In|Sync® kiosk

User Guide

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InSync Kiosk
User Guide

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Chapter 1

About the InSync Kiosk

About the InSync Kiosk

The InSync Kiosk provides you with direct access to functionality on the InSync Processor while at the cabinet. You can use it to confirm InSync Processor settings, change intersection configuration settings, and confirm camera views. It also allows you to access advanced InSync functionality and provide diagnostic information for troubleshooting problems at an intersection.

NOTE: To access the InSync Kiosk, you must attach a monitor and keyboard to the InSync Processor.

Chapter 2

Set up an InSync Processor

Set up an InSync Processor

After connecting all cables to the InSync Processor and turning on the InSync Processor, there are a number of steps that must be performed:

1. Set the network settings through the Network settings button.
2. Define the intersection and detections with the **Configure Detectors** button.
3. Confirm camera views through the **View** button.
4. Grab camera backgrounds through the **View** button (InSync/InSync:Fusion installations only).
5. Put the controller into recall.
6. Define the intersection's inputs and outputs through the **IO Test** button.
7. Verify the inputs are being received from the detectors and outputs are being sent to the controller within the IO Board Tester.
8. Take the controller out of recall.
9. Set the time, date, and/or time zone on the InSync Processor with the **Date/Time** button.
10. Set the GPS coordinates of the intersection, if necessary.
11. Set the NTP server if you are using an NTP server to synchronize time between processors.

NOTE: After installing the InSync Processor, you should run Detector mode for two weeks to verify that inputs and outputs are being sent properly and to allow enough time for a corridor to be installed. For instance, a 10-intersection corridor may take up to a week to have processors installed at each intersection. The two-week time period allows for enough time to get all intersections installed, running, and tested with the InSync Processor.

Set network settings

NOTE: Setting the network settings should only be performed by a qualified Rhythm technician.

This option is to be used when you need to set the IP address on the processor during the initial setup of an intersection or if you reset the processor to factory defaults and the processor needs to set up again.

Configure the intersection through the Configure utility

Clicking **Configure Detectors** displays the ConfigApplet utility.

For a newly created intersection, you must type the name of the intersection into the Intersection field. Otherwise, the name of the intersection and the direction view displays at the top of the screen. You can change the intersection's name in the Intersection field and select which direction you want to configure from the Direction drop-down box.

Within the All Direction view in Configure Detectors, the following color-coded blocks have different meanings:

- The green regions indicate the external detection zones.
- The blue regions indicate the InSync camera detection zones.

Configure an InSync intersection

For InSync, you must complete the following steps to fully configure vehicle detection for each direction:

1.   Add InSync detection cameras.

2.   Add detection zones.

3.   Add segment lines.

4. Define presence segments.

5. Set fog zones.

6. Confirm detection cameras are assigned correctly; lanes/phases are assigned when you added InSync detection cameras.

7. Update the intersection.

NOTE: DO NOT make any changes to the Day-Night Switch Duration or Sunset/Sunrise Offset parameters unless advised to do so by Rhythm Engineering.

Add InSync detection cameras

The following instructions pertain only to InSync/InSync:Fusion installations.

To define that an InSync detection camera is located on an approach:

1. If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2. Select the direction you want the camera on from the **Direction** drop-down box.

3. Verify that the **Camera** tab is selected.

4. Click the icon to add a camera. The Input dialog box displays.

5. Type the IP address associated with the InSync detection camera in the **IP** field and click **OK**.

6. Type the distance from the stop bar in which the camera starts reporting detections in the **Min Distance from Stopbar** field.

7. Type the distance from the beginning of the detection zone to the end of the detection zone in the **Coverage Distance** field.

8. Repeat steps 3-7 until all detection cameras are added to the intersection.

9. Continue configuring the InSync detection cameras by creating detection zones, fog zones, presence segments, etc.

NOTE: Adding a second camera to a direction will create an Advanced Camera Detector. An unlimited number of advanced cameras can be added per

direction. After adding advanced camera detection zones, be sure to assign lanes to each camera in the All Directions view.

Add advanced detection cameras

Advanced detection cameras are secondary cameras that measure traffic volume that is set back a user-specified distance from the stop bar instead of measuring traffic volume starting from the stop bar. It is used in conjunction with stop bar detection cameras to provide the most accurate data to the InSync Processor. To set up and assign an advanced detection camera within the Configuration utility:

Add Camera

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Click the **Direction** drop-down box, and select the direction you want the advanced detection camera on.

3.   Make sure the **Camera** tab is selected.

4.   Click the icon to add a camera. The Input dialog box displays.

5.   Type the IP address associated with the InSync detection camera in the IP field and click **OK**.

6.   Type the distance from the stop bar in which the camera starts reporting detections in the **Min Distance from Stopbar** field.

7.   Type the distance from the beginning of the detection zone to the end of the detection zone in the **Coverage Distance** field.

Assign Detection Zones to Camera

1.   Click the **Detection Zone** button.

2.   Click the **Add** button.

3.   Draw your zone by clicking on the image with the mouse. A polygon is created by joining the points clicked with the mouse.

NOTE: If you make a mistake, click **Clear** and re-start.

4.   When finished defining points, click the **OK** button to complete the zone/lane. A

dialog box opens, displaying a choice of available phase numbers to associate with the detection zones.

5.   Choose your phase number for the detection zone and click **OK**.

6.   Repeat steps 2-5 for each detection zone/lane.

Assign the Advanced Camera to a Lane

1.   Select **All** from the Direction drop-down box.

2.   Click the **+** icon next to the direction for which the advanced detection camera resides.

3.   Click the **+** icon next to the phase for which the advanced detection camera resides.

4.   Right-click the lane on which the advanced detection camera resides and select **Add Detector/"Camera Detector Name"** from the shortcut menu. The advanced camera displays on the cartoon view for that phase/lane.

Add detection zones

NOTE: The following instructions pertain only to InSync and InSync:Fusion installations.

The proper placement of detection zones is critical for InSync and InSync:Fusion to function properly:

- Detection zones represent lanes within a phase (one detection zone must exist for each lane).
- Detection zones are used for determining whether or not vehicles are present.

NOTE: Sometimes right-turn only lanes are ignored.

A detection zone can be added or edited by clicking the **Detection Zone** button. When you click Detection Zone, the area above the Add, Edit, and Remove buttons shows the detection zone numbers and associated phase numbers.

To add a detection zone:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the

Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3.   Click the **Detection Zone** button.

4.   Click the **Add** button.

5.   Draw your zone by clicking on the image with the mouse. A polygon is created by joining the points clicked with the mouse.

NOTE: If you make a mistake, click **Clear** and re-start.

6.   When finished defining points, click the **OK** button to complete the zone. A dialog box opens, displaying a choice of available phase numbers to associate with the detection zones.

7.   Choose your phase number for the detection zone and click **OK**.

8.   Repeat steps 4-7 for each detection zone.

9.   Click **DONE** when you are finished creating detection zones.

Detection zone tips

- Draw detection zones inside the lane striping. Including lane striping can cause false positives if the camera shakes.
- Do not make the zone too narrow. Making it too narrow may cause InSync to miss headlights during night mode.
- If the camera angle is low and off to the side, the zones may need to be drawn above the roadway to capture cars/headlights inside of them.
- Make all lanes, except for turn bays, approximately the same length. Turn bays may not extend as far back and thru lanes.
- Extend the zone forward at least ½ of a car length beyond the stop bar to cover traffic that may creep forward and extend back as far as the lane is visible in the image.
- If the lane is exceptionally wide, only surround the area where cars are likely to travel.
- Zones should not overlap.

Change/delete detection zone

To edit or remove a detection zone:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3.   Click the **Detection Zone** button.

4.   Select one of the zones in the list. The zone in the approach is highlighted in deep blue.

5.   Delete the zone by clicking the **Remove** button.
      or
      Modify the corner points by clicking the **Edit** button, moving the corner points, and clicking **OK** when done.

Add segment lines

NOTE: The following instructions pertain only to InSync and InSync:Fusion installations.

Segment lines are added after detection zones are drawn. They are used to divide detection zones into segments that are approximately one car length, which then can be used to approximate queue. To add segment lines:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3.   Click the **Segment Line** button to draw segment lines that divide the detection zones into segments.

4.   Click the mouse at the start of the segment.

5.   Click the mouse at the end of the segment.

The length of a segment should be approximately the length of a typical passenger car.

TIP: Click the **Refresh** button to capture an image with an actual car for better scaling.

5.   Repeat as necessary to divide the entire zone into segments.

6.   Click the **Done** button after all segment lines have been drawn.

By default, all segments are Advanced Segments, which do not trigger a detection. It is necessary that the first two to three segments be marked as Presence Segments in order to generate vehicle calls that are passed along to the controller.

NOTE: You should draw at least two segment lines (thereby creating three detection zone segments) for each detection zone. Occasionally, short turn bays will not allow for three detection zone segments. While not ideal, this is acceptable.

Delete segment lines

To delete a single segment:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3.   Click the **Segment Line** button.

4.   Click **Delete Segment**.

5.   Click on the segment you want to delete.

6.   Click **Done**.

To delete all segments:

1.   Click the **Segment Line** button.

2.   Click **Clear**. You are asked if you are sure you want to delete all segments.

3.   Click **Yes** to delete all segments.

4.   Click **Done**.

Edit segment lines

To edit a segment:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3.   Click the **Segment Line** button.

4.   Click **Edit**.

5.   Click and drag one end of the segment line to its new position.

6.   Click and drag the other end of the segment line to its new position.

7.   Click **Done**.

Define presence segments

The following instructions pertain only to InSync and InSync:Fusion installations.

At least two segments in each detection zone should be marked as Presence Segments. When a detection occurs inside a segment marked as a presence segment, the phase is considered to be in need of service. Detections in segments that are not presence segments are considered for queue counts and volume density analysis, but are not sufficient to bring a call to a phase. To define presence segments:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3.   Click the **Set Presence** button.

NOTE: To clear all presence segments, click the **Clear** button.

3.   Click anywhere within a segment that should be a presence segment. A dialog box opens, requesting presence delay. Presence delay is the number of seconds a car must be present before it is considered a presence.

NOTE: To change a presence delay that has already been entered, click within the segment you want to change and type a new presence delay.

             To delete a single presence point, click within that segment and click the **Delete** button in the Presence Delay dialog box.

4.   If no delay is desired, type **0** and click the **OK** button on the dialog box. That segment is set as a presence detector with no detector delay.

NOTE: Right-turn lanes can be marked with detector delay values of 5 or 10 seconds to allow vehicles to make a right-turn on red. A 10 second delay is standard.

             The delay value is shown in all segments that have been set as Presence Segments.

5.   Click the **Done** button after all Presence Segments have been marked.

When creating presence segments, keep the following in mind:

- There should be at least two presence segments at the front of each detection zone.
- Do not mark every segment as a presence segment. This can lead to false positives. Typically two to four presence segments per lane are adequate.

Set fog zones

NOTE: The following instructions pertain only to InSync and InSync:Fusion installations.

Fog zones are used by InSync to verify that the camera has a clear view of traffic. Fog zones are drawn around unchanging features in the camera view that have high contrast with the background, such as traffic signals and sidewalks. When InSync can no longer see high contrast within the fog zone(s), the camera information is considered unreliable and fog

mode is entered. At least one fog zone must be defined. To add fog zones:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3.   Click the **Fog Zone** button.

4.   Click the **Add** button.

5.   Click points within the view to define the edges of the fog zones. If you make a mistake, click the **Clear** button to start over.

6.   When done defining fog zones, click the **Done** button. If you are finished with all your editing, click the **Update Intersection** button.

Fog zone tips

- Fog zones can be drawn around objects that have high contrast with the background.
- Do not draw a single fog zone around multiple objects.
- Make the fog zone large enough around the point of interest to allow for camera shake.
- Avoid objects that might be obscured or that have a background that changes often.
- Good candidates for fog zones include light poles, traffic signs, business signs, and stone markers.
- Bad candidates for fog zones include temporary signs, bushes, and objects in front of a parking lot.
- Two to three fog zones is typically enough.
- Check the **Edge View** checkbox and click the **Refresh** button to see the areas/ edges of high contrast in the image.

Remove fog zones

To remove fog zones:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the

Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3.   Click the **Fog Zone** button.

4.   Select the appropriate zone number in the zone list. The selected zone is highlighted in red.

5.   Click the **Remove** button.

Confirm edge lines

NOTE: The following instructions pertain only to InSync and InSync:Fusion installations.

To confirm that a certain object creates a good edge line to draw a fog/contrast zone over:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Click **Update Intersection** to update the camera information.

3.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

4.   Click the **Edge View** checkbox (bottom left corner of the screen).

5.   Click the **Refresh** button. An edge view is generated.

6.   De-select the **Edge View** checkbox and click the **Refresh** button again to return to the normal camera view.

7.   Repeat steps 3-6 for all directions and all cameras.

8.   Click **Done** after all fog zones have been verified.

Confirm detection cameras are assigned correctly

After defining all detection cameras, verify that each camera is assigned to the correct direction and phase and that all lanes are correctly assigned. To do this:

1. If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2. Select **All** from the Direction drop-down box. A cartoon view representation of the intersection displays on the left, while a tree organizational view displays to the right.

3. Click the **+** icon in the tree view for each direction to verify that all phases for an approach exist.

4. Click the **+** icon in the tree view for each phase to verify that all lanes exist within each phase.

If a phase/lane is incorrectly assigned to a detection camera:

1. Right-click on the direction and select **Clear** from the short-cut menu.

2. Select the camera direction from the **Direction** pull-down menu.

3. Click the icon to add a camera. The Input dialog box displays.

4. Type the IP address associated with the InSync detection camera in the IP field and click **OK**.

5. Type the distance from the stop bar in which the camera starts reporting detections in the **Min Distance from Stopbar** field.

6. Type the distance from the beginning of the detection zone to the end of the detection zone in the **Coverage Distance** field.

7. Click **Detection Zone**.

8. Click **Add** to add the detection zones.

9. Draw the detection zones.

10. Click **OK** to indicate that you are finished drawing the detection zone. The Zone Information dialog box displays.

11. Select the correct phase from the **Choose a Phase** drop-down list.

12. Click **OK**.

Update the intersection

In order to save your configuration work, you must click the **Update Intersection** button to save configuration changes to the processor. You can do this after each direction is configured or after the configuration changes for all four directions have been made (to save the work all at once).

Settings are NOT saved until the **Update Intersection** button is clicked.

TIP: If you make a mistake during configuration editing and wish to revert to the current configuration settings without saving, close the applet and re-open it by selecting **Configure Detectors** from the Home screen.

Configure an InSync:Fusion intersection

For InSync:Fusion, you must complete the following steps to fully configure vehicle detection for each direction:

1.   Add InSync detection cameras.

2.   Add detection zones.

3.   Add segment lines.

4.   Define presence segments.

5.   Set fog zones.

6.   Add external detectors.

   a)   Assign external detectors to lanes.

7.   Confirm camera/detectors are assigned correctly.

8.   Update the intersection.

NOTE: DO NOT make any changes to the Day-Night Switch Duration or Sunset/Sunrise Offset parameters unless advised to do so by Rhythm Engineering.

Add InSync detection cameras

The following instructions pertain only to InSync/InSync:Fusion installations.

To define that an InSync detection camera is located on an approach:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Select the direction you want the camera on from the **Direction** drop-down box.

3.   Verify that the **Camera** tab is selected.

4.   Click the icon to add a camera. The Input dialog box displays.

5.   Type the IP address associated with the InSync detection camera in the **IP** field

and click **OK**.

6. Type the distance from the stop bar in which the camera starts reporting detections in the **Min Distance from Stopbar** field.

7. Type the distance from the beginning of the detection zone to the end of the detection zone in the **Coverage Distance** field.

8. Repeat steps 3-7 until all detection cameras are added to the intersection.

9. Continue configuring the InSync detection cameras by creating detection zones, fog zones, presence segments, etc.

NOTE: Adding a second camera to a direction will create an Advanced Camera Detector. An unlimited number of advanced cameras can be added per direction. After adding advanced camera detection zones, be sure to assign lanes to each camera in the All Directions view.

Add advanced detection cameras

Advanced detection cameras are secondary cameras that measure traffic volume that is set back a user-specified distance from the stop bar instead of measuring traffic volume starting from the stop bar. It is used in conjunction with stop bar detection cameras to provide the most accurate data to the InSync Processor. To set up and assign an advanced detection camera within the Configuration utility:

Add Camera

1. If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2. Click the **Direction** drop-down box, and select the direction you want the advanced detection camera on.

3. Make sure the **Camera** tab is selected.

4. Click the icon to add a camera. The Input dialog box displays.

5. Type the IP address associated with the InSync detection camera in the IP field and click **OK**.

6. Type the distance from the stop bar in which the camera starts reporting detections in the **Min Distance from Stopbar** field.

7. Type the distance from the beginning of the detection zone to the end of the detection zone in the **Coverage Distance** field.

Assign Detection Zones to Camera

1.   Click the **Detection Zone** button.

2.   Click the **Add** button.

3.   Draw your zone by clicking on the image with the mouse. A polygon is created by joining the points clicked with the mouse.

NOTE: If you make a mistake, click **Clear** and re-start.

4.   When finished defining points, click the **OK** button to complete the zone/lane. A dialog box opens, displaying a choice of available phase numbers to associate with the detection zones.

5.   Choose your phase number for the detection zone and click **OK**.

6.   Repeat steps 2-5 for each detection zone/lane.

Assign the Advanced Camera to a Lane

1.   Select **All** from the Direction drop-down box.

2.   Click the **+** icon next to the direction for which the advanced detection camera resides.

3.   Click the **+** icon next to the phase for which the advanced detection camera resides.

4.   Right-click the lane on which the advanced detection camera resides and select **Add Detector/"Camera Detector Name"** from the shortcut menu. The advanced camera displays on the cartoon view for that phase/lane.

Add detection zones

NOTE: The following instructions pertain only to InSync and InSync:Fusion installations.

The proper placement of detection zones is critical for InSync and InSync:Fusion to function properly:

   ▪   Detection zones represent lanes within a phase (one detection zone must exist for each lane).

   ▪   Detection zones are used for determining whether or not vehicles are present.

NOTE: Sometimes right-turn only lanes are ignored.

A detection zone can be added or edited by clicking the **Detection Zone** button. When you click Detection Zone, the area above the Add, Edit, and Remove buttons shows the detection zone numbers and associated phase numbers.

To add a detection zone:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3.   Click the **Detection Zone** button.

4.   Click the **Add** button.

5.   Draw your zone by clicking on the image with the mouse. A polygon is created by joining the points clicked with the mouse.

NOTE: If you make a mistake, click **Clear** and re-start.

6.   When finished defining points, click the **OK** button to complete the zone. A dialog box opens, displaying a choice of available phase numbers to associate with the detection zones.

7.   Choose your phase number for the detection zone and click **OK**.

8.   Repeat steps 4-7 for each detection zone.

9.   Click **DONE** when you are finished creating detection zones.

Detection zone tips

- Draw detection zones inside the lane striping. Including lane striping can cause false positives if the camera shakes.
- Do not make the zone too narrow. Making it too narrow may cause InSync to miss headlights during night mode.

- If the camera angle is low and off to the side, the zones may need to be drawn above the roadway to capture cars/headlights inside of them.

- Make all lanes, except for turn bays, approximately the same length. Turn bays may not extend as far back and thru lanes.

- Extend the zone forward at least ½ of a car length beyond the stop bar to cover traffic that may creep forward and extend back as far as the lane is visible in the image.

- If the lane is exceptionally wide, only surround the area where cars are likely to travel.

- Zones should not overlap.

Change/delete detection zone

To edit or remove a detection zone:

1. If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2. Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3. Click the **Detection Zone** button.

4. Select one of the zones in the list. The zone in the approach is highlighted in deep blue.

5. Delete the zone by clicking the **Remove** button.
   or
   Modify the corner points by clicking the **Edit** button, moving the corner points, and clicking **OK** when done.

Add segment lines

NOTE: The following instructions pertain only to InSync and InSync:Fusion installations.

Segment lines are added after detection zones are drawn. They are used to divide detection zones into segments that are approximately one car length, which then can be used to approximate queue. To add segment lines:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3.   Click the **Segment Line** button to draw segment lines that divide the detection zones into segments.

4.   Click the mouse at the start of the segment.

5.   Click the mouse at the end of the segment.

The length of a segment should be approximately the length of a typical passenger car.

TIP: Click the **Refresh** button to capture an image with an actual car for better scaling.

5.   Repeat as necessary to divide the entire zone into segments.

6.   Click the **Done** button after all segment lines have been drawn.

By default, all segments are Advanced Segments, which do not trigger a detection. It is necessary that the first two to three segments be marked as Presence Segments in order to generate vehicle calls that are passed along to the controller.

NOTE: You should draw at least two segment lines (thereby creating three detection zone segments) for each detection zone. Occasionally, short turn bays will not allow for three detection zone segments. While not ideal, this is acceptable.

Edit segment lines

To edit a segment:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3. Click the **Segment Line** button.

4. Click **Edit**.

5. Click and drag one end of the segment line to its new position.

6. Click and drag the other end of the segment line to its new position.

7. Click **Done**.

Delete segment lines

To delete a single segment:

1. If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2. Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3. Click the **Segment Line** button.

4. Click **Delete Segment**.

5. Click on the segment you want to delete.

6. Click **Done**.

To delete all segments:

1. Click the **Segment Line** button.

2. Click **Clear**. You are asked if you are sure you want to delete all segments.

3. Click **Yes** to delete all segments.

4. Click **Done**.

Define presence segments

The following instructions pertain only to InSync and InSync:Fusion installations.

At least two segments in each detection zone should be marked as Presence Segments.

When a detection occurs inside a segment marked as a presence segment, the phase is considered to be in need of service. Detections in segments that are not presence segments are considered for queue counts and volume density analysis, but are not sufficient to bring a call to a phase. To define presence segments:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3.   Click the **Set Presence** button.

NOTE: To clear all presence segments, click the **Clear** button.

3.   Click anywhere within a segment that should be a presence segment. A dialog box opens, requesting presence delay. Presence delay is the number of seconds a car must be present before it is considered a presence.

NOTE: To change a presence delay that has already been entered, click within the segment you want to change and type a new presence delay.

          To delete a single presence point, click within that segment and click the **Delete** button in the Presence Delay dialog box.

4.   If no delay is desired, type **0** and click the **OK** button on the dialog box. That segment is set as a presence detector with no detector delay.

NOTE: Right-turn lanes can be marked with detector delay values of 5 or 10 seconds to allow vehicles to make a right-turn on red. A 10 second delay is standard.

          The delay value is shown in all segments that have been set as Presence Segments.

5.   Click the **Done** button after all Presence Segments have been marked.

When creating presence segments, keep the following in mind:
- There should be at least two presence segments at the front of each detection zone.
- Do not mark every segment as a presence segment. This can lead to false positives. Typically two to four presence segments per lane are adequate.

Set fog zones

NOTE: The following instructions pertain only to InSync and InSync:Fusion
               installations.

Fog zones are used by InSync to verify that the camera has a clear view of traffic. Fog zones are drawn around unchanging features in the camera view that have high contrast with the background, such as traffic signals and sidewalks. When InSync can no longer see high contrast within the fog zone(s), the camera information is considered unreliable and fog mode is entered. At least one fog zone must be defined. To add fog zones:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3.   Click the **Fog Zone** button.

4.   Click the **Add** button.

5.   Click points within the view to define the edges of the fog zones. If you make a mistake, click the **Clear** button to start over.

6.   When done defining fog zones, click the **Done** button. If you are finished with all your editing, click the **Update Intersection** button.

Fog zone tips

- Fog zones can be drawn around objects that have high contrast with the background.
- Do not draw a single fog zone around multiple objects.
- Make the fog zone large enough around the point of interest to allow for camera shake.
- Avoid objects that might be obscured or that have a background that changes often.
- Good candidates for fog zones include light poles, traffic signs, business signs, and stone markers.
- Bad candidates for fog zones include temporary signs, bushes, and objects in front of a parking lot.

- Two to three fog zones is typically enough.

- Check the **Edge View** checkbox and click the **Refresh** button to see the areas/ edges of high contrast in the image.

Remove fog zones

To remove fog zones:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

3.   Click the **Fog Zone** button.

4.   Select the appropriate zone number in the zone list. The selected zone is highlighted in red.

5.   Click the **Remove** button.

Confirm edge lines

NOTE: The following instructions pertain only to InSync and InSync:Fusion installations.

To confirm that a certain object creates a good edge line to draw a fog/contrast zone over:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Click **Update Intersection** to update the camera information.

3.   Make sure the correct direction and camera is selected by selecting the camera direction from the **Direction** drop-down box and the camera from the **Camera** drop-down box.

4.   Click the **Edge View** checkbox (bottom left corner of the screen).

5.   Click the **Refresh** button. An edge view is generated.

6. De-select the **Edge View** checkbox and click the **Refresh** button again to return to the normal camera view.

7. Repeat steps 3-6 for all directions and all cameras.

8. Click **Done** after all fog zones have been verified.

Add external detectors

NOTE: The following instructions pertain only to InSync:Fusion and InSync:Tesla installations.

If *no external detectors exist* within InSync:

1. If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2. If the cartoon map view of the intersection is not showing, select **All** from the Direction drop-down box.

3. Click the **+** icon next to the direction where you want an external detector created.

    a) If no phases exist for the direction, right-click the direction and select **Add Phase/phase #** from the short-cut menu.

    b) If no lanes exist for a phase, right-click the phase and select **Add Lane** from the shortcut menu.

4. Right-click the lane and select **Create>External Detector**. The External Detector Details dialog box displays.

5. From this dialog box, you can define the following:
    - The name of the detector (make sure you give the detector a descriptive name so that you remember where the detector is located; we recommend using the following format:
    - [phase number] - [lane/subphase number (left to right)] - [detector order (front to back)]
        - ❖ 6-1-1 (phase 6, lane 1, front-most detector)
        - ❖ 6-1-2 (phase 6, lane 1, second detector)
        - ❖ 6-2-1 (phase 6, lane 2, front-most detector)
    - The distance from the stop bar in which the detector starts
    - If the detector starts in front of the stop bar, enter 0.

- The length of the detection zone

- The detection type

- Whether Lock On is set for the detector

- Delay, which is the amount of time before a detection should register a presence

NOTE: If you know that there is a potential for a car to slip past a detector so that it is not going to register a presence, we recommend that you turn on the Lock On attribute. Selecting Red or Amber Lock On is recommended, but at least Lock On Red should be configured in this case. Lock On Amber only locks when the signal is Amber and may not be sufficient in this case.

6.   Click **OK** to add the external detector to the lane.

If *external detectors do exist* within InSync:

1.   If the cartoon map view of the intersection is not showing, select **All** from the Direction drop-down box.

2.   Click the **+** icon next to the direction where you want to assign the external detector. This shows all the phases within the direction.

3.   Click the **+** icon next to phase in which you want to assign the external detector. This shows all the lanes within the phase.

4.   Right-click the lane and select **Add Detector**. A list of detectors displays in the short-cut menu. Select the one you want from the menu.

Change an external detector's settings

To change the settings assigned to a detector:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Click the external detector that you want to change.

3.   Click the **Edit Detector Details** button. The External Detector Details dialog box displays.

4.   Enter the new settings (distance from stopbar, length, etc.) into the External Detector Details dialog box and then click **OK**.

If you would like to change the name of the external detector, complete the following steps:

1. If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2. Click the direction on which the external detector resides from the **Direction** drop-down box.

3. Click the **External Detectors** tab.

4. Click the external detector that you want to edit in the list and click the **Edit** button. From this External Detector Details dialog box, you can change the detector's name.

Unassign an external detector

To remove an external detector from a lane:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Right-click the detector in the tree view.

3.   Select **Delete** from the shortcut menu.

NOTE: The definition of the detector still exists; it has just been removed from the lane.

Confirm camera/detectors are assigned correctly

After defining all InSync detection cameras and external detectors, verify that each camera/external detector is assigned to the correct direction and phase and that all lanes are correctly assigned. To do this:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Select **All** from the Direction drop-down box. A cartoon view representation of the

intersection displays on the left, while a tree organizational view displays to the right.

3. Click the **+** icon on the tree view for each direction to verify that all phases for an approach exist.

4. Click the **+** icon on the tree view for each phase to verify that all lanes exist within each phase.

If a phase/lane is incorrectly assigned to an InSync detection camera:

1. Right-click on the direction and select **Clear** from the short-cut menu.

2. Select the camera direction from the **Direction** pull-down menu.

3. Click the ⬛ icon to add a camera. The Input dialog box displays.

4. Type the IP address associated with the InSync detection camera in the **IP** field and click **OK**.

5. Type the distance from the stop bar in which the camera starts reporting detections in the **Min Distance from Stopbar** field.

6. Type the distance from the beginning of the detection zone to the end of the detection zone in the **Coverage Distance** field.

7. Click **Detection Zone**.

8. Click **Add** to add the detection zones.

9. Draw the detection zones.

10. Click **OK** to indicate that you are finished drawing the detection zone. The Zone Information dialog box displays.

11. Select the correct phase from the **Choose a Phase** drop-down list.

12. Click OK.

If a phase is incorrectly assigned to an external detector:

1. Find the external detector within the tree view.

2. Right-click on the detector and select **Delete** from the short-cut menu. The external detector is removed from the lane; however, it is not removed from the Configuration utility.

3. Right-click on the lane in the tree view and either select **Add Detector** to assign an existing external detector to the lane or click **Create Detector** to create a new external detector to the lane.

Update the intersection

In order to save your configuration work, you must click the **Update Intersection** button to save configuration changes to the processor. You can do this after each direction is configured or after the configuration changes for all four directions have been made (to save the work all at once).

Settings are NOT saved until the **Update Intersection** button is clicked.

TIP: If you make a mistake during configuration editing and wish to revert to the current configuration settings without saving, close the applet and re-open it by selecting **Configure Detectors** from the Home screen.

Configure an InSync:Tesla intersection

For InSync:Tesla, you must complete the following steps to fully configure vehicle detection for each direction:

1) Add the monitoring camera

2) Add phases

3) Assign lanes

4) Add external detectors

    a) Define detector settings

    a) Add external detectors to lanes

5) Confirm detectors are assigned correctly

6) Update the intersection

Add a monitoring camera

NOTE: The following instructions pertain only to InSync:Tesla installations.

For troubleshooting purposes, Rhythm Engineering requires that a monitoring camera be in place at each intersection. This allows traffic engineers to see what is going on at an intersection remotely and allows Rhythm Engineering personnel to remotely monitor/ configure settings. To add a monitoring camera within the Configure applet:

1. If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2. In the tree view, right-click the intersection's name.

3. Select **Create InSync Panomorphic Camera**.

4. Type the IP address for the camera in the **IP Address** field. Leave the user name and password set as the defaults.

5. Click **OK**.

Add phases

NOTE: The following instructions mainly pertain to InSync:Tesla installations, but can be applicable to InSync and InSync:Fusion installations.

To assign a phase to a direction:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Right-click the direction within the tree view.

3.   Click **Add Phase**.

4.   Select the phase number associated with this direction from the Add Phase submenu.

Delete phases

To delete a phase:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Right-click the phase number in the tree view.

3.   Select **Delete** from the shortcut menu.

Change a direction's phase

To change which phase is assigned to a direction:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Click the phase that you want changed.

3.   Select the new phase number from the **Number** drop-down box.

Assign lanes

NOTE: The following instructions mainly pertain to InSync:Tesla installations, but can be applicable to InSync and InSync:Fusion installations.

To assign lanes:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Right-click a phase number within the tree view.

3.   Click **Add Lanes**.

If more than one lane exists for that phase number, repeat steps 1 and 2.

Delete lanes

To remove a lane from a phase:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Right-click the lane that you want to delete.

3.   Select **Delete** from the shortcut menu.

Add external detectors

NOTE: The following instructions pertain only to InSync:Fusion and InSync:Tesla installations.

If *no external detectors exist* within InSync:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   If the cartoon map view of the intersection is not showing, select **All** from the Direction drop-down box.

3.   Click the **+** icon next to the direction where you want an external detector created.

    a)   If no phases exist for the direction, right-click the direction and select **Add Phase/phase #** from the short-cut menu.

    b)   If no lanes exist for a phase, right-click the phase and select **Add Lane** from the shortcut menu.

4.   Right-click the lane and select **Create>External Detector**. The External Detector Details dialog box displays.

5.   From this dialog box, you can define the following:

- The name of the detector (make sure you give the detector a descriptive name so that you remember where the detector is located; we recommend using the following format:

- [phase number] - [lane/subphase number (left to right)] - [detector order (front to back)]
    - ❖ 6-1-1 (phase 6, lane 1, front-most detector)
    - ❖ 6-1-2 (phase 6, lane 1, second detector)
    - ❖ 6-2-1 (phase 6, lane 2, front-most detector)

- The distance from the stop bar in which the detector starts

- If the detector starts in front of the stop bar, enter 0.

- The length of the detection zone

- The detection type

- Whether Lock On is set for the detector

- Delay, which is the amount of time before a detection should register a presence

NOTE: If you know that there is a potential for a car to slip past a detector so that it is not going to register a presence, we recommend that you turn on the Lock On attribute. Selecting Red or Amber Lock On is recommended, but at least Lock On Red should be configured in this case. Lock On Amber only locks when the signal is Amber and may not be sufficient in this case.

6.   Click **OK** to add the external detector to the lane.

If *external detectors do exist* within InSync:

1.   If the cartoon map view of the intersection is not showing, select **All** from the Direction drop-down box.

2.   Click the **+** icon next to the direction where you want to assign the external detector. This shows all the phases within the direction.

3.   Click the **+** icon next to phase in which you want to assign the external detector. This shows all the lanes within the phase.

4.   Right-click the lane and select **Add Detector**. A list of detectors displays in the short-cut menu. Select the one you want from the menu.

Unassign an external detector

To remove an external detector from a lane:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Right-click the detector in the tree view.

3.   Select **Delete** from the shortcut menu.

NOTE: The definition of the detector still exists; it has just been removed from the lane.

Change an external detector's settings

To change the settings assigned to a detector:

1.   If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2.   Click the external detector that you want to change.

3.   Click the **Edit Detector Details** button. The External Detector Details dialog box displays.

4.   Enter the new settings (distance from stopbar, length, etc.) into the External Detector Details dialog box and then click **OK**.

If you would like to change the name of the external detector, complete the following steps:

1. If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2. Click the direction on which the external detector resides from the **Direction** drop-down box.

3. Click the **External Detectors** tab.

4. Click the external detector that you want to edit in the list and click the **Edit** button. From this External Detector Details dialog box, you can change the detector's name.

Confirm detectors are assigned correctly

After defining all external detectors, verify that each external detector is assigned to the correct direction and phase and that all lanes are correctly assigned. To do this:

1. If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2. Select **All** from the Direction drop-down box. A cartoon view representation of the intersection displays on the left, while a tree organizational view displays to the right.

3. Click the **+** icon for each direction to verify that all phases for an approach exist.

4. Click the **+** icon for each phase to verify that all lanes exist within each phase.

If a phase is incorrectly assigned to an external detector:

1. Find the external detector within the tree view.

2. Right-click on the detector and select **Delete** from the short-cut menu. The external detector is removed from the lane; however, it is not removed from the Configuration utility.

3. Right-click on the lane in the tree view and either select **Add Detector** to assign an existing external detector to the lane or click **Create Detector** to create a new external detector to the lane.

Save the configuration

In order to save your configuration work, you must click the **Update Intersection** button to save configuration changes to the processor. You can do this after each direction is configured or after the configuration changes for all four directions have been made (to save the work all at once).

Settings are NOT saved until the **Update Intersection** button is clicked.

TIP: If you make a mistake during configuration editing and wish to revert to the current configuration settings without saving, close the applet and re-open it by selecting **Configure Detectors** from the Home screen.

Confirm camera views

After setting up cameras, lanes, and phases in the Configuration utility, you will want to confirm that each camera's IP address is correct and that InSync is receiving camera views from each camera. To do this:

1. Select **View** from the Home screen.

All cameras should be up and running in the display.

Grab camera background (InSync and InSync:Fusion only)

NOTE: The following instructions pertain only to InSync and InSync:Fusion installations.

After creating or adjusting configuration details within the Configure applet and confirming camera views, you must grab camera backgrounds for each camera view. The background is used as a reference for car detection and should be representative of average lighting/visibility conditions (ideally captured in late morning or early afternoon). It is also used to determine visibility conditions.

Make sure there are no cars in the detection zone when grabbing a background image.

1. If the camera views screen is not displayed, click **View** from the Home screen.
2. Click the camera view that you want to grab a background. An enlarged view of the camera displays.
3. If possible, wait until the lanes are free of traffic, and click the **Grab Background** button.
4. Click on the camera view again to minimize it and show all the other camera views.
5. Repeat steps 2-4 for the next camera view.

The camera moves into fog mode when the processor determines that it does not have a clear image for dependable video vehicle detection. In this situation, InSync references historical data collected for each phase associated with the unclear view. The historical data is based on green splits for that time of day, on that particular day of the week, for the past 4 weeks, in 15 minute increments. This allows InSync to make a reasonable estimation

of how much time should be allotted to each phase affected by the fog mode (preferable to MAX RECALL).

The camera will move out of fog mode automatically when the camera view clears.

NOTE: You can use the **Clear Background** button to erase any learned background. This will lead to false positives, but is valuable if the background is truly unusable (e.g. if you accidentally grab a background while a car is sitting at the stop bar and you need to temporarily clear the background until it moves).

Define inputs and outputs

NOTE: Mapping inputs and outputs is functionality that is performed only through the InSync Kiosk.

After confirming that camera views are being read correctly by InSync, you must then map pin inputs and signal outputs within InSync. This allows InSync to know what data is being received (inputs) and how to place calls (outputs) correctly.

NOTE: While the IO Tester program is running, detection is manually sent to the controller. We suggest that you place the controller into Recall during this time.

To configure the inputs and outputs in InSync:

1. Click the **IO Test** button on the Advanced screen. The IO-Board Tester program window appears.

2. You are warned that opening the IO Board Tester program will shut down InSync. Verify that the controller is in Recall and click **Yes** to proceed.

3. Click the **InSync Mapping** button on the IO Board Tester dialog box. The Edit Pin Assignments dialog box displays.

4. Select the method you are using to connect to the cabinet from the **InSync Cabinet Interface** drop-down menu.

Note: If creating a new configuration, it is a good idea to click the **Load Defaults** button or **Clear All Data** button.

5. Each phase is represented by a tab on the dialog box. Select the phase you want to configure by clicking the associated tab.

6. Click inside the appropriate functionality field to assign a pin to that functionality. The Select Pins dialog box displays.

7. Select the pins that you want mapped. Holding the **Ctrl** key down while clicking on the pins allows you to assign multiple pins to an input/output .

8. Click **OK** to close the Select Pins dialog box.

9. Repeat steps 5-8 until all inputs/outputs are assigned.

10.Once done mapping the inputs, click **OK** to close the Edit Pin Assignments dialog box.

Note: The Function column in the Select Pins dialog box describes the default functionality of a pin; however, this description may not accurately reflect the functionality of your pin in your cabinet if you have set up any customization.

For example, to assign that Phase 2 should send a vehicle call on Pins Det05 and Det25 when interfacing with the cabinet using a SLDC Intercept Module, perform the following steps:

1. Select **SDLC Intercept Module** from the InSync Cabinet Interface drop-down box.

2. Click the **Phase 2** tab.

3. Click in the **Vehicle Ext/Call** field. The Select Pins dialog box displays.

4. Click **Det05** and scroll down and click **Det25**.

5. Click **OK**. The pins are shown in the Vehicle Ext/Call field.

Assign a bypass configuration

Note: Bypass configuration is only functional while both InSync and the IO board are online and communicating.

If you want InSync to simply pass inputs through to the controller, you can define this behavior on the Bypass Conf tab. This can be done in instances where you did not purchase the Interface Module to integrate pedestrian signals into InSync or for detectors that simply count volume at an intersection. To assign pins to bypass InSync and go straight to the controller:

1. Click the **InSync Mapping** button on the IO Board Tester dialog box. The Edit Pin Assignments dialog box displays.

2. Select the method you are using to interface with the cabinet from the **InSync Cabinet Interface** drop-down menu.

3. Click the **Bypass Conf** tab.

4. Select the input pin that you want InSync to bypass from the **Input Pin/Signal** drop-down box.

5. Select the output pin that you want InSync to bypass from the **Output Pin/Signal** drop-down box.

6. Click the **Add** button. The pins are added to the list of pins to pass through InSync to the controller.

Define the failure behavior for InSync Processors

One of the hardware components of the most recent style of InSync Processors include an IO board that can store failure configuration behavior for an intersection on its internal flash memory. This "Fusion-style" processor can then use this failure configuration to outputs appropriately in the event of communications failure between InSync and the IO board. To define the failure configuration for a Fusion-style InSync Processor:

1. Click the **InSync Mapping** button on the IO Board Tester dialog box. The Edit Pin Assignments dialog box displays.

2. Select the method you are using to connect to the cabinet from the **InSync Cabinet Interface** drop-down menu.

3. Click the **Fusion Default Outputs** tab.

4. For each output pin, select the function from the Function column. Your choices are:
   - **Failure On:** Produces a constant vehicle call on the output pin. If this pin connects to the cabinet as a vehicle call, the constant call will force the controller to time the maximum green if there are conflicting calls on other phases.
   - **Failure Off:** Produces no output signal on the given pin.
   - **Failure Input:** Only sends an output signal when you see a corresponding input.
   - **Always Input:** Always sends an output signal when the corresponding input signal is received, regardless, even if communication has not failed.

Note: The first 12 pins automatically default to Failure On while the last 12 pins automatically default to Failure Off.

5. Upload the configuration to the processor's internal flash memory by clicking the **Write to IO Board** button.

Additionally, you can also compare your settings to the settings defined on the processor's memory by clicking **Compare to IO board** or you can download the processor's configuration to memory by clicking **Retrieve from IO Board**, modify the settings, and then upload your changes by clicking **Write to IO Board**.

Define SDLC detector rack BIUs

When connecting the InSync Processor to the controller using the SDLC Interface Module, you can define which DR BIUs exist. This allows InSync to scan for these connections and report when a DR BIU is missing or has failed. To define the amount of DR BIUs connected to the SDLC Interface Module:

1.   From the Advanced tab, click **InSync**. The InSync dashboard displays.

2.   Click the **I/O Assignment** button in the InSync dashboard dialog box. The I/O Device Management dialog box displays.

3.   Select **SDLC Module**.

4.   Click the **Assignments** button. The Edit Pin Assignments dialog box displays.

5.   Click the **DR BIUs** tab.

6.   Click the check boxes related to the which DR BIUs exist.

7.   Click **OK**.

8.   Click **Close** to close the Edit I/O Device Management dialog box.

9.   Click the **X** to close the InSync dashboard.

Once you define which DR BIUs are attached to the SDLC Interface Module, the SDLC Interface Module scans for these devices and reports it to InSync. If the SDLC Interface Module cannot detect a configured DR BIUs for 30 consecutive seconds, InSync displays an error in its InSync Dashboard and then automatically re-scans for the DR BIUs.

Common causes of DR BIUs not being detected include:

- Connector coming unattached or loose on the port
- DR BIU going bad and needing replacement

InSync continues to re-scan for the missing DR BIU until the DR BIU comes back online (from either replacing the BIU or correcting the connectivity problem). The maximum amount of time for a corrected DR BIU to be recognized by InSync is 90 seconds.

Confirm the inputs and outputs

After configuring the intersection, configuring detectors, and mapping the detector inputs and controller outputs, you must verify that InSync is correctly reading the inputs and sending the correct outputs to the controller. The IO-Board Tester can be used to confirm these hardware connections. To do so:

1. The Intersection View represents how InSync perceives the intersection based on how the raw inputs/outputs are mapped to/from the IO board. To ensure that the intersection view is accurate, double-check the mapping configuration.

   If all detectors, phases, and lanes have already been defined, you can use the InSync Mapping button to test the hardware. Otherwise, use the Tester Mapping button to load the default mapping. Any changes made within InSync Mapping are saved. Changes made within the Tester Mapping are not saved.

2. Verify that there are green returns for each phase in the **Inputs** section.

3. Selecting one of the phases in the **Outputs** section should place a call to that phase. For detector cards, the LED on the detector card will immediately light up and you will see a call placed for that phase on the signal controller. Test all phases systematically to ensure that communications between the InSync Processor and the controller are configured correctly.

TIP: You can view which pins are associated with an output call by hovering your mouse over the output. The pin assignment is then displayed in the tooltips.

Note: If you did not set up the detections within the ConfigApp utility, you can still test whether InSync is receiving inputs from the intersection by clicking the **Tester Mapping** button. These inputs reflect a default configuration for the cabinet interface.

4. Click the **X** icon (top right corner) when finished to exit and restart InSync.

5. Once you have confirmed that InSync is accurately receiving detections and sending calls, take the controller out of recall.

Optionally, you can verify inputs and outputs within the InSync application. To do so:
   1. Click **InSync** from the Advanced screen. The InSync dialog box displays.

2. Observe the icon view of the intersection in the top center, verifying that it reflects the correct number of lanes for each phase assigned.

3. Click the **I/O Board** tab. Verify that Communication Statuses all read **OK**.

4. Once you have confirmed that InSync is accurately receiving detections and sending calls, take the controller out of recall.

Set system time, date and/or time zone

This option is to be used when you need to set the time, date and time zone on the processor during the initial setup of an intersection or if you reset the processor to factory defaults and the processor needs to be set up again.

Set GPS coordinates

GPS coordinates are usually set only once, when you initially set up the processor at an intersection. We recommend that GPS coordinates are set from the CentralSync software; however, if you are in the field deploying an InSync Processor, you can use the Change GPS Coordinates functionality to quickly estimate the GPS coordinates until you can change them to a more accurate setting later.

NOTE: If an intersection is using a secondary InSync Processor as a video only processor, you do not need to define the NTP settings on it.

To set the processor GPS location with an approximate location:

1. Click **GPS Coordinates** from the Settings screen.

2. Use the scroll wheel on the mouse to zoom in to an area of the map. Additionally, you can click and drag an area of the map to view it better.

3. Click an approximate area of the map where the processor is located. The GPS coordinates are automatically entered in the Latitude and Longitude fields.

4. Click **Save**.

To set the processor s GPS coordinates at the intersection with an exact location:

1. Select **GPS Coordinates** from the Settings screen.

2. Type in the latitude of the intersection's location in the **Latitude** field.

NOTE: The entered GPS coordinates must be in decimal notation (minutes. fractional seconds).

3.   Type in the longitude of the intersection's location in the **Longitude** field.

4.   Click **Save**.

NOTE: To change the values back to the original latitude and longitude parameters, click **Cancel**.

Set the NTP server

For most InSync systems, the InSync Processors act as peers and automatically synchronize with each other. However, if your network uses a Network Time Protocol (NTP) server to synchronize the time of day among a set of distributed time servers and clients, you can set which processor is the NTP server by following the instructions below:

1.   Select **NTP Server** from the Settings screen.

2.   Type the IP address of the InSync Processor being used as the NTP server in the **Enter IP** field.

NOTE: The IP address of the InSync Processor currently being used as an NTP Server displays above the **Enter IP** field.

3.   Click **Test** to make sure the server is communicating.

4.   Click **Save**.

NOTE: If an intersection is using a secondary InSync Processor as a video only processor, you do not need to define the NTP settings on it.

Even if the NTP server goes down, the InSync Processors still synchronize with each other.

Chapter 3

InSync System Settings

InSync System Settings

Set system time, date, and/or timezone

This option is to be used when you need to set the time, date and time zone on the processor during the initial setup of an intersection or if you reset the processor to factory defaults and the processor needs to be set up again.

Set GPS coordinates

GPS coordinates are usually set only once, when you initially set up the processor at an intersection. We recommend that GPS coordinates are set from the CentralSync software; however, if you are in the field deploying an InSync Processor, you can use the Change GPS Coordinates functionality to quickly estimate the GPS coordinates until you can change them to a more accurate setting later.

NOTE: If an intersection is using a secondary InSync Processor as a video only processor, you do not need to define the NTP settings on it.

To set the processor GPS location with an approximate location:

1.   Click **GPS Coordinates** from the Settings screen.

2.   Use the scroll wheel on the mouse to zoom in to an area of the map. Additionally, you can click and drag an area of the map to view it better.

3.   Click an approximate area of the map where the processor is located. The GPS coordinates are automatically entered in the Latitude and Longitude fields.

4.   Click **Save**.

To set the processor s GPS coordinates at the intersection with an exact location:

1.   Select **GPS Coordinates** from the Settings screen.

2.   Type in the latitude of the intersection's location in the **Latitude** field.

NOTE: The entered GPS coordinates must be in decimal notation (minutes. fractional seconds).

3.   Type in the longitude of the intersection's location in the **Longitude** field.

4.   Click **Save**.

NOTE: To change the values back to the original latitude and longitude parameters, click **Cancel**.

Set the NTP server

For most InSync systems, the InSync Processors act as peers and automatically synchronize with each other. However, if your network uses a Network Time Protocol (NTP) server to synchronize the time of day among a set of distributed time servers and clients, you can set which processor is the NTP server by following the instructions below:

1.   Select **NTP Server** from the Settings screen.

2.   Type the IP address of the InSync Processor being used as the NTP server in the **Enter IP** field.

NOTE: The IP address of the InSync Processor currently being used as an NTP Server displays above the **Enter IP** field.

3.   Click **Test** to make sure the server is communicating.

4.   Click **Save**.

NOTE: If an intersection is using a secondary InSync Processor as a video only processor, you do not need to define the NTP settings on it.

Even if the NTP server goes down, the InSync Processors still synchronize with each other.

Synchronize NTP time

The NTP Server page that is available through the Settings menu provides the ability to compare the time on a processor with the NTP Server system time. To do so:

1.   Type the IP address of the processor you want to compare to the server in the **Enter IP** field.

2.   Click **Test**. Note that the NTP Time for the processor and a System Time displays below.

If the two times are greatly different (the offset should be less than 1000 ms.), you can synchronize the times by clicking the Sync button. This synchronizes the processor's NTP Server Time to the System Time.

Synching time after inital install or processor replacement

The following steps should be performed after:

- Installing a new processor into an existing corridor
- Replacing a processor into an existing corridor.

To sync NTP time of a new or replacement processor, complete the following steps:

1.   Turn on the InSync Processor.

2.   Restore the configuration, if not done prior to replacement.
If this is a replacement processor and the configuration has not been loaded, select **Restore the configuration** from the Kiosk's Home screen.

If you restored configuration prior to replacement, the processor automatically synchronizes with an NTP server or another intersection the first time the system boots (if configured and if network communication is available). The processor date, time, and time zone needs to be verified, as well as the time synchronization status with the NTP server or other intersections on the corridor.

3.   Set/verify the date and time zone.
From the Kiosk, go to **Settings > Date/Time** and verify that the date, time, and time zone settings are correct. If not, make the necessary changes.

If this is a replacement processor, only modify the date or time zone, if needed. Avoid adjusting the time. Only set the time if the NTP server or another intersection is unavailable to sync with.

4.   Verify that the system is synchronized.
If the NTP server or another intersection is available, verify that the current system time is synchronized.

a)   From the Kiosk, go to **Settings > NTP Server**. Type the NTP server address in the **Enter IP** field and click **Save**. To verify that you entered a valid NTP server, click **Test**. If the Test is not successful, enter a new IP and

click **Test**. Make sure to save the NTP server.

b)   If the NTP server is online, click **Sync** to synchronize the system time with the NTP server. To verify that the sync was successful, click **Test**. The offset should be less than 1000 ms.

c)   If the NTP server is unavailable, you must ensure that all intersections are synchronized with each other. To do this, type the IP address of another intersection on the corridor into the **Enter IP** field and click **Sync**. Verify the sync was successful by clicking **Test**. The offset should be less than 1000 ms.

Set network settings

NOTE: Setting the network settings should only be performed by a qualified Rhythm technician.

This option is to be used when you need to set the IP address on the processor during the initial setup of an intersection or if you reset the processor to factory defaults and the processor needs to set up again.

Chapter 4

Confirm camera views

Confirm camera views

The Views button contains several options to you for viewing the cameras at the intersection. You can choose to view cameras through different filtering options, rearrange the camera views within the grid, enlarge a view to full screen, and view a cartoon view representation of the intersection.

Camera and Cartoon Views

The View button allows you to either view live processed images coming from all the cameras located at the intersection or a cartoon view representation of the intersection. The processed view provides the following information:

- Name of the view

- Date and time of the frame

- Current period

- Wait time

- Whether or not vehicles have been detected

- Queue count

- Count of vehicles that have passed over the bar during the current 15 minute period

- Current light signal status

- Intersection name

- Current schedule of phases to be served

- Phases shown in the view

- Whether or not the InSync tunnel is in normal coordination

- Camera mode (day or night)

The cartoon view displays the following traffic conditions at the intersection:

- Light status

- Loop trigger status (drawn with orange when triggered, a padlock when locked or with a yellow outline when not triggered or locked)

- Phase calls (indicated with a blue for call, magenta for manual call, and white for no call)

- Wait time (red)
- Adjusted queue (white)
- Pedestrian phase information

Resize camera view

The views can be enlarged or reduced by clicking on the view.

Rearrange camera views

You can move camera views around by clicking on a camera view and dragging it to the new position on the screen. To restore the layout to its default view, click the **Reset Layout** button at the bottom of the camera views.

Grab a background

NOTE: The following instructions pertain only to InSync and InSync:Fusion installations.

After creating or adjusting configuration details within the Configure applet and confirming camera views, you must grab camera backgrounds for each camera view. The background is used as a reference for car detection and should be representative of average lighting/ visibility conditions (ideally captured in late morning or early afternoon). It is also used to determine visibility conditions.

Make sure there are no cars in the detection zone when grabbing a background image.

1. If the camera views screen is not displayed, click **View** from the Home screen.
2. Click the camera view that you want to grab a background. An enlarged view of the camera displays.
3. If possible, wait until the lanes are free of traffic, and click the **Grab Background** button.
4. Click on the camera view again to minimize it and show all the other camera views.
5. Repeat steps 2-4 for the next camera view.

The camera moves into fog mode when the processor determines that it does not have a clear image for dependable video vehicle detection. In this situation, InSync references historical data collected for each phase associated with the unclear view. The historical data is based on green splits for that time of day, on that particular day of the week, for the past 4 weeks, in 15 minute increments. This allows InSync to make a reasonable estimation of how much time should be allotted to each phase affected by the fog mode (preferable to MAX RECALL).

The camera will move out of fog mode automatically when the camera view clears.

NOTE: You can use the **Clear Background** button to erase any learned background. This will lead to false positives, but is valuable if the background is truly unusable (e.g. if you accidentally grab a background while a car is sitting at the stop bar and you need to temporarily clear the background until it moves).

Chapter 5

Access camera utilities

Access camera utilities

The InSync kiosk contains many functions for managing the InSync detection cameras:

- **CameraIO:** Rhythm utility for enabling shadow filtering, tail processing, and troubleshooting purposes.
- **Samsung Camera Utility:** Samsung camera-specific utility for troubleshooting purposes.
- **AXIS Camera Utility:** AXIS camera-specific utility for troubleshooting purposes.

Access CameraIO

CameraIO refers to the part of the InSync software that reads and processes images coming from each camera (video detection), which is then sent to the InSync WebUI. A separate instance of CameraIO runs for each camera at the intersection. Most of the functionality that exists within the CameraIO application is also available through the InSync WebUI; however, advanced features such as shadow filtering and tail processing are currently managed through this application.

Use shadow filtering

Moving shadows can create false positive detections. To counter these situations where shadows may create false positives, you can turn on shadow filtering. When shadow filtering is enabled, the CameraIO application detects and removes shadows from the video image.

Shadow filtering is configured within each camera's CameraIO application by selecting an option from the Adjust menu. One CameraIO application runs for each camera in use. To enable shadow filtering:

1. Select **Camera IO** from the Advanced screen. Dialog boxes for each camera direction displays.

2. In the appropriate dialog box, click the **Adjust** menu. The Shadow Filter option is checked when Shadow Filtering is enabled. Click the menu item to enable or disable the setting.

Use tail processing

The CameraIO application tracks movements of vehicles within a detection zone - starting at the first video frame in which it is detected to the point where a vehicle exits the lane and enters the intersection. This tracking creates a "tail." Tails are useful in determining whether a moving object is in fact a vehicle. In theory, long tails represent vehicles moving in a lane. Short tails represent miscellaneous objects that may enter and exit a lane quickly, like a deer crossing the road.

There may be situations in which a vehicle does create a short tail, like when a driveway is situated in close proximity to an intersection. In this situation, a car entering a lane from the driveway would not register a long tail. In those specific instances, you may want to turn tail processing off so that vehicle would register as a detection.

Tail processing is configured within each camera's CameraIO application by selecting an option from the Adjust menu. To disable tail processing:

1. Select **Camera IO** from the Advanced screen. Dialog boxes for each camera direction displays.

2. In the appropriate CameraIO's dialog box, click the **Adjust** menu. The Tail Processing option is checked when Tail Processing is enabled. Click the menu item to enable or disable the setting.

Access Samsung camera utility

The Samsung camera utility is for troubleshooting purposes by Rhythm personnel.

Access AXIS camera utility

The AXIS camera utility is for troubleshooting purposes by Rhythm personnel.

Chapter 6

Use IO Test

Use IO Test

After configuring the intersection, configuring detectors, and mapping the detector inputs and controller outputs, you must verify that InSync is correctly reading the inputs and sending the correct outputs to the controller. The IO-Board Tester can be used to confirm these hardware connections. To do so:

1. The Intersection View represents how InSync perceives the intersection based on how the raw inputs/outputs are mapped to/from the IO board. To ensure that the intersection view is accurate, double-check the mapping configuration.

   If all detectors, phases, and lanes have already been defined, you can use the InSync Mapping button to test the hardware. Otherwise, use the Tester Mapping button to load the default mapping. Any changes made within InSync Mapping are saved. Changes made within the Tester Mapping are not saved.

2. Verify that there are green returns for each phase in the **Inputs** section.

3. Selecting one of the phases in the **Outputs** section should place a call to that phase. For detector cards, the LED on the detector card will immediately light up and you will see a call placed for that phase on the signal controller. Test all phases systematically to ensure that communications between the InSync Processor and the controller are configured correctly.

   TIP: You can view which pins are associated with an output call by hovering your mouse over the output. The pin assignment is then displayed in the tooltips.

   Note: If you did not set up the detections within the ConfigApp utility, you can still test whether InSync is receiving inputs from the intersection by clicking the **Tester Mapping** button. These inputs reflect a default configuration for the cabinet interface.

4. Click the **X** icon (top right corner) when finished to exit and restart InSync.

5. Once you have confirmed that InSync is accurately receiving detections and sending calls, take the controller out of recall.

Optionally, you can verify inputs and outputs within the InSync application. To do so:
   1.   Click **InSync** from the Advanced screen. The InSync dialog box displays.

2. Observe the icon view of the intersection in the top center, verifying that it reflects the correct number of lanes for each phase assigned.

3. Click the **I/O Board** tab. Verify that Communication Statuses all read **OK**.

4. Once you have confirmed that InSync is accurately receiving detections and sending calls, take the controller out of recall.

Define inputs and outputs

NOTE: Mapping inputs and outputs is functionality that is performed only through the InSync Kiosk.

After confirming that camera views are being read correctly by InSync, you must then map pin inputs and signal outputs within InSync. This allows InSync to know what data is being received (inputs) and how to place calls (outputs) correctly.

NOTE: While the IO Tester program is running, detection is manually sent to the controller. We suggest that you place the controller into Recall during this time.

To configure the inputs and outputs in InSync:

1. Click the **IO Test** button on the Advanced screen. The IO-Board Tester program window appears.

2. You are warned that opening the IO Board Tester program will shut down InSync. Verify that the controller is in Recall and click **Yes** to proceed.

3. Click the **InSync Mapping** button on the IO Board Tester dialog box. The Edit Pin Assignments dialog box displays.

4. Select the method you are using to connect to the cabinet from the **InSync Cabinet Interface** drop-down menu.

Note: If creating a new configuration, it is a good idea to click the **Load Defaults** button or **Clear All Data** button.

5. Each phase is represented by a tab on the dialog box. Select the phase you want to configure by clicking the associated tab.

6. Click inside the appropriate functionality field to assign a pin to that functionality. The Select Pins dialog box displays.

7. Select the pins that you want mapped. Holding the **Ctrl** key down while clicking on the pins allows you to assign multiple pins to an input/output .

8. Click **OK** to close the Select Pins dialog box.

9. Repeat steps 5-8 until all inputs/outputs are assigned.

10. Once done mapping the inputs, click **OK** to close the Edit Pin Assignments dialog box.

Note: The Function column in the Select Pins dialog box describes the default functionality of a pin; however, this description may not accurately reflect the functionality of your pin in your cabinet if you have set up any customization.

For example, to assign that Phase 2 should send a vehicle call on Pins Det05 and Det25 when interfacing with the cabinet using a SLDC Intercept Module, perform the following steps:

1. Select **SDLC Intercept Module** from the InSync Cabinet Interface drop-down box.

2. Click the **Phase 2** tab.

3. Click in the **Vehicle Ext/Call** field. The Select Pins dialog box displays.

4. Click **Det05** and scroll down and click **Det25**.

5. Click **OK**. The pins are shown in the Vehicle Ext/Call field.

Assign a bypass configuration

Note: Bypass configuration is only functional while both InSync and the IO board are online and communicating.

If you want InSync to simply pass inputs through to the controller, you can define this behavior on the Bypass Conf tab. This can be done in instances where you did not purchase the Interface Module to integrate pedestrian signals into InSync or for detectors that simply count volume at an intersection. To assign pins to bypass InSync and go straight to the controller:

1. Click the **InSync Mapping** button on the IO Board Tester dialog box. The Edit Pin Assignments dialog box displays.

2. Select the method you are using to interface with the cabinet from the **InSync Cabinet Interface** drop-down menu.

3. Click the **Bypass Conf** tab.

4. Select the input pin that you want InSync to bypass from the **Input Pin/Signal** drop-down box.

5. Select the output pin that you want InSync to bypass from the **Output Pin/Signal** drop-down box.

6. Click the **Add** button. The pins are added to the list of pins to pass through InSync to the controller.

Define the failure behavior for InSync Processors containing POS boards

One of the hardware components of the most recent style of InSync Processors include an IO board that can store failure configuration behavior for an intersection on its internal flash memory. This "Fusion-style" processor can then use this failure configuration to outputs appropriately in the event of communications failure between InSync and the IO board. To define the failure configuration for a Fusion-style InSync Processor:

1. Click the **InSync Mapping** button on the IO Board Tester dialog box. The Edit Pin Assignments dialog box displays.

2. Select the method you are using to connect to the cabinet from the **InSync Cabinet Interface** drop-down menu.

3. Click the **Fusion Default Outputs** tab.

4. For each output pin, select the function from the Function column. Your choices are:
   - **Failure On:** Produces a constant vehicle call on the output pin. If this pin connects to the cabinet as a vehicle call, the constant call will force the controller to time the maximum green if there are conflicting calls on other phases.
   - **Failure Off:** Produces no output signal on the given pin.
   - **Failure Input:** Only sends an output signal when you see a corresponding input.
   - **Always Input:** Always sends an output signal when the corresponding input signal is received, regardless, even if communication has not failed.

Note: The first 12 pins automatically default to Failure On while the last 12 pins automatically default to Failure Off.

5. Upload the configuration to the processor's internal flash memory by clicking the **Write to IO Board** button.

Additionally, you can also compare your settings to the settings defined on the processor's memory by clicking **Compare to IO board** or you can download the processor's configuration to memory by clicking **Retrieve from IO Board**, modify the settings, and then upload your changes by clicking **Write to IO Board**.

Define SDLC detector rack BIUs

When connecting the InSync Processor to the controller using the SDLC Interface Module, you can define which DR BIUs exist. This allows InSync to scan for these connections and report when a DR BIU is missing or has failed. To define the amount of DR BIUs connected to the SDLC Interface Module:

1.   From the Advanced tab, click **InSync**. The InSync dashboard displays.

2.   Click the **I/O Assignment** button in the InSync dashboard dialog box. The I/O Device Management dialog box displays.

3.   Select **SDLC Module**.

4.   Click the **Assignments** button. The Edit Pin Assignments dialog box displays.

5.   Click the **DR BIUs** tab.

6.   Click the check boxes related to the which DR BIUs exist.

7.   Click **OK**.

8.   Click **Close** to close the Edit I/O Device Management dialog box.

9.   Click the **X** to close the InSync dashboard.

Once you define which DR BIUs are attached to the SDLC Interface Module, the SDLC Interface Module scans for these devices and reports it to InSync. If the SDLC Interface Module cannot detect a configured DR BIUs for 30 consecutive seconds, InSync displays an error in its InSync Dashboard and then automatically re-scans for the DR BIUs.

Common causes of DR BIUs not being detected include:

• Connector coming unattached or loose on the port
• DR BIU going bad and needing replacement

InSync continues to re-scan for the missing DR BIU until the DR BIU comes back online (from either replacing the BIU or correcting the connectivity problem). The maximum amount of time for a corrected DR BIU to be recognized by InSync is 90 seconds.

Chapter 7

Access InSync on the processor

Access InSync on the processor

You may also access the InSync Dashboard on the processor by selecting **InSync** from the Advanced screen. This option allows you to see the optimizer status, a listing of configurations and each configuration's settings, device status, and pedestrian and preempt status.

NOTE: We recommend that you make configuration changes to an intersection within CentralSync, Rhythm's configuration management companion software.

Chapter 8

Troubleshooting

Troubleshooting

Temporarily disable a lane

There may be times when you want to disable a lane so that detections in that lane are not used in determining service to a phase. For instance, if a lane is closed for construction, construction equipment residing in that lane can cause false detections. To temporarily disable a lane within InSync:

1. If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2. Select **All** from the Direction drop-down box.

3. Locate the lane that should be disabled within the tree view. Details for the lane display above the tree view.

4. Click the **Enabled** check box. A check box should not display and the lane on the map is shaded in red.

Flag a detector as failed

It is important that InSync knows when a detector is no longer working. When this information is provided to InSync, InSync no longer uses the information coming from this detector into its calculations. To flag a detector as not working:

1. If the Configuration Utility is not open, select **Configure Detectors** from the Home screen. The Configure Detectors dialog box displays.

2. Select **All** from the Direction drop-down box.

3. Locate the detector that should be disabled within the tree view. Details for the detector display above the tree view.

4. Select **Failed** from the Status drop-down box.

View intersection history logs

The InSync Processor collects and saves daily information into a historical log. This log can then be used for future use and historical reporting. It includes timing, detection actuation,

lane saturation, lane volume, coordination, and adaptive trigger information. Selecting **Logs** from the Home screen allows you to generate reports based on historical logs kept on the InSync Processor. These logs detail the activities of the InSync system by time of day and day of week.

This allows you to see precise historical phasing and intersection information for particular days and times of day. The History Viewer uses icons to show exactly which movement InSync served at particular times of day, the duration of the movement, and other conditions at the intersection at that time, such as queue lengths and wait times.

At the global level, you can see coordinated movements served and any adaptive qualities applied to the coordinated movement, such as whether the tunnel was truncated due to low demand, or whether the period length (time between tunnels) changed. Pedestrian call and preemption data are also available, allowing you to determine the reason for InSync's decisions.

To generate historical data:

1. Select **Logs** from the Home screen.

2. Either type the start date and time in the **Start Date/Time** field or click in the field and select the date from the calendar. Then use the Hour and Minute sliders to select the start time. Click **Done**.

   NOTE: This field automatically defaults to the current day.

3. Either type the end date and time in the **End Date/Time** field or click in the field and select the date from the calendar. Then use the Hour and Minute sliders to select the end time. Click **Done**. These fields define the range of time in which you want to view historical data.

4. You can then choose which information to display by clicking in the **Include** field and selecting the data type from the **Results** box.

   If you want to remove a data type from being displayed, click the **X** icon to the left of the data type to remove it from the Include list.

5. Select which movements you want to display by clicking the **Limit to Movements Including** field and selecting the traffic movement direction.

   To remove a movement direction, click the **X** icon to the left of the movement direction in the Limit to Movements field.

6. Type the amount of time that is considered too long of a wait time (in seconds) in the **Highlight wait times over** field.

7. If you want to only show wait times over a specific number of seconds, type that time amount in the **Only show wait times over** field.

8. Click **Load History**. A report with all the historical data between the times you specified displays.

Update an InSync Processor's software

For optimal InSync Processor performance and to make sure your processor contains the latest features, you can install the latest version of the processor software as it becomes available.

1. Prepare for any update by backing up your configuration.

2. Insert the USB flash disk containing the new software into a USB drive on the InSync Processor.

3. Click **Update** on the Advanced screen.

4. Click **OK** to indicate that you have inserted the USB flash disk. The Drive Browser dialog box displays.

5. Select the installation file from the USB drive. The processor installs the update.

6. Click **OK** to confirm that the install is currently running. A message displays indicating that video only processors are also going to be updated.

   NOTE: If a video only processor update fails, you can choose to Continue, Retry or Cancel.

   ❖ Retry makes another attempt to update the software of the video only processor.

   ❖ Continue skips over the failed video only processor and continues installing the software update.

   ❖ Cancel stops the software update for any processor that has not been updated.

7. Wait until the message "USB drive(s) 'D:\' can now be safely removed" displays. You can

now remove the USB drive.

NOTE: Anytime a software update/installation is performed on the system (locally or remotely), a copy of that Install/Update is saved to the system. Then, anytime you backup a configuration, a copy of that update/install is placed on the USB flash disk. You can then use that version to update older systems in the field or spares in the office.

If you want to go back to the old InSync software version, click **Revert Update**.

Revert an update

The Revert Update option allows you to restore the InSync Processor back to its previous software version. This is useful for troubleshooting purposes. To perform a revert:

1. Select **Revert Update** from the Advanced screen. The Software Revert dialog box displays.
2. Type **Perform Revert** in the dialog box and click **OK**.

Back up an InSync configuration file

It is good practice to back up InSync configuration files each time you make a change to a configuration. This ensures that you have a good backup copy of a configuration.

NOTE: In order to back up a configuration file, insert a USB flash drive into the InSync Processor.

To back up a InSync configuration file:

1. Click **Backup** from the Home screen. The Insert USB Drive dialog box displays.

2. Make sure that a USB flash drive is inserted into the InSync Processor and click **OK**. A Backup completed successfully! message displays after a minute.

3. Click **OK** to close the Backup completed successfully message.

4. Wait until the message "USB drive(s) 'D:\' can now be safely removed" displays. You can now remove the USB drive.

NOTES: Archived files are automatically saved in a InSync\Conf\ArchiveInSync folder.

The files names indicate the date and time that the file was archived. Each file is prefixed with the intersection name, followed by the year the file was archived (in four digits), the month (two digits), and the date (two digits). It is then followed by an underscore character (_), and the time of day the file was saved (hour, minute, and seconds (in military time format)).

Restore an InSync configuration file

This process is useful for configuring a spare processor as a replacement. It also can be used to replace an InSync configuration file that seems to be corrupt on a working processor.

NOTE: In order to restore a configuration file, you must have an archived InSync configuration file stored on a USB flash drive, which must be inserted into the InSync Processor before selecting the Restore button.

To restore an InSync configuration file:

1. Click **Restore** from the Home menu. The Insert USB Drive dialog box displays.

2. Make sure the USB flash drive containing the configuration file is inserted into a open USB port on the InSync Processor. Click **OK**. The Drive Browser dialog box displays.

3. Select the archived configuration that you want to restore from the **Files** list.

NOTES: Archived files are automatically saved in a InSync\Conf\ArchiveInSync folder, which is the folder that automatically opens when you select Restore.

Each filename contains the intersection's name, the year the file was archived (in four digits), the month (two digits), and the date (two digits). It is then followed by an underscore character (_), and the hour, minute, and seconds (in military time format).

3.   Click **OK**. The Verify Selection dialog box displays, asking if the selection was correct.

4.   Click **Yes** to continue to restore the configuration file. The Processor Type dialog box displays.

5.   If the InSync Processor is running the InSync software, click **Main**. If the InSync Processor is a video only processor, click **Video**. The system then restores the configuration.

6.   Click **OK** after seeing the Restore Completed Successfully dialog box.

7.   Wait until the message "USB drive(s) 'D:\' can now be safely removed" displays. You can now remove the USB drive.

Viewing InSync status

The InSync system status displays the following information:

- **Version:** The build number of the InSync software running on the processor.

- **IP:** The IP address assigned to the InSync Processor at the intersection.

- **Mode:** Displays whether or not the intersection is running in optimized.

- **Detector Switch Enabled:** Displays whether or not the detector switch is in adaptive mode.

- **System Time:** Current time in HH:MM:SS, military-style format.

- **System Up Time:** Displays the amount of time the intersection has been running without interruption.

- **NTP Mode:** Displays whether time is being synchronized between peers or through an NTP server.

- **NTP Status:** Displays the status of the NTP synchronization communication. The NTP server keeps time synchronized between all processors.

- **Current Configuration:** The name of the configuration currently running.

- **Facilitator:** Displays whether or not the current intersection is the facilitator intersection within the corridor.

- **IO Board:** The version number of the IO board(s) configured at the intersection. This can be more than one (i.e., SDLC, Intercept Module, V2 board). For instance, if you are connecting to your signals using an SDLC connection, you would have an IO board version number for both the SDLC module and the InSync Processor's Fusion IO board.

- **Cameras:** Lists the names of the cameras located at the intersection and each camera's communication status.

- **External detectors:** Lists the external detectors and the communication status for each external detector.

Chapter 9

About Wolf IO

About Wolf IO

WolfIO is InSync's volume analyzer software. It is for use by Rhythm personnel only.

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