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GEOCODING & ROUTING DISCLAIMER
BCS is not liable for the accuracy of geocoded addresses or recommended routes. We DO NOT guarantee the accuracy of the latitude and longitude coordinates generated from geocoding an address. Because of variability in the quality of the map data and the geocoding process used to determine the approximate location of an address, the geocoded location of the address can and will be wrong for some addresses. You must manually review and approve the location of every address you geocode. You agree to use the geocoding functionality at your own risk. If you cannot verify the address location is correct on the map, you should contact dispatch for further instructions. Do not assume that the geocoded address is at the correct location on the map.

Routing in MARVLIS is based on the road data purchased or supplied by the customer. The Routing Engine attempts to recommend the fastest route to the desired location based on information supplied by the user and contained in the road data. You agree to use the routing functionality at your own risk. You should carefully evaluate the recommended route and determine if it is really the best route to reach your destination. If you cannot verify the recommended route is correct on the map, you should contact dispatch for further instructions. Do not assume that the recommended route is the most correct or only route to reach your destination.

If you do not agree to this disclaimer, do not use the MARVLIS Server Administration (MSA) software.
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Chapter 1: Welcome to MARVLIS Client

In this Chapter
- MARVLIS Client: What does it do?
- MARVLIS Client Startup
- Menu

MARVLIS Client: What does it do?

When lives are on-the-line, every decision is critical. No matter how much planning and preparation is done, no one can predict where and when an emergency will arise. The ability to respond to those emergencies in the shortest amount of time allows crews to provide care during the crucial early moments of an emergency.

BCS® MARVLIS Client is an in-vehicle navigation system that is designed to aid public safety field crews in reaching their destination, receive dispatch information, and convey information back to the dispatch system. It is a touch screen enabled system that contains a map display and a variety of tools that interact with the map. The map display shows current vehicle location, incident locations, and recommended routes.
Other key features include:

- Predefined destination list to easily route to known locations
- Address location display for finding addresses
- Day/Night display modes
- “Supervisor” mode for viewing other incident locations and vehicles
- Map navigation modes: follow the vehicle, map rotation, route focus modes

In addition to navigation, status changes can be transmitted from the dispatch system to the vehicle and be displayed. In turn, status changes can be made from Client to notify or update the dispatch system.
MARVLIS Client Startup

Starting MARVLIS Client
Double click the MARVLIS Client 2 icon on the desktop. The splash screen will display momentarily followed by the login screen.

Login
Input an assigned username and password followed by pressing the “Connect” button (these boxes may already have default values).
Pressing the “Connect” button will bring up the connection progress window. Client will connect to MARVLIS Server, check for configuration updates, and download updates automatically if necessary. Successful login (shown below) will automatically dismiss the login form and the connection progress window and then proceed to the main application screen.
An unsuccessful login attempt, such as seen below, indicates a failure at one or more of the steps of connection. That failure is represented by a red “X” beside the portion of the connection process that failed. In this example, all or part of the login information entered is incorrect. Press the “OK” button and the login screen will reappear. Enter the correct login information and press “OK.”

The client application can be configured to open even if it does not connect to the Web Service, but it may not have the most recent Client Configuration available for the Client to utilize.
Chapter 2: Getting Started

In this Chapter

- Menu
- Status Display
- Map Window
- Interaction Display
- Report History
- Reports Panel
- Day/Night Modes

Menu

The main window of MARVLIS Client is comprised of a series of panels and tools that provide differing functionality for the application.
The options menu provides access to items primarily used for setup, configuration, and troubleshooting.

**Map**
- Map Layer Settings – Displays the Settings window allowing control over various display preferences for the current map layers
- Save Display Mode
  - Day Mode - Saves current user preferences for the Day Mode display
  - Night Mode - Saves current user preferences for the Night Mode display

**Communications**
- Communications Window - Displays the Communications window, used to verify open communication between the vehicle client and the dispatch server

**Report**
- Auto Report Display - Determines if the Reports Panel is automatically enabled when a new incident occurs

**Status Display**
Information for each unit’s status is located in the top left-hand corner of the Client application. This displays the current status of the vehicle and will change as updates to the unit’s status are received. Status information can be dictated from the dispatch system and optionally, status changes can be forwarded to the dispatch system from MARVLIS Client via button input. Status progression input can be configured to fit an organization’s workflow and business logic.
Map Window

The Map Window is the primary display. It shows map data, current vehicle location, incident location, and the recommended route to an incident or destination.

Configurable by an administrator, the Map Window can contain any number of map features or layers. These layers can display map information such as: streets, highways, building foot prints, bodies of water, and any number of additional layers. Scale dependent rendering and labeling can be utilized to provide additional detail to the map or remove detail that would clutter the map. These properties can be adjusted according to map scale.

Map Display

The map can be manipulated by using tools from the Interaction Display or from the map directly. To pan the map in any direction, simply click anywhere on the map itself and drag it towards any outer edge of the map display. The zoom out and zoom in buttons are located in the upper left and upper right corners respectively. Map orientation can be adjusted to center the vehicle on the map, rotate map so direction of travel is up, or scale map to keep the vehicle and incident/destination in view.
The map orientation toggle button is located in the bottom left corner of the map window. It has a series of four options that are available. These options are detailed below.

- Indicates that no map mode is currently selected.
- Indicates that the "Follow" map mode is enabled.
- Indicates that the "Rotate" map mode is enabled.
- Indicates that the "Route Focus" map mode is enabled.

As an example:

Map Window Zoomed Out

Map Window Zoomed In Showing Greater Detail
Interaction Display

The “Interaction Panel” button is located in the top right-hand corner of the Client application and is represented by four horizontal lines. This button toggles on or off the Interaction Panel, which is hidden by default in order to provide more map display area. The Interaction Panel contains three divisions: Zoom, Routing, and Reports.

Interaction Panel

Zoom

- **Full Extent** - The Full Extent button will zoom the area of interest to the maximum area covered by all of the currently loaded map layers that are visible. The Full Extent button will zoom the map without any user interaction with the map.
- **Destination** - This will zoom the map to the location of the last known destination. The destination could be the current assigned incident or a destination selected by the user. This action happens without any user interaction with the map.

Routing

- **Directions** - The View Directions button will display text directions in the reports area describing the route shown on the map.
- **Facility** - This button displays the Destinations form. Each button on the form represents a predefined group of locations. These groups are created using the MARVLIS Server Administration tool and can be suited to match the needs of your particular system. Pressing any of the group buttons will display all locations contained within the group that the user may select. Selecting a facility from the list automatically returns Client to the map window and displays a route to the chosen destination.
- **Address** - This button displays the Geocode Address form (displayed in the area normally containing the map view). This form allows the user to manually enter address information, enables Client to find the best match(es) for the address, and displays the block information. The user can then select the matched data to obtain a location and route.
- **Incident** - This button will request, from MARVLIS Server, a route to the current incident. The current incident is indicated by the selected incident tab in the Reports display. The Reports display may show more than one incident if in Supervisor mode or an organization’s business logic permits it.
- **Recalc Route** - The Recalculate Current Route button can be pressed at any time to obtain a new route to the current destination or incident from the vehicle’s current location.
- **Clear Dest/Add** - This button clears the currently selected destination from the map.
- **Clear Route** - Pressing the Clear Route button will clear the current route from the map.

Reports

- **Report History** - This button opens the Report History form.
- **Logout** - Pressing this button closes the Client application.
- **Full Screen** - This puts Client in full screen mode.
Additionally, just below the Reports section at the bottom center of the Client window is the target location information. Depending on the destination, this displays the targeted destination of the unit as either an address or destination name.

Address Interface

- **Address Input** - Textbox to input the search address.
- **Zip/City Input** - Textbox to input the zip code or city.
- **Address Match Results** - Display area that shows the results of the geocode.
- **Keyboard Input** - Button that opens a digital keyboard for inputting the address and zip/city.
- **Find Address** - Button that executes the geocode.
- **Clear Input** - Clears the address and zip/city textboxes.
- **Clear Results** - Button that clears the geocoding results.
- **Exit Address** - Closes the display and returns to the Map display.
Destination Interface

By default, a list of the predefined destination group buttons appears when the Destinations button is pressed. Pressing the “Search By Name” button toggles the Destinations window to show a complete list of those predefined destinations.

Destination Groups

Destination Name Search
The straight-line distance to the destination is presented below the name of each destination. After choosing a destination by pressing one of the button choices, the application will display the map with the location and suggested route.

- **Filter Destinations by** - Allows the user to narrow the destination results based on alpha-numeric characters.
- **Search Results** - The results of the destination search are displayed just below the search box in the form of selectable buttons. The results will automatically update as characters are entered into the Filter Destinations textbox.
- **Use Group Buttons** - Pressing this will return the destinations window to the destination groups screen.
- **Back** - This button allows the user to return to the list of destination groups.
- **Exit Destinations** - Exits the destinations window and returns to the Map display.
Report History

When pressed, the “Report History” button opens the Historical Report Viewer window. This allows crews to review past incident report information. In order to perform a search, enter a start date and an end date using the pop-up calendar after clicking on one of the date boxes. The number of days to keep historical incident reports is configurable by an administrator.

A report can be reviewed by pressing the desired report button. To return to the map window, press the “Exit History” button.

Reports Panel

The Reports panel, controlled by the “Report” button in the top-right of the Client window, appears just below the map and illustrates different types of information to the user. The Reports panel has three modes: partial screen, full screen, and off. Pressing the “Report” button will cause the Reports panel to progress to the next mode. It displays:

- One or more incidents that are assigned to the vehicle
- Text directions to accompany a planned route on the map
- Vehicle listing (Supervisor Mode)
- All Current Incidents (Supervisor Mode)
**Incident Information** - Incident information is displayed in the Reports panel. It is automatically updated when new information is available from the dispatch system. Incident updates are highlighted with a red background for the specific item that was updated as well as a dark red background on the incident report tab.

In the example below, this user is in Supervisor mode and current incidents are in list format.

**Directions Information** - Direction information is displayed in the Reports panel. It is automatically updated when new information is available.
Vehicle Information - The Reports panel will also display, in Supervisor mode, a Vehicles tab that contains a list of vehicles with current information about each vehicle (see Supervisor Mode in Chapter 3 for more information).

Report Tools

The Report Tools panel, located on the bottom right-hand corner of the Client interface, contains buttons used to control the display items in the Reports panel.

Collapse - Pressing the collapse button will cause the Reports panel to disappear.

Acknowledge - Pressing the Ack (Acknowledge) button when an incident tab is selected acknowledges that the update has been read. Updated incident fields (red background) will return to a normal background color.

Clear - The Clear button removes the current incident from the Reports panel display. This action only clears the incident from the Reports panel display. **It does NOT clear the call at dispatch or communicate the action to dispatch.**

Undo - The Undo button (formerly Oops) will re-display the last incident report that was cleared from the Reports panel via the Clear button.
Day/Night Modes

Client has a night display mode that uses darker colors to reduce glare affecting the driver. The night display can be activated by pressing the Day/Night mode button at the top of the screen. Pressing the Day/Night mode button again will return to day display mode. The colors of the map layers and symbols are configured by an administrator, but can be temporarily altered by the user.

Day Mode

Night Mode
Chapter 3: Supervisor Mode

In this Chapter
- Supervisor Mode
- Vehicles Tab
- Incidents

Supervisor Mode

This mode allows a supervisor or administrator to view other vehicles and incidents as they are updated in the dispatch system. Information is presented on both the map and report display. This includes vehicle information such as location, status, and incident assignment, as well as incident locations and details. Supervisors can obtain route recommendations to any incident displayed on the map.

Supervisor mode is controlled by pressing the Supervisor mode button at the top right of the Client display. This functionality requires supervisor privileges which are based on the username and password used when logging into Client and must be configured by an administrator.

When you press the Supervisor Mode button:
- All units that the Client user is allowed to see and in a visible status will be displayed on the map.
- All current incidents will be added to the map.
- The Vehicles tab will be added to the Reports panel.
- Information about all current incidents will be added to the Reports panel.
Vehicles Tab

The Vehicles tab in the Reports panel shows the list of vehicles viewable by the user currently logged into Client. The group of vehicles a user is allowed to view is dependent on the user’s permissions, which is configured by an administrator.

Each vehicle’s information is displayed on one row within the display. Information available includes:

1. Unit Name
2. Status
3. Incident Assigned
4. Priority
5. Time at Status

The vehicle list can be sorted by any of the columns in the table. To sort a column, press or click on the column heading and the list will be sorted by that column. A second click on the column heading will reverse the sorting order.

Because of the limitations in the connection to the dispatch system, the Time at Status column may not be accurate until the vehicle has made at least one status change since appearing on the Vehicles tab display.
Incidents

The Reports panel may contain multiple incident tabs that display all incidents currently active within the dispatch system. Each tab header displays information about the incident it represents.

In the picture above, the “P1” represents the priority of the incident. The “NC9” is the last three digits of the incident number. The “M8” is the vehicle currently assigned to the incident. The red background color indicates information for this incident has been updated since it was originally displayed.

When multiple incidents are displayed, the user can select any incident tab to see information about that particular incident. The selected incident will be highlighted on the map and will become the current incident for routing purposes. If the user presses the Route to Incident button, a route will be generated from their current location to this incident.

Optionally, incidents in Supervisor mode can be displayed in list format as seen below.
Chapter 4: Appendix

In this Chapter
- Troubleshooting MARVLIS Client

Troubleshooting MARVLIS Client

Checking Communication

GPS
The first step is to look at the GPS and Server icons at the bottom left of the Client application window.

- Indicates proper communication is taking place.
- Denotes a problem with communications.
- Indicates either the GPS device does not have a satellite fix or that the data type being transmitted to the Client is invalid.

MARVLIS Server
As a quick reference, the Communication Speed indicator allows you to determine an approximate rate of data transfer from Client to Server.

- Indicates good communications between Client and MARVLIS Server.
- Indicates there is a disruption in communications between Client and MARVLIS Server.

To further verify communication to the dispatch system, the user can click on the Diagnostics menu and choose the Communications Window (see next page) option to display inbound and outbound information. This display also illustrates position data coming in from the GPS device.
Chapter 4: Appendix

Checking communications is primarily used as a troubleshooting tool. If you suspect a problem with the wireless communication system or GPS device, and it appears that communications are down, please notify your administrator.