint.

Units do have the highest memory footprint with about 30kb per Unit in use. This 30kb include the necessary data and code blocks including an estimation of a typical sequence phase's implementation.

The requirements for Memory are as follows:
- 2 MB for 20 Units and all control modules
- 4 MB for 50 Units and all control modules
- 6 MB for 80 Units and all control modules
- 8 MB for 120 Units and all control modules

4.1 Minimum

As a **minimum** for small plants an amount of **at least 300kb of RAM** is needed. This 300 kb do NOT include all control modules, and is a cut down version of the BatchXpert systems, and include: 3 Process units, 64 Acts, 64 Din, 32 Ain, 8 PID, and 32 Msg
One can utilize a **VIPA 314-6CF02 with 512kb** (at approx. 10ms cycle time)**.**

4.2 Recommendation

It is strongly recommended to utilize a **VIPA 315-4NE13** with 1 Mb of RAM or a **VIPA 317-4NE13** with 2 Mb for bigger automation projects. These PLCs are upgradable by memory Chips, up to 8 Mb.

4.3 Remanent Memory

For Vipa PLC's, all data RAM is always fully remanent and thus can be fully used. They utilize an internal Capacitor that acts as an internal buffer battery that never needs to be replaced.

4.4 Memory Card

Vipa PLC's do not require a Memory card for functioning, nor for data retention. You can operate a Vipa PLC without any memory card AND with full data remanence. The Memory card is fully optional for Vipa PLC's.

The Memory card is used for Firmware updates, and as additional data storage in these type of PLC. The Memory card does not need to be an "Simatic MMC" but can be any common SD-Card with up to 4Gb of data.

There are memory expansion modules for Vipa PLC's that slot into the SD-Card slot and expand the Physical RAM of an PLC, or enable optional features (such as Profibus, Modbus, etc.), on SLIO models. Please refer to the Vipa PLC documentation for details.

4.5   Siemens S7 1200

Siemens S7-1200 controllers are the low-cost PLCs from Siemens and generally are not powerful enough for bigger automation projects with BatchXpert. BatchXpert Supports the S7-1200 controllers through the BatchXpert Micro Framework, which is a compatible, but modular version of the BatchXpert System. It is functionally similar, but not identical. "BatchXpert Micro" is tailored towards simple machine Automation projects, where the Batch Processing and Historical data collection functionalities are reduced and simpler, although it still supports Recipes and historical data.

Historical Batch Data and Manual Operations are supported by S7-1200 as of 06.11.2022.

An example of this might be:

- CIP Stations with up to 2 CIP Lines
- Flash Pasteurizers

4.5.1   Minimum

As a **minimum** for small projects an S7-1214 with 100kB of Ram can be used. This is enough for a Single unit with a few steps and about 32 actuators.

4.5.2   Recommendation

It is strongly recommended that using a **S7-1215** with 125 kB of RAM should be used. This is enough for a single complex unit or multiple simple units with about 50 Actuators, Analog inputs, and regulators.

4.5.3   Remanent Memory

S7-1200 PLC's have comparatively a lot of remanent memory, so this is of less concern. However, if you need more remanent memory, you can use the "Persistence" functionality of BatchXpert, which utilizes the internal Flash memory (or Memory card if used). However, this results in considerable "Wear" on the internal memory or flash memory. The "Persistence" functionality is optimized for this but still results in about "10-year lifetime" of the flash memory. The Persistence functionality will save modification at most every 20 minutes, so the" Resolution" is limited to this interval.

4.6   Memory Card

The Simatic S7-1200 series does not require a Memory card for functioning, nor for data retention on the internal retentive memory. You can operate a S7-1200 PLC without any memory card AND with limited data remanence. The Memory card is also not required for the "Persistence" functionality mentioned above.

5 Supported HMI and SCADA Systems

The BatchXpert system provides libraries and ports for multiple different HMI and SCADA systems that can be used. It should be noted however that the system is designed to be used primarily with its integrated "VisXpert SCADA" system, since this is the primary application that provides all functionality, that other HMI systems can not provide.

HMI systems outside of VisXpert should be considered complementary for "in the filed" touch devices, which complement the primary Operating Stations that use VisXpert Scada.

BatchXpert supports the Following HMI systems and thus is available for all Touch panel types that can run these HMI systems.

- VisXpert (recommended)
- Simatic WinCC Comfort
- Progea MoViCon V11

It should be noted that the following HMI systems are specifically **not** supported:

- Simatic WinCC Basic
- Simatic WinCC Professional
- Progea MoViCon Next

6 Touch Panels

The BatchXpert system is ported on various touch panel devices for Visualization purposes. In General, the BatchXpert System is running on Panels from Siemens and VIPA. The Requirements are as follows.

6.1 Touch Panel PC (recommended)

Dedicated Touch panels that use proprietary software are increasingly falling out of favor, especially as Panel Mounting Touch Enabled PCs are getting much more cost effective. We recommend the use of Panel mounted Touch PC's, or a Touch Monitor connected to a dedicated PC that runs the standard BatchXpert and VisXpert combination.

This has the benefit that the Standard BatchXpert project can directly run on the Touch panel, without the need to maintain a separate HMI project in a Proprietary third-party HMI software. This reduces project complexity and maintainability.

It is recommended to use a Panel Mount pc with 1920x1080 resolution, but tools to easily reduce the project resolution to fit the screen size exist.

6.2 Siemens Comfort Line

BatchXpert supports the Touch panel of the **Comfort** Line from Siemens, and it is recommended to use a Screen diagonal of >= 9". On lower Diagonals the buttons might appear too small and screen adaptions might be necessary, but there are templates that can be used for smaller sizes.

As Engineering software, the "WinCC Advanced Tia" portal Software is used. This Software is the successor of the "WinCC Flexible Software".

6.3 Siemens Basic Line

The Basic Line of the Touch Panels is currently **NOT** supported, as it does not support "Faceplates" nor "Scripts", both of which are heavily used by BatchXpert.

6.4 Siemens MultiPanel (MP)

The Simatic Multi panel have been supported, but since they are discontinued, they are no longer supported. They are still supported by BatchXpert, but one should upgrade to current generation models.

6.5 VIPA ECO Panels

ECO Panels are not supported anymore by its vendor VIPA. They are still supported by BatchXpert, but it is recommended to switch to the newer Smart Panels.
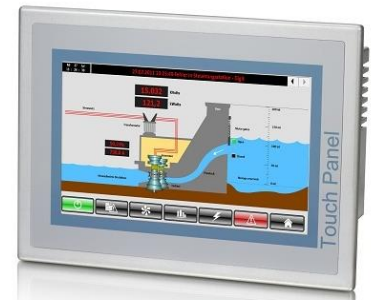
6.6 VIPA Smart Panels

The Vipa Smart Panels are fully supported. The recommendation is a screen diagonal from at least 7". As Engineering Software, the "Movicon 11.5" from "Progea" is used, which is freely downloadable from their homepage. The Demo Version is sufficient for Engineering and a license is not required. Due to the low power of the Smart Panels, they should only be used as small Input/output devices without big sophisticated Synoptically Interfaces.

The 10" Display variants of the VIPA Smart Panels has more power and thus can be used with Advanced graphics for the process images. On Smart Panels trending is limited to 7 days' maximum data storage via CSV or XML files. However, if extensive Trending is required, an "Pro" License is required (not the Basic, sometimes called "Movicon Lite" or "Power HMI"), to be able to use SQL as trend data storage.

7   PC Requirements

The BatchXpert system requires no special design for PC. It requires Windows 10 or better. It is however recommended using a **Windows 11 with 64 Bit**. Windows XP, Windows Vista, Windows 7 or earlier are **not** supported anymore. Please see Chapter "Software Requirements" for details.

7.1   Hardware

The RAM requirements are low, and **2 GB of RAM** is enough to achieve decent performance. However, it is recommended to use about **6 GB or more**.

Due to the strongly parallel software architecture of the BatchXpert System a Multi Core CPU is recommended. A CPU with **4 or more CPU-Cores** is recommended.

The Hard disk requirements depend on the amount of Historical and Trending data that will be recorded. In general, a usual BatchXpert Operating station does suffice with 250 **GB of disk space**.

7.2   Screen

The BatchXpert System can be adjusted to three Screen resolutions.
- 1366 x 768
- 1600 x 900 (HD)
- 1920 x 1080 (Full HD)
- 2 x 1920 x 1080 (2 monitors with Full HD)

It is **recommended** that a **Full HD** screen resolution with **1920 x 1080** pixels is used for the automation project. Double monitor support is possible, but both Monitors should have the same screen resolution.

7.3   Network

It is also recommended that the PC has a dedicated Network interface for the Automation Network (the PLC (s)). So, if the PC is connected to the Internet or a corporation, it is recommended that the PC is equipped with two Network interfaces. This reduces Manageability and complexity of the solution and improves the stability of the system, since the networks cannot interfere with each other. Software Requirements

7.4   Administrative Privileges

To install BatchXpert and to perform basic adjustments and maintenance tasks, administrative access is required for the PC Stations. BatchXpert should NOT be executed with administrative privileges, however the Installation proves requires these privileges.

Without Administrative Privileges, the system cannot be installed.

8 Software Requirements

As mentioned earlier, although the BatchXpert has very moderate requirements, there are some minimum Requirements to the software running on the BatchXpert Stations. Since technology progresses, these Requirements are sometimes changing depending on the BatchXpert Version. Following is a list of BatchXpert Versions and their specific Requirements.

One can infer the compatibility of a version to the next update, by its version number. The Version number is composed of the following parts:

Major.Minor.Update.Hotfix

- **Major**: This number indicates a major version change. No compatibility is guaranteed either for the Database, PLC or any configuration file.
- **Minor**: This indicates a minor Change in the software, where usually new Features are added to the System. Compatibility to the Database is guaranteed by automatic database update, and compatibility to the PLC is guaranteed. Configuration files may have changed but are usually compatible.
- **Update**. An update to the BatchXpert system, where bugs are fixed. Usually no now features are added. Compatibility to the Database is guaranteed by automatic database update, and compatibility to the PLC is guaranteed. Configuration files may have changed but are usually compatible.
- **Hotfix**: Minor Fix in the BatchXpert System. No New features and fully Compatibility are guaranteed.

For detailed Changelogs please visit:
http://docu.mlogics-automation.com

8.1 Version 1.11

- **Windows**

  BatchXpert is compatible with Windows versions. Mixed Windows Versions are supported in an Installation.
  - o **Windows 11 recommended**
  - o Windows 10
- **Sql Server**

  BatchXpert does not support mixed SQL Server versions in an Installation, as Data synchronization cannot work with mixed server version. All SQL Server version must be the same on all Stations.
  - o **Sql Server 2022 Express (or better), recommended.**
  - o Sql Server 2019 Express (or better)
- **.Net**
  - o Microsoft .Net Framework 4.8

8.2 Version 1.10

- **Windows**

  BatchXpert is compatible with Windows versions. Mixed Windows Versions are supported in an Installation.
  - o **Windows 11 recommended**
  - o Windows 10
- **Sql Server**

  BatchXpert does not support mixed SQL Server versions in an Installation, as Data synchronization cannot work with mixed server version. All SQL Server version must be the same on all Stations.
  - o **Sql Server 2022 Express (or better), recommended.**
  - o Sql Server 2019 Express (or better)
  - o Sql Server 2017 Express (or better), not recommended, soon out of support by
  - o Sql Server 2016 Express (or better), not recommended, soon out of support by
- **.Net**
  - o Microsoft .Net Framework 4.8

8.3 Version 1.9

- **Windows**

  BatchXpert is compatible with Windows versions. Mixed Windows Versions are supported in an Installation.
  - o **Windows 11 recommended**
  - o Windows 10
- **Sql Server**

  BatchXpert does not support mixed SQL Server versions in an Installation, as Data synchronization cannot work with mixed server version. All SQL Server version must be the same on all Stations.
  - o **Sql Server 2022 Express (or better), recommended.**
  - o Sql Server 2019 Express (or better)
  - o Sql Server 2017 Express (or better), not recommended, soon out of support by
  - o Sql Server 2016 Express (or better), not recommended, soon out of support by
  - o Sql Server 2014 Express (or better), not recommended, soon out of support by vendor.
  - o Sql Server 2012 Express (or better), not recommended, soon out of support by vendor.
- **.Net**
  - o Microsoft .Net Framework 4.6 Full

8.4 Version 1.8

- **Windows**

  BatchXpert is compatible with Windows versions. Mixed Windows Versions are supported in an Installation.

- o **Windows 11 recommended**
- o Windows 10
- o Windows 8.1 (all editions), not recommended, end of life.
- o Windows 8 (all editions), not recommended, end of life.
- o Windows 7 (all editions), not recommended, end of life.
- **Sql Server**

  BatchXpert does not support mixed SQL Server versions in an Installation, as Data synchronization cannot work with mixed server version. All SQL Server version must be the same on all Stations.
  - o **Sql Server 2022 Express (or better), recommended.**
  - o Sql Server 2019 Express (or better)
  - o Sql Server 2017 Express (or better), not recommended, soon out of support by
  - o Sql Server 2016 Express (or better), not recommended, soon out of support by
  - o Sql Server 2014 Express (or better), not recommended, soon out of support by vendor.
  - o Sql Server 2012 Express (or better), not recommended, soon out of support by vendor.
  - o Sql Server 2008 R2 Express (or better), not recommended out of support by vendor.
  - o Sql Server 2008 Express (or better), not recommended out of support by vendor.
  - o Sql Server 2005 Express (or better), not recommended out of support by vendor.
- **.Net**
  - o Microsoft .Net Framework 4.6 Full

9 System Update

During the upgrading of the system, one must consider the compatibilities of the BatchXpert Installation with the corresponding PLC, Database and Visualization Version.

The BatchXpert Installation installs Database Updates automatically. PLC and Visualization Updates are NOT trivial to install and ALWAYS require a technical engineer for installation. However, PLC and Visualization upgrades are usually not mandatory.

To determine if an update is possible, one first hast to check what PLC Version, Visualization Version and what BatchXpert Version is currently installed. Then one can check the **"Compatibility matrix"** to check if the current version is compatible with the version to be updated.

The compatibility Matrix can be found in the documentation folder of the BatchXpert SDK.

If you wish to upgrade your Sql server, the recommended way of doing this is by Making a full database Backup, and after that uninstall the obsolete Sql Server and all its components. After doing so, one can install the desired Sql Server by using the "BatchXpert Installation Center". After installation, the Backup can be restored by help of the "BatchXpert Database Administration Tool", which automatically upgrades the database files.

WARNING: a downgrade of the Sql server version is not possible

The following are some additional notes when updates are to be performed.

9.1 Version 1.10.x.x to Version 1.11.x.x
There is no special case to consider.

9.2 Version 1.9.x.x to Version 1.10.x.x
There is no special case to consider.

9.3 Version 1.8.x.x to Version 1.9.x.x
There is no special case to consider.

9.4 Version 1.7.x.x to Version 1.8.x.x
There is no special case to consider.

9.5 Version 1.6.x.x to Version 1.7.x.x
There is no special case to consider.

9.6 Version 1.5.x.x to Version 1.6.x.x
There is no special case to consider.