**Process Line Intersection Check – Perfect Intersections for Symphony Plus Operations**

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1. **Introduction**

Engineers involved in designing the process HMI graphics for various automation projects have to constantly meet with their customer expectations. A certain degree of perfection is required in every facet of the product being delivered. Modifications may include naming the various objects, performing width based operations or even changing the color of the background. With hundreds of files in each projects, making such changes often involves hours of strenuous work. To avoid the dual problems of making errors and to reduce the effort in correcting them, various software extensions are developed. These tools that help synchronize the work of the humans with the customer requirements while reducing the man hours involved are classified under UI Automation.

One such use case has been observed in the S+ Operations HMI graphics. There are quality issues and punch points related to the aesthetics of the HMI graphics. One of them is the alignment of the intersecting process lines. The intersection can be of two types as mentioned below.

Type-1: Intersection at the edges



Type-2: Intersection in between



But while developing the graphics there could be human errors with improper line intersection as shown in below example which may not be visible in view mode(unless Zoomed In).

Ex:

With reference to this, Process Line Intersection Check Tool has a solution which can quickly identify such errors and mark the points with a circle as indicated in the above example.

1. **Business Impact**

Improves the quality of the HMI graphics to be delivered to customer.

Can reduce the HMI graphics testing efforts.

1. **Advantages**

Simple and easy to use.

Good tool to expand the business opportunities with various global ABB affiliates.

1. **Features**

##### **Easy Check option**

This has a simple check button which marks a circle on all the process lines and pipes which do not intersect properly.

##### 

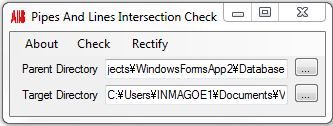
##### **Easy Rectification option**

This has support for to remove the circles that were added after the user is done with the correction.

1. **Technology / Software Platform**

ARTHA has been developed in C# programming language using Visual Studio.

1. **How it works**
2. Double click on the .exe file.



2. Click on the respective Browse buttons for setting the Parent directory and Target Directory

Parent Directory: Path where graphic files to be checked are placed

Target Directory: Path where tested files are placed after Check

3. Click on the Check tab to run the tool.

This will copy individual graphics files in the parent directory to the target directory and check for improper process line intersections.

4. After check is completed a message “Check Completed” is displayed.

5. Now open the files in the Target directory and correct the improper process line intersection.

NOTE: There could be marking made on other line intersection on objects which needs to be ignored. Only process line intersection should be checked and saved.

1. **Installation**

The application has no prerequisites.

1. **Acknowledgments**

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