Version: 2.0.0.0

User Guide

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1. Introduction

The following section describes the details of the MIRA LITE ™ application, including: Application Features, Installation, Use and Administration.

1.1 About MIRA LITE

MIRA LITE is designed to work with Okuma THINC controls. The application is equipped with a simple, easy to use interface that provides machine operational data without server or networking needs. It can also be connected to other controls.

MIRA LITE automatically collects and monitors machine status,including: Running, Operating, Cutting and Alarm. Part Count and Utilization are also provided in graphical format for a time period chosen by the operator.

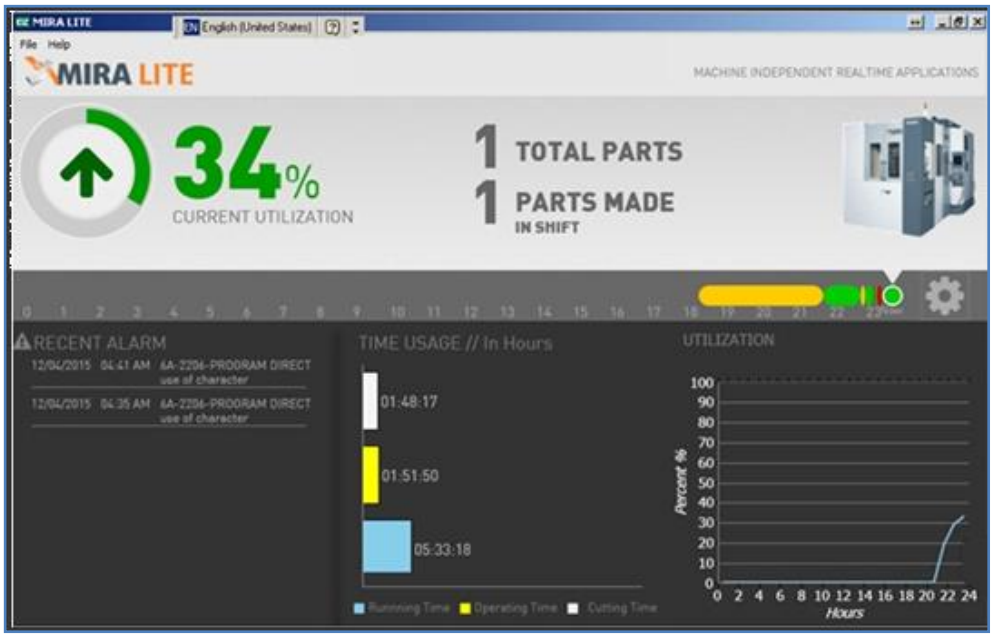

Figure 1: About MIRA LITE

1.2 Features

- Simple interface that provides a wealth of event information.
- Display machine utilization % for a chosen duration.
- Shows the current state of the machine.
- Display machine operational data.
- Export report screen in pdf/ jpeg format.

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1.3 Organization of the Manual

Section 2: System Overview

This section covers the overall system architecture, describes various components of the system, along with the different user access levels. The aim of this section is to give the user an overview of the components of the application.

Section 3: Installation

This section covers System Requirements, Installation Process, Uninstallation Process and Troubleshooting, if applicable for each component of the application.

The section will allow the administrator and/or IT department to schedule installation of the components based on the downtime, shift schedules etc. of the plant.

Section 4: Using Application

This section covers the user interface for each feature along with their actions, if any, that can be performed by regular users of the application.

Section 5: Help

This section covers licensing for MIRA LITE, checking application validity and application version details.

Section 6: Frequently Asked Questions

This section covers frequently asked questions and their answers by users.

Section 7: Terms and Conditions

This section covers terms and conditions of using the application and applicable laws.

Section 8: Technical Support

This section provides contact information.

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2. System Overview

The section covers the overall system architecture and identifies the various components of the application. Installation and operation of each component are discussed in more detail in the following sections.

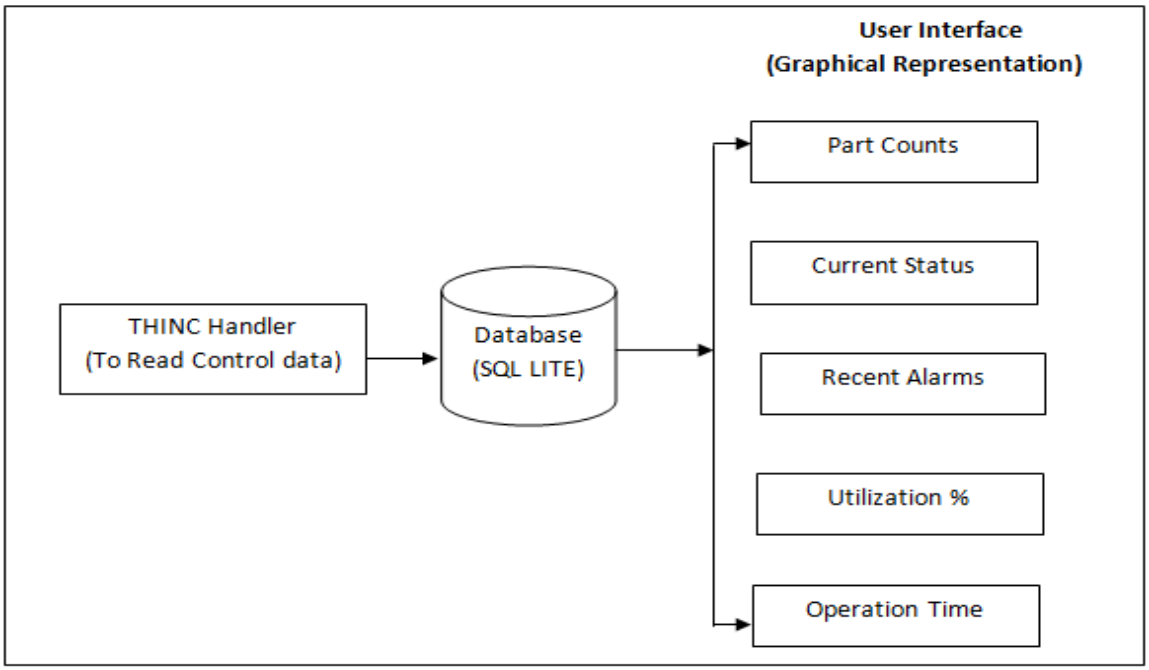

Figure 2: System Overview

As depicted by the diagram above.

- The application collects data from THINC handler and stores it in a database.
- In the application window, the operator can see the following details:
  - Produced part count for the selected duration.
  - Machine current status.
  - Recently generated alarms for the control.
  - Utilization for selected period in %.
  - Total operation time of the machine for selected duration.

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3. Installation

3.1 System Requirements

- THINC API (Lathe or Machining Center) Version 1.15.0.0 and above.
- Okuma THINC Startup Service
- Microsoft Visual C++ 2010 Redistributable Package
- Microsoft .NET Framework 4.0
- SQLite
- OSP Controls (P-100 II / P-200 / P-300)

Note: *During installation, setup will prompt user to install the following prerequisites if those are not already installed on the machine.*

- Okuma THINC Startup Service
- Microsoft Visual C++ 2010 Redistributable Package
- Microsoft .NET Framework 4.0
- SQLite

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3.2 MIRA LITE Installation

MIRA LITE installation is divided into two parts: setup will install prerequisites first, and then it will continue with the MIRA LITE installation.

1. Install the application in Windows-only mode (*NOTE: the NC software should not be running*). To run the software on Windows-only mode follow the steps below :
   a. Restart the computer.
   b. When the NC software starts, click on the escape key and then click on cancel.

Figure 3: Setting Windows Mode

2. Copy the MIRA LITE installation folder to the P-control using USB drive.
3. Open the installation folder and double click on “Setup.exe”
4. Once clicked on “Setup” installer will check if Okuma THINC Startup Service, .NET Framework 4.0, Microsoft Visual C++ 2010 Redistributable Package is installed on the machine.

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5. If any of the prerequisite is not installed on the machines, setup will install those prerequisites and continue with the MIRA LITE installation.

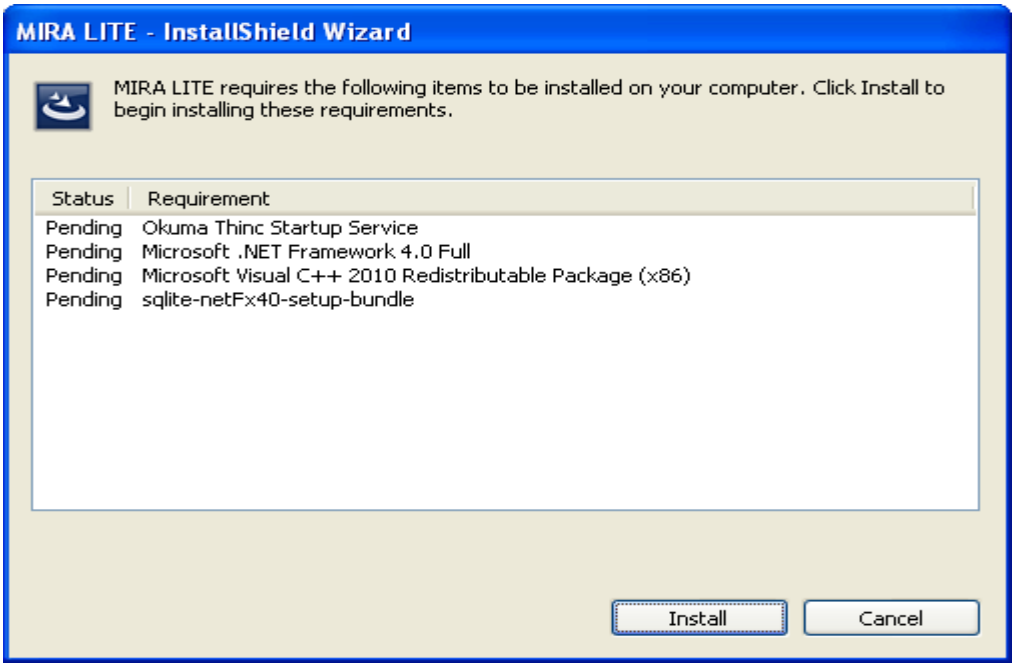

Figure 4: Installation- .NET 4.0 Framework Installation

6. Follow the instruction provided in the setup wizard to install Okuma THINC Startup Service.

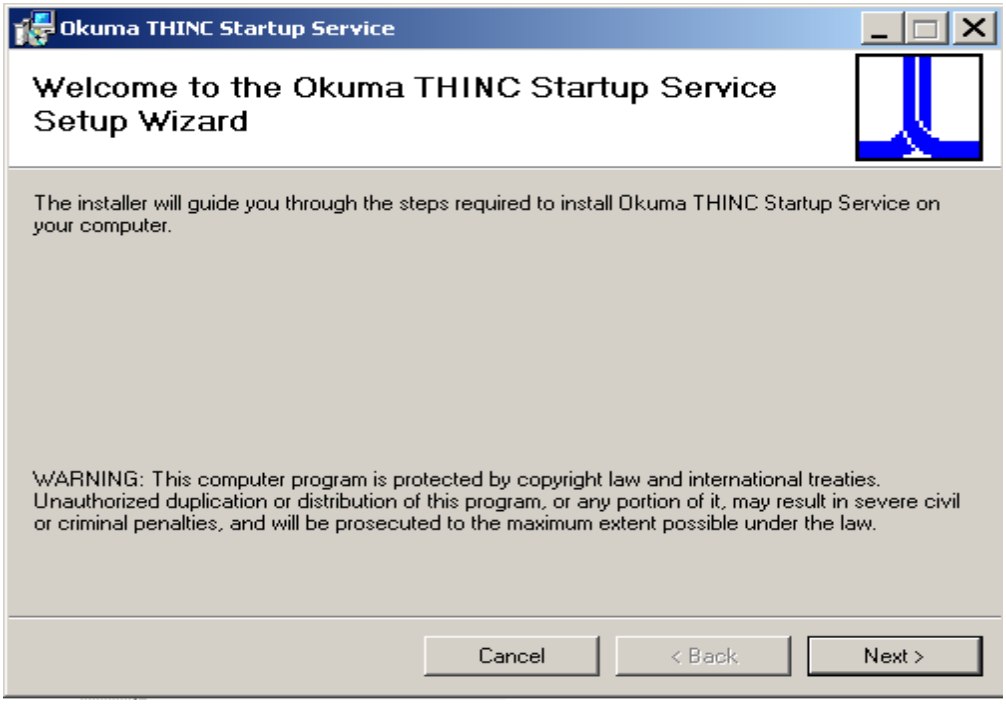

Figure 5: THINC Startup Installation-1

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7. Click on “desktop, “Start Menu” and “Vertical Function Key” and click on Next button.

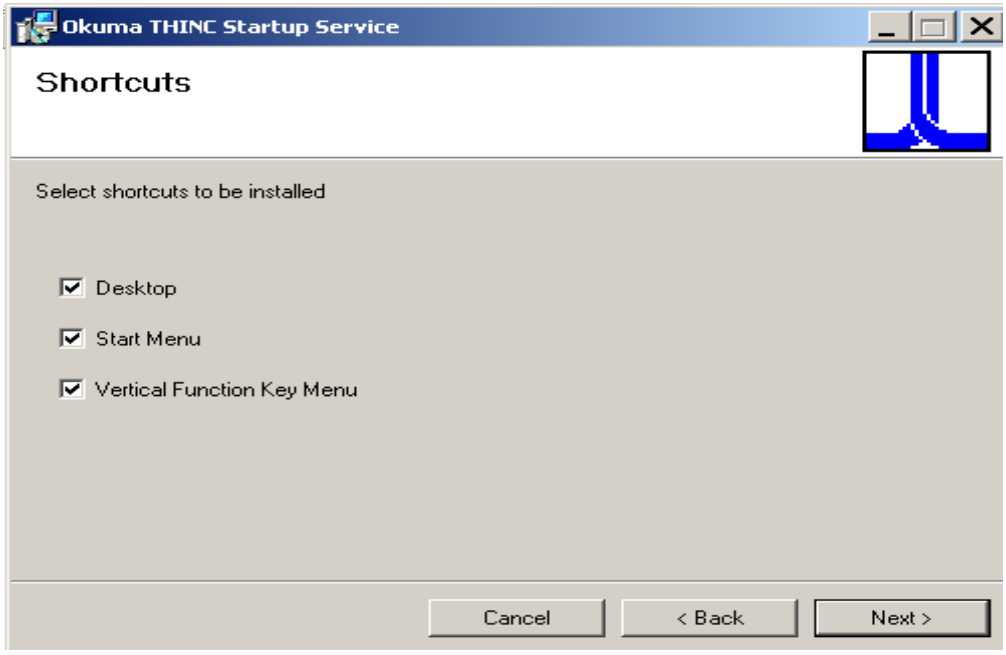

Figure 6: THINC Startup Installation-2

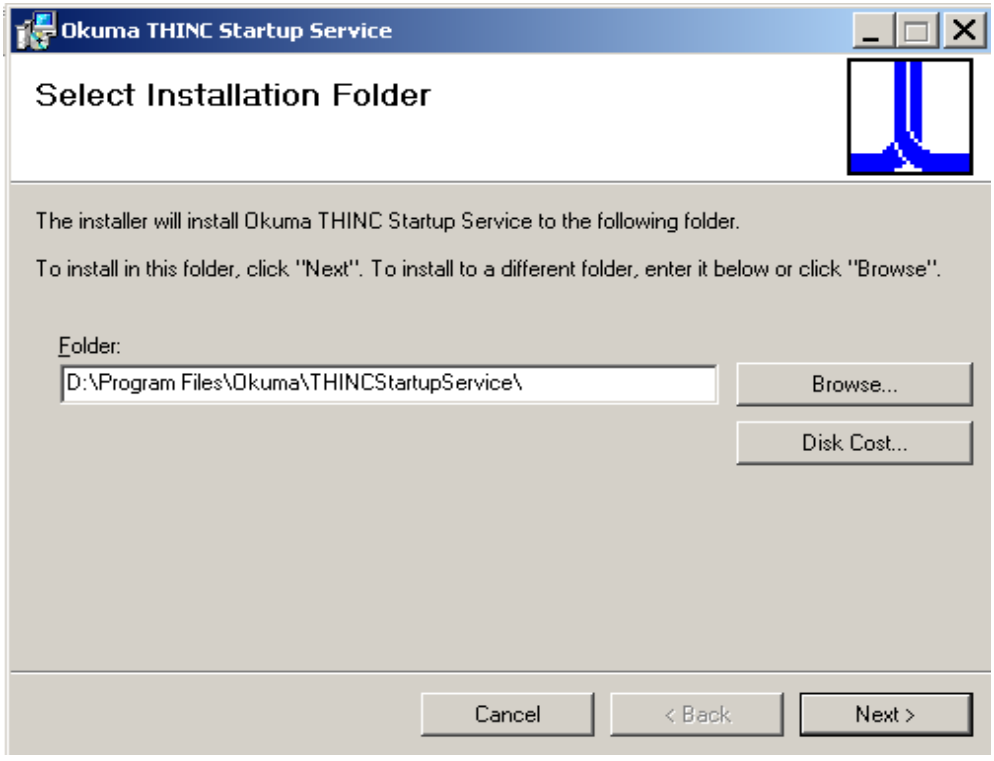

Figure 7: THINC Startup Installation-3

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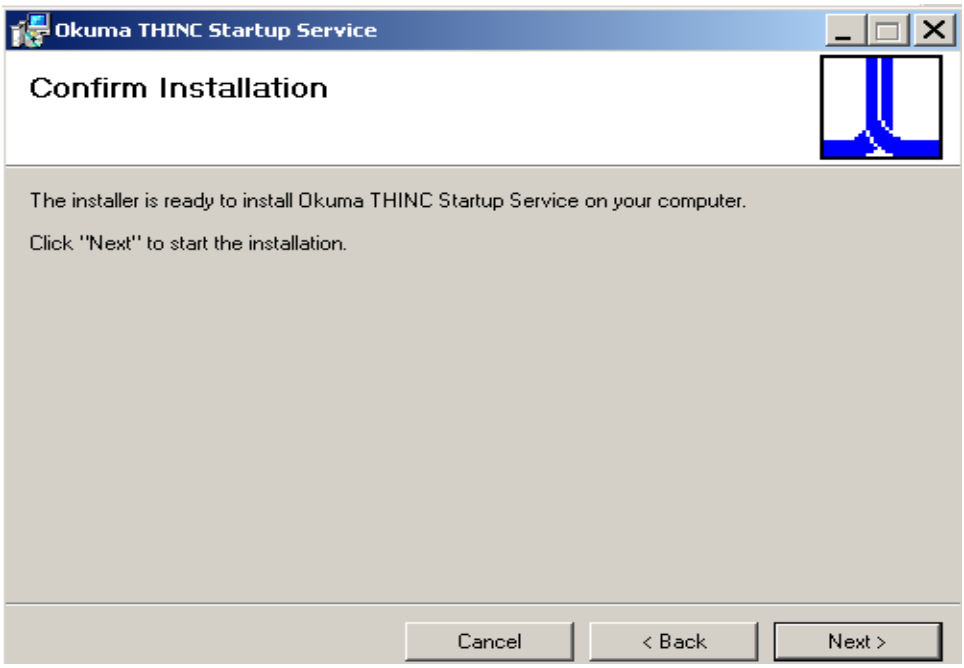

Figure 8: THINC Startup Installation-4

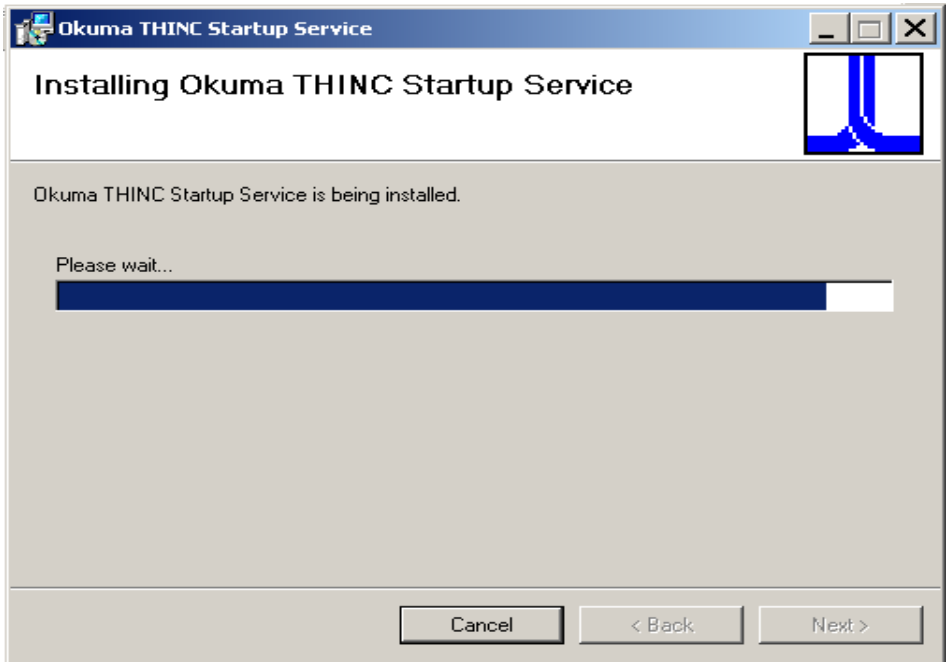

Figure 9: THINC Startup Installation-5

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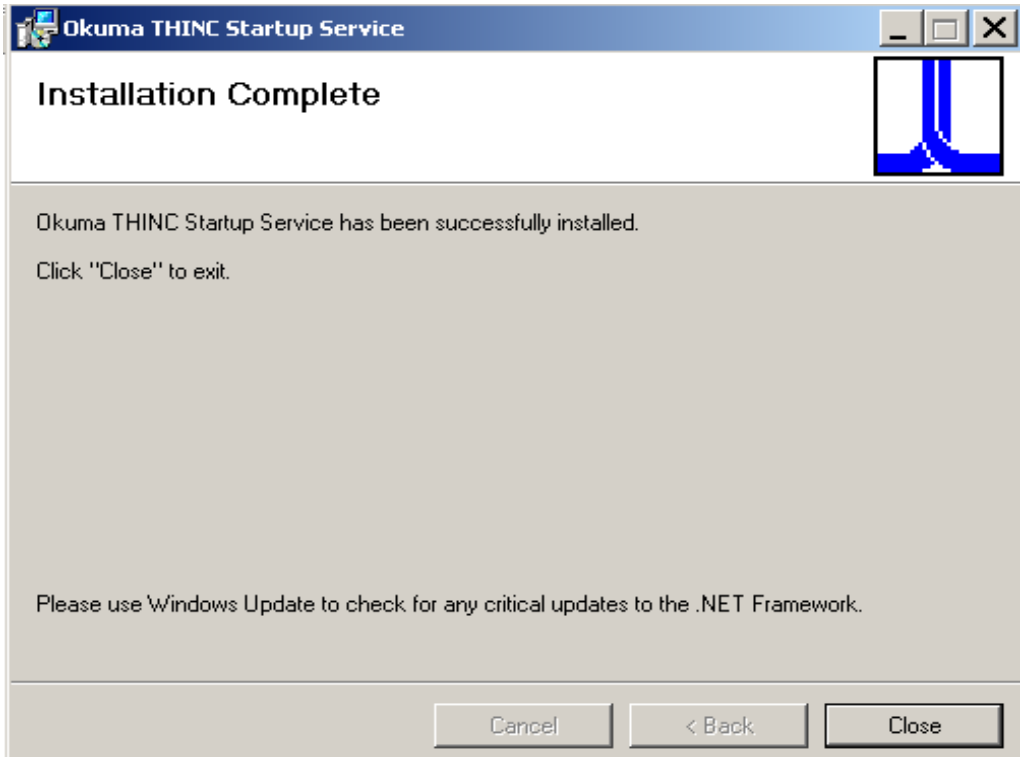

Figure 10: THINC Startup Installation-6

8. Once the Okuma THINC Startup is installed successfully setup will continue with Microsoft .NET Framework 4.0 and Microsoft Visual C++ 2010 Redistributable Package.

Note: *Microsoft .NET Framework 4.0 and Microsoft Visual C++ 2010 Redistributable Package will be installed in a background and user need not follow any other steps.*

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9. Once the Microsoft .NET Framework 4.0 and Microsoft Visual C++ 2010 Redistributable Package successfully installed, setup will continue with SQLITE installation.
10. Please follow the steps provided in the setup wizard.

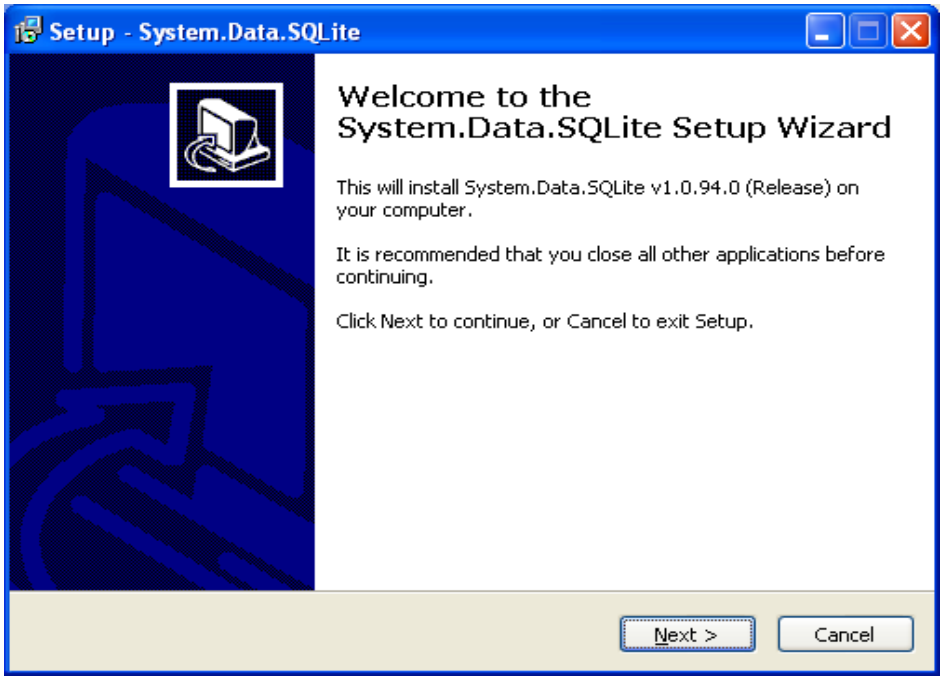

Figure 11: SQLite Installation-1

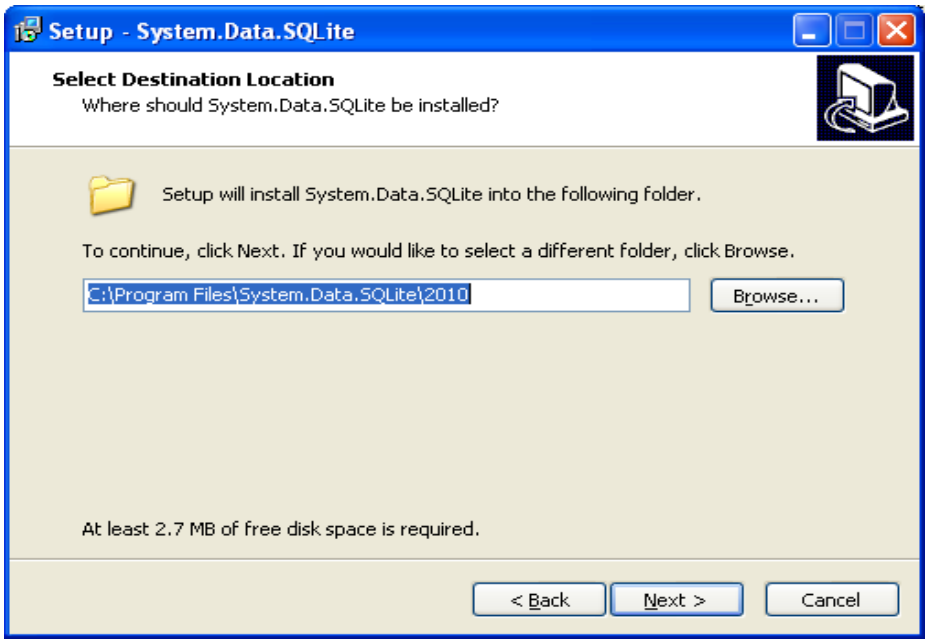

Figure 12: SQLite Installation- 2

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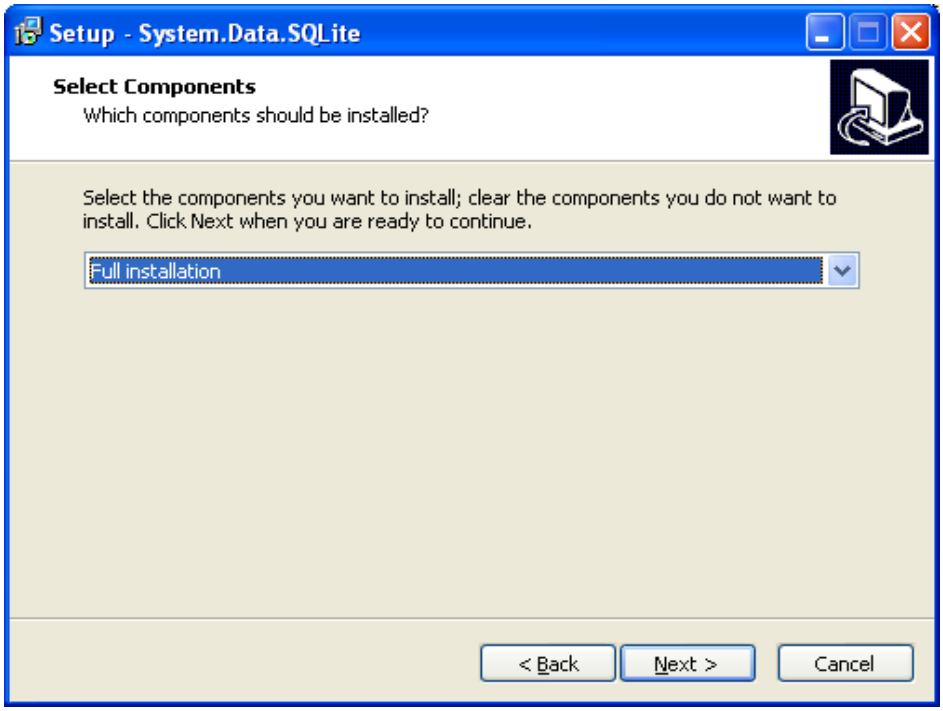

Figure 13: SQLite Installation- 3

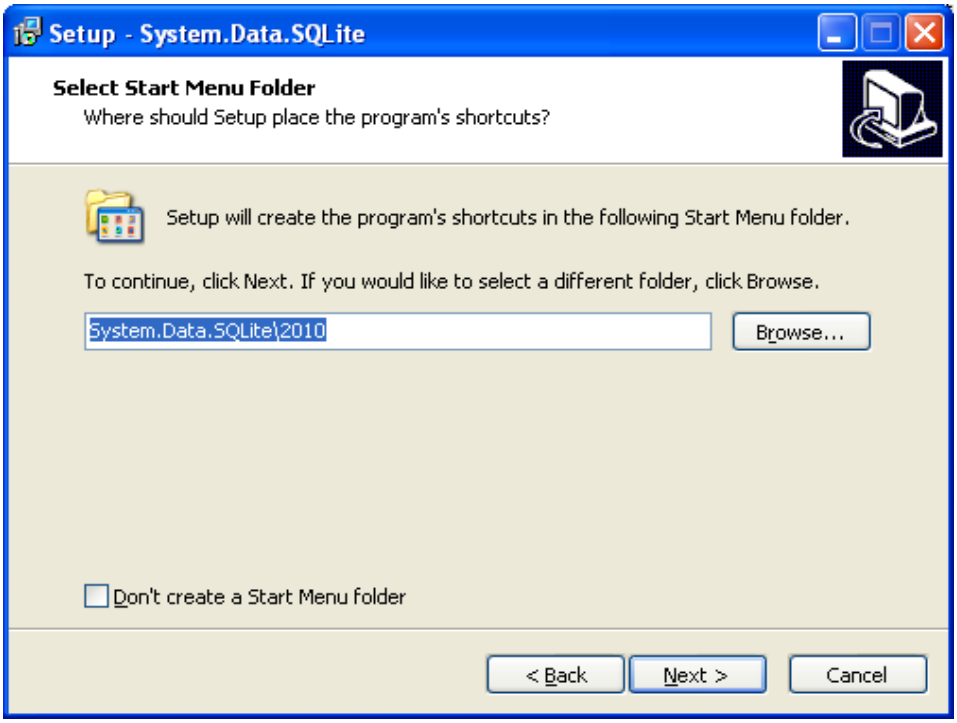

Figure 14: SQLite Installation- 4

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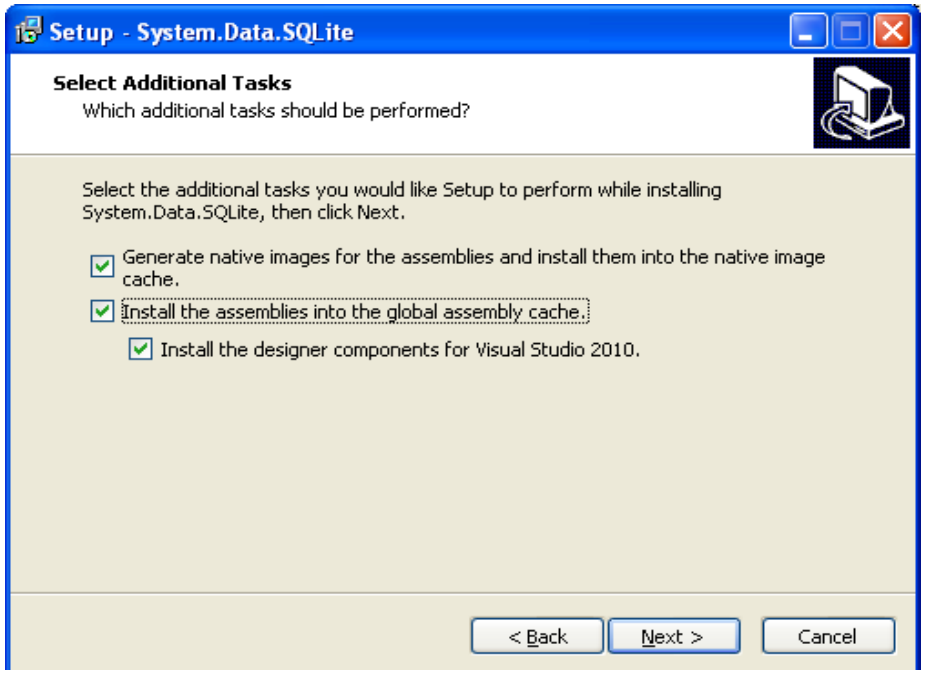

Figure 15: SQLite Installation- 5

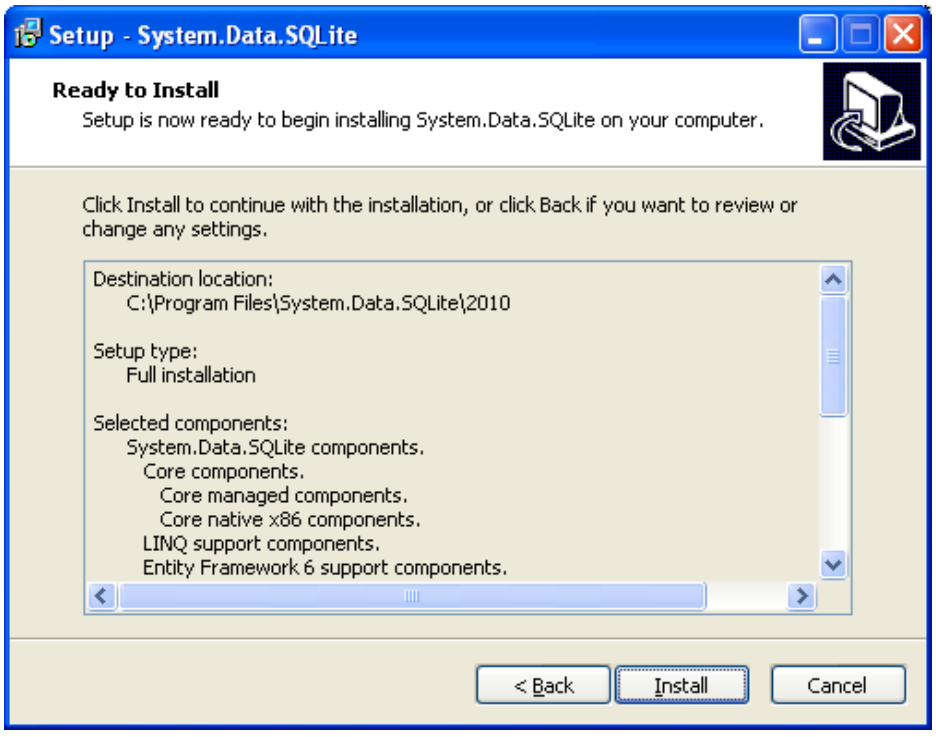

Figure 16: SQLite Installation- 6

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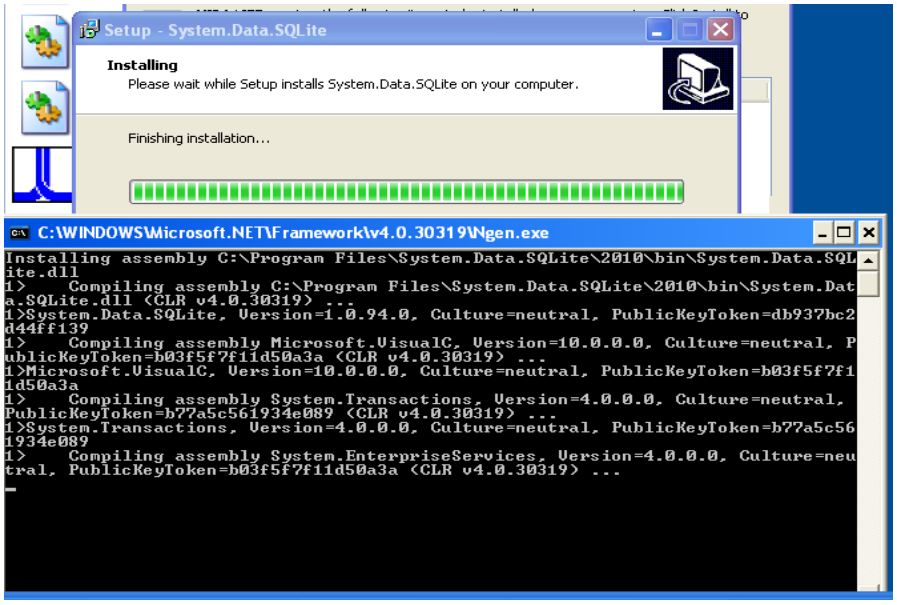

Figure 17: SQLite Installation- 7

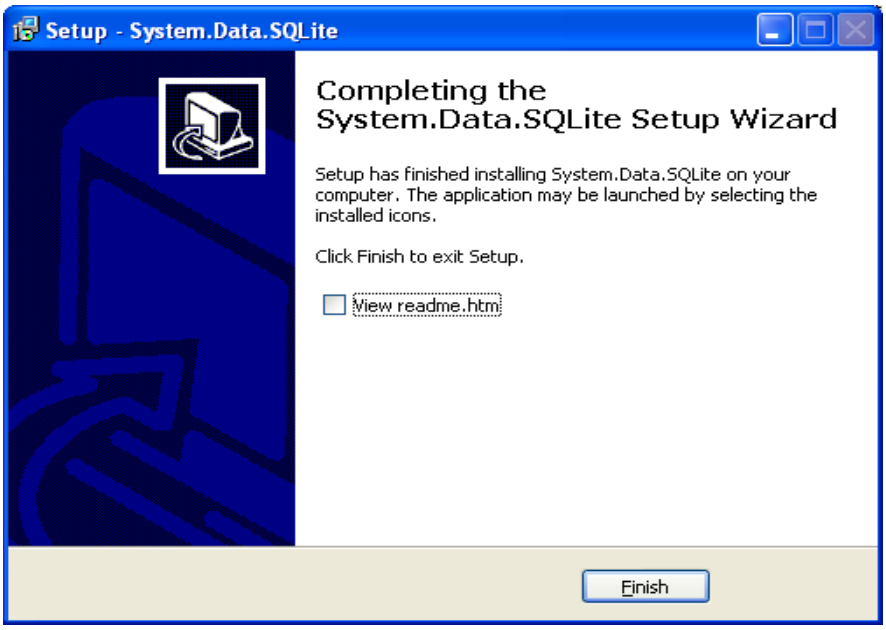

Figure 18: SQLite Installation- 8

11. After SQLITE installation, setup will continue with the MIRA LITE Installation.

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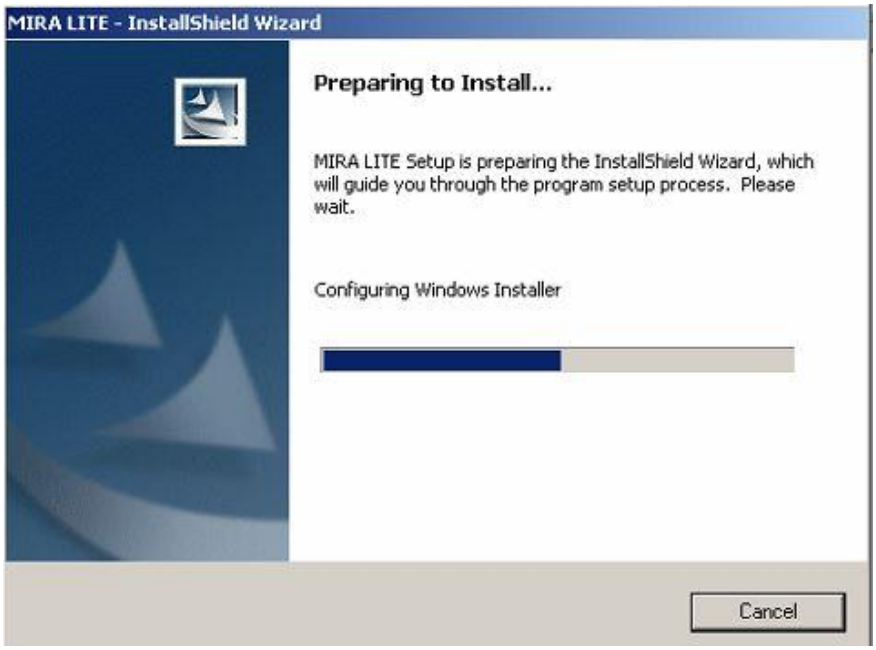

Figure 19: MIRA LITE Installation

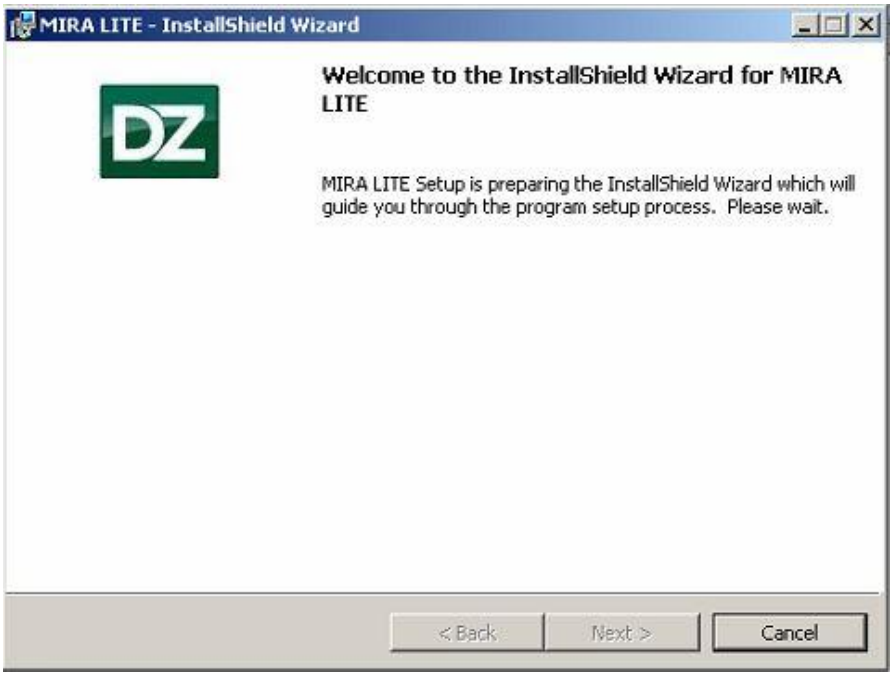

Figure 20:MIRA LITE Installation-1

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12. Click on **'Next'** to continue with the installation of MIRA LITE.

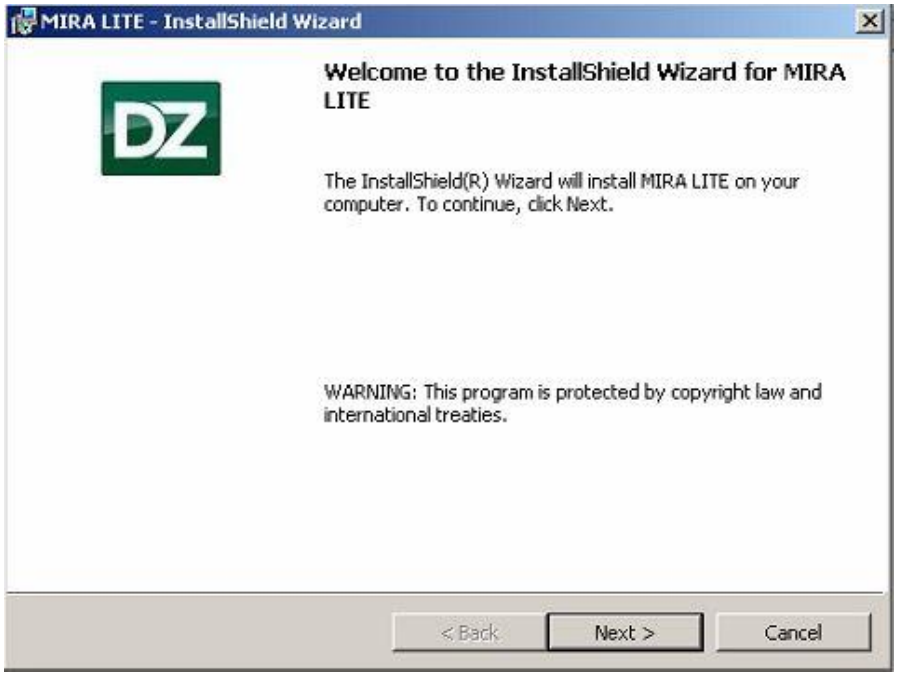

Figure 21: MIRA LITE Installation-2

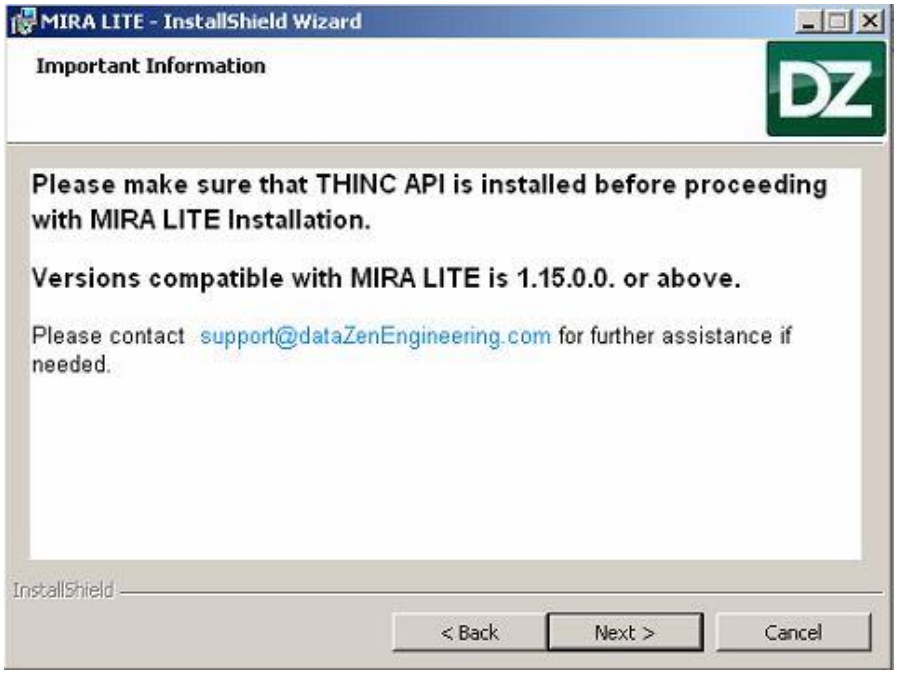

Figure 22: MIRA LITE Installation- Important Information

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13. Please enter the User Name and Organization.
14. User Name can be Machine name, Operator name, etc. and Organization should be the company name.

Figure 23: MIRA LITE Installation- User Configuration

15. The default location for MIRA LITE application installation is "D:\Program Files\dataZen\MIRA LITE\". The user may change the installation location by click on the **Browse** button and selecting the desired location of installation and then click **'Next'** to continue installation.

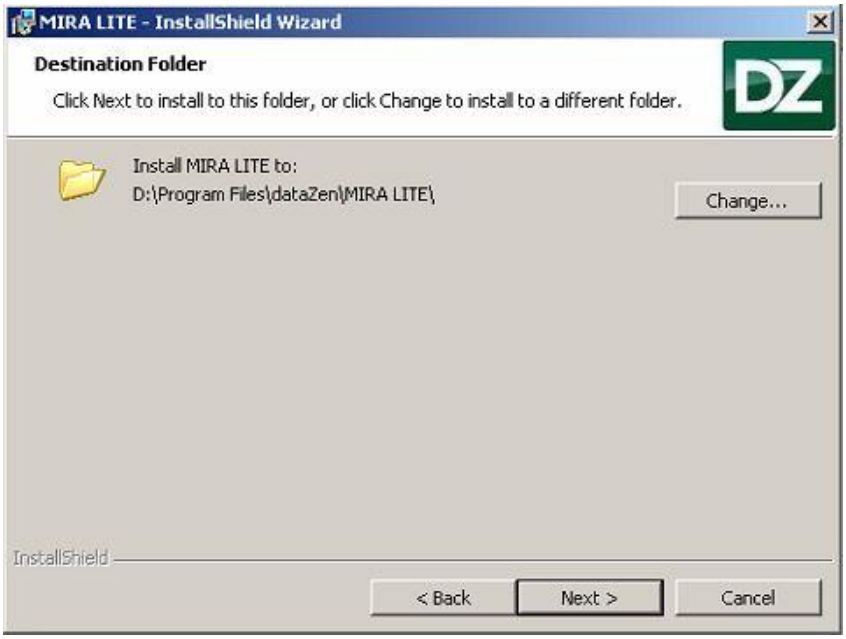

Figure 24: MIRA LITE Installation- Select installation folder

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16. Click on “Install” to continue the installation.

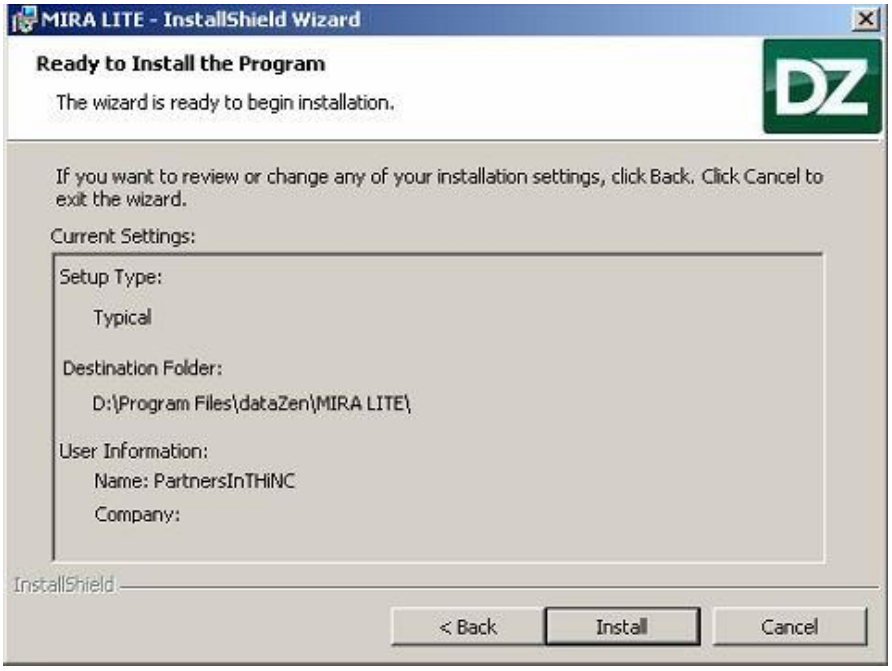

Figure 25: Installation- Click on “Install” to continue

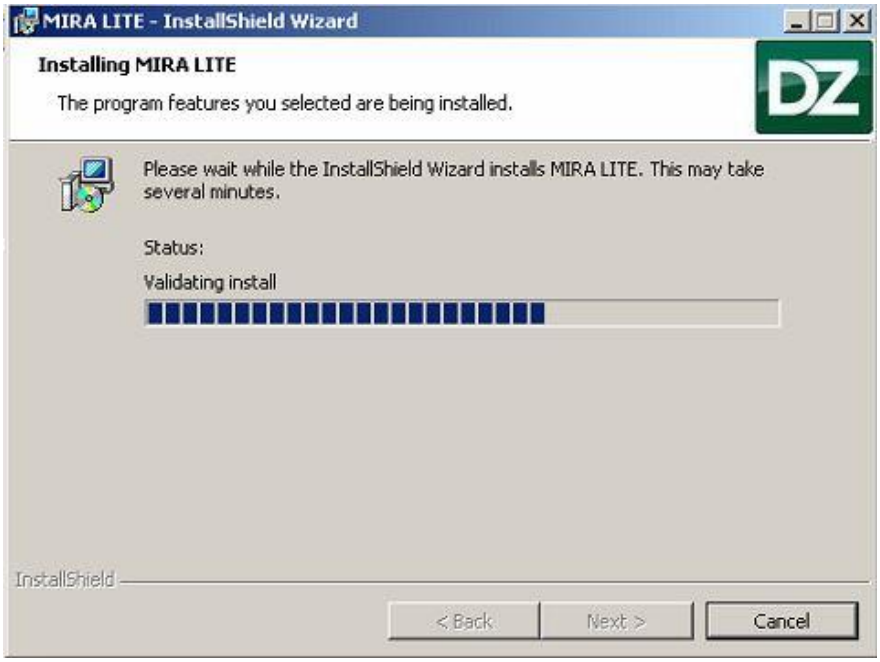

Figure 26: MIRA LITE Installation- In progress

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17. Read the machine information and click on **'Next'** to continue.

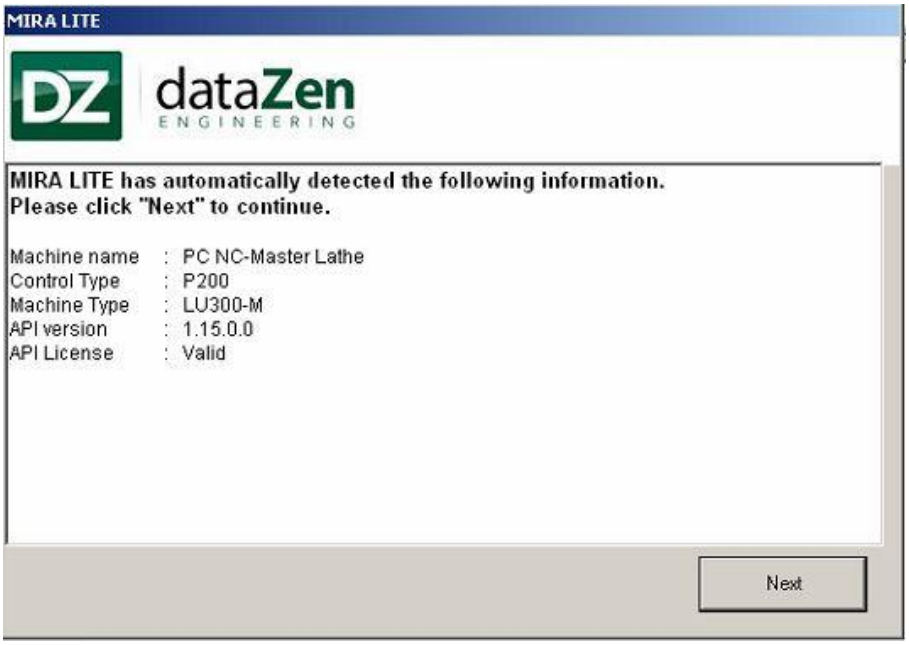

Figure 27: MIRA LITE Installation- Machine details

18. MIRA LITE Service gets added to the THINC Startup Service monitor.

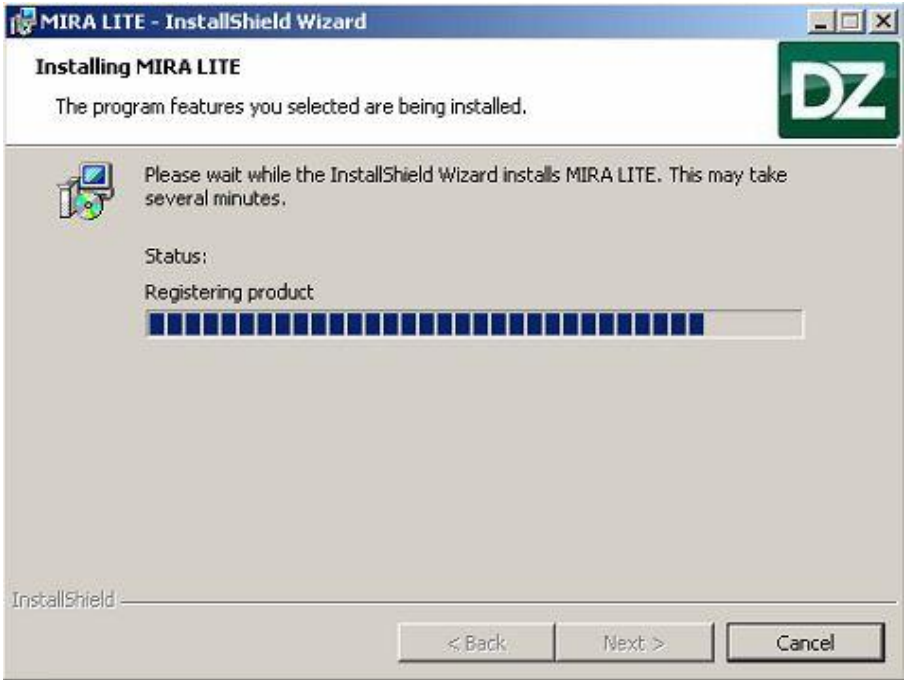

Figure 28: MIRA LITE Installation in process

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19. MIRA LITE Services gets added to the THINC Startup Setting panel.

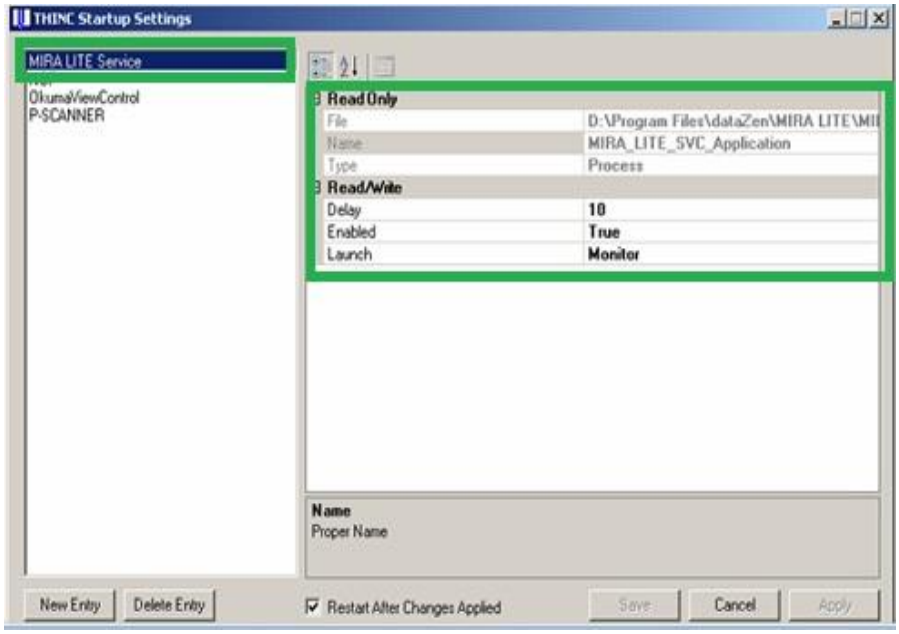

Figure 29: THINC Startup Service

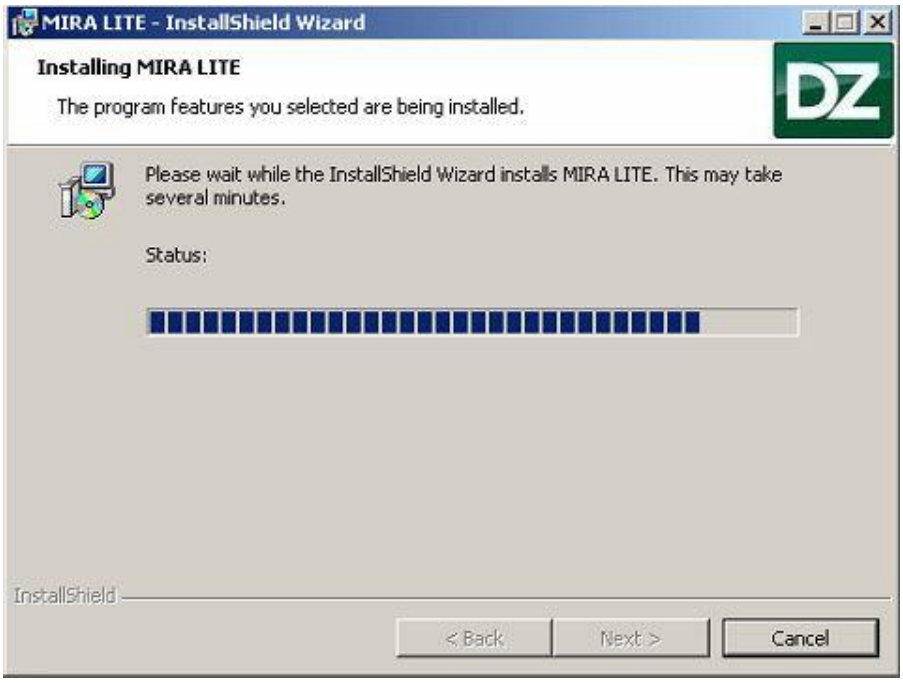

Figure 30: MIRA LITE Installation- In Process

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20. Click on **'Finish'** to complete the installation.

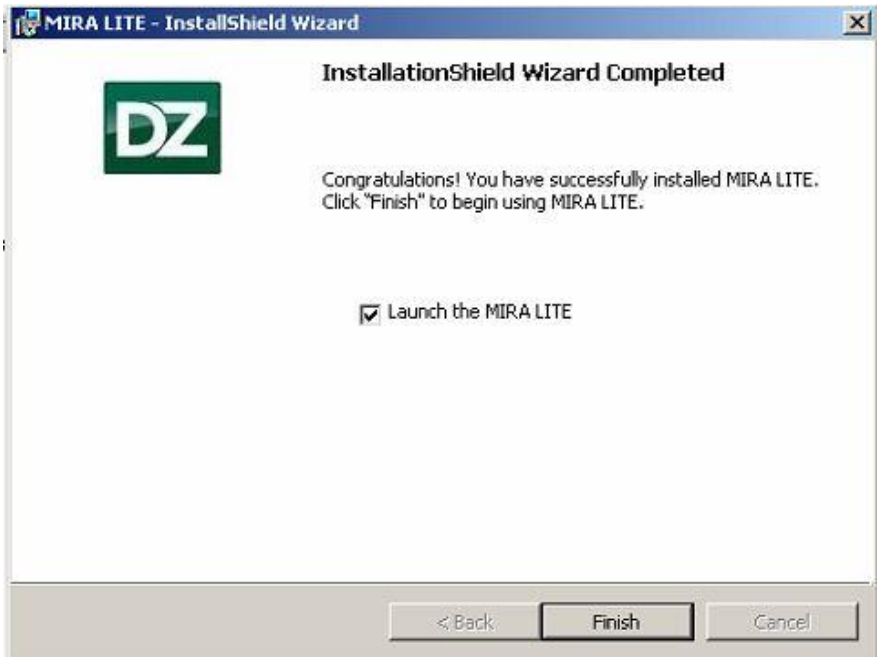

Figure 31: MIRA LITE Installation Complete

21. After "Launch the MIRA LITE" checkbox is checked, the application gets launched automatically and the home page of MIRA LITE appears.

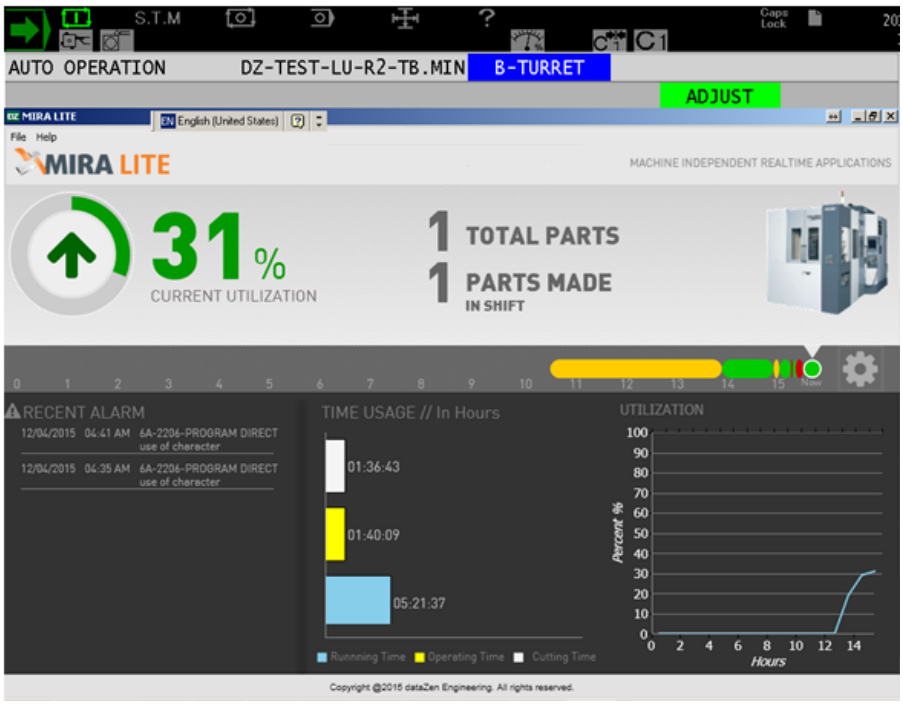

Figure 32: MIRA LITE Application-UI

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3.2.1 Installation Verification

1. Click on the 'MIRA LITE' key located on the Vertical Menu Bar to launch the application.

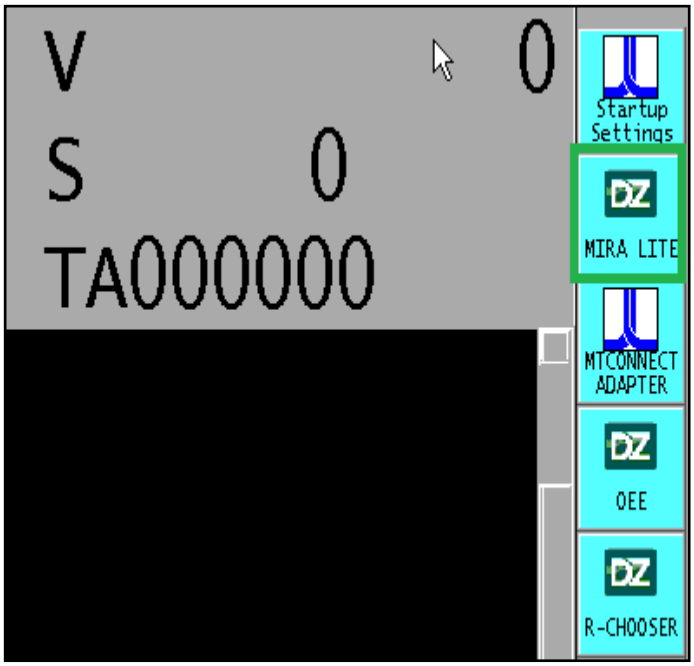

Figure 33: Installation Verification 1

2. The application can also be launched from the start menu.
3. Go to "Start→All Programs→dataZen→MIRA LITE→MIRA LITE

Figure 34: Installation Verification-2

Note: *For the first time use of MIRA LITE, a 30 day trial license is provided. Once the trial license has expired, follow the licensing procedure in* *Section 5.1 License**.*

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3.3 MIRA LITE Upgrade Process

Upgrade MIRA LITE to a newer version includes copying data from a previously installed version. To upgrade the MIRA LITE Version 2.0.0.0 over MIRA LITE Version 1.0.0.0, follow the steps below:

Note: *Before starting the MIRA LITE upgrade process, it is mandatory that* ***"Machine Cycle is stopped before Upgrade(s)***

1. Double click on the MIRA LITE Setup Installer to start the upgrade process.

Figure 35: MIRA LITE Upgrade-Installation Wizards

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2. Read the **Read-Me** information and click on **Upgrade**.

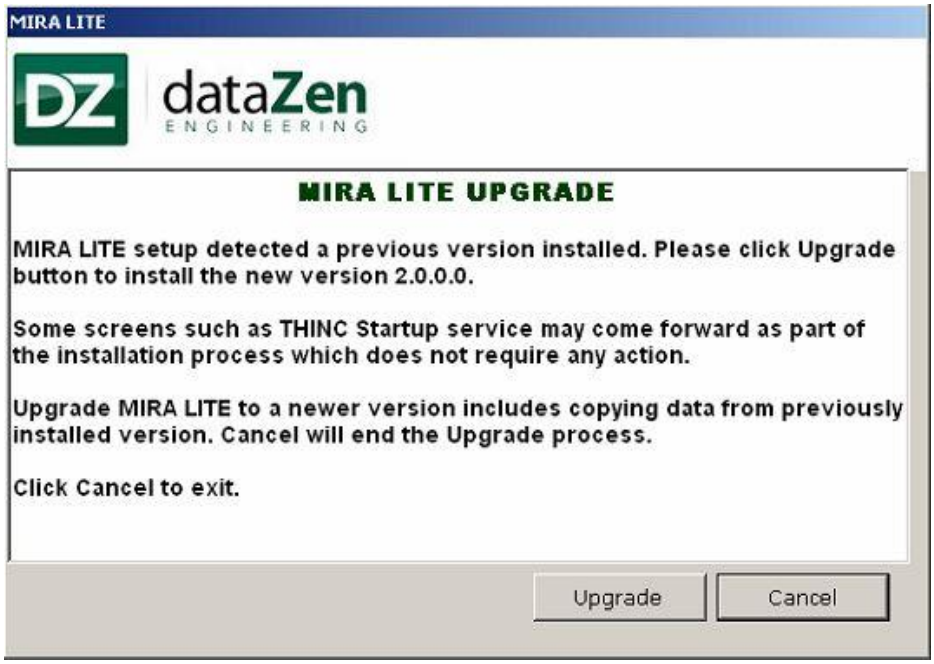

Figure 36: MIRA LITE Upgrade- Read Me

3. Please click "Next" button to proceed with the installation of MIRA LITE.

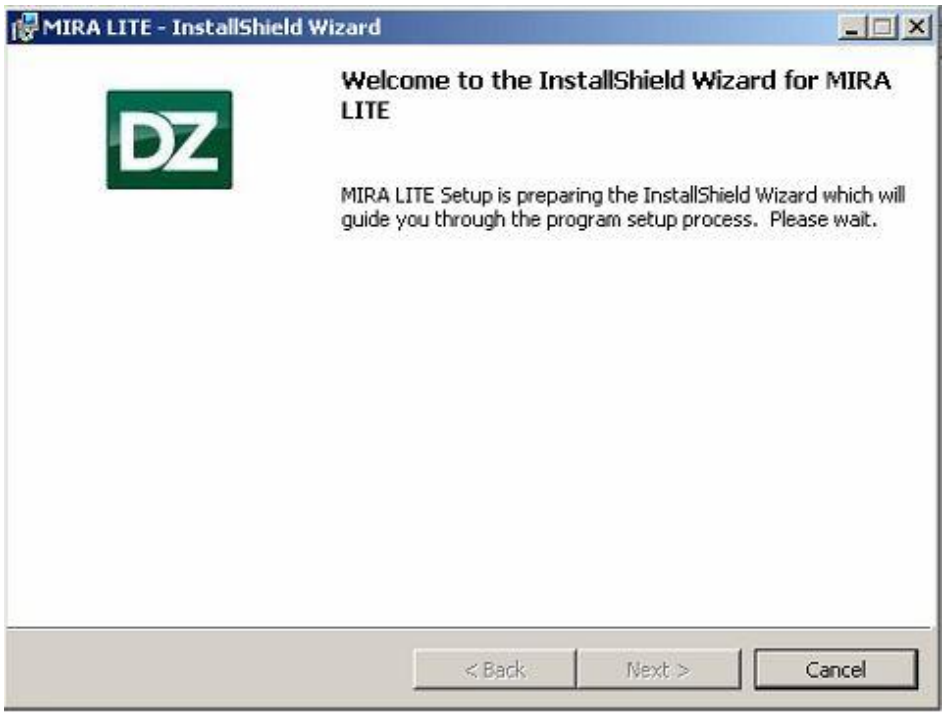

Figure 37: MIRA LITE- InstallSheild Wizard

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4. Click on ‘Next’ to continue with the installation.

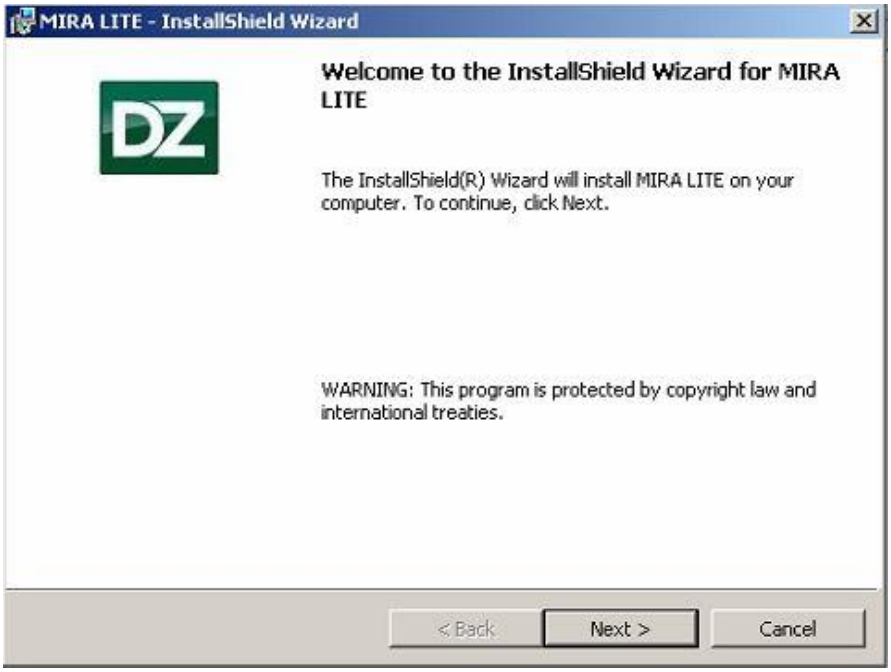

Figure 38: MIRA LITE Installation

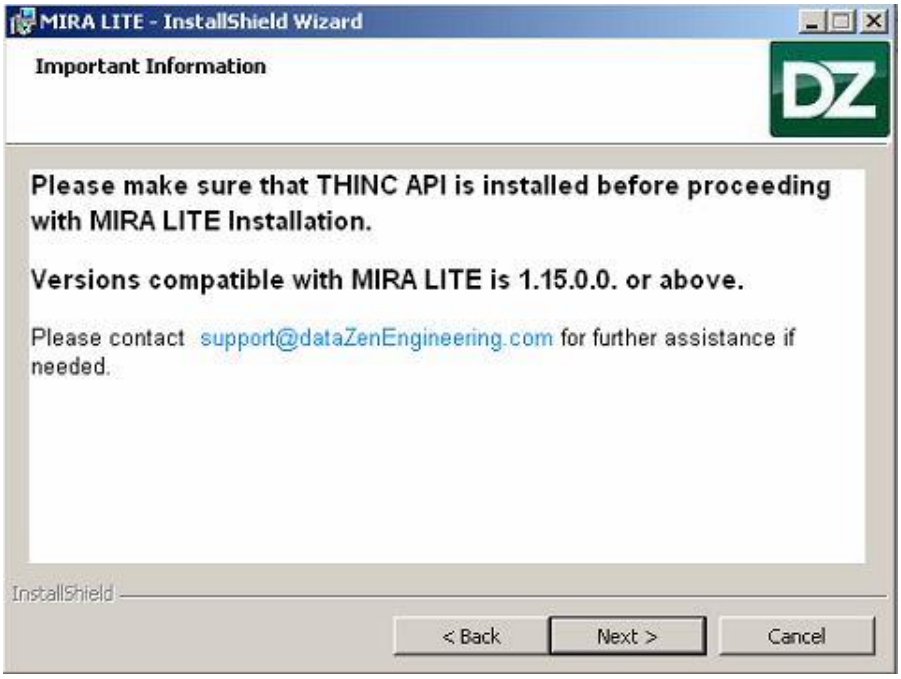

Figure 39: MIRA LITE Installation- Confirm Prerequisites

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5. Please enter the User Name and Organization.
6. User Name can be Machine name, Operator name, etc. and Organization should be the company name.

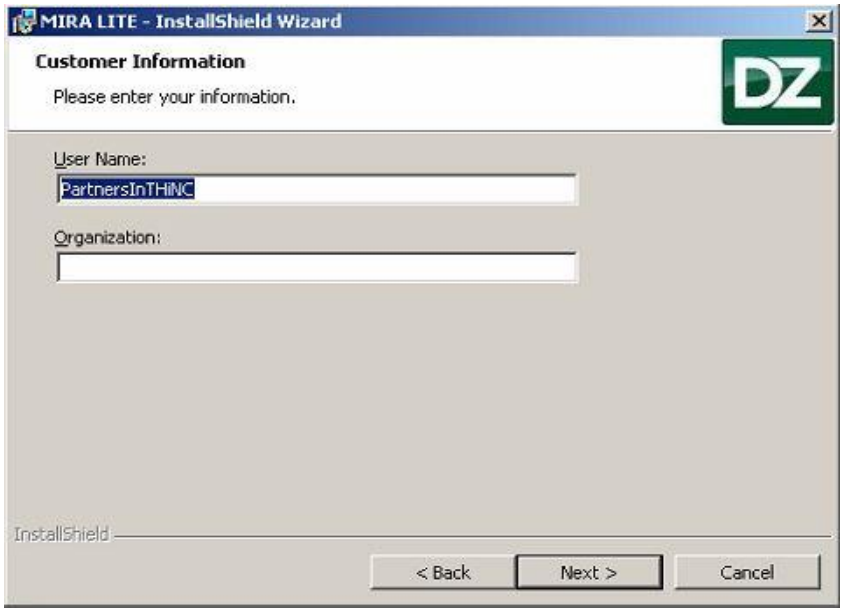

Figure 40: MIRA LITE Installation-User Configuration

7. The default location for MIRA LITE application installation is "D:\Program Files\dataZen\MIRA LITE\". The user may change the installation location by click on the Browse button and selecting the desired location of installation and then click 'Next' to continue installation.

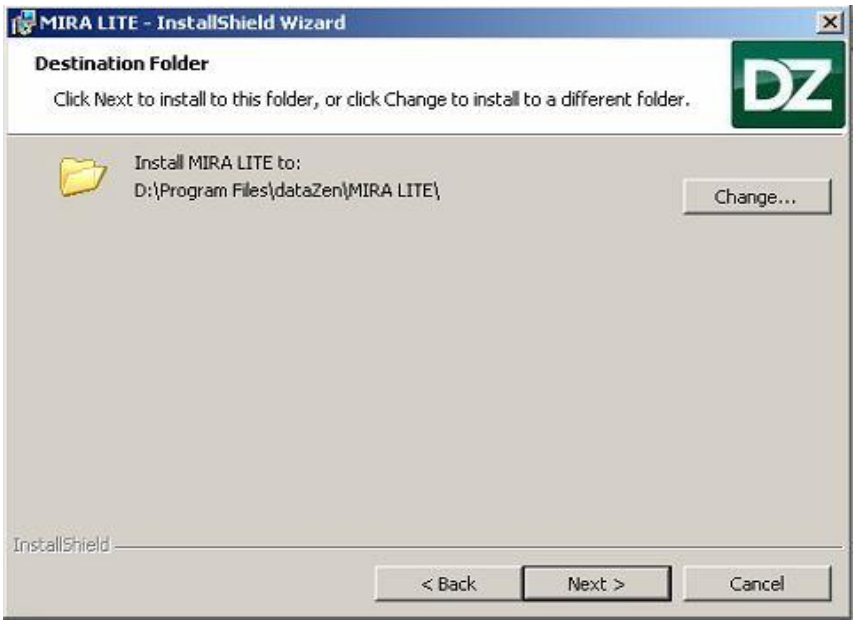

Figure 41: MIRA LITE Installation- Select installation folder

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8. Click on “Install” to continue the installation.

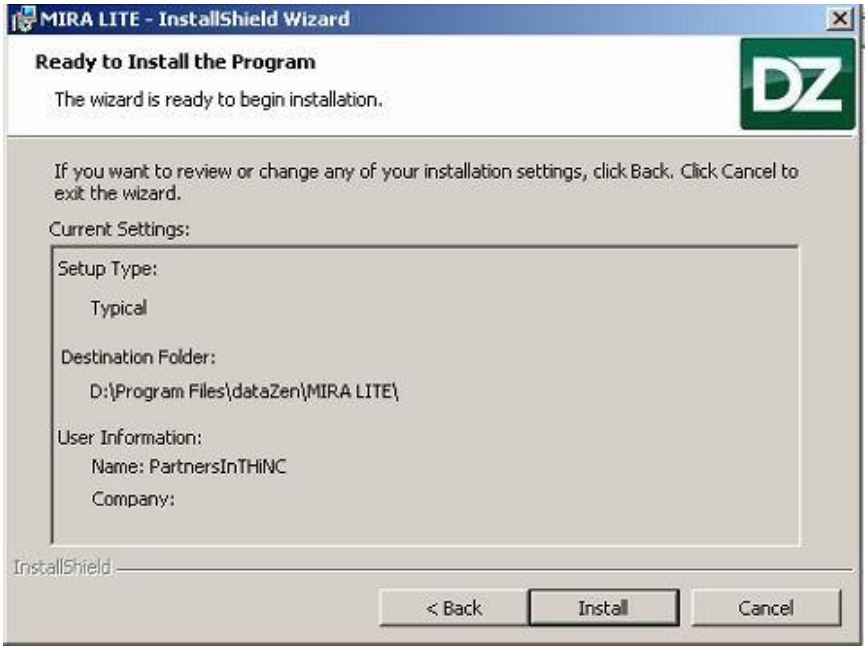

Figure 42: Installation- Click on “Install” to continue

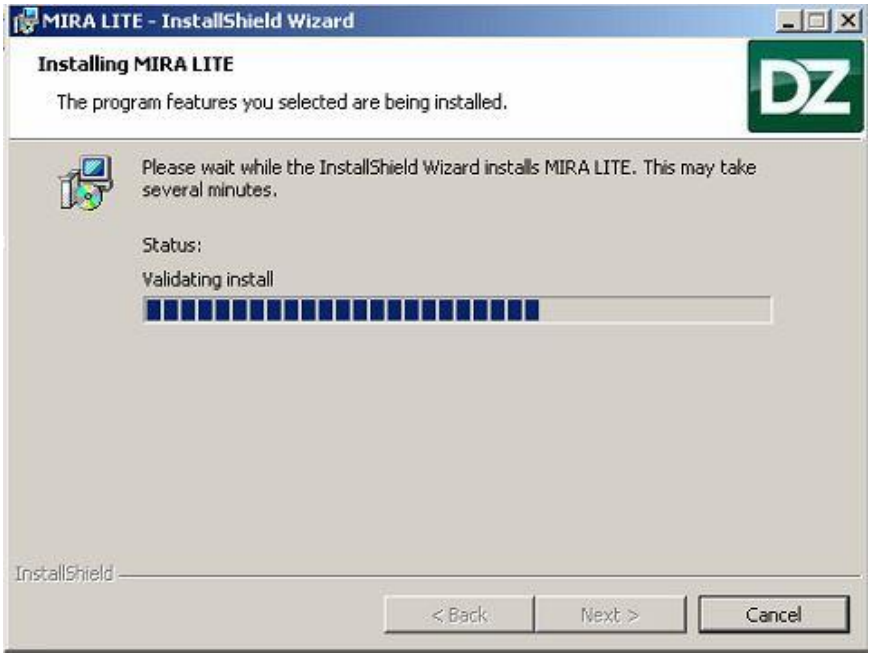

Figure 43: MIRA LITE Installation- In progress

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9. Read the machine information and click on ‘Next’ to continue.

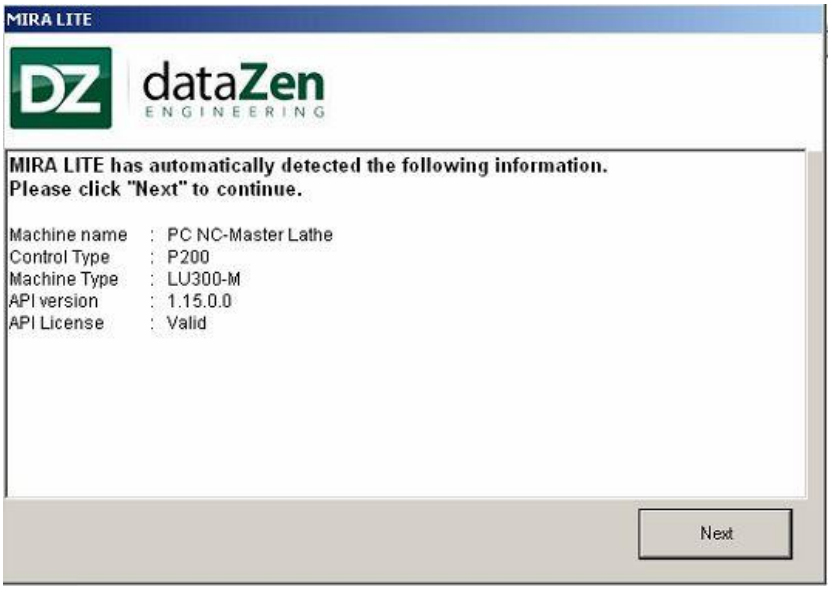

Figure 44: MIRA LITE Installation- Machine details

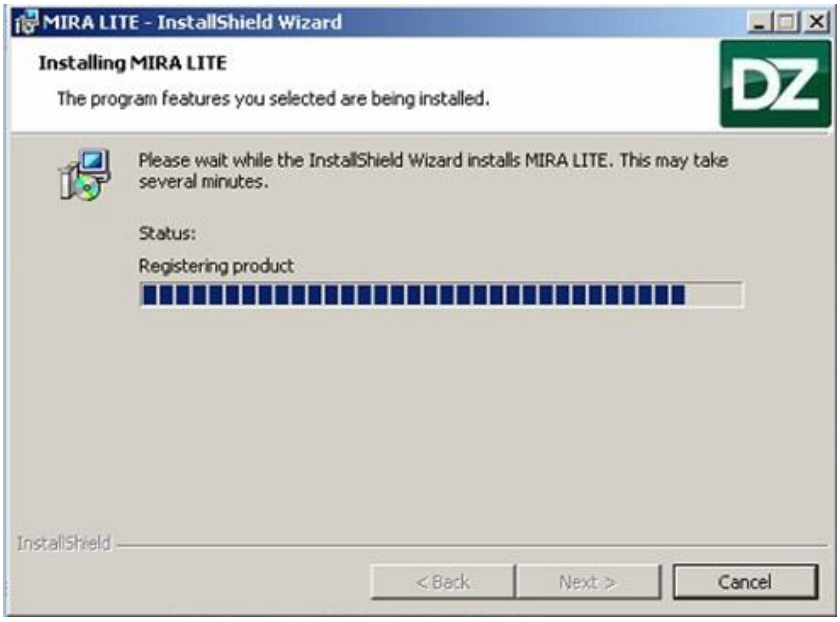

Figure 45: MIRA LITE Installation- In progress

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10. MIRA LITE Service gets added to the THINC Startup Service monitor.

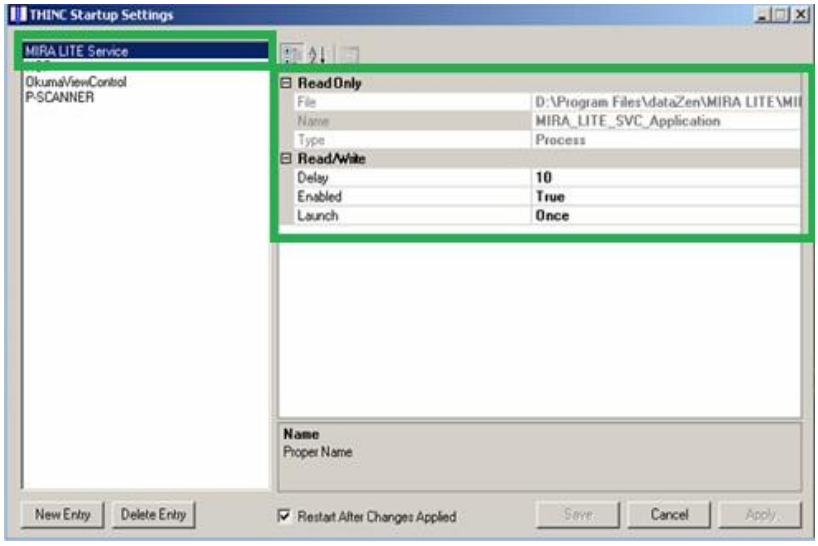

Figure 46: THINC Startup Setting

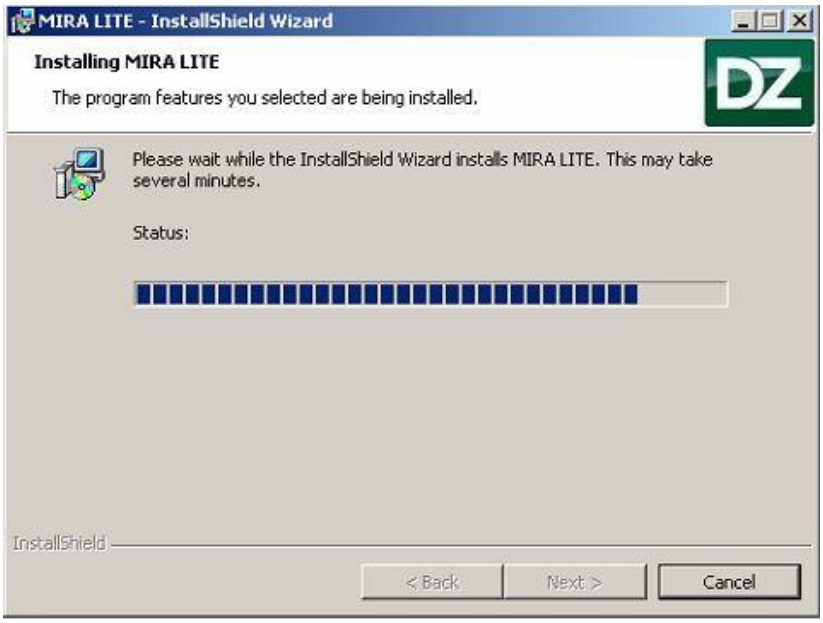

Figure 47: MIRA LITE Installation process

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11. Click on ‘Finish’ to complete the installation.

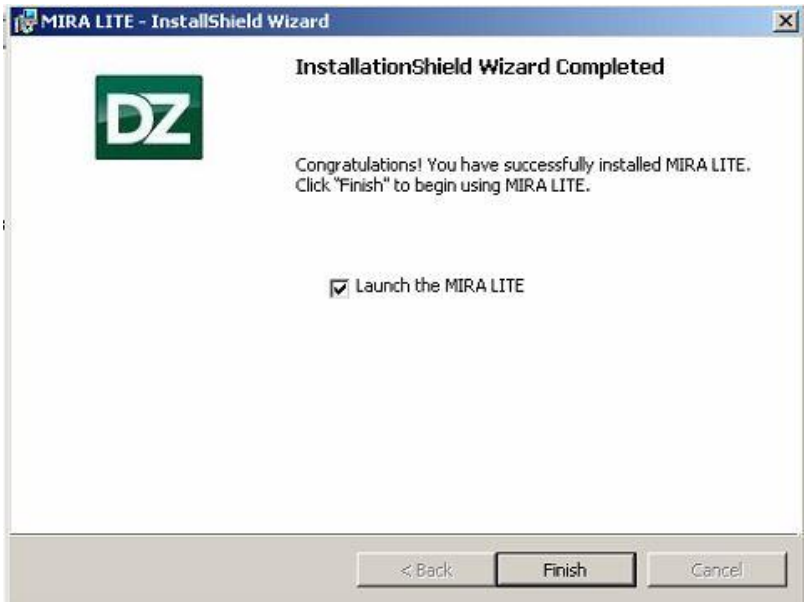

Figure 48: Installation Complete

Note: *If the Upgrade Process is interrupted, click on Finish and start a fresh installation of MIRA LITE.*

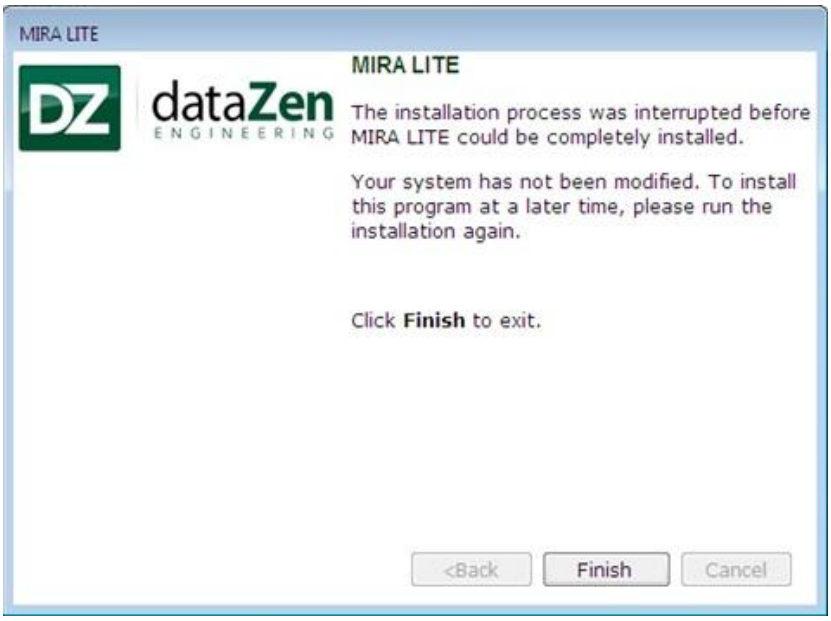

Figure 49: MIRA LITE Upgrade interrupts-Finish

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3.4 Uninstallation Process

3.4.1 MIRA LITE Uninstallation

1. Go to Start→Control Panel and double click on **"Add or Remove Programs"**

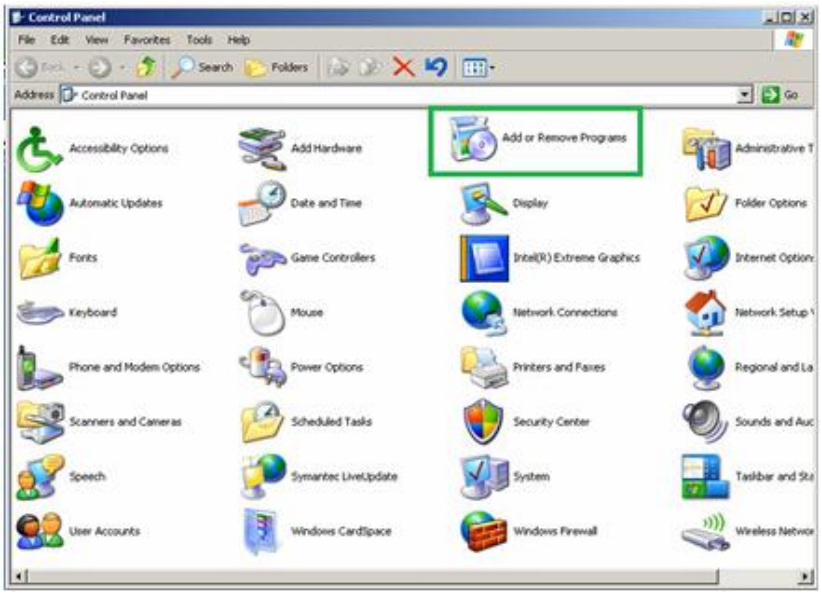

Figure 50: Uninstall MIRA LITE-1

2. Select "MIRA LITE" from the list and click on "Remove".
3. MIRA LITE should uninstall normally.

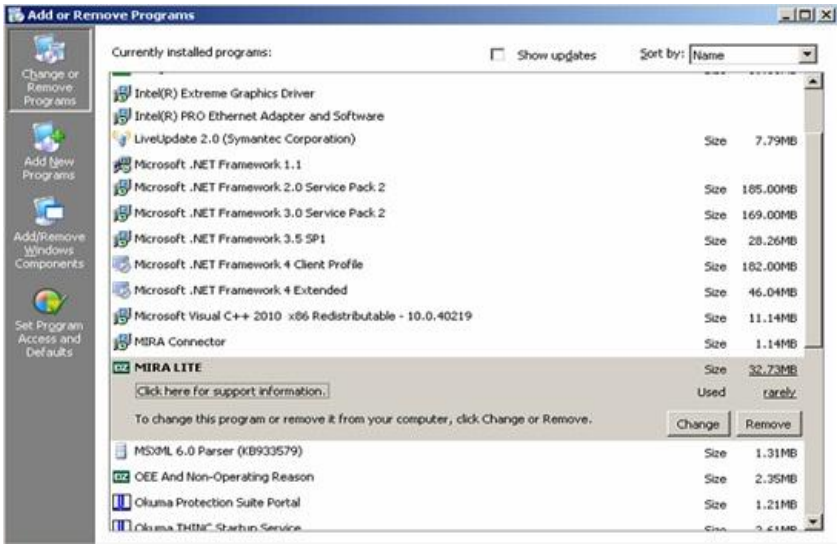

Figure 51: Uninstall MIRA LITE-2

4. If the program is not working properly, click on **'Repair'** to re-install otherwise click on **'Close'** and continue with uninstallation of MIRA LITE.

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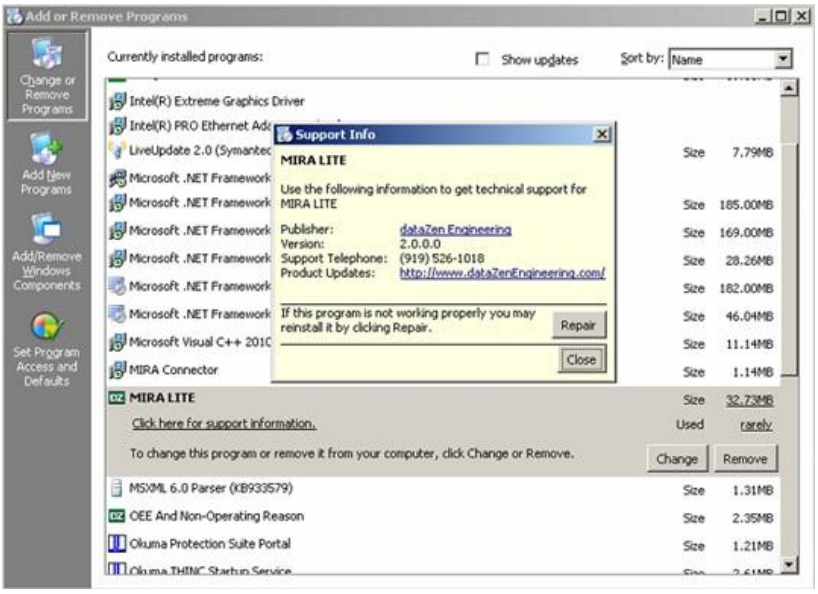

Figure 52: Uninstallation - Support Info

5. Click on **YES** to un-install MIRA LITE completely.

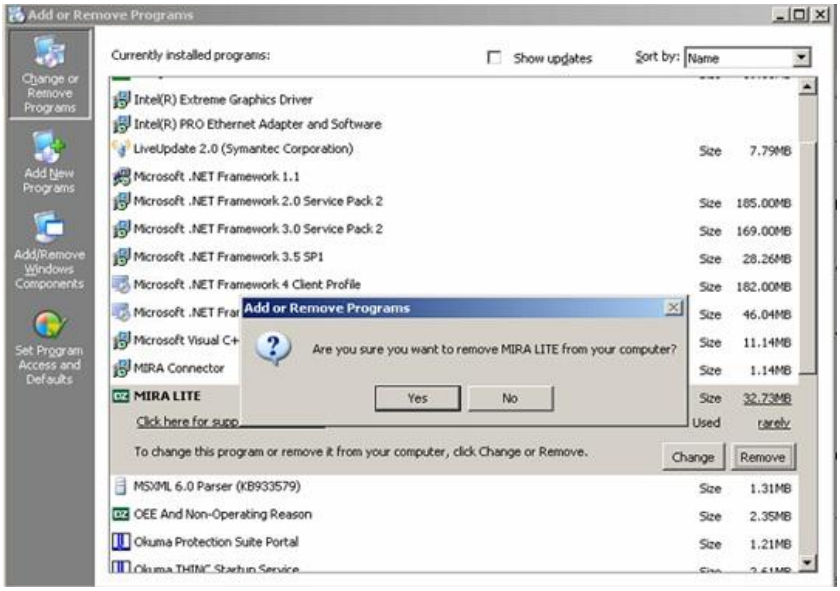

Figure 53: MIRA LITE Uninstallation Confirmation

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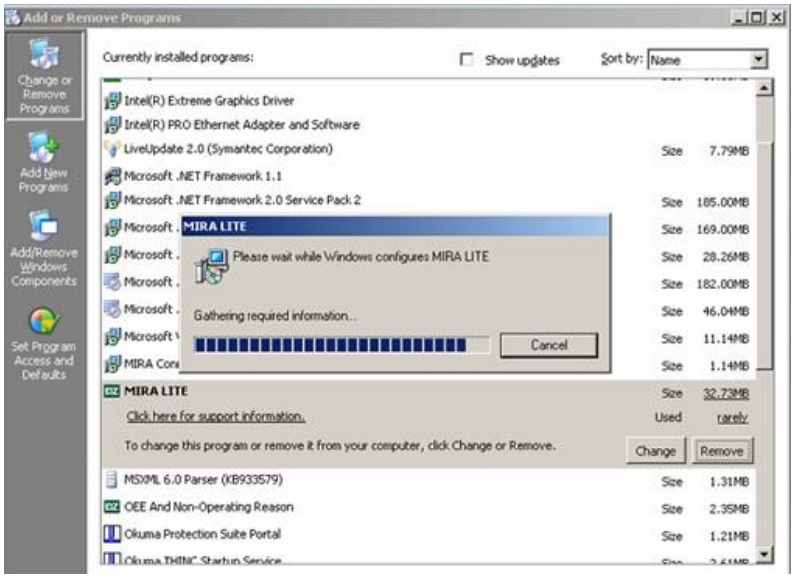

Figure 54: Uninstallation Complete

Note: *1. MIRA LITE service will be removed from THINC Startup service automatically.*

2. MIRA LITE Prerequisites will not be uninstalled if MIRA LITE is uninstalled from the machine, Please uninstall prerequisites manually.

Follow the steps below to uninstall the prerequisites:

3.4.2 Microsoft Visual C++ 2010 Uninstallation

1. Go to Start→Control Panel and double click on "Add or Remove Programs"
2. Select "Microsoft Visual C++ 2010 Redistributable Package" and click on "Remove" Button as shown in the figure below.
3. Microsoft Visual C++ 2010 Redistributable Package should uninstall normally.

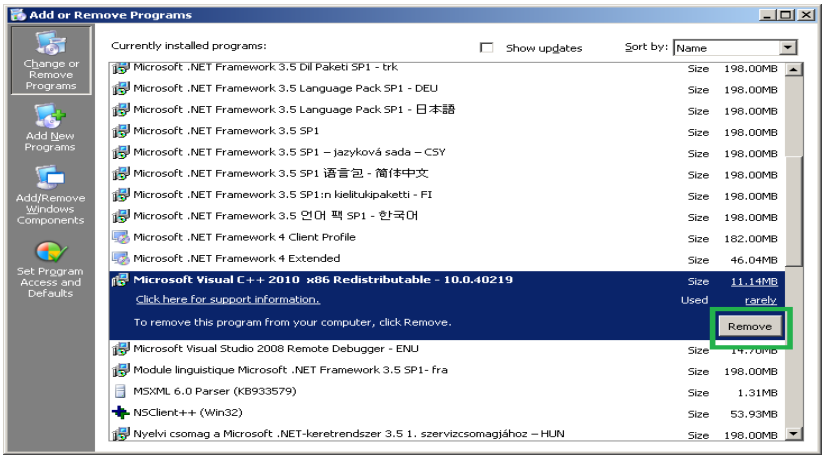

Figure 55: Microsoft Visual C++ 2010 Uninstallation

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3.4.3 SQLite Uninstallation

1. Go to Start→Control Panel and double click on “Add or Remove Programs”
2. Select “System.Data.SQLite v1.0.94.0” and click on “Remove” Button as shown in the figure below.

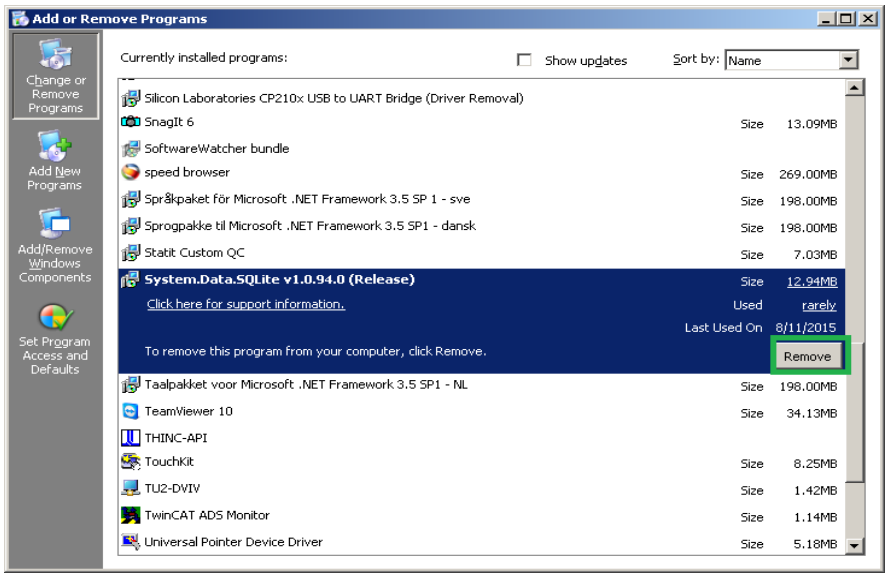

Figure 56: SQLite Uninstallation-1

3. SQLite should uninstall gradually.

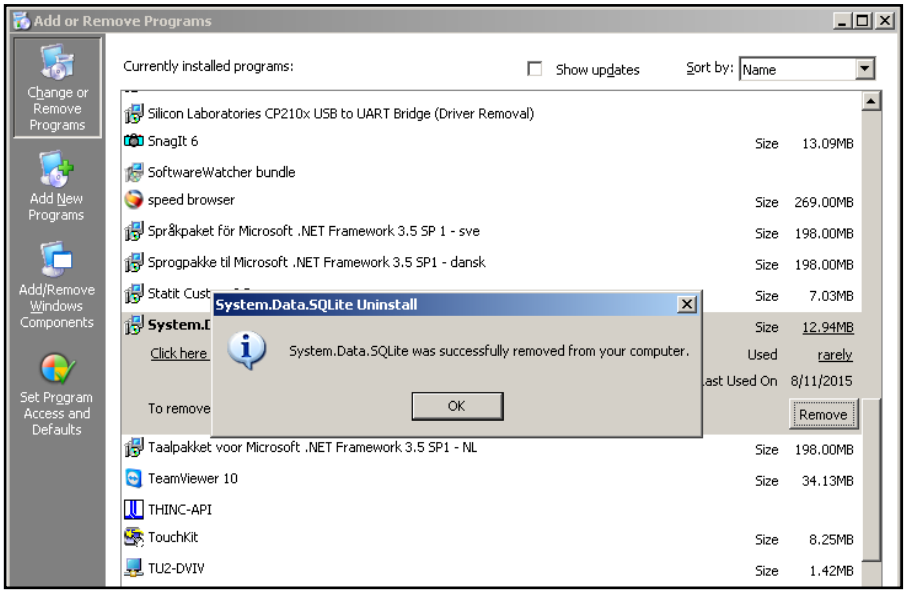

Figure 57: SQLite Uninstallation-2

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4 Using MIRA LITE

This section describes the user interface plus actions and functions for reference by the user.

4.1 Machine Status

The operator can see machine current status in different color codes

1. Machine current status will be shown on the machine image background and "CURRENT UTILIZATION" box background as shown in the figure below.

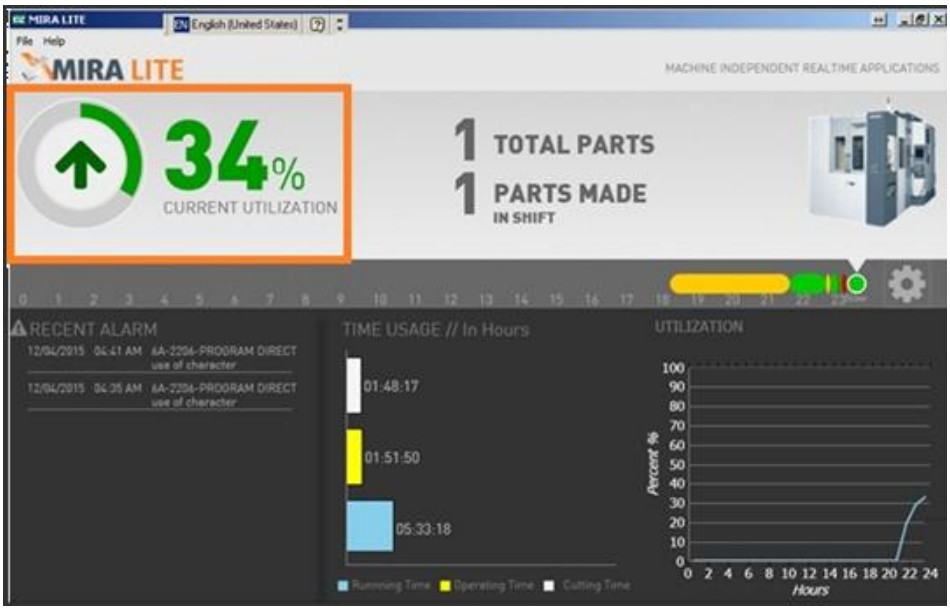

Figure 58: Machine Status

Color codes:

Green: Running

Yellow: Program Stopped

Red: Alaram

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2. The user will be able to see the time if the machine is in Operating, Alarm or Program Stop mode.
3. Position the cursor over the color strip to check the time the machine is in Operating, Alarm, or Program Stop mode, as shown in the figure below.

Figure 59: Machine Status Time

4. For B-Level Alarms MIRA LITE will show the alarm state, however the program may be running on the machine. E.g. “2206 ALARM-B Battery out of life” as shown in the below figure
5. Even if the machine state shows alarm, but still it will update the utilization and parts produced details on the window.

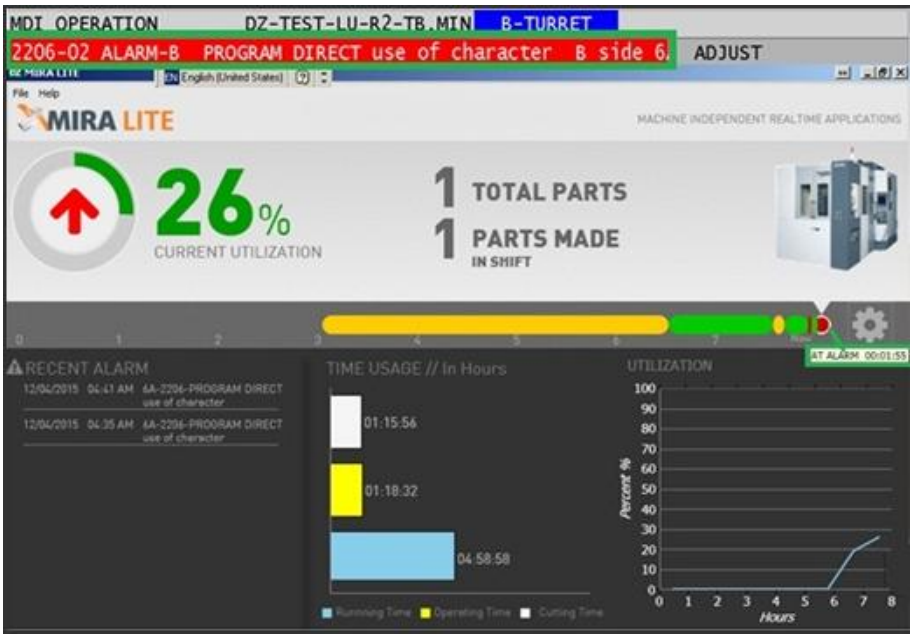

Figure 60: B-Level Alarms

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4.2 MIRA LITE Service

MIRA LITE Application runs the background windows startup service which collects the data from the machine and display it on the application window.

MIRA LITE Services gets added to the THINC Startup Settings after the successful installation of MIRA LITE.

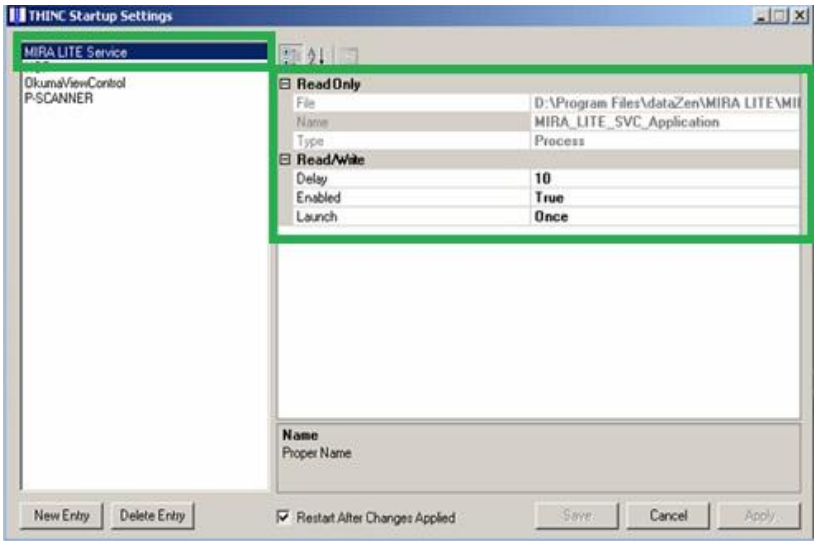

Figure 61: MIRA LITE Service in THINC Startup Settings

Service Status:

MIRA LITE service status can be checked on the THINC Startup Setting window.

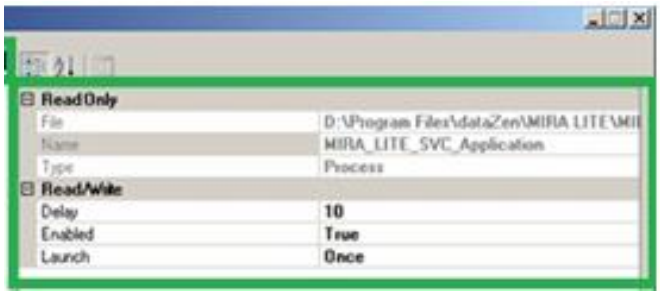

Figure 62: MIRA LITE Service Status

1. If the MIRA LITE Service status **"Enabled = True",** MIRA LITE Services are started and the data are collected.
2. If the MIRA LITE Service status **"Enabled = False"**, MIRA LITE Services are stopped and the data are not collected.

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4.3 Operation Time

1. Machine operation time will be shown on the left panel of the application in graphical format as shown in the figure below.
2. The graph will show total running time, operating time and the cutting time for selected duration.
3. By default, the duration is set to 24hrs. To change the duration to 8, 12, or 16 hours, respectively, click on **"Setting"** icon and select the appropriate option.
4. To check the current Operation, Non-Operation and Alarm time, position the mouse cursor over the application status bar (color codes) on the top of the application.
5. Operation time chart and total parts will be refreshed per selected duration.

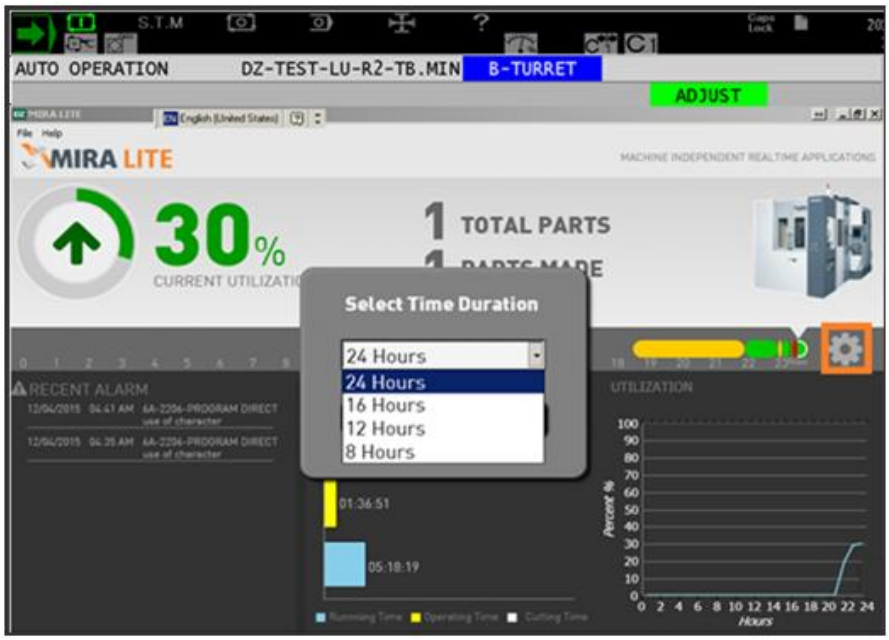

Figure 63: Operation Time

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4.4 Produced Parts

4.4.1 Total Parts

1. Total parts produced will be shown in the center of the application window.

4.4.2 Parts made in the shift

1. This section will show the total parts produced for the selected shift duration as shown in the figure below.
2. The Operator can change the duration by clicking on **"Setting"** button. Part counts will be refreshed per the selected duration as shown in the figure below.
   a. For 24 hrs. duration.

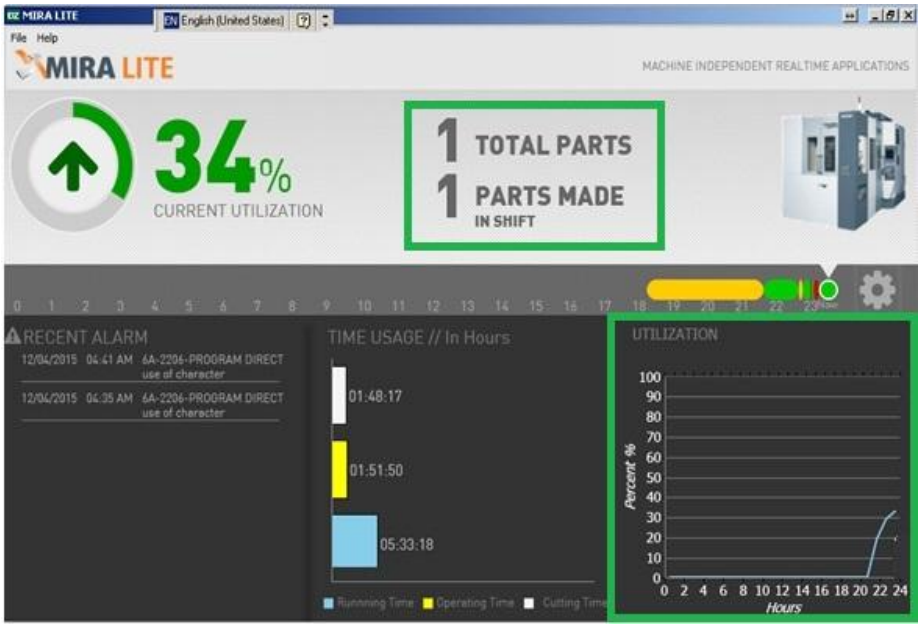

Figure 64: Total Parts Produced

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b. For 16 hours duration, part count value and other details on the MIRA LITE window are updated as per the duration selected.

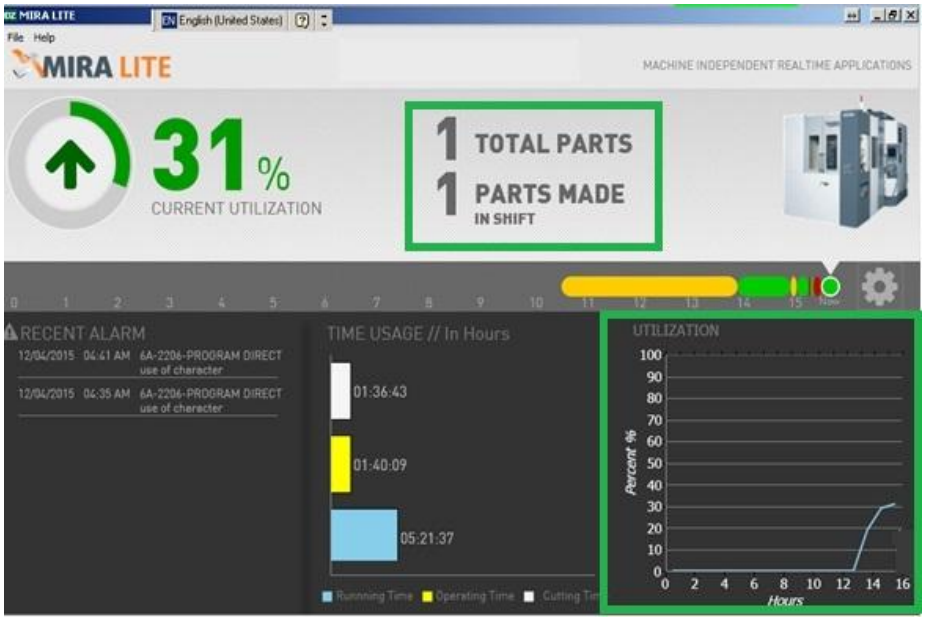

Figure 65: Select 16 hours duration

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4.5 Current Utilization

1. Current machine utilization is displayed in the left corner of the application in the form of a %.
2. It will be changed as per the duration selected.
3. The machine utilization graph is displayed on the right side of the application window.

Figure 66: Current Utilization

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4.6 Export to PDF/JPEG

1. To export the shown reports and graphs, click on **File→Export→PDF/JPEG**

Figure 67: Export to PDF/JPEG

2. Select the file format from the "Save as" dropdown list, e.g. JPEG or PDF.
3. By default the report file name is set to "Machine Name Month-Year-current date-current time' user can rename the report as per convenience.
4. Select the location to save the file and click on **'Save'**.

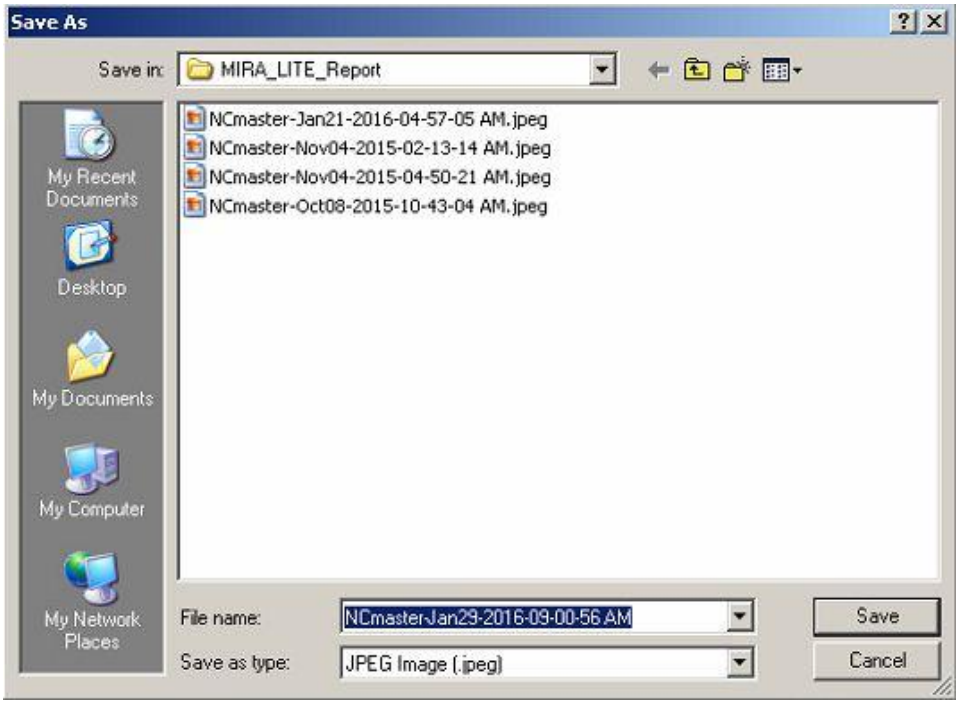

Figure 68: Save the report

Note: *By default report will be stored under* ***"D:\dataZen\MIRA_LITE_Report"*** *folder; User can change the location as per convenience.*

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5 Help

5.1 License

5.1.1 Get License

1. To get the license for MIRA LITE, click on “Help” in menu bar and then click on “License”

Figure 69: Get License

2. Click on “Get License” and email the ‘Hardware ID’ to dataZen at licensing@datazenengineering.com

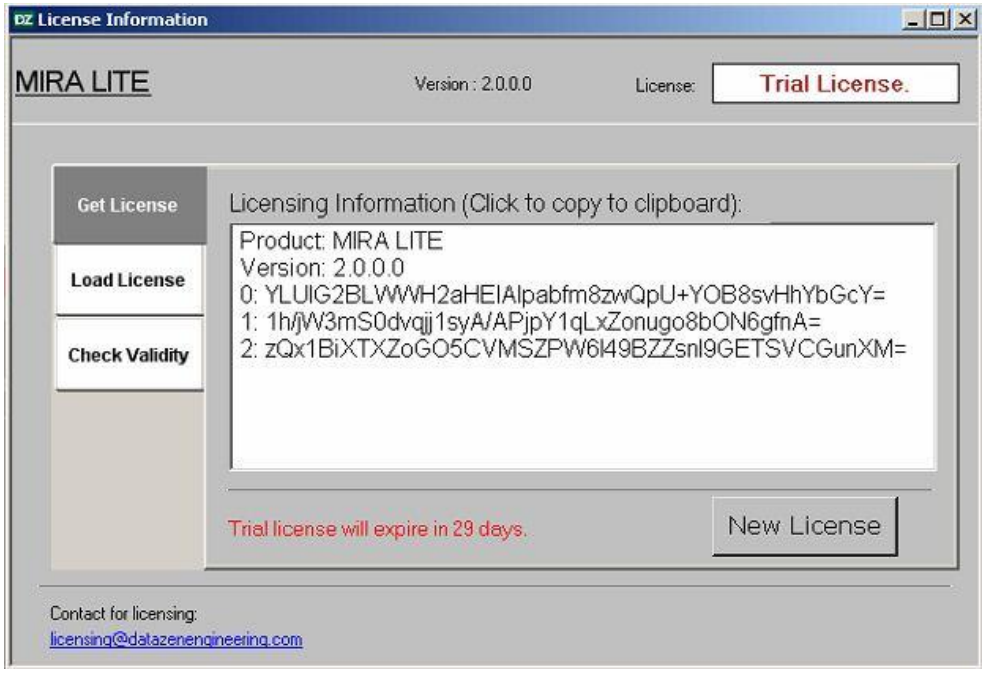

Figure 70: Send Hardware ID to dataZen

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5.1.2 Load License

1. To load the license, open “License Information” window in “Help” menu and click on “Load License”.
2. To browse the license file, click on “Load License” button, select the file and click on “Open”.

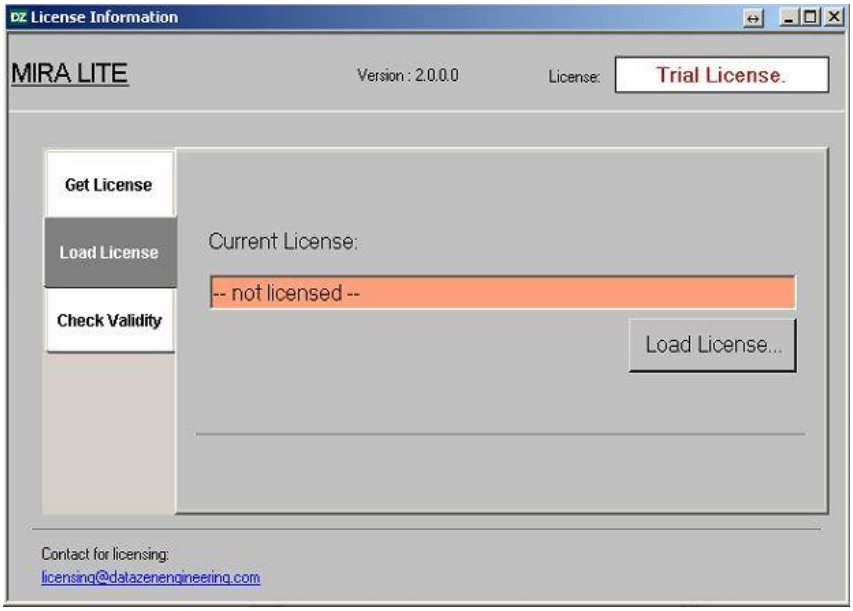

Figure 71: Load License

Note: *User must restart the application to register the application.*

5.1.3 Check Validity

1. To check the license validity click on “Check Validity”.

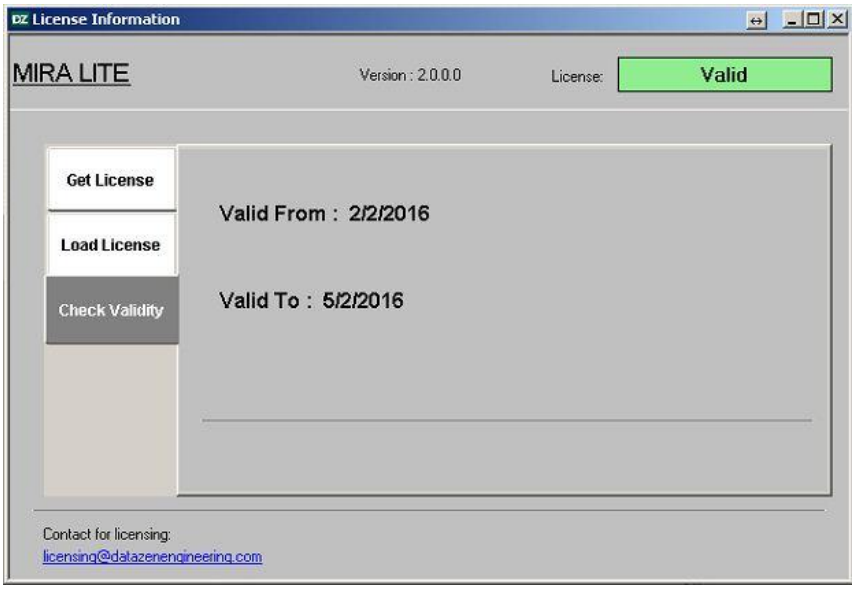

Figure 72: Check License Validity

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5.1.4 About

1. To check the MIRA LITE application version, click on “Help” and then click on “About”.

Figure 73: Check Application version

2. ‘About’ window will display the application version and application information.

Figure 74: Check Application Version

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6 Frequently Asked Questions

1. **What is MIRA LITE?**

   Answer: MIRA LITE is built on a scalable technology from dataZen Engineering, it automatically collects and monitors Machine Operational Status, Alarms, Utilization, Parts Produced and Availability from the control at the machine level. MIRA LITE doesn't require a server or network connection and runs directly to the P-control.

2. **What CNC controls will MIRA LITE work on?**

   Answer: Currently MIRA LITE will work on Okuma P100 II, P200 and P300 controls.
   Technical Specifications are:

   - THINC API (Lathe or Machining Center) Version 1.15.0.0 and above.
   - .NET Framework 4.0
   - OSP Controls (P-100 II / P-200 / P-300)
   - Scalable to connect other controls

3. **Will MIRA LITE work on other controls?**

   Answer: Current version, 2.0 is intended to work with Okuma CNC controls only. However, it is designed to work with other CNC controls such as Mazak, DMG Mori Seiki etc. in subsequent versions. MIRA LITE comes with a plug-in manager that will allow other CNC controls to be supportive.

4. **Does MIRA LITE require a dedicated server or CNC controls to be networked?**

   Answer: MIRA LITE is designed specifically to work on the CNC controls with operator efficiency in mind. However, a version called MIRA PLUS is in the works that will support CNC controls that are networked to a dedicated or virtual server.

5. **Where can I find or download MIRA LITE?**

   Answer: MIRA LITE can be downloaded from
   http://www.datazenengineering.com/products/product-offerings/mira/mira-lite/
   Here you can find the MIRA LITE installer, datasheet and user manuals, etc.

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6. **Do I need to purchase an additional Machine option for Okuma CNC controls for MIRA LITE to work?**

   Answer: The only software that is needed for MIRA LITE to work in this version 2.0 is the Okuma THINC API (Lathe or Machining Center) Version 1.15.0.0 and above. Please see the Technical Specifications for more details. Subsequent versions will include MTConnect or CNC control specific API support.

7. **Do I need to configure anything after MIRA LITE is installed on the CNC control?**

   Answer: No, MIRA LITE is designed to work as soon as it is installed with no additional configuration needed. However, to add any data points beyond what is seen on the application screen will require customization. Please contact sales@dataZenEngineering.com with a request and a quote will be provided based on the specific requirement.

8. **What to do if there is an error on the control screen and whom to contact?**

   Answer: MIRA LITE has gone through very rigorous Quality Assurance Process. However, it is understandable that certain events could trigger within the Windows Operating System that could potentially impact the application behavior. In the event the error is related to MIRA LITE application, please send an email to support@dataZenEngineering.com with a screen capture of the error. A ticket will be created to respond in a timely manner. A more detail analysis may be required, including obtaining the Windows event logs and the application logs.

   For all other CNC control related issues, please contact your local distributor who supplied the Machine w/ CNC control.

9. **What is THINC API and how to obtain it?**

   Answer: API stands for Application Programming Interface. For more information on THINC API, please visit http://www.okuma.com. Contact your local Okuma Distributor for installation and support of THINC API.

10. **I see the machine operational data within the MIRA LITE application, can I export it?**

    Answer: Yes, MIRA LITE comes with an export feature that allows the screen with machine operational data to be exported into PDF and JPEG format. In that process MIRA LITE allows the actual CNC Control name to be displayed with date time information appended. Please follow section "Export to PDF/JPEG"

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11. I see a link to download MIRA LITE. Can I download the application and pay online?

Answer: Yes. You can download MIRA LITE full version 30-days trial license from http://www.datazenengineering.com/products/product-offerings/mira/mira-lite/.

Once downloaded to your PC or laptop, simply copy the installer to a USB key. Then install MIRA LITE on your Okuma CNC control. You will also need to make sure to have the correct version of THINC API running. Note: See the Technical Specification for MIRA LITE.
When you are ready after the trial period you can simply send us the license key code at licensing@dataZenEngineering.com. A new license file will be generated specific to the CNC control. That's it. *Please refer the "Quick Start Guide on MIRA LITE" for more information.*

12. Where can I see application logs and the log file location?

Answer: MIRA LITE maintains the application logs in "MIRA LITELog.txt" file.
The log file will be stored in the application directory "D:\Program Files\dataZen\MIRA LITE"

13. I cannot launch the application. It is showing "Application has generated an exception that could not be handled" error message?

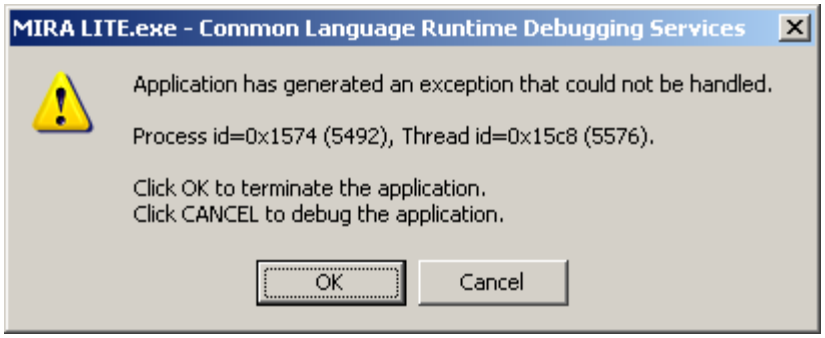

Figure 75: .Net Framework error resolution

Answer: Application shows above error message when one of the prerequisites .NET Framework 4.0 is uninstalled or corrupt. Please follow the steps to get this issue resolved.

1. Click on **OK** button on error message screen.
2. Open the MIRA installation folder and click on **SETUP.EXE**

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Note: Open the installer folder downloaded from dataZen website or provided by dataZen.

3. The installation wizard will search for the corrupt or uninstalled prerequisites and install it in the background.
4. Click on “Install” button to install .NET framework 4.0 and please wait till the installer will finish the installation.

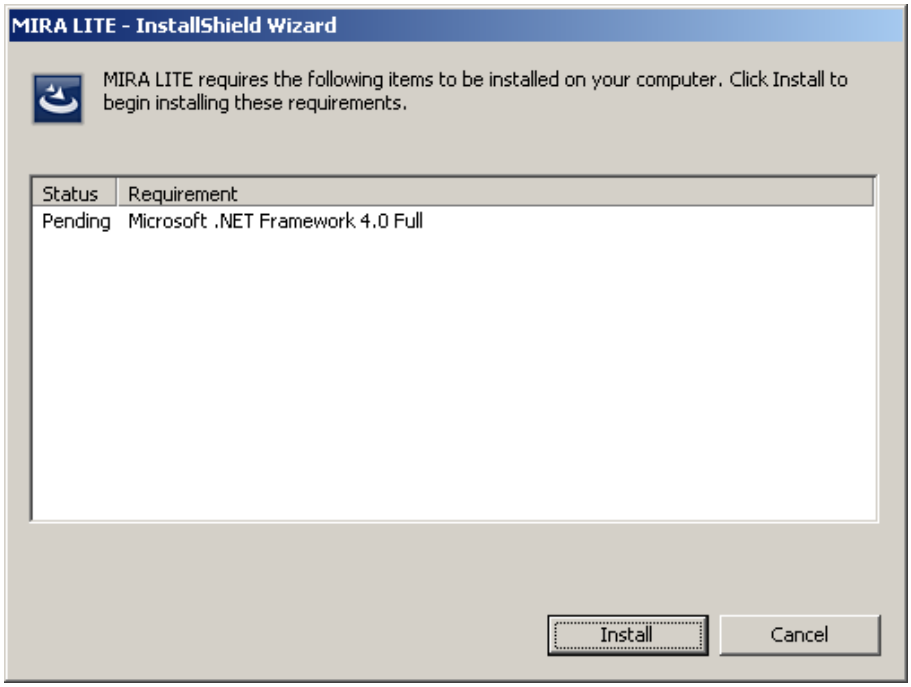

Figure 76: Installation of .NET Framework

5. Once the .NET Framework 4.0 installed successfully installer will continue with the MIRA LITE Installation. As MIRA LITE is already installed on the computer click on “Cancel” button and then click on Finish.

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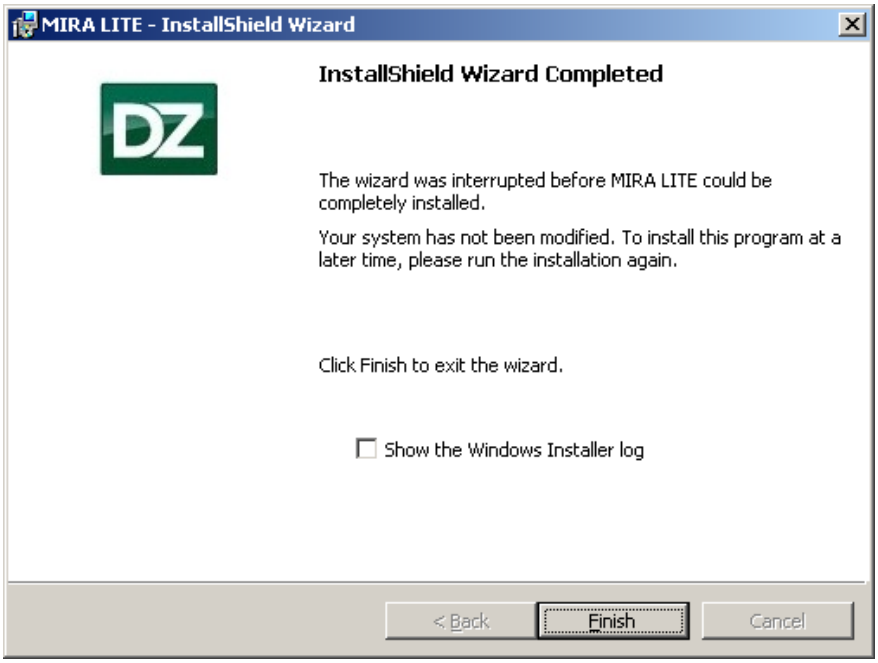

Figure 77: MIRA LITE Installation

After installation of .NET Framework 4.0 MIRA LITE application will work properly without any errors.

If the issue still persists or if you need any other assistance, please contact dataZen Support team at support@dataZenEngineering.com .

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